



AN UPDATE

ON THE SINGLE SECURITY INITIATIVE AND THE COMMON
SECURITIZATION PLATFORM

December 2017



Division of Conservatorship

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Background

The Federal Housing Finance Agency (FHFA) [2014 Strategic Plan for the Conservatorships of Fannie Mae and Freddie Mac](#) includes the strategic goal of developing a new securitization infrastructure for Fannie Mae and Freddie Mac (the Enterprises) for mortgage loans backed by 1- to 4-unit (single-family) properties. To help achieve that strategic goal the Enterprises, under FHFA's direction and guidance, have formed a joint venture, Common Securitization Solutions (CSS). CSS's mandate is to develop and operate a Common Securitization Platform (CSP) that will support the Enterprises' single-family mortgage securitization activities, including the issuance by both Enterprises of a common, single mortgage-backed security (to be called the Uniform Mortgage-Backed Security or UMBS). These securities will finance the same types of fixed-rate mortgages that currently back Enterprise-guaranteed securities eligible for delivery into the "To-Be-Announced" (TBA) market, a forward market for certain mortgage-backed securities, including those issued by Fannie Mae and Freddie Mac. FHFA has mandated that CSS develop the CSP to allow for the future integration of additional market participants.

The development of and transition to the new UMBS constitute the Single Security Initiative (SSI). FHFA has two principal objectives in undertaking this initiative. The first objective is to establish a single, liquid market for the mortgage-backed securities issued by both Enterprises and backed by fixed-rate loans. The second objective is to maintain the liquidity of this market over time. Achievement of these objectives would further FHFA's statutory obligation and the Enterprises' charter obligations to ensure the liquidity of U.S. housing finance markets. The SSI should also reduce or eliminate the cost to Freddie Mac and taxpayers that has resulted from the historical difference in the liquidity of Fannie Mae's Mortgage-Backed Securities (MBS) and Freddie Mac's Participation Certificates (PCs).¹

FHFA, the Enterprises, and CSS are committed to developing the SSI and the CSP in a transparent manner. This commitment includes the regular release by FHFA of public updates to provide information to, and solicit feedback from, policymakers, market participants, and the public.

¹ MBS may also refer to mortgage-backed securities more generally, including PCs, Giants, MBS, UMBS, and Supers issued by Freddie Mac and MBS, Megs, UMBS, and Supers issued by Fannie Mae. Freddie Mac will change the name of its non-TBA eligible securities to MBS upon implementation of the SSI when they change the payment delay on those securities from 45 days to 55 days.



This *Update*, like previous *Updates*, reviews activity and progress at the Enterprises, CSS, and FHFA related to the development of the CSP and implementation of the SSI. In addition, this *Update* focuses on outreach by the Enterprises and FHFA to inform and prepare market participants for SSI implementation. This *Update* also summarizes efforts made by the Enterprises and FHFA to inform and engage market participants and ensure regulatory clarity. This *Update* also includes details about steps FHFA and the Enterprises are taking to support alignment of cash flows to investors after SSI implementation.

A key objective of this *Update* is to emphasize the need for market participants to begin now to plan and prepare for SSI implementation. FHFA joins the Enterprises in strongly encouraging market participants to commit adequate resources to these activities. The timeframe that FHFA announced in March 2017 calls for the SSI to be implemented in Q2 2019. Because forward trading in the TBA market could start in Q1 2019, market participants need to complete preparations by year-end 2018.

As reported in previous *Updates*, the Enterprises and CSS are developing the CSP in two stages:

- Release 1 implements the CSP's Data Acceptance, Issuance Support, and Bond Administration modules for Freddie Mac's existing fixed-rate single-class securities. The development and implementation of Release 1 did not involve or affect Fannie Mae.
- Release 2 will allow both Enterprises to use those modules, plus the Disclosure module, to perform activities related to their current fixed-rate, single-class securities, and multi-class securities; to issue UMBS and related resecuritizations, including commingled resecuritizations; and to perform activities related to the underlying loans. In addition, both Enterprises will use certain modules to perform activities related to securities backed by adjustable-rate loans.

I. Release 1 Successes

With the implementation of Release 1 on November 21, 2016,² Freddie Mac seamlessly transferred to CSS operational responsibilities for the monthly issuance and settlement of single-class mortgage-backed securities backed by 15-, 20-, and 30-year fixed-rate loans and for the

² See *FHFA Announces Successful Implementation of Release 1 of the Common Securitization Platform*.



computation of the monthly pool and bond factors³ for Freddie Mac's PCs and Giants. From implementation of Release 1 through the end of October 2017, Freddie Mac used the CSP for monthly issuance and settlement of approximately 1,000 new securities, representing about \$55 billion in unpaid principal balance, and monthly bond administration functions for 260,000 securities backed by approximately 9.8 million loans.

In May 2017, CSS achieved another important success in its operational support for Freddie Mac's mortgage securitization processes. During normal business hours and without interruption in service, CSS performed a planned failover and failback exercise between its primary systems and its emergency backup systems. Failover entails shifting the platform processing and operations from the primary systems to the backup facility. Failback is the process of returning the platform processing and operations to the primary systems. The ability to shift operations seamlessly between primary and backup facilities is crucial to business continuity and disaster recovery and ensures robust systems and processes.

II. Release 2 Developments

Since the *March 2017 Update*, CSS has continued to develop and test Release 2 software and has been conducting system-to-system testing with each Enterprise. In comparison to Release 1, which itself was a large and complex undertaking, Release 2 has several additional layers of complexity. Release 1 involved coordination between two parties: Freddie Mac and CSS. Release 2 adds Fannie Mae as a second user of the CSP, which will require CSS to conduct both bilateral testing with each Enterprise as well as trilateral testing and implementation by CSS and the Enterprises. Another layer of complexity involves the product mix covered by Release 2. Release 1 only included Freddie Mac single-class MBS backed by fixed rate loans, while Release 2 will also cover single-class resecuritizations of UMBS (to be known as Supers),⁴ multiclass securities such as REMICs, and various functions that will differ by Enterprise for securities that are backed by adjustable-rate loans. Additional complexity is also involved in testing triparty failover and failback capability for Release 2.

³ Release of pool and bond factors to the market enables investors to calculate the principal and interest payments they expect to receive on mortgage securities they own. The pool factor for an MBS or PC is a fraction equal to the current outstanding security-level principal balance divided by the original security-level principal balance. The bond factor for a resecuritization is comparable to the pool factor for an MBS or PC except that the remaining security-level principal balance used to calculate a bond factor reflects the cumulative distribution of the underlying securities, not the underlying mortgage loans.

⁴ Supers will be analogous to Fannie Mae Megas and Freddie Mac Giants, which are, respectively, single-class resecuritizations of Fannie Mae MBS and Freddie Mac PCs. Single-class and multi-class resecuritizations may commingle UMBS or Supers originally issued by Fannie Mae and Freddie Mac.



Because of the additional complexity of Release 2, the project schedule includes extended periods of both end-to-end testing and parallel activities. The Enterprises, CSS, and FHFA will closely monitor test results and perform due diligence to mitigate the risks associated with Release 2.

The bilateral system-to-system testing CSS has been conducting with each of the Enterprises ensures the functionality of the Data Acceptance, Issuance Support, Bond Administration, and Disclosure modules of the CSP for single- and multi-class securitizations and resecuritizations. Despite the significant progress all parties are making, system-to-system testing requires additional time and will not be completed by the end of the year as had previously been expected. The focus of the remaining work is in several key areas, including the conversion of legacy multi-class securities onto the platform, disclosure reporting, and tax reporting. FHFA, CSS, and the Enterprises currently expect system-to-system testing to be completed and end-to-end testing to begin during by the first quarter of 2018. FHFA has updated the *CSP/Single Security Timeline* (Appendix A) to reflect that change.

FHFA, the Enterprises, and CSS remain confident that Release 2 will be implemented in the second quarter of 2019 as announced in the *March 2017 Update*. With the implementation of Release 2, Freddie Mac and Fannie Mae will be using the CSP Data Acceptance, Issuance Support, Bond Administration, and Disclosure modules.

III. Freddie Mac Implements Aligned Disclosures

On August 28, 2017, Freddie Mac implemented new investor disclosures for single-family fixed-rate and adjustable-rate MBS designed with Fannie Mae to align investor disclosures across the Enterprises in conjunction with the SSI. Those disclosures provide standardized loan-level and pool-level data for all of Freddie Mac's PCs. Fannie Mae and Freddie Mac published the disclosure templates in July 2016. The Enterprises also published technical specifications and sample files in November 2016.⁵ Freddie Mac published test files in June and July 2017. Freddie Mac also published a *Disclosure Guide* providing details and technical specifications to facilitate changes securities dealers, investors, and data and analytics vendors might need to make to their systems, software, or processes.

