Overview of Recent Administrative Reforms of Fannie Mae and Freddie Mac

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SUMMARY

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Congress chartered Fannie Mae and Freddie Mac, also known collectively as the government-sponsored enterprises (GSEs), to promote homeownership for underserved groups and locations by providing liquidity to the secondary mortgage market. The GSEs specifically facilitate financing for single-family residential mortgages and multifamily (apartment and condominium) construction. After purchasing pools of single-family 30-year fixed rate mortgages, the GSEs retain the credit (default) risks from the whole mortgages and subsequently issue mortgage-backed securities (MBSs), which are bond-like securities. Investors who purchase MBSs are guaranteed a return on their initial principal and interest, but they assume prepayment risk, which is the risk that borrowers prepay their mortgages ahead of schedule. In contrast to the original mortgages (with both credit and prepayment risks attached), the MBSs are relatively more liquid, meaning they can be exchanged for cash more quickly with little change in their quoted prices. If institutional investors from around the globe are willing to hold liquid MBSs, then additional funds are channeled to the nation's mortgage market (particularly to support 30-year fixed rate mortgages). National mortgage rates tend to fall as the supply of funds in this market increases, making homeownership more affordable.

The Federal Housing Finance Agency (FHFA), an independent federal government agency created by the Housing Economic and Recovery Act of 2008 (HERA; P.L. 110-289), is the GSE's primary supervisor. FHFA regulates the GSEs for prudential safety and soundness and to ensure that they meet their affordable housing mission goals. In September 2008, the GSEs experienced losses that exceeded their statutory minimum capital requirement levels as a result of above-normal mortgage defaults. The GSEs also experienced losses following spikes in short-term borrowing rates that occurred while they were funding long-term assets held in their portfolios. The GSEs subsequently were placed under conservatorship, and the FHFA currently has the powers of management, boards, and shareholders until the GSEs' financial safety and soundness can be restored. In addition, the U.S. Treasury is providing financial support through the Senior Preferred Stock Purchase Agreements (PSPAs) program, which requires the GSEs to pay dividends to Treasury rather than private shareholders while they are under conservatorship.

Congressional interest in the GSEs has continued since conservatorship. First, the final costs to the U.S. Treasury (and, by proxy, to U.S. taxpayers) of providing financial support to the GSEs are unknown. Furthermore, the GSEs' future viability could affect the availability of single-family 30-year fixed rate mortgage loan products. Although these mortgage products are arguably popular with borrowers, private lenders may be reluctant to retain in portfolio and fund relatively less liquid mortgages—with both credit and prepayment risks attached—for several decades. Congressional interest has been reflected by various draft proposals, bills, and oversight hearings on housing finance reform. During the 116th Congress, the Senate Committee on Banking, Housing, and Urban Affairs released a proposal that would likely affect the GSEs' role in the housing finance system. President Donald J. Trump also released a memorandum directing federal agencies to develop a plan to reform the housing finance system, which includes ending the conservatorships.

The FHFA's initiatives have focused primarily on managing the GSEs' liquidity, operational, and credit risks. The FHFA has directed the GSEs to standardize numerous processes to foster greater liquidity in the market for their MBSs. The standardization initiatives may also reduce operational risks, particularly risks associated with data breaches and other technology disruptions. The GSEs are also being required to share more of the credit risk linked to their single-family mortgage purchases with the private sector.

The GSEs still face future challenges. For example, recent FHFA initiatives require the GSEs to harmonize their business models, including certain borrower risk characteristics that are eligible for securitization. The GSEs' ability to satisfy their affordable housing goals, therefore, might depend upon the extent to which borrowers with risk characteristics deemed eligible for securitization overlap with those who traditionally face greater difficulty accessing credit. In addition, the GSEs' securitization activities may depend upon certain legal protections that loan originators receive when their mortgages are sold to the GSEs. These protections are granted under what is referred to as the GSE patch, which expires on January 10, 2021. It is unclear how the secondary-market participants—the loan originators, the GSEs, and investors in the MBSs issued by the GSEs—will respond if the GSE patch expires.

Contents

Contacts

Introduction

Congress chartered Fannie Mae and Freddie Mac,[1] also known collectively as the government-sponsored enterprises (GSEs),[2] to promote homeownership by providing liquidity to the secondary markets for single-family residential mortgages and multifamily (apartment and condominium) construction. Guaranteeing single-family residential mortgages is their core business activity, but it comes with risks. The GSEs retain the credit (default) risks from the mortgages they purchase from loan originators and subsequently issue mortgage-backed securities (MBSs), which are bond-like securities.[3] Investors who purchase the MBSs are guaranteed to get their initial principal investment returned, but they assume the risk that borrowers may choose to repay their mortgages ahead of schedule, known as prepayment risk.[4] The MBSs are considered more liquid (in comparison to the original mortgages with both attached risks) because they may be traded or sold for cash more quickly. If investors are willing to hold MBSs, then more private-sector funds become available for relatively less liquid mortgages—particularly 30-year fixed-rate mortgages. National mortgage rates tend to fall as the supply of funds in this market increases, making homeownership more affordable.

