Declaration of Rebekah B. Kcehowski

Exhibit 9

(Partially Redacted)

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

BlackRock Allocation Target Shares: Series S Portfolio, *et al.*,	:	
Plaintiffs,	:	
	:	Case No. 14-cv-9371-RMB-SN
v.	:	
Wells Fargo Bank, National Association,	:	
Defendant.	:	

EXPERT REPORT OF ETHAN COHEN-COLE, PH.D.

<u>HIGHLY CONFIDENTIAL</u>

DECEMBER 14, 2017

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I. INTRODUCTION AND SCOPE OF WORK

A. Qualifications

1. I am the Managing Director at Vega Economics, a company that provides consulting services on various economic issues. I hold a Ph.D. and M.A. in Economics from the University of Wisconsin at Madison, an M.P.A. in Public Policy from Princeton University, and a B.A. in History from Harvard University.

2. I was previously a professor in the Department of Finance at the University of Maryland, College Park's Robert H. Smith School of Business. In addition, I served as a faculty participant at the Center for Financial Policy and on the steering committee of the Center for Social Value Creation. I taught courses on various topics, including risk management, corporate finance, and the regulation and management of financial institutions.

3. Before teaching, I was a financial economist in the Supervision and Regulation function of the U.S. Federal Reserve System ("Federal Reserve"), where I provided technical and analytical direction to bank supervisors for many of the largest banks in the United States. At the Federal Reserve, I led quantitative reviews of large bank risk modeling efforts and was a designated system quantitative expert on risk management and Basel II.

4. At various stages of my career, I have worked in the banking sector in roles related to mortgage securitization. In the mid-1990s, I worked as a technical risk management consultant. This job included helping clients build risk-based scoring systems for a range of loan types, including mortgages. At the Federal Reserve, I evaluated the mortgage credit risk models for many top-20 financial institutions. Also at the Federal Reserve, I worked closely with mortgage databases to develop internal evaluations of bank risk and to write papers on mortgage risk. As an academic at the University of Maryland, I continued to research and work in the mortgage area. I wrote papers both on consumer credit and commercial paper.

5. I have experience evaluating financial risk within a range of contexts, including market risk, operational risk, and credit risk. My client experience involves advising financial institutions in a variety of contexts including the measurement and management of credit risk, the creation and validation of loan scoring models, and the evaluation of risk management systems for personal and corporate lending.

6. I have evaluated structured financial products in a range of contexts. Prior to working as an expert, I taught classes in risk management and financial institutions, during which I taught sections on structured products. At the Federal Reserve, I regularly reviewed industry risk management models that included a variety of structured financial products.

7. I have published widely in peer-reviewed economics and finance journals, including *The Review of Economics and Statistics*, *Journal of Macroeconomics*, *American Law and Economics Review*, *Journal of Health Economics*, *Economic Inquiry*, *Economics Letters*, and *Applied Economics*. I have also served as a referee for more than 20 academic journals, including *The Review of Financial Studies*, *The Quarterly Journal of Economics*, *The American Economic Review*, *Journal of Monetary Economics*, *The Review of Economic Studies*, *The Review of Economics and Statistics*, *American Economic Journal—Economic Policy*, *Journal of Financial Intermediation*, *Journal of Money*, *Credit and Banking*, *Journal of Banking & Finance*, and *Journal of Financial Services Research*.

8. Apart from my regular class lectures, I have delivered more than 75 lectures at universities and professional meetings. I have been a visiting scholar or professor at the University of California, Berkeley, the European Central Bank, the Bank of France, and the Federal Deposit Insurance Corporation's Center for Financial Research. I have received scholarly research grants from the National Science Foundation, the National Institutes of Health, the National Institute of Justice, the Department of Education, the European Central Bank, and the MacArthur Foundation.

9. I have included a recent CV as **Appendix A**: *Curriculum Vitae*. My CV includes all my publications for the last ten years and all my expert witness testimony for the last four years.

10. For a list of materials I considered in forming my opinions, please *see* **Appendix B**: *Materials Considered*.

11. For my work on this matter, I am being compensated at a rate of $875/hour. In performing my analyses, I utilized a team of Vega Economics personnel who worked under my supervision and direction at rates of $280 to $750.[1] Neither my compensation nor that of Vega Economics is contingent upon my findings or the outcome of this matter. I reserve the right to express additional opinions or otherwise supplement my analysis or the opinions expressed herein.

B. Case Background and Assignment

12. BlackRock Funds, DZ Bank AG, PIMCO, Prudential, Sealink Funding Limited, and TIAA-CREF ("Named Plaintiffs") bring this class action against Wells Fargo Bank, National Association ("Wells Fargo") for alleged violations of obligations arising out of Wells Fargo's role as indenture trustee of twelve residential mortgage-backed securities ("RMBS") trusts (the "Relevant Trusts").[2] *See* **Exhibit 1**: *Relevant Trusts.* I understand that Named Plaintiffs have identified nineteen tranches in the Relevant Trusts as the tranches that form the basis of their claims (the "At-Issue Tranches").[3] The At-Issue Tranches were acquired through 38 unique purchases (the "Relevant Purchases"). *See* **Exhibit 2**: *Named Plaintiffs' Relevant Purchases*.

13. According to the Amended Complaint, Named Plaintiffs seek to represent a class of investors who currently hold certificates issued by the Relevant Trusts and claim to have suffered damages as a result of Wells Fargo's alleged misconduct.[4]

14. Named Plaintiffs allege that Wells Fargo breached its duties under certain trust documents including the Mortgage Loan Purchase and Sale Agreements, the Trust Agreements, the Sale and Servicing Agreements, and the Indentures (collectively, the "Governing Agreements").[5] According to Named Plaintiffs, under the Governing Agreements, common law, and the Trust Indenture Act of 1939 ("TIA"), Wells Fargo was obligated to (1) enforce repurchase rights after it learned of breaches of representations and warranties ("R&Ws") that materially and adversely affected the interests of the certificateholders or the value of the loans; (2) "remedy known servicing failures;" (3) "act prudently" after alleged events of default; and (4) provide timely notice to certificateholders of all alleged uncured events of default.[6]

15. Named Plaintiffs allege that "there is ample evidence that beginning in 2009 and by 2011," Wells Fargo knew that many of the mortgage loans in the Relevant Trusts' loan pools materially breached the R&Ws regarding characteristics and credit quality.[7]

16. Named Plaintiffs have submitted the expert report of Dr. Michael L. Hartzmark in support of class certification. Dr. Hartzmark opines that damages can be measured on a class-wide basis utilizing a common methodology. Dr. Hartzmark proposes to calculate two separate components of damages, "Put-Back Damages" and "Servicing Damages."[8] He also opines that these damages can be calculated for each putative class member under a methodology that he contends can be derived from terms specified in the Governing Agreements.[9]

17. I have been retained by Wells Fargo, through its counsel Jones Day, to review and respond to Dr. Hartzmark's report and, in particular, his opinion that damages can be calculated in this case on a class-wide basis. I provide opinions and quantitative analysis regarding, *inter alia*, the following:

- whether Named Plaintiffs are representative of the class they seek to represent;
- whether Named Plaintiffs have established that they have experienced losses;
- whether Dr. Hartzmark provides a reliable methodology to isolate losses allegedly attributable to Wells Fargo's conduct;
- whether Dr. Hartzmark's damages methodologies are consistent with Named Plaintiffs' allegations and based on defined and reasonable assumptions;
- whether Dr. Hartzmark's "financial benefit" analysis and proposed methodology to determine injury and calculate damages is reliable;
- whether Dr. Hartzmark adequately addresses conflicts of interest among certificateholders in the putative class; and
- whether Dr. Hartzmark's proposed damages methodology adequately addresses causation.

II. SUMMARY OF OPINIONS

18. It is my opinion that Dr. Hartzmark does not provide a reliable basis for his opinion that damages to class members can be adequately and reliably calculated on a class-wide basis consistent with Named Plaintiffs' allegations in the Amended Complaint.

19. ***Opinion One***. Certificateholders across trusts and in different tranches of the Relevant Trusts are not similarly situated. There are meaningful differences among the trusts, tranches, and loan collateral that demonstrate that Named Plaintiffs are not representative of certificateholders in other trusts or tranches. Each of the Relevant Trusts has its own economic framework, with distinct loans and agreements underlying each trust, and considerable differences in terms of tranche structure, collateral, and risk. Because of the unique structure and characteristics of each trust and tranche, the performance of certificates varies, as do the economic incentives of the certificateholders and any alleged impact of Wells Fargo's conduct.

20. ***Opinion Two***. Whether and how Named Plaintiffs or class members have experienced injury or losses is an individualized inquiry, about which investors will have conflicting economic

incentives. Indeed, Dr. Hartzmark has failed to establish that Named Plaintiffs have experienced losses.

a. Eighteen of the nineteen At-Issue Tranches had zero cumulative realized losses as of November 27, 2017. Fourteen of those nineteen tranches had zero cumulative interest shortfalls as of November 27, 2017.

b. Dr. Hartzmark has also failed to establish that Named Plaintiffs will suffer any alleged latent losses in the future. Dr. Hartzmark calculates no such latent or expected losses, and he fails to commit to any particular formula, variables, data, or assumptions to be used to estimate such alleged latent losses. Based on my analysis, substantial additional losses to the trust must occur before most At-Issue Tranches would experience any losses.

c. Dr. Hartzmark's observation that so-called "no-loss" tranches "might" have been harmed fails to provide a reliable basis to conclude that Named Plaintiffs with interests in such "no-loss" tranches have or are likely to suffer losses. Erosion of subordination from the default of allegedly defective loans and downgrades in credit ratings by outside ratings agencies do not necessarily entail losses for the "no-loss" tranches. Dr. Hartzmark proposes no methodology for determining losses based on such measures, let alone on a class-wide basis. His reliance on price as a proxy—without further analysis—is not reliable.

d. Dr. Hartzmark also ignores Named Plaintiffs' periods of ownership, instead looking at the performance of the Relevant Trusts since issuance. He proposes no methodology for calculating "out-of-pocket" losses on a class-wide basis or otherwise. However, he referenced in his deposition his own formula for "out-of-pocket" losses for RMBS investments. Using that formula, and under various assumptions, Named Plaintiffs themselves have experienced no "out-of-pocket" losses for the majority of the holdings arising from the Relevant Purchases. [redacted]

e. Named Plaintiffs are differently situated than investors that have experienced realized losses during their ownership periods or "out-of-pocket" losses, as defined by Dr. Hartzmark.

21. ***Opinion Three***. Dr. Hartzmark has failed to provide a reliable methodology for calculating damages on a class-wide basis consistent with Named Plaintiffs' allegations in the Amended Complaint. His methodology cannot be applied reliably class-wide to calculate damages here. Notably, Dr. Hartzmark's proposed damages methodology provides no reliable way to isolate the losses allegedly attributable to Wells Fargo's conduct from the losses that would have occurred even if Wells Fargo had acted as Named Plaintiffs allege that Wells Fargo should have acted.

a. With respect to Put-Back Damages, Dr. Hartzmark proposes to so isolate losses allegedly attributable to Wells Fargo by calculating losses based on so-called "defective mortgage loans" and states that "re-underwriting of loans would be used to identify the defective mortgage loans."[10] [redacted]

b. With respect to Servicing Damages, Dr. Hartzmark similarly states that he will rely on some other expert, but he fails to explain how excess servicing fees could be derived reliably based on the findings of the servicing expert.

c. Ultimately, Dr. Hartzmark would rely upon other experts or methods to accomplish the critical task of isolating losses allegedly attributable to Wells Fargo's conduct from other losses that occurred regardless of Wells Fargo's conduct, but Dr. Hartzmark has no understanding of how or whether this can be reliably done, nor has he proposed a methodology by which he can reliably do it.

22. ***Opinion Four***. Dr. Hartzmark's proposed damages methodologies for both Put-Back and Servicing Damages are also inconsistent with any relevant "but-for scenario" implied by Named

Plaintiffs' allegations and are based on ill-defined and unreasonable assumptions in multiple ways.

a. Dr. Hartzmark ignores, for example, the timing of the alleged loan-by-loan and trust-by-trust breaches by Wells Fargo, compensating class members today even though Named Plaintiffs allege that Wells Fargo breached in the past. Named Plaintiffs' alleged foregone repurchases and excess servicing costs would have flowed through the waterfalls in the past, and the tranches that would have been affected vary depending on timing. Running funds through the waterfalls today will result in a different allocation of value across tranches than would have occurred if repurchase proceeds had come in earlier, whether in 2009, 2011, or over several years. As I illustrate using a hypothetical distribution running funds through a trust's principal waterfall in 2009, 2011, and 2017, the amount each tranche would receive will vary significantly if different dates are used. By ignoring issues of timing, Dr. Hartzmark's damages methodology incorrectly awards damages to tranches that were not actually impacted by Wells Fargo's alleged conduct, violating a fundamental premise of a "but-for" damages methodology.

b. As to Put-Back Damages specifically, Dr. Hartzmark also ignores the costs and risk of failure in the repurchase process that Named Plaintiffs allege Wells Fargo should have pursued. Instead, Dr. Hartzmark assumes, without analysis or empirical support, that the put-back process would have resulted in a 100 percent recovery on allegedly defective loans.

c. As to Servicing Damages, Dr. Hartzmark likewise ignores the realities of the servicing process, including material limitations on what Wells Fargo could do even if it had actual knowledge of servicing defaults, and he assumes—again without analysis or empirical support—that the actions Named Plaintiffs claim Wells Fargo could or should have taken would have resulted in full recovery of all fees allegedly incurred as a result of excess foreclosure timelines.

23. ***Opinion Five*.** Dr. Hartzmark has proposed a "financial benefit" analysis to determine both the fact of injury and the amount of damages at the tranche level. This analysis is unsupported and flawed, and is not a reliable method for determining the fact or amount of damages on a class-

wide basis. Despite Dr. Hartzmark's suggestions that he would rely on the Relevant Trusts' waterfall rules, his proposed "financial benefit" analysis goes well beyond those rules. Further, Dr. Hartzmark depends heavily on having both reliable pre-award price data and a reliable methodology to derive post-award prices. Finally, even if all the flaws in Dr. Hartzmark's methodology are disregarded, his methodology would yield negative damages figures for certain tranches, establishing that some class members were better off with Wells Fargo's actual conduct than they would have been had Wells Fargo engaged in the conduct Named Plaintiffs allege was proper, and highlighting conflicts of interest among holders.

24. ***Opinion Six*.** Dr. Hartzmark ignores fundamental conflicts of interest among certificateholders left unresolved by his proposed damages methodology. Dr. Hartzmark's methodology does not rest on the Governing Agreements' waterfall rules, but rather requires subjective assumptions and judgments that will have a different impact on certificateholders in different trusts, and in different tranches of the same trust. Dr. Hartzmark uses these assumptions and judgments to determine the very fact of injury here, not just the amount of damages. Dr. Hartzmark's proposed damages methodology, therefore, does not resolve, and in fact creates, fundamental conflicts of interest among proposed class members.

25. ***Opinion Seven*.** Dr. Hartzmark's proposed damages methodology is also unreliable because it fails to address causation adequately. Dr. Hartzmark assumes that all losses on allegedly defective loans can be attributed to Wells Fargo, ignoring other important causes of losses to the trusts, such as the state of the U.S. economy in the time period following the closing dates of the Relevant Trusts.

III. Relevant Background

A. RMBS Structure and Administration

26. RMBS are secured by loan groups, with each group containing many residential mortgages.[11] Issuers of RMBS create a separate entity, a trust, which holds residential mortgages. The trust issues RMBS certificates, which are sold to investors.

27. RMBS are divided into slices, or "tranches," each of which bears a different level of risk and offers a different level of return.[12] Each purchaser of an RMBS certificate is typically entitled to cash flows associated with the principal and interest payments made by the mortgagors on the loans supporting the purchasers' tranches over the life of the certificate.[13] As discussed further

below, these payments are distributed to the various certificateholders pursuant to the Governing Agreements in a highly complex way often referred to as a trust's "waterfall."

28. A highly simplified example structure functions as follows: the certificateholders of the most senior tranche have the first right to receive principal and interest payments, and each successive tranche is junior to that tranche and any tranches above it.[14]

29. The specific structure of a given RMBS trust is described in the prospectuses/prospectus supplements and the Governing Agreements.[15] These documents contain information about the tranches in the RMBS, cash flow structures, credit enhancements, performance of the tranches under different payment speeds, risk factors, and other items such as tax treatment.[16] Prospectus supplements typically also disclose a range of loan characteristics for each supporting loan group and display these characteristics in the form of stratifications.[17] These documents also describe how interest, principal, and excess cashflow will be distributed, and how losses will be allocated.

30. Over the life of the trust, a trustee typically provides reports, sometimes referred to as "remittance reports," to investors based on data it receives from the servicer.[18] Remittance reports include information relating to the trust's performance, including distribution amounts, servicer advances, certificate balances, and realized losses, among other things.[19]

B. RMBS Credit Enhancements

31. Even high credit quality loans can default. In fact, default rates on prime loans, generally considered to have better credit quality than subprime and Alt-A loans, increased rapidly throughout the mid-2000s.[20]

32. RMBS, like other asset-backed securities, often have credit enhancements such that defaulted loans do not necessarily cause losses to investors. Credit enhancements, sometimes expressed as a percent of the total supporting loan group that can experience losses before a given certificateholder's claim to cash flows declines,[21] play an important role in mitigating default risk.[22] They also create differing incentives among certificateholders in different tranches.[23]

33. Credit enhancements may include:

   a. *Subordination*, a common form of credit enhancement, "is the most direct approach to generate credit enhancement for senior tranches."[24] With a subordinated structure, senior tranches have one or more supporting tranches. When funds are received, the senior tranches are generally the first to receive payments.

b. *Allocation of losses* is a related mechanism by which these supporting tranches act as a cushion to the senior tranches, often in highly complex ways, if losses occur. Losses are typically absorbed more or less in a "bottom-up" fashion, with the junior-most tranche absorbing initial losses and increasingly senior tranches absorbing losses afterward.[25] The senior-most investors typically experience losses only if they penetrate through all other subordinate tranches.[26]

c. *Overcollateralization* is another common credit enhancement. In the case of overcollateralization, the face value of the collateral is larger than the value of the security backed by those assets.[27] Such overcollateralization can act as a buffer if the underlying collateral experiences defaults. Trusts often have complex rules around the maintenance of overcollateralization levels and the distribution of any excess or remaining overcollateralization.

d. *Excess spread* (or "excess interest") is the amount of interest collected above and beyond the amount needed to pay interest to certificateholders.[28] This excess spread can be used to pay the ongoing expenses of the transaction. It may also be distributed as principal, thus building overcollateralization for the trust over time.[29]

e. *Cross-collateralization* is a credit enhancement that can apply when there are multiple supporting loan groups in the same trust.[30] Cross-collateralization occurs when funds from one supporting loan group can be released to another supporting loan group under certain circumstances.[31]

f. *Insurance provided by bond insurers* (such as MBIA, FGIC, Ambac, and Assured Guaranty) also serves as a form of credit enhancement. For securities with bond insurance "wraps," bond insurers guarantee some portion of the principal and/or interest payments owed to investors in certain (typically senior) tranches.[32] Investors in those tranches are insulated to some degree from the effects of losses on the underlying collateral.

g. *Private/primary mortgage insurance* is an insurance contract that protects the lender against default.[33] Other types of guarantees exist as well. [redacted].[34]

34. Credit enhancements mitigate potential shortfalls between payments made into an RMBS trust and the payments due to investors from the trust. If losses must be allocated, credit enhancements may lead to some tranches experiencing losses while others experience none.

C. Distribution of Payments and Allocation of Losses Pursuant to Waterfall Provisions

35. The original certificate balance for each tranche refers to the dollar amount of principal a tranche is intended to receive over the life of the trust. Many of the certificates issued by the Relevant Trusts are declining principal balance bonds, meaning the certificate balance of the tranche typically *decreases* over time.

36. For declining principal balance bonds, the certificate principal balance can decrease in two ways. First, the balance can be reduced as the result of principal (and sometimes excess interest) payments made by mortgagors. Payments are allocated to tranches based on the Governing Agreements, and the certificate balance of each tranche eligible to receive such payments is reduced by the amount of principal allocated to it.

37. Second, certificate balances can be reduced through "write-downs." Write-downs reflect the realization of losses to the trust that are applied to the tranches. Realized losses can occur when a defaulted loan has been liquidated and the proceeds of the liquidation do not fully cover the unpaid principal balance.[35] A realized loss may also occur when a mortgage loan has been modified and the principal is reduced, or a bankruptcy court reduces the amount owed on the mortgage.[36]

38. The Governing Agreements specify how these losses are applied to the tranches. They are generally first allocated from the "bottom up," that is, beginning with the most junior certificates.[37]

39. On each payment distribution date for a given trust, the amount of funds available for distribution depends on the amount of funds received from mortgagors, the amount of funds advanced by servicers, and any insurance/liquidation proceeds.[38]

40. Payments from mortgagors may include regularly scheduled payments of principal and interest, as well as unscheduled prepayments. A rapid pace of prepayments can reduce cash flows available to the trust.[39]

41. In certain circumstances, the servicer is also obligated to make cash advances to the trust under the trust's Governing Agreements.

42. A trust may also receive funds in connection with a loan that has been previously liquidated, typically referred to as a "subsequent recovery."[40] Subsequent recoveries, subject to specific distribution rules defined in the Governing Agreements, are typically included in the principal distribution amount and certificate balances can be written up to the extent that the recovery funds reverse applied realized losses according to the rules in the Governing Agreements.[41]

43. In addition, in instances where the seller has repurchased or substituted a loan, the repurchase or substitution amount is typically included in the calculation of funds available for distribution.[42]

44. The manner in which payments are distributed to the various certificateholders is often referred to as a "waterfall."[43] For each trust, there are typically separate, complex waterfall rules for the distribution of funds, including separate waterfalls for interest, principal, and excess cashflow.

45. Even within a trust, waterfall rules are conditional on a number of factors, and may vary over time.[44] For example, many RMBS include a "stepdown date,"[45] a date after which subordinate tranches may receive principal payments.[46] RMBS may also include certain "trigger events" that redirect the allocation of payments. Trigger events are "highly deal- and issuer-specific, depending on both the type of collateral backing the deal and how it was expected to perform at issuance."[47]

46. Overcollateralization and its targets may also affect distributions.[48] If a trust has a target overcollateralization amount, the distribution of principal can vary depending on whether the target has been met.

47. Cross-collateralization can also reallocate the principal and interest payments received from one supporting loan group to tranches backed by other supporting loan groups if certain defined conditions are met. Cross-collateralization can depend on whether, and to what extent, losses impact other tranches, and other rules set out in a trust's Governing Agreements.

IV. THE HARTZMARK REPORT AND OPINIONS

48. The Hartzmark Report has two central opinions. First, Dr. Hartzmark provides the opinion that there are at least 163 "current" certificateholders.[49] Second, Dr. Hartzmark opines that there is a common methodology by which he can calculate and distribute damages on a class-wide basis. Specifically, Dr. Hartzmark contends that class-wide "Put-Back Damages" and class-wide "Servicing Damages" can be calculated using a common methodology that relies upon waterfall rules. My report addresses this second opinion.[50]

Calculation of Put-Back Damages

49. Dr. Hartzmark first proposes a methodology for calculating so-called Put-Back Damages. According to Dr. Hartzmark, Wells Fargo had the duty to enforce repurchases set forth in the Amended Complaint and failed to act consistently with this duty.[51] He contends that had Wells Fargo fulfilled its obligations to enforce repurchases of the allegedly defective loans, the loan pools in the Relevant Trusts would not have included nor currently include those allegedly defective mortgage loans.[52]

50. Dr. Hartzmark asserts that Put-Back Damages should include both losses from the defective mortgage loans that have been realized to date, as well as alleged latent losses from the defective mortgage loans projected to occur in the future. Dr. Hartzmark rests his assertions on the premise that the current values of the certificates are "directly linked to both realized and latent collateral losses," the former through its impact on the face value of the certificates, and the latter through the impact on the expected cash flows and alleged certificate prices.[53]

51. Dr. Hartzmark proposes to calculate the alleged Put-Back Damages using four steps. *First*, he proposes to compile the total realized losses from all inactive loans and active modified loans.[54]

52. *Second*, Dr. Hartzmark proposes to calculate alleged latent or expected losses on a loan-by-loan basis for active loans. Dr. Hartzmark states that his calculation will take into account a loan's outstanding principal balance, its current performance status, and his yet-to-be-defined assumptions regarding default risk and loss severity for each active loan.[55]

53. *Third*, Dr. Hartzmark proposes to determine what losses were caused by Wells Fargo's alleged breaches by separating the losses resulting from the allegedly defective mortgage loans from those losses resulting from non-defective loans.[56] To do so, he intends to rely upon an undefined

re-underwriting or "breach analysis" exercise, but does not know how this re-underwriting or "breach analysis" exercise will be performed.[57] Dr. Hartzmark proposes to then categorize the losses as "Defective Realized Losses" and "Defective Latent Losses."[58]

54. *Fourth*, Dr. Hartzmark proposes to add the "Defective Realized Losses" and "Defective Latent Losses" to arrive at the aggregate Put-Back Damages at the trust or loan group level (not the tranche level or certificateholder level) for each Relevant Trust.[59]

Calculation of Servicing Damages

55. Dr. Hartzmark states that his methodology for calculating Servicing Damages assumes that Wells Fargo had the duties set forth in the Amended Complaint and failed to act in accordance with such duties. According to Dr. Hartzmark, had Wells Fargo enforced servicing obligations, losses would have been reduced because "more of the funds from the borrowers' mortgage payments" would have been remitted to the Relevant Trusts.[60]

56. Without specifying what actions Wells Fargo failed to take and when those actions should have occurred,[61] Dr. Hartzmark proposes that "*Servicing Damages* can be estimated from servicing file information and/or based on periods of distress deemed to be excessive in length[.]"[62] Dr. Hartzmark plans to rely on a servicing industry expert to determine what periods of distress are deemed "excessive,"[63] but does not know how this will be done or what benchmarks will be used.[64] Dr. Hartzmark would then measure the alleged excess costs incurred during those distressed months.

57. Dr. Hartzmark states that aggregate Servicing Damages would be equal to the "sum of all [the] excess fees and costs over all loans in each of the collateral pools[.]"[65] Further, he states that "[a]s the misconduct by the [s]ervicers remains ongoing, [he] would update the calculations until such time as the servicer deficiencies are remedied."[66]

Total Trust or Loan Group Level Damages

58. Dr. Hartzmark states that total trust or loan group level damages will depend on the factfinder's ruling on Wells Fargo's liability.[67] Based on that finding, Dr. Hartzmark will either calculate Put-Back Damages only, Servicing Damages only, or combine the amount of Put-Back and

Servicing Damages and back out Servicing Damages attributable to defective loans to arrive at a total damages figure.[68]

Calculation of Tranche-Level and Investor-Level Put-Back Damages and Servicing Damages

59. In the Hartzmark Report, Dr. Hartzmark proposes to calculate damages for each tranche "based on measuring the value in dollars of the financial benefits that flows to specific tranches from the allocation of aggregate damages via the waterfall."[69] Then, he would distribute tranche-level damages to class members "in an equal amount for each of that tranche's Notes."[70] Dr. Hartzmark fails to provide further detail in the Hartzmark Report regarding how his so-called "financial benefits" will be defined or calculated based on the waterfall rules of the trusts or otherwise, or how they will be distributed.

60. In recent reply reports in other RMBS trustee matters and deposition testimony, however, Dr. Hartzmark demonstrated that his methodology goes far beyond a strict application of the waterfall rules.[71] Instead, it relies on running a hypothetical damages award through the waterfall and then estimating how that distribution would impact certificate prices. He would then calculate the so-called "financial benefits" of such a hypothetical distribution to each tranche, meaning the benefit from any cash payment to the tranche plus the change in market value of the tranche that he would estimate to occur.[72] That "financial benefits" amount would be based in large part on estimated post-award prices to distribute a damages award *outside* of the trust.[73] This calculation of damages goes well beyond an objective application of the waterfall rules. It also critically depends on assumptions regarding prices both before and after the hypothetical distribution.

V. OPINION ONE: THE MEANINGFUL DIFFERENCES AMONG THE TRUSTS, TRANCHES, AND LOAN COLLATERAL IGNORED BY DR. HARTZMARK DEMONSTRATE THAT NAMED PLAINTIFFS ARE NOT REPRESENTATIVE OF CERTIFICATEHOLDERS IN OTHER TRUSTS OR TRANCHES

61. Named Plaintiffs seek class treatment for this litigation, and claim damages can be calculated on a class-wide basis, but they overlook crucial differences between trusts and tranches. Given the unique structure and characteristics of each Relevant Trust, discussed in more detail below, the performance of each certificate will vary, as will the economic incentives of the certificateholders, including with regard to repurchases, servicing workouts, and Wells Fargo's conduct. Because certificateholders invest in a variety of securities, each with its own unique

risk and return profile, there are different economic incentives among the certificateholders, and Named Plaintiffs have failed to establish that they are representative of certificateholders in other trusts or tranches as to the allegations here.

62. Certificateholders across the Relevant Trusts and in different tranches of a given Relevant Trust are not similarly situated due to trust- and tranche-specific differences, described in detail below.

63. Dr. Hartzmark ignores these differing economic interests and incentives entirely. For the purposes of his report, he accepts without verifying that "the terms of the [Relevant] Trusts' Governing Agreements that are pertinent to the subject matter of this Complaint are substantially similar[.]"[74] That assumption is unjustified and incorrect, and renders Dr. Hartzmark's opinions, including his opinion that damages can be calculated on a class-wide basis, unreliable.

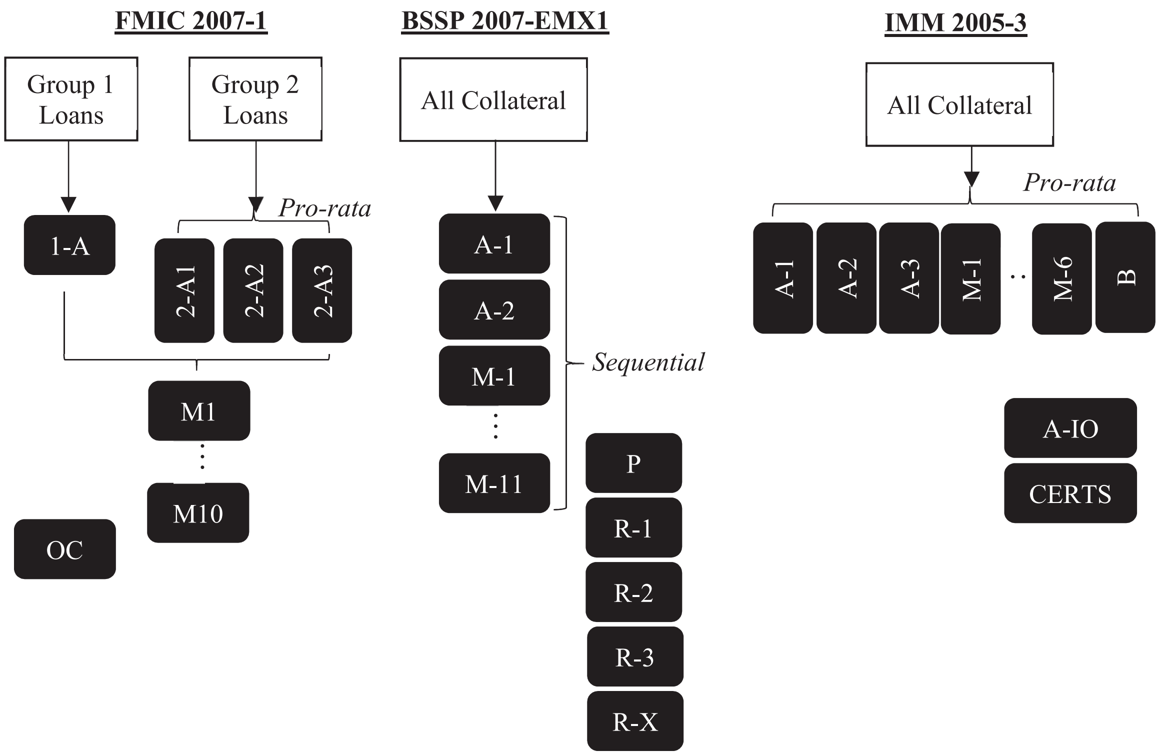
Trust-Level Differences

64. Each of the Relevant Trusts has its own economic framework, with distinct loans and agreements underlying each trust.[75] There are considerable differences between the Relevant Trusts in terms of structure, collateral, and risk.

65. To begin with, the Relevant Trusts have unique waterfalls set out in the Governing Agreements, which mean payments flow to certificateholders in the various tranches in significantly different ways. Dr. Hartzmark admits that he did not review the waterfall rules in detail, and they are not listed in the appendix to his report identifying materials relied upon.[76]

66. For example, FMIC 2007-1 has a "Y-structure." As of November 27, 2017, the senior certificates for each of the two supporting loan groups are paid principal in tandem from their respective loan groups until the senior tranches are fully paid-off. Once these senior certificates have been fully paid-off, or once certain other conditions are met, both loan groups will begin to pay down the subordinate tranches sequentially. *See* the graphical illustrations in **Figure 1**: *Example Principal Waterfall Distribution Differences*. For more information, *see* **Exhibit 3**: *Example Principal Waterfall Distribution Differences*.

Figure 1: *Example Principal Waterfall Distribution Differences*



67. In addition to "Y-structures," the Relevant Trusts also have "senior-sub structures." This means that the tranches will be paid from a single supporting loan group either sequentially or pro-rata. BSSP 2007-EMX1 has a sequential "senior-sub structure" and as of November 27, 2017, is paid from the senior most certificate down through the subordinate tranches. As another distinct example, IMM 2005-3 has a pro-rata "senior-sub structure," and the principal payments are distributed pro-rata to all tranches instead of sequentially. *See* the graphical illustrations in **Exhibit 3**: *Example Principal Waterfall Distribution Differences*.

68. Furthermore, the Governing Agreements for the various trusts may specify unique events that can alter the priority of payments. For example, both "stepdown dates" and "trigger events" can alter the payment provisions of some of the Relevant Trusts. In the case of AHM 2004-2, for example, the Governing Agreements provide for both a stepdown date and a trigger event that determine whether all principal payments will be directed only to senior tranches or whether senior and junior tranches will each receive some portion of the total principal payments available. *See* **Exhibit 4**: *AHM 2004-2 Waterfall Decision Tree*. In contrast, IMM 2004-6 specifies no stepdown date or trigger events. Each tranche is paid pro-rata from the principal

payments available on each distribution date. These highly complex unique events differ across trusts in terms of when and how they apply.

69. These varying trust structures create differing and conflicting economic incentives among investors in different trusts, as well as within different tranches in a single trust, regarding put-backs and servicing issues.

70. The credit enhancements applicable to the Relevant Trusts also differ. For example, according to the offering documents, MSHLC 2007-1 includes credit enhancements of overcollateralization, excess spread, and bond insurance,[77] while [redacted].[78]

71. In addition to the structural differences among the Relevant Trusts, the loans collateralizing each trust are unique. For example, IRWHE 2006-2 and MSHLC 2007-1 are collateralized entirely by home equity loans ("HEL") and home equity line of credit ("HELOC") loans. HEL loans are typically closed-end, fixed rate loans made against the equity in the relevant property. Conversely, HELOC loans are typically open-end, adjustable rate loans that allow borrowers to draw from a revolving line of credit.[79, 80]

72. More than 90 percent of the loans in MSHLC 2007-1 are HELOC loans that do not require principal payments until maturity, when they require a balloon payment of the entire principal due.[81] These loans "involve a greater degree of risk because the ability of a mortgagor to make a balloon payment typically will depend on the mortgagor's ability either to refinance the revolving credit loan in a timely manner or to sell the related mortgaged property."[82]

73. [redacted]

74. Reverse mortgages are commonly extended to senior citizens in exchange for the equity in their homes.[86] Unlike traditional amortizing mortgages, reverse mortgages do not provide for scheduled monthly payments of principal or interest by the borrowers.[87] Instead, the borrowers are entitled to receive unscheduled or scheduled payments, so long as the borrowers remain in

the homes and comply with the mortgage terms.[88] Although a borrower may prepay the loan at any time without penalty, payments are generally not made until the occurrence of a maturity event.[89, 90]

75. The payment characteristics of an RMBS comprised of reverse mortgages differ significantly from an RMBS comprised of amortizing loans. While amortizing loans make scheduled payments of principal and interest, reverse mortgages may not make a single payment until maturity. [redacted]

76. In addition, the procedures and the expertise required to service reverse mortgage loans differ from the procedures and expertise required to service amortizing mortgage loans.[92] Generally, a reverse mortgage loan servicer is not responsible for the collection of monthly payments and will not be required to modify a delinquent mortgage loan. Instead, the servicer must protect the collateral for the mortgage loan by monitoring borrower occupancy of the mortgaged property, borrower payment of taxes and insurance premiums, and maintenance of the mortgaged property.[93] [redacted]

77. These meaningful differences between the Relevant Trusts illustrate how certificateholders of each trust are not similarly situated from an economic perspective. Dr. Hartzmark's assumption of similarity across the pertinent terms and conditions of the Governing Agreements is unjustified and without basis. These differences will impact certificateholders' preferences regarding repurchase enforcement and servicing matters. For a more detailed summary of certain other key differences among the Relevant Trusts, *see* **Exhibit 5**: *Trust Differences*.

Tranche-Level Differences Within Trusts

78. In addition to the differences among the Relevant Trusts, the tranches within each Relevant Trust differ in meaningful ways that make certificateholders in one tranche not representative of certificateholders in other tranches.

79. Foremost among these differences is that tranches in the same trust may be collateralized by different supporting loan groups. In that case, certificateholders in a tranche are typically, but

not always, entitled to payment streams corresponding only to the loan pool backing that specific tranche. *See* **Exhibit 6**: *Loan Group Differences.*

80. The tranches also vary in terms of the level of credit support. For example, [redacted]. These differing levels of credit support present meaningfully different risk profiles to investors. *See* **Exhibit 7**: *Credit Support by Tranche* for total original credit support by tranche for each Relevant Trust. Such differing levels of credit support as stated in this exhibit set up, inform, and create differing economic incentives among RMBS investors regarding actions by Wells Fargo on behalf of the Relevant Trusts, such as enforcing repurchases and addressing loan servicing issues.[94]

81. Furthermore, the tranches also differ in the interest rate a given tranche is entitled to and whether and when it is entitled to principal payments. [redacted].[95] The same is true of other interest-only tranches in the Relevant Trusts.[96] There are different economic incentives regarding Wells Fargo's pursuit of put-backs and servicer events among investors because of the tranche differences.

82. Additionally, eight of the At-Issue Tranches benefited from bond insurance policies,[97] though not all other tranches within the Relevant Trusts benefited from similar policies.

83. For examples of certain other differences across tranches within the Relevant Trusts, *see* **Exhibit 8**: *Trust and Tranche Collateral Differences*.

84. These differences across the tranches within the Relevant Trusts create unique economic incentives among the class members regarding the actions of Wells Fargo to remedy potentially defective loans and address loan servicing issues. The class members that invested in various tranches would have different claims to the cash flows of the trust, and the servicer's decision to modify rather than foreclose on a loan could benefit one tranche at the expense of another.[98] There will also be differing incentives among class members in different tranches regarding whether the seller should have repurchased potentially defective loans.[99] These conflicts between tranches have been known as "tranche warfare."[100]

Collateral Differences

85. The supporting loan groups that back each tranche also differ. They contain different loans, different numbers of loans, and different loan balances. In addition, the loans within these supporting loan groups have differing characteristics that are known to affect cash flows, defaults, and delinquencies to the trust over time, such as the maximum length of the original loan term and whether the mortgage loan, for example, has an adjustable or fixed interest rate.

86. Even loans that share similar loan characteristics, such as an identical credit score, can have other characteristics that diverge significantly from one another. Loans from the Relevant Trusts that are extremely similar with respect to original balance, for example, had vastly different product types and credit scores; similarly, loans with identical credit scores or original combined loan-to-value ratios could vary significantly in terms of original balance and property type.[101]

87. Originators also vary across the loans in the Relevant Trusts. For example, Irwin Union Bank and Trust Company was the originator of the loans in IRWHE 2005-A, whereas Financial Freedom Senior Funding Corporation was the originator of the loans in RVMLT 2007-2A.[102] Different originators have different underwriting guidelines and origination practices. This means that the facts and arguments regarding alleged breaches of R&Ws will vary across loans, tranches, and trusts.

88. These differences raise trust- and tranche-specific issues regarding defaults, delinquencies, and performance, as well as certificateholders' economic views regarding these matters and the trustee's conduct. For a list of exemplar differences among the collateral supporting the Relevant Trusts, *see* **Exhibit 8**: *Trust and Tranche Collateral Differences*.

Certificates Held by Named Plaintiffs

89. Collectively, Named Plaintiffs are certificateholders of only a fraction of the tranches within the Relevant Trusts and hold, in almost all cases, some of the most senior tranches in the Relevant Trusts. Besides the At-Issue Tranches, no Named Plaintiffs have identified any of the remaining tranches to be the basis of their claims (the "Unrepresented Tranches"). *See* **Exhibit 9**: *Unrepresented Tranches (Shaded)* for the percentage of total current certificate balance associated with the Unrepresented Tranches in each Relevant Trust. In some trusts, such as

MSHLC 2007-1, as high as 100 percent of the current principal balance is associated with the Unrepresented Tranches.

90. The At-Issue Tranches differ significantly from the Unrepresented Tranches. Nevertheless, Named Plaintiffs, who own the At-Issue Tranches, seek to represent the putative class members that own the Unrepresented Tranches.

91. For example, the At-Issue Tranches include only two of the fifteen tranches in IMM 2005-6, 1-A-1 and 1-A-2. These two tranches purchased by Named Plaintiffs are backed by only one of the two supporting loan groups.[103] This supporting loan group, called Group 1, consists of one- to four-family residential mortgage loans.[104] On the other hand, the Group 2 supporting loan group, which does not collateralize the At-Issue Tranches, consists only of multifamily mortgage loans.[105] The risks of each supporting loan group can differ based on the type of loans that collateralize them. In this example, each loan group is supported by loans with different property types which have different levels of risk.[106]

92. For each of the Relevant Trusts with multiple loan groups, Dr. Hartzmark has not shown that cash flows from the loan groups supporting Named Plaintiffs' holdings have affected or will affect cash flows to the certificates supported by other loan groups through cross-collateralization or otherwise.

93. Certain At-Issue Tranches also benefited from bond insurance that was not available to other tranches within the same Relevant Trust. For example, among the At-Issue Tranches, three At-Issue Tranches owned by PIMCO and two At-Issue Tranches owned by BlackRock are associated with bond insurance.[107]

94. In addition, almost all of the nineteen At-Issue Tranches are senior tranches, subject to priority of payment and loss allocation features that differ from those applicable to the subordinate tranches.[108] Indeed, borrowing Dr. Hartzmark's own terminology, all At-Issue Tranches are either "active" (tranches with current face value greater than zero) or fully repaid.[109] Named Plaintiffs, however, seek to represent other investors who own "inactive" tranches that have been completely written down, or were partially paid and partially written down.

95. Notably, Named Plaintiffs have not identified any current holdings in MSHLC 2007-1 as the basis of their claims. BlackRock and Prudential purchased the A tranche in MSHLC 2007-1,

which was fully paid-off as of March 2017; as such, Named Plaintiffs do not have an active ownership interest in MSHLC 2007-1 that they have asserted forms the basis of their claims.[110]

96. In sum, Dr. Hartzmark ignores meaningful differences among the trusts, tranches within a trust, and loan collateral. Certificateholders in different tranches will have differing views on matters central to Named Plaintiffs' allegations and relevant to damages determinations, such as the alleged repurchases and servicing decisions that Wells Fargo should have pursued and when Wells Fargo should have pursued them. Therefore, the At-Issue Tranches are not representative of the Unrepresented Tranches across Relevant Trusts, or even within a single Relevant Trust. *See* **Exhibit 8**: *Trust and Tranche Collateral Differences*.

97. Moreover, Dr. Hartzmark's failure to consider or analyze these meaningful differences among the trusts, tranches within a trust, and loan collateral renders his opinion that damages can be determined and calculated on a class-wide basis without conflicts of interest unreliable. He has not even considered, let alone accounted for, these divergent interests of putative class members. The conflicts of interest are fundamental, as explained in more detail in Section X below, and go beyond the amounts of damages a certificateholder might recover to whether the certificateholder will be deemed to have been impacted or injured by Wells Fargo's alleged conduct.

VI. OPINION TWO: DR. HARTZMARK HAS FAILED TO ESTABLISH THAT NAMED PLAINTIFFS HAVE EXPERIENCED LOSSES

98. Dr. Hartzmark has not calculated damages to any Named Plaintiffs or done anything to examine whether, or to establish that, any Named Plaintiffs have experienced losses or are reasonably expected to experience losses of any kind as a result of Wells Fargo's conduct alleged in the Amended Complaint. While Dr. Hartzmark purports to outline a benefit-of-the-bargain method for determining damages on a class-wide basis,[111] he has not applied that method to a single Named Plaintiff to establish any actual or expected losses.

99. In regard to actual losses, Dr. Hartzmark, for example, has failed to establish cumulative realized losses or cumulative interest shortfalls for Named Plaintiffs' holdings. Dr. Hartzmark also has failed to establish latent losses as a result of Wells Fargo's conduct or otherwise. Further, Dr. Hartzmark's observation that "no-loss" tranches "might" have been harmed fails to provide a reliable basis to conclude that Named Plaintiffs have or are likely to suffer losses. Additionally, Dr. Hartzmark fails to take into account Named Plaintiffs' periods of ownership,

aggregating losses over the life of the Relevant Trusts, rather than examining those individually experienced by Named Plaintiffs. Finally, Dr. Hartzmark fails to establish that Named Plaintiffs experienced any "out-of-pocket" losses.

100. At best, whether any class member has experienced losses involves individualized inquiries into investor-specific circumstances, including purchase prices and dates, principal and interest payments, and trust performance among others. *See* **Exhibit 10**: *Investor-Specific Issues For Named Plaintiffs' Relevant Purchases.*

A. Dr. Hartzmark Fails to Establish Cumulative Realized Losses, or Cumulative Interest Shortfalls, for the Named Plaintiffs

101. Realized losses to the trust do not necessarily result in reductions of certificate balances or losses to the tranches. One obvious reason for a tranche to not be allocated realized losses is because it has already been paid in full at the time a loss is realized. Dr. Hartzmark acknowledges that several of the tranches in the Relevant Trusts have been fully repaid such that they have no current face value.[112] *See* **Exhibit 11**: *Paid-Off Tranches* for a list of the sixteen tranches that have had their principal balance paid off without realized losses. As reflected there, included among these sixteen tranches is the A tranche from MSHLC 2007-1, which was the only tranche in that trust identified by Named Plaintiffs as representing the basis of their claims.

102. In order to determine which At-Issue Tranches have zero cumulative realized losses, I utilized the information in the applicable remittance reports available through November 27, 2017 ("Recording Date"). I analyzed the cumulative realized loss history for each tranche, including the status for each tranche as of the Recording Date.

103. I found that eighteen of the nineteen At-Issue Tranches had zero cumulative realized losses as of the Recording Date. *See* **Exhibit 12**: *Cumulative Realized Losses Since Issuance as of Recording Date*.

104. In addition to principal, certificateholders are typically entitled to interest payments according to the terms of the Governing Agreements. An interest shortfall can occur if interest payments received from the mortgage loans are inadequate to pay the interest due to certificateholders or when mortgage loans are prepaid by borrowers. Losses due to interest shortfalls may be allocated in highly complex, trust-specific ways.[113]

105. I found that fourteen out of nineteen At-Issue Tranches had zero cumulative interest shortfalls as of the Recording Date. *See* **Exhibit 13**: *Cumulative Interest Shortfalls Since Issuance as of Recording Date*.

106. Dr. Hartzmark does not dispute that some tranches in the Relevant Trusts have received all principal and interest payments and have not experienced [redacted][114]

107. Even for those few At-Issue Tranches that have experienced cumulative realized losses, or cumulative interest shortfalls, Dr. Hartzmark has done nothing to isolate those losses allegedly due to Wells Fargo's conduct as alleged in the Amended Complaint. In other words, Dr. Hartzmark has not even attempted to—and has in fact failed to—establish that any cumulative realized losses or cumulative interest shortfalls experienced by any Named Plaintiff were caused by Wells Fargo.

B. Dr. Hartzmark Fails to Establish Latent Losses As a Result of Wells Fargo's Conduct or Otherwise

108. Dr. Hartzmark has also not analyzed whether or established that any Named Plaintiff is reasonably expected to experience losses in the future, let alone losses as a result of Wells Fargo's conduct as alleged in the Amended Complaint.

109. Dr. Hartzmark contends that certain losses are "lying dormant" in the collateral pool and will arise in the future. Calculating the amount of these "latent losses," as Dr. Hartzmark describes them, requires an estimate of both the number of future defaults on the allegedly defective loans (default risk) and the extent of losses arising out of such defaults (loss severity), among other things such as prepayment speeds. Dr. Hartzmark calculates no such latent or expected losses and fails to provide any detail regarding his assumptions with respect to default and severity rates or what other variables he might incorporate or consider.[115] It is, accordingly, impossible to evaluate whether his latent losses methodology is reliable.

110. It is immediately evident that one of the At-Issue Tranches cannot incur losses in the future. Because MSHLC 2007-1 A, mentioned above, is fully paid-off, it cannot incur losses in the future. In addition, the IIA-2 tranche from IRWHE 2006-2 is likely to be paid because less than 1.8 percent of the principal balance remained to be paid as of November 27, 2017, and it has had no losses.

111. With respect to the remaining At-Issue Tranches, I calculated the dollar value of additional losses that would need to occur in each Relevant Trust before the At-Issue Tranches would experience any realized losses. For example, the IMM 2005-2 trust would have to incur more than $31 million of losses before the 1-A-1 tranche owned by Named Plaintiff PIMCO would experience realized losses. Other Relevant Trusts would have to experience losses of up to more than $200 million before associated At-Issue Tranches would experience any loss. *See* **Exhibit 14**: *Amount of Losses At-Issue Tranches Can Withstand*.

112. Dr. Hartzmark has failed to establish that these amounts of losses will be incurred in the Relevant Trusts, and Dr. Hartzmark has failed to establish that any latent losses were caused by Wells Fargo.

113. Furthermore, the irregular cash flow pattern of non-amortizing loans in three of the Relevant Trusts lead to unique credit risks for the loans collateralizing those trusts.[116] Unlike mortgage pools collateralized by amortizing loans, the credit risk in a reverse mortgage pool, for example, is rarely driven by the potential default of the loans. Instead, the main risk factors for these loans are the mortality and mobility of the underlying borrowers, and the net liquidation value upon the sale of the underlying properties.[117] Dr. Hartzmark's methodology for calculating latent losses completely ignores the key risks associated with reverse mortgages and relies on measures of expected default rates and loss severity.[118] Moreover, Dr. Hartzmark fails to mention or shed light on an alternative methodology to appropriately calculate latent losses for reverse mortgages.

C. Dr. Hartzmark's Observation That "No-Loss" Tranches "Might" Have Been Harmed Fails to Provide a Reliable Basis to Conclude That Named Plaintiffs Have or Are Likely to Suffer Losses

114. Dr. Hartzmark's observation that "no-loss" tranches "might" have been harmed fails to provide a reliable basis to conclude that Named Plaintiffs have or are likely to suffer losses.

115. In the Hartzmark Report, Dr. Hartzmark acknowledges that certain tranches have experienced no realized losses. He states that these "no-loss" tranches "*might* have been harmed because of the erosion of the cushion provided by subordinate tranches" and that allegedly defective loans that have not yet defaulted "*may* cause" damages to holders in the future.[119] He further contends that all "active tranches" have experienced reduced credit ratings.[120] But Dr. Hartzmark's observations about erosion of subordination and downgrades in credit ratings by outside

agencies over the life of a Relevant Trust since initial offering do not establish losses to the Named Plaintiffs.