The successful implementation of the new disclosures, like the successful implementation of Release 1, is a key step toward industry alignment and implementation of the SSI.

⁵ The final features and disclosures may be found on Fannie Mae's website [here](#) and on Freddie Mac's website [here](#).



Outreach and Industry Readiness

I. Enterprise Outreach Activities

The successful implementation of Release 2 and smooth transition of the TBA market to trading the new, common securities (UMBS and Supers) require planning, investment, and preparation on the part of a wide variety of market participants, including MBS investors, dealers, seller/servicers,⁶ vendors, and providers of critical infrastructure. To facilitate the transition, the Enterprises and FHFA have engaged in extensive industry outreach. Since 2015, the Enterprises and FHFA have participated in industry forums and conferences, webinars, conference calls, meetings with individual firms, and consultations with advisory and industry-sponsored working groups. Much of this activity is conducted in conjunction with major trade associations, including the Securities Industry and Financial Markets Association (SIFMA), the Structured Finance Industry Group (SFIG), the Mortgage Bankers Association (MBA), the American Bankers Association (ABA), and standing committees of these associations. FHFA and the Enterprises also receive valuable feedback from other members of the Single Security and CSP Industry Advisory Group, including the Independent Community Bankers of America (ICBA), the Housing Policy Council (HPC), the Association of Mortgage Investors (AMI), and the Center for Responsible Lending (CRL). In addition to providing opportunities to raise industry awareness, these activities provide the Enterprises and FHFA insight into industry understanding of the SSI and industry engagement in preparing for its implementation.

In conjunction with the outreach activities, FHFA and the Enterprises have developed a variety of materials related to SSI implementation and published them on Enterprise or FHFA websites. These materials include regularly updated Frequently Asked Questions (FAQs), technical information, CSP and SSI timelines, and these *Updates*.⁷ The Enterprises also produced a *short video* to raise awareness among market participants about SSI and the need to prepare for its implementation. Most recently, the Enterprises published the *Single Security Initiative Market Adoption Playbook* (*Playbook*) and an *Illustrative Implementation Schedule* (Figure 1) aimed at market participants. The *Playbook* identifies actions that four types of market participants—investors, dealers, seller/servicers, and vendors—should consider taking to ensure a smooth

⁶ A seller/servicer is an institution approved to sell mortgages to an Enterprise, service mortgages purchased by an Enterprise or both sell mortgages to and service mortgages purchased by an Enterprise. The term "seller," refers to a seller/servicer acting in its capacity as a seller of mortgages; and the term "servicer," refers to a seller/servicer acting in its capacity as a servicer of mortgages. A seller may sell mortgages it originated itself or mortgages it purchased from other originators. A servicer may service the mortgages it sold to an Enterprise or other mortgages sold to the Enterprise by other sellers.

⁷ CSP and SSI information posted by Freddie Mac may be found [here](#), by Fannie Mae [here](#), and by FHFA [here](#).



transition to the issuance of and TBA trading in the new securities. The Illustrative Implementation Schedule provides examples of the timing of some activities that market participants may need to undertake to prepare for SSI implementation.

As implementation approaches, the Enterprises will accelerate and intensify their engagement with market participants. To do so, they are developing detailed communication and risk management plans. The Enterprises have also engaged Ernst & Young (E&Y) to assist in those activities and to help align readiness activities between Fannie Mae, Freddie Mac, FHFA, and market participants. In the coming months, E&Y will be designing a survey of groups of market participants and “impact assessment templates” based on the Playbook. The “impact assessment templates” are intended to help market participants estimate the level of effort that may be required to effect systems and process changes in preparation for implementing the SSI. The Enterprises expect to use those instruments to facilitate market awareness and understanding of the SSI and to gauge the state of industry preparations. As implementation approaches, the Enterprises will also support the creation of test environments, where appropriate.

II. Critical Infrastructure and Market Services

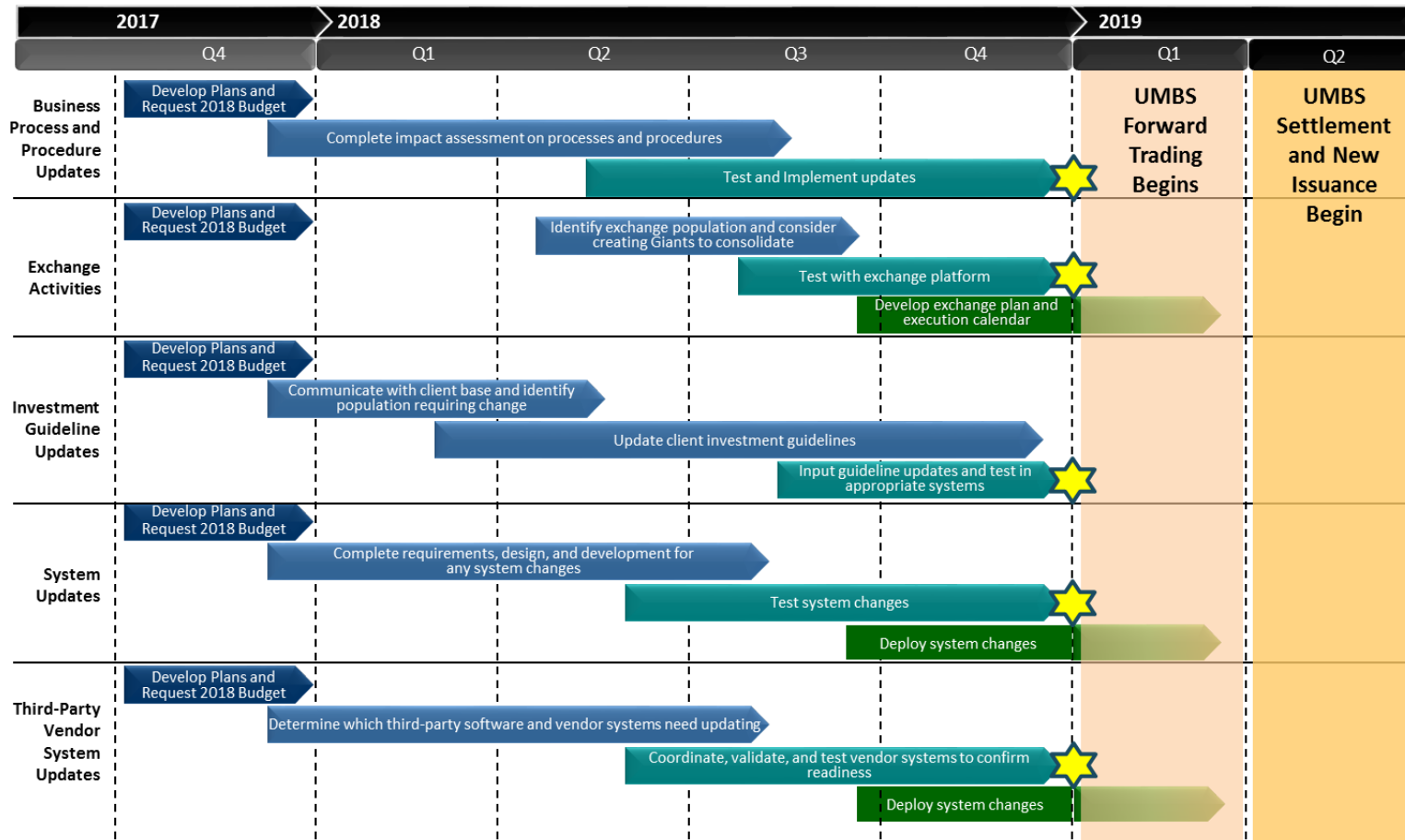
Implementing the SSI will require preparations by the providers of critical infrastructure and services to the TBA market. Critical market infrastructures include the Fixed Income Clearing Corporation (FICC), which nets and clears trades in Enterprise MBS, and the Federal Reserve Bank of New York (FRBNY), which acts as the Enterprises’ fiscal agent. Critical services include those provided by the major trading platforms and the large custodian banks. Other firms provide critical support to market participants or market functions through pool identification, valuation, CUSIP allocation, and MBS index computation services, as well as data and analytics. In addition, rule changes related to the TBA market are determined by SIFMA through its *Good Delivery Guidelines*⁸ for Enterprise TBA contracts.

⁸ See *Uniform Practices for the Clearance and Settlement of Mortgage-Backed Securities and Other Related Securities*, Chapter 8, “Standard Requirements for Delivery on Settlements of Fannie Mae, Freddie Mac, and Ginnie Mae Securities.”



Figure 1: Illustrative Implementation Schedule for Market Participants

This sample schedule illustrates the time market participants may need to prepare for implementation in Q2 2019. The examples below do not include all changes that may be required.



Strong Recommendation: Test and deploy system changes and implement updates by year-end 2018



Fannie Mae



The Enterprises and FHFA have been working closely with many of the providers of these services. Many of them have developed plans for SSI implementation and are in the process of implementing those plans. For example, the Enterprises have worked with the FRBNY to ensure that all parties are aligned on the operational and system changes they each need to make for SSI implementation. Those modifications will ensure that FRBNY, as the Enterprises' fiscal agent and on their behalf, is able to distribute principal and interest payments associated with Supers and REMICs that commingle Fannie Mae and Freddie Mac UMBS. The Enterprises and FHFA have also worked closely with FICC to identify modifications necessary to its clearing, netting, and settlement processes, including changes to TBA CUSIPs and to pool identification procedures.

With respect to vendor services, the Enterprises have worked with several of the major trading platforms to help them prepare for trading in the new TBA contracts. Those platforms are developing new trading screens and have shown prototypes at industry events. They have also committed to provide testing environments well in advance of implementation. Other vendors that produce MBS market indexes are working to modify those indexes to reflect the post-SSI-implementation market for Enterprise MBS. Investors and money managers use MBS market indexes to determine portfolio allocations and evaluate performance.

The fact that the Enterprises have no or only minimal direct relationships with many service providers has presented a challenge to the Enterprises. For example, custodian banks have a direct relationship with owners of Enterprise MBS assets, but not necessarily with the Enterprises themselves. Those banks provide a number of critical services to investors that may include maintenance of accounts, segregation and safekeeping of assets, settlement of transactions (including resolution of counterparty failures to deliver as expected), provision of account statements, income collection, and miscellaneous administrative services. We are therefore requesting market participants to ensure that the vendors they work with are identified, informed, and prepared for SSI implementation. Upon request, the Enterprises and FHFA can provide support for these efforts.

III. Achieving Regulatory Clarity

The introduction of a new security and the exchange of legacy Freddie Mac PCs for UMBS present regulatory issues that must be resolved to smooth the market transition. These issues include accounting and tax treatments, regulatory and supervisory limits on the concentration of exposures to a single issuer, and the continued exemption of TBA contracts from rules that apply to security-based swaps under Title VII of the Dodd-Frank Act.

To increase liquidity of the new securities, Freddie Mac will offer investors the opportunity to



exchange outstanding TBA-eligible PCs and Giants for UMBS and Supers.⁹ Because PCs and Giants currently pay investors on the 45th day after interest starts to accrue for the payment period and UMBS and Supers will pay on the 55th day, the exchange offer will include compensation for the extra ten-day delay in receipt of payments to investors. Both the exchange itself and the compensation payment to investors raise accounting and tax questions. Freddie Mac and Fannie Mae have requested the Internal Revenue Service (IRS) to issue public guidance concerning the application of tax rules to the exchange itself and to the accompanying payment from Freddie Mac to investors. Both Enterprises have also requested Securities and Exchange Commission (SEC) guidance concerning the application of accounting rules to these transactions.

The transition to both Enterprises issuing UMBS and Supers to replace their current MBS will be accompanied by new contracts in the TBA market. FHFA and the Enterprises are working with SIFMA on those changes. The goal is for the new contracts to allow delivery of securities issued by either Fannie Mae or Freddie Mac without the issuer being identified when contracts are traded. Instead, sellers would notify buyers of which Enterprise's securities they will receive 48 hours before settlement, consistent with the current TBA market practice of sellers notifying buyers of the exact securities they will receive 48 hours before settlement.

Market participants have identified a number of regulatory issues related to the introduction of UMBS and the new TBA contracts, including possible changes to the exemption of TBA trades from security-based swap (SBS) rules imposed by the Dodd-Frank Act or institution-specific capital, liquidity, and diversification requirements. FHFA has facilitated a request for SEC guidance on the application of SBS rules.

The Enterprises, in close collaboration with industry representatives, are also requesting the IRS to resolve uncertainty about how the new TBA contracts will interact with the diversification requirement imposed on certain variable contracts under Section 817(h) of the IRS Code. That section applies primarily to life insurers and pension administrators with respect to certain annuity, endowment, and life insurance products. The implementing regulation currently requires that not more than 55 percent of the total assets of an account be represented by securities of any single issuer and that not more than 70 percent of the total assets of an account be represented by securities of any two issuers. Each government instrumentality (a category

⁹ Freddie Mac will also offer investors the opportunity to exchange non-TBA-eligible 45-day PCs for 55-day MBS.



that includes the Enterprises) is currently considered a separate issuer.¹⁰

FHFA has also reached out to the federal banking regulators and market regulators to ensure that they are aware of the SSI and of possible questions the regulators may receive from their regulated entities.¹¹ Such questions could include implications for capital requirements, liquidity rules, and concentrations limits.

Alignment Actions and Analyses

Some market participants have expressed concern that divergence in the prepayment rates of UMBS issued by Fannie Mae and Freddie Mac could lead to differences in the prices of Fannie Mae- and Freddie Mac-issued UMBS and to the possibility of erosion of the broad market liquidity the SSI seeks to foster. Divergence in prepayment rates could occur if the Enterprises fail to align programs, policies, and practices that significantly affect prepayments. In response to this concern, FHFA and the Enterprises have worked together to develop processes to identify and align those Enterprise programs, policies, and practices that could materially affect prepayments.

Previous *Updates* have described FHFA's commitment to keeping the Enterprises aligned with respect to prepayments, including discussion of the Enterprises' processes to manage changes to their programs, policies, and practices, FHFA review of those processes, and the resulting decisions. The following sections expand on the information provided in prior *Updates* by describing:

- FHFA's guidelines for alignment on prepayment speeds;
- The Enterprises' change management processes, including their assessments of the potential prepayment effects of new initiatives or changes to programs, policies, or practices; and
- Detailed examples of how FHFA monitors the *ex post* alignment of Enterprise prepayment speeds.

¹⁰ 26 CFR 1.187-5(b)

¹¹ The federal banking regulators include the Federal Deposit Insurance Corporation (FDIC), the Office of the Comptroller of the Currency (OCC), and the Board of Governors of the Federal Reserve System. The federal market regulators are the SEC and the Commodity Futures Trading Commission (CFTC).



I. FHFA Alignment Guidelines

FHFA's goal is to provide transparency to market participants regarding which Enterprise processes and decisions FHFA seeks to align, which processes and decisions FHFA does not seek to align, and the reasons for those decisions. FHFA does not believe that complete alignment of the Enterprises' programs, policies, and practices is necessary or appropriate. The Enterprises remain separate entities and competitors despite being in conservatorship, and innovation by the Enterprises has significant benefits to the secondary mortgage market and to mortgage borrowers. Therefore, FHFA believes that alignment for purpose of the SSI should focus only on those innovations or other changes that are likely to cause a divergence of prepayment speeds.

FHFA is seeking general alignment on the observed prepayments associated with Enterprise UMBS at the cohort level. By "general alignment," FHFA means that those cash flows should be similar rather than identical. For this purpose, FHFA defines a cohort as those Enterprise TBA-eligible securities with the same coupon, maturity, and issuance year. FHFA has set a minimum standard to trigger a review of the differences in prepayment speeds of any given cohort. In general, FHFA investigates differences between actual Fannie Mae and Freddie Mac prepayment speeds when the divergence for a cohort exceeds a conditional prepayment rate (CPR)¹² of 2 percentage points. For a divergence in CPR in excess of 3 percentage points, FHFA will require that the cause of the divergence be reported to FHFA's internal Single Security Governance Committee. The percentage triggers are based on the current interest rate environment and mortgage rates and are subject to change over time.

FHFA will continue to require the Enterprises to submit non-public reports to FHFA with all proposed or pending changes as described in the next section.

II. Fannie Mae and Freddie Mac Prepayment Review Processes

As reported in the *July 2016 Update*, each Enterprise has a formal internal Enterprise-wide governance process to ensure that any significant proposed changes to its programs, policies, and practices are identified, reviewed, escalated, and submitted to FHFA for review in a timely manner. Such reviews have helped align Enterprise prepayment speeds in recent years and continue to help ensure that Enterprise business decisions consider investor interests. This section provides more detail on each Enterprise's review process.