116. Dr. Hartzmark claims to have illustrated that credit support reduction, credit ratings downgrades, and price decreases occurred for "no-loss" tranches using FMIC 2007-1 as his example.[121] Specifically, in Exhibit 3 to his report, Dr. Hartzmark lists for each tranche in FMIC 2007-1, the cumulative realized loss (from remittance reports), current credit support (from Bloomberg as of September 1, 2017), and current prices (from IDC as of September 1, 2017). Dr. Hartzmark, however, does nothing to establish any losses that necessarily flow from these observations, let alone in any definite or algorithmic way.[122] He admits that the FMIC 2007-1 example does not reflect his proposed class-wide damages methodology or make any effort to identify losses attributable to either allegedly defective loans or Wells Fargo's conduct.[123]

117. Instead, in what Dr. Hartzmark calls the "losses expected to be realized" column in his FMIC 2007-1 example in Exhibit 3 of his report, Dr. Hartzmark does not analyze expected future losses but [redacted] and reports only [redacted][124] For example, for the 1-A tranche, based on Dr. Hartzmark's reported current price of 82.93, he lists the so-called expected losses to be 17.07 percent of the current face value of the tranche. This observation is flawed, however, and does not establish expected losses for a number of reasons.

118. First, in Exhibit 3 of his report, Dr. Hartzmark improperly assumes a mathematical relationship between the current price and expected losses [redacted]. Dr. Hartzmark acknowledged at deposition that prices below par are not predictions of future losses and that, among other things, [redacted]

119. Second, in his FMIC 2007-1 example, Dr. Hartzmark fails to account or control for a number of factors other than any conduct by the trustee that he acknowledges impact certificate prices or values. These factors include, but are not limited to, macroeconomic factors, changes in liquidity, trust-specific factors such as bond insurance, interest rates, and spread.[128]

120. Third, Dr. Hartzmark fails to acknowledge that the approximate prices reported by a vendor for RMBS certificates can vary significantly depending on the valuation methodologies for each

source. For example, Exhibit 3 to Dr. Hartzmark's report uses IDC prices to illustrate what he labels as "losses expected to be realized."[129] [redacted]

121. Fourth, Dr. Hartzmark neglects to consider whether any tranches have experienced an increase in credit support over the past decade. Indeed, many senior tranches have experienced such an increase, which reduces the likelihood that they will experience future realized losses over time. *See* **Exhibit 15**: *Example Tranches With Increased Credit Support* for example tranches that have seen credit support increase over the past decade.

122. As with prices, Dr. Hartzmark not provided any valid basis to use credit ratings as an indication of damage.[130] Credit rating downgrades occur for a variety of reasons and do not establish that any Named Plaintiff has or is expected to experience any losses, and certainly do not reliably establish any losses resulting from Wells Fargo's conduct.[131]

123. As discussed in more detail in Section XI, the U.S. housing market and economy started to undergo substantial changes around 2007. These changes impacted mortgage loan delinquency and default rates with widespread credit rating downgrades for all types of RMBS. I am unaware of a methodology that would allow one to draw inferences related to defective loans, discovery of breaches, or damages solely from the fact that the Relevant Trusts also experienced downgrades during this time.

124. Dr. Hartzmark has not established a mathematical relationship between credit ratings and certificate value. In fact, I understand that [redacted]

[redacted]

125. Further, [redacted] a particular credit rating can correspond to a wide variety of risk. For example, two bonds with a rating such as CCC may have a different risk of repayment and different expected future cash flows.[135] The credit rating alone would not necessarily indicate whether one of those two bonds, rated CCC, had a different risk of repayment than the other, or was more likely than the other to include defective loans.[136] The same downgrade could also occur for bonds with very different credit support. For example, two bonds, both rated AAA, one with 20 percent credit support and another with 80 percent credit support, could both be downgraded in the same degree even though one faced a different risk of repayment.[137]

126. Moreover, credit rating downgrades present individualized trust-, loan group-, and tranche-specific issues because the timing and severity of ratings downgrades differed across the Relevant Trusts, and even among tranches within a given trust. **Exhibit 16**: *Initial Credit Ratings and First Downgrade of At-Issue Tranches* summarizes the initial credit rating and first downgrade date for each of the At-Issue Tranches, demonstrating that downgrades occurred at different points in time.

127. Notably, fifteen of nineteen of the At-Issue Tranches have not experienced credit ratings downgrades during Named Plaintiffs' ownership periods. *See* **Exhibit 17**: *Example At-Issue Tranches Without Credit Rating Downgrades After Named Plaintiffs' Purchase Dates.* [redacted]

128. In sum, Dr. Hartzmark's observations about credit ratings downgrades fail to establish that losses have occurred, or are likely to occur, for the "no-loss" tranches as a result of Wells Fargo's conduct.

129. For all of these reasons, Dr. Hartzmark's observations about credit ratings downgrades, decreased credit support, and price decreases for the "no-loss" tranches do not establish that any of the certificateholders with interests in the "no-loss" tranches have suffered any losses or are likely to suffer any losses. It is my opinion that Dr. Hartzmark has no reliable basis for his

opinion that the "no-loss" tranches have suffered or will suffer any losses, let alone losses that can be reliably attributed as damages due to the actions of Wells Fargo.

D. Dr. Hartzmark Fails to Take Into Account Named Plaintiffs' Periods of Ownership

130. I understand from counsel [redacted] that it is Named Plaintiffs' position that their rights include the claims and demands of all prior holders, which they allege automatically transferred to Named Plaintiffs upon their purchases of the At-Issue Tranches.[139] I also understand that Wells Fargo disputes Named Plaintiffs' position and denies that the claims at issue automatically transferred to the Named Plaintiffs on purchase of their certificates in the Relevant Trusts and that, instead, Named Plaintiffs must establish injury and damages during their periods of ownership. I take no position on this legal matter, but note that both Named Plaintiffs and Dr. Hartzmark ignore Named Plaintiffs' time periods of ownership, looking instead at the performance of the Relevant Trusts since issuance.[140]

131. Dr. Hartzmark's disregard of Named Plaintiffs' periods of ownership results in his failure to demonstrate that Named Plaintiffs have experienced any losses while they held their certificates. Many of the At-Issue Tranches were purchased by Named Plaintiffs not only well after issuance but after a derivative complaint regarding eleven out of twelve Relevant Trusts was filed by certain Named Plaintiffs against Wells Fargo in June 2014. Named Plaintiff BlackRock, for example, purchased all of the holdings that represent the basis of its claims in 2015. *See* **Exhibit 2:** *Named Plaintiffs' Relevant Purchases*. These Named Plaintiffs were well aware of the allegations against Wells Fargo regarding the allegedly breaching conduct and thus would have known about and considered this when they invested in the Relevant Trusts.

132. Certain of Named Plaintiffs' holdings also experienced gains during Named Plaintiffs' ownership periods. For example, the 1-A-2 tranche in IMM 2004-11 has experienced losses in some periods since issuance. However, Named Plaintiff BlackRock purchased the certificate in this tranche on June 2, 2015. Since this date, the tranche has benefited from write-ups totaling approximately $320,634.20. *See* **Exhibit 18**: *Realized Losses and Interest Shortfalls of At-Issue Tranches Since Issuance and Purchase Dates.*

E. Dr. Hartzmark Fails to Establish Named Plaintiffs Experienced "Out-of-Pocket" Losses

133. Named Plaintiffs allege claims that include breach of contract and violation of the TIA.[141] Dr. Hartzmark admits, however, that he has not proposed a claim-specific damages methodology.

His damages methodology is a single common methodology applicable to all claims,[142] purporting to measure so-called "benefit-of-the-bargain damages."[143] I understand, though, that it is Wells Fargo's position that, at a minimum, claims under the TIA require proof of out-of-pocket losses.

134. Named Plaintiffs have stated that they are not seeking out-of-pocket losses on a class-wide basis,[144] and Dr. Hartzmark has not purported to calculate out-of-pocket losses in this case. In fact, he stated at deposition that a calculation of out-of-pocket losses would be irrelevant for this case.[145] However, in his deposition, he described his own formula for calculating out-of-pocket losses set forth in a previous report submitted in the matter captioned *Policemen's Annuity and Benefit Fund of the City of Chicago, et al. v. Bank of America, N.A. and U.S. Bank, N.A.* (S.D.N.Y. No. 12-cv-2865) ("*Policemen's Annuity*). [redacted]

135. Any such out-of-pocket loss measure of damages would be highly individualized and depend on the individual facts and circumstances of each transaction. As Dr. Hartzmark explained in *Policemen's Annuity*, it would be necessary to look at [redacted]

136. Utilizing Dr. Hartzmark's own formula, for the majority of the Relevant Purchases, Named Plaintiffs have not experienced "out-of-pocket" losses [redacted]

137. As discussed later at length in this report, the RMBS market is not perfectly efficient and price calculations can be subject to significant variation depending on the methodology used. Therefore, in this analysis, I utilized a range of possible prices. Specifically, I retrieved the price reported by Bloomberg or, if unavailable, the most recent prices from Named Plaintiffs' valuation documents[151] for each of the At-Issue Tranches. I then calculated 90, 95, 100, 105,

and 110 percent of that price, to account for the possibility that the price was inaccurate by up to 10 percent in either direction.

138. I then compared the value of Named Plaintiffs' holdings under this range of prices to the difference between each Named Plaintiff's holding valued at the purchase price and the sum of principal payments received to date. I found that for the majority of Named Plaintiffs' holdings, [redacted] In other words, the majority of Named Plaintiffs' Relevant Purchases do not show out-of-pocket losses under Dr. Hartzmark's definition. *See* **Exhibit 19**: *Named Plaintiffs' Relevant Purchases Show Few Out-of-Pocket Losses Under Various Assumptions*.

139. Additionally, I compared the prices found in Named Plaintiffs' valuation documents to the prices at which Named Plaintiffs purchased their holdings. [redacted] *See* **Exhibit 20**: *Prices at Purchase and Current Valuations of At-Issue Tranches*.

140. [redacted]

141. For the reasons described above, Dr. Hartzmark has failed to establish that Named Plaintiffs have experienced losses, let alone losses attributable to Wells Fargo's conduct or by application of his class-wide damages methodology. Named Plaintiffs are differently situated than investors that have experienced realized losses during their ownership periods or out-of-pocket losses, as defined by Dr. Hartzmark. At best, whether and how any Named Plaintiff or class member has experienced injury is an individualized inquiry, about which investors will have conflicting views. *See* **Exhibit 10**: *Investor-Specific Issues For Named Plaintiffs' Relevant Purchases*.

VII. OPINION THREE: DR. HARTZMARK PROVIDES NO RELIABLE METHODOLOGY TO ISOLATE LOSSES ALLEGEDLY ATTRIBUTABLE TO WELLS FARGO'S CONDUCT

142. Dr. Hartzmark provides no reliable or well-specified methodology to separate the losses allegedly attributable to Wells Fargo's conduct from other losses that would have occurred even if Wells Fargo had acted as Named Plaintiffs allege that Wells Fargo should have acted. Controlling for all but one factor that may influence an economic metric of interest (in this case,

losses), such that only the influence of the factor being studied (in this case, Wells Fargo's conduct) is measured, is a fundamental concept of econometric analysis.[153]

143. To attempt to isolate losses attributable to Wells Fargo and not other factors, Dr. Hartzmark's Put-Back Damages methodology would attempt to distinguish losses based on so-called "defective" loans from losses based on "non-defective" loans.[154] [redacted]

144. In his report, Dr. Hartzmark states that he would isolate losses due to defective loans using re-underwriting.[156] [redacted]

145. Dr. Hartzmark also admitted that, for purposes of his report, [redacted][159] He likewise could not say if [redacted][160]

146. Without explanation of how he intends to isolate Put-Back Damages from losses that would have occurred or will occur in the future in the absence of Wells Fargo's alleged breaches, Dr. Hartzmark fails to provide a reliable methodology for calculating class-wide Put-Back Damages. Dr. Hartzmark himself concedes the importance of separating losses on "defective loans" (which Wells Fargo is purportedly responsible for) from losses on "non-defective loans" (which he admits Wells Fargo is not responsible for). He cannot reliably separate these distinct categories of losses without knowing how any such "breach analysis" would work, or how the outputs of any such "breach analysis" would be inputs for his class-wide damages methodology.

147. Dr. Hartzmark also provides no reliable way to calculate projected latent losses that can be attributed to Wells Fargo. First, he fails to specify or commit to how he would calculate latent losses, despite acknowledging that there are [redacted] that require judgment to implement.[161] He has not explained how he would use or calculate expected default

rates or loss severity rates, or any other variables or data that would be needed to calculate alleged latent losses such as discount rates.[162] Further, he has not explained how his approach to latent losses would capture only losses attributable to Wells Fargo, nor has he predicted when any latent losses will occur, if at all, using reasonable assumptions. As evidenced by the IMM 2005-2 trust, it is possible for previously allocated losses to be reversed. In that trust, over $13.4 million of certificate write-downs were reversed between the July 26, 2010 and July 25, 2017 remittance reports.

148. Similar problems undermine Dr. Hartzmark's Servicing Damages methodology. Dr. Hartzmark states that he will rely on another expert to determine the "normal" benchmark foreclosure time on a loan-by-loan basis, but he has failed to explain how he would reliably derive excess servicing fees attributable to Wells Fargo from that expert's findings.[163]

VIII. Opinion Four: Dr. Hartzmark's Damages Methodology Is Not Consistent With Named Plaintiffs' Allegations and Is Based on Ill-Defined and Unreasonable Assumptions.

149. Dr. Hartzmark acknowledges that he has not constructed a hypothetical but-for scenario or made assumptions about what would have happened if Wells Fargo had acted as Named Plaintiffs allege that Wells Fargo should have acted.[164] Despite this, he claims that his proposed damages methodology is consistent with a relevant "but-for world" that would have occurred if Wells Fargo had acted as Named Plaintiffs allege that Wells Fargo should have acted.[165]

150. Dr. Hartzmark's proposed damages methodologies for both Put-Back and Servicing Damages, however, are inconsistent with a relevant "but-for scenario" implied by Named Plaintiffs' allegations. His methodologies are also based on ill-defined and unreasonable assumptions in multiple ways.

A. Dr. Hartzmark's Approach Would Inappropriately Compensate Class Members Without Regard to Timing or Injury

151. One way that Dr. Hartzmark's approach to Put-Back Damages is inconsistent with a relevant "but-for scenario" implied by Named Plaintiffs' allegations is its failure to account for the timing of the alleged loan-by-loan breaches by Wells Fargo and the alleged economic consequences of those loan-by-loan breaches.

152. Named Plaintiffs allege that Wells Fargo should have enforced repurchases and taken other steps, in the past, at times when Wells Fargo allegedly discovered or gained actual knowledge on a loan-by-loan basis of breaches of multiple different R&Ws and other servicing failures.[166]

153. Dr. Hartzmark's methodology appears to completely disregard this aspect of Named Plaintiffs' claims. Had Wells Fargo acted as Named Plaintiffs allege it should have, repurchases or other remedies would have been initiated at various and multiple points in time in the past, resulting in any repurchase payments flowing to the Relevant Trusts over time. Similarly, had Wells Fargo acted as Named Plaintiffs allege it should have with respect to servicing, servicing breaches would have been addressed in the past, presumably resulting in reduced servicing costs to the Relevant Trusts over time.[167] However, Dr. Hartzmark proposes to run the aggregate trust damages through the waterfall *today*, without accounting for the timing of when Wells Fargo allegedly discovered or gained actual knowledge of breaches of R&Ws or other servicing matters or the timing of any associated historical or future alleged losses.[168]

154. This matters because the repurchases advocated by Named Plaintiffs would have resulted in payments flowing through the waterfall at the time of the loan-by-loan repurchase recoveries and would flow down to the tranches differently depending on the timing of the payments and the deal's incurred losses and compliance on the payment date with deal-specific rules such as triggers, stepdown dates, overcollateralization, or excess spread. If Wells Fargo had pursued repurchases historically, as Named Plaintiffs allege it should have, the tranches receiving those repurchase proceeds would have depended on what losses had been experienced at that time and whether various triggers had been hit. Running funds through the waterfalls today will result in a different allocation of value across tranches than would have occurred if repurchase proceeds had come in earlier whether in 2009, 2011, or over several years. In other words, Dr. Hartzmark's proposal to use the waterfalls today will not assign injury or damages to the same tranches that were impacted by the alleged lack of past repurchases.

155. As I illustrate in **Exhibit 21**: *Hypothetical Distribution Through AHM 2004-2 Principal Waterfall in 2009, 2011, and 2017*, the amount each tranche would be compensated will vary significantly if different dates are used. In that example, I assumed a hypothetical payment of $15 million was received by the trust and distributed equally among the loan groups of AHM 2004-2. If the funds were received in January 2009, the IV-A-5 tranche would not receive any payment. However, if such funds were received in January 2011, that same tranche would have received more than $3 million. Finally, if funds were received in November 2017, the same

tranche would have been paid in full and would not be eligible for any payment. The dates on which the alleged breaches and their economic consequences are determined to have occurred, therefore, are relevant and impact different proposed class members differently.[169]

156. Yet Dr. Hartzmark's damages method ignores how timing of the alleged breaches, and the economic consequences that follow from actions Wells Fargo allegedly should have taken on a loan-by-loan basis in the past, impact any injury or damages. Determining injury, awarding damages, and ignoring timing in this way, among other things, fails to account for changes in the waterfall that occur over time and as trigger events, stepdown dates, or other adjustments occur. These changes impact whether particular investors would have been injured, and if so, how much. Dr. Hartzmark ignores this.

157. Another example further illustrates this point. Named Plaintiffs' interrogatory responses have identified allegedly breaching loans. [redacted] Dr. Hartzmark's methodology would compensate current certificateholders for this realized loss without regard for when the losses occurred or which tranches were affected. He makes no effort to compensate certificateholders of the [redacted] tranche specifically for the default and liquidation of this allegedly breaching loan.

158. Similarly, Named Plaintiffs allege that Wells Fargo discovered that [redacted][170] However, PIMCO did not acquire any of its interests in AHM 2004-2 until May 31, 2012—nearly three years after Wells Fargo's alleged breaches.[171]

159. Dr. Hartzmark acknowledges that his proposed method ignores what would have happened had Wells Fargo enforced repurchases or remedied servicing breaches over time as Named Plaintiffs allege Wells Fargo should have done;[172] instead, [redacted][173] The timing of Wells Fargo's alleged actions and failures to act and any losses resulting from those actions or failures to act, however, appears to be central to Named Plaintiffs' allegations.

160. [redacted] Dr. Hartzmark, however, had

not considered how that would work, the conflicts or other problems created by shifting breach dates and recoveries over time, or how it could impact the running of the waterfall. He did not explain any such process in his report and also has not considered the complexities stemming from multiple alleged breach dates.[175] He would defer to the finder of fact to identify for him whether the calculation should be undertaken at the time of judgment or on a particular date or dates in the past, but he has undertaken no analysis of these issues himself.[176]

B. Dr. Hartzmark's Put-Back Damages Approach Is Inconsistent With the Relevant But-For Scenario and Makes Unsupported and Unrealistic Assumptions

161. Another way that Dr. Hartzmark's approach is inconsistent with a relevant "but-for scenario" implied by Named Plaintiffs' allegations is his failure to make realistic assumptions about the repurchase process. Dr. Hartzmark's unsupported and unrealistic assumptions undermine the validity of his proposed Put-Back Damages methodology and, therefore, the reliability of his opinion that such damages can be calculated on a class-wide basis here.

162. Foremost is the assumption that 100 percent of these loans would have been repurchased at the request of Wells Fargo. Dr. Hartzmark's assumption is unrealistic and unjustified because it fails to account for the numerous uncertainties and considerations that would have affected any repurchase request. At his deposition, Dr. Hartzmark was unable to justify the assumption that 100 percent of repurchase demands would be successful if made by Wells Fargo.[177]

163. This is because the remedy process for an allegedly defective loan involves, among other things, identification of a breach, request for remedy, and potentially enforcement if the warrantor fails or refuses to remedy. Dr. Hartzmark does not consider these steps, explain how he would incorporate them into his model on a loan-by-loan basis, or account for the real-world possibility that the trust would recover less than the full amount of losses on a particular allegedly breaching loan. He has no analysis or methodology accounting for the possibility of less than full recovery, effectively assuming that if Wells Fargo had pursued a repurchase, the put-back process would have resulted in full recovery of all losses on all allegedly defective loans.[178]

164. Dr. Hartzmark also does not consider alternatives to repurchase, such as cure or substitution of a loan.[179] The trust documents, however, allow a warrantor to repurchase, substitute, or cure if there is a breach.[180] Although Dr. Hartzmark acknowledges that the trust documents allow a warrantor to repurchase, substitute, or cure if there is a breach,[181] he does not account for a

situation in which, due to Wells Fargo's intervention as alleged should have occurred in the Amended Complaint, an allegedly defective loan was cured or replaced with a non-defective loan.[182] By ignoring alternative remedies, Dr. Hartzmark's methodology would overestimate damages.

165. Dr. Hartzmark's blanket assumption regarding repurchase also ignores the possibility that the warrantor might have failed to repurchase even if Wells Fargo requested repurchase. A warrantor may refuse to repurchase a loan for a number of reasons. For example, a warrantor may refuse to repurchase due to lack of financial ability or bankruptcy. Four of the warrantors involved in this matter filed for bankruptcy or went out of business by March 2011, limiting Wells Fargo's ability to achieve the result Named Plaintiffs alleged it should have for five of the Relevant Trusts. *See* **Exhibit 22**: *Selected Warrantors and Bankruptcy or Receivership*.

166. Moreover, even assuming cases where all relevant warrantors were in a financial position to repurchase, repurchase requests could be refused. This reality was made known to investors like Named Plaintiffs. The prospectus supplements generally warn investors that the parties otherwise obligated to do so might not repurchase or substitute any given mortgage due to financial inability or other reasons.[183] *See* **Appendix C**: *Statements Regarding Repurchase*. It is unrealistic to assume that all warrantors could have and would have repurchased if requested.

167. Additionally, litigation would likely have been necessary to enforce put-back claims if warrantors refused to repurchase. Such litigation entails costs and delays, and the outcomes of such repurchase litigation are varied, uncertain, and can take years.[184] Dr. Hartzmark proposes no methodology to account for any of these variables.[185]

168. [redacted]

169. However, to model which investors actually sustained injury as a result of Wells Fargo's alleged inaction and what Named Plaintiffs would have received absent alleged breaches by Wells Fargo, Dr. Hartzmark needs to define the variables needed for his methodology and the sources of data for those variables. Without doing so, Dr. Hartzmark's proposed methodology

does not and cannot properly identify the investors who were injured, or measure damages to class members as a result of the wrongs alleged in the Amended Complaint, or properly analyze the economic consequences of Wells Fargo's alleged failure to act.

C. Dr. Hartzmark's Servicing Damages Approach Is Unexplained and Inconsistent With Any Relevant But-For Scenario

170. Dr. Hartzmark's proposed methodology is also flawed because it fails to make reasonable assumptions about the servicing process and remedies that Wells Fargo could have pursued and their impact on servicing fees and costs. Dr. Hartzmark's Servicing Damages approach improperly assumes a but-for scenario in which Wells Fargo had the ability to fully enforce and remedy servicers' obligations such that the trusts could have recovered 100 percent of allegedly excess servicing fees.[187] [redacted] As such, there is no basis to conclude that it can be reliably done, much less on a class-wide basis.

171. First, Dr. Hartzmark does not specify what actions Wells Fargo should have taken to enforce the servicers' obligations, or address whether Wells Fargo had the legal or practical ability to take those actions, let alone in a way that would have resulted in a complete recovery of servicing fees in allegedly excess servicing periods. Without specifying how Wells Fargo should have acted, it is impossible to evaluate what would have happened had Wells Fargo acted as Named Plaintiffs allege it should have. It appears that Dr. Hartzmark, instead, effectively treats Wells Fargo as a guarantor of servicing performance on foreclosures.

172. The Governing Agreements, however, specify prerequisites to be fulfilled before Wells Fargo can replace the servicer. For example, the AHM 2004-2 Servicing Agreement does not grant the trustee authority to immediately step in and replace the servicer, but instead outlines several conditions that need to be met first.[189] Dr. Hartzmark has failed to consider the effect of these requirements.

173. Dr. Hartzmark fails to consider, for example, a situation in which Wells Fargo provided notice to certificateholders, but was not granted the authority to replace the servicer. In such a scenario, the same fees would have been incurred despite the fact that Wells Fargo acted as Named Plaintiffs allege it should have. In such a scenario, the action taken by Wells Fargo

would not have caused any excess fees, and therefore such fees should not form the basis of a damages claim against Wells Fargo. Moreover, Dr. Hartzmark ignores the costs and difficulties of replacing a servicer.[190]

174. Moreover, Dr. Hartzmark ignores the complexities of the servicing process and the multiple factors that impact the time period to foreclosure and related servicing fees. He instead proposes a damages approach that would utilize a "normal foreclosure time" obtained from a servicing expert unknown to him that would be compared to the actual foreclosure time of the applicable loans. However, Dr. Hartzmark provides no basis for how that would measure only those claimed excess fees actually attributable to Wells Fargo's allegedly improper conduct regarding servicing issues of which it had actual knowledge. Rather, Dr. Hartzmark makes the unrealistic assumption that any months a loan remained in foreclosure greater than the "benchmark" are what he deems the "Excess Foreclosure Months" to be charged as damages to Wells Fargo.[191] Dr. Hartzmark's approach would attribute all servicing costs incurred during these "excess" foreclosure months to Wells Fargo's failure to enforce the servicers' obligations without considering other factors that may have affected these costs and whether they would have been different even if Wells Fargo had acted as Named Plaintiffs would have liked. This approach is flawed and unreliable in multiple ways.

175. To begin with, the Governing Agreements are silent regarding a "normal" foreclosure timeline. In fact, the Governing Agreements authorize the servicer to "do anything it reasonably deems appropriate or desirable in connection with such servicing and administration."[192] The offering materials disclosed that servicers have significant discretion in servicing functions, that the exercise (or non-exercise) of such discretion, coupled with substantially differing statutory foreclosure schemes across the relevant portfolio, would create individualized foreclosure timelines, and that the appropriate actions for servicing may vary. *See* **Appendix D**: *Statements Regarding Servicing*. Dr. Hartzmark does not specify how such a "benchmark," "normal," or "reasonable" foreclosure timeline could be determined.

176. Dr. Hartzmark instead contends in the Hartzmark Report that the "normal" distress period is generally a "standard number of months" and will be "based on industry data and GSE guidelines."[193] Dr. Hartzmark did not identify which guidelines he was referring to.[194]

177. Furthermore, the use of the GSE guidelines as an industry standard presents other problems that Dr. Hartzmark does not address. First, the Governing Agreements do not incorporate or outline

any duties based on the GSE guidelines. Second, the GSE guidelines do not apply to the non-agency loans in the Relevant Trusts.

178. Additionally, an appropriate but-for scenario would need to consider the servicing environment, including local and individual factors that led to foreclosure delays.[195] During the financial crisis, there was "an extraordinary extension of foreclosure timelines resulting in significantly higher costs to investors when resolving distressed properties."[196] Dr. Hartzmark has not specified how he will take such factors into consideration.

179. Further, foreclosures are governed both by the mortgage contract and by state laws.[197] State laws dictate the available foreclosure procedure(s) and impact the amount of time and costs involved.[198] Certain states require judicial foreclosure processes, which can be lengthier and more expensive than non-judicial foreclosure processes.[199] Foreclosure timelines increased by about 20 months in judicial states after the crisis.[200] Nonjudicial states and local jurisdictions also enacted a wide range of legislative responses to the foreclosure crisis, including measures that directly prevented foreclosures, created pre-foreclosure mediation or counseling, added pre-foreclosure notice requirements, afforded additional rights to borrowers, and affected the availability of non-judicial foreclosure.[201] This wide range of local factors could lead to foreclosure delays, but Dr. Hartzmark fails to explain how he would account for any of these factors.

180. Additionally, individual factors can influence foreclosures. Instead of foreclosing on a loan, a servicer can offer a loan modification, which permanently alters the mortgage contract, including interest rate reductions or loan term extensions.[202] Some of the loans in the Relevant Trusts were modified and are now current and continuing to provide cash flows to the trusts. Dr. Hartzmark does not specify how he will consider other servicing functions such as modification.

181. Extended foreclosure episodes also do not necessarily cause damage to a trust and, in fact, could have been beneficial to the Relevant Trusts depending on market conditions. For instance, if house prices increased, delaying foreclosure could result in a higher recovered value distributed to the trust. As an example, [redacted] The increased property value likely resulted in an increased

recovery to the trust when the home was liquidated. As illustrated in this instance, the increase in home value that came as a result of a lengthy foreclosure exceed the estimated servicing fees associated with the foreclosure. *See* **Figure 2**: *Foreclosure Time May Not Imply Servicing Damages*. For further information, *see* **Exhibit 23**: *Foreclosure Time May Not Imply Servicing Damages*.

[redacted]

182. At his deposition, Dr. Hartzmark could not say [redacted][203]

183. Dr. Hartzmark also has not even considered whether junior and senior certificateholders have conflicting economic views with respect to servicer foreclosure practices or loan modification or whether extending foreclosure timelines could impact junior and senior noteholders differently.[204] Yet Named Plaintiffs' own witnesses have testified that junior and senior

investors have differing incentives regarding such servicing related matters.[205] [redacted] Dr. Hartzmark ignores these conflicting interests among investors within a trust, and his methodology cannot account for the different preferences investors may have had regarding servicer behavior in the past.

184. For all of these reasons, Dr. Hartzmark's approach to Servicing Damages does not measure servicing damages attributable to Wells Fargo's alleged misconduct and fails to account for conflicts of interest regarding servicing.

IX. Opinion Five: Dr. Hartzmark's Proposed Method to Calculate and Distribute "Financial Benefits" Is Flawed

185. In his report here, Dr. Hartzmark contends that class-wide damages can be determined for each individual class member by using the waterfall rules in each of the Trusts' Governing Agreements.[207] Without providing further detail, Dr. Hartzmark contends that he will calculate tranche-level damages by measuring the "value in dollars of the financial benefits that flows to specific tranches from the allocation of aggregate damages via the waterfall."[208] He then proposes to distribute damages to class members "in an equal amount for each of that tranche's Notes."[209]

186. Dr. Hartzmark does not explain this "financial benefit" analysis in detail in the Hartzmark Report. He has explained this "financial benefit" analysis in more detail in other recent reply reports and at his deposition in this case. He proposes to make a hypothetical distribution inside the waterfall to calculate "financial benefits" to each tranche that will then be paid to investors *outside* the trust.[210] This "financial benefit" reflects two main components. The first component is the hypothetical cash distribution made to the tranche in exchange for a reduction in the principal balance. The second component is the net change in the market value of the tranche, which is derived from the claimed price changes that result from the hypothetical cash distribution.

187. Dr. Hartzmark provided no example of this "financial benefits" analysis being accepted by any court or recognized in academic literature, and I am not aware of any such example. Rather, his proposed "financial benefits" methodology for determining tranche-level and then class member

injury and damages is novel and untested. Furthermore, his "financial benefits" analysis is flawed for a variety of other reasons. It does not reflect a reliable means of calculating investor-level damages on a class-wide basis.

A. Dr. Hartzmark's Damages Methodology Goes Far Beyond the Waterfall Rules

188. Dr. Hartzmark incorrectly suggests that he would calculate "financial benefits" to determine class member level damages based on the waterfall rules in the Governing Agreements. In truth, however, Dr. Hartzmark would distribute "financial benefits" based on steps not defined in the waterfalls or Governing Agreements.[211]

189. According to Dr. Hartzmark, the "financial benefit for a tranche would reflect one or more of the following: (1) the benefit from a cash payment in exchange for principal; (2) the benefit from a write-up of realized losses; and/or (3) the benefit from the increased value of the post-award principal balance."[212] It is noteworthy that for those tranches that would receive no direct benefit from a hypothetical distribution based strictly on the waterfall, this third element—the estimated derived benefit from the increased value of the post-award principal balance—is the sole vehicle for determining injury and receiving any damages under Dr. Hartzmark's approach.

Run the Total Damages Inside the Trust According to Waterfall Provisions

190. To begin, Dr. Hartzmark would hypothetically run the total calculated damages *inside* the trust using waterfall rules today.

191. In the Hartzmark HSBC Rebuttal Report, Dr. Hartzmark illustrates how this would work by using a $35 million damages amount, which he refers to as an "inside cash payment."[213] He would run this $35 million through the principal waterfall today and shows how this payment would affect the certificate balances for each tranche.[214] Although Dr. Hartzmark does not specify which waterfall he would utilize, in his example, it appears that he treats the damages as subsequent recovery and utilizes the principal waterfall.[215]

192. Dr. Hartzmark's example shows that under this step of his method, *only one tranche*, the most senior tranche with an outstanding certificate principal balance, would be entitled to receive a cash payment. Specifically, A-4 is the most senior tranche with an outstanding principal balance and, because its outstanding certificate balance, $47,366,194, is greater than the damages amount, the entire inside cash payment would be used to reduce its balance.[216] That is, using only the waterfall rules, the entire damages award hypothetically would go to a single tranche.

Had the outstanding certificate balance of A-4 been less than the damages award, any remaining damages amounts that exceeded its outstanding balance would have been distributed to a more junior tranche with outstanding principal balance. Tranches with no outstanding certificate balance would not receive any damages.

193. Certain other tranches in Dr. Hartzmark's example would also be affected by the hypothetical distribution inside the trust by virtue of their certificate balance being written up by the payment. That is, because according to the rules of this trust, the inside cash payment decreases the aggregate certificate principal balance of the trust, but the trust collateral remains the same, certain junior certificates will be written up by the amount that the seniors were paid down. In Dr. Hartzmark's example, the M-4 through M-7 tranches would have their principal balances hypothetically written up to match the damages amount. No other tranches would be affected by the hypothetical distribution of the damages award according to the strict waterfall rules.

Calculate "Post-Award" Prices Based on Ad-Hoc Assumptions

194. Dr. Hartzmark's damages methodology does not end with the hypothetical distribution using the waterfall rules described above. The next step in his calculation of "financial benefits" requires the consideration of the post-award market value of a tranche, which is based on the post-award price and post-award face value. Dr. Hartzmark did not commit at deposition [redacted][217] Therefore, I looked to previous reports for guidance regarding how Dr. Hartzmark will approach estimating post-award prices. Dr. Hartzmark's post-award prices in these cases depend on his assumptions about how pre-award tranche values would change as the result of the hypothetical distribution.[218] From my review of those reports, it appears that Dr. Hartzmark has not committed to any particular valuation model or methodology.

195. To estimate post-award prices for each tranche in both the Hartzmark HSBC Rebuttal Report and the Hartzmark U.S. Bank Supplemental Rebuttal Report, Dr. Hartzmark made ad-hoc assumptions to arrive at the hypothetical post-award prices of each tranche. For example, he assumed that "the same amounts of pre-award balances of tranches are supported by the same pre-award prices."[219] To determine post-award prices and "financial benefits" there, he made that assumption and essentially calculated post-award prices simply as weighted averages of pre-award prices. In essence, because of the payment priorities, tranches were assigned a post-award price based on the weighted average pre-award prices of the tranches senior to them. *See*

Exhibit 24: *Dr. Hartzmark's Post-Award Price Calculation Set Forth in Hartzmark HSBC Rebuttal Report* for an illustration regarding how these prices were derived.

196. However, Dr. Hartzmark conceded that was just one approach to estimating post-award prices, and there were others. In the Hartzmark U.S. Bank Supplemental Rebuttal Report, Dr. Hartzmark stated that "[t]he post-award prices would be estimated using a reliable valuation model," and "could be estimated using one of the many valuation models that are available through third-parties, such as Bloomberg, IDC, etc."[220] For illustrative purposes, he calculated the weighted average prices based on the pre-award prices and pre-award balances.[221] Dr. Hartzmark confirmed at his deposition in this case that he would estimate post-award prices by utilizing an unspecified valuation model.[222] Further, Dr. Hartzmark admitted at his deposition that he has not had experience valuing RMBS tranches.[223]

197. In both the Hartzmark U.S. Bank Supplemental Rebuttal Report and the Hartzmark HSBC Rebuttal Report, Dr. Hartzmark's examples utilized an example trust with a single supporting loan group and one-directional payment priorities. He has not specified how his post-award price calculations can be applied to a trust with more complex structure.[224]

Calculate and Distribute "Financial Benefits" for Each Tranche

198. After distributing hypothetical cash payments inside the trust and calculating post-award prices, Dr. Hartzmark goes on to estimate a "financial benefit" for each tranche. He asserts that a tranche can have a "financial benefit" resulting from the hypothetical distribution of damages even if the tranche does not receive a cash payment in an inside-the-trust distribution.[225]

199. Dr. Hartzmark calculates the "financial benefit" to each tranche by adding the inside cash payment to the market value of the tranche's post-award principal balance, and then subtracts out the market value of the pre-award principal balance of the tranche.[226]

200. Finally, Dr. Hartzmark would distribute these derived "financial benefit" amounts at the tranche level outside of the trust. The principal balances of all tranches and total collateral of the trust will remain unchanged. The trust will carry on as is, with no alteration to payment streams or collateral. Dr. Hartzmark asserts that class members would be indifferent to whether the distribution of damages occurs *inside* or *outside* of the trust.[227]

201. Contrary to Dr. Hartzmark's suggestions in the Hartzmark Report, this "financial benefit" analysis would go well beyond a strict application of the waterfall rules in its calculation and

distribution of tranche-level and class member damages. It is also incorrect to call this calculation of tranche-level damages an "allocation" of damages, as Dr. Hartzmark claims, given that the "financial benefits" calculation determines whether a tranche is impacted under Named Plaintiffs' allegations—at all—by Wells Fargo's alleged conduct. In other words, until the tranche-level damages are calculated, it is undetermined which tranches have been injured or damaged at all by Named Plaintiffs' claims. The "financial benefits" analysis is, accordingly, not an "allocation" of damages to the tranches but rather a determination in the first instance of which tranches have been injured by Wells Fargo's alleged breaches according to Named Plaintiffs' allegations. It is used to establish both the fact and amount of damages for tranches.

B. Dr. Hartzmark Does Not Specify How He Would Run Aggregate Damages Through the Relevant Trusts' Waterfalls, Masking Differences That Result From Various Implementation Approaches

202. Dr. Hartzmark does not specify in any detail how he will implement the waterfall rules in the Governing Agreements to calculate financial benefits. Dr. Hartzmark does not explain how he will treat the aggregate damages consisting of realized historic losses, predicted latent losses, and servicing damages when flowing them through the Relevant Trusts' waterfalls. However, at his deposition, Dr. Hartzmark stated that he would utilize a similar methodology to those utilized in his most recent submissions.[228]

203. As discussed, in the Hartzmark U.S. Bank Supplemental Rebuttal Report, Dr. Hartzmark appears to run damages through the principal waterfall twice, first treating realized losses as subsequent recovery and then latent losses as prepayment.[229] In his HSBC Rebuttal Report, Dr. Hartzmark does not specify which waterfall he utilized in his example but appears to run aggregate damages through the principal waterfall today as a subsequent recovery.

204. A subsequent recovery is typically an additional recovery to the trust with respect to a mortgage loan that has been *previously liquidated* and that has resulted in a *realized loss*.[230] Latent losses do not equate to realized losses to the trust because they are based on an expectation regarding how the allegedly defective loans backing the supporting loan groups will perform in the future rather than as payment to offset a prior realized loss.

205. How Dr. Hartzmark treats aggregate damages in flowing them through the Relevant Trusts' waterfalls will have a significant impact on distributions.

C. Dr. Hartzmark's Damages Methodology Is Highly Sensitive to Pre-Award Price Assumptions

206. Dr. Hartzmark's proposed "financial benefits" methodology, as illustrated in his previous reports, would rely heavily on pre-award price data to determine the "financial benefits" to class members. Dr. Hartzmark, however, does not acknowledge that his method can be highly sensitive to the source of price data that he uses in his calculation of "financial benefits." Nor does he commit to any particular source of price data.

207. The market for RMBS is not perfectly liquid and prices can vary among sources. RMBS are traded in over-the-counter markets, which are bilateral in nature, which means that two parties negotiate and agree on a price at which to trade.[231] The RMBS market is opaque[232] and dealers in this market "do not necessarily quote the same prices to all customers."[233] Therefore, "[e]ven when quotes are displayed on electronic systems, they are often merely indicative and can differ from actual transaction prices."[234] Dr. Hartzmark does not acknowledge or seem to recognize that his method can be highly sensitive to the source of price selected in his calculation.

208. Dr. Hartzmark also has not analyzed, and has no opinion on, whether the RMBS market is or has been liquid at any relevant point in time.[235] Since the RMBS market is known to have varying liquidity, Dr. Hartzmark's failure to assess this issue results in an unreliable approach.

209. In his Exhibit 3 of the Hartzmark HSBC Rebuttal Report, Dr. Hartzmark reports the IDC prices as the pre-award prices for WFHET 2006-1 as of March 31, 2017.[236] However, the prices [redacted] To illustrate how the "financial benefit" calculation can be highly sensitive to the selection of pre-award prices, I show that the "financial benefits" to each tranche varied by as much as almost 41 percent with [redacted] *See* **Exhibit 25**: *Dr. Hartzmark's "Financial Benefits" Calculation Highly Depends on Price Input.*

210. This makes his method unreliable, particularly with no explanation as to what prices or price inputs he will use and no incorporation of the effects of market liquidity.

D. Dr. Hartzmark's Post-Award Price Calculation Is Unreliable

211. The damages calculations for class members resulting from Dr. Hartzmark's proposed methodology also would rely heavily on Dr. Hartzmark's method for estimating post-award prices. Dr. Hartzmark, however, does not specify and has not identified the model or method he

will utilize to estimate post-award prices from his proposed "financial benefit" distribution.[237] Dr. Hartzmark cannot establish the reliability of his post-award price calculations without providing any specifics. Moreover, Dr. Hartzmark testified that he has no experience calculating such post-award prices.[238]

212. In recent reply reports in other matters against trustee defendants, Dr. Hartzmark illustrates his "financial benefits" calculation with examples.[239] In those examples, he presumes that a tranche's pre-award price will support the same amount of pre-award principal balance after his hypothetical distribution. He then calculates a tranche's post-award price using the pre-award prices of more senior tranches.

213. This calculation method is inappropriate because it ignores the significant differences among tranches. He inappropriately assumes that tranche prices can be averaged across tranches despite the fact that each tranche is associated with its own unique characteristics. Tranche prices are not solely a function of seniority. Bond insurance, interest rate type, and spread may also affect bond pricing. *See* **Exhibit 8**: *Trust and Tranche Collateral Differences*. Under this methodology, a tranche could receive a post-award price based on the weighted average of a tranche that has bond insurance and one that does not, or a tranche that has a floating coupon rate and one that has a fixed coupon rate.

214. For all of these reasons, Dr. Hartzmark's post-award price estimation component of his methodology to calculate and distribute damages to proposed class members is undefined and unreliable. This further undermines Dr. Hartzmark's opinion that damages can be reliably calculated on a class-wide basis in this matter.

E. Dr. Hartzmark's Damages Methodology Would Yield Negative "Financial Benefits" for Certain Tranches

215. Further calling into question its reliability, Dr. Hartzmark's methodology can yield *negative* "financial benefits" for certain tranches, as Dr. Hartzmark acknowledged in the Hartzmark HSBC Rebuttal Report and at his deposition in this case.[240] If Dr. Hartzmark's methodology compensates investors for alleged harm, this implies that certain certificateholders (those with negative "financial benefits" under Dr. Hartzmark's proposed methodology) did better with Wells Fargo doing what Named Plaintiffs now claim should not have been done. This demonstrates further reliability problems with Dr. Hartzmark's proposed "financial benefits" methodology and a conflict of interest between various certificateholders.

216. "Financial benefits" may be negative under Dr. Hartzmark's methodology for a variety of reasons. For example, when tranches are trading above par, the "financial benefits" can be negative because these tranches are hypothetically exchanging principal balances priced above par for a damages distribution at par.

217. Additionally, "financial benefits" may be negative when the tranche prices do not increase according to tranche seniority. If tranches are assigned a post-award price based on the weighted average pre-award prices of the tranches senior to them, according to Dr. Hartzmark's post-award price calculation in the Hartzmark HSBC Rebuttal Report, a tranche with a pre-award price greater than tranches senior to it will experience a decrease in price post-award. Therefore, the reduction in price may cause the "financial benefit" to be negative. *See* **Exhibit 26**: *Negative "Financial Benefits" Illustration Using BSSP 2007-EMX1*.

218. In the event that there are tranches with negative "financial benefits," as Dr. Hartzmark suggested in the Hartzmark HSBC Rebuttal Report, investors in these tranches have not experienced injury as a result of Wells Fargo's conduct and will not be eligible for damages.[241] He further noted in that case that "all [c]lass [m]embers['] ["financial benefits"] would be reduced pro-rata[.]"[242] However, Dr. Hartzmark did not specify how he proposes to calculate the pro-rata reduction. This reduction could vary significantly depending on the basis for Dr. Hartzmark's pro-rata reduction. I illustrate these differences in **Exhibit 27**: *Changes in "Financial Benefits" in BSSP 2007-EMX1 Based on Pro-Rata Reduction*.

219. If the "financial benefits" are redistributed because some tranches receive a gain under Dr. Hartzmark's methodology due to Wells Fargo's alleged misconduct, or a negative "financial benefit," the other tranches will not receive the full amount of the damages they are allegedly entitled to receive using Dr. Hartzmark's methodology.

220. Even if some tranches were determined to have benefited as a result of the alleged misconduct by Wells Fargo, Dr. Hartzmark stated at his deposition that he does not envision that Wells Fargo would be given a credit against damages for those certain tranches with a negative "financial benefit" that did better in the real world than under Dr. Hartzmark's methodology.[243]

221. In sum, for all of these reasons, Dr. Hartzmark's "financial benefits" methodology does not reflect a reliable means of determining the fact or amount of tranche- or investor-level damages on a class-wide basis.[244]

X. Opinion Six: Dr. Hartzmark Ignores Fundamental Conflicts of Interest Among Certificateholders

222. Dr. Hartzmark asserts that because his methodology is tied to the Governing Agreements and waterfall rules, there cannot be any meaningful conflicts.[245] Dr. Hartzmark, however, ignores various conflicts of interest that exist among certificateholders in the proposed class left unresolved by his proposed damages methodology. His failure to acknowledge or address these conflicts further renders his methodology unsupported and unreliable. In addition to the differences among the trusts and tranches described above, at least four significant types of conflicts exist in Dr. Hartzmark's damages methodology here, and these conflicts go beyond just the amount of damages a certificateholder might recover to whether the certificateholder will be deemed to have been impacted or injured by Wells Fargo's conduct.

223. First, there are inherent conflicts among tranches and class members because Dr. Hartzmark's proposed damages methodology will calculate a <u>fixed</u> amount of aggregate damages at the trust or loan group level, which will then be distributed at the tranche and investor levels to determine which tranches experienced any injury as a result of Wells Fargo's conduct. Consequently, selecting a method to find injury and award damages to one tranche or investor within a given trust or loan group will necessarily diminish the amount and availability of any funds for distribution to another tranche or investor within such group, creating fundamental conflicts of interest among tranches and investors as both the fact and amount of injury.

224. Second, there are inherent conflicts of interest regarding the selection of a method to determine injury at the tranche level and calculate tranche-level damages. [redacted]

225. Dr. Hartzmark also claimed that the certificateholders would be indifferent between cash payment inside of the trust or a "financial benefits" distribution outside of the trust.[249] [redacted]

[redacted] Instead of awarding these tranches "negative" amounts, Dr. Hartzmark would deem them uninjured and award them nothing outside of the trust and reduce the "financial benefits" for other tranches pro-rata to maintain the fixed amount of total damages.[251] Thus, tranches allocated negative "financial benefits" may prefer the "outside" approach to avoid exchanging their principal balance at par. Investors in other tranches, on the other hand, would prefer receiving money *inside* of the trust because there would be no pro-rata reduction to their recoveries for the negative "financial benefits."

226. Third, subjective judgments must be made to perform the "financial benefit" analysis, creating conflicts of interest among tranches and certificateholders. Dr. Hartzmark takes the position in his report that, "[i]f the [Relevant] Trusts' waterfall guidelines are employed to allocate aggregate *Put-Back* and *Servicing Damages* to individual [c]lass [m]embers, <u>no investor is subjectively favored or advantaged</u> at the expense of others."[252] He goes on to claim that his methodology "is completely objective because it is tied to the Governing Agreements and waterfall rules, and cannot be influenced by the incentives or preferences of individual Noteholders."[253]

227. However, Dr. Hartzmark does not intend to use only the waterfall rules of the Governing Agreements to determine injury and calculate damages at the tranche and investor level. Instead, through his "financial benefits" calculations, explained in more detail above, Dr. Hartzmark plans to go beyond the waterfall rules to calculate tranche-level damages, distributing amounts to tranches based on, among other things, pre-award prices and post-award calculated hypothetical prices.[254] His claim of objectivity based on application of the waterfall rules does not resolve conflicts of interest among class members in different tranches regarding both the fact and calculation of damages proposed here.

228. Rather, judgments about pre- and post-award prices will impact different certificateholders differently. [redacted] As reflected in **Exhibit 25**: *Dr. Hartzmark's "Financial Benefits" Calculation Highly Depends on Price Input*, which utilizes WFHET 2006-2 as an example, [redacted]

229. This problem is compounded by the possibility that a tranche may be priced above par by one pricing source and below par by another. As an example, for the A-2 tranche in BSSP 2007-EMX1, [redacted][255] Dr. Hartzmark's methodology would likely award damages to holders of the A-2 tranche in this trust if IDC prices were used but these same investors would likely not be entitled to "financial benefits" if the Bloomberg prices were used. Consequently, investors in different tranches would likely have different preferences regarding the data source used to calculate damages.

230. In addition to the difficulty in selecting an objective pre-award price source for a given tranche, it is even more difficult and requires further modelling assumptions to set a hypothetical post-award price. With respect to post-award prices, investors would have different preferences regarding the assumptions that Dr. Hartzmark would utilize. Some would prefer Dr. Hartzmark utilizing third-party valuation tools, and some would prefer his calculation methodology set forth in the Hartzmark HSBC Rebuttal Report.

231. Moreover, Dr. Hartzmark's post-award price assumptions will affect whether the total distribution amount *inside* of the trust equals the total distribution amount *outside* of the trust. Dr. Hartzmark has not explained how any methodology other than the weighted-average price calculation set forth in his Hartzmark HSBC Rebuttal Report[256] will result in the total "financial benefits" amount distributed *outside* of the trust will be equivalent to the hypothetical cash payment *inside* of the trust. In Exhibit 4 of the Hartzmark U.S. Bank Reply Report, it shows that a hypothetical cash payment of $5,305,113 inside the trust leads to a total "financial benefit" amount of $8,332,955 outside of the trust, when prices are not calculated using his weighted-average methodology.[257] In that case, the total damages amount ($5,305,113) falls short of the "financial benefits" necessary to make the outside cash payments to class members. The hypothetical cash payment not being equivalent to the "financial benefits" is not only a fundamental flaw in the methodology but would also create conflicts among class members. Investors will have different economic views regarding the treatment of distributions when the payments inside of the trusts differ from those calculated outside of the trusts.

232. Fourth, even in applying the waterfall rules, choices will need to be made about how to run the waterfalls in the circumstances of this case, and those choices can benefit some certificateholders at the expense of others. Dr. Hartzmark assumes that there are strict, objective rules for distributing his Put-Back and Servicing Damages, but he has not considered, reviewed,

or analyzed the waterfall structures for the Relevant Trusts.[258] There are no waterfall rules stating how a damages award recovered from an RMBS trustee should be distributed, particularly given the nature of the damages award sought here. Dr. Hartzmark proposes to run aggregate damages reflecting historic realized losses, predicted latent losses, and claimed servicing damages through the waterfall, requiring choices about how to categorize these amounts under the strict definitions of the Governing Agreements and which waterfalls to utilize. These choices are currently undisclosed and will impact different certificateholders differently, which may benefit certain tranches at the expense of others.