¹² The CPR is the annualized percentage of the unpaid principal balance of an existing mortgage pool prepaid in a given period. FHFA analysis focuses on one-month, three-month, and six-month CPRs. CPRs may be actual or forecast depending on the context of the analysis. Prepayment rates are also referred to as prepayment speeds.



Both Enterprises have well-established, internal processes that require all internal stakeholders to notify their Securitization teams to evaluate any proposed new or modified programs, policies, or practices. Such proposals may include, but are not limited to, new credit and servicing policies and programs for loan buy-outs or modifications. Each Enterprise analyzes proposals for any effect on its securities, including on prepayment speeds. Each Enterprise requires a senior vice president to approve any change prior to implementation.

Fannie Mae and Freddie Mac have also established processes to inform FHFA of new or modified programs, policies, and practices. Each Enterprise has augmented its process to include a Single Security Initiative Impact Assessment. Through those processes, the Enterprises notify FHFA of any measurable effects on prepayment speeds and the performance of TBA-eligible securities that may result from a new or modified program, policy, or practice. The Enterprises also notify FHFA if the analysis reveals no effect on prepayment speeds or performance.

For any changes to a program, policy, or practice that an Enterprise's analysis indicates may have a significant impact on prepayment speeds, FHFA works with the Enterprises to determine the dimensions on which the Enterprises should align. For example, in August, the Enterprises and FHFA announced new streamlined refinance programs that will be available for loans originated on or after October 1, 2017. Similar to the Home Affordable Refinance Program (HARP) scheduled to expire at the end of December 2018, the new programs are aimed to assist borrowers who are current on their payments and who cannot refinance because their loan-to-value (LTV) ratios exceed the maximum otherwise allowed. Because these programs could significantly impact prepayment speeds on TBA-eligible securities, FHFA required the Enterprises to align on all major program aspects prior to implementation.

When circumstances arise that cause divergences in prepayment speeds for some cohorts notwithstanding the above efforts, each Enterprise has used other strategies, with FHFA oversight, to address misalignment of prepayment speeds. For example, the Enterprises may create larger, multi-lender pools to increase the homogeneity and size of the loan pools backing their TBA-eligible securities. Prepayment speeds of such pools are less likely to diverge significantly from those of the overall market. While adjustments to pooling practices do not address the average prepayment speed of a cohort, larger pools do help assure buyers that they will not receive pools with particularly undesirable prepayment characteristics.

Each Enterprise has also used other options to address prepayments. Fannie Mae has addressed prepayment idiosyncrasies directly with a seller/servicer. Options for doing so include recapturing premium paid to the seller/servicer at loan acquisition; seller/servicer indemnification of Fannie Mae should an investor file a claim; review of seller/servicer policies and practices that influence borrower behavior; and review of seller/servicer compliance with Fannie Mae's Selling and Servicing Guides.



Freddie Mac has addressed misalignment of prepayment speeds by adjusting its seller/servicer mix to reflect better the mix in the overall market. The seller/servicer mix can affect prepayment speeds because some seller/servicers originate loans whose prepayment speeds diverge significantly from the market average. A disproportionate share of pools backed by loans from such seller/servicers can create a material divergence in the prepayment speeds of a cohort. Freddie Mac has remediated such divergences by adjusting their loan purchases across seller/servicers so that prepayment speeds of Freddie Mac PCs more closely mirror those of the overall market.

III. FHFA *Ex Post* Monitoring and Reporting of Prepayment Speeds

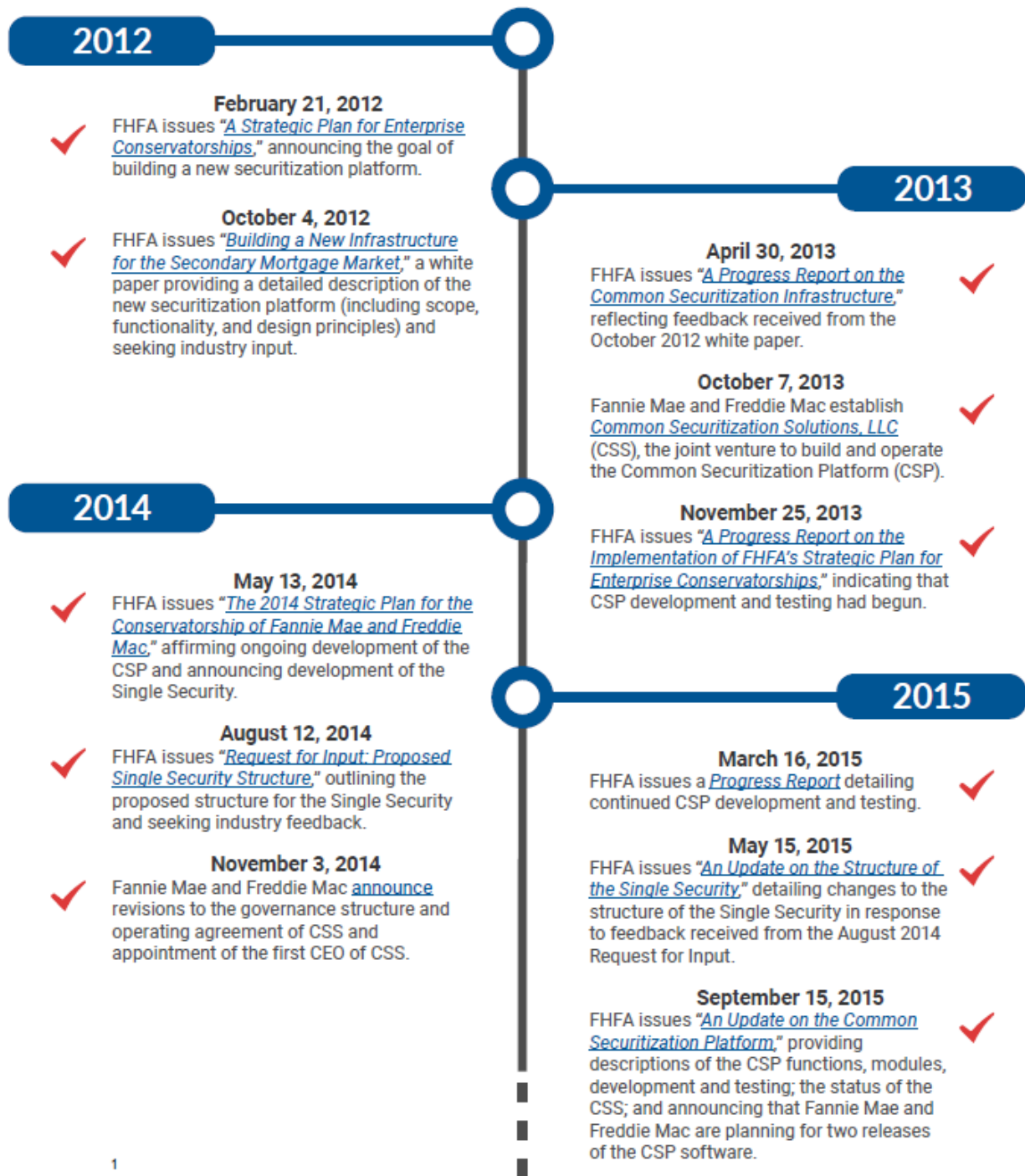
As announced in the March 2017 *Update*, the FHFA's Single Security Governance Committee will monitor issuance and prepayment performance of Fannie Mae's and Freddie Mac's mortgage-backed securities and take appropriate steps to address prepayment differences between the two Enterprises' mortgage-backed securities if they arise. Since that announcement, market participants have requested more transparency with respect to the data FHFA monitors and FHFA's uses of that data. Appendix B provides samples of the data FHFA receives and reviews on a monthly basis as well as descriptions of how FHFA uses that data. As indicated above, FHFA investigates any difference in CPR for any coupon, maturity, and issuance year cohort in excess of 2 percentage points.

Conclusion

FHFA and the Enterprises believe that the accomplishments, activities, and processes described in this *Update* will help achieve the key goals and objectives of the Single Security Initiative, including maintaining a broader, more liquid secondary mortgage market. FHFA welcomes public input on this Update. Feedback can be *submitted electronically* via FHFA.gov, or to the Federal Housing Finance Agency, Office of Strategic Initiatives, 400 7th Street, S.W., Washington, DC 20219. All pertinent submissions received will be made public and posted without redaction to FHFA's website.



Appendix A—Single Security Initiative/CSP Timeline



2016

February 19, 2016

- ✓ Freddie Mac and CSS complete system-to-system testing for Release 1 (first use of CSP software).

March 3, 2016

- ✓ FHFA issues the "[2015 Scorecard Progress Report](#)," detailing continued CSP development and testing.