233. For example, the FMIC 2007-1 Governing Agreements specify that the priority of payments can change based on the relationship between the trust collateral and the certificate balances. *See* **Exhibit 28**: *Example Principal Waterfall Distribution Scenarios.*

234. According to the FMIC 2007-1 Transfer and Servicing Agreement, payments to the Class 2 certificates are to be paid *pro-rata* whenever the trust is undercollateralized by an amount greater than the sum of the Class M certificate balances.[259] I refer to this as the *pro-rata scenario*. When the trust is not undercollateralized or is undercollateralized by an amount less than the sum of the balances of the class M certificates, payments to the Class 2 certificates are allocated sequentially, first to 2-A1, then to 2-A2, and lastly to 2-A3. I refer to this as the *sequential scenario*.

235. In running the waterfall for FMIC 2007-1, Dr. Hartzmark therefore will need to make a choice as to whether to presume the trust continued to be undercollateralized such that the *pro-rata scenario* applies, or whether the repurchases would have remedied the undercollateralization over time, making the *sequential scenario* appropriate. Other similar choices regarding trust status and triggers will impact determinations of both the fact of damages as a result of Wells Fargo's conduct and the distributions to holders in other Relevant Trusts as well. Whatever choices Dr. Hartzmark makes will benefit certain tranches to the detriment of others.

236. Thus, there are fundamental conflicts of interest among tranches and holders left unresolved, and in fact created, by Dr. Hartzmark's damages methodology, which determines both the fact and amount of injury to tranches, including the four types of conflicts identified above. Dr. Hartzmark ignores these conflicts of interest, and he cannot rely on the waterfall rules of trusts to avoid them.

XI. Opinion Seven: Dr. Hartzmark's Proposed Damages Methodology Is Unreliable Because It Ignores Causation

237. Dr. Hartzmark's proposed damages methodology is also unreliable because it fails to adequately address other factors causing losses on allegedly defective loans. Dr. Hartzmark proposes to calculate damages based on the losses associated with allegedly defective loans. Dr. Hartzmark's methodology *assumes* that all such losses can be attributed to Wells Fargo's alleged inaction, ignoring the state of the U.S. economy after the closing dates of the Relevant Trusts; Dr. Hartzmark does not even attempt to discern whether other factors contributed, in whole or in part, to the losses on loans allegedly classified as defective loans discovered by Wells Fargo.[260] He proposes no method to segregate losses on allegedly defective loans attributable to Wells Fargo's conduct as opposed to other causes, and he makes no effort to account for the impacts of these variables that investors expected to occur at the time of their purchases.[261]

238. In adopting the assumption that all losses from defective loans can be attributed to Wells Fargo's alleged inaction, Dr. Hartzmark ignores all macroeconomic factors impacting loan defaults and the U.S. economy in the time period following the closing dates of the Relevant Trusts. This severely undermines the validity of Dr. Hartzmark's methodology.

A. Macroeconomic Factors Affect Loan Performance

239. In order to properly understand the performance of the loans, investors' expectations regarding performance, and any alleged impact of Wells Fargo's conduct, it is necessary to take into consideration the overall macroeconomic environment and the housing market during the relevant time period. Determining whether losses on allegedly defective loans are attributable to Wells Fargo's conduct, as opposed to other causes, is essential to determining any claimed damages that may be implied by Named Plaintiffs' allegations.

240. Home prices are an important factor influencing mortgage default rates[262] and therefore drive the credit risk of a loan. When homeowners have equity in their home, they are less likely to allow foreclosure to occur, choosing instead to sell the property to recover available equity.[263] Borrowers' equity increases over time as portions of payments are applied toward principal,[264] and equity also increases if house prices increase.[265]

241. Declining house prices affect both the ability and willingness of mortgagors to honor their repayment commitments.[266] Declining housing prices also impact the ability of a mortgagor to refinance the mortgage or sell the property in the face of difficulty making payments.[267] A borrower's decision to refinance also may be affected by changes in house prices.[268] Furthermore, if declining housing prices place a borrower in a situation where the value of the property is less than the outstanding balance of the mortgage,[269] a borrower may be less willing to make payments or may choose to stop payment altogether. There is empirical evidence that negative equity and "strategic default" (homeowners stopping mortgage payment even though they can meet their obligations)[270] are correlated.[271] Dr. Hartzmark acknowledges that house price declines are correlated with mortgage defaults.[272]

242. The unemployment rate is also an indicator of the state of the economy.[273] A strong economy, with a low unemployment rate, stimulates the housing market.[274] Conversely, increases in unemployment and decreases in income have been found to be correlated with significantly increased default rates and to have a negative impact on mortgage performance.[275] Some researchers have found that "job loss is the main 'single trigger' determinant of default."[276] Individual job loss, an increase in the likelihood of job loss, and/or a decline in income can lead to difficulty or unwillingness to pay a mortgage.[277] Dr. Hartzmark acknowledged this.[278]

243. Changes in interest rates have also been found to affect the performance of loans. The risk of losses due to changes in interest rates is referred to as interest rate risk.[279]

244. Dr. Hartzmark proposes no methodology to assess, consider, or isolate the impact of these factors that he admits impact loans, RMBS performance, and prices separate and apart from the trustee's conduct.[280] Dr. Hartzmark's methodology makes Wells Fargo responsible for all losses to the Relevant Trusts from the allegedly defective loans, whether or not the loans ultimately defaulted due to some other cause (*e.g.*, a borrower's job loss or substantial decline in housing prices resulting in negative equity and strategic borrower default).

B. The Macroeconomic Environment and Housing Market, 2007-2015

245. The time period from 2007 to 2009 is often referred to as a financial crisis and the worst economic downturn since the Great Depression.[281] Capital markets were characterized by a lack of liquidity,[282] a lack of access to capital for homeowners and businesses (a credit crunch),[283] and a drop in real GDP growth. *See* **Exhibit 29a**: *Macroeconomic Indicators*.

246. In this period, there was an historic and unprecedented intervention in markets by the Federal Reserve.[284] One of the actions of the Federal Reserve was to cut the federal funds effective rate to levels that approached zero and to leave it at extreme lows through 2015. *See* **Exhibit 29a**: *Macroeconomic Indicators*.

247. Personal consumption expenditures began declining and then experienced a sharp downturn. Unemployment levels rose well beyond rates observed during most other recession periods of the past half-century. The national unemployment rate had peaked at 6.3 percent at the height of the dotcom recession and had reached 7.8 percent in 1992. By comparison, by 2009, unemployment had risen to 10 percent. *See* **Exhibit 29a**: *Macroeconomic Indicators*. At the same time, there was a dramatic decline in consumer confidence.[285] *See* **Exhibit 29b**: *Macroeconomic Indicators*.

248. As the mortgage market slowed, the homeownership rate decreased. The homeownership rate declined from 68.5 percent at the outset of 2007 to 63.7 percent at the end of 2015. By the summer of 2015, the homeownership rate had reached its lowest point since the 1960s.[286] *See* **Exhibit 29b**: *Macroeconomic Indicators*.

249. After years of unprecedented growth, home prices initially leveled off and then turned sharply downward. The loans backing the Relevant Trusts were originated by late-2007; home prices declined every year from 2007 to 2011. While home prices declined nationally, some cities were affected more dramatically than the national average. *See* **Exhibit 30a**: *Home Price Index (National and Select Cities)*. Nationally, house prices dropped by 27 percent between July 2006 and January 2012.[287] *See* **Exhibit 30b**: *Home Price Index (Percent Change)*. There was no historical precedent for such a national downturn in home prices.[288] As mentioned previously, home prices are an important factor influencing mortgage default rates.[289]

250. The sudden decrease in home prices was accompanied by a dramatic reduction in housing starts, which reached unprecedented lows. Housing starts fell from over 2 million in 2005 to 554,000 in 2009. *See* **Exhibit 29b**: *Macroeconomic Indicators*. The homeowner vacancy rate reached its highest recorded level in 2008, and remained high through 2010, reflecting a large number of vacant homes for sale. The vacancy rate in certain states was significantly higher than national rates. *See* **Exhibit 31**: *Homeowner Vacancy Rate (National and Select States)*. In January 2009, the monthly supply of houses in the United States had reached its highest recorded level, with 12.2 months of housing inventory for sale. *See* **Exhibit 29b**: *Macroeconomic Indicators*.

251. Worsening housing market conditions were also reflected in the decrease in securitization during this period. Total issuance in 2008 showed marked declines from previous years, and issuances after 2008 remained lower than the levels reached in the peak years. *See* **Exhibit 32**: *Non-Agency RMBS Issuance*. As the housing market stalled, home equity securitizations similarly dropped dramatically. At the same time, equity cashed out by borrowers returned to the low levels seen in the 1990s. *See* **Exhibit 33**: *Volume of Home Equity Cashed Out*.

252. Foreclosure rates rose dramatically during the financial crisis at the same time house prices decreased and unemployment rates increased. *See* **Exhibit 34a**: *Home Price Index and Foreclosure Rates* and **Exhibit 34b**: *Unemployment and Foreclosure Rates*.

C. Dr. Hartzmark's Methodology Ignores These Factors That Impact Loan Performance

253. There is widespread consensus that the unprecedented nationwide decline in home prices, near record unemployment, and overall deterioration of economic conditions were key contributors to the high levels of loan delinquencies and defaults during the time period after the closing of the Relevant Trusts. It cannot be concluded from rising delinquency and default rates alone that loans in the loan pools in the Relevant Trusts violated underwriting guidelines or breached R&Ws.

254. Dr. Hartzmark ignores the macroeconomic context entirely and simply assumes that all losses from so-called defective loans are attributable to the purported inaction of Wells Fargo. His proposed methodology makes no effort to link alleged breaches of representations and warranties to economic loss, or to evaluate causes of loss at all. He proposes no method to isolate and exclude losses to the Relevant Trusts from causes unrelated to Wells Fargo's conduct.

XII. CONCLUSION

255. As described herein, there are meaningful differences among the trusts, tranches and loan collateral ignored by Dr. Hartzmark that demonstrate that Named Plaintiffs are not representative of certificateholders in other trusts or tranches. Certificateholders in different Relevant Trusts and different tranches within the Relevant Trusts are not similarly situated, and the differences among them give rise to different economic interests, and trust- and tranche-specific issues regarding performance, expectations of return, as well as any alleged impact of Wells Fargo's conduct.

256. Furthermore, Dr. Hartzmark has failed to establish that Named Plaintiffs have experienced losses or are expected to do so in the future. He failed to commit to any particular formula, variables, data, or assumptions to be used to estimate alleged latent losses. Based on my analysis, substantial additional losses must occur before most of the At-Issue Tranches would experience any losses, let alone losses attributable to Wells Fargo's conduct.

257. Dr. Hartzmark's observation that "no-loss" tranches "might" have been harmed fails to provide a reliable basis to conclude that plaintiffs with interests in such "no-loss" tranches have or are likely to suffer losses. He proposes no methodology for determining losses (let alone class-wide methodology) based on erosion of subordination or credit ratings. Furthermore, he proposes no methodology for calculating "out-of-pocket" losses on a class-wide basis or otherwise.

258. Importantly, Dr. Hartzmark provides no reliable methodology to separate the losses allegedly attributable to Wells Fargo's conduct from other losses that would have occurred even if Wells Fargo had acted as Named Plaintiffs allege it should have. Indeed, in his deposition, Dr. Hartzmark conceded that he could not explain how the process of identifying purportedly defective loans would work. With respect to Servicing Damages, Dr. Hartzmark also stated that he will rely on another expert, but he has failed to explain how excess servicing fees could be derived reliably based on the findings of the servicing expert who was unknown to him.

259. Dr. Hartzmark's proposed damages methodologies are also inconsistent with any relevant "but-for scenario" implied by Named Plaintiffs' allegations and are based on ill-defined and unreasonable assumptions in multiple ways. Dr. Hartzmark, among other things, proposes to compensate investors without regard to timing or injury, assumes that 100 percent of allegedly defective loans would have been successfully repurchased, and fails to account for the actions Wells Fargo allegedly could or should have taken to enforce servicer obligations. Dr. Hartzmark's "financial benefit" analysis and proposed methodology to determine injury and calculate damages at the tranche level is also flawed, and does not reflect a reasonable means of determining damages on a class-wide basis.

260. Dr. Hartzmark does not intend to use only the waterfall rules of the Governing Agreements to calculate damages for individual investors, and judgments about his model will impact different holders differently, creating conflicts of interest.

261. Finally, Dr. Hartzmark's proposed damages methodology is unreliable because it ignores causation. Dr. Hartzmark does not even attempt to discern whether other factors contributed, in

whole or in part, to the losses on allegedly defective loans that he would use to measure damages, undermining the validity of Dr. Hartzmark's methodology.

262. For all these reasons, the Hartzmark Report fails to show that damages can be reliably calculated on a class-wide basis using a common methodology.

Submitted under penalty of perjury on:

December 14, 2017

Ethan Cohen-Cole, Ph.D.

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[1] My team and I were under the employment of Econ One Research until October 31, 2017. Some portion of our work related to this matter occurred under Econ One Research's employment.

[2] Amended Class Action Complaint. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Feb. 23, 2016) ("Amended Complaint"), amending the original Class Action Complaint filed on Nov. 24, 2014 ("Complaint"). *See* Amended Complaint at preface, ¶ 1, and Exhibit 2. I understand that certain Named Plaintiffs, among others, filed a derivative complaint in New York state court on June 18, 2014 regarding eleven of the twelve Relevant Trusts. *See* Derivative Complaint. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A., et al.* (N.Y. Sup. Ct. (N.Y. Co.) No. 651867/2014) (June 18, 2014) at Exhibit 2. I understand that Named Plaintiff Sealink Funding Limited recently sold its position in the applicable trust and may no longer participate in this action. *See* email from Lucas Gilmore, to Bart Green, *et al.*, *RE: BlackRock v. Wells Fargo Bank, N.A., 14-cv-09371 (S.D.N.Y.)* (Nov. 29, 2017).

[3] *See* Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017) ("Interrogatories Set 1") at Exhibits 1-5 and Amended Exhibit 6. I was instructed by counsel to also include the M2 tranche in BSSP 2007-EMX1, owned by PIMCO, as one of the At-Issue Tranches.

[4] Amended Complaint at preface, ¶ 222. Dr. Hartzmark's report contains a modified class definition. Hartzmark, Michael L. Expert Report of Michael L. Hartzmark, Ph.D. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Oct. 30, 2017) ("Hartzmark Report") at ¶ 3 ("All individuals who purchased or otherwise acquired a beneficial interest in a security issued from the covered trusts between the date of offering and 60 days from the final order certifying the Class, and who hold that beneficial interest in the security through the date of final judgment in the District Court[.]").

[5] Amended Complaint at ¶¶ 49-60.

[6] *Id.* at ¶¶ 1, 162-170.

[7] *Id.* at ¶ 97; *see also* Plaintiffs' Supplemental Responses and Objections to Interrogatory No. 3 of Defendant Wells Fargo Bank, N.A.'s Third Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Sept. 12, 2017) ("Supplemental Response to Interrogatory No. 3") at 2.

[8] Hartzmark Report at ¶¶ 1, 25 *et seq*., 45 *et seq*.

[9] *Id.* at ¶ 65.

[10] *Id.* at ¶ 43.

[11] Fabozzi, Frank J., Michael G. Ferri, and Steven V. Mann. "Overview of the Types and Features of Fixed Income Securities." *The Handbook of Fixed Income Securities*. 8th ed. Eds. Frank J. Fabozzi and Steven V. Mann. New York: McGraw Hill (2012): 3-19 at 16.

[12] Hu, Dapeng, and Robert Goldstein. "Nonagency Residential Mortgage-Backed Securities." *The Handbook of Fixed Income Securities.* 8th ed. Eds. Frank J. Fabozzi, and Steven V. Mann. New York: McGraw Hill (2012): 645-680 at 645. This chapter was authored by two BlackRock managing directors.

[13] Fabozzi, Frank J., Anand K. Bhattacharya, and William S. Berliner. *Mortgage-Backed Securities: Products, Structuring, and Analytical Techniques.* 2nd ed. Hoboken, NJ: John Wiley & Sons, Inc. (2011) at 25-26 at 25.

[14] Vallee, David E. "A New Plateau for the U.S. Securitization Market." *FDIC Outlook* (Fall 2006): 3-10 at 3.

[15] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 189-90; for a list of indentures pertaining to the Relevant Trusts, *see* **Appendix B**: *Materials Considered.*

[16] For a list of offering documents pertaining to the Relevant Trusts, *see* **Appendix B**: *Materials Considered.*

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[17] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 189. *See*, *e.g.*, IMM 2005-2 Prospectus Supplement at WF_BR_000462054-68.

[18] For a list of servicing agreements for the Relevant Trusts, *see* **Appendix B**: *Materials Considered.*

[19] *See* BSSP 2007-EMX1 Confidential Supplemental Private Placement Memorandum at WF_BR_000487975-6.

[20] Schelkle, Thomas. "Mortgage Default During the U.S. Mortgage Crisis." *University of Cologne Working Paper Series in Economics* 72 (May 16, 2014): 1-48 at 2.

[21] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 195.

[22] Ward, Warrick, and Simon Wolfe. "Asset-Backed Securitization, Collateralized Loan Obligations and Credit Derivatives." *Handbook of International Banking*. Eds. Andrew W. Mullineux and Victor Murinde. Cheltenham, UK: Edward Elgar Publishing (Apr. 2003): 60-101 at 62-63.

[23] [redacted]

[24] Hu & Goldstein, *supra* note 12, at 664.

[25] *Id*. at 666.

[26] *Id.*

[27] *Id.* at 666-667.

[28] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 104.

[29] *Id*. at 199.

[30] Hu & Goldstein, *supra* note 12, at 664.

[31] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 207.

[32] *Id*. at 206.

[33] *Id*.

[34] [redacted] Hyman, Daniel. Deposition (Feb. 2, 2017) ("Hyman Dep.") at 72:9-73:3 [redacted]

[35] *See*, *e.g.*, IMM 2004-6 Indenture at WF_BR_000369784-5; BSSP 2007-EMX1 Confidential Supplemental Private Placement Memorandum at WF_BR_000487966.

[36] *Id.*

[37] *See*, *e.g.*, IMM 2005-3 Indenture at WF_BR_000467308; IMM 2005-3 Prospectus Supplement at WF_BR_000466885.

[38] Funds can also include receipts from derivatives owned by the trust.

[39] *See*, *e.g.*, American Home Mortgage Securities LLC, Mortgage Pass-Through Certificates Mortgage-Backed Notes, Prospectus (Mar. 30, 2004) (WF_BR_000435623 at WF_BR_000435689). ("In general, the earlier a prepayment of principal on the underlying mortgage loans or a repurchase thereof, the greater will be the effect on an investor's yield to maturity.").

[40] *See*, *e.g.*, AHM 2004-2 Indenture at WF_BR_000436050; AHM 2004-2 Prospectus Supplement at WF_BR_00435569.

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[41] *See*, *e.g.*, IMM 2005-2 Indenture at WF_BR_000462669; IMM 2005-2 Prospectus Supplement at WF_BR_00462130.

[42] *See*, *e.g.*, AHM 2004-2 Indenture at WF_BR_000436023; AHM 2004-2 Servicing Agreement at WF_BR_000436093-94.

[43] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 169.

[44] *Id.* at 199-201.

[45] *See*, *e.g.*, AHM 2004-2 Indenture at WF_BR_000436050; AHM 2004-2 Prospectus Supplement at WF_BR_00435569.

[46] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 199.

[47] *Id*. at 200-201.

[48] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 199.

[49] Hartzmark Report at ¶¶ 6, 20 *et seq*.

[50] The Hartzmark Report fails to provide crucial details relating to the methodologies advanced by Dr. Hartzmark to calculate damages. Dr. Hartzmark has supplied some additional details in reply or rebuttal reports in other matters against other trustee defendants. I understand that Named Plaintiffs have cited to these reports in their responses to interrogatories here. *See* Plaintiffs' Amended Responses and Objections to Interrogatory Nos. 3 and 10 of Defendant Wells Fargo Bank, N.A.'s Third Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) ("Interrogatories Set 3") at 3. [redacted] Consequently, I refer to some of the details that have been provided by Dr. Hartzmark in those identified other matters in this report. I reserve the right to amend or add to my report if Dr. Hartzmark presents new or different information in reply to this report.

[51] Hartzmark Report at ¶ 25.

[52] *Id.* at ¶ 26.

[53] *Id.* at ¶ 32.

[54] *Id.* at ¶ 36.

[55] *Id.* at ¶¶ 37, 42.

[56] *Id.* at ¶ 33.

[57] Hartzmark Dep. at 135:2-19 [redacted] *id*. at 136:21-138:9 [redacted]

[58] Hartzmark Report at ¶ 43.

[59] *Id.* at ¶ 44; Hartzmark Dep. at 106:7-17 [redacted]

[redacted]

[60] Hartzmark Report at ¶ 45.

[61] Hartzmark Dep. at 35:12-36:2 [redacted]

[62] Hartzmark Report at ¶ 52.

[63] *Id.*

[64] Hartzmark Dep. at 192:14-21 [redacted] *id.* at 192:25-193:22 [redacted] *see also id.* at 196:25-197:13 [redacted]

[65] Hartzmark Report at ¶ 58.

[66] *Id.*

[67] *Id.* at ¶ 74.

[68] *Id.*

[69] *Id.* at ¶ 69.

[70] *Id.*

[71] Hartzmark, Michael L. Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *BlackRock Balanced Capital Portfolio (FI), et al. v. HSBC Bank USA, N.A.* (S.D.N.Y. No. 14-cv-09366) (June 2, 2017) (HARTZMARK—WELLS FARGO 00001150) ("Hartzmark HSBC Rebuttal Report") and Hartzmark, Michael L. Supplemental Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *BlackRock Core Bond Portfolio, et al. v. U.S. Bank, N.A.* (S.D.N.Y. No. 14-cv-09401) (Aug. 18, 2017) (HARTZMARK_WELLS FARGO 00004082) ("Hartzmark U.S. Bank Supplemental Rebuttal Report").

[72] Hartzmark HSBC Rebuttal Report at ¶ 66.

[73] *Id.* at ¶ 78.

[74] Hartzmark Report at ¶ 4.

[75] *See*, *e.g.*, Kamberi, Nobel. Deposition (Mar. 16, 2017) at 56:15-17 [redacted]

[76] Hartzmark Dep. at 17:5-1 [redacted] and Hartzmark Report Appendix B.

[77] MSHLC 2007-1 Prospectus Supplement at WF_BR_000513283.

[78] BSSP 2007-EMX1 Confidential Supplemental Private Placement Memorandum at WF_BR_000487900-2.

[79] MSHLC 2007-1 Prospectus Supplement at WF_BR_000513291, WF_BR_000513304.

[80] A subset of the HELOC loans in IRWHE 2006-2 are "HELOC HYBRIDs," which have initial fixed-rate periods of two or three years after origination. *See* IRWHE 2006-2 Offering Memorandum Supplement at WF_BR_000394490.

[81] MSHLC 2007-1 Prospectus Supplement at WF_BR_000513289, WF_BR_000513304, WF_BR_000513307.

[82] *Id.* at WF_BR_000513289.

[83] RVMLT 2007-2A Offering Circular at WF_BR_000493122.

[84] Zhai, David H. "Reverse Mortgage Securitizations: Understanding and Gauging the Risks." *Moody's Investors Service* (June 23, 2000): 1-16 at 2-3.

[85] RVMLT 2007-2A Offering Circular at WF_BR_ 000493114.

[86] Zhai, supra note 84, at 2.

[87] RVMLT 2007-2A Offering Circular at WF_BR_000493122.

[88] *Id.* at WF_BR_000493130.

[89] *Id.* at WF_BR_000493122.

[90] Sale of property or death of the borrower are typical examples of maturity events.

[91] RVMLT 2007-2A Offering Circular at WF_BR_000493121.

[92] *Id.* at WF_BR_000493125.

[93] *Id.*

[94] *See*, *e.g.*, Martin, Bill. Deposition (March 8, 2017) ("Martin Dep.") at 314:19-20 [redacted] Padmanabhan-Medema, Lalantika. Deposition (Jan. 25, 2017) at 145:5-23 [redacted] *id.* at 322:19-326:21 [redacted]

[95] RVMLT 2007-2A Indenture at WF_BR_000493403; RVMLT 2007-2A Offering Circular at WF_BR_000493118 [redacted]

[96] *See* IMM 2005-2 Indenture at WF_BR_000462564; IMM 2005-3 Indenture at WF_BR_000467291; IRWHE 2005-A Indenture at WF_BR_000337995; IMM 2005-2 Prospectus Supplement at WF BR_000462030; IMM 2005-3 Prospectus Supplement at WF_BR_000466802; IRWHE 2005-A Prospectus Supplement at WF BR_000337897.

[97] *See* IMM 2004-6 Indenture at WF_BR_000369643-44; IMM 2004-11 Indenture at WF_BR_000464019-20; IMM 2005-3 Indenture at WF_BR_000467288; IMM 2005-6 Indenture at WF_BR_000465821; IRWHE 2006-2 Indenture at WF_BR_000394818; MSHLC 2007-1 Indenture at WF_BR_000513814; IMM 2004-6 Prospectus Supplement at WF_BR_000369105; IMM 2004-11 Prospectus Supplement at WF_BR_000463386; IMM 2005-3 Prospectus Supplement at WF_BR_000466799; IMM 2005-6 Prospectus Supplement at WF_BR_000465204; IRWHE 2006-2 Offering Memorandum Supplement at WF_BR_000394461; MSHLC 2007-1 Prospectus Supplement at WF_BR_000513272.

[98] Gerardi, Kristopher, and Wenli Li. "Mortgage Foreclosure Prevention Efforts." *Federal Reserve Bank of Atlanta Economic Review* 2 (2010): 1-13 at 9 ("Since investors in the various tranches have different claims to the cash flows from the MBS, a modification could alter the flows in a way that would benefit one tranche at the expense of another.").

[99] *See* Martin Dep. at 314:19-20.

[100] *See*, *e.g.*, Gerardi & Li, *supra* note 98, at 9 ("Thus, there may be enough ambiguity in the PSAs to make servicers wary of getting caught up in so-called tranche warfare[.]").

101 [redacted]

102 *See* IRWHE 2005-A Prospectus Supplement at WF_BR_000337893; RVMLT 2007-2A Offering Circular at WF_BR_000493113.

103 IMM 2005-6 Indenture at WF_BR_000465947; IMM 2005-6 Prospectus Supplement at WF_BR_00465300.

104 IMM 2005-6 Prospectus Supplement at WR_BR_000465209.

105 *Id*.

106 Hu & Goldstein, *supra* note 12, at 657.

107 PIMCO owns certificates in the following At-Issue Tranches: IMM 2004-6 II-A, IMM 2005-6 I-A-1, IMM 2005-6 I-A-2. BlackRock owns certificates in the following At-Issue Tranches: IMM 2004-11 I-A-2 and IMM 2005-6 1-A-1. *See* IMM 2004-6 Indenture at WF_BR_000369643-4; IMM 2005-6 Indenture at WF_BR_000465821; IMM 2004-11 Indenture at WF_BR_000464019-20; IMM 2004-6 Prospectus Supplement at WF_BR_000369111; IMM 2005-6 Prospectus Supplement at WF_BR_000465209; and IMM 2004-11 Prospectus Supplement at WF_BR_000463391. *See also* Interrogatories Set 1 at Exhibits 1 & 5.

108 [redacted] Rogers, Richard. Deposition (Mar. 28, 2017) ("Rogers Dep.") at 96:24-97:6.

109 Hartzmark Report at ¶ 16.

110 MSHLC 2007-1 Remittance Report (Mar. 27, 2017); Vincent, Stephen Tyler. Deposition (Sept. 29, 2017) at 136:19-24 [redacted]

111 Hartzmark Report at ¶ 26 ("[M]y damages methodology compensates Class Members for the loss of bargained-for benefits.").

112 *Id.* at ¶ 16, Appendix C (identifying "no-loss" tranches).

113 *See* Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 284.

114 Hartzmark Dep. at 212:15-213:5 [redacted]

115 *Id.* at 110:3-16 [redacted]

116 *See*, *e.g.*, IRWHE 2006-2 Prospectus Supplement at WF_BR_000394480, MSHLC 2007-1 Prospectus Supplement at WF_BR_000513296, and RVMLT 2007-2A Offering Circular at WF_BR_000493122.

117 Zhai, supra note 84, at 1.

118 Hartzmark Report at ¶ 38.

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[119] *Id.* at ¶ 59 (emphasis added).

[120] *Id.* at ¶ 60.

[121] *Id.* at Exhibit 3.

[122] *See id.* at ¶¶ 62, 63, and Exhibit 3; *see also* Hartzmark Dep. at 217:8-218:9 [redacted]

[123] Hartzmark Dep. at 226:12-227:15 [redacted]

[124] *Id.* at 226:5-227:15.

[125] *Id.* at 220:4-24 [redacted]

[126] *Id.* at 220:25-221:8 [redacted]

[127] [redacted] Gross, William. Deposition (Apr. 4, 2017) at 147:25-148:2; *see also id.* at 148:21-149:1 [redacted] *see also* Bansal, Sharad. Deposition (Jan. 27, 2017) ("Bansal Dep.") at 62:14-63:7 [redacted]

[128] Hartzmark Dep. at 219:17-220:14 [redacted] *id.* at 119:23-120:22 [redacted]

[redacted]

[129] Hartzmark Report at Exhibit 3.

[130] Hartzmark Dep. at 222:3-10 [redacted] *see also id.* at 222:11-223:6 [redacted]

[131] *See* McMahon, Bliss. Deposition (Apr. 11, 2017) at 159:12-160:3 [redacted]

[132] *See, e.g.*, Bansal Dep. at 120:24-122:20; Hyman Dep. at 39:22-41:8; Freitag, Peter. Deposition (Mar. 10, 2017) at 243:3-23; Rogers Dep. at 99:10-100:5; Bhagat, Victor. Deposition (Jan. 27, 2017) at 103:21-104:7.

[133] *See* Hyman Dep. at 40:15-24 [redacted] (emphasis added); Deposition Exhibit B-368: Murata, Alfred and Daniel Hyman. "3 Ways to Capitalize on Today's Mortgage Market." (June 1, 2015) [redacted]

[134] *See* Anderson, Joshua. Deposition (Mar. 3, 2017) at 226:7-13 [redacted]

[135] *See, e.g.*, Yang, Jing. Deposition (Jan. 13, 2017) at 323:5-16 [redacted]

[136] *Id.*

[137] Simon, William Scott. Deposition (Feb. 28, 2017) at 201:24-202:13 [redacted]

[138] Hartzmark Dep. at 222:3-10; *id.* at 222:22-223:6.

[139] *See, e.g.*, Amended Responses and Objections to Wells Fargo Bank, N.A.'s First Set of Requests for Admission to All Plaintiffs. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Mar. 31, 2017) at 8 (admitting that it is Named Plaintiffs' position that, "as current Holders, Plaintiffs' rights include the claims and demands of all prior Holders, which automatically transferred to Plaintiffs upon their purchase of the RMBS under Section 13-107 of the New York General Obligation Law"); Hartzmark Dep. at 183:7-23 [redacted]

[redacted]

[140] Hartzmark Report at ¶¶ 36, 43. *See also* Plaintiffs' Supplemental Responses and Objections to Interrogatory No. 10 of Defendant Wells Fargo Bank, N.A.'s Third Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Oct. 10, 2017) at 7 (looking at "amount of total realized losses from all inactive (*i.e.,* liquidated) loans").

[141] *See* Amended Complaint ¶¶ 8, 27, 107, 163, 165, 201 *et seq*.

[142] Hartzmark Dep. at 83:24-84:8 [redacted]

[143] *See*, *e.g.*, Hartzmark Report at ¶ 26 ("[M]y damages methodology compensates Class Members for the loss of bargained-for benefits.").

[144] Hearing Before Judge Netburn. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (June 15, 2017) at 80:19-81:15 ("MR. GAL[D]STON: […] we are not suing on out-of-pocket investment losses. This is a breach of contract case. […] We are entitled to the benefit of the bargain. We are entitled to a number of ways that we were damaged.").

[145] Hartzmark Dep. at 297:10-1 [redacted]

[146] *Id.* at 301:23-302:4; *id*. at 303:13-304:11 [redacted]

[147] Hartzmark Policemen's Annuity Rebuttal Report at ¶ 55.

[148] Hartzmark Dep. at 302:20-24 [redacted] (emphasis added).

[149] *See* Hartzmark, Michael L. Expert Report of Michael L. Hartzmark, Ph.D. *Policemen's Annuity and Benefit Labor Fund, et al. v. Bank of America, N.A., et al.* (S.D.N.Y. No. 12-cv-02865) (Jan. 17, 2014) (HARTZMARK_WELLS FARGO 00004667) ("Hartzmark Policemen's Annuity Opening Report") at ¶ 49; *see also id*. at ¶¶ 47-52; Hartzmark Dep. at 296:11-20 [redacted] *see also* Policemen's Annuity Rebuttal Report at ¶¶ 53-56.

[150] I express no opinion as to any appropriate measure of out-of-pocket losses in this case but instead apply Dr. Hartzmark's own formula to show a lack of losses under that formula.

[151] These materials were used by Named Plaintiffs for various purposes, such as internal valuation estimates or for government submissions for accounting purposes. I utilized the "price" or "valuation" reported in these documents for At-Issue Tranches as a proxy measure for the prices of the At-Issue Tranches.

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[152] Hartzmark Dep. at 20:14-1 [redacted]

[153] This is often referred to as causal inference in economics. *See*, *e.g.*, Heckman, James J. "Econometric Causality." *International Statistical Review* 76.1 (Apr. 2008): 1-27 at 2.

[154] Hartzmark Report at ¶ 33.

[155] Hartzmark Dep. at 55:11-56:4 [redacted] *id.* at 102:24-103:9 [redacted]

[156] Hartzmark Report at ¶ 43.

[157] Hartzmark Dep. at 28:3-16 [redacted]

[158] *Id.* at 136:21-138:9; *see also id.* at 135:2-17 [redacted]

[159] *Id.* at 25:6-18 [redacted] *see also* Supplemental Response to Interrogatory No. 3 at Appendix A.

[160] Hartzmark Dep. at 25:19-26:20 [redacted]

[161] *Id.* at 124:22-125:23 [redacted]

[162] *Id.* at 110:3-16 [redacted]

[redacted]; *see also id. at* 110:17-114:4.

[163] *Id.* at 192:25-193:22 [redacted] *see also id.* at 197:7-13.

[164] Hartzmark Report at ¶ 76.

[165] *Id.* at ¶ 26.

[166] Amended Complaint at ¶¶ 97, 145, 163-170; *see also*, *e.g*., Supplemental Response to Interrogatory No. 3 at 2-7 (alleging specific dates by which Wells Fargo allegedly had knowledge of breaches).

[167] Amended Complaint at ¶¶ 188-89, 199, 204.

[168] Hartzmark Report at ¶ 76.

[169] See **Exhibit 4**: *AHM 2004-2 Waterfall Decision Tree* for an example of how different dates can change cash flows to the different tranches.

[170] *See* Supplemental Response to Interrogatory No. 3 at 4.

[171] *See* **Exhibit 2**: *Named Plaintiffs' Relevant Purchases*.

[172] Hartzmark Report at ¶ 76 ("My proposed damages methodology is consistent with the Plaintiffs' theory of liability and is not built on hypotheticals or but-for scenarios that require speculative assumptions about what would have happened (and when) and what could have happened (and when)."); Hartzmark Dep. at 149:25-150:9 [redacted] *id.* at 126:17-21 [redacted] *id.* at 185:10-18 [redacted]

[173] *Id.* at ¶ 76; Hartzmark Dep. at 184:14-185:9 [redacted]

[174] Hartzmark Dep. at 94:8-11 [redacted] *id.* at 97:16-98:2 [redacted] *id.* at 245:20-246:2 [redacted] *see also id.* at 93:20-94:11.

[175] *Id.* at 98:3-15 [redacted] *id.* at 257:4-258:25 [redacted]

[redacted]

[176] *Id.* at 145:5-146:2 [redacted]

[177] *Id.* at 155:8-19 [redacted] *id*. at 156:11-157:4 [redacted]

[178] *Id.* at 152:13-153:5 [redacted]

[179] *Id.* at 178:3-11.

[180] *See*, *e.g.*, BSSP 2007-EMX1 Indenture at WF_BR_000488208 [redacted] IRWHE 2006-2 Sale and Servicing Agreement at WF_BR_000395573 ("The Master Servicer shall cause the Seller within 120 days of its receipt of such notice, to correct or cure any such defect or to cause such defect to be corrected or cured or to substitute for or repurchase the affected Mortgage Loan[.]"); FMIC 2007-1 Prospectus Supplement at WF_BR_000452222 ("If the seller fails to cure a material breach of its representations and warranties with respect to any mortgage loan in a timely manner, then the seller would be required to repurchase or substitute for the defective mortgage loan.").

[181] Hartzmark Dep. at 174:14-19 [redacted]

[182] *Id.* at 178:3-11 [redacted]

[183] *See*, *e.g.*, FMIC 2007-1 Prospectus Supplement at WF_BR_000452222.

[184] Prudential, one of Named Plaintiffs, issued a publication in October 2015 discussing the Gibbs & Bruns RMBS trustee settlement amounts that ranged from 7 percent to 10 percent of past and future losses. "RMBS—After the Flood. Part 1: A Second Look at Legacy Assets." *Pramerica Fixed Income Perspectives. Prudential* (Oct. 2015). <http://www3.prudential.com/pramerica/fi/pdf/pramerica-fixed-income-rmbs-after-the-flood.pdf> (accessed Nov. 13, 2017) at 7.

[185] Hartzmark Dep. at 153:6-154:20; *id.* at 171:22-172:23.

[186] *Id.* at 143:12-19 [redacted] . at 153:25-154:7 [redacted]

[187] Hartzmark Report at ¶¶ 26, 58.

[188] Hartzmark Dep. at 192:14-21 [redacted] *id.* at 192:25-193:22 [redacted] *id.* at 197:7-13 [redacted] *id.* at 198:3-12 [redacted] *id.* at 207:18-24 [redacted]

[189] AHM 2004-2 Servicing Agreement § VI.01 (WF_BR_000436116-8).

[redacted]

[191] Hartzmark Report at ¶ 53.

[192] *See*, *e.g.*, AHM 2004-2 Servicing Agreement § III.01 (WF_BR_000436089).

[193] Hartzmark Report at ¶ 53.

[194] Hartzmark Dep. at 196:25-197:13 [redacted] *id.* at 206:14-16 [redacted] *id.* at 211:7-25 [redacted]

[195] As previously discussed, GSE guidelines do not apply to the Relevant Trusts. However, even such guidelines allow for exceptions and discretion in servicing mortgage loans. *See*, *e.g.*, "A2-1-01 General Servicer Duties and Responsibilities." *Fannie Mae Single Family Servicing Guide* (July 12, 2017): 63-67 at 64 ("Most of the policies and standards described in the *Servicing Guide* are intended to set forth the broad parameters under which the servicer must exercise sound and professional judgment as a mortgage loan servicer in the performance of its duties.

As a result, in most instances Fannie Mae has not set forth absolute requirements because it believes that the servicer needs to maintain the discretion to apply appropriate judgment in dealing with borrowers and mortgage loans on a case by case basis, consistent with Fannie Mae's servicing policies.").

[196] Cordell, Larry, Liang Geng, Laurie S. Goodman, and Lidan Yang. "The Cost of Foreclosure Delay." *Real Estate Economics* 43.4 (Nov. 2015): 916–56 at 916.

[197] Hayre, Lakhbir S., and Manish Saraf. "A Loss Severity Model for Residential Mortgages." *Journal of Fixed Income* 18.2 (Fall 2008): 5–31 at 7.

[198] *Id.* at 8-9.

[199] Ghent, Andra C., and Marianna Kudlyak. "Recourse and Residential Mortgage Default: Evidence from US States." *The Review of Financial Studies* 24.9 (2011): 3139-3186 at 3177-3183.

[200] Cordell, Geng, Goodman & Yang, *supra* note 196, at 917.

[201] Alexander, Frank S., Dan Immergluck, Katie Balthrop, and Philip Schaeffing. "Legislative Responses to the Foreclosure Crisis in Nonjudicial Foreclosure States." *Review of Banking and Financial Law* 31 (2011-2012): 341-410 at 382.

[202] Cordell, Larry, Karen Dynan, Andreas Lehnert, Nellie Liang, Eileen Mauskopf, and Robert W. Kolb. "The Incentives of Mortgage Servicers and Designing Loan Modifications to Address the Mortgage Crisis." *Lessons from the Financial Crisis.* Ed. Robert W. Colb. Hoboken, NJ: John Wiley & Sons, Inc. (2010): 231–37 at 232.

[203] Hartzmark Dep. at 207:25-208:14 [redacted] *id*. at 208:24-209:5 [redacted] *id*. at 211:7-11 [redacted]

[204] *Id.* at 261:21-263:3.

[205] *See*, *e.g.*, Smith, Kent. Deposition (Jan. 31, 2017) ("Smith Dep.") at 369:19-370:10 [redacted]

[206] Goodman, Laurie, Roger Ashworth, Brian Landy, and Ke Yin. "Everything You Always Wanted to Know About Modification But Were Afraid to Ask." *Amherst Mortgage Insight* (June 23, 2009) (WF-BlackRock-PLTFS 04504793-808 at WF-BlackRock-PLTFS 04504794) (emphasis added).

[207] Hartzmark Report at ¶¶ 65-66.

[208] *Id.* at ¶ 69.

[209] *Id.* at ¶ 69.

[210] Hartzmark HSBC Rebuttal Report at Exhibit 3; Hartzmark U.S. Bank Supplemental Rebuttal Report at ¶ 8 and Exhibit 4; and Hartzmark Dep. at 234:24-235:15 [redacted]

[211] Hartzmark HSBC Rebuttal Report at ¶ 78.

[212] *Id.* at ¶ 81.

[213] *Id.* at ¶ 69, and Exhibit 2.

[214] *Id.* at ¶ 84, and Exhibit 2.

[215] In the Hartzmark U.S. Bank Supplemental Rebuttal Report, Dr. Hartzmark runs damages through the waterfall twice, first treating realized losses as subsequent recovery and then latent losses as prepayment. *See* Hartzmark U.S. Bank Supplemental Rebuttal Report at Exhibits 2-3. However, in the Hartzmark HSBC Rebuttal Report, he ran the aggregate damages through the principal waterfall only once. *See* Hartzmark HSBC Rebuttal Report at Exhibit 3.

[216] Hartzmark HSBC Rebuttal Report at ¶ 84, and Exhibit 2.

[217] Hartzmark Dep. at 240:7-1 [redacted]

[218] Hartzmark HSBC Rebuttal Report at ¶ 85, and Exhibit 3.

[219] *Id.* at fn 74; Hartzmark U.S. Bank Supplemental Rebuttal Report at fn 96 (stating that "in the post-award world, it is assumed that the same amounts of pre-award balances of tranches are supported by the same pre-award prices.").

[220] Hartzmark U.S. Bank Supplemental Rebuttal Report at fn 96.

[221] *Id.* 96. In the Hartzmark HSBC Rebuttal Report, Dr. Hartzmark does not note that his post-award price methodology is purely for illustrative purposes. *See* Hartzmark HSBC Rebuttal Report at fn 74.

[222] Hartzmark Dep. at 239:9-240:12 [redacted]

[223] *Id.* at 255:16-256:3 [redacted]

[224] *See*, *e.g.*, *id.* at 254:10-13 [redacted] *id*. at 254:3-9 [redacted]

[225] Hartzmark HSBC Rebuttal Report at ¶ 70.

[226] Dr. Hartzmark defines the market values of the principal balances based on the respective tranche prices (post- and pre-award).

[227] Hartzmark HSBC Rebuttal Report at ¶¶ 78, 89.

[228] Aside from the issue of sampling, Dr. Hartzmark states that his proposal for class-wide damages in his recently submitted reports is consistent across cases. Hartzmark Dep. at 45:23-46:4.

[229] *See* Hartzmark U.S. Bank Supplemental Rebuttal Report at Exhibits 2 and 3.

[230] *See*, *e.g.*, IMM 2004-11 Indenture at WF_BR_000464169; IMM 2004-11 Prospectus Supplement at WF_BR_000463536.

[231] Zhu, Hoaxing. "Finding a Good Price in Opaque Over-the-Counter Markets." *Review of Financial Studies* 25.4 (2012): 1255-1285 at 1255. *See also* Teleanu, Florin. Deposition (Jan. 12, 2017) ("Teleanu Dep.") at 95:11-18 [redacted]

[232] Teleanu Dep. at 165:6-11 [redacted]

[233] Dodd, Randall. "Markets: Exchange or Over-the-Counter." *International Monetary Fund: Finance and Development.* (July 29, 2017). <http://www.imf.org/external/pubs/ft/fandd/basics/markets.htm> (accessed Nov. 17, 2017).

[234] Zhu, *supra* note 231, at 1255.

[235] Hartzmark Dep. at 228:18-229:1 [redacted]

[236] Hartzmark HSBC Rebuttal Report at Exhibit 1.

[237] Hartzmark Dep. at 240:21-24 [redacted]

[238] *Id.* at 255:24-256:3.

[239] Hartzmark U.S. Bank Supplemental Rebuttal Report at Exhibit 4; Hartzmark HSBC Rebuttal Report at Exhibit 3.

[240] Hartzmark HSBC Rebuttal Report at ¶ 92; Hartzmark Dep. at 251:3-8 [redacted]

[241] Hartzmark HSBC Rebuttal Report at ¶ 92. Further, Dr. Hartzmark states in his deposition in this case that he would allow the [redacted] Hartzmark Dep. at 252:16-20.

[242] Hartzmark HSBC Rebuttal Report at fn 83.

[243] Hartzmark Dep. at 252:5-10 [redacted]

[244] It is noteworthy that Dr. Hartzmark provides no support for his "financial benefits" methodology apart from his own reports in the handful of current matters against trustees. He has not identified any academic literature directly in support of the analysis nor any case precedent where anything like his "financial benefit" analysis was accepted as a reliable methodology for determining damages on a class-wide basis for RMBS securities. Further, Dr. Hartzmark's financial benefit analysis to calculate damages is different from his own proposed damages methodology in Policemen's Annuity. *See* Policemen's Annuity Opening Report at ¶¶ 49-52; and Policemen's Annuity Rebuttal Report at ¶¶ 53-56, and different from another plaintiffs' expert's proposed damages methodology in another pending RMBS trustee matter. *See* Dalrymple, W. Scott. Expert Report of W. Scott Dalrymple, CFA. *Royal Park Investments SA/NV v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 114-cv-09764) (submitted Jan. 30, 2017, filed June 29, 2017).

[245] Hartzmark Report at ¶ 73.

[246] Hartzmark Dep. at 235:3-23 [redacted] *see also* Hartzmark Dep. at 296:11-20 [redacted]

[redacted] *see also* Hartzmark Policemen's Annuity Opening Report at ¶¶ 49-52; Policemen's Annuity Rebuttal Report at ¶¶ 53-56.

[247] Hartzmark Dep. at 248:4-18 [redacted]

[248] *See* Hartzmark, Michael L. Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *Fixed Income Shares: Series M, et al. v. Citibank N.A., et al.* (S.D.N.Y. No. 14-cv-09373) (Nov. 14, 2016) (HARTZMARK_WELLS FARGO 00000001) at ¶¶ 44-46, Exhibit I-B.

[249] Hartzmark HSBC Rebuttal Report at ¶¶ 78, 89.

[250] *See* Hartzmark Dep. at 251:3-8.

[251] Hartzmark HSBC Rebuttal Report at fn 83.

[252] Hartzmark Report at ¶ 73 (emphasis in original).

[253] *Id.* at ¶ 73.

[254] Hartzmark Dep. at 238:8-11 [redacted] and *id.* at 239:4-18 [redacted]

[255] Named Plaintiffs' Valuation Documents: 20171004_WF-PIMCO-HIGHLY_CONFIDENTIAL-FOR-DISCUSSTION-PURPOSES-ONLY.xlsx; Bloomberg, L.P. (accessed Nov. 27, 2017).

[256] Hartzmark HSBC Rebuttal Report at fn 74.

[257] Hartzmark U.S. Bank Supplemental Reply Report at Exhibit 4. In this report, Dr. Hartzmark appears to refer to "financial benefits" as the "Value of Recovery."

[258] Hartzmark Dep. at 17:5-19 [redacted]

[259] FMIC 2007-1 Transfer and Servicing Agreement at § 6.02(e)(i)(2)(C) and 6.02(e)(ii)(2) (WF_BR_000452937-8).

[260] Hartzmark Dep. at 147:18-25 [redacted] *id.* at 149:5-10 [redacted] and *id.* at 219:17-221:8 [redacted]

[261] *See id.* at 147:18-25.

[262] Gerardi, Kristopher, Adam Hale Shapiro, and Paul S. Willen. "Subprime Outcomes: Risky Mortgages, Homeownership Experiences, and Foreclosures." *Federal Reserve Bank of Boston Working Papers* 07–15 (Dec. 3, 2007): 1–57 at 1.

[263] Foote, Christopher L., Kristopher Gerardi, Lorenz Goette, and Paul S. Willen. "Just the Facts: An Initial Analysis of Subprime's Role in the Housing Crisis." *Journal of Housing Economics* 17 (2008): 291–305 at 293.

[264] Fabozzi, Frank J., and John N. Dunlevy. *Real Estate-Backed Securities*. New Hope, PA: Frank J. Fabozzi Associates (2001) at 5.

[265] Nothaft, Frank E. "The Contribution of Home Value Appreciation to US Economic Growth." *Urban Policy and Research* 22.1 (Mar. 2004): 23-34 at 23.

[266] Doms, Mark, Fred Furlong, and John Krainer. "Subprime Mortgage Delinquency Rates." *Federal Reserve Bank of San Francisco Working Paper* 2007–33 (Nov. 2007): 1-29 at 5-6.

[267] Foote, Gerardi, Goette & Willen, *supra* note 263, at 293.

[268] Pennington-Cross, Anthony, and Souphala Chomsisengphet. "Subprime Refinancing: Equity Extraction and Mortgage Termination." *Real Estate Economics* 35.2 (Summer 2007): 233-263 at 233.

[269] Ellis, Luci. "How Many in Negative Equity? The Role of Mortgage Contract Characteristics." *BIS Quarterly Review* (Dec. 2008): 81-93 at 82.

[270] Gerardi, Kristopher, Kyle F. Herkenhoff, Lee E. Ohanian, and Paul S. Willen. "Unemployment, Negative Equity, and Strategic Default." *Federal Reserve Bank of Atlanta Working Paper* 2013-4 (Aug. 2013): 1-50 at 2.

[271] *Id*. at 17, 23.

[272] Hartzmark Dep. at 146:25-147:6 [redacted]

[273] Bennett, Paul B., Frank M. Keane, and Patricia C. Mosser. "Mortgage Refinancing and the Concentration of Mortgage Coupons." *Federal Reserve Bank of New York Current Issues in Economics and Finance* 5.4 (Mar. 1999): 1-6 at 4.

[274] Harvey, James, and Kenneth Spong. "Home Financing for Low- and Moderate-Income Borrowers: What Are the Trends in Denver?" *Federal Reserve Bank of Kansas City Financial Industry Perspectives* (Oct. 2005): 1-16 at 2.