July 7, 2016

- ✓ FHFA issues "[An Update on Implementation of the Single Security and the Common Securitization Platform](#)," detailing the progress made and expected milestones.

July 11, 2016

- ✓ [Fannie Mae](#) and [Freddie Mac](#) publish final Single Security features and disclosures for Release 2.

July 26, 2016

- ✓ Freddie Mac and CSS complete end-to-end testing for Release 1.

November 18, 2016

- ✓ Freddie Mac and CSS complete operational and production readiness for Release 1.
- ✓ Freddie Mac and CSS complete parallel activities for Release 1.

December 8, 2016

- ✓ FHFA [Announces](#) Successful Implementation of Release 1 of the Common Securitization Platform.

2017

March 23, 2017

- ✓ FHFA issues "[An Update on the Implementation of the Single Security and the Common Securitization Platform](#)," providing details of the successful implementation of Release 1 of the CSP, the timeframe for Release 2, costs related to the CSP and CSS, and steps to ensure alignment between the Enterprises to facilitate the Single Security Initiative.

August 28, 2017

- ✓ Freddie Mac implements aligned investor disclosures in support of the Single Security Initiative.

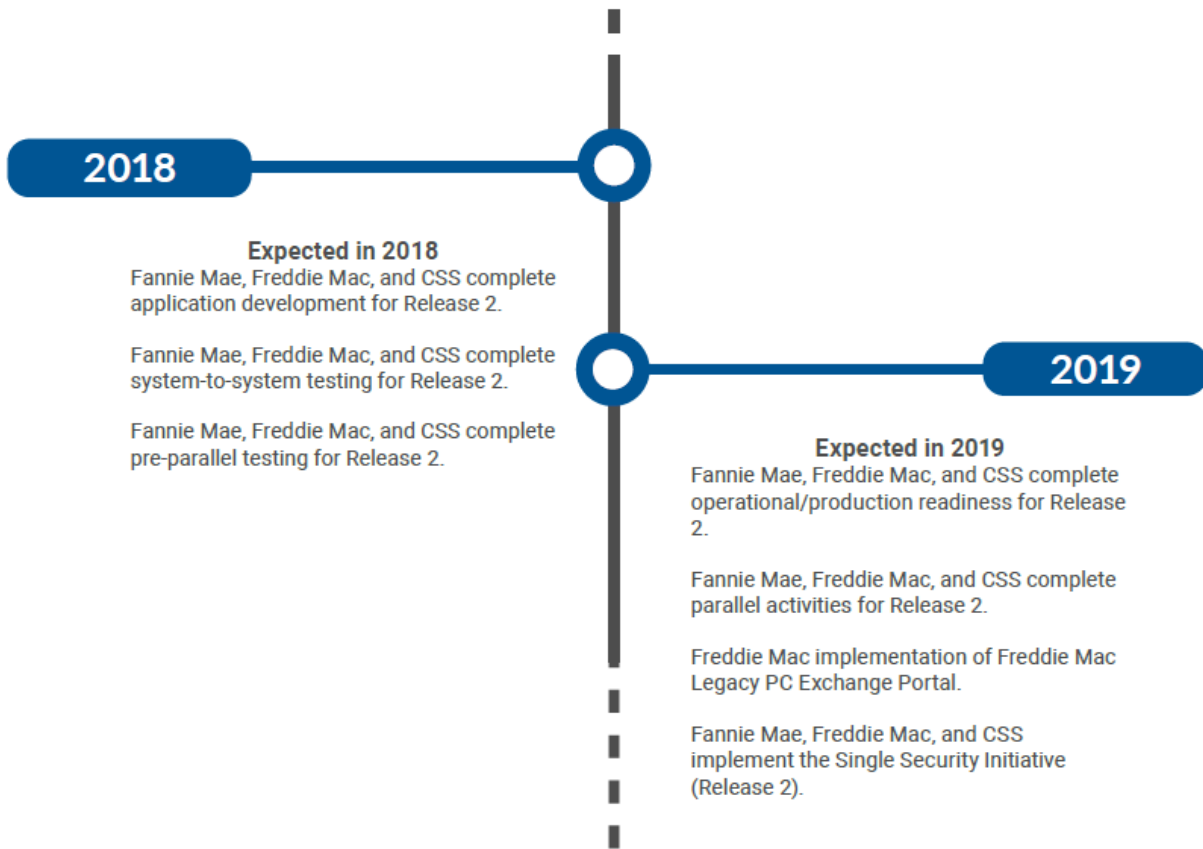
September 6, 2017

- ✓ Fannie Mae and Freddie Mac publish the [Market Adoption Playbook](#) identifying possible actions that market participants should consider taking to ensure a smooth transition to the issuance of, and TBA trading in, the new Uniform Mortgage-Backed Securities.

December 4, 2017

- ✓ FHFA issues "[An Update on the Single Security Initiative and the Common Securitization Platform](#)" detailing activity and progress on the development of the CSP and implementation of the Single Security Initiative (SSI). This Update also describes outreach by the Enterprises and FHFA to inform and engage market participants as they prepare for SSI implementation.





Appendix B—FHFA Monitoring of Prepayment Alignment

FHFA monitors and evaluates prepayment speeds of the Enterprises' TBA-eligible securities because a divergence in those speeds could lead to differences in the prices of Fannie Mae- and Freddie Mac-issued UMBS. A divergence could also erode the broad market liquidity that the SSI seeks to foster.

FHFA uses charts and data tables similar to those included here to evaluate the alignment of loan attributes for newly issued MBS and the prepayment performance of Fannie Mae and Freddie Mac MBS. These charts and tables are examples of the range of information FHFA regularly monitors using publicly available data. They have been abridged to improve readability. FHFA monitors similar information for both Enterprises and for all coupons, maturities, and issuance years that account for significant outstanding volumes of Enterprise MBS.

A prepayment of a mortgage loan is the amount of principal paid in advance of the loan's payment schedule. Full prepayments occur when borrowers pay off their loans ahead of schedule payment, refinance their mortgages, sell their homes, or default on their mortgage loans. Partial prepayments occur when borrowers pay principal in addition to their regularly scheduled payments of principal and interest.

When a loan is prepaid, an MBS investor receives the payment as principal. If the investor paid a premium for the security, the prepayment reduces the investor's yield. Therefore, investors in premium securities look for MBS that are likely to prepay slower than other MBS. Similarly, investors in discounted securities prefer MBS with faster prepayment speeds.

Market participants measure prepayments using the conditional prepayment rate (CPR), which is the percentage of the existing mortgage pool principal that is prepaid in a given period. Prepayment rates are also referred to as prepayment speeds.

I. Prepayment Comparison for 30-Year, TBA-Eligible MBS

The Prepayment Speed Comparison (Chart B-1 below) compares prepayment speeds for all Fannie Mae and Freddie Mac TBA-eligible 30-year securities for the past ten years, illustrating differences in historical prepayment rates.

The chart also illustrates how prepayment speeds (left axis) move in the opposite direction of the 30-year mortgage rate (right axis), illustrating how a decline in mortgage rates leads to faster prepayment speeds and vice versa.

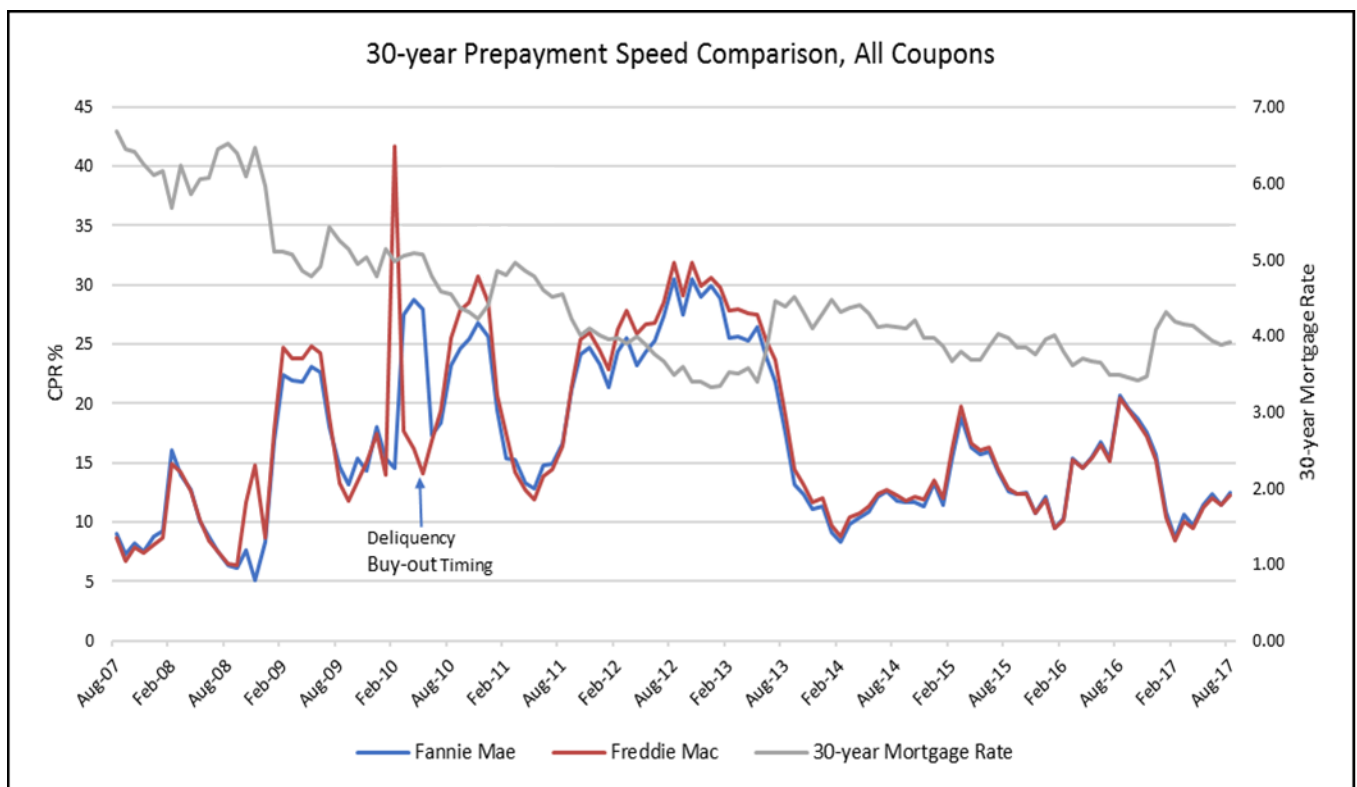
Finally, the chart includes events that resulted in differences in the prepayment rates of Fannie Mae MBS and Freddie Mac MBS in 2010 and 2011. The event marked "Delinquency Buy-out Timing" occurred in 2010 when the Enterprises implemented new accounting requirements



related to securitizations (FAS 166/167). To comply with the new requirements, the Enterprises adjusted their loan buy-out policies from buying loans out of pools when they were two years delinquent to when they were 120 days delinquent. That adjustment resulted in a large, one-time “catch up” loan buy-out by both Enterprises. The prepayment rate spike shown in the chart resulted from that policy change. Freddie Mac was able to issue the debt needed to pay investors the par amount of the delinquent loans within a month, while Fannie Mae, which needed to raise a larger amount, required three months.

Other actions by the Enterprises have also resulted in differences between Freddie Mac and Fannie Mae historical prepayment speeds. Such actions included, for example, purchasing mortgage loans from a different mix of originators or purchasing loans with different attributes. In addition, the Enterprises followed different implementation approaches to the Home Affordable Refinance Program (HARP), which resulted in different prepayment speeds.

Chart B-1: Prepayment Comparison for 30-Year, TBA-Eligible MBS, All Coupons



II. Prepayment Comparison by Coupon and Issuance Year

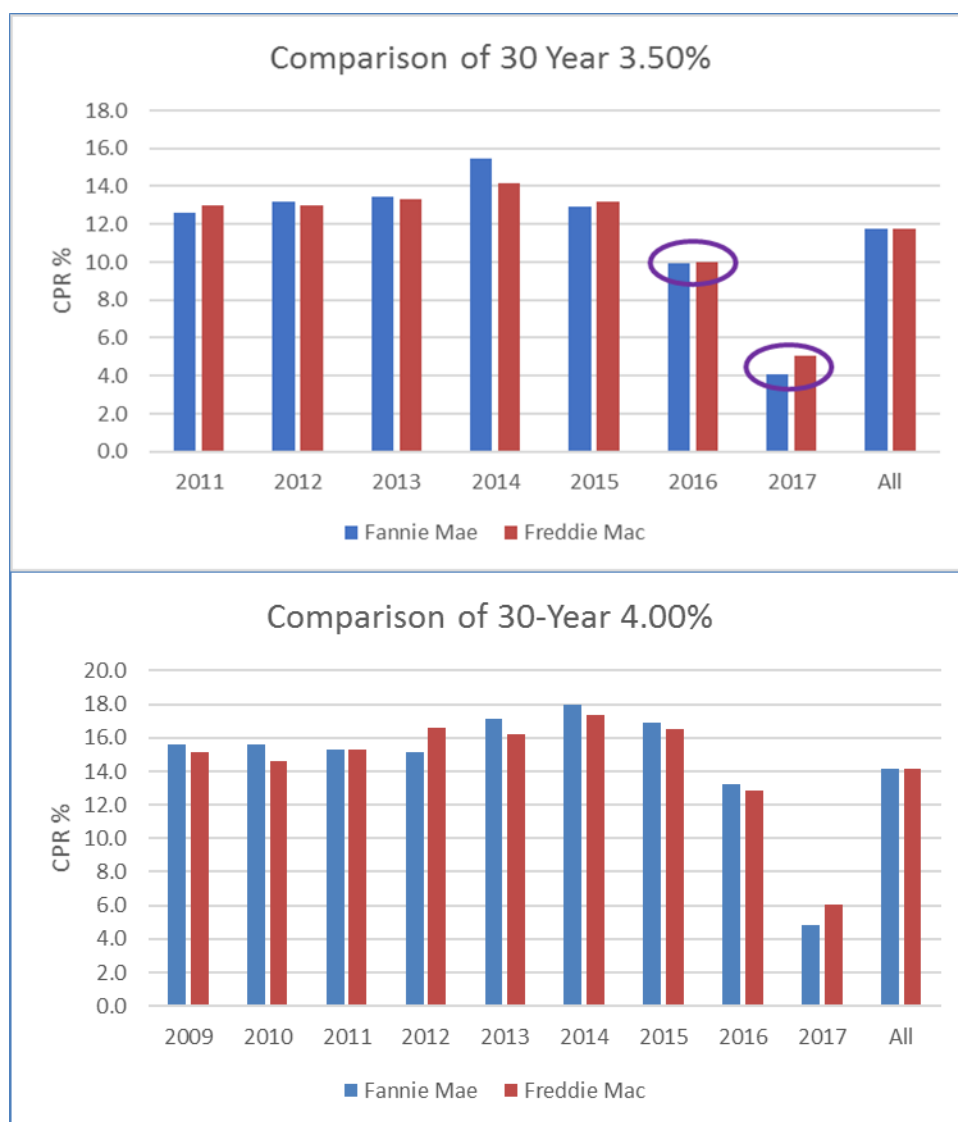
Chart B-2 (below) illustrates the comparison of pool issuance years for a given MBS coupon, here 3.50 percent. The top half of that chart shows the June 2017 prepayment speeds for each



Enterprise’s 30-year MBS for that coupon and recent issuance years. FHFA uses these charts to assess the current alignment of CPRs for past origination cycles and the general trend of alignment over issuance years.

The chart shows Enterprise MBS with a coupon of 3.5 percent had almost exactly the same prepayment speeds for the 2016 issuance, at 10 percent CPR. The prepayment speeds for such MBS issued in 2017 differed by about one percentage point CPR, with Freddie Mac MBS prepaying at five percent CPR and Fannie Mae MBS prepaying at four percent CPR. The lower half of Chart B-2 shows a similar pattern for Enterprise MBS with a four percent coupon.

Chart B-2: Prepayment Comparison by Coupon and Issuance Year



III. Prepayment Comparison by Coupon for All Issuance and by Issuance Year

FHFA also uses line charts as illustrated in Chart B-3 below to compare Fannie Mae’s MBS and Freddie Mac’s MBS prepayment speeds and to evaluate the degree of alignment on a historical basis. Since 2013, the prepayment experience on the Enterprises’ MBS have been very closely aligned.

Chart B-3: Prepayment Comparison by Coupon for All Issuance and by Issuance Year



IV. Annual Vintage Report

FHFA uses the Annual Vintage Report (Table B-1 below) to correlate Fannie Mae's and Freddie Mac's prepayment speeds with cohort attributes such as the weighted-average coupon (WAC), the weighted-average maturity (WAM), the weighted-average loan age (WALA), and the current balance of the outstanding principal of the MBS bonds, (Current Balance).¹³ Such correlations provide context to understand better any significant differences in CPRs across the Enterprises.