[275] Deng, Yongheng, John M. Quigley, and Robert van Order. "Mortgage Terminations, Heterogeneity and the Exercise of Mortgage Options." *Econometrica* 68.2 (Mar. 2000): 275–307 at 289; *see also*, Capozza, Dennis R., Dick Kazarian, and Thomas A. Thomson. "Mortgage Default in Local Markets." *Real Estate Economics* 25.4 (1997): 631-655 at 654; Yang, Tyler T., Henry Buist, and Isaac F. Megbolugbe. "An Analysis of the Ex Ante Probabilities of Mortgage Prepayment and Default." *Real Estate Economics* 26.4 (Dec. 1998): 651–676 at 675.

[276] Gerardi, Herkenhoff, Ohanian & Willen, *supra* note 270, at 25.

[277] Nettleton, Sarah, and Roger Burrows. "Mortgage Debt, Insecure Home Ownership and Health: An Exploratory Analysis." *Sociology of Health & Illness* 20.5 (Sept. 1998): 731–753 at 735-736; *See also*, Carroll, Christopher D., Karen E. Dynan, and Spencer D. Krane. "Unemployment Risk and Precautionary Wealth: Evidence from Households' Balance Sheets." *The Review of Economics and Statistics* 85.3 (Aug. 2003): 586-604 at 602; and Guiso, Luigi, Paola Sapienza, and Luigi Zingales. "The Determinants of Attitudes Toward Strategic Default on Mortgages." *The Journal of Finance* 68.4 (Aug. 2013): 1473–1515 at 1475.

[278] Hartzmark Dep. at 147:7-11 [redacted]

[279] Fabozzi, Bhattacharya & Berliner, *supra* note 13, at 231.

[280] *See* Hartzmark Dep. at 219:17-220:3 [redacted]

[281] Iyer, Rajkamal, José-Luis Peydró, Samuel da-Rocha-Lopes, and Antoinette Schoar. "Interbank Liquidity Crunch and the Firm Credit Crunch: Evidence from the 2007–2009 Crisis." *Review of Financial Studies* 27.1 (Oct. 2013): 347–372 at 347.

[282] Adrian, Tobias, Christopher R. Burke, and James McAndrews. "The Federal Reserve's Primary Dealer Credit Facility." *Federal Reserve Bank of New York Current Issues in Economics and Finance* 15.4 (2009): 1-11 at 7.

[283] Chor, Davin, and Kalina Manova. "Off the Cliff and Back? Credit Conditions and International Trade During the Global Financial Crisis." *Journal of International Economics* 87.1 (2012): 117-133 at 117; Mian, Atif, Kamalesh

Rao, and Amir Sufi. "Household Balance Sheets, Consumption, and the Economic Slump." *The Quarterly Journal of Economics* (2013): 1687-1726 at 1721.

[284] Cecchetti, Stephen G. "Crisis and Responses: The Federal Reserve in the Early Stages of the Financial Crisis." *Journal of Economic Perspectives* 23.1 (2009): 51-75 at 64.

[285] Mantell, Ruth. "U.S. Consumer Confidence Plunges to Record Low." *MarketWatch* (Oct. 28, 2008). <http://www.marketwatch.com/story/us-consumer-confidence-plunges-on-financial-crisis> (accessed Oct. 2, 2017).

[286] Howley, Kathleen. "U.S. Homeownership Rate Falls to the Lowest Level Since the 1960s." *Bloomberg Business* (July 28, 2015). <http://www.bloomberg.com/news/articles/2015-07-28/u-s-homeownership-rate-falls-to-lowest-since-the-1960s> (accessed Oct. 2, 2017).

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[288] Goetzmann, William N., Liang Peng, and Jacqueline Yen. "The Subprime Crisis and House Price Appreciation." *The Journal of Real Estate Finance and Economics* 44.1–2 (May 31, 2011): 36–66 at 42.

[289] Gerardi, Shapiro & Willen, *supra* note 262, at 1.

Exhibit 1
Relevant Trusts[1]

Issuing Trust Name	Abbreviated Trust Name
American Home Mortgage Investment Trust 2004-2	AHM 2004-2
Impac CMB Trust Series 2004-6	IMM 2004-6
Impac CMB Trust Series 2004-11	IMM 2004-11
Impac CMB Trust Series 2005-2	IMM 2005-2
Impac CMB Trust Series 2005-3	IMM 2005-3
Impac CMB Trust Series 2005-6	IMM 2005-6
Irwin Whole Loan Home Equity Trust 2005-A	IRWHE 2005-A
Irwin Whole Loan Home Equity Trust 2006-2	IRWHE 2006-2
Bear Stearns Structured Products Inc. 2007-EMX1	BSSP 2007-EMX1
Fieldstone Mortgage Investment Trust, Series 2007-1	FMIC 2007-1
MSDWCC HELOC Trust 2007-1	MSHLC 2007-1
Riverview HECM Trust 2007-2A	RVMLT 2007-2A

Note:
1. Relevant Trusts are those trusts identified in Exhibit 1 of the Amended Complaint.

Source:
Amended Class Action Complaint. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N. A.* (S.D.N.Y. No. 14-cv-9371) (Feb. 23, 2016).

Exhibit 2
Named Plaintiffs' Relevant Purchases

Named Plaintiff	Relevant Trust	At-Issue Tranche	CUSIP	Purchase Amount[1]	Purchase Date	Purchased After Derivative Complaint
BlackRock	IMM 2004-11	1-A-2	45254NMA2	$45,000,000	June 2, 2015	✓
	IMM 2005-6	1-A-1	45254NQG5	$48,592,000	June 18, 2015	✓
	IRWHE 2006-2	IIA-2	46412QAC1	$5,000,000	June 4, 2015	✓
	MSHLC 2007-1	A	55352RAA6	$6,462,000	Mar. 24, 2015[2]	✓
DZ Bank	IMM 2004-6	1-A-2	45254NKD8	$20,000,000	June 25, 2004	
PIMCO	AHM 2004-2	II-A	02660TAW3	$96,818,000	Nov. 15, 2012	
	AHM 2004-2	II-A	02660TAW3	$750,000	May 23, 2014	
	AHM 2004-2	M-1	02660TBF9	$18,930,000	May 31, 2012	
	IMM 2004-6	1-A-2	45254NKD8	$264,587,300	June 13, 2011[3]	
	IMM 2004-6	1-A-2	45254NKD8	$20,000,000	Apr. 30, 2013	
	IMM 2004-6	1-A-2	45254NKD8	$200,000	Apr. 30, 2014	
	IMM 2004-6	2-A	45254NJW8	$8,500,000	May 21, 2013	
	IMM 2004-11	2-A-1	45254NMB0	$11,000,000	Oct. 20, 2009	
	IMM 2004-11	2-A-1	45254NMB0	$1,000,000	June 13, 2011	
	IMM 2004-11	2-A-1	45254NMB0	$40,000,000	Apr. 30, 2013[4]	
	IMM 2005-2	1-A-1	45254NMY0	$60,000,000	Apr. 30, 2013	
	IMM 2005-6	1-A-1	45254NQG5	$20,000,000	Sept. 2, 2005	
	IMM 2005-6	1-A-2	45254NQW0	$120,000,000	July 12, 2012	
	BSSP 2007-EMX1	A-2	07402LAB8	$2,500,000	June 24, 2014[5]	✓
	BSSP 2007-EMX1	M-2	07402LAD4	$3,251,000	May 5, 2017	✓
	RVMLT 2007-2A	A-1	769423AA2	$7,800,000	Apr. 29, 2010	
	RVMLT 2007-2A	A-1	769423AA2	$19,188,567	Sept. 29, 2010	
	RVMLT 2007-2A	A-1	769423AA2	$2,500,000	Nov. 22, 2010	
Prudential	FMIC 2007-1	2-A1	31659YAB0	$21,009,073	Apr. 9, 2007	
	MSHLC 2007-1	A	55352RAA6	$1,320,000	Feb. 21, 2014[2]	
	RVMLT 2007-2A	A-1	769423AA2	$19,000,000	Apr. 29, 2010	
	RVMLT 2007-2A	A-1	769423AA2	$26,200,000	Apr. 30, 2010	
	RVMLT 2007-2A	A-1	769423AA2	$1,500,000	Dec. 18, 2014	✓

Exhibit 2
Named Plaintiffs' Relevant Purchases

Named Plaintiff	Relevant Trust	At-Issue Tranche	CUSIP	Purchase Amount[1]	Purchase Date	Purchased After Derivative Complaint
Sealink	IMM 2005-2	1-A-1	45254NMY0	$100,000,000	June 10, 2008	
TIAA-CREF	IMM 2004-11	2-A-1	45254NMB0	$180,000,000	May 30, 2013	
	IMM 2004-11	2-A-1	45254NMB0	$10,000,000	Sept. 13, 2013	
	IMM 2004-11	2-A-1	45254NMB0	$3,000,000	June 3, 2014	
	IMM 2004-11	2-A-2	45254NMC8	$15,000,000	Sept. 22, 2015	✓
	IMM 2005-3	A-1	45254NNP8	$80,000,000	Nov. 15, 2013	
	IMM 2005-6	1-A-1	45254NQG5	$65,087,419	June 15, 2012	
	IMM 2005-6	1-A-1	45254NQG5	$75,190,725	May 2, 2013	
	IRWHE 2005-A	A-3	464187CB7	$11,000,000	Nov. 19, 2010	
	IRWHE 2006-2	IIA-3	46412QAD9	$7,000,000	July 12, 2006	

Notes:

1. Purchase Amount reflects the total amount of original principal purchased by Named Plaintiffs for each date and CUSIP, as reported in Interrogatories Set 1, Amended Exhibit 6, and 2017.12.12 Wells (Fed) PIMCO Holdings Chart.
2. This tranche was fully paid-off in March 2017.
3. 2017.12.12 Wells (Fed) PIMCO Holdings Chart reflects "$2,500,000 Asset Deposit" under the column heading "Date of Sale (if any)" for one of five purchases of this CUSIP by PIMCO on this date.
4. 2017.12.12 Wells (Fed) PIMCO Holdings Chart reflects "$1,700,000 Asset Deposit" under the column heading "Date of Sale (if any)" for this purchase.
5. 2017.12.12 Wells (Fed) PIMCO Holdings Chart reflects Feb. 22, 2017 under the column heading "Date of Sale (if any)" and 97.00 under the column heading "Sale Price (if any)" for this purchase.

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Derivative Complaint. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A., et al.* (N.Y. Sup. Ct. (N.Y. Co.) No. 651867/2014) (June 18, 2014).

-MSHLC 2007-1 Remittance Reports (Mar. 26, 2007 - Nov. 27, 2017).

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

Exhibit 3

Example Principal Waterfall Distribution Differences[1]

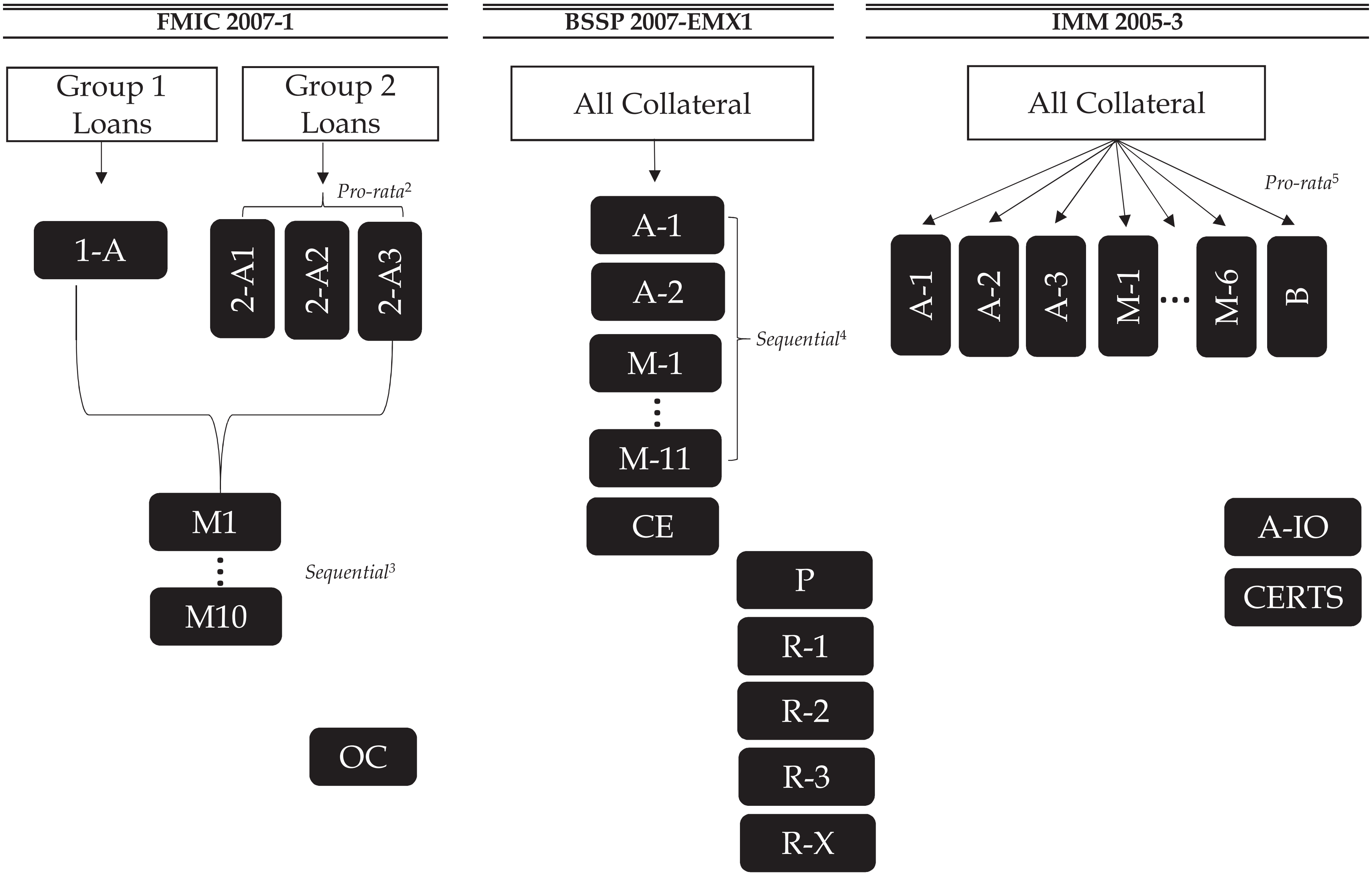


Exhibit 3

Example Principal Waterfall Distribution Differences[1]

Notes:

1. Example principal waterfall distributions illustrate the priority of principal distributions as reflected in the Nov. 27, 2017 remittance reports. At other points in time, different principal waterfall priorities may apply. The OC, P, A-IO, residual tranches, and certificates with principal balances of zero are included for completeness.
2. FMIC 2007-1 Transfer and Servicing Agreement at § 6.02(e)(i)(2)(C).
3. FMIC 2007-1 Transfer and Servicing Agreement at § 6.02(e)(i)(1)(E-N) and (2)(E-N).
4. BSSP 2007-EMX1 Indenture at § 3.02(a)(2)(A)(i-xiii).
5. IMM 2005-3 Indenture at § 3.05(c).

Sources:

-Indentures: IMM 2005-3 (WF_BR_000467283 at WF_BR_000467296) and BSSP 2007-EMX1 (WF_BR_000488190 at WF_BR_000488199-201).

-Transfer and Servicing Agreement: FMIC 2007-1 (WF_BR_000452830 at WF_BR_000452935-8).

-Remittance Reports: IMM 2005-3 (Nov. 27, 2017); BSSP 2007-EMX1 (Nov. 27, 2017); and FMIC 2007-1 (Nov. 27, 2017).

Exhibit 4

AHM 2004-2 Waterfall Decision Tree[1]

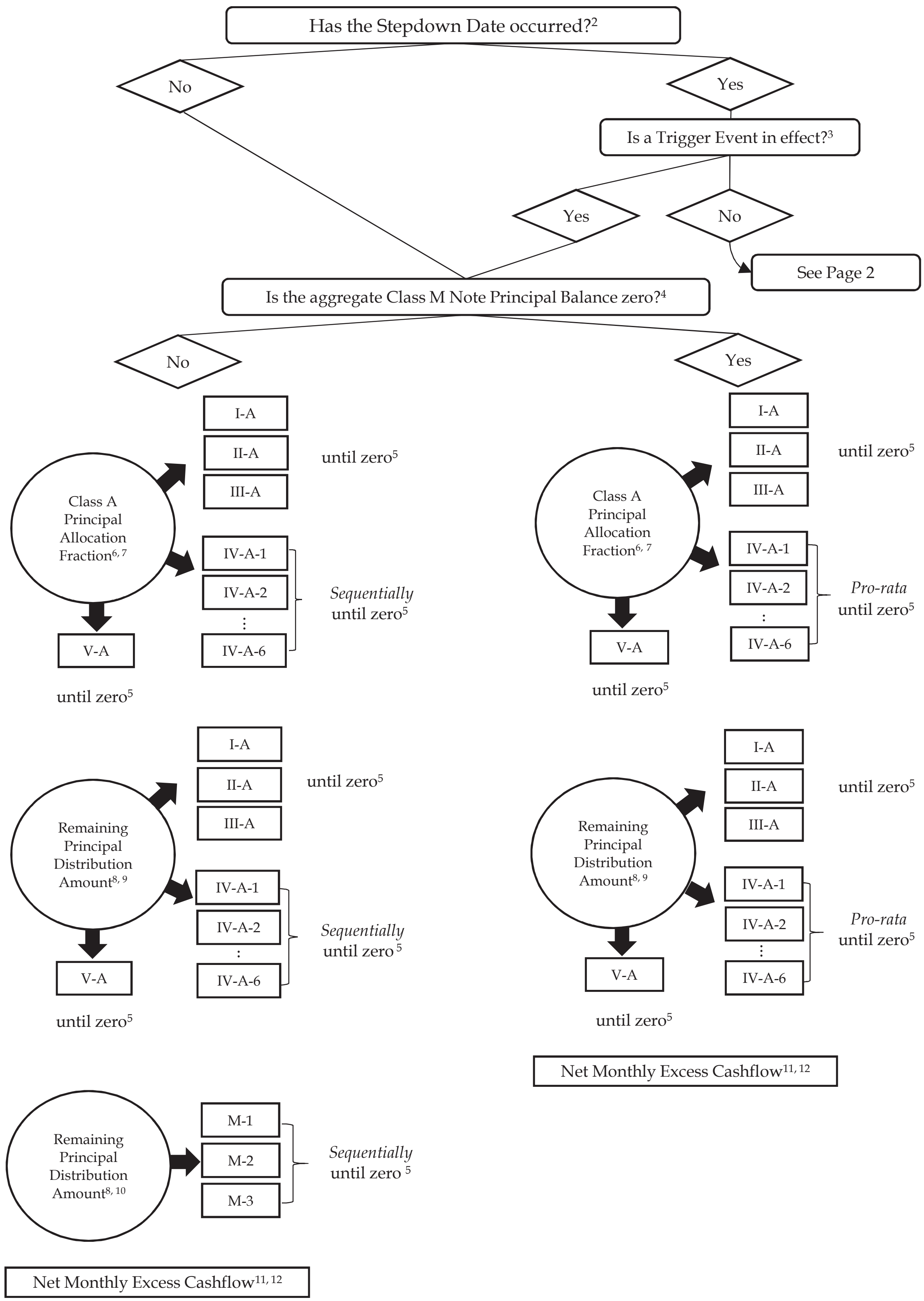


Exhibit 4

AHM 2004-2 Waterfall Decision Tree[1]

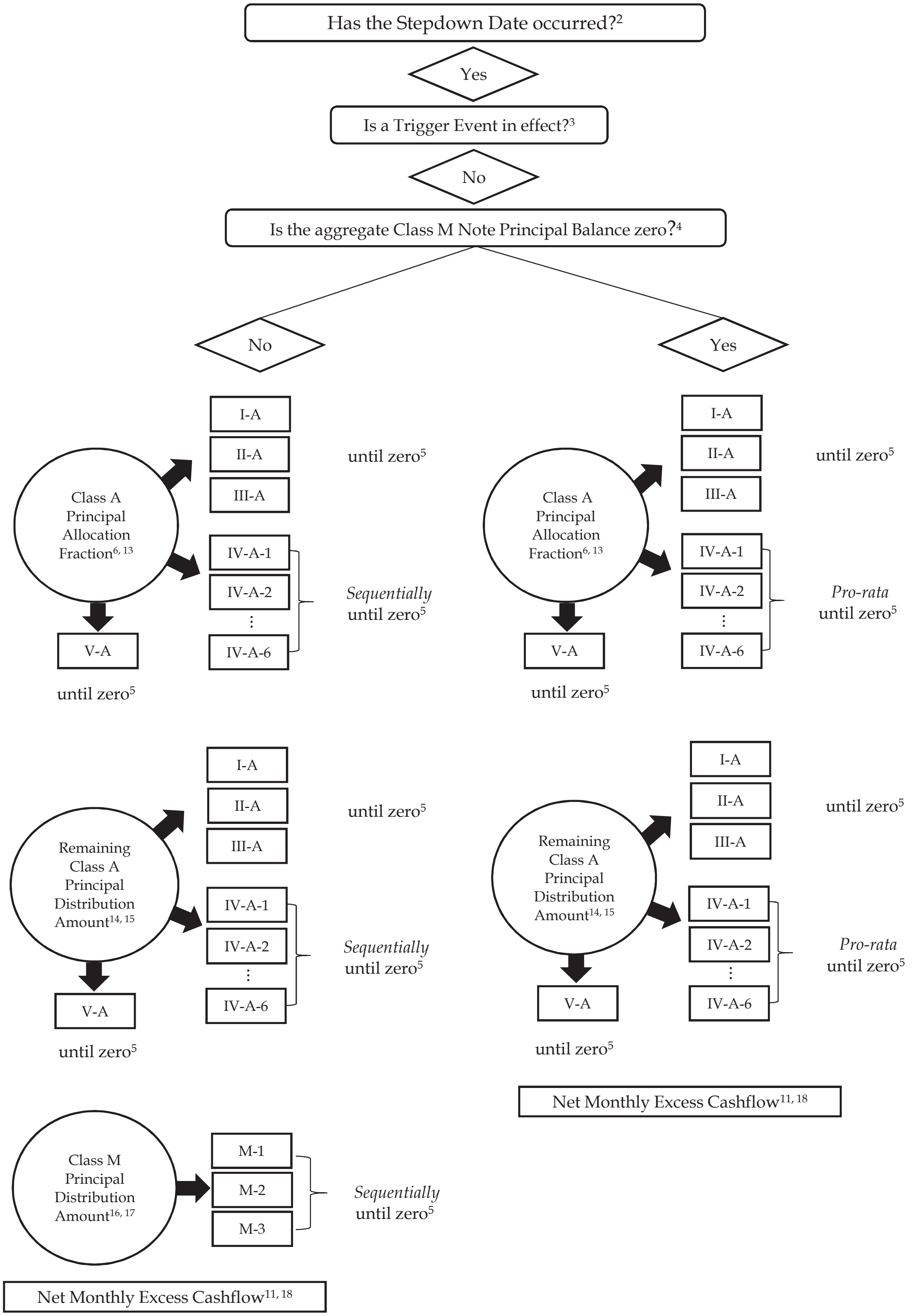


Exhibit 4

AHM 2004-2 Waterfall Decision Tree[1]

Notes:

1. Waterfall refers to the principal distribution priorities. Interest and Net Monthly Excess Cashflow distribution priorities differ. Capitalized terms are defined in the AHM 2004-2 Indenture unless otherwise noted.
2. AHM 2004-2 Indenture at § III.05(c and d)(WF_BR_000435919). For information on the Stepdown Date, *see* AHM 2004-2 Indenture at WF_BR_000436050.
3. AHM 2004-2 Indenture at § III.05(c and d)(WF_BR_000435919). For information on Trigger Events, *see* AHM 2004-2 Indenture at WF_BR_000436050-1.
4. AHM 2004-2 Indenture at § III.05(e), as modified in Supplemental Indenture Number Three to the Indenture (WF_BR_000436073).
5. Until zero indicates that certificates are paid until the Note Principal Balance is reduced to zero.
6. For information on the Class A Principal Allocation Fraction, *see* AHM 2004-2 Indenture at WF_BR_000436017.
7. AHM 2004-2 Indenture at § III.05(c)(i)(WF_BR_000435919) and § III.05(e)(WF_BR_00043673).
8. The Remaining Principal Distribution amount refers to the Principal Distribution Amount that remains after the Class A Principal Allocation Fraction has been paid. For information on the Principal Distribution Amount, *see* AHM 2004-2 Indenture at WF BR_000436044.
9. AHM 2004-2 Indenture at § III.05(c)(ii)(WF_BR_000435919) and § III.05(e)(WF_BR_00043673).
10. AHM 2004-2 Indenture at § III.05(c)(iii)(WF_BR_000435919).
11. For information on the Net Monthly Excess Cashflow, *see* AHM 2004-2 Indenture at WF_BR_000436038. For information on its allocation, *see* AHM 2004-2 Indenture at § III.05(f)(WF_BR_000435920-2).
12. AHM 2004-2 Indenture at § III.05(c)(iv)(WF_BR_000435919).
13. AHM 2004-2 Indenture at § III.05(d)(i)(WF_BR_000435919-20) and § III.05(e)(WF_BR_00043673).
14. The Remaining Class A Principal Distribution Amount refers to the Class A Principal Distribution Amount that remains after the Class A Principal Allocation Fraction has been paid. For information on the Class A Principal Distribution Amount, *see* AHM 2004-2 Indenture at WF_BR_000436017.
15. AHM 2004-2 Indenture at § III.05(d)(ii)(WF_BR_000435920) and § III.05(e)(WF_BR_00043673).
16. The Class M Principal Distribution Amount refers to the Class M-1 Principal Distribution Amount, the Class M-2 Principal Distribution Amount, and the Class M-3 Principal Distribution amount. For information on these amounts, *see* AHM 2004-2 Indenture at WF_BR_000436017-8.
17. AHM 2004-2 Indenture at § III.05(d)(iii, iv, v)(WF_BR_000435920).
18. AHM 2004-2 Indenture at § III.05(d)(vi)(WF_BR_000435920).

Source:

American Home Mortgage Investment Trust 2004-2, Wells Fargo Bank, N.A., Indenture (June 30, 2004) (WF_BR_000435905).

Exhibit 5
Trust Differences

Relevant Trust	Closing Date	Private Offering?[1]	Number of Mortgage Loans[2]	Initial Loan Pool Balance[3]	Number of Loan Groups
AHM 2004-2	June 30, 2004	No	5,123	$1,380,859,289.00	5
IMM 2004-6	June 29, 2004	No	8,163[4]	$2,180,013,453.00[5]	2
IMM 2004-11	December 30, 2004	No	6,160[4]	$1,500,001,683.00[5]	2
IMM 2005-2	March 3, 2005	No	4,518[4]	$1,320,980,987.00[5]	2
IMM 2005-3	April 6, 2005	No	4,006	$873,375,574.00	1
IMM 2005-6	September 9, 2005	No	5,607	$1,722,555,600.00[5]	2
IRWHE 2005-A	January 28, 2005	No	6,911	$357,816,901.38	1
IRWHE 2006-2	July 21, 2006	Yes	5,375[4]	$303,051,389.54[5]	2
BSSP 2007-EMX1	October 1, 2007	Yes	856	$189,831,957.00	1
FMIC 2007-1	April 12, 2007	No	2,077	$373,173,174.00	2
MSHLC 2007-1	February 27, 2007	No	8,632	$730,376,794.00	1
RVMLT 2007-2A	July 27, 2007	Yes	3,155	$304,205,556.00	1

Relevant Trust	Has Prefunding Account?	Adjustable Rate Mortgage Loans (%)	Single Family Residence (%)[6]	Properties in California (%)[7]	Maximum Remaining Term To Maturity[8]
AHM 2004-2	No	93.05[9]	60.70	18.86	475 Months
IMM 2004-6	No	Group 1: 100.00 Group 2: 0.00	Group 1: 66.17 Group 2: 69.52	Group 1: 67.19 Group 2: 43.99	360 Months
IMM 2004-11	Yes - Group 1	Group 1: 88.34 Group 2: 91.58	Group 1: 61.42 Group 2: 70.76	Group 1: 40.12 Group 2: 69.59	360 Months
IMM 2005-2	No	Group 1: 89.22 Group 2: 100.00	Group 1: 62.94 Group 2: 0.00	Group 1: 58.03 Group 2: 72.92	360 Months
IMM 2005-3	Yes	82.83	63.73	45.11	360 Months
IMM 2005-6	No	Group 1: 86.48 Group 2: 100.00	Group 1: 67.85 Group 2: 0.00	Group 1: 54.23 Group 2: 56.87	360 Months
IRWHE 2005-A	No	0.00	76.25	12.35	353 Months
IRWHE 2006-2	No	Group 1: 100.00 Group 2: 0.71[10]	Group 1: 74.84 Group 2: 78.83	Group 1: 19.82 Group 2: 3.81	357 Months
BSSP 2007-EMX1	No	75.45	66.18	7.58	471 Months
FMIC 2007-1	No	49.70	68.66[12]	35.36	478 Months
MSHLC 2007-1	Yes	91.96[11]	75.64	24.83	360 Months
RVMLT 2007-2A	No	100.00	85.70	19.11	n/a

Exhibit 5
Trust Differences

Relevant Trust	Contains Balloon Loans?[13]	Contains Reverse Mortgages?	Contains HELOC Loans?[14]	Has Trigger Events?[15]	Has a Stepdown Date?
AHM 2004-2	No	No	No	Yes	Yes
IMM 2004-6	Yes	No	No	No	No
IMM 2004-11	Yes	No	No	No	No
IMM 2005-2	No	No	No	Group 2 Only	Group 2 Only
IMM 2005-3	Yes	No	No	No	No
IMM 2005-6	Yes	No	No	Group 2 Only	Group 2 Only
IRWHE 2005-A	No	No	No	Yes	Yes
IRWHE 2006-2	No	No	Yes	Yes	Yes
BSSP 2007-EMX1	Yes	No	No	Yes	Yes
FMIC 2007-1	Yes	No	No	Yes	Yes
MSHLC 2007-1	Yes	No	Yes	Yes	Yes
RVMLT 2007-2A	No	Yes	No	No	No

Relevant Trust	Has Target Overcollateralization?[16]	Has Bond Insurance?[17]	Has Interest Only Notes?	Has Fixed Rate Notes?	Has Derivative Agreements?[18]
AHM 2004-2	Yes	No	No	Yes	No
IMM 2004-6	Yes	Yes - Ambac	No	Yes	Yes
IMM 2004-11	Yes	Yes - FGIC	No	No	Yes
IMM 2005-2	Yes	No	Yes	No	Yes
IMM 2005-3	Yes	Yes - FGIC	Yes	No	Yes
IMM 2005-6	Yes	Yes - Ambac	No	No	Yes
IRWHE 2005-A	Yes	No	Yes	Yes	No
IRWHE 2006-2	Yes	Yes - FGIC	No	Yes	No
BSSP 2007-EMX1	Yes	No	No	No	Yes
FMIC 2007-1	Yes	No	No	Yes	Yes
MSHLC 2007-1	Yes	Yes - Ambac	No	No	No
RVMLT 2007-2A	No	No	Yes	No	Yes

Exhibit 5
Trust Differences

Notes:

1. A trust is considered to be a private offering if its Offering Documents were provided only to "Qualified Institutional Buyers."
2. The number of mortgage loans refers to the number of mortgage loans in all groups in the trust as of the applicable cut-off date, as specified in the Offering Documents.
3. The initial pool balance refers to the aggregate principal balance of all loans in all groups in the trust as of the applicable cut-off date, as specified in the Offering Documents.
4. The number of mortgage loans in this trust is calculated as the sum of the number of mortgage loans in group 1 and group 2.
5. The initial pool balance of this trust is calculated as the sum of the principal balance of the mortgage loans in group 1 and group 2.
6. Single family residence percentage refers to loans listed as having a property type of single family.
7. Loans in California refers to the percent of loans (by principal balance as of the cut-off date) secured by properties located in California.
8. Maximum remaining term to maturity refers to the maximum remaining stated or scheduled term to maturity of the mortgage loans in all groups as of the applicable cut-off date, as specified in the Offering Documents.
9. The adjustable rate mortgage percentage is calculated as the total percent of loans that will experience a rate adjustment.
10. The adjustable rate mortgage percentage refers to the percent of loans in group II listed as having a product type of HEL ARMs.
11. The adjustable rate mortgage percentage is calculated as the total percent of loans listed as having a product type of adjustable rate mortgage loan with an initial interest only term, first lien HELOC or second lien HELOC.
12. Single family residence percentage is the sum of the percent of single family attached and single family detached properties.
13. A trust is considered to contain balloon loans if any loans are described as balloon loans or requiring a balloon payment.
14. A trust is considered to contain HELOC loans if it contains home equity loans with a revolving line of credit.
15. A trust is considered to have trigger events if the Offering Documents refer to a "trigger event" with respect to any payment date, a "loss and delinquency trigger," or "loss and delinquency test," but not if they refer to any trigger related to a swap provider.
16. A trust is considered to have target overcollateralization if the Offering Documents refer to an "Overcollateralization Target Amount," or "Targeted Overcollateralization," or a "Required Overcollateralization Amount."
17. A trust is considered to have bond insurance if one or more of its certificates are guaranteed by a monoline insurer.
18. Derivative agreements include "Derivative Contracts," an "Interest Rate Swap Agreement," an "Interest Rate Cap Agreement," or a "Swap Agreement."

Source:

Offering Documents: AHM 2004-2 (WF_BR_000435483); IMM 2004-6 (WF_BR_000369105); IMM 2004-11 (WF_BR_000463386); IMM 2005-2 (WF_BR_000462026); IMM 2005-3 (WF_BR_000466799); IMM 2005-6 (WF_BR_000465204); IRWHE 2005-A (WF_BR_000337890); IRWHE 2006-2 (WF_BR_000394461); BSSP 2007-EMX1 (WF_BR_000487885); FMIC 2007-1 (WF_BR_000452197); MSHLC 2007-1 (WF_BR_000513272); and RVMLT 2007-2A (WF_BR_000493105).

Exhibit 6
Loan Group Differences[1, 2]

Relevant Trust	Supporting Loan Group[3]	Credit Score	Original Loan-to-Value Ratio	Original Combined Loan-to-Value Ratio	Average Loan Balance ($)[4]	Prepayment Penalty (%)[5]	Adjustable Rate Mortgage (%)
AHM 2004-2	1	709	77.78	-	282,490.00	0.00	100.00
	2	720	74.97	-	336,775.00	0.00	100.00
	3	691	80.82	-	216,355.00	0.00	100.00
	4	715	76.55	-	288,631.00	0.00	100.00
	5	679	77.13	-	168,672.00	0.00	0.00
IMM 2004-6	1	699	76.80	-	272,517.00	70.68	100.00
	2	703	71.49	-	218,463.00	48.71	0.00
IMM 2004-11	1	686	77.70	-	188,560.00	69.69	88.34
	2	688	77.05	-	399,051.00	61.35	91.58
IMM 2005-2	1	693	75.11	-	272,356.00	45.80	89.22
	2	724	69.81	-	1,080,186.00	100.00	100.00
IMM 2005-3	All	688	75.37	-	218,017.00	71.51	82.83
IMM 2005-6	1	685	78.19	-	276,316.00	76.80	86.48
	2	739	65.16	-	1,313,744.00	100.00	100.00
IRWHE 2005-A	All	689	-	108.03	51,774.98	84.90	0.00
IRWHE 2006-2	1	673	-	95.99	53,420.00	66.29	100.00
	2	693	-	111.17	57,305.00	65.98	0.71[6]
BSSP 2007-EMX1	All	621	84.11	86.98	221,766.00	53.30	75.45
FMIC 2007-1	1	627	84.68	89.84	152,407.00	79.48	48.13
	2	649	82.45	90.66	208,194.00	85.67	50.90
MSHLC 2007-1	All	742	-	70.05	84,612.70	0.00	91.96[7]
RVMLT 2007-2A	All	-	49.75	-	96,420.00	0.00	100.00

Exhibit 6
Loan Group Differences[1, 2]

Relevant Trust	Supporting Loan Group[3]	Full Documentation (%)	Owner Occupied (%)[8]	Single Family (%)[9]	Loan Purpose: Purchase (%)	Loan Purpose: Cash Out Refinance (%)	Loan Purpose: Rate / Term Refinance (%)
AHM 2004-2	1	49.19	88.37	60.54	52.58	28.09	19.33
	2	89.55	95.78	62.89	50.19	25.03	24.78
	3	12.04	83.01	58.43	56.94	31.01	12.05
	4	67.24	90.74	60.17	53.91	25.95	20.14
	5	18.14	81.74	63.34	46.12	39.90	13.99
IMM 2004-6	1	26.23	81.82	66.17	60.59	28.64	10.77
	2	28.61	75.03	69.52	37.39	43.37	19.24
IMM 2004-11	1	25.43	78.54	61.42	62.46	28.22	9.32
	2	21.93	87.78	70.76	55.71	30.24	14.05
IMM 2005-2	1	26.90	77.54	62.94	51.73	37.28	10.98
	2	99.42	0.00	0.00	53.10	42.45	4.46
IMM 2005-3	All	27.95	79.36	63.73	58.46	31.61	9.93
IMM 2005-6	1	31.42	84.77	67.85	63.44	29.03	7.52
	2	99.16	0.00	0.00	51.17	44.52	4.32
IRWHE 2005-A	All	-	99.91	76.25	-	-	-
IRWHE 2006-2	1	-	99.15	74.84	-	-	-
	2	-	99.94	78.83	-	-	-
BSSP 2007-EMX1	All	62.34[10]	91.84	66.18	23.03	69.91	7.06
FMIC 2007-1	1	60.51	95.23	69.61[11]	32.28	58.62	9.10
	2	36.30	98.71	67.94[11]	57.61	39.99	2.40
MSHLC 2007-1	All	-	89.96	75.64	-	-	-
RVMLT 2007-2A	All	-	-	85.70	-	-	-

Exhibit 6
Loan Group Differences[1, 2]

Notes:

1. All values are obtained from the Offering Documents. Missing values indicate the information is not available in the Offering Documents.
2. The values, except for average loan balance, are listed as reported in the Offering Documents as weighted averages based on original loan balance as of the cut-off date.
3. If the group listed is "All," then that certificate is backed by all the loans in the trust.
4. Average Loan Balance ($) refers to the current or scheduled principal balance as of the cut-off date.
5. Prepayment Penalty (%) refers to the percent of mortgage loans that are listed as having prepayment penalty charges.
6. The adjustable rate mortgage percentage refers to the percent of loans in group 2 listed as having a product type of HEL ARMs.
7. The adjustable rate mortgage percentage is calculated as the total percent of loans listed as having a product type of adjustable rate mortgage loan with an initial interest only term, first lien HELOC or second lien HELOC.
8. Owner Occupied (%) refers to the percent of loans listed as having a property type of private residence or owner occupied.
9. Single Family (%) refers to the percent of loans listed as having a property type of single family.
10. This value includes both Full documentation and Alternative documentation types as stipulated in the Offering Documents.
11. Single family residence percentage is the sum of the percent of single family attached and single family detached properties.

Source:

Offering Documents: AHM 2004-2 (WF_BR_000435483); IMM 2004-6 (WF_BR_000369105); IMM 2004-11 (WF_BR_000463386); IMM 2005-2 (WF_BR_000462026); IMM 2005-3 (WF_BR_000466799); IMM 2005-6 (WF_BR_000465204); IRWHE 2005-A (WF_BR_000337890); IRWHE 2006-2 (WF_BR_000394461); BSSP 2007-EMX1 (WF_BR_000487885); FMIC 2007-1 (WF_BR_000452197); MSHLC 2007-1 (WF_BR_000513272); and RVMLT 2007-2A (WF_BR_000493105).

Exhibit 7
Credit Support by Tranche

AHM 2004-2		IMM 2004-6		IMM 2004-11		IMM 2005-2	
Tranche	Original Credit Support (%)[1]	Tranche	Original Credit Support (%)[1, 2]	Tranche	Original Credit Support (%)[1, 2]	Tranche	Original Credit Support (%)[1]
I-A	5.250	1-A-1	13.750	1-A-1	Insured	1-A-1	30.700
II-A	5.250	1-A-2	22.375	1-A-2	Insured	1-A-2	23.000
III-A	5.250	1-A-3	13.750	2-A-1	26.650	1-A-IO	n/a
IV-A-1	5.250	2-A	Insured	2-A-2	18.500	1-M-1	13.000
IV-A-2	5.250	M-1	11.750	2-M-1	13.350	1-M-2	8.050
IV-A-3	5.250	M-2	8.500	2-M-2	8.600	1-M-3	5.700
IV-A-4	5.250	M-3	6.250	2-M-3	5.850	1-M-4	4.000
IV-A-5	5.250	M-4	4.000	2-M-4	4.100	1-M-5	2.250
IV-A-6	5.250	M-5	1.500	2-M-5	2.000	1-M-6	1.250
V-A	5.251	M-6	0.000	2-M-6	0.750	1-B	0.000
M-1	2.000	Certs	n/a	2-B	0.000	2-A-1	69.035
M-2	1.000			Cert	n/a	2-A-2	36.322
M-3	0.400					2-M-1	30.079
N	n/a					2-M-2	20.590
OC	n/a					2-B	2.610
OT	n/a					Owner Cert	n/a

IMM 2005-3		IMM 2005-6		IRWHE 2005-A		IRWHE 2006-2	
Tranche	Original Credit Support (%)[1, 2]	Tranche	Original Credit Support (%)[1, 2]	Tranche	Original Credit Support (%)[1]	Tranche	Original Credit Support (%)[1, 2]
A-1	29.800	1-A-1	Insured	A-1	23.350	IA-1	Insured
A-2	22.000	1-A-2	Insured	A-2	23.350	IIA-1	Insured
A-3	Insured	1-M-1	13.600	A-3	23.350	IIA-2	Insured
A-IO	n/a	1-M-2	12.250	A-IO	n/a	IIA-3	Insured
M-1	12.500	1-M-3	8.300	M-1	16.450	IIA-4	Insured
M-2	8.000	1-M-4	4.650	M-2	10.700	VFN	Insured
M-3	5.600	1-M-5	2.950	M-3	8.800	Cert	n/a
M-4	4.000	1-B-1	1.000	M-4	7.050		
M-5	2.250	1-B-2	0.000	M-5	5.450		
M-6	1.250	2-A-1	54.050	M-6	3.950		
B	0.000	2-A-2	37.250	M-7	1.000		
Certs	n/a	2-M-1	26.250	X-1	n/a		
		2-M-2	16.250	X-2A	n/a		
		2-B-1	8.250	X-2B	n/a		
		2-B-2	2.249	Cert	1.000		
		Owner Trust	n/a				

Exhibit 7
Credit Support by Tranche

BSSP 2007-EMX1		FMIC 2007-1		MSHLC 2007-1		RVMLT 2007-2A[3]	
Tranche	Original Credit Support (%)[1]	Tranche	Original Credit Support (%)[1]	Tranche	Original Credit Support (%)[1, 2]	Tranche	Original Credit Support (%)[1]
A-1	49.970	1-A	22.950	A	Insured	A-1	40.884
A-2	43.150	2-A1	22.950	L	n/a	A-2	0.000
M-1	37.300	2-A2	22.950	O	n/a	X	n/a
M-2	31.900	2-A3	22.950			R	n/a
M-3	28.600	M1	19.350				
M-4	25.500	M2	16.100				
M-5	22.600	M3	14.050				
M-6	19.700	M4	12.250				
M-7	18.450	M5	10.600				
M-8	16.950	M6	9.100				
M-9	15.350	M7	7.550				
M-10	13.450	M8	6.150				
M-11	11.750	M9	5.100				
CE	n/a	M10	4.000				
P	n/a	OC	n/a				
R-1	n/a						
R-2	n/a						
R-3	n/a						
RX	n/a						

Notes:

1. Original Credit Support reflects the original credit support reported by Intex. According to Intex, it reflects the amount of losses the collateral is able to withstand before the tranche loses principal, divided by the balance of the collateral group (or groups) backing the tranche. It does not include credit supports such as excess interest or primary mortgage insurance, which may provide additional protection against losses.

2. Insured reflects that the bond was subject to an insurance policy that guaranteed certain payments on the bond.

3. According to the Offering Circular, [redacted]

Sources:

-Intex Solutions, Inc. (accessed Dec. 5, 2017).
-RVMLT 2007-2A Offering Circular at WF_BR_000493114.

Exhibit 8
Trust and Tranche Collateral Differences[1]

Relevant Trust	Tranche	Collateral Characteristics					Certificate Characteristics		
		Loan Group[2]	Group Collateral Type[3]	Number of Loans[4]	Lien Position(s)[5]	Loan Interest Rate Type(s)[6]	Certificate Interest Rate Type[7]	Initial Note Rate or Bond Margin (%)[8]	Bond Insurance[9]
AHM 2004-2	I-A	1	ALT-A	1,464	1	ARM	Adjustable	LIBOR + 0.350	No
	II-A	2	ALT-A	564	1	ARM	Fixed[10]	3.770	No
	III-A	3	ALT-A	660	1	ARM	Fixed[10]	4.340	No
	IV-A-1	4	ALT-A	1,866	1	ARM	Fixed[10]	2.440	No
	IV-A-2	4	ALT-A	1,866	1	ARM	Fixed[10]	3.635	No
	IV-A-3	4	ALT-A	1,866	1	ARM	Fixed[10]	4.550	No
	IV-A-4	4	ALT-A	1,866	1	ARM	Fixed[10]	4.550	No
	IV-A-5	4	ALT-A	1,866	1	ARM	Fixed[10]	4.550	No
	IV-A-6	4	ALT-A	1,866	1	ARM	Fixed[10]	4.550	No
	V-A	5	ALT-A	569	1	FRM	Fixed[10]	5.500	No
	M-1	All	ALT-A	5,123	1	ARM, FRM	Adjustable	LIBOR + 0.600	No
	M-2	All	ALT-A	5,123	1	ARM, FRM	Adjustable	LIBOR + 1.450	No
	M-3	All	ALT-A	5,123	1	ARM, FRM	Adjustable	LIBOR + 2.500	No
	N	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	OT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	OC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
IMM 2004-6	1-A-1	1	ALT-A	7,339	1	ARM	Adjustable	LIBOR + 0.400	No
	1-A-2	1	ALT-A	7,339	1	ARM	Adjustable	LIBOR + 0.390	No
	1-A-3	1	ALT-A	7,339	1	ARM	Adjustable	LIBOR + 0.490	No
	2-A	2	ALT-A	824	1	FRM	Fixed	5.560	Yes
	M-1	All	ALT-A	8,163	1	ARM, FRM	Adjustable	LIBOR + 0.550	No
	M-2	All	ALT-A	8,163	1	ARM, FRM	Adjustable	LIBOR + 0.600	No
	M-3	All	ALT-A	8,163	1	ARM, FRM	Adjustable	LIBOR + 0.700	No
	M-4	All	ALT-A	8,163	1	ARM, FRM	Adjustable	LIBOR + 1.150	No
	M-5	All	ALT-A	8,163	1	ARM, FRM	Adjustable	LIBOR + 1.300	No
	M-6	All	ALT-A	8,163	1	ARM, FRM	Adjustable	LIBOR + 1.550	No
	CERT	n/a	ALT-A	n/a	n/a	n/a	n/a	n/a	No
IMM 2004-11	1-A-1	1	ALT-A	4,552	1	ARM, FRM	Adjustable	LIBOR + 0.270	Yes
	1-A-2	1	ALT-A	4,552	1	ARM, FRM	Adjustable	LIBOR + 0.260	Yes
	2-A-1	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.330	No
	2-A-2	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.370	No

Exhibit 8
Trust and Tranche Collateral Differences[1]

Relevant Trust	Tranche	Collateral Characteristics					Certificate Characteristics		
		Loan Group[2]	Group Collateral Type[3]	Number of Loans[4]	Lien Position(s)[5]	Loan Interest Rate Type(s)[6]	Certificate Interest Rate Type[7]	Initial Note Rate or Bond Margin (%)[8]	Bond Insurance[9]
IMM 2004-11	2-M-1	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.520	No
	2-M-2	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.550	No
	2-M-3	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.580	No
	2-M-4	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.850	No
	2-M-5	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.920	No
	2-M-6	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 1.050	No
	2-B	2	ALT-A	1,608	1 & 2	ARM, FRM	Adjustable	LIBOR + 1.580	No
	CERT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
IMM 2005-2	1-A-1	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.260	No
	1-A-2	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.310	No
	1-A-IO	1	ALT-A	4,406	1	ARM, FRM	Fixed	1.00[11]	No
	2-A-1	2	ALT-A	112	1	ARM	Adjustable	LIBOR + 0.300	No
	2-A-2	2	ALT-A	112	1	ARM	Adjustable	LIBOR + 0.400	No
	1-M-1	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.430	No
	1-M-2	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.490	No
	1-M-3	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.510	No
	1-M-4	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.670	No
	1-M-5	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.730	No
	1-M-6	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 0.780	No
	2-M-1	2	ALT-A	112	1	ARM	Adjustable	LIBOR + 0.520	No
	2-M-2	2	ALT-A	112	1	ARM	Adjustable	LIBOR + 0.750	No
	1-B	1	ALT-A	4,406	1	ARM, FRM	Adjustable	LIBOR + 1.300	No
	2-B	2	ALT-A	112	1	ARM	Adjustable	LIBOR + 1.650	No
	CERT[12]	n/a	ALT-A	n/a	n/a	n/a	n/a	n/a	No
IMM 2005-3	A-1	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.240	No
	A-2	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.300	No
	A-3	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.180	Yes
	A-IO	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	1.450[13]	No
	M-1	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.420	No
	M-2	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.450	No
	M-3	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.500	No
	M-4	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.650	No
	M-5	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.700	No

Exhibit 8
Trust and Tranche Collateral Differences[1]

		Collateral Characteristics					Certificate Characteristics		
Relevant Trust	Tranche	Loan Group[2]	Group Collateral Type[3]	Number of Loans[4]	Lien Position(s)[5]	Loan Interest Rate Type(s)[6]	Certificate Interest Rate Type[7]	Initial Note Rate or Bond Margin (%)[8]	Bond Insurance[9]
IMM 2005-3	M-6	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 0.750	No
	B	All	ALT-A	4,006	1 & 2	ARM, FRM	Floating	LIBOR + 1.350	No
	CERTS	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
IMM 2005-6	1-A-1	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.250	Yes
	1-A-2	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.140[14]	Yes
	2-A-1	2	ALT-A	167	1	ARM	Adjustable	LIBOR + 0.340	No
	2-A-2	2	ALT-A	167	1	ARM	Adjustable	LIBOR + 0.400	No
	1-M-1	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.480	No
	1-M-2	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.510	No
	1-M-3	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.610	No
	1-M-4	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.670	No
	1-M-5	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 0.710	No
	2-M-1	2	ALT-A	167	1	ARM	Adjustable	LIBOR + 0.520	No
	2-M-2	2	ALT-A	167	1	ARM	Adjustable	LIBOR + 0.750	No
	1-B-1	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 1.350	No
	1-B-2	1	ALT-A	5,440	1 & 2	ARM, FRM	Adjustable	LIBOR + 1.550	No
	2-B-1	2	ALT-A	167	1	ARM	Adjustable	LIBOR + 1.700	No
	2-B-2	2	ALT-A	167	1	ARM	Adjustable	LIBOR + 2.250	No
	OT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
IRWHE 2005-A	A-1	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 0.170	No
	A-2	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 0.250	No
	A-3	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 0.380	No
	A-IO	All	High LTV	6,911	1 & 2	FRM	Fixed	6.000[15]	No
	M-1	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 0.570	No
	M-2	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 0.900	No
	M-3	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 1.000	No
	M-4	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 1.450	No
	M-5	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 1.550	No
	M-6	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 2.450	No
	M-7	All	High LTV	6,911	1 & 2	FRM	Variable	LIBOR + 4.000	No
	X-1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	X-2A	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	X-2B	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	CERT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No

Exhibit 8

Trust and Tranche Collateral Differences[1]

		Collateral Characteristics					Certificate Characteristics		
Relevant Trust	Tranche	Loan Group[2]	Group Collateral Type[3]	Number of Loans[4]	Lien Position(s)[5]	Loan Interest Rate Type(s)[6]	Certificate Interest Rate Type[7]	Initial Note Rate or Bond Margin (%)[8]	Bond Insurance[9]
IRWHE 2006-2	IA-1	1	HELOC	1,277	1 & 2	ARM	Variable	LIBOR + 0.150	Yes
	IIA-1	2	Second Lien, High LTV	4,098	1 & 2	ARM, FRM	Variable	LIBOR + 0.100	Yes
	IIA-2	2	Second Lien, High LTV	4,098	1 & 2	ARM, FRM	Fixed	6.240	Yes
	IIA-3	2	Second Lien, High LTV	4,098	1 & 2	ARM, FRM	Fixed	6.400	Yes
	IIA-4	2	Second Lien, High LTV	4,098	1 & 2	ARM, FRM	Fixed	6.170	Yes
	VFN	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	CERT	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
FMIC 2007-1	1-A	1	Subprime	1,062	1 & 2	ARM, FRM	Floating	LIBOR + 0.2575	No
	2-A1	2	Subprime	1,015	1 & 2	ARM, FRM	Floating	LIBOR + 0.1100	No
	2-A2	2	Subprime	1,015	1 & 2	ARM, FRM	Floating	LIBOR + 0.2700	No
	2-A3	2	Subprime	1,015	1 & 2	ARM, FRM	Floating	LIBOR + 0.3400	No
	M1	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 0.3900	No
	M2	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 0.4500	No
	M3	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 0.5500	No
	M4	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 0.9000	No
	M5	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 1.0000	No
	M6	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 1.5000	No
	M7	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 2.2500	No
	M8	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 2.2500	No
	M9	All	Subprime	2,077	1 & 2	ARM, FRM	Floating	LIBOR + 2.2500	No
	M10	All	Subprime	2,077	1 & 2	ARM, FRM	Fixed	7.0000	No
	OC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
BSSP 2007-EMX1	A-1	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 1.000	No
	A-2	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 1.300	No
	M-1	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-2	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-3	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-4	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-5	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-6	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No

Exhibit 8

Trust and Tranche Collateral Differences[1]

Relevant Trust	Tranche	Collateral Characteristics: Loan Group[2]	Group Collateral Type[3]	Number of Loans[4]	Lien Position(s)[5]	Loan Interest Rate Type(s)[6]	Certificate Characteristics: Certificate Interest Rate Type[7]	Initial Note Rate or Bond Margin (%)[8]	Bond Insurance[9]
BSSP 2007-EMX1	M-7	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-8	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-9	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-10	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	M-11	All	Subprime	856	1 & 2	ARM, FRM	Adjustable	LIBOR + 2.000	No
	R-1	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	R-2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	R-3	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	RX	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	CE	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
	P	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No
MSHLC 2007-1	A	All	HELOC, Subprime	8,632	1 & 2	ARM, FRM	Floating	LIBOR + 0.100	Yes
	L	All	HELOC, Subprime	8,632	1 & 2	ARM, FRM	WA Loan Rate	n/a	No
	O	All	HELOC, Subprime	8,632	1 & 2	ARM, FRM	n/a	n/a	No
RVMLT 2007-2A[16]	A-1	All	HECM	3,155	1	ARM	Variable	LIBOR + 0.06	No
	A-2	All	HECM	3,155	1	ARM	Variable	LIBOR + 0.10	No
	X	All	HECM	3,155	1	ARM	Variable	Other[17]	No
	R	n/a	n/a	n/a	n/a	n/a	n/a	n/a	No

Notes:

1. All characteristics are listed as reported in the Offering Documents. "n/a" indicates that a certificate is not offered and information is not available in the applicable Offering Document.
2. If the supporting loan group listed is "All," then that certificate is backed by all the loans in the trust.
3. According to Intex, "[c]ollateral types are assigned based on series name, descriptions of the collateral available in the [prospectus supplement] and initial credit support levels."
4. Number of Loans refers to the total number of loans backing a certificate, as of the applicable cut-off date.
5. Lien Position(s) refers to whether a certificate was backed by first lien and/or second lien loans.
6. Loan Interest Rate Types refers to whether the loans collateralizing a tranche were adjustable rate mortgages ("ARM") or fixed rate mortgages ("FRM").
7. Certificate Interest Rate Type refers to the certificate interest rate classification.
8. Initial Note Rate or Bond Margin (%) lists the interest rate or margin that was in effect as of the first payment date of the trust. If the trust has a Step-Up Date or a Note-Rate Change Date, it is the interest rate percentage prior to such date.