For example, in reviewing the 3.5 percent coupon, the table lists the issuance years of MBS, the WAC, the WAM, the WALA, and the Current Balance. These attributes may explain differences between the Enterprises' CPRs. MBS backed by loans with higher WAC, WALA, and Current Balance are likely to experience faster CPRs.

The columns to the right of these attributes show for both Fannie Mae (FNM) and Freddie Mac (FRE) the recent CPRs for each coupon and issuance year.

¹³ For this table, WAC, WAM, and WALA each are weighted by the principal balance of the individual loan relative to all loans in the cohort before taking the average. WAC refers to weighted average note rate on the loans backing the MBS and does not refer to the coupon of the MBS itself. Both WAM and WALA are measured in months, and Current Balance is measured in billions of dollars.



Table B-1: Annual Vintage Report—September 2017

Coupon	Year	WAC (percent)		WAM (months)		WALA (months)		Current Balance (\$ billions)		September CPR (percent)		August CPR (percent)		3-month Average CPR (percent)		6-month Average CPR (percent)	
		FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE	FNM	FRE
3.0	2012	3.58	3.61	290	290	60	59	97.6	50.4	8.71	8.72	10.44	10.14	8.96	13.34	9.18	11.41
	2013	3.58	3.57	297	296	54	54	133.5	78.8	8.99	8.87	10.67	10.42	10.24	7.23	9.92	8.44
	2015	3.77	3.75	326	326	28	28	50.1	44.4	9.1	8.36	10.41	9.23	9.66	8.69	9.1	8.53
	2016	3.66	3.71	343	343	13	13	221.5	169.3	6.19	6.53	6.45	6.72	6.15	6.41	5.67	5.84
	2017	3.63	3.67	351	351	7	6	11	7.6	3.29	3.38	3.5	3.72	3.75	3.91	3.5	3.62
	All	3.64	3.67	320	323	34	31	515.8	352.2	7.64	7.55	8.67	8.33	8.1	7.92	7.82	7.62
3.5	2011	4.02	4.04	277	275	72	72	19.1	9.5	9.78	11.58	11.77	11.57	10.83	15.46	11.11	13.29
	2012	4	3.99	286	285	63	64	110.1	58	11.22	10.69	12.77	12.48	12.23	11.79	11.9	11.6
	2013	4.02	4.02	300	299	52	51	66	42.4	11.68	11.55	13.37	12.91	12.47	11.38	12.41	11.67
	2014	4.24	4.21	317	316	37	37	46.8	39.7	13.75	13.27	14.89	15.01	14.26	13.02	13.74	13.25
	2015	4.1	4.11	328	328	27	27	153.4	103.6	12.84	12.42	13.82	13.55	12.43	13.16	12.1	12.03
	2016	4.08	4.12	341	341	15	15	105.6	70.7	10.8	10.93	10.99	11.33	11.22	11.27	9.25	9.91
	2017	4.08	4.11	354	354	4	4	120	87	5.18	5.88	4.2	4.78	6.57	6.7	6.47	6.1
	All	4.07	4.09	322	324	32	30	628.6	412.9	10.63	10.55	11.56	11.36	11.75	11.74	11.4	11.3
4.0	2009	4.54	4.55	246	246	100	100	17.1	9	14.32	13.18	15.84	15.97	14.94	14.11	14.59	14.07
	2010	4.48	4.48	264	264	83	83	30.2	19.1	13.5	13.41	14.83	15.15	13.81	14.18	13.61	13.85
	2011	4.47	4.48	274	273	74	75	35.7	19.8	13.65	13.2	15.12	15.21	14.47	15.78	14.16	14.63
	2012	4.46	4.49	284	283	65	65	32.2	11.8	13.74	14.03	14.93	16.58	14.39	12.43	14.17	13.26
	2013	4.57	4.58	303	303	48	48	44.4	22.9	15.26	14.64	17.15	16.47	16.05	15.47	15.78	22.63
	2014	4.58	4.59	315	314	39	39	72.6	50.2	16.78	16.4	18.4	18.3	17.1	16.96	16.78	13.04
	2015	4.57	4.56	329	329	26	26	44.3	24.6	17.45	15.82	19.18	18.26	18.07	16.88	16.58	15.81
	2016	4.51	4.55	341	340	16	16	36.5	20.6	14.56	13.84	14.62	14.83	13.83	13.19	12.59	11.45
	2017	4.47	4.5	354	354	4	4	109.6	62	7.14	8.18	6.79	7.21	8.32	9.96	8.54	11.48
	All	4.52	4.53	315	315	38	38	423	240.1	13.25	13.15	14.43	14.52	14.49	14.54	14.77	14.68

Source: RiskSpan calculations from data available publicly as of October 16, 2017.

V. Servicer Prepay Report

FHFA uses the Servicer Prepay Report (Table B-2 below) to compare prepayment speeds across each Enterprise's largest servicers and the effect of individual servicers on the Enterprise's prepayment performance.

Table B-2 provides a sample servicer prepay report for loans backing Fannie Mae 30-year, 3.5 percent coupon MBS. The table shows that for the second half of 2016 (2016 2H, highlighted), loans serviced by Wells Fargo have an unpaid principal balance of \$8,442 million (second row from the bottom in the top box). The prepayment rate for all 3.5 percent coupon pools serviced by Wells Fargo was 7.6 percent CPR, which may be seen two rows from the bottom of the page. The [+1.9] means that the 7.6 percent CPR was an increase of 190 basis points of CPR from the previous month.

Even though the overall variance in prepayment speeds between the Enterprises is very small, as shown in the yellow box, the variance in speeds among seller/servicers can be significant.



Table B-2: Servicer Prepay Report September 2017–Fannie Mae 30-year, 3.5 Coupon

Servicer	2017 2H	2017 1H	2016 2H	2016 1H	2015 2H	2017 2H		2017 1H		2016 2H	2016 1H		2015 2H		
	Unpaid Balance (\$ Millions)					CPR (%) and [Month-over-Month Change]									
ArvestBk	66	264	396	799	863	5.9	[+4.0]	17.6	[+2.3]	11.4	[-4.4]	13.3	[-0.8]	20.1	[-0.7]
BBT	170	217	69	150	467	5.6	[-2.4]	5.9	[+1.3]	17.6	[+4.9]	14.4	[-0.2]	10.0	[-0.5]
BOA	8	32	103	160	240	0.2	[+0.1]	15.5	[+10.1]	5.5	[-12.0]	5.7	[-12.0]	6.7	[-6.9]
Caliber	841	732	398	703	824	1.4	[+1.1]	7.4	[-0.5]	8.1	[-0.7]	13.3	[-8.7]	20.7	[+1.5]
Chase	2,444	2,834	748	933	2,360	1.9	[-1.8]	6.9	[+0.2]	9.0	[+1.3]	9.6	[+0.6]	11.9	[+0.6]
Freedom	684	1,045	761	1,085	2,006	3.7	[+2.1]	7.6	[+1.4]	12.2	[+1.4]	22.5	[+12.3]	14.5	[-3.2]
Lakeview	349	796	1,848	2,874	2,897	3.6	[-3.2]	17.4	[+8.1]	13.8	[+2.3]	15.7	[-1.6]	18.4	[+0.3]
Matrix	1,570	1,824	1,909	2,296	2,186	4.8	[-26.2]	10.4	[+3.1]	7.9	[-1.5]	13.4	[+0.1]	14.9	[-3.1]
Nationstar	855	764	466	350	718	2.3	[-1.4]	12.7	[+5.1]	10.7	[-6.9]	15.4	[-2.4]	16.3	[-3.5]
NewResident	405	590	555	556	767	62.9	[+59.0]	6.5	[-0.5]	10.7	[+1.6]	15.2	[+0.5]	8.6	[-3.1]
PNC	180	567	356	798	1,482	4.0	[+1.8]	7.8	[+1.5]	3.9	[-2.1]	6.9	[-3.9]	9.3	[-1.8]
PennyMac	3,792	4,314	2,396	2,508	2,384	3.9	[-1.4]	7.3	[+1.2]	9.6	[-0.9]	11.8	[-1.2]	15.3	[-1.5]
Pingora	1,386	1,883	1,959	2,791	4,668	4.8	[-1.2]	7.0	[-1.0]	12.1	[+1.9]	15.2	[-1.0]	11.2	[-5.1]
ProvidentFun	498	866	30	192	327	2.3	[-2.1]	23.3	[+10.0]	0.3	[-18.1]	10.7	[-7.1]	17.8	[+5.3]
Quicken	1,818	2,949	3,232	3,560	4,067	1.8	[+0.6]	9.3	[+3.0]	13.7	[+0.6]	20.7	[+0.8]	20.9	[-1.4]
Roundpoint	847	1,101	584	1,253	1,768	4.8	[-48.6]	6.4	[-1.3]	12.6	[+4.2]	15.6	[+3.8]	14.9	[-5.4]
SenecaMtge	0	319	377	844	1,768	0.0	[+0.0]	8.7	[+5.6]	13.3	[+0.1]	13.2	[-6.5]	20.1	[+1.7]
SunTrust	705	1,734	590	1,347	2,668	2.6	[-1.6]	11.6	[+5.7]	9.9	[+1.7]	11.0	[-2.9]	11.7	[-0.3]
USBank	302	571	1,215	699	1,299	2.5	[-5.3]	4.9	[-0.4]	3.1	[-1.9]	6.8	[+0.3]	7.7	[-3.7]
Wells	7,815	9,680	8,234	9,548	11,278	4.3	[+1.2]	4.8	[-0.1]	7.2	[-1.1]	10.0	[-0.2]	10.6	[-1.4]
Other	18,437	20,377	13,295	20,333	29,683	6.9	[-0.3]	10.9	[+3.8]	15.8	[+4.7]	20.2	[+4.3]	18.3	[+1.4]