Exhibit 8

Trust and Tranche Collateral Differences[1]

Notes (cont.):

9. A tranche is considered to have bond insurance if it was guaranteed by a monoline insurer.
10. The interest rate is fixed until the Note Rate Change Date, which occurred in May 2007 for tranche II-A, in June 2007 for tranche III-A, and in June 2009 for tranche IV-A-1 through IV-A-6.
11. According to the prospectus supplement, "[t]he Class 1-A-IO Bonds will accrue interest based on: (i) the notional amount; and (ii) on or prior to the payment date in December 2005, 1.00% per annum, and thereafter, 0.00% per annum."
12. Tranche "CERT" refers to the tranche listed in the remittance reports as "OWNER CERT."
13. According to the prospectus supplement, "[t]he interest rate for the Class A-IO Bonds will be 1.45% per annum for the April 2005 payment date through the September 2005 payment date, 0.85% per annum for each payment date from October 2005 through the March 2006 payment date and for each payment date thereafter, 0.00% per annum."
14. According to the prospectus supplement, "[t]he bond interest rate on the Class 1-A-2 Bonds will be equal to one month LIBOR plus 0.140% per annum, initially [...] provided, however, that if a Class 1-A-2 derivative counterparty termination is in effect, the bond interest rate will be equal to the least of: (1) one month LIBOR plus 0.250% per annum, initially[.]"
15. According to the prospectus supplement, "[i]nterest will accrue on the notional balance of the Class A-IO notes. Distributions on the A-IO notes are calculated at a coupon of 6.000% per annum on the outstanding notional balance for the first 30 months."
16. According to the Offering Circular, [redacted]
17. According to the Offering Circular, the [redacted]

Sources:

-Intex Solutions, Inc. (accessed Dec. 4, 2017).
-Offering Documents: AHM 2004-2 (WF_BR_000435483); IMM 2004-6 (WF_BR_000369105); IMM 2004-11 (WF_BR_000463386); IMM 2005-2 (WF_BR_000462026); IMM 2005-6 (WF_BR_000465204); IRWHE 2005-A (WF_BR_000337890); IRWHE 2006-2 (WF_BR_000394461); BSSP 2007-EMX1 (WF_BR_000487885); FMIC 2007-1 (WF_BR_000452197); MSHLC 2007-1 (WF_BR_000513272); and RVMLT 2007-2A (WF_BR_000493105).
-Remittance Reports: AHM 2004-2 (Nov. 27, 2017); IMM 2004-6 (Nov. 27, 2017); IMM 2004-11 (Nov. 27, 2017); IMM 2005-2 (Nov. 27, 2017); IMM 2005-3 (Nov. 27, 2017); IMM 2005-6 (Nov. 27, 2017); IRWHE 2005-A (Nov. 27, 2017); IRWHE 2006-2 (Nov. 27, 2017); BSSP 2007-EMX1 (Nov. 27, 2017); FMIC 2007-1 (Nov. 27, 2017); MSHLC 2007-1 (Nov. 27, 2017); and RVMLT 2007-2A (Nov. 27, 2017).

Exhibit 9
Unrepresented Tranches (Shaded)[1]

AHM 2004-2

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
I-A	$0.00	0.00%
II-A	$8,585,693.52	15.21%
III-A	$6,170,512.75	10.93%
IV-A-1	$0.00	0.00%
IV-A-2	$0.00	0.00%
IV-A-3	$0.00	0.00%
IV-A-4	$0.00	0.00%
IV-A-5	$0.00	0.00%
IV-A-6	$12,793,868.56	22.66%
V-A	$5,750,602.52	10.19%
M-1	$23,088,857.12	40.90%
M-2	$60,912.95	0.11%
M-3	$0.00	0.00%
N	$0.00	0.00%
OC	$0.00	0.00%
OT	$0.00	0.00%
Unrepresented Tranches Percentage		**43.89%**

IMM 2004-11

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
1-A-1	$32,539,708.00	53.03%
1-A-2	$8,336,445.52	13.59%
2-A-1	$16,201,598.87	26.40%
2-A-2	$1,800,166.18	2.93%
2-M-1	$1,137,530.43	1.85%
2-M-2	$1,049,167.53	1.71%
2-M-3	$295,845.34	0.48%
2-M-4	$0.00	0.00%
2-M-5	$0.00	0.00%
2-M-6	$0.00	0.00%
2-B	$0.00	0.00%
Cert	$0.00	0.00%
Unrepresented Tranches Percentage		**57.08%**

IMM 2004-6

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
1-A-1	$6,074,367.06	7.59%
1-A-2	$40,535,288.49	50.67%
1-A-3	$4,503,920.94	5.63%
2-A	$17,889,994.70	22.36%
M-1	$1,600,082.81	2.00%
M-2	$2,600,134.56	3.25%
M-3	$1,800,093.16	2.25%
M-4	$1,800,093.16	2.25%
M-5	$2,000,103.51	2.50%
M-6	$1,200,062.11	1.50%
Certs	$0.00	0.00%
Unrepresented Tranches Percentage		**26.97%**

IMM 2005-2

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
1-A-1	$69,009,083.39	66.16%
1-A-2	$7,969,496.37	7.64%
1-A-IO	$0.00	0.00%
2-A-1	$2,429,412.12	2.33%
2-A-2	$2,676,233.37	2.57%
1-M-1	$10,349,995.28	9.92%
1-M-2	$5,123,247.66	4.91%
1-M-3	$2,432,248.89	2.33%
1-M-4	$1,254,080.49	1.20%
1-M-5	$37,653.68	0.04%
1-M-6	$43,954.35	0.04%
2-M-1	$510,753.76	0.49%
2-M-2	$776,307.84	0.74%
1-B	$226,500.74	0.22%
2-B	$1,470,927.54	1.41%
Cert	$0.00	0.00%
Unrepresented Tranches Percentage		**33.84%**

Exhibit 9

Unrepresented Tranches (Shaded)[1]

IMM 2005-3

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
A-1	$51,511,157.02	65.48%
A-2	$5,723,461.89	7.28%
A-3	$13,627,290.22	17.32%
A-IO	$0.00	0.00%
M-1	$7,802,616.51	9.92%
M-2	$0.00	0.00%
M-3	$0.00	0.00%
M-4	$0.00	0.00%
M-5	$0.00	0.00%
M-6	$0.00	0.00%
B	$0.00	0.00%
Certs	$0.00	0.00%
Unrepresented Tranches Percentage		**34.52%**

IRWHE 2005-A

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
A-1	$0.00	0.00%
A-2	$0.00	0.00%
A-3	$5,872,163.38	64.49%
A-IO	$0.00	0.00%
M-1	$1,750,279.30	19.22%
M-2	$1,458,566.08	16.02%
M-3	$23,948.80	0.26%
M-4	$0.00	0.00%
M-5	$0.00	0.00%
M-6	$41.75	0.00%
M-7	$15.00	0.00%
X-1	$0.00	0.00%
X-2A	$0.00	0.00%
X-2B	$0.00	0.00%
Cert	$100.00	0.00%
Unrepresented Tranches Percentage		**35.51%**

IMM 2005-6

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
1-A-1	$104,619,032.51	67.26%
1-A-2	$21,854,068.64	14.05%
2-A-1	$8,520,143.68	5.48%
2-A-2	$3,115,060.27	2.00%
1-M-1	$5,406,490.21	3.48%
1-M-2	$0.00	0.00%
1-M-3	$0.00	0.00%
1-M-4	$0.00	0.00%
1-M-5	$0.00	0.00%
2-M-1	$2,039,602.26	1.31%
2-M-2	$1,854,260.70	1.19%
1-B-1	$0.00	0.00%
1-B-2	$0.00	0.00%
2-B-1	$1,483,408.56	0.95%
2-B-2	$1,112,577.93	0.72%
Cert	$5,546,727.17	3.57%
Unrepresented Tranches Percentage		**18.69%**

IRWHE 2006-2

Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
I-A	$4,235,837.70	9.80%
II-A1	$0.00	0.00%
II-A2	$805,534.88	1.86%
II-A3	$35,771,000.00	82.79%
II-A4	$2,091,876.17	4.84%
VFN	$8,125.38	0.02%
Cert	$293,212.57	0.68%
Unrepresented Tranches Percentage		**15.34%**

Exhibit 9
Unrepresented Tranches (Shaded)[1]

BSSP 2007-EMX1		
Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
A-1	$5,839,427.17	9.67%
A-2	$12,947,000.00	21.44%
M-1	$11,105,000.00	18.39%
M-2	$10,251,000.00	16.97%
M-3	$6,264,000.00	10.37%
M-4	$5,885,000.00	9.74%
M-5	$5,505,000.00	9.12%
M-6	$2,594,301.18	4.30%
M-7	$0.00	0.00%
M-8	$0.00	0.00%
M-9	$0.00	0.00%
M-10	$0.00	0.00%
M-11	$0.00	0.00%
CE	$0.00	0.00%
P	$0.00	0.00%
R-1	$0.00	0.00%
R-2	$0.00	0.00%
R-3	$0.00	0.00%
RX	$0.00	0.00%
Unrepresented Tranches Percentage		61.59%

MSHLC 2007-1		
Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
A	$0.00	0.00%
L	$40,410,964.50	93.19%
O	$2,955,079.13	6.81%
Unrepresented Tranches Percentage		100.00%

FMIC 2007-1		
Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
1-A	$31,136,756.88	21.28%
2-A1	$3,607,261.16	2.47%
2-A2	$28,875,123.95	19.73%
2-A3	$11,990,683.97	8.19%
M1	$13,434,000.00	9.18%
M2	$12,128,000.00	8.29%
M3	$7,650,000.00	5.23%
M4	$6,717,000.00	4.59%
M5	$6,158,000.00	4.21%
M6	$5,597,000.00	3.83%
M7	$5,785,000.00	3.95%
M8	$5,224,000.00	3.57%
M9	$3,918,000.00	2.68%
M10	$4,105,000.00	2.81%
OC	$0.00	0.00%
Unrepresented Tranches Percentage		97.53%

RVMLT 2007-2A		
Tranche	Current Certificate Balance[2]	Percent of Total Certificate Balance[3]
A-1	$63,263,694.02	24.03%
A-2	$200,000,000.00	75.97%
X	$263,263,694.02	n/a
Unrepresented Tranches Percentage		75.97%

Notes:

1. Named Plaintiffs are certificateholders of only a fraction of the tranches in the Relevant Trusts. Besides the At-Issue Tranches, no Named Plaintiffs have identified any of the remaining tranches (shaded) to be the basis of their claims (the "Unrepresented Tranches").
2. Current Certificate Balance refers to the Ending Certificate Balance as reflected in the Nov. 27, 2017 Remittance Reports.
3. Percent of Total Certificate Balance reflects the percent of the trust cumulative Current Certificate Balance associated with each tranche.

Exhibit 9
Unrepresented Tranches (Shaded)[1]

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Offering Documents: AHM 2004-2 (WF_BR_000435483); IMM 2004-6 (WF_BR_000369105); IMM 2004-11 (WF_BR_000463386); IMM 2005-2 (WF_BR_000462026); IMM 2005-6 (WF_BR_000465204); IRWHE 2005-A (WF_BR_000337890); IRWHE 2006-2 (WF_BR_000394461); BSSP 2007-EMX1 (WF_BR_000487885); FMIC 2007-1 (WF_BR_000452197); and MSHLC 2007-1 (WF_BR_000513272); and RVMLT 2007-2A (WF_BR_000493105).

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

-Remittance Reports: AHM 2004-2 (Nov. 27, 2017); IMM 2004-6 (Nov. 27, 2017); IMM 2004-11 (Nov. 27, 2017); IMM 2005-2 (Nov. 27, 2017); IMM 2005-3 (Nov. 27, 2017); IMM 2005-6 (Nov. 27, 2017); IRWHE 2005-A (Nov. 27, 2017); IRWHE 2006-2 (Nov. 27, 2017); BSSP 2007-EMX1 (Nov. 27, 2017); FMIC 2007-1 (Nov. 27, 2017); MSHLC 2007-1 (Nov. 27, 2017); and RVMLT 2007-2A (Nov. 27, 2017).

Exhibit 10
Investor-Specific Issues for Named Plaintiffs' Relevant Purchases

Named Plaintiff	Relevant Trust	At-Issue Tranche	Date of Purchase	Purchased After Separate Trustee Appointment[1]	Purchased After Derivative Complaint	Paid-Off or Sold	Insured / Guaranteed	Since Purchase Date: No Cumulative Realized Losses	Since Purchase Date: No Cumulative Interest Shortfall	Since Purchase Date: Increased Credit Support[2]	Since Purchase Date: Losses Tranche Can Withstand	Since Purchase Date: Improved / Unchanged Moody's Rating	[redacted]	Currently Priced At or Above Par[5]
BlackRock	IMM 2004-11	1-A-2	June 2, 2015	✓	✓		✓	✓	✓		$0			
	IMM 2005-6	1-A-1	June 18, 2015	✓	✓		✓	✓	✓		$9,483,618			
	IRWHE 2006-2	IIA-2	June 4, 2015		✓		✓	✓[6]	✓		$0			✓
	MSHLC 2007-1	A	Mar. 24, 2015		✓	✓	✓	✓	✓	Paid-Off	Paid-Off	Paid-Off		
DZ Bank	IMM 2004-6	1-A-2	June 25, 2004					✓	✓	✓	$26,829,871			
PIMCO	AHM 2004-2	II-A	Nov. 15, 2012					✓[7]		✓	$26,592,672			✓
	AHM 2004-2	II-A	May 23, 2014					✓[7]		✓	$26,592,672			✓
	AHM 2004-2	M-1	May 31, 2012					✓	✓		$51,667	n/a		
	IMM 2004-6	1-A-2	June 13, 2011					✓	✓	✓	$26,829,871			
	IMM 2004-6	1-A-2	Apr. 30, 2013					✓	✓	✓	$26,829,871			
	IMM 2004-6	1-A-2	Apr. 30, 2014					✓	✓	✓	$26,829,871			
	IMM 2004-6	2-A	May 21, 2013				✓	✓[7]		✓	$17,541,084			
	IMM 2004-11	2-A-1	Oct. 20, 2009					✓[7]	✓		$4,571,818			
	IMM 2004-11	2-A-1	June 13, 2011					✓[7]	✓		$4,571,818			
	IMM 2004-11	2-A-1	Apr. 30, 2013					✓[7]	✓		$4,571,818			
	IMM 2005-2	1-A-1	Apr. 30, 2013					✓	✓	✓	$31,595,690			
	IMM 2005-6	1-A-1	Sept. 2, 2005				✓	✓	✓		$9,483,618			
	IMM 2005-6	1-A-2	July 12, 2012				✓	✓	✓	✓	$9,483,618			
	BSSP 2007-EMX1	A-2	June 24, 2014	✓	✓	✓		✓		✓	$41,439,870			✓
	BSSP 2007-EMX1	M2	May 5, 2017	✓	✓			✓		✓	$20,083,870			
	RVMLT 2007-2A	A-1	Apr. 29, 2010					✓	✓	✓	$200,781,031	✓		
	RVMLT 2007-2A	A-1	Sept. 29, 2010					✓	✓	✓	$200,781,031			
	RVMLT 2007-2A	A-1	Nov. 22, 2010					✓	✓	✓	$200,781,031			
Prudential	FMIC 2007-1	2-A1	Apr. 9, 2007					✓[6]	✓		$0			
	MSHLC 2007-1	A	Feb. 21, 2014			✓	✓	✓	✓	Paid-Off	Paid-Off	Paid-Off		
	RVMLT 2007-2A	A-1	Apr. 29, 2010					✓	✓	✓	$200,781,031	✓		
	RVMLT 2007-2A	A-1	Apr. 30, 2010					✓	✓	✓	$200,781,031	✓		
	RVMLT 2007-2A	A-1	Dec. 18, 2014		✓			✓	✓	✓	$200,781,031			

Exhibit 10
Investor-Specific Issues for Named Plaintiffs' Relevant Purchases

Named Plaintiff	Relevant Trust	At-Issue Tranche	Date of Purchase	Purchased After Separate Trustee Appointment[1]	Purchased After Derivative Complaint	Paid-Off or Sold	Insured / Guaranteed	Since Purchase Date: No Cumulative Realized Losses	No Cumulative Interest Shortfall	Increased Credit Support[2]	Losses Tranche Can Withstand	Improved / Unchanged Moody's Rating	[redacted]	Currently Priced At or Above Par[5]
Sealink	IMM 2005-2	1-A-1	June 10, 2008			✓		✓	✓		$31,595,690		[redacted]	
	IMM 2004-11	2-A-1	May 30, 2013					✓[7]	✓	✓	$4,571,818.40		[redacted]	
	IMM 2004-11	2-A-1	Sept. 13, 2013					✓[7]	✓	✓	$4,571,818.40		[redacted]	
	IMM 2004-11	2-A-1	June 3, 2014					✓[7]	✓		$4,571,818.40		[redacted]	
	IMM 2004-11	2-A-2	Sept. 22, 2015	✓	✓			✓	✓		$2,771,652.22		[redacted]	
TIAA-CREF	IMM 2005-3	A-1	Nov. 15, 2013					✓	✓		$15,156,124.19		[redacted]	
	IMM 2005-6	1-A-1	June 15, 2012				✓	✓	✓	✓	$9,483,618.46		[redacted]	
	IMM 2005-6	1-A-1	May 2, 2013				✓	✓	✓	✓	$9,483,618.46		[redacted]	
	IRWHE 2005-A	A-3	Nov. 19, 2010					✓	✓		$6,811,019.94		[redacted]	✓
	IRWHE 2006-2	IIA-3	July 12, 2006				✓	✓[6]	✓		$0		[redacted]	

Notes:

1. Law Debenture Trust Company of New York was appointed as a separate indenture trustee for the holders of mortgage-backed notes/bonds issued by IMM 2004-6, IMM 2004-11, IMM 2005-2, IMM 2005-6, BSSP 2007-EMX1, FMIC 2007-1, and RVMLT 2007-2A.
2. Increased Credit Support reflects a greater current credit support percentage than that reported prior to or on the purchase date, as reported by Intex.
3. Named Plaintiffs' Relevant Purchases show no out-of-pocket losses between ±10% of reported prices based on Dr. Hartzmark's formula. *See* **Exhibit 19**: *Named Plaintiffs' Relevant Purchases Show Few Out-of-Pocket Losses Under Various Assumptions* for additional details.
4. Prices are according to Named Plaintiffs' Valuation Documents. *See* **Exhibit 20**: *Prices at Purchase and Current Valuations of At-Issue Tranches* for additional details.
5. Currently Priced At or Above Par represents a price of 100 or greater. Price is the PX_MID price reported by Bloomberg or the most recent price available from Named Plaintiffs' Valuation Documents where the value was unavailable from Bloomberg.
6. Intex reports a positive "Accumulated Unrealized Writedown" for this tranche.
7. Realized losses are not applied to the principal balance of this tranche, per the Offering Documents, though Intex does not report an "Accumulated Unrealized Writedown" for this tranche.

Exhibit 10
Investor-Specific Issues for Named Plaintiffs' Relevant Purchases

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Bloomberg, L.P. (accessed Dec. 5, 2017).

-Derivative Complaint. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A., et al.* (N.Y. Sup. Ct. (N.Y. Co.) No. 651867/2014) (June 18, 2014).

-Intex Solutions, Inc. (accessed Dec. 6, 2017).

-MSHLC 2007-1 Remittance Reports (Mar. 26, 2007 - Nov. 27, 2017).

-Named Plaintiffs' Valuation Documents: 07402LAD4 – Prices.xlsx, 098 - 2017.04.04 WF-SEALINK-PLTFS 00014942.pdf, 20171004_WF-PIMCO-HIGHLY_CONFIDENTIAL-FOR-DISCUSSTION-PURPOSES-ONLY.xlsx, BLK Historical Prices Various Secs 9-29-17.pdf, DZ Bank - MTM_VALUATION_August_2017_static__ (002).pdf, RMBS Trustee Litigation_Pace Prices_09272017.xls., and WF-Prudential-PLTFS 04994095-CONFIDENTIAL.XLSX.

-Offering Documents: AHM 2004-2 (WF_BR_000435483 at WF BR_000435494); IMM 2004-6 (WF_BR_000369105 at WF_BR_000369219); IMM 2004-11 (WF_BR_000463386 at WF_BR_000463403); and FMIC 2007-1 (WF_BR_000452197 at WF_BR_000452208).

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

-Separate Trustee Appointment Orders: BSSP 2007-EMX1, FMIC 2007-1, IMM 2004-6, IMM 2004-11, IMM 2005-2, IMM 2005-6, and RVMLT 2007-2A.

Exhibit 11
Paid-Off Tranches[1]

Relevant Trust	Tranche	Original Certificate Balance[2]	Paid-Off Date[3]
AHM 2004-2	I-A	$391,853,000	Jan. 2012
AHM 2004-2	IV-A-1	$139,521,000	Oct. 2005
AHM 2004-2	IV-A-2	$52,675,000	May 2006
AHM 2004-2	IV-A-3	$97,028,000	May 2008
AHM 2004-2	IV-A-4	$54,126,000	May 2009
AHM 2004-2	IV-A-5	$61,208,000	June 2011
AHM 2004-2	N	$14,000,000	July 2005
IRWHE 2005-A	A-1	$148,833,000	Mar. 2006
IRWHE 2005-A	A-2	$68,581,000	Mar. 2007
IRWHE 2005-A	M-4	$6,262,000	June 2017
IRWHE 2005-A	M-5	$5,725,000	July 2017
IRWHE 2005-A	M-6	$5,367,000	July 2017
IRWHE 2005-A	M-7	$10,556,000	Feb. 2016
IRWHE 2005-A	X-1	$8,016,436	July 2011
IRWHE 2006-2	IIA-1	$112,096,000	Feb. 2011
MSHLC 2007-1	A	$845,750,000	Mar. 2017

Notes:

1. For the purposes of this report, paid-off tranches are those that have received cumulative principal distributions within $100 of their Original Certificate Balance.
2. Original Certificate Balance is the "Beginning Certificate Balance"as reported in the AHM 2004-2 July 2004, the IRWHE 2005-A Feb. 2005, the IRWHE 2006-2 Aug. 2006, and the MSHLC 2007-1 Mar. 2007 remittance reports.
3. Paid-Off Date reflects the last month and year on which the tranche received a principal distribution.

Source:

Remittance Reports: AHM 2004-2 (July 26, 2004 - Nov. 27, 2017); IRWHE 2005-A (Feb. 25, 2005 - Nov. 27, 2017); IRWHE 2006-2 (Aug. 25, 2006 - Nov. 27, 2017); and MSHLC 2007-1 (Mar. 26, 2007 - Nov. 27, 2017).

Exhibit 12
Cumulative Realized Losses Since Issuance as of Recording Date

AHM 2004-2					IMM 2004-6				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2, 3]	At-Issue Tranche	Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2, 4]	At-Issue Tranche
I-A	$391,853,000.00	28.09%	0.00%		1-A-1	$205,000,000.00	9.32%	0.00%	
II-A	$179,968,000.00	12.90%	0.00%	✓	1-A-2	$1,368,000,000.00	62.18%	0.00%	✓
III-A	$135,297,000.00	9.70%	0.00%		1-A-3	$152,000,000.00	6.91%	0.00%	
IV-A-1	$139,521,000.00	10.00%	0.00%		2-A	$172,500,000.00	7.84%	0.00%	✓
IV-A-2	$52,675,000.00	3.78%	0.00%		M-1	$44,000,000.00	2.00%	0.00%	
IV-A-3	$97,028,000.00	6.96%	0.00%		M-2	$71,500,000.00	3.25%	0.00%	
IV-A-4	$54,126,000.00	3.88%	0.00%		M-3	$49,500,000.00	2.25%	0.00%	
IV-A-5	$61,208,000.00	4.39%	0.00%		M-4	$49,500,000.00	2.25%	0.00%	
IV-A-6	$105,751,000.00	7.58%	0.00%		M-5	$55,000,000.00	2.50%	0.00%	
V-A	$90,935,000.00	6.52%	0.00%		M-6	$33,000,000.00	1.50%	0.00%	
M-1	$44,880,000.00	3.22%	0.00%	✓					
M-2	$13,808,000.00	0.99%	50.87%						
M-3	$8,285,500.00	0.59%	19.08%						
N	$14,000,000.00	1.00%	0.00%						
OC	$5,523,789.25	0.40%	0.00%						
OT	$0.00	0.00%	n/a						

Notes:

1. Original Certificate Balance is the "Beginning Certificate Balance" as reported in the AHM 2004-2 July 2004 and the IMM 2004-6 July 2004 remittance reports.
2. Cumulative Realized Losses as of Recording Date are cumulative realized losses as of Nov. 2017, as reported in the remittance report, divided by the Original Certificate Balance.
3. Realized losses will not be allocated to Class I-A, Class II-A, Class III-A, Class IV-A, and Class V-A tranches, per the Offering Document, though Intex does not report an "Accumulated Unrealized Writedown" for this tranche.
4. Realized losses will not be allocated to the Class 2-A tranche, per the Offering Document, though Intex does not report an "Accumulated Unrealized Writedown" for this tranche.

Sources:

-Offering Documents: AHM 2004-2 (WF_BR_000435483 at WF_BR_000435494) and IMM 2004-6 (WF_BR_000369105 at WF_BR_000369219).

-Remittance Reports: AHM 2004-2 (July 26, 2004 and Nov. 27, 2017) and IMM 2004-6 (July 26, 2004 and Nov. 27, 2017).

Exhibit 12
Cumulative Realized Losses Since Issuance as of Recording Date

IMM 2004-11

Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2, 3]	At-Issue Tranche
1-A-1	$695,000,000.00	45.87%	1.21%	
1-A-2	$178,348,000.00	11.77%	1.21%	✓
2-A-1	$470,667,000.00	31.07%	0.00%	✓
2-A-2	$52,296,000.00	3.45%	0.00%	✓
2-M-1	$33,046,000.00	2.18%	0.00%	
2-M-2	$30,479,000.00	2.01%	0.00%	
2-M-3	$17,646,000.00	1.16%	4.48%	
2-M-4	$11,229,000.00	0.74%	9.59%	
2-M-5	$13,475,000.00	0.89%	10.10%	
2-M-6	$8,021,000.00	0.53%	12.20%	
2-B	$4,814,000.00	0.32%	16.54%	

IMM 2005-2

Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche
1-A-1	$831,600,000.00	63.10%	0.00%	✓
1-A-2	$92,400,000.00	7.01%	0.00%	
1-A-IO	$0.00	0.00%	n/a	
2-A-1	$37,462,000.00	2.84%	0.00%	
2-A-2	$39,576,000.00	3.00%	0.00%	
1-M-1	$120,000,000.00	9.11%	0.00%	
1-M-2	$59,400,000.00	4.51%	0.00%	
1-M-3	$28,200,000.00	2.14%	0.00%	
1-M-4	$20,400,000.00	1.55%	0.00%	
1-M-5	$21,000,000.00	1.59%	0.00%	
1-M-6	$12,000,000.00	0.91%	0.00%	
2-M-1	$7,553,000.00	0.57%	0.00%	
2-M-2	$11,480,000.00	0.87%	0.00%	
1-B	$15,000,000.00	1.14%	0.00%	
2-B	$21,752,000.00	1.65%	0.00%	

Notes:

1. Original Certificate Balance is the "Beginning Certificate Balance" as reported in the IMM 2004-11 Jan. 2005 and the IMM 2005-2 Apr. 2005 remittance reports.
2. Cumulative Realized Losses as of Recording Date are cumulative realized losses as of Nov. 2017, as reported in the remittance report, divided by the Original Certificate Balance.
3. Realized losses will not be allocated to the 2-A-1 tranche, per the Offering Document, though Intex does not report an "Accumulated Unrealized Writedown" for this tranche.

Sources:

-Offering Document: IMM 2004-11 (WF_BR_000463386 at WF_BR_000463403).

-Remittance Reports: IMM 2004-11 (Jan. 25, 2005 and Nov. 27, 2017) and IMM 2005-2 (Apr. 25, 2005 and Nov. 27, 2017).

Exhibit 12
Cumulative Realized Losses Since Issuance as of Recording Date

IMM 2005-3				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche
A-1	$567,000,000.00	56.70%	0.00%	✓
A-2	$63,000,000.00	6.30%	0.00%	
A-3	$150,000,000.00	15.00%	0.00%	
A-IO	$0.00	0.00%	n/a	
M-1	$95,000,000.00	9.50%	1.26%	
M-2	$45,000,000.00	4.50%	18.02%	
M-3	$24,000,000.00	2.40%	22.08%	
M-4	$16,000,000.00	1.60%	23.56%	
M-5	$17,500,000.00	1.75%	24.48%	
M-6	$10,000,000.00	1.00%	25.20%	
B	$12,500,000.00	1.25%	25.88%	

IMM 2005-6				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche
1-A-1	$957,433,000.00	55.58%	0.00%	✓
1-A-2	$200,000,000.00	11.61%	0.00%	✓
2-A-1	$100,812,000.00	5.85%	0.00%	
2-A-2	$36,858,000.00	2.14%	0.00%	
1-M-1	$141,297,000.00	8.20%	14.99%	
1-M-2	$20,293,000.00	1.18%	31.83%	
1-M-3	$59,375,000.00	3.45%	32.70%	
1-M-4	$54,865,000.00	3.19%	33.93%	
1-M-5	$25,554,000.00	1.48%	35.41%	
2-M-1	$24,133,000.00	1.40%	0.00%	
2-M-2	$21,940,000.00	1.27%	0.00%	
1-B-1	$29,312,000.00	1.70%	36.67%	
1-B-2	$15,031,000.00	0.87%	37.53%	
2-B-1	$17,552,000.00	1.02%	0.00%	
2-B-2	$13,164,000.00	0.76%	0.00%	

Notes:

1. Original Certificate Balance is the "Beginning Certificate Balance" as reported in the IMM 2005-3 Apr. 2005 and the IMM 2005-6 Sept. 2005 remittance reports.
2. Cumulative Realized Losses as of Recording Date are cumulative realized losses as of Nov. 2017, as reported in the remittance report, divided by the Original Certificate Balance.

Source:

Remittance Reports: IMM 2005-3 (Apr. 25, 2005 and Nov. 27, 2017) and IMM 2005-6 (Sept. 26, 2005 and Nov. 27, 2017).

Exhibit 12
Cumulative Realized Losses Since Issuance as of Recording Date

IRWHE 2005-A				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche
A-1	$148,833,000.00	41.09%	0.00%	
A-2	$68,581,000.00	18.93%	0.00%	
A-3	$56,852,000.00	15.69%	0.00%	✓
A-IO	$0.00	0.00%	n/a	
M-1	$24,689,000.00	6.82%	0.00%	
M-2	$20,574,000.00	5.68%	0.00%	
M-3	$6,799,000.00	1.88%	0.00%	
M-4	$6,262,000.00	1.73%	0.00%	
M-5	$5,725,000.00	1.58%	0.00%	
M-6	$5,367,000.00	1.48%	0.00%	
M-7	$10,556,000.00	2.91%	0.00%	
X-1	$8,016,436.00	2.21%	0.00%	
X-2A	$0.00	0.00%	n/a	
X-2B	$0.00	0.00%	n/a	

IRWHE 2006-2				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche
IA-1	$58,866,000.00	19.90%	0.00%	
IIA-1	$112,096,000.00	37.90%	0.00%	
IIA-2[3]	$44,262,000.00	14.97%	0.00%	✓
IIA-3[3]	$35,771,000.00	12.09%	0.00%	✓
IIA-4[3]	$21,348,000.00	7.22%	0.00%	
VFN	$0.00	0.00%	n/a	

Notes:

1. Original Certificate Balance is the "Beginning Certificate Balance" as reported in the IRWHE 2005-A Feb. 2005 and the IRWHE 2006-2 Aug. 2006 remittance reports.
2. Cumulative Realized Losses as of Recording Date are cumulative realized losses as of Nov. 2017, as reported in the remittance report, divided by the Original Certificate Balance.
3. Intex reports a positive "Accumulated Unrealized Writedown" for this tranche.

Sources:

-Intex Solutions, Inc. (accessed Dec. 6, 2017).

-Remittance Reports: IRWHE 2005-A (Feb. 25, 2005 and Nov. 27, 2017) and IRWHE 2006-2 (Aug. 25, 2006 and Nov. 27, 2017).

Exhibit 12
Cumulative Realized Losses Since Issuance as of Recording Date

BSSP 2007-EMX1					FMIC 2007-1				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche	Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2, 3]	At-Issue Tranche
A-1	$94,973,000.00	50.03%	0.00%		1-A	$124,711,000.00	33.42%	0.00%	
A-2	$12,947,000.00	6.82%	0.00%	✓	2-A1[4]	$92,056,000.00	24.67%	0.00%	✓
M-1	$11,105,000.00	5.85%	0.00%		2-A2[4]	$50,000,000.00	13.40%	0.00%	
M-2	$10,251,000.00	5.40%	0.00%	✓	2-A3[4]	$20,763,000.00	5.56%	0.00%	
M-3	$6,264,000.00	3.30%	0.00%		M1[4]	$13,434,000.00	3.60%	0.00%	
M-4	$5,885,000.00	3.10%	0.00%		M2[4]	$12,128,000.00	3.25%	0.00%	
M-5	$5,505,000.00	2.90%	0.00%		M3[4]	$7,650,000.00	2.05%	0.00%	
M-6	$5,505,000.00	2.90%	52.87%		M4[4]	$6,717,000.00	1.80%	0.00%	
M-7	$2,373,000.00	1.25%	100.00%		M5[4]	$6,158,000.00	1.65%	0.00%	
M-8	$2,847,000.00	1.50%	100.00%		M6[4]	$5,597,000.00	1.50%	0.00%	
M-9	$3,037,000.00	1.60%	100.00%		M7[4]	$5,785,000.00	1.55%	0.00%	
M-10	$3,607,000.00	1.90%	100.00%		M8[4]	$5,224,000.00	1.40%	0.00%	
M-11	$3,227,000.00	1.70%	100.00%		M9[4]	$3,918,000.00	1.05%	0.00%	
CE	$22,305,956.54	11.75%	0.00%		M10[4]	$4,105,000.00	1.10%	0.00%	
P	$100.00	0.00%	0.00%		OC	$14,927,173.61	4.00%	0.00%	
R-1	$0.00	0.00%	n/a						
R-2	$0.00	0.00%	n/a						
R-3	$0.00	0.00%	n/a						
RX	$0.00	0.00%	n/a						

Notes:

1. Original Certificate Balance is the "Beginning Certificate Balance" as reported in the BSSP 2007-EMX1 Oct. 2007 and the FMIC 2007-1 May 2007 remittance reports.
2. Cumulative Realized Losses as of Recording Date are cumulative realized losses as of Nov. 2017, as reported in the remittance report, divided by the Original Certificate Balance.
3. Realized losses will not be allocated to any tranche, per the Offering Document.
4. Intex reports a positive "Accumulated Unrealized Writedown" for this tranche.

Sources:

-Intex Solutions, Inc. (accessed Dec. 6, 2017).
-Offering Document: FMIC 2007-1 (WF_BR_000452197 at WF_BR_000452208).
-Remittance Reports: BSSP 2007-EMX1 (Oct. 25, 2007 and Nov. 27, 2017) and FMIC 2007-1 (May 25, 2007 and Nov. 27, 2017).

Exhibit 12
Cumulative Realized Losses Since Issuance as of Recording Date

MSHLC 2007-1				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche
A	$845,750,000.00	98.97%	0.00%	✓
L[4]	$0.01	0.00%	15.80%	
O	$4,250,000.00	0.50%	0.00%	

RVMLT 2007-2A				
Tranche	Original Certificate Balance[1]	Percent of Total Original Balance	Cumulative Realized Losses as of Recording Date[2]	At-Issue Tranche
A-1	$289,188,567.00	29.56%	0.00%	✓
A-2	$200,000,000.00	20.44%	0.00%	
X	$489,188,567.00	50.00%	0.00%	
R	$0.00	0.00%	n/a	

Notes:

1. Original Certificate Balance is the "Beginning Certificate Balance" as reported in the MSHLC 2007-1 Mar. 2007 and the RVMLT 2007-2A Aug. 2007 remittance reports.
2. Cumulative Realized Losses as of Recording Date are cumulative realized losses as of Nov. 2017, as reported in the remittance report, divided by the Original Certificate Balance.
3. Percent of Total Original Balance reflects the Original Certificate Balance of each tranche divided by cumulative Original Certificate Balance.
4. For this tranche, I report the cumulative realized losses as of Nov. 2017 as a percentage of the maximum beginning certificate balance reflected in all prior remittance reports.

Source:

Remittance Reports: MSHLC 2007-1 (Mar. 26, 2007 - Nov. 27, 2017) and RVMLT 2007-2A (Aug. 24, 2007 and Nov. 27, 2017).

Exhibit 13
Cumulative Interest Shortfalls Since Issuance as of Recording Date

AHM 2004-2

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
I-A	$16,496,829.96	$16,496,829.96	$0.00	
II-A	$21,566,144.21	$21,564,707.33	$3,857.83	✓
III-A	$13,052,813.23	$13,053,256.70	$0.00	
IV-A-1	$2,853,588.57	$2,853,588.57	$0.00	
IV-A-2	$3,019,196.61	$3,019,196.61	$0.00	
IV-A-3	$12,018,527.98	$12,018,527.98	$0.00	
IV-A-4	$10,857,597.45	$10,857,597.45	$0.00	
IV-A-5	$14,838,707.78	$14,838,707.78	$0.00	
IV-A-6	$37,953,722.10	$37,953,722.10	$0.00	
V-A	$20,505,657.78	$20,438,528.41	$73,504.17	
M-1	$10,164,031.40	$10,164,831.09	$0.00	✓
M-2	$3,469,844.53	$3,471,318.87	$0.00	
M-3	$1,939,134.51	$1,941,587.93	$0.00	
N	$364,961.66	$391,453.66	$0.00	
OC	$0.00	$0.00	$0.00	
OT	$0.00	$6,249,187.18	$0.00	

IMM 2004-6

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
1-A-1	$17,314,258.10	$17,314,257.83	$0.00	
1-A-2	$115,070,664.36	$115,070,662.71	$0.00	✓
1-A-3	$13,308,224.62	$13,308,224.41	$0.00	
2-A	$54,209,488.25	$49,179,486.70	$7,214,093.60	✓
M-1	$4,145,748.42	$4,145,748.36	$0.00	
M-2	$6,858,339.28	$6,858,339.16	$0.00	
M-3	$4,916,309.01	$4,916,308.94	$0.00	
M-4	$5,673,335.20	$5,673,335.13	$0.00	
M-5	$6,584,085.84	$6,583,649.01	$541.17	
M-6	$4,230,831.53	$4,228,204.30	$3,334.45	
Certs	$0.00	$39,770,013.39	$0.00	

IMM 2004-11

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
1-A-1	$63,215,299.72	$63,215,306.89	$0.00	
1-A-2	$16,151,078.48	$16,151,080.27	$0.00	✓
2-A-1	$42,338,693.07	$42,338,712.52	$0.00	✓
2-A-2	$4,781,996.78	$4,781,999.38	$0.00	✓
2-M-1	$3,123,289.75	$3,123,291.64	$0.00	
2-M-2	$2,910,251.53	$2,910,253.44	$0.00	
2-M-3	$1,674,200.17	$1,674,201.12	$0.00	
2-M-4	$1,127,097.90	$1,127,097.90	$0.00	
2-M-5	$1,373,820.80	$1,373,820.79	$0.00	
2-M-6	$823,763.08	$823,763.08	$0.00	
2-B	$519,339.83	$519,341.71	$0.00	
Cert	$0.00	$26,099,322.63	$0.00	

IMM 2005-2

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
1-A-1	$87,802,716.78	$87,802,716.78	$0.00	✓
1-A-2	$10,000,789.31	$10,000,789.31	$0.00	
1-A-IO	$5,341,500.00	$5,341,500.00	$0.00	
2-A-1	$5,788,566.43	$5,788,569.22	$0.00	
2-A-2	$6,444,897.05	$6,444,901.38	$0.00	
1-M-1	$13,377,488.85	$13,377,488.85	$0.00	
1-M-2	$6,769,908.73	$6,769,908.73	$0.00	
1-M-3	$3,237,426.14	$3,237,426.14	$0.00	
1-M-4	$2,381,922.03	$2,381,922.03	$0.00	
1-M-5	$2,238,412.03	$2,238,412.03	$0.00	
1-M-6	$1,287,026.62	$1,287,026.62	$0.00	
2-M-1	$1,271,151.85	$1,271,153.02	$0.00	
2-M-2	$2,075,902.83	$2,075,905.60	$0.00	
1-B	$1,782,572.49	$1,782,567.50	$4.99	
2-B	$4,999,889.03	$4,999,970.50	$0.00	
Cert	$0.00	$28,529,069.95	$0.00	

Exhibit 13
Cumulative Interest Shortfalls Since Issuance as of Recording Date

IMM 2005-3

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
A-1	$58,962,116.97	$58,962,116.97	$0.00	✓
A-2	$6,729,437.70	$6,729,437.70	$0.00	
A-3	$15,174,416.70	$15,174,416.70	$0.00	
A-IO	$8,115,778.33	$8,115,778.33	$0.00	
M-1	$10,441,774.57	$10,441,774.57	$0.00	
M-2	$4,687,838.64	$4,687,838.64	$0.00	
M-3	$2,442,834.39	$2,442,834.39	$0.00	
M-4	$1,670,154.72	$1,670,154.72	$0.00	
M-5	$1,833,210.23	$1,833,210.23	$0.00	
M-6	$1,053,148.05	$1,053,148.05	$0.00	
B	$1,474,634.50	$1,474,634.50	$0.00	
Certs	$0.00	$22,445,772.24	$0.00	

IMM 2005-6

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
1-A-1	$109,921,930.66	$109,921,930.66	$0.00	✓
1-A-2	$21,821,074.29	$21,821,074.29	$0.00	✓
2-A-1	$16,705,490.33	$16,701,682.49	$4,072.70	
2-A-2	$6,266,885.53	$6,264,617.90	$2,441.49	
1-M-1	$16,003,405.36	$16,003,405.36	$0.00	
1-M-2	$2,204,086.84	$2,204,086.84	$0.00	
1-M-3	$6,561,710.20	$6,561,710.20	$0.00	
1-M-4	$6,102,946.89	$6,102,946.89	$0.00	
1-M-5	$2,840,385.21	$2,840,385.21	$0.00	
2-M-1	$4,290,890.71	$4,286,718.78	$4,503.57	
2-M-2	$4,255,795.35	$4,248,834.10	$7,677.86	
1-B-1	$3,592,779.64	$3,592,779.64	$0.00	
1-B-2	$1,875,652.02	$1,875,652.02	$0.00	
2-B-1	$4,577,098.32	$4,558,390.58	$22,892.78	
2-B-2	$3,941,941.00	$3,911,501.76	$40,395.76	
Cert	$0.00	$21,233,211.19	$0.00	

IRWHE 2005-A

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
A-1	$2,930,807.26	$2,930,807.26	$0.00	
A-2	$4,718,940.48	$4,718,940.47	$0.00	
A-3	$9,563,885.43	$9,563,885.43	$0.00	✓
A-IO	$5,694,655.87	$5,694,655.87	$0.00	
M-1	$5,494,245.03	$5,494,245.03	$0.00	
M-2	$4,788,354.06	$4,788,354.06	$0.00	
M-3	$1,586,917.69	$1,586,917.69	$0.00	
M-4	$1,610,880.70	$1,610,880.70	$0.00	
M-5	$1,487,039.44	$1,487,039.44	$0.00	
M-6	$1,662,938.14	$1,662,938.14	$0.00	
M-7	$4,086,609.32	$4,087,081.98	$0.00	
X-1	$0.00	$0.00	$0.00	
X-2A	$0.00	$4,562,856.94	$0.00	
X-2B	$0.00	$8,473,877.18	$0.00	
Cert	$0.00	$0.00	$0.00	

IRWHE 2006-2

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
IA-1	$5,128,410.24	$5,128,410.24	$0.00	
IIA-1	$7,487,285.06	$7,487,285.06	$0.00	
IIA-2	$21,933,627.26	$21,933,627.26	$0.00	✓
IIA-3	$25,945,899.12	$25,945,899.12	$0.00	✓
IIA-4	$10,666,150.50	$10,666,150.50	$0.00	
VFN	$1,649.87	$1,649.87	$0.00	
Cert	$0.00	$2,729,071.88	$0.00	

Exhibit 13
Cumulative Interest Shortfalls Since Issuance as of Recording Date

BSSP 2007-EMX1

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
A-1	$8,045,271.99	$8,009,129.20	$37,461.43	
A-2	$2,666,683.72	$2,602,352.52	$65,324.15	✓
M-1	$3,088,390.80	$2,908,732.55	$185,158.39	
M-2	$2,850,886.44	$2,667,678.66	$188,723.46	✓
M-3	$1,742,069.33	$1,603,523.90	$143,435.44	
M-4	$1,636,666.30	$1,490,137.58	$151,215.82	
M-5	$1,530,985.21	$1,392,248.58	$143,165.22	
M-6	$1,454,188.46	$1,342,055.68	$116,775.40	
M-7	$532,886.80	$514,308.12	$20,131.92	
M-8	$587,274.29	$579,664.00	$8,447.50	
M-9	$540,253.65	$536,828.14	$3,947.79	
M-10	$585,827.62	$581,774.63	$4,586.94	
M-11	$480,621.95	$476,988.32	$4,050.08	
CE	$0.00	$3,275,684.46	$0.00	
P	$0.00	$92,098.23	$0.00	
R-1	$0.00	$0.00	$0.00	
R-2	$0.00	$0.00	$0.00	
R-3	$0.00	$0.00	$0.00	
RX	$0.00	$0.00	$0.00	

FMIC 2007-1

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
1-A	$10,789,433.22	$10,749,862.47	$39,911.42	
2-A1	$5,938,200.94	$5,934,606.85	$3,622.86	✓
2-A2	$5,885,116.67	$5,847,751.45	$37,690.65	
2-A3	$2,584,616.43	$2,566,791.94	$17,991.78	
M1	$1,875,250.26	$1,292,164.14	$595,703.56	
M2	$1,771,414.06	$1,120,742.70	$668,200.81	
M3	$1,199,850.54	$682,046.95	$535,505.89	
M4	$1,307,026.54	$640,073.94	$700,785.38	
M5	$1,264,657.39	$583,905.98	$719,360.11	
M6	$1,451,217.36	$580,023.98	$941,848.64	
M7	$1,967,824.80	$670,714.15	$1,452,243.23	
M8	$1,776,995.14	$590,915.47	$1,329,876.69	
M9	$1,332,746.37	$431,932.55	$1,011,528.05	
M10	$3,041,120.41	$470,987.73	$3,559,706.84	
OC	$0.00	$6,117,143.80	$0.00	

MSHLC 2007-1

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
A	$66,510,578.03	$70,407,154.82	$0.00	✓
L	$9,308,536.17	$9,323,459.82	$0.00	
O	$2,562,530.97	$27,009,947.95	$0.00	

RVMLT 2007-2A

Tranche	Total Current Accrued Interest[1]	Total Interest Distribution[2]	Unpaid Interest Shortfall[3]	At-Issue Tranche
A-1	$21,217,044.05	$21,217,044.05	$0.00	✓
A-2	$18,471,861.95	$18,471,861.95	$0.00	
R	$0.00	$3,509,485.25	$0.00	
X	$31,938,692.49	$24,439,509.04	$8,434,559.89	

Notes:
1. Total Current Accrued Interest is the cumulative accrued interest since issuance for each trust through Nov. 2017.
2. Total Interest Distribution is the cumulative interest distribution since issuance for each trust through Nov. 2017.
3. Unpaid Interest Shortfall is as of Nov. 2017, as reported in the remittance reports.

Exhibit 13
Cumulative Interest Shortfalls Since Issuance as of Recording Date

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25,

-Remittance Reports: AHM 2004-2 (July 26, 2004 - Nov. 27, 2017); IMM 2004-6 (July 26, 2004 - Nov. 27, 2017); IMM 2004-11 (Jan. 25, 2005 - Nov. 27, 2017); IMM 2005-2 (Apr. 25, 2005 - Nov. 27, 2017); IMM 2005-3 (Apr. 25, 2005 - Nov. 27, 2017); IMM 2005-6 (Sept. 26, 2005 - Nov. 27, 2017); IRWHE 2005-A (Feb. 25, 2005 - Nov. 27, 2017); IRWHE 2006-2 (Aug. 25, 2006 - Nov. 27, 2017); BSSP 2007-EMX1 (Oct. 25, 2007 - Nov. 27, 2017); FMIC 2007-1 (May 25, 2007 - Nov. 27, 2017); MSHLC 2007-1 (Mar. 26, 2007 - Nov. 27, 2017); and RVMLT 2007-2A (Aug. 24, 2007 - Nov. 27, 2017).

Exhibit 14

Amount of Losses At-Issue Tranches Can Withstand[1]

Named Plaintiff	Relevant Trust	At-Issue Tranche	Losses Tranche Can Withstand
BlackRock	IMM 2004-11	1-A-2	$0.00
	IMM 2005-6	1-A-1	$9,483,618.46
	IRWHE 2006-2	IIA-2	$0.00
	MSHLC 2007-1	A	Paid-Off
DZ Bank	IMM 2004-6	1-A-2	$26,829,871.19
PIMCO	AHM 2004-2	II-A	$26,592,672.43
	AHM 2004-2	M-1	$51,667.31
	IMM 2004-6	1-A-2	$26,829,871.19
	IMM 2004-6	2-A	$17,541,084.07
	IMM 2004-11	2-A-1	$4,571,818.40
	IMM 2005-2	1-A-1	$31,595,689.79
	IMM 2005-6	1-A-1	$9,483,618.46
	IMM 2005-6	1-A-2	$9,483,618.46
	BSSP 2007-EMX1	A-2	$41,439,870.41
	BSSP 2007-EMX1	M-2	$20,083,870.41
	RVMLT 2007-2A	A-1	$200,781,030.93
Prudential	FMIC 2007-1	2-A1	$0.00
	MSHLC 2007-1	A	Paid-Off
	RVMLT 2007-2A	A-1	$200,781,030.93
Sealink	IMM 2005-2	1-A-1	$31,595,689.79
TIAA-CREF	IMM 2004-11	2-A-1	$4,571,818.40
	IMM 2004-11	2-A-2	$2,771,652.22
	IMM 2005-3	A-1	$15,156,124.19
	IMM 2005-6	1-A-1	$9,483,618.46
	IRWHE 2005-A	A-3	$6,811,019.94
	IRWHE 2006-2	IIA-3	$0.00

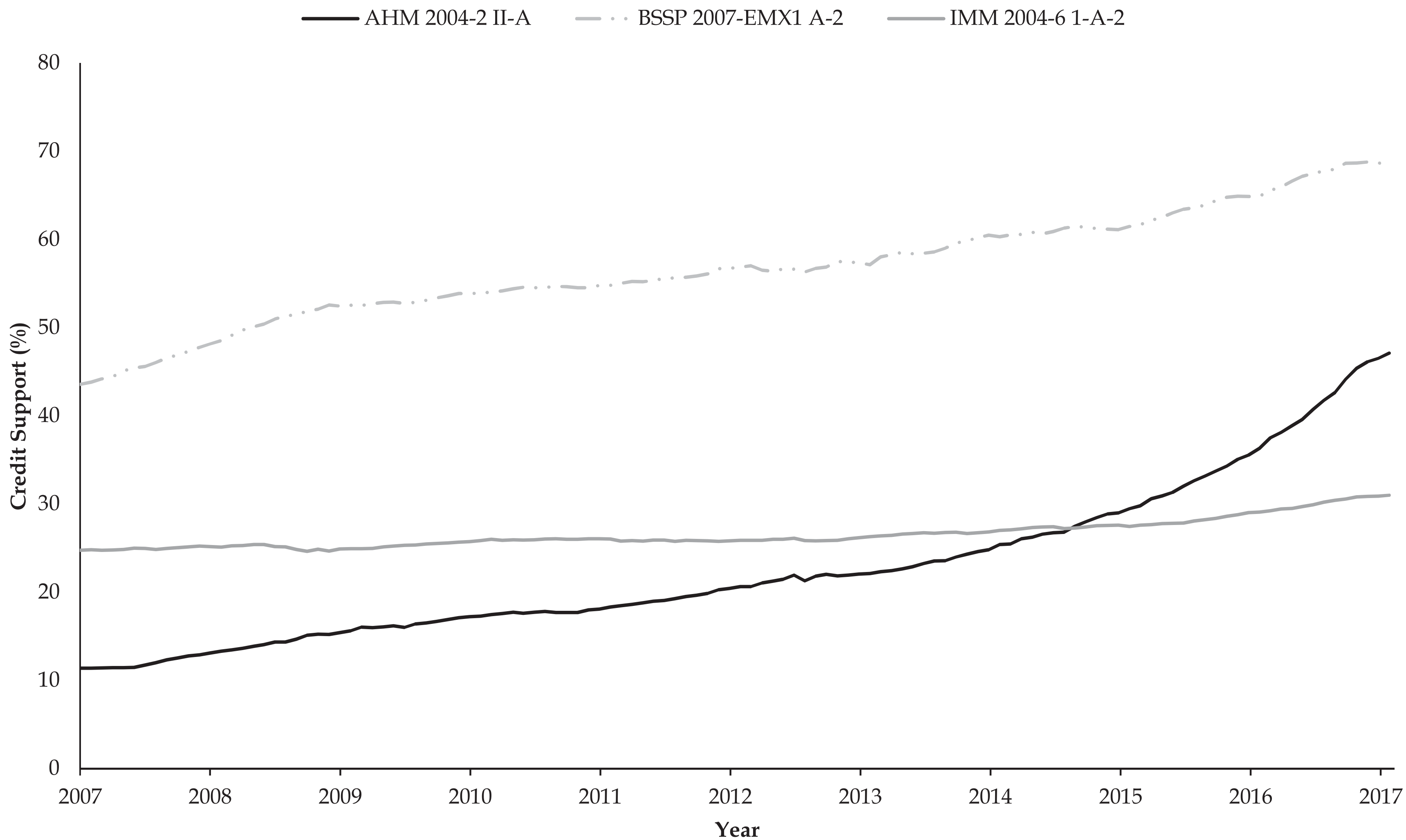
Note:

1. Losses Tranche Can Withstand reflects the amount of losses that the collateral can withstand before the tranche loses principal. It is equal to the current support balance reported by Intex, if positive.

Source:

Intex Solutions, Inc. (accessed Dec. 5, 2017).

Exhibit 15
Example Tranches With Increased Credit Support[1]
(Oct. 2007 - Nov. 2017)



Note:
1. Credit support is the credit support percentage reported by Intex. According to Intex, it reflects the amount of losses the collateral is able to withstand before the tranche loses principal, divided by the total balance of the collateral group (or groups) backing the tranche.

Source:
Intex Solutions, Inc. (accessed Dec. 5, 2017).

Exhibit 16
Initial Credit Ratings and First Downgrade of At-Issue Tranches

Relevant Trust	At- Issue Tranche	Initial Moody's Rating[1]	Rating After First Downgrade	Date of First Downgrade
AHM 2004-2	II-A	Aaa	A3	July 10, 2009
	M-1[2]	n/a	n/a	Nov. 3, 2009
IMM 2004-6	1-A-2	Aaa	Aa3	June 8, 2009
	2-A	Aaa	Aa1	June 8, 2009
IMM 2004-11	1-A-2	Aaa	A3	Feb. 14, 2008
	2-A-1	Aaa	Baa2	June 8, 2009
	2-A-2	Aaa	Aa3	Nov. 21, 2008
IMM 2005-2	1-A-1	Aaa	Aa2	Nov. 21, 2008
IMM 2005-3	A-1	Aaa	Aa3	Nov. 21, 2008
IMM 2005-6	1-A-1	Aaa	Aa3	June 19, 2008
	1-A-2	Aaa	Aa3	June 19, 2008
IRWHE 2005-A	A-3	Aaa	Aa3	June 30, 2010
IRWHE 2006-2	IIA-2	Aaa	A3	Feb. 14, 2008
	IIA-3	Aaa	A3	Feb. 14, 2008
BSSP 2007-EMX1	A-2	Aaa	Baa1	Mar. 24, 2009
	M-2	Aa2	A1	Aug. 14, 2008
FMIC 2007-1	2-A1	Aaa	Ba3	Mar. 16, 2009
MSHLC 2007-1	A	Aaa	Aa3	June 19, 2008
RVMLT 2007-2A	A-1	Aaa	No Downgrade	No Downgrade

Notes:

1. Initial Moody's Rating reflects the Moody's reported rating at issuance, a "new" rating action, unless otherwise noted.
2. Moody's ratings were not available for this tranche.

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Moody's Rating Actions: AHM 2004-2, IMM 2004-6, IMM 2004-11, IMM 2005-2, IMM 2005-3, IMM 2005-6, IRWHE 2005-A, IRWHE 2006-2, BSSP 2007-EMX1, FMIC 2007-1, MSHLC 2007-1, and RVMLT 2007-2A.

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

Exhibit 17
Example At-Issue Tranches Without Credit Rating Downgrades After Named Plaintiffs' Purchase Dates

Named Plaintiff	Relevant Trust	At-Issue Tranche	Purchase Date	Rating at Purchase[1]	Current Rating[2]	Rating Change?
BlackRock	IMM 2004-11	1-A-2	June 2, 2015	Caa3	Caa3	No Change
	IMM 2005-6	1-A-1	June 18, 2015	Caa2	Caa2	No Change
	IRWHE 2006-2	IIA-2	June 4, 2015	B2	Baa3	Upgrade
	MSHLC 2007-1	A	Mar. 24, 2015	B3	WR	Paid-Off
PIMCO	AHM 2004-2	II-A	Nov. 15, 2012	Ba3	A3	Upgrade
	AHM 2004-2	II-A	May 23, 2014	Ba1	A3	Upgrade
	IMM 2004-6	1-A-2	June 13, 2011	Baa1	A2	Upgrade
	IMM 2004-6	1-A-2	Apr. 30, 2013	Baa1	A2	Upgrade
	IMM 2004-6	1-A-2	Apr. 30, 2014	Baa1	A2	Upgrade
	IMM 2004-6	2-A	May 21, 2013	Baa2	Baa2	No Change
	IMM 2004-11	2-A-1	June 13, 2011	Caa2	Caa1	Upgrade
	IMM 2004-11	2-A-1	Apr. 30, 2013	Caa2	Caa1	Upgrade
	IMM 2005-2	1-A-1	Apr. 30, 2013	Baa1	Baa1	No Change
	IMM 2005-6	1-A-2	July 12, 2012	Caa2	Caa2	No Change
	BSSP 2007-EMX1	A-2	June 24, 2014	Ba1	Baa2	Upgrade
	BSSP 2007-EMX1	M-2	May 5, 2017	B3	B3	No Change
	RVMLT 2007-2A	A-1	Apr. 29, 2010	Aaa	Aaa	No Change
	RVMLT 2007-2A	A-1	Sept. 29, 2010	Aaa	Aaa	No Change
	RVMLT 2007-2A	A-1	Nov. 22, 2010	Aaa	Aaa	No Change
Prudential	MSHLC 2007-1	A	Feb. 21, 2014	B3	WR	Paid-Off
	RVMLT 2007-2A	A-1	Apr. 29, 2010	Aaa	Aaa	No Change
	RVMLT 2007-2A	A-1	Apr. 30, 2010	Aaa	Aaa	No Change
	RVMLT 2007-2A	A-1	Dec. 18, 2014	Aaa	Aaa	No Change
TIAA-CREF	IMM 2004-11	2-A-1	May 30, 2013	Caa2	Caa1	Upgrade
	IMM 2004-11	2-A-1	Sept. 13, 2013	Caa2	Caa1	Upgrade
	IMM 2004-11	2-A-1	June 3, 2014	Caa2	Caa1	Upgrade
	IMM 2004-11	2-A-2	Sept. 22, 2015	Ca	Caa3	Upgrade
	IMM 2005-3	A-1	Nov. 15, 2013	Caa1	Caa1	No Change
	IMM 2005-6	1-A-1	June 15, 2012	Caa2	Caa2	No Change
	IMM 2005-6	1-A-1	May 2, 2013	Caa2	Caa2	No Change

Exhibit 17
Example At-Issue Tranches Without Credit Rating Downgrades After Named Plaintiffs' Purchase Dates

Notes:

1. Rating at purchase is the Moody's rating on or prior to the purchase date, as reported by Intex.
2. Current Rating is the Moody's rating as of November 2017, as reported by Intex.

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Intex Solutions, Inc. (accessed Dec. 6, 2017).

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

Exhibit 18

Realized Losses and Interest Shortfalls of At-Issue Tranches Since Issuance and Purchase Dates[1]

Named Plaintiff	Relevant Trust	At-Issue Tranche	Cumulative Realized Losses Since Issuance	Cumulative Realized Losses Since Purchase Date[2]	Cumulative Interest Shortfall Since Issuance	Cumulative Interest Shortfall Since Purchase Date[2]
BlackRock	IMM 2004-11	1-A-2	$2,165,234.37	-$320,634.20	$0.00	$0.00
	IMM 2005-6	1-A-1	$0.00	$0.00	$0.00	$0.00
	IRWHE 2006-2	IIA-2[3]	$0.00	$0.00	$0.00	$0.00
	MSHLC 2007-1	A	$0.00	$0.00	$0.00	$0.00
DZ Bank	IMM 2004-6	1-A-2	$0.00	$0.00	$0.00	$0.00
PIMCO	AHM 2004-2	II-A[4]	$0.00	$0.00	$3,857.83	$3,857.83
	AHM 2004-2	M-1	$0.00	$0.00	$0.00	$0.00
	IMM 2004-6	1-A-2	$0.00	$0.00	$0.00	$0.00
	IMM 2004-6	2-A[4]	$0.00	$0.00	$7,214,093.60	$3,209,957.78
	IMM 2004-11	2-A-1[4]	$0.00	$0.00	$0.00	$0.00
	IMM 2005-2	1-A-1	$0.00	$0.00	$0.00	$0.00
	IMM 2005-6	1-A-1	$0.00	$0.00	$0.00	$0.00
	IMM 2005-6	1-A-2	$0.00	$0.00	$0.00	$0.00
	BSSP 2007-EMX1	A-2	$0.00	$0.00	$65,324.15	$58,036.05
	BSSP 2007-EMX1	M-2	$0.00	$0.00	$188,723.46	$105,405.33
	RVMLT 2007-2A	A-1	$0.00	$0.00	$0.00	$0.00
Prudential	FMIC 2007-1	2-A1[3]	$0.00	$0.00	$3,622.86	$0.00
	MSHLC 2007-1	A	$0.00	$0.00	$0.00	$0.00
	RVMLT 2007-2A	A-1	$0.00	$0.00	$0.00	$0.00
Sealink	IMM 2005-2	1-A-1	$0.00	$0.00	$0.00	$0.00
TIAA-CREF	IMM 2004-11	2-A-1[4]	$0.00	$0.00	$0.00	$0.00
	IMM 2004-11	2-A-2	$0.00	$0.00	$0.00	$0.00
	IMM 2005-3	A-1	$0.00	$0.00	$0.00	$0.00
	IMM 2005-6	1-A-1	$0.00	$0.00	$0.00	$0.00
	IRWHE 2005-A	A-3	$0.00	$0.00	$0.00	$0.00
	IRWHE 2006-2	IIA-3[3]	$0.00	$0.00	$0.00	$0.00

Exhibit 18

Realized Losses and Interest Shortfalls of At-Issue Tranches Since Issuance and Purchase Dates[1]

Notes:

1. The table presents information related to the entire tranche, not just the portion owned by Named Plaintiffs.
2. For At-Issue Tranches where a Named Plaintiff made multiple purchases, realized losses since purchase date and interest shortfalls since purchase date are the same for each purchase date. For example, Named Plaintiff PIMCO made two purchases of tranche II-A in AHM 2004-2, once on Nov. 15, 2012 and another on May 23, 2014. However, since each of those dates, the losses applied to this tranche have been zero and the cumulative interest shortfall has equaled approximately $3,857.83.
3. Intex reports a positive "Accumulated Unrealized Writedown" for this tranche.
4. Realized losses are not applied to the principal balance of this tranche, per the Offering Documents, though Intex does not report an "Accumulated Unrealized Writedown" for this tranche.

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Intex Solutions, Inc. (accessed Dec. 6, 2017).

-Offering Documents: AHM 2004-2 (WF_BR_000435483 at WF_BR_000435494); IMM 2004-6 (WF_BR_000369105 at WF_BR_000369219); IMM 2004-11 (WF_BR_000463386 at WF_BR_000463403); and FMIC 2007-1 (WF_BR_000452197 at WF_BR_000452208).

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

-Remittance Reports: AHM 2004-2, BSSP 2007-EMX1, FMIC 2007-1, IMM 2004-6, IMM 2004-11, IMM 2005-2, IMM 2005-3, IMM 2005-6, IRWHE 2005-A, IRWHE 2006-2, MSHLC 2007-1, and RVMLT 2007-2A.

Exhibit 19

Named Plaintiffs' Relevant Purchases Show Few Out-of-Pocket Losses[1] Under Various Assumptions

Named Plaintiff	Relevant Trust	At-Issue Tranche	Date of Purchase	Named Plaintiffs' Purchases Show Out-of-Pocket Losses?
BlackRock	IMM 2004-11	1-A-2	June 2, 2015	[redacted]
	IMM 2005-6	1-A-1	June 18, 2015	
	IRWHE 2006-2	IIA-2	June 4, 2015	
	MSHLC 2007-1	A	Mar. 24, 2015	
DZ Bank	IMM 2004-6	1-A-2	June 25, 2004	
PIMCO	AHM 2004-2	II-A	Nov. 15, 2012	
	AHM 2004-2	II-A	May 23, 2014	
	AHM 2004-2	M-1	May 31, 2012	
	IMM 2004-6	1-A-2	June 13, 2011	
	IMM 2004-6	1-A-2	Apr. 30, 2013	
	IMM 2004-6	1-A-2	Apr. 30, 2014	
	IMM 2004-6	2-A	May 21, 2013	
	IMM 2004-11	2-A-1	Oct. 20, 2009	
	IMM 2004-11	2-A-1	June 13, 2011	
	IMM 2004-11	2-A-1	Apr. 30, 2013	
	IMM 2005-2	1-A-1	Apr. 30, 2013	
	IMM 2005-6	1-A-1	Sept. 2, 2005	
	IMM 2005-6	1-A-2	July 12, 2012	
	BSSP 2007-EMX1	A-2	June 24, 2014	
	BSSP 2007-EMX1	M2	May 5, 2017	
	RVMLT 2007-2A	A-1	Apr. 29, 2010	
	RVMLT 2007-2A	A-1	Sept. 29, 2010	
	RVMLT 2007-2A	A-1	Nov. 22, 2010	
Prudential	FMIC 2007-1	2-A1	Apr. 9, 2007	
	MSHLC 2007-1	A	Feb. 21, 2014	
	RVMLT 2007-2A	A-1	Apr. 29, 2010	
	RVMLT 2007-2A	A-1	Apr. 30, 2010	
	RVMLT 2007-2A	A-1	Dec. 18, 2014	

Exhibit 19

Named Plaintiffs' Relevant Purchases Show Few Out-of-Pocket Losses[1] Under Various Assumptions

Named Plaintiff	Relevant Trust	At-Issue Tranche	Date of Purchase	Named Plaintiffs' Purchases Show Out-of-Pocket Losses?
Sealink	IMM 2005-2	1-A-1	June 10, 2008	[redacted]
TIAA-CREF	IMM 2004-11	2-A-1	May 30, 2013	
	IMM 2004-11	2-A-1	Sept. 13, 2013	
	IMM 2004-11	2-A-1	June 3, 2014	
	IMM 2004-11	2-A-2	Sept. 22, 2015	
	IMM 2005-3	A-1	Nov. 15, 2013	
	IMM 2005-6	1-A-1	June 15, 2012	
	IMM 2005-6	1-A-1	May 2, 2013	
	IRWHE 2005-A	A-3	Nov. 19, 2010	
	IRWHE 2006-2	IIA-3	July 12, 2006	

Notes:

1. I calculate out-of-pocket losses consistent with Dr. Hartzmark's formula described at his deposition. *See* Hartzmark Dep. at 301:22-302:4 [redacted] This is not a calculation of damages nor an opinion regarding how damages should be calculated.

2. Current Price reflects the PX_MID price reported by Bloomberg or the most recent price available from Named Plaintiffs' Valuation Documents where the value was unavailable from Bloomberg.

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Bloomberg, L.P. (accessed Dec. 5, 2017).

-Hartzmark, Michael L. Deposition (Nov. 16, 2017).

-Named Plaintiffs' Valuation Documents: 20171004_WF-PIMCO-HIGHLY_CONFIDENTIAL-FOR-DISCUSSTION-PURPOSES-ONLY.xlsx, BLK Historical Prices Various Secs 9-29-17.pdf, RMBS Trustee Litigation_Pace Prices_09272017.xls, and WF-Prudential-PLTFS 04994095-CONFIDENTIAL.XLSX.

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

-Remittance Reports: AHM 2004-2, IMM 2004-6, IMM 2004-11, IMM 2005-2, IMM 2005-3, IMM 2005-6, IRWHE 2005-A, IRWHE 2006-2, BSSP 2007-EMX1, FMIC 2007-1, MSHLC 2007-1, and RVMLT 2007-2A.

Exhibit 20
Prices at Purchase and Current Valuations of At-Issue Tranches

Named Plaintiff	Relevant Trust	At-Issue Tranche	Purchase Date	[redacted]	[redacted]	[redacted]
BlackRock	IMM 2004-11	1-A-2	June 2, 2015			
	IMM 2005-6	1-A-1	June 18, 2015			
	IRWHE 2006-2	IIA-2	June 4, 2015			
	MSHLC 2007-1	A	Mar. 24, 2015			
DZ Bank	IMM 2004-6	1-A-2	June 25, 2004			
PIMCO	AHM 2004-2	II-A	Nov. 15, 2012			
	AHM 2004-2	II-A	May 23, 2014			
	AHM 2004-2	M-1	May 31, 2012			
	IMM 2004-6	1-A-2	June 13, 2011			
	IMM 2004-6	1-A-2	Apr. 30, 2013			
	IMM 2004-6	1-A-2	Apr. 30, 2014			
	IMM 2004-6	2-A	May 21, 2013			
	IMM 2004-11	2-A-1	Oct. 20, 2009			
	IMM 2004-11	2-A-1	June 13, 2011			
	IMM 2004-11	2-A-1	Apr. 30, 2013			
	IMM 2005-2	1-A-1	Apr. 30, 2013			
	IMM 2005-6	1-A-1	Sept. 2, 2005			
	IMM 2005-6	1-A-2	July 12, 2012			
	BSSP 2007-EMX1	A-2	June 24, 2014			
	BSSP 2007-EMX1	M-2	May 5, 2017			
	RVMLT 2007-2A	A-1	Apr. 29, 2010			
	RVMLT 2007-2A	A-1	Sept. 29, 2010			
	RVMLT 2007-2A	A-1	Nov. 22, 2010			
Prudential	FMIC 2007-1	2-A1	Apr. 9, 2007			
	MSHLC 2007-1	A	Feb. 21, 2014			
	RVMLT 2007-2A	A-1	Apr. 29, 2010			
	RVMLT 2007-2A	A-1	Apr. 30, 2010			
	RVMLT 2007-2A	A-1	Dec. 18, 2014			

Exhibit 20
Prices at Purchase and Current Valuations of At-Issue Tranches

Named Plaintiff	Relevant Trust	At-Issue Tranche	Purchase Date	[redacted]	[redacted]	[redacted]
Sealink	IMM 2005-2	1-A-1	June 10, 2008			
TIAA-CREF	IMM 2004-11	2-A-1	May 30, 2013			
	IMM 2004-11	2-A-1	Sept. 13, 2013			
	IMM 2004-11	2-A-1	June 3, 2014			
	IMM 2004-11	2-A-2	Sept. 22, 2015			
	IMM 2005-3	A-1	Nov. 15, 2013			
	IMM 2005-6	1-A-1	June 15, 2012			
	IMM 2005-6	1-A-1	May 2, 2013			
	IRWHE 2005-A	A-3	Nov. 19, 2010			
	IRWHE 2006-2	IIA-3	July 12, 2006			

Notes:

1. Current Price is the most recent price available from Named Plaintiffs' Valuation Documents.
2. Price Difference refers to the price differential between the Purchase Price and the Current Price as per Named Plaintiffs' Valuation Documents, unless otherwise noted.

Sources:

-2017.12.12 Wells (Fed) PIMCO Holdings Chart.pdf. Attached to email from Ben Galdston, to Jason Jurgens, *FW: BlackRock/Wells Fargo - TIAA 30(b)(6) witness name* (Dec. 12, 2017).

-Named Plaintiffs' Valuation Documents: 07402LAD4 – Prices.xlsx, 098 - 2017.04.04 WF-SEALINK-PLTFS 00014942.pdf, 20171004_WF-PIMCO-HIGHLY_CONFIDENTIAL-FOR-DISCUSSTION-PURPOSES-ONLY.xlsx, BLK Historical Prices Various Secs 9-29-17.pdf, DZ Bank - MTM_VALUATION_August_2017_static__ (002).pdf, RMBS Trustee Litigation_Pace Prices_09272017.xls., and WF-Prudential-PLTFS 04994095-CONFIDENTIAL.XLSX.

-Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and amended exhibits (Aug. 25, 2017).

Exhibit 21

Hypothetical Distribution Through AHM 2004-2 Principal Waterfall in 2009, 2011, and 2017[1]

Illustrative Example Only

Tranche	January 2009		January 2011		November 2017	
	Certificate Principal Balance[2]	Hypothetical Distribution	Certificate Principal Balance[2]	Hypothetical Distribution[3]	Certificate Principal Balance[2]	Hypothetical Distribution[3]
I-A	$5,181,314.79	$3,000,000.00	$912,985.27	$912,985.27	$0.00	$0.00
II-A	$30,460,286.54	$3,000,000.00	$22,238,432.04	$3,257,525.64	$8,687,755.03	$3,774,681.71
III-A	$12,480,782.74	$3,000,000.00	$10,232,658.89	$3,096,816.37	$6,191,523.94	$3,434,690.88
IV-A-1	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
IV-A-2	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
IV-A-3	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
IV-A-4	$21,518,926.39	$3,000,000.00	$0.00	$0.00	$0.00	$0.00
IV-A-5	$61,208,000.00	$0.00	$6,041,977.42	$4,456,302.71	$0.00	$0.00
IV-A-6	$105,751,000.00	$0.00	$105,751,000.00	$0.00	$13,383,867.62	$4,414,300.07
V-A	$28,642,672.42	$3,000,000.00	$23,646,200.01	$3,276,370.02	$5,763,015.62	$3,376,327.33
M-1	$23,088,857.11	$0.00	$23,088,857.11	$0.00	$23,088,857.12	$0.00
M-2	$7,104,263.73	$0.00	$7,104,263.73	$0.00	$61,033.99	$0.00
M-3	$1,580,826.57	$0.00	$1,184,535.12	$0.00	$0.00	$0.00
N	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
OC	$5,523,437.16	$0.00	$200,358.07	$0.00	$0.00	$0.00
Totals	**$302,540,367.45**	**$15,000,000.00**	**$200,401,267.66**	**$15,000,000.00**	**$57,176,053.32**	**$15,000,000.00**

Notes:

1. I assume that a hypothetical $15 million award is distributed equally among the loan groups in accordance with the principal waterfall. This exercise is intended to illustrate differences through time and is not a calculation of damages nor an opinion on how distributions should be made.
2. Amount shown is the Beginning Certificate Balance as reported on each month's respective remittance report.
3. The AHM 2004-2 Indenture states that, "any remaining Principal Distribution Amount shall be distributed to the Class A Notes on a pro rata basis, based on the Note Principal Balances thereof, until the Note Principal Balances thereof have been reduced to zero."

Sources:

-American Home Mortgage Investment Trust 2004-2, Wells Fargo Bank, N.A., Indenture (June 30, 2004) (WF_BR_000435905).
-Remittance Reports: AHM 2004-2 (Jan. 26, 2009, Jan. 25, 2011, and Nov. 27, 2017).

Exhibit 22

Selected Warrantors and Bankruptcy or Receivership[1]

Relevant Trust	Warrantor	Date[2]
AHM 2004-2	American Home Mortgage Acceptance, Inc.	Aug. 2007
IRWHE 2005-A[3]	Irwin Union Bank and Trust Company	Sept. 2009[4]
IRWHE 2006-2[3]	Irwin Union Bank and Trust Company	Sept. 2009[4]
FMIC 2007-1	Fieldstone Investment Corporation	Nov. 2007
RVMLT 2007-2A[5]	Financial Freedom Senior Funding Corporation	Mar. 2011[6]

Notes:

1. Warrantors refers to the entity that made representations and warranties regarding the underlying collateral. Unless otherwise noted, this refers to the seller.
2. Date refers to the date when the warrantor filed a bankruptcy petition, unless otherwise noted.
3. For this trust, the warrantor is the originator and master servicer.
4. The FDIC reports that "[o]n Friday, September 18, 2009, Irwin Union Bank and Trust Company, Columbus, IN was closed by the Indiana Department of Financial Institutions, and the Federal Deposit Insurance Corporation (FDIC) was named Receiver."
5. For this trust, the warrantor is the originator and servicer.
6. Bloomberg reports that "[a]s of March 21, 2011 Financial Freedom Senior Funding Corporation went out of business."

Sources:

-Failed Bank Information: Information for Irwin Union Bank and Trust Company, Columbus, IN. *Federal Deposit Insurance Corporation.* <https://www.fdic.gov/bank/individual/failed/irwin-in.html> (accessed Nov. 9, 2017).
-Offering Documents: AHM 2004-2 (WF_BR_000435483 at WF_BR_000435486 and WF_BR_000435497), IRWHE 2006-2 (WF_BR_000394461 at WF_BR_000394461 and WF_BR_000394550), FMIC 2007-1 (WF_BR_000452197 at WF_BR_000452202 and WF_BR_000452204), and RVMLT 2007-2A (WF_BR_000493105 at WF_BR_000493106 and WF_BR_000493126).
-Thrifts and Mortgage Finance: Company Overview of Financial Freedom Senior Funding Corporation. *Bloomberg.* <http://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=9478422> (accessed Nov. 9, 2017).
-Voluntary Petition for Bankruptcy. American Home Mortgage Acceptance, Inc. (Bk. Del. No. 07-11049) (Aug. 6, 2007).
-Voluntary Petition for Bankruptcy. Fieldstone Mortgage Company. (Bk. Md. No. 07-21814) (Nov. 23, 2007).

Exhibit 23

[redacted]

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Exhibit 23
Foreclosure Time May Not Imply Servicing Damages
Illustrative Example Only

Notes:

1. Foreclosure End Date is the assumed date of termination to a hypothetical foreclosure proceeding. I assume the beginning of the foreclosure proceeding is the first date on which the Bloomberg Pay History field reflects an “F” (foreclosure).
2. For illustration purposes, I use the Bloomberg HPI Property Value, reported by Bloomberg, on the Foreclosure End Date, as a proxy for the recovery amount.

[redacted]

4. Net Recovery reflects the difference between the property value and the total servicing fees incurred.
5. In the “Benchmark” scenario, I assume the foreclosure episode lasts approximately 19 months. Other possible foreclosure time frames may exist.
6. In the “Actual” scenario, the Foreclosure End Date is the date on which the Bloomberg Pay History field reflects an “L” (liquidation).

Sources:

-Bloomberg, L.P. (accessed Nov. 1, 2017).

-Confidential Supplemental Private Placement Memorandum: BSSP 2007-EMX1 (WF_BR_000487885 at WF_BR_000487903).

Exhibit 24
Dr. Hartzmark's Post-Award Price Calculation Set Forth in Hartzmark HSBC Rebuttal Report

Tranche	Current Face Value	Pre-Award Price	Face Value After Distribution	Post-Award Price Calculation[1]	Post-Award Price
A-4	$47,366,194	98.06	$12,366,194	= $12,366,194 @ 98.06	98.06
M-1	$30,000,100	90.65	$30,001,000	= $30,001,000 @ 98.06	98.06
M-2	$25,542,000	79.84	$25,542,000	= $4,999,999 @ 98.06 + $20,542,001 @ 90.65	92.10
M-3	$14,595,000	70.05	$14,595,000	= $9,458,099 @ 90.65 + $5,136,901 @ 79.84	86.85
M-4	$12,815,903	36.24	$12,974,000	= $12,974,000 @ 79.84	79.84

Note:

1. Dr. Hartzmark's post-award price calculation shifts pre-award prices down up to the pre-award balance of each tranche. As set forth in the Hartzmark HSBC Rebuttal Report, "[t]he hypothetical post-award prices are weighted average prices based on the pre-award prices and the pre-award balances of the different tranches." For example, the post-award price for the M-2 tranche is calculated as follows: ($4,999,999/$25,542,000)*.9806 + ($20,542,001/$25,542,000)*.9065 = .9210, or 92.10.

Source:

Hartzmark, Michael L. Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *BlackRock Balanced Capital Portfolio (FI), et al. v. HSBC Bank USA, N.A.* (S.D.N.Y. No. 1:14-cv-09366) (June 2, 2017).

Exhibit 25

Dr. Hartzmark's "Financial Benefits" Calculation Highly Depends on Price Input[1]

WFHET 2006-2

Tranche	IDC Price[2]	Claimed Financial Benefit of Distribution	Bloomberg Price[3]	Claimed Financial Benefit of Distribution	Claimed Financial Benefit Difference[4]
A-1	0.00	$0.00	0.00	$0.00	0.00%
A-2	0.00	$0.00	0.00	$0.00	0.00%
A-3	0.00	$0.00	0.00	$0.00	0.00%
A-4	98.06	$680,750.00	98.54	$509,960.94	-25.09%
M-1	90.65	$2,220,674.00	94.15	$1,317,231.41	-40.68%
M-2	79.84	$3,132,393.00	84.78	$2,612,054.38	-16.61%
M-3	70.05	$2,451,149.00	76.56	$2,086,045.27	-14.90%
M-4	36.24	$5,713,955.00	38.30	$6,091,935.82	6.62%
M-5	0.00	$9,815,744.00	0.00	$10,544,244.34	7.42%
M-6	0.00	$7,321,345.00	0.00	$7,966,367.97	8.81%
M-7	0.00	$3,663,989.00	0.00	$3,872,159.88	5.68%
M-8	n/a	n/a	n/a	n/a	n/a
M-9	n/a	n/a	n/a	n/a	n/a
M-10	n/a	n/a	n/a	n/a	n/a
CE	n/a	n/a	n/a	n/a	n/a
Total		$35,000,000.00		$35,000,000.00	

Notes:

1. This illustrative example is intended to demonstrate the sensitivity of Dr. Hartzmark's claimed financial benefits distribution with respect to price. It is not a calculation of damages nor an opinion as to how distributions should be made.
2. IDC Price reflects the WFHET 2006-2 IDC prices as of Mar. 31, 2017, as reported in Exhibit 1 of Hartzmark HSBC Rebuttal Report .
3. Bloomberg Price reflects the Mar. 31, 2017 PX_MID prices reported by Bloomberg for WFHET 2006-2.
4. "Financial Benefit Difference" is the percent difference in the "financial benefit" of each tranche relative to the "financial benefit" the tranche would realize using the alternative pricing source presented.

Sources:

-Bloomberg, L.P. (accessed Dec. 6, 2017).

-Hartzmark, Michael L. Ph.D. Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *BlackRock Balanced Capital Portfolio (FI), et al. v. HSBC Bank USA, N.A.* (S.D.N.Y. No. 1:14-cv-09366) (June 2, 2017).

Exhibit 26

Negative "Financial Benefits" Illustration Using BSSP 2007-EMX1[1]

Illustrative Example Only

Tranche	Dec. 2017 Price[2]	Financial Benefit of Distribution[3]
A-1	100.747	**-$43,605.69**
A-2	101.837	**-$140,096.39**
M-1	101.417	**$41,984.18**
M-2	98.274	**$314,310.84**
M-3	73.279	**$1,565,665.47**
M-4	10.994	**$4,599,324.18**
M-5	0.896	**$3,118,942.18**
M-6	0.016	**$502,789.93**
M-7	n/a	**$21,258.18**
M-8	n/a	**$19,126.31**
M-9	n/a	**$300.83**
M-10	n/a	**$0**
M-11	n/a	**$0**
CE	n/a	**$0**
P	n/a	**$0**
R-1	n/a	**$0**
R-2	n/a	**$0**
R-3	n/a	**$0**
RX	n/a	**$0**
Totals		**$10,000,000.00**

Notes:

1. Illustration assumes a $10 million hypothetical damages amount is distributed as principal when a trigger event is in effect. It is not a calculation of damages nor an opinion as to how distributions should be made.
2. The Dec. 2017 price reflects the PX_MID price as reported by Bloomberg.
3. I calculate post-award prices and the financial benefits in the manner described by the Hartzmark HSBC Rebuttal Report.

Sources:

-Bloomberg, L.P. (accessed Dec. 5, 2017).
-BSSP 2007-EMX1 Remittance Report (Nov. 27, 2017).
-Hartzmark, Michael L. Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *BlackRock Balanced Capital Portfolio (FI), et al. v. HSBC Bank USA, N.A.* (S.D.N.Y. No. 1:14-cv-09366) (June 2, 2017).

Exhibit 27

Changes in "Financial Benefits" in BSSP 2007-EMX1 Based on Pro-Rata Reduction

Illustrative Example Only

	Negative "Financial Benefits" Illustration[1]			Adjusted "Financial Benefits"[2, 3]					
Tranche	Face Value After Distribution	"Market Value" After Distribution	"Financial Benefit"	Reduced Pro-rata by Face Value		Reduced Pro-rata by "Market Value"		Reduced Pro-rata by "Financial Benefit"	
A-1	$0.00	$0.00	-$43,605.69	$0.00		$0.00		$0.00	
A-2	$8,786,427.17	$8,884,169.87	-$140,096.39	$0.00		$0.00		$0.00	
M-1	$11,105,000.00	$11,304,361.92	$41,984.18	$2,452.36	-22%	-$14,435.26	-31%	$41,226.83	-0%
M-2	$10,251,000.00	$10,388,385.83	$314,310.84	$277,819.11	-20%	$262,462.98	-28%	$308,641.04	-3%
M-3	$6,264,000.00	$6,155,887.79	$1,565,665.47	$1,543,366.75	-12%	$1,534,941.77	-17%	$1,537,422.69	-15%
M-4	$5,885,000.00	$5,246,293.83	$4,599,324.18	$4,578,374.63	-11%	$4,573,140.22	-14%	$4,516,357.75	-45%
M-5	$5,505,000.00	$3,168,257.94	$3,118,942.18	$3,099,345.36	-11%	$3,103,129.58	-9%	$3,062,680.11	-31%
M-6	$5,505,000.01	$503,207.43	$502,789.93	$483,193.11	-11%	$500,278.45	-1%	$493,720.18	-5%
M-7	$2,373,000.02	$21,258.18	$21,258.18	$12,810.73	-5%	$21,152.08	-0%	$20,874.71	-0%
M-8	$2,847,000.01	$19,126.31	$19,126.31	$8,991.50	-6%	$19,030.85	-0%	$18,781.29	-0%
M-9	$1,869,301.14	$300.83	$300.83	-$6,353.55	-4%	$299.33	-0%	$295.40	-0%
M-10	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
M-11	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
CE	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
P	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
R-1	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
R-2	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
R-3	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
RX	$0.00	$0.00	$0.00	$0.00		$0.00		$0.00	
Totals	**$60,390,728.35**	**$45,691,249.92**	**$10,000,000.00**	**$10,000,000.00**		**$10,000,000.00**		**$10,000,000.00**	

Notes:

1. I calculate post-award prices and the "financial benefits" in the manner described by the Hartzmark HSBC Rebuttal Report. This is not a calculation of damages nor an opinion as to how distributions should be made.
2. Adjusted "Financial Benefits" reflect the "Financial Benefit" adjusted for negative "financial benefits."
3. In this illustrative example, total negative "financial benefits" equal $183,702.09. Percents are the portion of that amount which are subtracted from the "Financial Benefit" of each tranche to determine Adjusted Financial Benefits. Percents may not sum to 100 due to rounding.

Sources:

-Bloomberg, L.P. (accessed Dec. 5, 2017).

-BSSP 2007-EMX1 Remittance Report (Nov. 27, 2017).

-Hartzmark, Michael L. Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *BlackRock Balanced Capital Portfolio (FI), et al. v. HSBC Bank USA, N.A.* (S.D.N.Y. No. 1:14-cv-09366) (June 2, 2017).

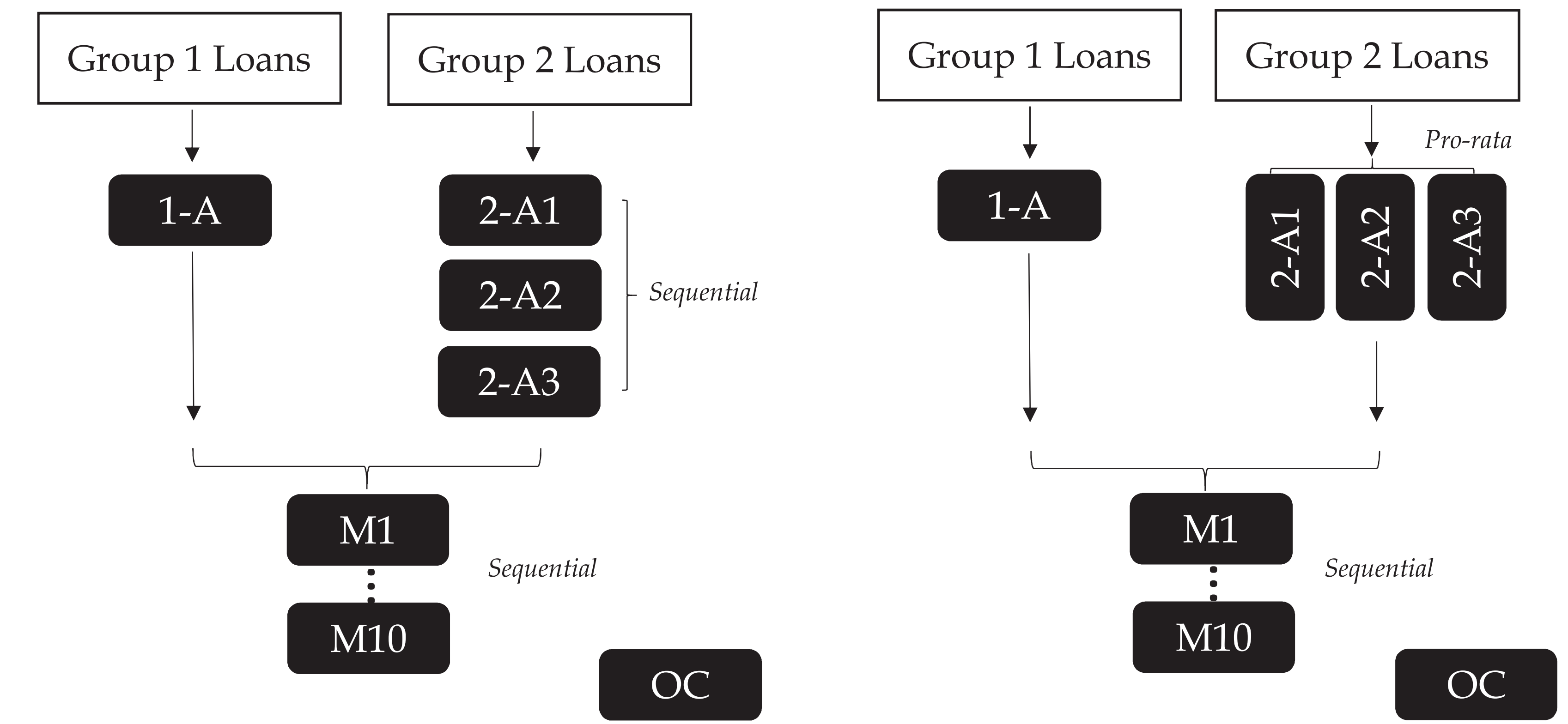
Exhibit 28

Example Principal Waterfall Distribution Scenarios[1]

FMIC 2007-1

Sequential Scenario[2]

Pro-Rata Scenario[2]



Notes:

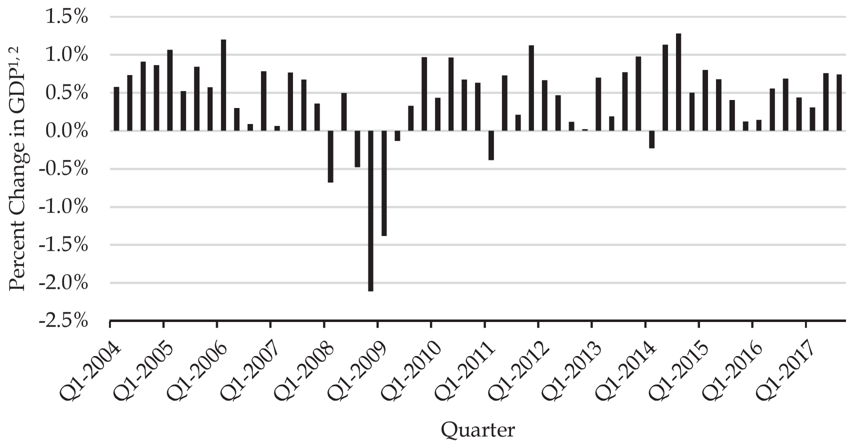
1. In the sequential scenario, the trust is not undercollateralized or is undercollateralized by an amount less than the sum of the Class M certificate balances. Payments to the Class 2 certificates are allocated sequentially. In the pro-rata scenario, the trust is undercollateralized by an amount greater than the sum of the Class M certificate balances. Principal is distributed pro-rata to the Class 2 certificates.

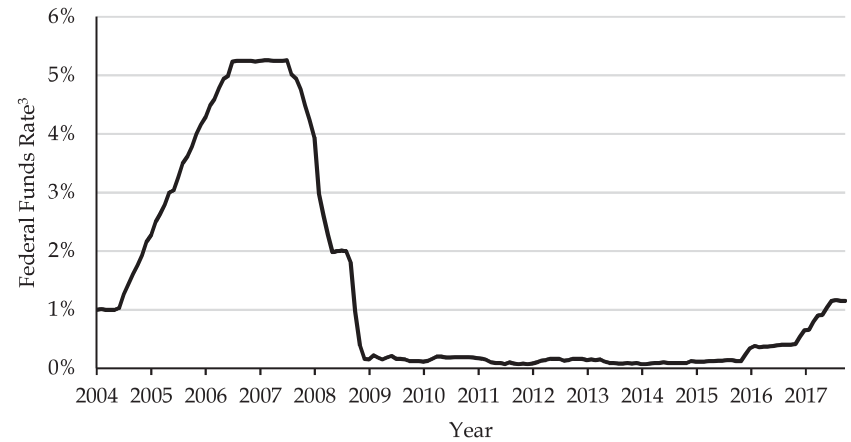
2. Under certain limited circumstances that have not yet occurred in FMIC 2007-1, principal payments from one loan group may be paid as principal to the tranches backed by another loan group.

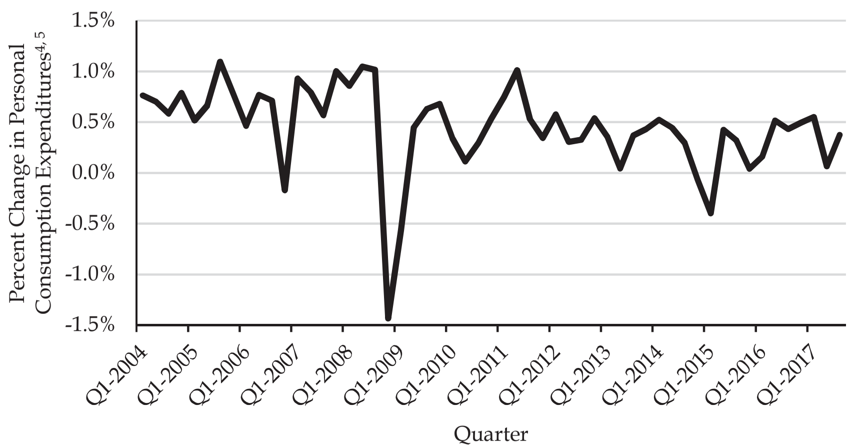
Source:

FMIC 2007-1 Prospectus Supplement (WF_BR_000452197 at WF_BR_000452254, WF_BR_000452258, and WF_BR_000452310).

Exhibit 29a
Macroeconomic Indicators
(2004 - 2017)







Notes:

1. Real GDP is the value of goods and services, adjusted for inflation, that is produced by labor and property in the United States.
2. Data are seasonally adjusted quarterly average percent changes.
3. The federal funds effective rate is the weighted average interest rate at which banks borrow and lend to each other overnight.
4. Personal consumption expenditures measures consumer spending in the economy, specifically the value of goods and services purchased by persons who reside in the U.S.
5. Data represents quarterly average percent change.
6. Unemployment Rate represents the monthly seasonally-adjusted percent of unemployed civilians over the age of 16.

Exhibit 29a
Macroeconomic Indicators
(2004 - 2017)

Sources:

-"Civilian Unemployment Rate." *U.S. Bureau of Labor Statistics* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/UNRATE> (accessed Nov. 14, 2017).

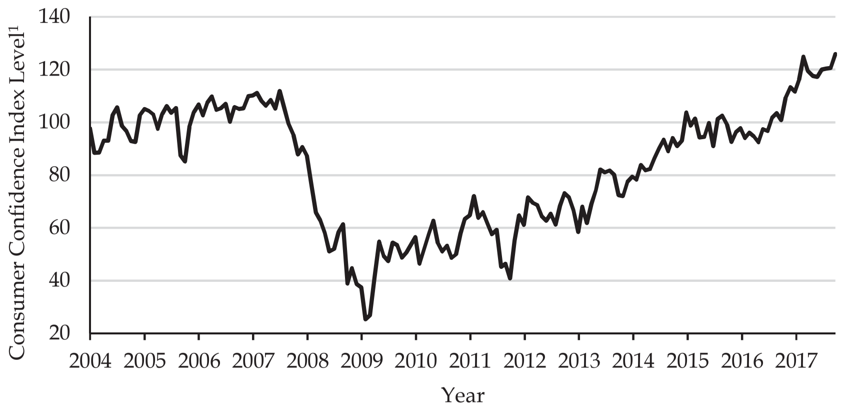
-"Effective Federal Funds Rate." *Board of Governors of the Federal Reserve System* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/FEDFUNDS> (accessed Nov. 14, 2017).