Source: RiskSpan calculations from data available publicly as of October 13, 2017.

VI. Decile Report

FHFA uses the Decile Report (Table B-3 below) to understand the range of prepayment speeds across all of the MBS that have the same coupon issued by a given Enterprise. To do so, an Enterprise's TBA-eligible MBS pools of a given coupon are ranked by prepayment speed from fastest to slowest over the past twelve months. The pools are then grouped into deciles based on unpaid principal balance. In addition to the current month's prepayment speeds, the Report presents the 3-month and 6-month CPR, and WALA, WAC, average loan size (ALS), and credit score (FICO) for each decile.¹⁴

As an example, Table B-3 provides a Decile Report for Freddie Mac MBS with a 4 percent coupon. The top row of the table (beneath the headings) shows the prepayment speeds for each decile for July 2017. In July, the fastest 10 percent of pools, based on UPB, prepaid at a rate of 37.9 percent CPR. The fifth decile prepaid at 14.4 percent CPR, less than half the fastest decile, while the slowest decile was not much more than zero percent. A complementary report is produced for Fannie Mae. For each coupon and decile, FHFA monitors the performance of Freddie Mac's MBS relative to Fannie Mae's MBS.

¹⁴ WAC and WALA are described in more detail in footnote 13 above. ALS is measured in thousands of dollars.



Table B-3: Decile Report for Freddie Mac 30-year, 4 Coupon¹⁵

Conditional Prepayment Rate (percent)										
Reporting Month	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10
Oct 17	35.7	19.9	17.8	15.8	13.4	10.3	7.4	3.5	0.5	0.1
Sep 17	38.1	22.1	19.0	17.2	15.0	12.2	8.3	4.2	0.5	0.1
Aug 17	35.0	20.2	17.9	16.0	13.7	10.9	7.2	3.4	0.4	0.1
Jul 17	37.6	21.1	18.2	16.2	14.1	11.3	7.5	3.6	0.4	0.0

Reporting Month	Decile 1	Decile 2	Decile 3	Decile 4	Decile 5	Decile 6	Decile 7	Decile 8	Decile 9	Decile 10	
Oct 17	WALA / WAC	48 4.57	38 4.57	33 4.54	42 4.56	53 4.51	47 4.50	28 4.51	24 4.51	47 4.52	28 4.53
	ALS/ FICO	173 735	217 737	227 740	196 743	170 746	152 747	183 742	177 738	142 742	175 726
	Cpr3 / Cpr6	23.7 19.7	18.3 16.4	16.9 15.1	15.9 15.0	14.9 14.4	12.0 12.8	9.2 11.5	7.9 11.3	9.0 11.1	8.9 11.2
Sep 17	WALA / WAC	45 4.58	43 4.56	43 4.57	50 4.54	39 4.52	43 4.51	36 4.50	18 4.50	43 4.53	25 4.54
	ALS/ FICO	179 733	198 737	204 741	189 746	186 743	164 746	162 744	187 740	145 741	185 726
	Cpr3 / Cpr6	24.4 19.4	18.8 16.7	17.5 16.3	16.2 15.1	14.2 12.6	12.8 12.7	9.9 11.6	7.2 11.2	9.1 10.8	8.7 10.9
Aug 17	WALA / WAC	47 4.57	42 4.57	43 4.57	41 4.54	47 4.52	47 4.51	27 4.51	20 4.49	46 4.53	25 4.56
	ALS/ FICO	173 736	203 742	202 739	209 741	173 746	154 745	179 742	182 742	142 742	186 724
	Cpr3 / Cpr6	23.1 18.1	18.0 15.6	16.7 15.2	15.6 13.9	13.9 13.1	12.5 12.3	9.6 11.5	7.5 10.5	9.3 10.6	8.8 10.5
Jul 17	WALA / WAC	49 4.56	44 4.57	42 4.58	43 4.55	45 4.52	43 4.51	31 4.51	20 4.51	45 4.52	21 4.54
	ALS/ FICO	169 737	197 738	199 741	198 743	170 744	172 745	168 743	187 743	143 741	265 728
	Cpr3 / Cpr6	22.9 18.3	16.9 15.7	16.0 15.2	15.3 14.7	12.9 12.5	11.4 12.1	9.1 11.2	7.4 10.9	8.2 10.4	8.0 10.2

ALS = average loan size; CPR3/CPR6 = 3 or 6 months conditional prepayment rate, respectively.

Source: RiskSpan calculations from data available publicly as of October 16, 2017.

¹⁵ FHFA monitors decile performance for the most recent twelve months' issuance for each Enterprise and each coupon with significant volume. Four are shown here for illustrative and readability purposes.



VII. Total Industry Issuance Report

The Total Industry Issuance Report (Table B-4 below) provides a comparison of Fannie Mae's and Freddie Mac's previous three months of issuance, with various key loan attributes that would affect the expectations of prepayments and delinquencies.

The attributes that would create a larger rate of prepayments, such as high credit score and low loan-to-value (LTV) ratio, would have the opposite effect on defaults, expecting defaults to be lower.

FHFA uses this report to identify any differences in loan attributes that may provide an expectation of a divergence in prepayment alignment. Analyzing new issuance allows FHFA and the Enterprises to make early adjustments to business practices to reduce potential misalignments in future prepayment rates.



Table B-4: Total Industry 30-year Issuance for July – September 2017

	3.00%		3.50%		4.00%		4.50%		All Loans ¹⁶	
	Fannie Mae	Freddie Mac	Fannie Mae	Freddie Mac	Fannie Mae	Freddie Mac	Fannie Mae	Freddie Mac	Fannie Mae	Freddie Mac
Loan Count	8,342	6,965	221,948	156,902	160,490	88,959	43,698	26,834	438,360	281,001
UPB (\$millions)	\$2,284	\$1,998	\$56,527	\$40,909	\$34,548	\$19,635	\$7,998	\$4,396	\$102,028	\$67,117
% Lender Volume	2.2%	3.0%	55.4%	60.9%	33.9%	29.3%	7.8%	6.5%	100.0%	100.0%
WA FICO	764	767	757	758	732	729	708	715	745	747
WA LTV	76%	77%	79%	79%	80%	80%	81%	80%	79%	79%
% FICO<680	3%	2%	3%	3%	15%	16%	35%	28%	10%	8%
% FICO>740	77%	80%	69%	69%	45%	42%	28%	33%	58%	59%
% LTV>80	35%	37%	39%	40%	39%	38%	37%	32%	39%	39%
% FICO<680 & LTV>80	1%	0%	1%	1%	6%	5%	12%	8%	3%	3%
% DTI>40	28%	32%	30%	35%	37%	42%	42%	42%	34%	37%
% Purchase	73%	78%	76%	78%	66%	65%	61%	58%	71%	73%
% Rate/Term	27%	16%	24%	11%	34%	12%	39%	11%	29%	11%
% Cash-out	0%	6%	0%	11%	0%	23%	0%	31%	0%	16%
% Owner Occupied	96%	96%	93%	95%	86%	85%	67%	60%	89%	89%
% Second Home	4%	4%	5%	4%	4%	3%	2%	1%	4%	3%
% Investor	0%	0%	1%	1%	10%	12%	31%	39%	7%	7%

UPB = unpaid principal balance; WA= weighted average

Source: RiskSpan calculations from data available publicly as of October 16, 2017.

¹⁶ Includes loans backing coupons not shown in table.