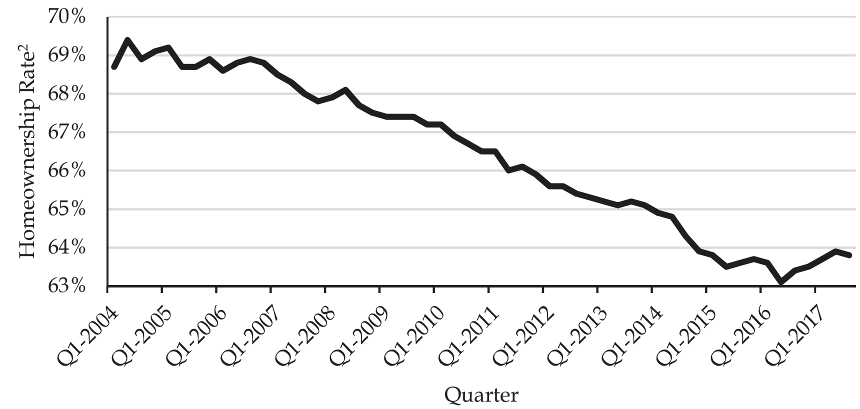
-"Glossary: National Income and Product Accounts." *U.S. Bureau of Economic Analysis* . <http://www.bea.gov/national/pdf/glossary.pdf> (accessed Oct. 4, 2017).

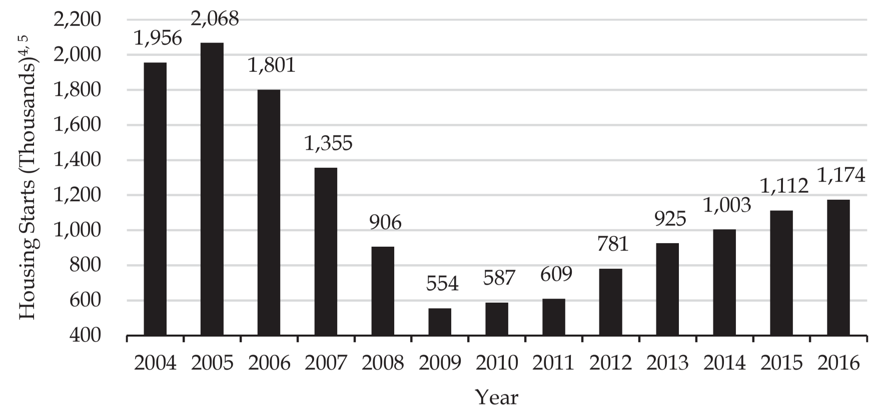
-"Real Gross Domestic Product." *U.S. Bureau of Economic Analysis* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://research.stlouisfed.org/fred2/series/GDPC1> (accessed Nov. 14, 2017).

-"Personal Consumption Expenditures: Chain-type Price Index." *U.S. Bureau of Economic Analysis* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://research.stlouisfed.org/fred2/series/PCEPI> (accessed Nov. 14, 2017).

Exhibit 29b
Macroeconomic Indicators
(2004 - 2017)







Notes:

1. The Consumer Confidence Index measures consumer perceptions about the health of the economy. It is based on responses to survey questions regarding consumers' perceptions of current and near term business, employment, and income conditions.
2. Data represents quarterly seasonally-adjusted percentages of households that are owner occupied.
3. "The months' supply is the ratio of houses for sale to houses sold. This statistic provides an indication of the size of the for sale inventory in relation to the number of houses currently being sold. The months' supply indicates how long the current for sale inventory would last given the current sales rate if no additional new houses were built."
4. Single-family housing starts are an estimate of the number of single unit (detached, semidetached, row houses, and townhouses) properties on which construction had begun in the United States on a particular date.
5. Data represents annual aggregate not-seasonally-adjusted single family housing starts.

Exhibit 29b
Macroeconomic Indicators
(2004 - 2017)

Sources:

-Bloomberg, L.P. (CONCCONF) (accessed Nov. 14, 2017).

-“Consumer Confidence Survey Technical Note – February 2011.” *The Conference Board.* <https://www.conference-board.org/pdf_free/press/TechnicalPDF_4134_1298367128.pdf> (accessed Nov. 14, 2017).

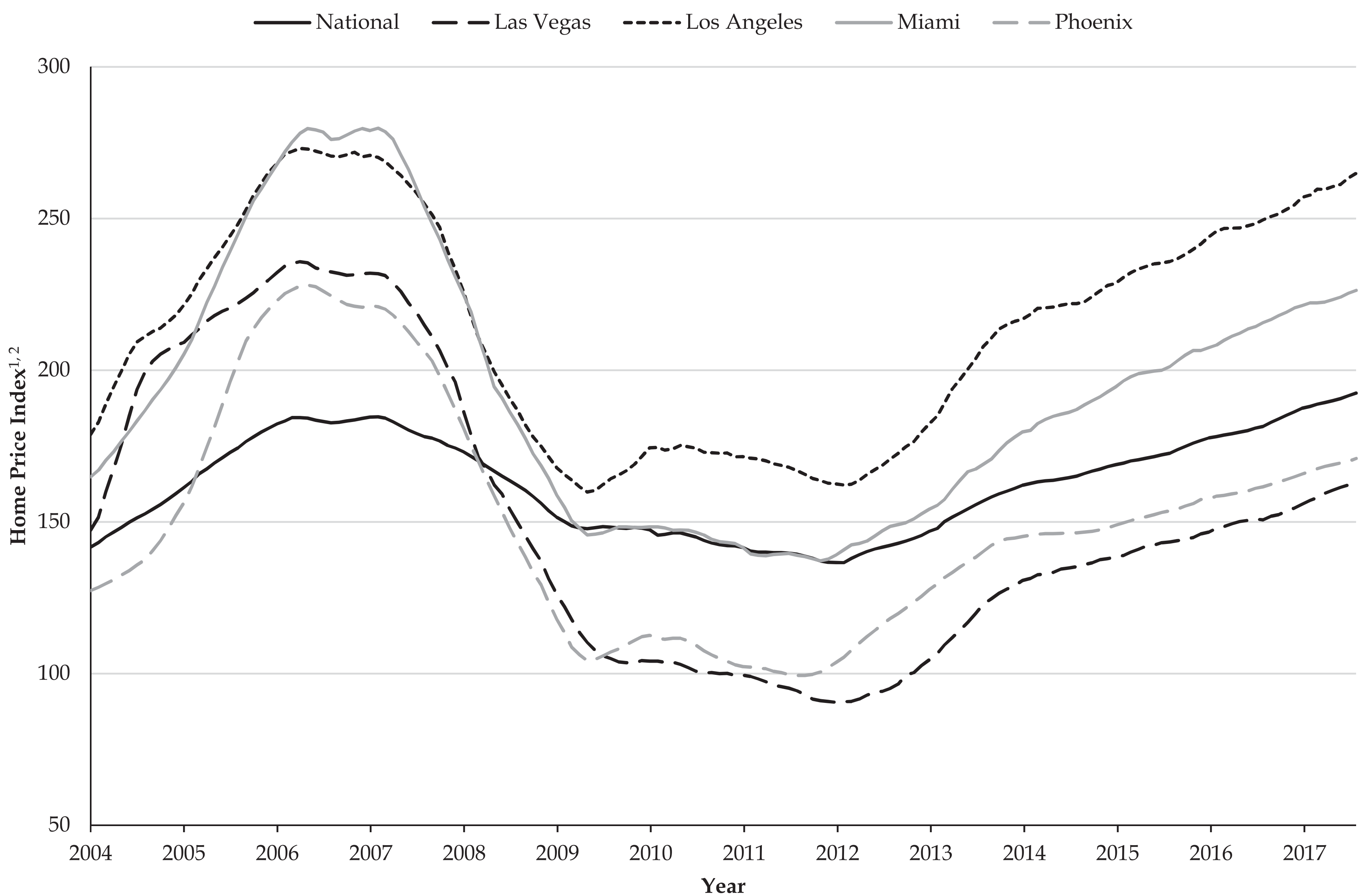
-“Homeownership Rate for the United States.” *U.S. Bureau of the Census* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://research.stlouisfed.org/fred2/series/RSAHORUSQ156S> (accessed on Nov. 14, 2017).

-“Housing Starts: Total: New Privately Owned Housing Units Started.” *U.S. Bureau of the Census.* Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://research.stlouisfed.org/fred2/series/HOUSTNSA> (accessed Nov. 14, 2017).

-“Monthly Supply of Houses in the United States.” *U.S. Bureau of the Census.* Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/MSACSR> (accessed Nov. 14, 2017).

-“New Residential Construction: Definitions.” *United States Census Bureau* . <http://www.census.gov/construction/nrc/definitions/index.html#h> (accessed Nov. 14, 2017).

Exhibit 30a
Home Price Index (National and Select Cities)
(2004 - 2017)



Notes:
1. The S&P CoreLogic Case-Shiller U.S. National Home Price Index is calculated monthly from single family house prices for the nine U.S. Census divisions.
2. Data are seasonally adjusted.

Exhibit 30a
Home Price Index (National and Select Cities)
(2004 - 2017)

Sources:

-"S&P/Case-Shiller U.S. National Home Price Index." *S&P Dow Jones Indices LLC*. Retrieved from FRED, *Federal Reserve Bank of St. Louis*. <https://research.stlouisfed.org/fred2/series/CSUSHPISA> (accessed Nov. 14, 2017).

-"S&P/Case-Shiller AZ-Phoenix Home Price Index." *S&P Dow Jones Indices LLC*. Retrieved from FRED, *Federal Reserve Bank of St. Louis*. <https://fred.stlouisfed.org/series/PHXRSA> (accessed Nov. 14, 2017).

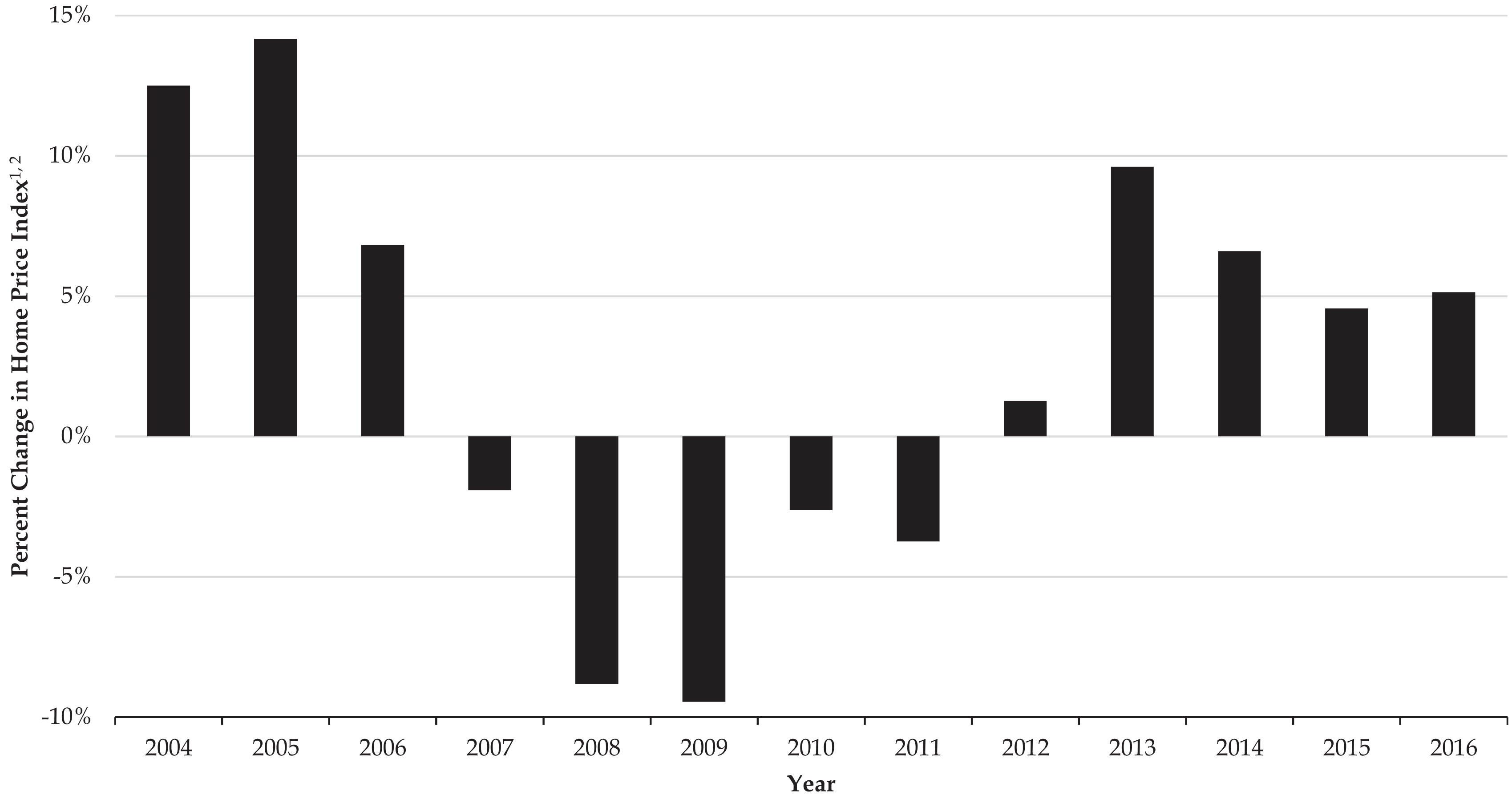
-"S&P/Case-Shiller CA-Los Angeles Home Price Index." *S&P Dow Jones Indices LLC*. Retrieved from FRED, *Federal Reserve Bank of St. Louis*. <https://fred.stlouisfed.org/series/LXXRSA> (accessed Nov. 14, 2017).

-"S&P/Case-Shiller FL-Miami Home Price Index." *S&P Dow Jones Indices LLC*. Retrieved from FRED, *Federal Reserve Bank of St. Louis*. <https://fred.stlouisfed.org/series/MIXRSA> (accessed Nov. 14, 2017).

-"S&P/Case-Shiller NV-Las Vegas Home Price Index." *S&P Dow Jones Indices LLC*. Retrieved from FRED, *Federal Reserve Bank of St. Louis*. <https://fred.stlouisfed.org/series/LVXRSA> (accessed Nov. 14, 2017).

-"S&P/Case-Shiller CoreLogic U.S. National Home Price NSA Index Fact Sheet." *S&P Dow Jones Indices LLC* (Sept. 30, 2017). <http://us.spindices.com/indices/real-estate/sp-corelogic-case-shiller-us-national-home-price-nsa-index> (accessed Dec. 1, 2017).

Exhibit 30b
Home Price Index (Percent Change)
(2004 - 2016)



Notes:

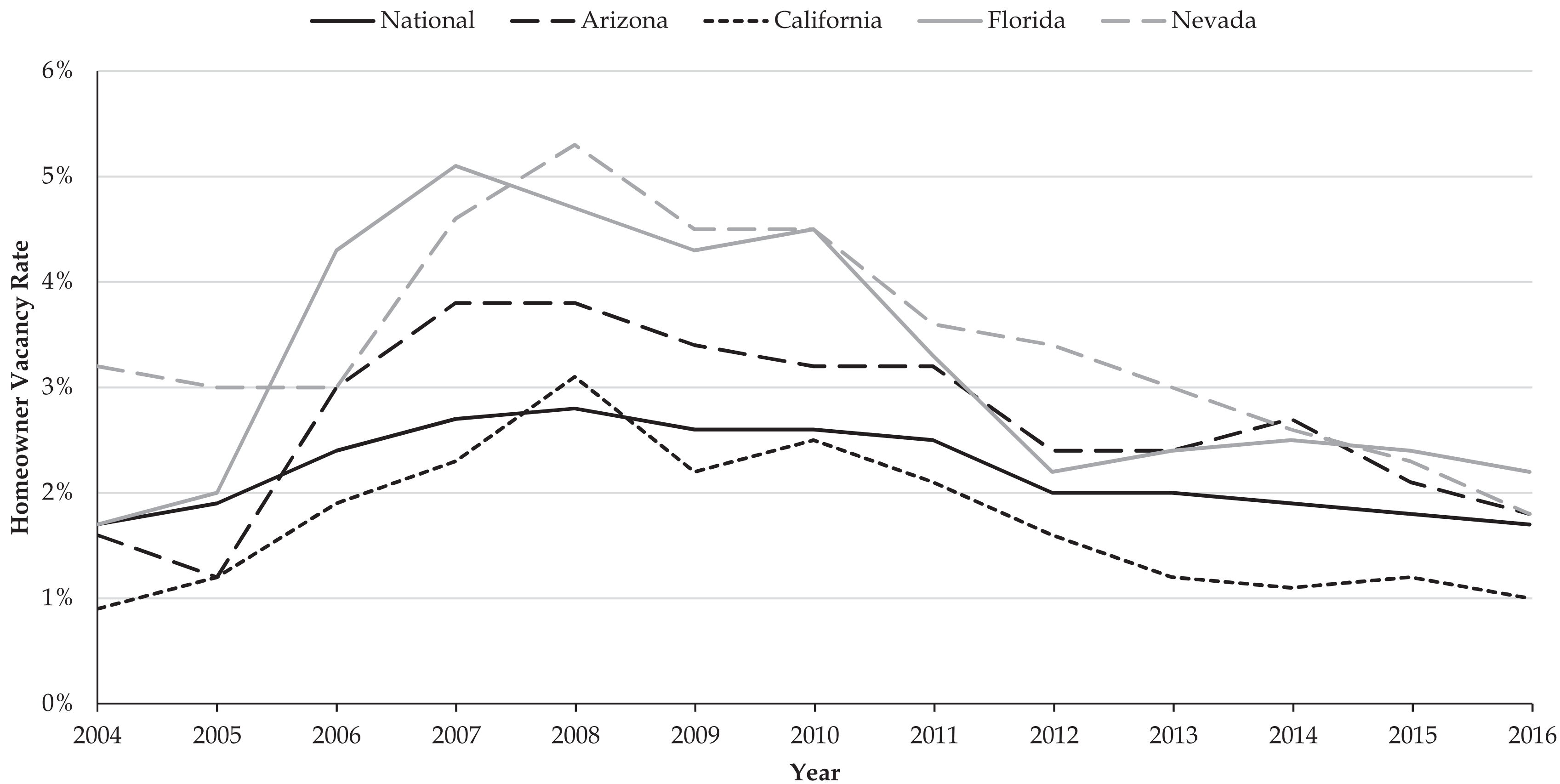
1. The S&P CoreLogic Case-Shiller U.S. National Home Price Index is calculated monthly from single family house prices for the nine U.S. Census divisions.
2. Data represents annual average percent change.

Sources:

-"S&P/Case-Shiller U.S. National Home Price Index." *S&P Dow Jones Indices LLC* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://research.stlouisfed.org/fred2/series/CSUSHPISA> (accessed Nov. 14, 2017).

-"S&P/Case-Shiller Corelogic U.S. National Home Price NSA Index Fact Sheet." *S&P Dow Jones Indices LLC* (Aug. 31, 2017). <http://us.spindices.com/indices/real-estate/sp-corelogic-case-shiller-us-national-home-price-nsa-index> (accessed Dec. 1, 2017).

Exhibit 31
Homeowner Vacancy Rate (National and Select States)
(2004 - 2016)



Sources:

-"Home Vacancy Rate for the United States." *U.S. Bureau of the Census* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/USHVAC> (accessed Nov. 14, 2017).

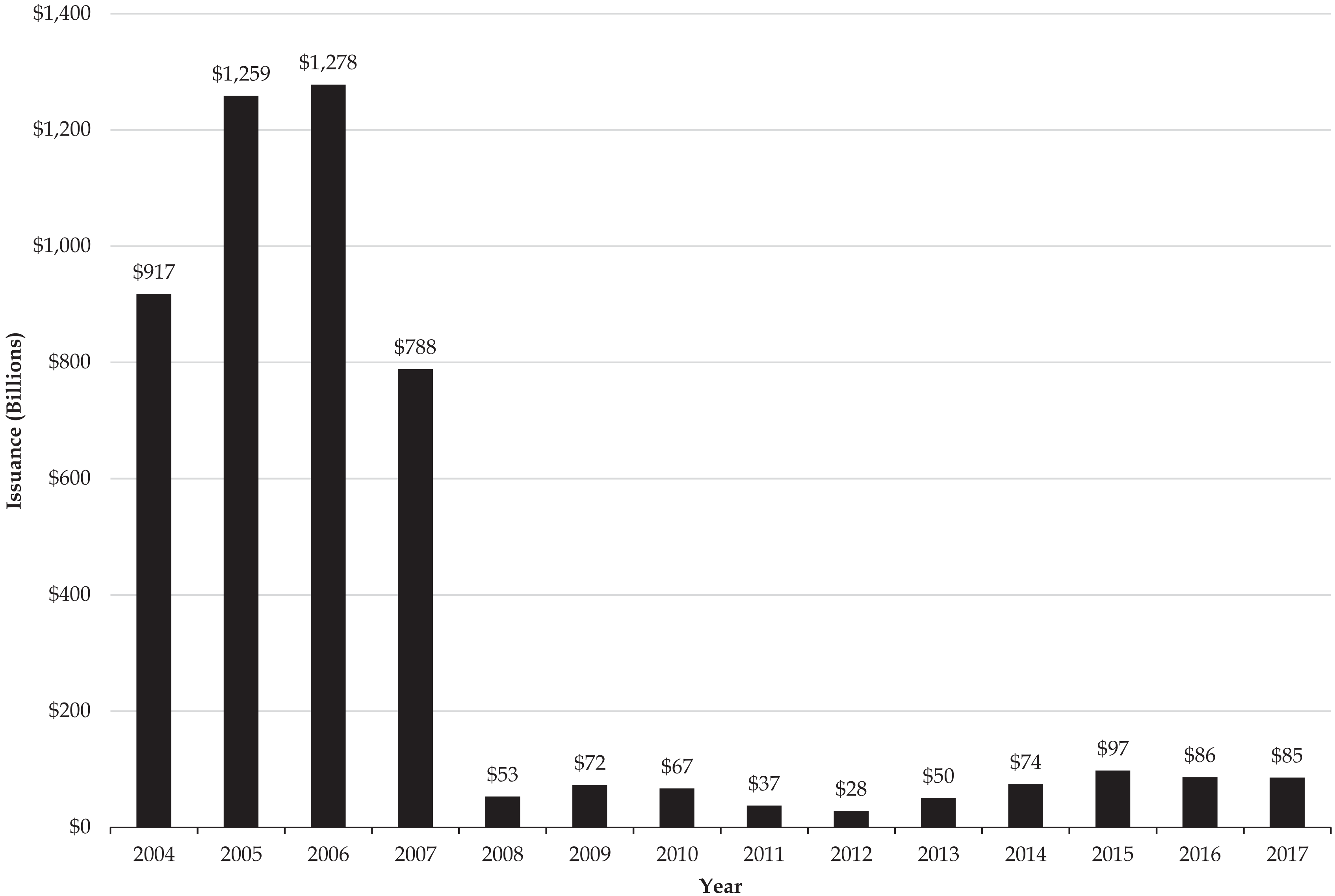
-"Home Vacancy Rate for Arizona." *U.S. Bureau of the Census* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/AZHVAC> (accessed Nov. 14, 2017).

-"Home Vacancy Rate for California." *U.S. Bureau of the Census* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/CAHVAC> (accessed Nov. 14, 2017).

-"Home Vacancy Rate for Florida." *U.S. Bureau of the Census* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/FLHVAC> (accessed Nov. 14, 2017).

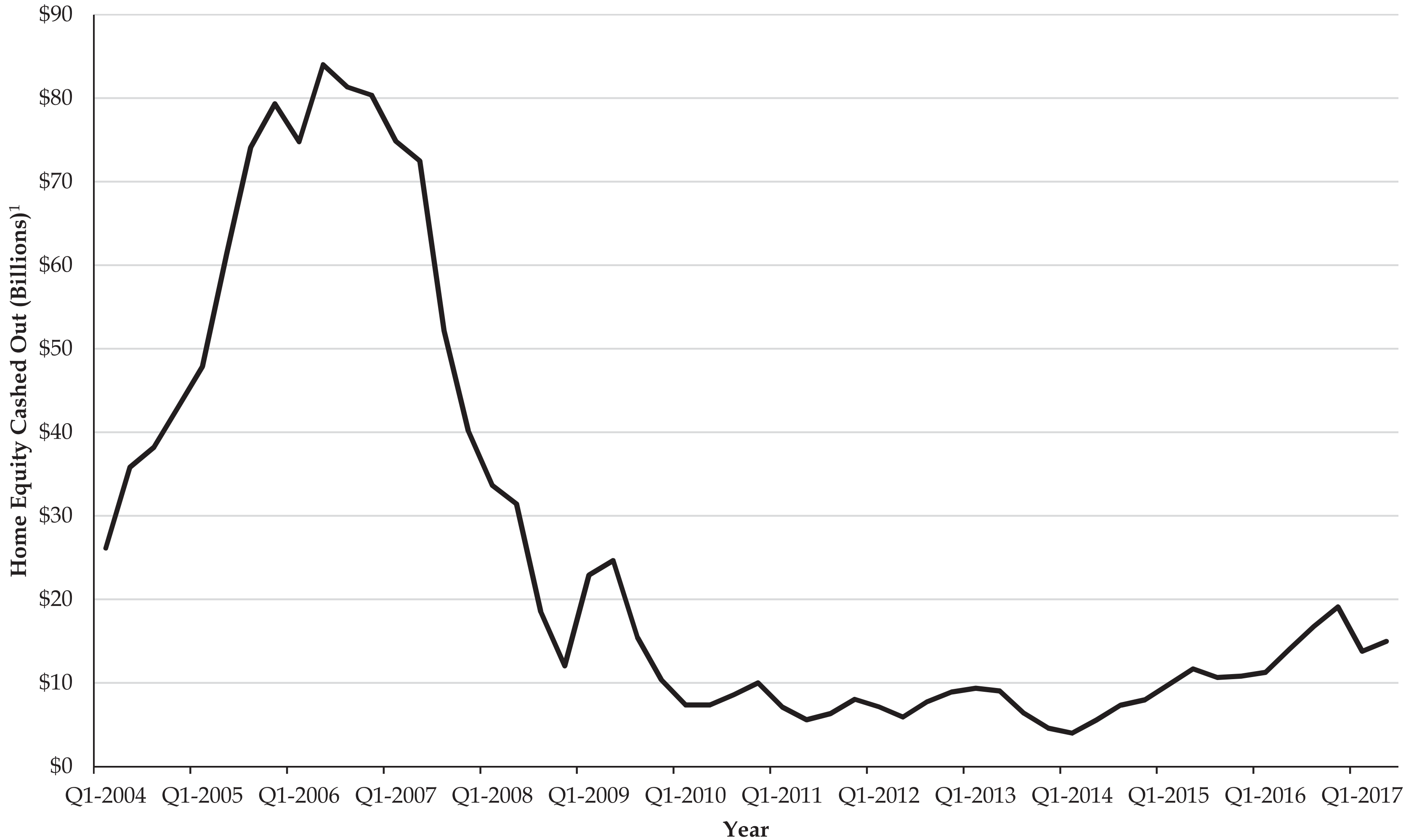
-"Home Vacancy Rate for Nevada." *U.S. Bureau of the Census* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/NVHVAC> (accessed Nov. 14, 2017).

Exhibit 32
Non-Agency RMBS Issuance
(2004 - 2017)



Source:
"U.S. Mortgage-Related Issuance and Outstanding." *SIFMA* (Nov. 1, 2017). <https://www.sifma.org/wp-content/uploads/2017/06/sf-us-mortgage-related-sifma.xls> (accessed Nov. 14, 2017).

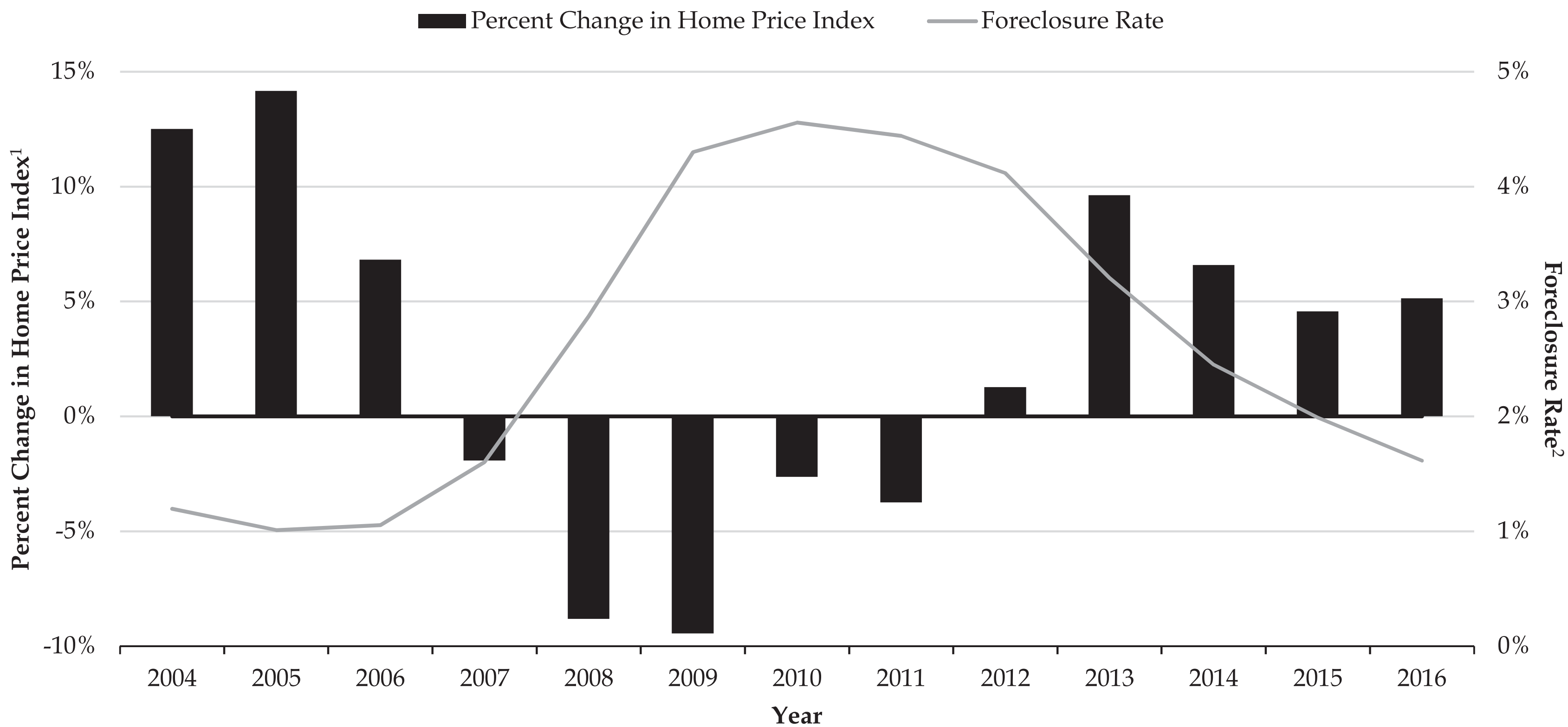
Exhibit 33
Volume of Home Equity Cashed Out
(Q1 2004 - Q2 2017)



Note:
1. Home equity cashed out represents the dollar value of equity cashed-out by refinancing prime, first-lien conventional loans. FHA, VA, or subprime loans are not included.

Source:
"Cash-Out Refinance Report." *Freddie Mac* (Aug. 15, 2017). <http://www.freddiemac.com/research/docs/q2_refinance_2017.xls> (accessed Nov. 14, 2017).

Exhibit 34a
Home Price Index and Foreclosure Rates
(2004 - 2016)



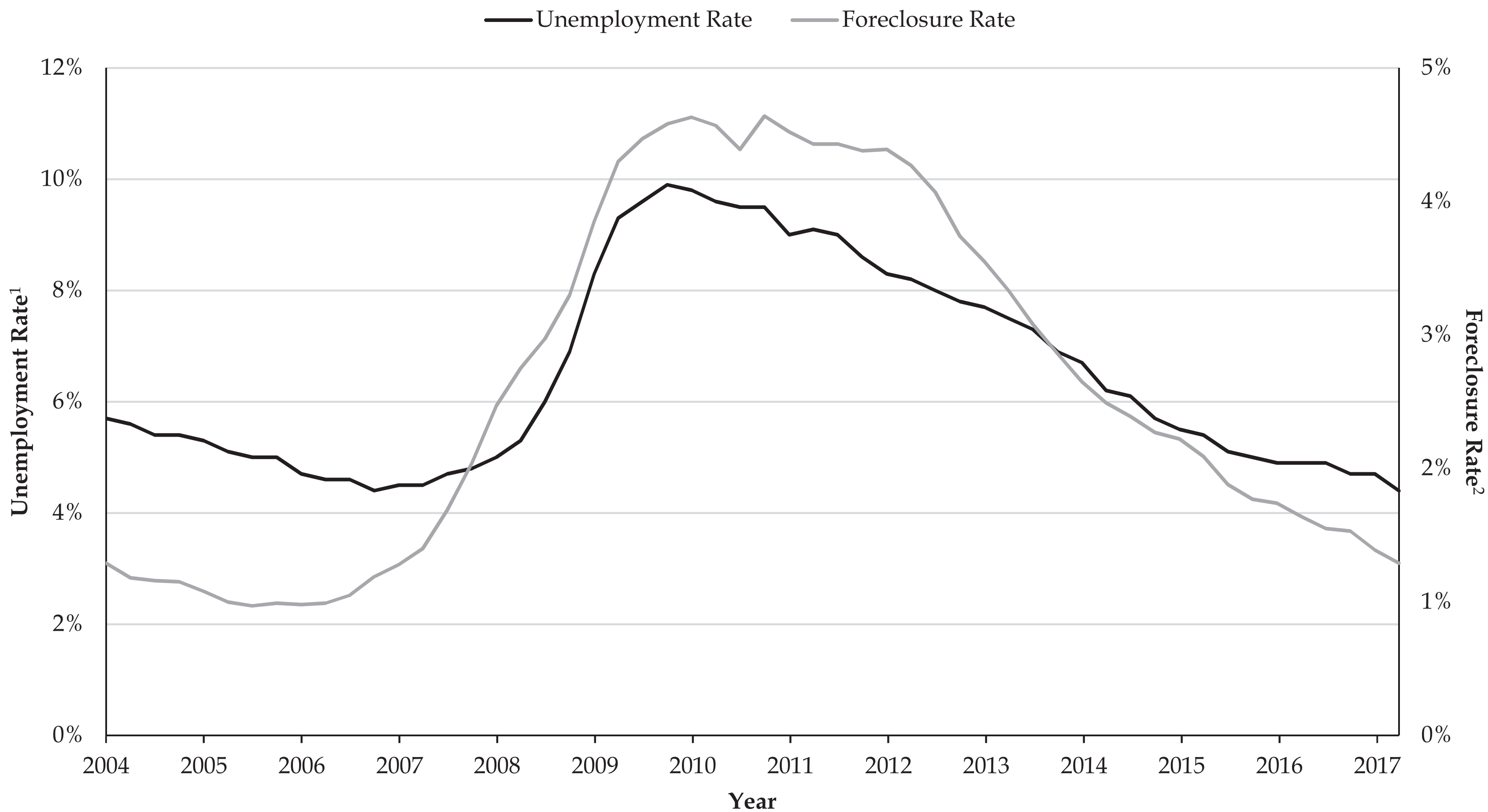
Notes:

1. The S&P CoreLogic Case-Shiller U.S. National Home Price Index is calculated monthly from single family house prices for the nine U.S. Census divisions. Home price index data represent annual average percent change.
2. Foreclosure rate represents the annual average percentage of residential property loans in default where the lender has begun the process of recovering the loan balance.

Sources:

-Bloomberg L.P. (FORLTOTL) (accessed Nov. 14, 2017).
-"S&P/Case-Shiller U.S. National Home Price Index." *S&P Dow Jones Indices LLC* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://research.stlouisfed.org/fred2/series/CSUSHPISA> (accessed Nov. 14, 2017).
-"S&P/Case-Shiller CoreLogic U.S. National Home Price NSA Index Fact Sheet." *S&P Dow Jones Indices LLC* (Aug. 31, 2017). <http://us.spindices.com/indices/real-estate/sp-corelogic-case-shiller-us-national-home-price-nsa-index> (accessed Dec. 1, 2017).

Exhibit 34b
Unemployment and Foreclosure Rates
(2004 - 2017)



Notes:

1. Unemployment rate represents quarterly seasonally-adjusted rates for the percentage of unemployed civilians over the age of 16.
2. Foreclosure rate represents the percentage of residential property loans in default where the lender has begun the process of recovering the loan balance, reported quarterly.

Sources:

-Bloomberg L.P. (FORLTOTL) (accessed Nov. 14, 2017).

-"Civilian Unemployment Rate." *U.S. Bureau of Labor Statistics* . Retrieved from FRED, *Federal Reserve Bank of St. Louis* . <https://fred.stlouisfed.org/series/UNRATE> (accessed Nov. 14, 2017).

Appendix A

Curriculum Vitae

Ethan Cohen-Cole Ph.D., MPA, MA

Vega Economics
Managing Director
1625 Shattuck Ave, Suite 200
Berkeley, CA 94709
Tel: (510) 280-5520
ecohencole@vegaeconomics.com

Ethan Cohen-Cole is the Managing Director with Vega Economics. Dr. Cohen-Cole is an expert in banking, financial regulation, consumer credit, structured finance (RMBS, CMBS, CDS, CDO, ABS, etc.), financial markets, econometric methods, capital markets, analysis of networks, and systemic risk. Dr. Cohen-Cole is a former finance professor and has taught executives, MBA, and Masters in Finance candidates and undergraduates in a range of topics including corporate finance, macroeconomics, valuation, financial risk management, banking, and financial institution management.

Dr. Cohen-Cole has more than 17 years of experience in financial services, litigation consulting and bank supervision, including experience with the Federal Reserve System as a bank regulator and as a policy and regulation expert. Dr. Cohen-Cole has worked with clients across the world such as central banks, including the Bank of France, the Bank of Austria, the Central Bank of Brazil, and the Bank for International Settlements ("BIS"). His financial sector clients have included the largest multinational banks in the US and Europe. Broadly experienced, Dr. Cohen-Cole has worked on client engagements in more than 25 countries in Europe, Asia, Africa, and the Americas.

Dr. Cohen-Cole has also been an invited visitor or speaker at more than 75 professional and academic seminars and training sessions. These have included programs sponsored by the Federal Reserve System, Central Bank of Chile, BIS, Bank of France, Bank of Austria, European Economic Association, Chicago/London Conferences on Financial Markets, Financial Management Association (US and Europe), RiskMinds Europe, University of California – Berkeley, Harvard University, FDIC, European Central Bank, Bank of Italy, American Finance Association, American Economic Association, and Cambridge University.

Dr. Cohen-Cole has worked in the banking sector in roles related to risk management. As financial economist in the Supervision and Regulation function of the U.S. Federal Reserve System, Dr. Cohen-Cole led quantitative reviews of large bank risk modeling efforts and was a designated system quantitative expert on risk management and Basel II. Dr. Cohen-Cole evaluated the credit, market, and operational risk models for many top-20 financial institutions and evaluated bank-wide risk management systems from a technical as well as a policy and governance perspective.

Dr. Cohen-Cole has also been closely involved with the creation of financial sector regulations. He was a steering committee member of the Center for Financial Policy at the University of Maryland, where he served on an advisory committee to the BIS in the drafting of Basel I and II, and served as an advisor to three central banks on systemic risk management.

He has written widely on topics including commodities markets, municipal bond markets, systemic risk, and financial markets in general. He has been published in *The Journal of Financial Economics*, *the Journal of Banking & Finance*, *Review of Economics and Statistics*, *Journal of Macroeconomics*, *American Law and Economic Review*, *Journal of Health Economics*, and *Economic Letters.*

RECENT PROFESSIONAL HISTORY

Vega Economics 2017-*present*
Managing Director

Econ One Research 2014-2017
Managing Director, Financial Services Practice Lead

Alvarez & Marsal 2012-2013
Managing Director

NERA Economic Consulting 2010-2012
Special Consultant

University of Maryland 2009-2012
Finance Professor

Federal Reserve Bank of Boston 2006-2009
Financial Economist, Bank Supervisor

EDUCATION

Harvard University
BA, *History*

Princeton University
MPA, *Public Policy*

University of Wisconsin-Madison
MA, *Economics*

University of Wisconsin-Madison
Ph.D., *Economics*

BOARD MEMBERSHIP

Legal Momentum 2015-*present*
Board of Directors

El Camino Hospital 2012-2015
Investment Committee

SELECT AREAS OF EXPERTISE

Bank Regulation and Supervision
Structured Finance (CDO, RMBS, CLN)
Derivatives
Risk Management
Pricing Models
Systemic Risk
OTC Markets
High Frequency / Algorithmic Trading
Advisor to BIS for Basel II Creation
Market Risk
Operational Risk
Foreign Exchange
Capital Markets
Macroeconomics
Merchant Acquiring
Consumer Payments
Payment Systems
Consumer Credit
Credit Cards
Commodities Markets
Macro Prudential Regulation
Repo Markets
Securities Lending
Credit Risk

Publication List: 2007 - Present

2007

Banerjee, Ritesh, Ethan Cohen-Cole, and Giulio Zanella. "Demonstration Effects in Preventive Care." Working Paper No. QAU07-7, Federal Reserve Bank of Boston (2007).

Cohen-Cole, Ethan. "Asset Liquidity, Debt Valuation, and Credit Risk." Working Paper No. QAU07-5, Federal Reserve Bank of Boston (2007).

Cohen-Cole, Ethan, and Nick Kraniger. "Multiple Bank Mergers and Rational Foresight." Working Paper (2007).

Cohen-Cole, Ethan, and Todd Prono. "Loss Distribution Estimation, External Data and Model Averaging." Working Paper No. QAU07-8, Federal Reserve Bank of Boston (2007).

2008

Cohen-Cole, Ethan. "Is Obesity Contagious? Social Networks vs. Environmental Factors in the Obesity Epidemic." *Journal of Health Economics* 27.5 (2008).

Cohen-Cole, Ethan, and Burcu Duygan-Bump. "Household Bankruptcy Decision: The Role of Social Stigma vs. Information Sharing." Working Paper No. QAU08-6, Federal Reserve Bank of Boston (2008).

Cohen-Cole, Ethan, Burcu Duygan-Bump, Jose Fillat, and Judit Montoriol-Garriga. "Looking Behind the Aggregates: A Reply to 'Facts and Myths about the Financial Crisis of 2008.'" Working Paper No. QAU08-5, Federal Reserve Bank of Boston (2008).

Cohen-Cole, Ethan, and Jason M. Fletcher. "Detecting Implausible Social Network Effects in Acne, Height, and Headaches: Longitudinal Analysis." *British Medical Journal* (2008): 337: a2533.

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National Credit Union Administration Board, as Liquidating Agent of Southwest Corporate Federal Credit Union v. Goldman, Sachs & Co., and GS Mortgage Securities Corp. (S.D.N.Y. No. 13-cv-6721).

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Appendix B

Materials Considered

Materials Considered[1]

LEGAL

Amended Class Action Complaint. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Feb. 23, 2016).

Amended Responses and Objections to Wells Fargo Bank, N.A.'s First Set of Requests for Admission to All Plaintiffs. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Mar. 31, 2017).

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Plaintiffs' Amended Responses and Objections to Interrogatories Nos. 6, 7 and 8 of Defendant Wells Fargo Bank, N.A.'s First Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017) and related exhibits (including amended Exhibit 6 from Aug. 25, 2017).

Plaintiffs' Amended Responses and Objections to Interrogatory Nos. 3 and 10 of Defendant Wells Fargo Bank, N.A.'s Third Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Aug. 21, 2017).

Plaintiffs' Supplemental Responses and Objections to Interrogatory No. 3 of Defendant Wells Fargo Bank, N.A.'s Third Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Sept. 12, 2017).

Plaintiffs' Supplemental Responses and Objections to Interrogatory No. 10 of Defendant Wells Fargo Bank, N.A.'s Third Set of Interrogatories. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Oct. 10, 2017).

Voluntary Petition for Bankruptcy. American Home Mortgage Acceptance, Inc. (Bk. Del. No. 07-11049) (Aug. 6, 2007).

Voluntary Petition for Bankruptcy. Fieldstone Mortgage Company. (Bk. Md. No. 07-21814) (Nov. 23, 2007).

[1] In preparing my report, I relied upon the documents listed here along with any items cited or referenced in the body and endnotes of my report.

Separate Trustee Appointment Orders

Order with respect to Verified Petition of Wells Fargo Bank, N.A. as Indenture Trustee for Instructions in the Administration of a Trust Pursuant to Minn. Stat.§ 501B.16. *In the Matter of: The trusteeship created by Bear Stearns Structured Products Trust 2007-EMX1, relating to the issuance of Mortgage-Backed Notes pursuant to an Indenture dated as of October 1, 2007*. (Dist. Ct. Minn. (Hennepin Co.) No. 27-TR-CV-14-12) (Mar. 19, 2014) ("BSSP 2007-EMX1 Separate Trustee Appointment Order").

Order with respect to Verified Petition of Wells Fargo Bank, N.A. as Indenture Trustee and Trust Administrator for Instructions in the Administration of a Trust Pursuant to Minn. Stat.§ 501B.16. *In the Matter of: Fieldstone Mortgage Investment Trust, Series 2007-1*. (Dist. Ct. Minn. (Hennepin Co.) No. 27-TR-CV-14-237) (Nov. 24, 2014) ("FMIC 2007-1 Separate Trustee Appointment Order").

Order with respect to Verified Petition of Wells Fargo Bank, N.A. as Indenture Trustee for Instructions in the Administration of a Trust Pursuant to Minn. Stat.§ 501B.16. *In the Matter of: The trusteeship created by Impac CMB Trust Series 2004-6, relating to the issuance of Collateralized Asset-Backed Bonds, Series 2004-6, pursuant to an Indenture dated as of June 29, 2004*. (Dist. Ct. Minn. (Hennepin Co.) No. 27-TR-CV-15-8) (Feb. 26, 2015) ("IMM 2004-6 Separate Trustee Appointment Order").

Order with respect to Verified Petition of Wells Fargo Bank, N.A. as Indenture Trustee for Instructions in the Administration of a Trust Pursuant to Minn. Stat.§ 501B.16. *In the Matter of: Impac CMB Trust Series 2004-11*. (Dist. Ct. Minn. (Hennepin Co.) No. 27-TR-CV-13-59) (Oct. 15, 2014) ("IMM 2004-11 Separate Trustee Appointment Order").

Order with respect to Verified Petition of Wells Fargo Bank, N.A. as Indenture Trustee for Instructions in the Administration of a Trust Pursuant to Minn. Stat.§ 501B.16. *In the Matter of: The trusteeship created by Impac CMB Trust Series 2005-2, relating to the issuance of Collateralized Asset-Backed Bonds, Series 2005-2, pursuant to an Indenture dated as of March 3, 2005*. (Dist. Ct. Minn. (Hennepin Co.) No. 27-TR-CV-15-10) (Feb. 26, 2015) ("IMM 2005-2 Separate Trustee Appointment Order").

Order with respect to Verified Petition of Wells Fargo Bank, N.A. as Indenture Trustee for Instructions in the Administration of a Trust Pursuant to Minn. Stat.§ 501B.16. *In the Matter of: The trusteeship created by Impac CMB Trust Series 2005-6, relating to the issuance of Collateralized Asset-Backed Bonds, Series 2005-6, pursuant to an Indenture dated as of September 9, 2005*. (Dist. Ct. Minn. (Hennepin Co.) No. 27-TR-CV-15-11) (Feb. 26, 2015) ("IMM 2005-6 Separate Trustee Appointment Order").

Order with respect to Verified Petition of Wells Fargo Bank, N.A. as Indenture Trustee for Instructions in the Administration of a Trust Pursuant to Minn. Stat.§ 501B.16. *In the Matter of: The trusteeship created by Riverview Mortgage Loan Trust 2007-2 relating to the issuance of Mortgage Loan Pass-Through Notes, Series 2007-2, pursuant to an Indenture dated as of July 27, 2007.* (Dist. Ct. Minn. (Hennepin Co.) No. 27-TR-CV-15-102) (May 21, 2015) ("RVMLT 2007-2A Separate Trustee Appointment Order").

EXPERT REPORTS

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Hartzmark, Michael L. Expert Rebuttal Report of Michael L. Hartzmark, Ph.D. *BlackRock Balanced Capital Portfolio (FI), et al. v. HSBC Bank USA, N.A.* (S.D.N.Y. No. 14-cv-09366) (June 2, 2017) (HARTZMARK—WELLS FARGO 00001150).

Hartzmark, Michael L. Expert Report of Michael L. Hartzmark, Ph.D. *BlackRock Allocation Target Shares: Series S Portfolio, et al. v. Wells Fargo Bank, N.A.* (S.D.N.Y. No. 14-cv-9371) (Oct. 30, 2017).

Hartzmark, Michael L. Expert Report of Michael L. Hartzmark, Ph.D. *Fixed Income Shares: Series M, et al. v. Citibank N.A., et al.* (S.D.N.Y. No. 14-cv-09373) (Nov. 14, 2016) (HARTZMARK_WELLS FARGO 00000001).

Hartzmark, Michael L. Expert Report of Michael L. Hartzmark, Ph.D. *Policemen's Annuity and Benefit Labor Fund, et al. v. Bank of America, N.A., et al.* (S.D.N.Y. No. 12-cv-02865) (Jan. 17, 2014) (HARTZMARK_WELLS FARGO 00004667).

Hartzmark, Michael L. Rebuttal Report of Michael L. Hartzmark, Ph.D. *Policemen's Annuity and Benefit Labor Fund, et al. v. Bank of America, N.A., et al.* (S.D.N.Y. No. 12-cv-02865) (Apr. 17, 2014) (HARTZMARK_WELLS FARGO 00004164).

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Hyman, Daniel. Deposition (Feb. 2, 2017).

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Martin, Bill. Deposition (March 8, 2017).

McMahon, Bliss. Deposition (Apr. 11, 2017).

Padmanabhan-Medema, Lalantika. Deposition (Jan. 25, 2017).

Rogers, Richard. Deposition (Mar. 28, 2017).

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Smith, Kent. Deposition (Jan. 31, 2017).

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Vincent, Stephen Tyler. Deposition (Sept. 29, 2017).

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Relevant Produced Documents

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American Home Mortgage Investment Trust 2004-2, Wells Fargo Bank, N.A., Indenture (June 30, 2004) (WF_BR_000435905) ("AHM 2004-2 Indenture").

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Fieldstone Mortgage Investment Trust, Series 2007-1, Wells Fargo Bank, N.A., Indenture (Apr. 1, 2007) (WF_BR_000453100) ("FMIC 2007-1 Indenture").

Impac CMB Trust Series 2004-6, Wells Fargo Bank, N.A., Indenture (June 29, 2004) (WF_BR_000369637) ("IMM 2004-6 Indenture").

Impac CMB Trust Series 2004-11, Wells Fargo Bank, N.A., Indenture (Dec. 30, 2004) (WF_BR_000464014) ("IMM 2004-11 Indenture").

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Irwin Whole Loan Home Equity Trust 2005-A, Wells Fargo Bank, N.A., Indenture (Jan. 1, 2005) (WF_BR_000337984) ("IRWHE 2005-A Indenture").

MSCC HELOC Trust 2007-1, Wells Fargo Bank, N.A., Indenture (Feb. 1, 2007) (WF_BR_000513743) ("MSHLC 2007-1 Indenture").

Riverview Mortgage Loan Trust 2007-2, Wells Fargo Bank, N.A., Indenture (July 27, 2007) (WF_BR_000493345) ("RVMLT 2007-2A Indenture").

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Private Placement Offering Materials

Bear Stearns Structured Products Inc., Bear Stearns Structured Products Trust 2007-EMX1, Confidential Supplemental Private Placement Memorandum (Oct. 1, 2007) (WF_BR_000487885) ("BSSP 2007-EMX1 Confidential Supplemental Private Placement Memorandum").

Greenwich Capital Acceptance, Inc., Riverview Mortgage Loan Trust 2007-2, Offering Circular (July 26, 2007) (WF_BR_000493105) ("RVMLT 2007-2A Offering Circular").

Irwin Funding Corp., Irwin Home Equity Loan Trust 2006-2, Offering Memorandum Supplement to Offering Memorandum dated June 23, 2006 (July 12, 2006) (WF_BR_000394461) ("IRWHE 2006-2 Offering Memorandum Supplement").

Irwin Funding Corp., Mortgage Pass-Through Certificates Mortgage-Backed Notes, Offering Memorandum (June 23, 2006) (WF_BR_000394629) ("IRWHE 2006-2 Offering Memorandum").

Prospectuses

American Home Mortgage Securities LLC, Mortgage Pass-Through Certificates Mortgage-Backed Notes, Prospectus (Mar. 30, 2004) (WF_BR_000435623).

Bear Stearns Asset Backed Securities I LLC, Mortgage-Backed/Asset-Backed Securities, Prospectus (Apr. 26, 2004). <https://www.sec.gov/Archives/edgar/data/1283557/000095013605000412/file001.htm> (accessed Oct. 16, 2017).

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IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Mar. 29, 2004) (WF_BR_000369251).

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IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 8, 2005) (WF_BR_000465351).

Morgan Stanley ABS Capital I Inc., Asset Backed Securities, Prospectus (Feb. 21, 2007) (WF_BR_000513386).

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Bear Sterns Asset Backed Securities I LLC, Irwin Whole Loan Home Equity Trust 2005-A, Prospectus Supplement to Prospectus dated April 26, 2004 (Jan. 25, 2005) (WF_BR_000337890) ("IRWHE 2005-A Prospectus Supplement").

Fieldstone Mortgage Investment Corporation, Fieldstone Mortgage Investment Trust, Series 2007-1, Prospectus Supplement to Prospectus dated June 8, 2006 (Apr. 11, 2007) (WF_BR_000452197) ("FMIC 2007-1 Prospectus Supplement").

IMH Assets Corp., Impac CMB Trust Series 2004-6, Prospectus Supplement to Prospectus dated March 29, 2004 (June 25, 2004) (WF_BR_000369105) ("IMM 2004-6 Prospectus Supplement").

IMH Assets Corp., Impac CMB Trust Series 2004-11, Prospectus Supplement to Prospectus dated September 28, 2004 (Dec. 28, 2004) (WF_BR_000463386) ("IMM 2004-11 Prospectus Supplement").

IMH Assets Corp., Impac CMB Trust Series 2005-2, Prospectus Supplement to Prospectus dated September 28, 2004 (Mar. 2, 2005) (WF_BR_000462026) ("IMM 2005-2 Prospectus Supplement").

IMH Assets Corp., Impac CMB Trust Series 2005-3, Prospectus Supplement to Prospectus dated September 28, 2004 (Mar. 30, 2005) (WF_BR_000466799) ("IMM 2005-3 Prospectus Supplement").

IMH Assets Corp., Impac CMB Trust Series 2005-6, Prospectus Supplement to Prospectus dated September 8, 2005 (Sept. 8, 2005) (WF_BR_000465204) ("IMM 2005-6 Prospectus Supplement").

Morgan Stanley ABS Capital I Inc., MSCC HELOC Trust 2007-1, Prospectus Supplement to Prospectus dated February 21, 2007 (Feb. 26, 2007) (WF_BR_000513272) ("MSHLC 2007-1 Prospectus Supplement").

Servicing Agreements

Columbia National, Incorporated, American Home Mortgage Trust 2004-2, Wells Fargo Bank, N.A., Servicing Agreement (June 30, 2004) (WF_BR_000436079) ("AHM 2004-2 Servicing Agreement").

Financial Freedom Senior Funding Corporation, Riverview Mortgage Loan Trust 2007-2, Wells Fargo Bank, N.A., Sale and Servicing Agreement (July 27, 2007) (WF_BR_000493219) ("RVMLT 2007-2A Sale and Servicing Agreement").

Impac Funding Corporation, Impac CMB Trust Series 2004-6, Wells Fargo Bank, N.A., Servicing Agreement (June 29, 2004) (WF_BR_000369574) ("IMM 2004-6 Servicing Agreement").

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Appendix C

Statements Regarding Repurchase

Statements Regarding Repurchase

AHM 2004-2

1. There can be no guarantee that a loan will be repurchased.

    However, there can be no assurance that a Seller will honor its obligation to repurchase or, if permitted, replace any mortgage loan or mortgage security as to which a breach of a representation or warranty arises.[1]

2. If a repurchase does not occur, it can result in losses.

    In instances where a Seller is unable, or disputes its obligation, to repurchase affected mortgage loans and/or mortgage securities, the master servicer or the trustee, employing the standards set forth in the preceding sentence, may negotiate and enter into one or more settlement agreements with the related Seller that could provide for the repurchase of only a portion of the affected mortgage loans and/or mortgage securities. Any settlement could lead to losses on the mortgage loans and/or mortgage securities which would be borne by the related securities.[2]

3. A repurchase is one of the remedies in case of a breach.

    In the event of a breach of this representation, the seller will be obligated to cure the breach or repurchase or replace the affected mortgage loan in the manner described in the prospectus.[3]

4. A repurchase may not be required for all breaches.

    In accordance with the above described practices, the master servicer or trustee will not be required to enforce any repurchase obligation of a Seller arising from any misrepresentation by the Seller, if the master servicer determines in the reasonable exercise of its business judgment that the matters related to the misrepresentation did not directly cause or are not likely to directly cause a loss on the related mortgage loan or mortgage security.[4]

5. Loans that are not repurchased may remain in the loan pool.

    Any mortgage loan or mortgage security not so repurchased or substituted for shall remain in the related trust fund and any losses related thereto shall be allocated to the related credit enhancement, to the extent available, and otherwise to one or more classes of the related series of securities.[5]

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[1] American Home Mortgage Securities LLC, Mortgage Pass-Through Certificates Mortgage-Backed Notes, Prospectus (Mar. 30, 2004) (WF_BR_000435623 at WF_BR_000435637) ("AHM 2004-2 Prospectus").
[2] *Id.* at WF_BR_000435639.
[3] *Id.* at WF_BR_000435501.
[4] *Id.* at WF_BR_000435639.
[5] *Id.*

6. Repurchases may affect the yield on the certificates.

    In general, the earlier a prepayment of principal on the underlying mortgage loans or a repurchase thereof, the greater will be the effect on an investor's yield to maturity. As a result, the effect on an investor's yield of principal payments and repurchases occurring at a rate higher (or lower) than the rate anticipated by the investor during the period immediately following the issuance of a series of securities would not be fully offset by a subsequent like reduction (or increase) in the rate of principal payments.[6]

IMM 2004-6

1. There can be no guarantee that a loan will be repurchased.

    However, there can be no assurance that a Seller will honor its obligation to repurchase or, if permitted, replace any mortgage loan or mortgage security as to which a breach of a representation or warranty arises.[7]

    Neither the company nor the master servicer will be obligated to purchase a mortgage loan or mortgage security if a Seller defaults on its obligation to do so, and no assurance can be given that the Sellers will carry out their purchase obligations.[8]

2. If a repurchase does not occur, it can result in losses.

    Any mortgage loan or mortgage security not so purchased or substituted for shall remain in the related trust fund and any losses related thereto shall be allocated to the related credit enhancement, to the extent available, and otherwise to one or more classes of the related series of bonds.[9]

3. A repurchase is one of the remedies in case of a breach.

    In the event of a breach of a Seller's representation or warranty that materially adversely affects the interests of the bondholders in a mortgage loan or mortgage security, the related Seller will be obligated to cure the breach or repurchase or, if permitted, replace the mortgage loan or mortgage security as described below.[10]

4. A repurchase may not be required for all breaches.

    As more particularly described in the prospectus, the Seller will have certain repurchase or substitution obligations in connection with a breach of any such representation or warranty, as well as in connection with an omission or defect in respect of certain constituent documents required to be delivered with respect to the mortgage loans, if such breach,

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[6] *Id.* at WF_BR_000435689.
[7] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Mar. 29, 2004) (WF_BR_000369251 at WF_BR_000369262-3) ("IMM 2004-6 Prospectus").
[8] *Id.* at WF_BR_000369264.
[9] *Id.*
[10] *Id.* at WF_BR_000369262.

omission or defect cannot be cured and it materially and adversely affects the interests of the Bondholders or the Bond Insurer.[11]

5. Loans that are not repurchased may remain in the loan pool.

However, the company will not be required to repurchase or substitute for any mortgage loan in connection with a breach of a representation and warranty if the substance of the breach also constitutes fraud in the origination of the related mortgage loan. This purchase or substitution obligation constitutes the sole remedy available to bondholders or the trustee for a breach of a representation by the company. Any mortgage loan not so purchased or substituted for shall remain in the related trust fund.[12]

6. Repurchases may affect the yield on the certificates.

The timing of changes in the rate of principal payments on or repurchases of the mortgage loans may significantly affect an investor's actual yield to maturity, even if the average rate of principal payments experienced over time is consistent with an investor's expectation. In general, the earlier a prepayment of principal on the underlying mortgage loans or a repurchase thereof, the greater will be the effect on an investor's yield to maturity. As a result, the effect on an investor's yield of principal payments and repurchases occurring at a rate higher (or lower) than the rate anticipated by the investor during the period immediately following the issuance of a series of bonds would not be fully offset by a subsequent like reduction (or increase) in the rate of principal payments.[13]

IMM 2004-11

1. There can be no guarantee that a loan will be repurchased.

However, there can be no assurance that a Seller will honor its obligation to repurchase or, if permitted, replace any mortgage loan or mortgage security as to which a breach of a representation or warranty arises.[14]

Neither the company nor the master servicer will be obligated to purchase a mortgage loan or mortgage security if a Seller defaults on its obligation to do so, and no assurance can be given that the Sellers will carry out their purchase obligations.[15]

2. If a repurchase does not occur, it can result in losses.

Any mortgage loan or mortgage security not so purchased or substituted for shall remain in the related trust fund and any losses related thereto shall be allocated to the related credit enhancement, to the extent available, and otherwise to one or more classes of the related series of bonds.[16]

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[11] IMH Assets Corp., Impac CMB Trust Series 2004-6, Prospectus Supplement to Prospectus dated March 29, 2004 (June 25, 2004) (WF_BR_000369105 at WF_BR_000369127) ("IMM 2004-6 Prospectus Supplement").
[12] IMM 2004-6 Prospectus at WF_BR_000369278.
[13] *Id.* at WF_BR_000369305.
[14] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 28, 2004) (WF_BR_000463542 at WF_BR_000463553-4) ("IMM 2004-11 Prospectus").
[15] *Id.* at WF_BR_000463555.
[16] *Id.*

3. A repurchase is one of the remedies in case of a breach.

   In the event of a breach of a Seller's representation or warranty that materially adversely affects the interests of the bondholders in a mortgage loan or mortgage security, the related Seller will be obligated to cure the breach or repurchase or, if permitted, replace the mortgage loan or mortgage security as described below.[17]

4. A repurchase may not be required for all breaches.

   As more particularly described in the prospectus, the Seller will have certain repurchase or substitution obligations in connection with a breach of any such representation or warranty, as well as in connection with an omission or defect in respect of certain constituent documents required to be delivered with respect to the mortgage loans, if such breach, omission or defect cannot be cured and it materially and adversely affects the interests of the Bondholders or the Bond Insurer.[18]

5. Loans that are not repurchased may remain in the loan pool.

   However, the company will not be required to repurchase or substitute for any mortgage loan in connection with a breach of a representation and warranty if the substance of the breach also constitutes fraud in the origination of the related mortgage loan. This purchase or substitution obligation constitutes the sole remedy available to bondholders or the trustee for a breach of a representation by the company. Any mortgage loan not so purchased or substituted for shall remain in the related trust fund.[19]

6. Repurchases may affect the yield on the certificates.

   The timing of changes in the rate of principal payments on or repurchases of the mortgage loans may significantly affect an investor's actual yield to maturity, even if the average rate of principal payments experienced over time is consistent with an investor's expectation. In general, the earlier a prepayment of principal on the underlying mortgage loans or a repurchase thereof, the greater will be the effect on an investor's yield to maturity. As a result, the effect on an investor's yield of principal payments and repurchases occurring at a rate higher (or lower) than the rate anticipated by the investor during the period immediately following the issuance of a series of bonds would not be fully offset by a subsequent like reduction (or increase) in the rate of principal payments.[20]

[17] *Id.* at WF_BR_000463553.
[18] IMH Assets Corp., Impac CMB Trust Series 2004-11, Prospectus Supplement to Prospectus dated September 28, 2004 (Dec. 28, 2004) (WF_BR_000463386 at WF_BR_000463407).
[19] IMM 2004-11 Prospectus at WF_BR_000463569.
[20] *Id.* at WF_BR_000463596.

IMM 2005-2

1. There can be no guarantee that a loan will be repurchased.

   However, there can be no assurance that a Seller will honor its obligation to repurchase or, if permitted, replace any mortgage loan or mortgage security as to which a breach of a representation or warranty arises.[21]

   Neither the company nor the master servicer will be obligated to purchase a mortgage loan or mortgage security if a Seller defaults on its obligation to do so, and no assurance can be given that the Sellers will carry out their purchase obligations.[22]

2. If a repurchase does not occur, it can result in losses.

   Any mortgage loan or mortgage security not so purchased or substituted for shall remain in the related trust fund and any losses related thereto shall be allocated to the related credit enhancement, to the extent available, and otherwise to one or more classes of the related series of bonds.[23]

3. A repurchase is one of the remedies in case of a breach.

   In the event of a breach of a Seller's representation or warranty that materially adversely affects the interests of the bondholders in a mortgage loan or mortgage security, the related Seller will be obligated to cure the breach or repurchase or, if permitted, replace the mortgage loan or mortgage security as described below.[24]

   This purchase or substitution obligation constitutes the sole remedy available to bondholders or the trustee for a breach of a representation by the company.[25]

4. A repurchase may not be required for all breaches.

   As more particularly described in the prospectus, the Seller will have certain repurchase or substitution obligations in connection with a breach of any such representation or warranty, as well as in connection with an omission or defect in respect of certain constituent documents required to be delivered with respect to the mortgage loans, if such breach, omission or defect cannot be cured and it materially and adversely affects the interests of the Bondholders.[26]

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[21] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 28, 2004) (WF_BR_000462158 at WF_BR_000462169-70) ("IMM 2005-2 Prospectus").
[22] *Id.* at WF_BR_000462171.
[23] *Id.*
[24] *Id.* at WF_BR_000462169.
[25] *Id.* at WF_BR_000462185.
[26] IMH Assets Corp., Impac CMB Trust Series 2005-2, Prospectus Supplement to Prospectus dated September 28, 2004 (Mar. 2, 2005) (WF_BR_000462026 at WF_BR_000462047) ("IMM 2005-2 Prospectus Supplement").

5. Loans that are not repurchased may remain in the loan pool.

   Any mortgage loan not so purchased or substituted for shall remain in the related trust fund.[27]

6. Repurchases may affect the yield on the certificates.

   The timing of changes in the rate of principal payments on or repurchases of the mortgage loans may significantly affect an investor's actual yield to maturity, even if the average rate of principal payments experienced over time is consistent with an investor's expectation. In general, the earlier a prepayment of principal on the underlying mortgage loans or a repurchase thereof, the greater will be the effect on an investor's yield to maturity. As a result, the effect on an investor's yield of principal payments and repurchases occurring at a rate higher (or lower) than the rate anticipated by the investor during the period immediately following the issuance of a series of bonds would not be fully offset by a subsequent like reduction (or increase) in the rate of principal payments.[28]

IMM 2005-3

1. There can be no guarantee that a loan will be repurchased.

   However, there can be no assurance that a Seller will honor its obligation to repurchase or, if permitted, replace any mortgage loan or mortgage security as to which a breach of a representation or warranty arises.[29]

   Neither the company nor the master servicer will be obligated to purchase a mortgage loan or mortgage security if a Seller defaults on its obligation to do so, and no assurance can be given that the Sellers will carry out their purchase obligations.[30]

2. If a repurchase does not occur, it can result in losses.

   Any mortgage loan or mortgage security not so purchased or substituted for shall remain in the related trust fund and any losses related thereto shall be allocated to the related credit enhancement, to the extent available, and otherwise to one or more classes of the related series of bonds.[31]

3. A repurchase is one of the remedies in case of a breach.

   In the event of a breach of a Seller's representation or warranty that materially adversely affects the interests of the bondholders in a mortgage loan or mortgage security, the related Seller will be obligated to cure the breach or repurchase or, if permitted, replace the mortgage loan or mortgage security as described below.[32]

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[27] IMM 2005-2 Prospectus at WF_BR_000462185.
[28] *Id.* at WF_BR_000462212.
[29] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 28, 2004) (WF_BR_000466911 at WF_BR_000466922-3) ("IMM 2005-3 Prospectus").
[30] *Id.* at WF_BR_000466924.
[31] *Id.*
[32] *Id.* at WF_BR_000466922.

> This purchase or substitution obligation constitutes the sole remedy available to bondholders or the trustee for a breach of a representation by the company.[33]

4. A repurchase may not be required for all breaches.

> As more particularly described in the prospectus, the Seller will have certain repurchase or substitution obligations in connection with a breach of any such representation or warranty, as well as in connection with an omission or defect in respect of certain constituent documents required to be delivered with respect to the mortgage loans, if such breach, omission or defect cannot be cured and it materially and adversely affects the interests of the Bondholders or the Bond Insurer.[34]

5. Loans that are not repurchased may remain in the loan pool.

> Any mortgage loan not so purchased or substituted for shall remain in the related trust fund.[35]

6. Repurchases may affect the yield on the certificates.

> The timing of changes in the rate of principal payments on or repurchases of the mortgage loans may significantly affect an investor's actual yield to maturity, even if the average rate of principal payments experienced over time is consistent with an investor's expectation. In general, the earlier a prepayment of principal on the underlying mortgage loans or a repurchase thereof, the greater will be the effect on an investor's yield to maturity. As a result, the effect on an investor's yield of principal payments and repurchases occurring at a rate higher (or lower) than the rate anticipated by the investor during the period immediately following the issuance of a series of bonds would not be fully offset by a subsequent like reduction (or increase) in the rate of principal payments.[36]

IMM 2005-6

1. There can be no guarantee that a loan will be repurchased.

> However, there can be no assurance that a Seller will honor its obligation to repurchase or, if permitted, replace any mortgage loan or mortgage security as to which a breach of a representation or warranty arises.[37]
>
> Neither the company nor the master servicer will be obligated to purchase a mortgage loan or mortgage security if a Seller defaults on its obligation to do so, and no assurance can be given that the Sellers will carry out their purchase obligations. A default by a Seller is not a default by the company or by the master servicer.[38]

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[33] *Id.* at WF_BR_000466938-9.
[34] IMH Assets Corp., Impac CMB Trust Series 2005-3, Prospectus Supplement to Prospectus dated September 28, 2004 (Mar. 30, 2005) (WF_BR_000466799 at WF_BR_000466819) ("IMM 2005-3 Prospectus Supplement").
[35] IMM 2005-3 Prospectus at WF_BR_000466938-9.
[36] *Id.* at WF_BR_000466965.
[37] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 8, 2005) (WF_BR_000465351 at WF_BR_000465364) ("IMM 2005-6 Prospectus").
[38] *Id.* at WF_BR_000465365.

2. If a repurchase does not occur, it can result in losses.

   In instances where a Seller is unable, or disputes its obligation, to purchase affected mortgage loans and/or mortgage securities, the master servicer, employing the standards set forth in the preceding sentence, may negotiate and enter into one or more settlement agreements with the related Seller that could provide for the purchase of only a portion of the affected mortgage loans and/or mortgage securities. Any settlement could lead to losses on the mortgage loans and/or mortgage securities which would be borne by the related bonds.[39]

3. A repurchase is one of the remedies in case of a breach.

   In the event of a breach of a Seller's representation or warranty that materially adversely affects the interests of the bondholders in a mortgage loan or mortgage security, the related Seller will be obligated to cure the breach or repurchase or, if permitted, replace the mortgage loan or mortgage security as described below.[40]

   This purchase or substitution obligation constitutes the sole remedy available to bondholders or the trustee for a breach of a representation by the company.[41]

4. A repurchase may not be required for all breaches.

   As more particularly described in the prospectus, the Seller will have certain repurchase or substitution obligations in connection with a breach of any such representation or warranty, as well as in connection with an omission or defect in respect of certain constituent documents required to be delivered with respect to the mortgage loans, if such breach, omission or defect cannot be cured and it materially and adversely affects the interests of the Bondholders or the Bond Insurer.[42]

5. Loans that are not repurchased may remain in the loan pool.

   Any mortgage loan not so purchased or substituted for shall remain in the related trust fund.[43]

6. Repurchases may affect the yield on the certificates.

   The timing of changes in the rate of principal payments on or repurchases of the mortgage loans may significantly affect an investor's actual yield to maturity, even if the average rate of principal payments experienced over time is consistent with an investor's expectation. In general, the earlier a prepayment of principal on the underlying mortgage loans or a repurchase thereof, the greater will be the effect on an investor's yield to maturity. As a result, the effect on an investor's yield of principal payments and repurchases occurring at a rate higher (or lower) than the rate anticipated by the investor during the period immediately

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[39] *Id.*
[40] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 8, 2005) (WF_BR_000465351 at WF_BR_000465364) ("IMM 2006-5 Prospectus").
[41] *Id.* at WF_BR_000465381.
[42] IMH Assets Corp., Impac CMB Trust Series 2005-6, Prospectus Supplement to Prospectus dated September 8, 2005 (Sept. 8, 2005) (WF_BR_000465204 at WF_BR_000465228).
[43] IMM 2006-5 Prospectus at WF_BR_000465381.

following the issuance of a series of bonds would not be fully offset by a subsequent like reduction (or increase) in the rate of principal payments.[44]

IRWHE 2005-A

1. There can be no guarantee that a loan will be repurchased.

> The depositor's only source of funds to effect any cure, repurchase or substitution will be through the enforcement of the corresponding obligations, if any, of the responsible originator or seller of the non-conforming primary assets.[45]

2. A repurchase is one of the remedies in case of a breach.

> The obligation of IUB to cure such breach or to substitute or repurchase any Mortgage Loan constitutes the sole remedy respecting a material breach of any such representation or warranty to the Securityholders and the Indenture Trustee.[46]

3. A repurchase may not be required for all breaches.

> If the depositor or the other entity cannot cure a breach of any such representations and warranties in all material respects within the time period specified in the related prospectus supplement after notification by the trustee of such breach, and if the breach is of a nature that materially and adversely affects the value of the primary asset, the depositor or the other entity will be obligated to repurchase the affected primary asset or, if provided in the prospectus supplement, provide a qualifying substitute primary asset, subject to the same conditions and limitations on purchases and substitutions as described above.[47]

4. Repurchases may affect the yield on the certificates.

> The yield to maturity and the aggregate amount of payments on the Offered Notes will depend on the price paid by the related Noteholder for such Offered Note, the related Note Rate and the rate and timing of principal payments (including payments in excess of the monthly payment, prepayments in full or terminations, liquidations and repurchases) on the Mortgage Loans.[48]

IRWHE 2006-2

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[44] *Id.* at WF_BR_000465411.

[45] Bear Stearns Asset Backed Securities I LLC, Mortgage-Backed/Asset-Backed Securities, Prospectus (Apr. 26, 2004). <https://www.sec.gov/Archives/edgar/data/1283557/000095013605000412/file001.htm> (accessed Oct. 16, 2017) ("IRWHE 2005-A Prospectus") at 57.

[46] Bear Sterns Asset Backed Securities I LLC, Irwin Whole Loan Home Equity Trust 2005-A, Prospectus Supplement to Prospectus dated April 26, 2004 (Jan. 25, 2005) (WF_BR_000337890 at WF_BR_000337964) ("IRWHE 2005-A Prospectus Supplement").

[47] IRWHE 2005-A Prospectus at 57.

[48] IRWHE 2005-A Prospectus Supplement at WF_BR_000337947.

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[49] Irwin Funding Corp., Mortgage Pass-Through Certificates Mortgage-Backed Notes, Offering Memorandum (June 23, 2006) (WF_BR_000394629 at WF_BR_000394658) ("IRWHE 2006-2 Offering Memorandum").
[50] Irwin Funding Corp., Irwin Home Equity Loan Trust 2006-2, Offering Memorandum Supplement to Offering Memorandum dated June 23, 2006 (July 12, 2006) (WF_BR_000394461 at WF_BR_000394551) ("IRWHE 2006-2 Offering Memorandum Supplement").
[51] IRWHE 2006-2 Offering Memorandum at WF_BR_000394690.
[52] *Id.* at WF_BR_000394690-91.
[53] IRWHE 2006-2 Offering Memorandum Supplement at WF_BR_000394538.

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FMIC 2007-1

1. There can be no guarantee that a loan will be repurchased.

    It is possible that the seller may not be capable of repurchasing or substituting any defective mortgage loans, for financial or other reasons. The inability of the seller to repurchase or substitute for defective mortgage loans would likely cause the mortgage loans to experience higher rates of delinquencies, defaults and losses. As a result, shortfalls in the payments due on the notes could occur.[59]

    A seller may not have the resources to honor its obligation to cure, repurchase or replace any trust asset as to which such a breach of a representation or warranty arises. A seller's failure

[54] Bear Stearns Structured Products Inc., Bear Stearns Structured Products Trust 2007-EMX1, Confidential Supplemental Private Placement Memorandum (Oct. 1, 2007) (WF_BR_000487885 at WF_BR_000487918) ("BSSP 2007-EMX1 Confidential Supplemental Private Placement Memorandum").
[55] *Id.* at WF_BR_000487909.
[56] *Id.* at WF_BR_000487918.
[57] *Id.* at WF_BR_000487928.
[58] *Id.* at WF_BR_000487915.
[59] Fieldstone Mortgage Investment Corporation, Fieldstone Mortgage Investment Trust, Series 2007-1, Prospectus Supplement to Prospectus dated June 8, 2006 (Apr. 11, 2007) (WF_BR_000452197 at WF_BR_000452222) ("FMIC 2007-1 Prospectus Supplement").

or refusal to honor its repurchase obligation could lead to losses that, to the extent not covered by credit enhancement, may adversely affect the yield to maturity of your securities.[60]

Neither FMIC nor any servicer, master servicer or subservicer will be obligated to substitute trust assets or to repurchase trust assets if the defaulting seller defaults upon its obligation to do so, and no assurance can be given that sellers will perform their obligations.[61]

2. If a repurchase does not occur, it can result in losses.

To the extent that any Mortgage Loan as to which a representation or warranty has been breached is not repurchased by the Seller and a Realized Loss occurs with respect to that Mortgage Loan, holders of Notes, in particular the Class M Notes, may incur a loss.[62]

Any affected trust asset not repurchased or substituted for shall remain in your issuing entity and losses shall be allocated first to the reduction of credit enhancement and next to the classes of securities.[63]

3. A repurchase is one of a limited set of remedies in case of a breach.

In the event that the representations and warranties of the seller are breached, and the breach or breaches adversely affect your interests in your issuing entity's assets, the seller will be required to cure the breach or, in the alternative, to substitute new trust assets, or to repurchase the affected trust assets, generally at a price equal to the unpaid principal balance of these trust assets, together with accrued and unpaid interest at the trust asset's rate.[64]

A breach of any warranty that materially and adversely affects your issuing entity's interest in any mortgage loan would create an obligation on the part of the originator or seller, as the case may be, to repurchase or substitute for the mortgage loan unless the breach is cured. However, the failure of an originator or a seller, as the case may be to repurchase the defective asset or pay the liability could expose your issuing entity to losses.[65]

4. A repurchase may not be required for all breaches.

Each seller will make representations and warranties in respect of the trust assets sold by it. In the event of a breach of a seller's representation or warranty that materially and adversely affects your interests, the related seller will be obligated to cure the breach. repurchase or replace the trust asset. A seller may not have the resources to honor its obligation to cure, repurchase or replace any trust asset as to which such a breach of a representation or warranty arises. A seller's failure or refusal to honor its repurchase obligation could lead to losses that, to the extent not covered by credit enhancement may adversely affect the yield to maturity of your securities.[66]

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[60] Fieldstone Mortgage Investment Corporation, Mortgage Backed Securities, Prospectus (June 8, 2006) (WF_BR_000452362 at WF_BR_000452380) ("FMIC 2007-1 Prospectus").
[61] *Id.* at WF_BR_000452396.
[62] FMIC 2007-1 Prospectus Supplement at WF_BR_000452266.
[63] FMIC 2007-1 Prospectus at WF_BR_000452380.
[64] *Id.* at WF_BR_000452396.
[65] *Id.* at WF_BR_000452378-9.
[66] *Id.* at WF_BR_000452380.

5. Repurchases may affect the yield on the certificates.

> The yield to maturity and weighted average life of the notes will be affected primarily by the rate and timing of principal payments (including prepayments, liquidations, repurchases and defaults) of, and losses on, the mortgage loans.[67]

> Any repurchases or repayments of the Mortgage Loans may reduce the weighted average lives of the Notes and will reduce the yields on the Notes to the extent they are purchased at a premium.[68]

MSHLC 2007-1

1. There can be no guarantee that a loan will be repurchased.

> It is possible that any such loan seller or responsible party may not be capable of repurchasing or substituting any defective loans, for financial or other reasons. The inability of any such party to repurchase or substitute for defective loans would likely cause the loans to experience higher rates of delinquencies, defaults and losses. As a result, shortfalls in the distributions due on the securities could occur.[69]

> Neither the depositor nor the master servicer, unless the master servicer is the seller or originator, will be obligated to purchase or substitute a loan if a seller or originator defaults on its obligation to do so, and no assurance can be given that sellers or originators will carry out their respective repurchase or substitution obligations with respect to loans.[70]

2. If a repurchase does not occur, it can result in losses.

> The sponsor and servicer have other financial obligations to the issuing entity including for repurchase of certain home equity loans that have been modified or as to which there has been a material breach of a representation and warranty. In these circumstances, you could experience a loss of the credit enhancer fails to perform its obligations under the policy.[71]

3. A repurchase is one of the remedies in case of a breach.

> This repurchase or substitution obligation will constitute the sole remedy available to holders of securities or the trustee for a breach of representation by a seller or originator.[72]

4. A repurchase may not be required for all breaches.

> Since the representations and warranties of a seller or originator do not address events that may occur following the sale of a loan by that seller or originator, its repurchase obligation

[67] FMIC 2007-1 Prospectus Supplement at WF_BR_000452216.
[68] *Id.* at WF_BR_000452272.
[69] Morgan Stanley ABS Capital I Inc., Asset Backed Securities, Prospectus (Feb. 21, 2007) (WF_BR_000513386 at WF_BR_000513408-9) ("MSHLC 2007-1 Prospectus").
[70] *Id.* at WF_BR_000513431.
[71] Morgan Stanley ABS Capital I Inc., MSCC HELOC Trust 2007-1, Prospectus Supplement to Prospectus dated February 21, 2007 (Feb. 26, 2007) (WF_BR_000513272 at WF_BR_000513291) ("MSHLC 2007-1 Prospectus Supplement").
[72] MSHLC 2007-1 Prospectus at WF_BR_000513430.

described in this prospectus will not arise if the relevant event that would otherwise have given rise to a repurchase obligation with respect to a loan occurs after the date of sale of the loan by the applicable originator or seller.[73]

5. Loans that are not repurchased will remain in the loan pool.

If the seller fails to repurchase that home equity loan, it will remain in the assets of the issuing entity.[74]

6. Repurchases may affect the yield on the certificates.

Also, to the extent the servicer is required to repurchase revolving credit loans as described above, the rate of principal payments on the notes will be higher that [sic] it otherwise would be.[75]

The yield to maturity of the notes will depend on a variety of factors, including: • the rate and timing of principal payments on the home equity loans (including payments in excess of required installments, prepayments in full, liquidations and repurchases due to breaches of representations or warranties) as compared with the creation and amount of additional balances[.][76]

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[73] *Id.* at WF_BR_000513430.
[74] MSHLC 2007-1 Prospectus Supplement at WF_BR_000513297.
[75] *Id.* at WF_BR_000513292.
[76] *Id.* at WF_BR_000513295.
[77] Greenwich Capital Acceptance, Inc., Riverview Mortgage Loan Trust 2007-2, Offering Circular (July 26, 2007) (WF_BR_000493106 at WF_BR_000493123-4).
[78] *Id.* at WF_BR_000493126.
[79] *Id.*

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[80] *Id.* at WF_BR_000493151.
[81] *Id.* at WF_BR_000493119.

Appendix D

Statements Regarding Servicing

Statements Regarding Servicing

AHM 2004-2

1. The servicer is given discretion in the servicing of the mortgage loans.

   Under a pooling and servicing agreement or a servicing agreement, a master servicer and each servicer will be granted discretion to extend relief to mortgagors whose payments become delinquent. In the case of single family loans and Contracts, a master servicer or servicer may, for example, grant a period of temporary indulgence to a mortgagor or may enter into a liquidating plan providing for repayment of delinquent amounts within a specified period from the date of execution of the plan.[1]

2. The timeline for servicing functions (including foreclosure or loan modification) may vary.

   Furthermore, a pooling and servicing agreement or a servicing agreement may authorize the master servicer or servicer of the mortgage loan to sell any defaulted mortgage loan if and when the master servicer or servicer determines, consistent with the servicing standard, that the sale would produce a greater recovery to securityholders on a present value basis than would liquidation of the related mortgaged property.[2]

   The time within which the master servicer or servicer can make the initial determination of appropriate action, evaluate the success of corrective action, develop additional initiatives, institute foreclosure proceedings and actually foreclose (or accept a deed to a mortgaged property in lieu of foreclosure) on behalf of the security holders of the related series may vary considerably depending on the particular multifamily, commercial or mixed-use loan, the mortgaged property, the mortgagor, the presence of an acceptable party to assume that loan and the laws of the jurisdiction in which the mortgaged property is located.[3]

3. The appropriate servicing functions (including foreclosure or loan modification) may vary.

   With respect to a mortgage loan in default, the master servicer or servicer of the mortgage loan may pursue foreclosure (or similar remedies) concurrently with pursuing any remedy for a breach of a representation and warranty. However, neither the master servicer nor the servicer of the mortgage loan is required to continue to pursue both remedies if it determines that one remedy is more likely than the other to result in a greater recovery. Upon the first to occur of final liquidation (by foreclosure or otherwise) or a repurchase or substitution pursuant to a breach of a representation and warranty, the mortgage loan will be removed from the related trust fund if it has not been removed previously.[4]

[1] American Home Mortgage Securities LLC, Mortgage Pass-Through Certificates Mortgage-Backed Notes, Prospectus (Mar. 30, 2004) (WF_BR_000435623 at WF_BR_000435641).
[2] *Id.* at WF_BR_000435646.
[3] *Id.* at WF_BR_000435642.
[4] *Id.* at WF_BR_000435645.

IMM 2004-6

1. The servicer is given discretion in the servicing of the mortgage loans.

   Under a servicing agreement, a master servicer will be granted discretion to extend relief to mortgagors whose payments become delinquent. In the case of single family loans and Contracts, a master servicer may, for example, grant a period of temporary indulgence to a mortgagor or may enter into a liquidating plan providing for repayment of delinquent amounts within a specified period from the date of execution of the plan.[5]

2. The timeline for servicing functions (including foreclosure or loan modification) may vary.

   A significant period of time may elapse before the master servicer is able to assess the success of any such corrective action or the need for additional initiatives. The time within which the master servicer can make the initial determination of appropriate action, evaluate the success of corrective action, develop additional initiatives, institute foreclosure proceedings and actually foreclose (or accept a deed to a mortgaged property in lieu of foreclosure) on behalf of the bondholders of the related series may vary considerably depending on the particular multifamily, commercial or mixed-use loan, the mortgaged property, the mortgagor, the presence of an acceptable party to assume that loan and the laws of the jurisdiction in which the mortgaged property is located.[6]

3. The appropriate servicing functions (including foreclosure or loan modification) may vary.

   With respect to a mortgage loan in default, the master servicer may pursue foreclosure (or similar remedies) concurrently with pursuing any remedy for a breach of a representation and warranty. However, the master servicer is not required to continue to pursue both remedies if it determines that one remedy is more likely than the other to result in a greater recovery. Upon the first to occur of final liquidation (by foreclosure or otherwise) or a repurchase or substitution pursuant to a breach of a representation and warranty, the mortgage loan will be removed from the related trust fund if it has not been removed previously.[7]

IMM 2004-11

1. The servicer is given discretion in the servicing of the mortgage loans.

   Under a servicing agreement, a master servicer will be granted discretion to extend relief to mortgagors whose payments become delinquent. In the case of single family loans and contracts, a master servicer may, for example, grant a period of temporary indulgence to a mortgagor or may enter into a liquidating plan providing for repayment of delinquent amounts within a specified period from the date of execution of the plan.[8]

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[5] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Mar. 29, 2004) (WF_BR_000369251 at WF_BR_000369265).
[6] *Id.* at WF_BR_000369266.
[7] *Id.* at WF_BR_000369268.
[8] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 28, 2004) (WF_BR_000463542 at WF_BR_000463556).

2. The timeline for servicing functions (including foreclosure or loan modification) may vary.

   A significant period of time may elapse before the master servicer is able to assess the success of any such corrective action or the need for additional initiatives. The time within which the master servicer can make the initial determination of appropriate action, evaluate the success of corrective action, develop additional initiatives, institute foreclosure proceedings and actually foreclose (or accept a deed to a mortgaged property in lieu of foreclosure) on behalf of the bondholders of the related series may vary considerably depending on the particular multifamily, commercial or mixed-use loan, the mortgaged property, the mortgagor, the presence of an acceptable party to assume that loan and the laws of the jurisdiction in which the mortgaged property is located.[9]

3. The appropriate servicing functions (including foreclosure or loan modification) may vary.

   With respect to a mortgage loan in default, the master servicer may pursue foreclosure (or similar remedies) concurrently with pursuing any remedy for a breach of a representation and warranty. However, the master servicer is not required to continue to pursue both remedies if it determines that one remedy is more likely than the other to result in a greater recovery. Upon the first to occur of final liquidation (by foreclosure or otherwise) or a repurchase or substitution pursuant to a breach of a representation and warranty, the mortgage loan will be removed from the related trust fund if it has not been removed previously.[10]

IMM 2005-2

1. The servicer is given discretion in the servicing of the mortgage loans.

   Under a servicing agreement, a master servicer will be granted discretion to extend relief to mortgagors whose payments become delinquent. In the case of single family loans and Contracts, a master servicer may, for example, grant a period of temporary indulgence to a mortgagor or may enter into a liquidating plan providing for repayment of delinquent amounts within a specified period from the date of execution of the plan.[11]

2. The timeline for servicing functions (including foreclosure or loan modification) may vary.

   A significant period of time may elapse before the master servicer is able to assess the success of any such corrective action or the need for additional initiatives. The time within which the master servicer can make the initial determination of appropriate action, evaluate the success of corrective action, develop additional initiatives, institute foreclosure proceedings and actually foreclose (or accept a deed to a mortgaged property in lieu of foreclosure) on behalf of the bondholders of the related series may vary considerably depending on the particular multifamily, commercial or mixed-use loan, the mortgaged property, the mortgagor, the presence of an acceptable party to assume that loan and the laws of the jurisdiction in which the mortgaged property is located.[12]

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[9] *Id.* at WF_BR_000463557.
[10] *Id.* at WF_BR_000463559.
[11] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 28, 2004) (WF_BR_000462158 at WF_BR_000462172).
[12] *Id.* at WF_BR_000462173.

3. The appropriate servicing functions (including foreclosure or loan modification) may vary.

   With respect to a mortgage loan in default, the master servicer may pursue foreclosure (or similar remedies) concurrently with pursuing any remedy for a breach of a representation and warranty. However, the master servicer is not required to continue to pursue both remedies if it determines that one remedy is more likely than the other to result in a greater recovery. Upon the first to occur of final liquidation (by foreclosure or otherwise) or a repurchase or substitution pursuant to a breach of a representation and warranty, the mortgage loan will be removed from the related trust fund if it has not been removed previously.[13]

IMM 2005-3

1. The servicer is given discretion in the servicing of the mortgage loans.

   Under a servicing agreement, a master servicer will be granted discretion to extend relief to mortgagors whose payments become delinquent. In the case of single family loans and Contracts, a master servicer may, for example, grant a period of temporary indulgence to a mortgagor or may enter into a liquidating plan providing for repayment of delinquent amounts within a specified period from the date of execution of the plan.[14]

2. The timeline for servicing functions (including foreclosure or loan modification) may vary.

   A significant period of time may elapse before the master servicer is able to assess the success of any such corrective action or the need for additional initiatives. The time within which the master servicer can make the initial determination of appropriate action, evaluate the success of corrective action, develop additional initiatives, institute foreclosure proceedings and actually foreclose (or accept a deed to a mortgaged property in lieu of foreclosure) on behalf of the bondholders of the related series may vary considerably depending on the particular multifamily, commercial or mixed-use loan, the mortgaged property, the mortgagor, the presence of an acceptable party to assume that loan and the laws of the jurisdiction in which the mortgaged property is located.[15]

3. The appropriate servicing functions (including foreclosure or loan modification) may vary.

   With respect to a mortgage loan in default, the master servicer may pursue foreclosure (or similar remedies) concurrently with pursuing any remedy for a breach of a representation and warranty. However, the master servicer is not required to continue to pursue both remedies if it determines that one remedy is more likely than the other to result in a greater recovery. Upon the first to occur of final liquidation (by foreclosure or otherwise) or a repurchase or substitution pursuant to a breach of a representation and warranty, the mortgage loan will be removed from the related trust fund if it has not been removed previously.[16]

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[13] *Id.* at WF_BR_000462175.
[14] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 28, 2004) (WF_BR_000466911 at WF_BR_000466925).
[15] *Id.* at WF_BR_000466926.
[16] *Id.* at WF_BR_000466928.

IMM 2005-6

1. The servicer is given discretion in the servicing of the mortgage loans.

   Under a servicing agreement, a master servicer will be granted discretion to extend relief to mortgagors whose payments become delinquent. In the case of single family loans and Contracts, a master servicer may, for example, grant a period of temporary indulgence to a mortgagor or may enter into a liquidating plan providing for repayment of delinquent amounts within a specified period from the date of execution of the plan. However, the master servicer must first determine that any waiver or extension will not impair the coverage of any related insurance policy or materially adversely affect the security for the mortgage loan.[17]

2. The timeline for servicing functions (including foreclosure or loan modification) may vary.

   A significant period of time may elapse before the master servicer is able to assess the success of any such corrective action or the need for additional initiatives. The time within which the master servicer can make the initial determination of appropriate action, evaluate the success of corrective action, develop additional initiatives, institute foreclosure proceedings and actually foreclose (or accept a deed to a mortgaged property in lieu of foreclosure) on behalf of the bondholders of the related series may vary considerably depending on the particular multifamily, commercial or mixed-use loan, the mortgaged property, the mortgagor, the presence of an acceptable party to assume that loan and the laws of the jurisdiction in which the mortgaged property is located.[18]

3. The appropriate servicing functions (including foreclosure or loan modification) may vary.

   With respect to a mortgage loan in default, the master servicer may pursue foreclosure (or similar remedies) concurrently with pursuing any remedy for a breach of a representation and warranty. However, the master servicer is not required to continue to pursue both remedies if it determines that one remedy is more likely than the other to result in a greater recovery. Upon the first to occur of final liquidation (by foreclosure or otherwise) or a repurchase or substitution pursuant to a breach of a representation and warranty, the mortgage loan will be removed from the related trust fund if it has not been removed previously.[19]

IRWHE 2005-A

1. The servicer is given discretion in the servicing of the mortgage loans.

   The master servicer may use a wide variety of practices to limit losses on defaulted mortgage loans, including writing off part of the debt, reducing future payments, and deferring the collection of past due payments. The use of these practices may result in recognition of losses.[20]

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[17] IMH Assets Corp., Collateralized Asset-Backed Bonds, Prospectus (Sept. 8, 2005) (WF_BR_000465351 at WF_BR_0004655367).
[18] *Id.* at WF_BR_000465367.
[19] *Id.* at WF_BR_000465370.
[20] Bear Sterns Asset Backed Securities I LLC, Irwin Whole Loan Home Equity Trust 2005-A, Prospectus Supplement to Prospectus dated April 26, 2004 (Jan. 25, 2005) (WF_BR_000337890 at WF_BR_000337903) ("BSSP 2007-EMX1 Prospectus Supplement").

2. The appropriate servicing functions (including foreclosure or loan modification) may vary.

The servicer will use its reasonable best efforts to foreclose upon, repossess or otherwise comparably convert the ownership of the properties securing the related loans that come into and continue in default and as to which no satisfactory arrangements can be made for collection of delinquent payments. In this connection, the servicer will follow such practices and procedures as it deems necessary or advisable and as are normal and usual in its servicing activities with respect to comparable loans that it services.[21]

The Master Servicer will be permitted, in its discretion, to, among other things, (i) waive any late payment charge, prepayment penalty or other charge in connection with any Mortgage Loan, (ii) arrange a schedule, running for no more than 180 days after the due date of any payment due under the related mortgage documents, for the liquidation of delinquent items and (iii) subject to certain restrictions, modify the Mortgage Interest Rate of a Mortgage Loan. Under the terms of the Sale and Servicing Agreement, the Master Servicer will treat any Mortgage Loan that is 180 days or more delinquent as being finally liquidated. Notwithstanding such treatment of a seriously delinquent Mortgage Loan, the Master Servicer will continue to make reasonable efforts to collect all payments due on such Mortgage Loan as described above.[22]

In lieu of foreclosing upon any defaulted Mortgage Loan, the Master Servicer may, in its discretion, permit the assumption of such Mortgage Loan if, in the Master Servicer's judgment, such default is unlikely to be cured and if the assuming borrower satisfies the Master Servicer's underwriting guidelines with respect to Mortgage Loans owned by the Master Servicer. Any fee collected by the Master Servicer for entering into an assumption agreement will be retained by the Master Servicer as servicing compensation. Alternatively, the Master Servicer may encourage the refinancing of any defaulted Mortgage Loan by the related Mortgagor.[23]

IRWHE 2006-2

[redacted]

[21] Bear Stearns Asset Backed Securities I LLC, Mortgage-Backed/Asset-Backed Securities, Prospectus (Apr. 26, 2004). <https://www.sec.gov/Archives/edgar/data/1283557/000095013605000412/file001.htm> (accessed Oct. 16, 2017) at 50.
[22] BSSP 2007-EMX1 Prospectus Supplement at WF_BR_000337964.
[23] *Id.* at WF_BR_000337965.
[24] Irwin Funding Corp., Irwin Home Equity Loan Trust 2006-2, Offering Memorandum Supplement to Offering Memorandum dated June 23, 2006 (July 12, 2006) (WF_BR_000394461 at WF_BR_000394551).

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BSSP 2007-EMX1

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[25] *Id.* at WF_BR_000394674.
[26] *Id.* at WF_BR_000394551.
[27] *Id.* at WF_BR_000394553.
[28] Bear Stearns Structured Products Inc., Bear Stearns Structured Products Trust 2007-EMX1, Confidential Supplemental Private Placement Memorandum (Oct. 1, 2007) (WF_BR_000487885 at WF_BR_000487946).
[29] *Id*. at WF_BR_000487941.

[redacted]

FMIC 2007-1

1. The servicer is given discretion in the servicing of the mortgage loans.

    In connection with a foreclosure, the servicer will follow the practices and procedures that it deems necessary or advisable and as are normal and usual in its servicing activities with respect to comparable assets serviced by it.[32]

2. The timeline for servicing functions (including foreclosure or loan modification) may vary.

    In the case of an issuing entity for which a REMIC election has been made, the servicer will be required to liquidate any mortgaged property acquired through foreclosure within 36 months (or a shorter period specified in the related pooling and servicing agreement) after the acquisition of the mortgaged property. While the holder of a mortgaged property acquired through foreclosure can often maximize its recovery by providing financing to a new purchaser, the issuer will have no ability to do so and neither the master servicer, the servicer, not the depositor will be required to do so.[33]

3. The appropriate servicing functions (including foreclosure or loan modification) may vary.

    As mortgage loans become delinquent, the Servicer first tries to determine whether the mortgagor is facing a short term or long term series of issues that created the default. If the default is created by a short term issue, repayment plans or forbearance agreements may be negotiated so that the default can be cured over the plan's specified period. However, if a long-term issue exists, the mortgage loan is referred to the Servicer's loss mitigation department. If the mortgagor has experienced a long-term event but wishes to continue to reside in the home, a modification of the mortgage loan may be pursued. […] If the mortgagor either does not want to make or does not have the ability to make monthly

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[30] *Id*. at WF_BR_000487909-10.
[31] *Id.* at WF_BR_000487938-9.
[32] Fieldstone Mortgage Investment Corporation, Mortgage Backed Securities, Prospectus (June 8, 2006) (WF_BR_000452362 at WF_BR_000452422).
[33] *Id.*

payments on the mortgage loan, the Servicer will attempt to pursue programs such as short sales or a deed in lieu of foreclosure.[34]

MSHLC 2007-1

1. The servicer is given discretion in the servicing of the mortgage loans.

    The Servicer is authorized to engage in a wide variety of loss mitigation practices with respect to the Home Equity Loans, including waivers, modifications, payment forbearances, partial forgiveness, entering into repayment schedule arrangements and capitalization of arrearages; provided, in any case, that the Servicer determines that such action is generally consistent with the Servicer's policies with respect to similar loans; and provided, further, that certain of such modifications (including reductions in the Loan Rate, partial forgiveness or a maturity extension) may only be taken if the Home Equity Loan is in default or if default is reasonably foreseeable. With respect to Home Equity Loans that come into and continue in default, the Servicer may take a variety of actions including foreclosure upon the related mortgaged property, writing off the balance of the Home Equity Loan as a bad debt, taking a deed in lieu of foreclosure, accepting a short sale, arranging for a repayment plan, modifications as described above or taking an unsecured note.[35]

2. The appropriate timeline for servicing functions (including foreclosure or loan modification) may vary.

    The master servicer will use its reasonable best efforts to foreclose upon, repossess or otherwise comparably convert the ownership of the properties securing the related loans as come into and continue in default and as to which no satisfactory arrangements can be made for the collection of delinquent payments. In connection with a foreclosure or other conversion, the master servicer will follow the practices and procedures as deems necessary or advisable and as are normal and usual in its servicing activities with respect to comparable loans serviced by it.[36]

3. It may not be possible to replace a servicer.

    The prospectus supplement will specify the servicing fee payable by the related trust. In the event it becomes necessary to replace a servicer, no assurance can be made that the servicing fee will be sufficient to attract replacement servicers to accept an appointment for the related trust. In addition, to the extent the loans of any series have amortized significantly at the time that a replacement servicer is sought, the aggregate fee that would be payable to any such replacement may not be sufficient to attract a replacement to accept an appointment for the trust.[37]

[34] Fieldstone Mortgage Investment Corporation, Fieldstone Mortgage Investment Trust, Series 2007-1, Prospectus Supplement to Prospectus dated June 8, 2006 (Apr. 11, 2007) (WF_BR_000452197 at WF_BR_000452244).
[35] Morgan Stanley ABS Capital I Inc., MSCC HELOC Trust 2007-1, Prospectus Supplement to Prospectus dated February 21, 2007 (Feb. 26, 2007) (WF_BR_000513272 at WF_BR_000513322).
[36] Morgan Stanley ABS Capital I Inc., Asset Backed Securities, Prospectus (Feb. 21, 2007) (WF_BR_000513386 at WF_BR_000513475).
[37] *Id.* at WF_BR_000513409.

RVMLT 2007-2A

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[38] Greenwich Capital Acceptance, Inc., Riverview Mortgage Loan Trust 2007-2, Offering Circular (July 26, 2007) (WF_BR_000493105 at WF_BR_000493148-9).
[39] *Id.* at WF_BR_000493149.