The Federal Housing Finance Agency (FHFA), an independent federal government agency created by the Housing and Economic Recovery Act of 2008 (HERA; P.L. 110-289), is the GSEs' primary supervisor.[5] FHFA regulates the GSEs for prudential safety and soundness and ensure they meet their affordable housing mission goals. In September 2008, the GSEs experienced losses that exceeded their statutory minimum capital requirement levels due to the high rate of mortgage defaults. The GSEs also experienced losses following spikes in short-term borrowing rates that occurred while they were funding long-term assets held in their portfolios. The GSEs subsequently agreed to be placed under conservatorship.[6] Until the GSEs' financial safety and soundness can be restored, the FHFA has the powers of management, boards, and shareholders. The FHFA established three conservatorship performance goals designed to restore confidence in the GSEs and restore them to a safe and solvent condition:

1. The GSEs must promote a well-functioning national housing finance market while operating in a financially safe and sound manner.
2. Credit or default risk to U.S. taxpayers should be reduced by increasing private capital's role in the mortgage market.

[1] For more historical information about the chartering of Fannie Mae and Freddie Mac, see "Why Were Fannie Mae and Freddie Mac Created," CRS Report R44525, *Fannie Mae and Freddie Mac in Conservatorship: Frequently Asked Questions*, by N. Eric Weiss and Darryl E. Getter.

[2] The term *GSEs* refer only to Fannie Mae and Freddie Mac in this report; the Federal Home Loan Bank System will not be included in this discussion.

[3] Fannie Mae calls its securities mortgage-backed securities (MBSs), and Freddie Mac calls its securities participation certificates (PCs). Common industry practice is to refer to both Fannie's MBSs and Freddie's PCs generically as MBSs.

[4] Ginnie Mae is a federal corporation that issues MBSs created with mortgages in which the default risk has already been guaranteed by federal agencies, such as the Federal Housing Administration (FHA), the U.S. Department of Veterans Affairs (VA), and the U.S. Department of Agriculture (USDA). Hence, Ginnie Mae does not retain credit risk.

[5] Prior to the Federal Housing Finance Agency's (FHFA's) creation, the Office of Federal Housing Enterprise Oversight (OFHEO), which was an agency under the Department of Housing and Urban Development (HUD), was the safety and soundness regulator for Fannie Mae and Freddie Mac. OFHEO ensured that the GSEs complied with their statutory capital requirements.

[6] See FHFA, "Conservatorship," at https://www.fhfa.gov/Conservatorship.

3. The GSEs must construct a contemporary single-family securitization infrastructure for their use and other private mortgage securitizers.[7]

In addition, the Senior Preferred Stock Purchase Agreements (PSPAs) stipulate the conditions under which the U.S. Treasury will provide financial support to the GSEs while they are under conservatorship.[8] The PSPAs require the GSEs to pay dividends to Treasury rather than private shareholders while they are under conservatorship. The PSPAs also require the GSEs to reduce the size of their lending portfolios to $250 billion.[9]

Since they entered conservatorship, congressional interest in the GSEs has continued due to uncertainty in the housing, mortgage, and financial market. For example, the final amount and duration of financial support that Treasury will eventually provide the GSEs is difficult to predict at present. Furthermore, reforming or replacing the GSEs might affect the availability of single-family 30-year fixed-rate mortgage loan products. This mortgage product is arguably popular with borrowers, but private lenders may be reluctant to retain them in their lending portfolios because they are relatively less liquid mortgages—with both credit and prepayment risks attached—and may last for several decades.[10] Congressional interest has been reflected by various draft proposals, bills, and oversight hearings on housing finance reform. During the 116th Congress, the U.S. Senate Committee on Banking, Housing, and Urban Affairs released a proposal that would affect the GSEs' role in the housing finance system.[11] President Donald J. Trump also released a memorandum directing federal agencies to develop a plan to reform the housing finance system, which includes ending the conservatorships.[12]

This report first describes Fannie Mae's and Freddie Mac's activities and mission. It then summarizes the progress made to date on FHFA's initiatives, focusing primarily on the management of the GSEs' credit and liquidity risks. The FHFA has directed the GSEs to share more of the credit risk linked to their single-family mortgage purchases with the private sector to reduce potential risks that would be borne by U.S. taxpayers. The GSEs must also standardize numerous processes to foster greater liquidity in the market for their MBSs. This report concludes with a discussion of the policy implications of GSE challenges while they are under conservatorship. For example, recent FHFA initiatives require the GSEs to harmonize their business models, including certain borrower risk characteristics that are eligible for securitization. The GSEs' ability to satisfy their affordable housing goals, therefore, might depend upon the extent to which borrowers with risk characteristics deemed eligible for securitization overlap with those who traditionally face greater difficulty accessing mortgage credit. In addition, the GSEs'

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[7] Ibid.

[8] P.L. 110-289 gave the Secretary of the Treasury authority to lend or invest in the government-sponsored enterprises (GSEs). The Treasury's response to the GSEs after they were undercapitalized was similar to its response after the banking system became undercapitalized, in which it purchased preferred shares from the banks via the Troubled Assets Relief Program (TARP). For information about TARP, see CRS Report R43413, *Costs of Government Interventions in Response to the Financial Crisis: A Retrospective*, by Baird Webel and Marc Labonte.

[9] See the third amendment to the GSEs' Senior Preferred Stock Purchase Agreements, at https://www.treasury.gov/press-center/press-releases/Documents/Freddie.Mac.Amendment.pdf and https://www.treasury.gov/press-center/press-releases/Documents/Fannie.Mae.Amendement.pdf.

[10] See Richard K. Green and Susan M. Watcher, "The American Mortgage in Historical and International Context," *Journal of Economic Perspectives*, vol. 19, no. 4 (Fall 2005), pp. 93-114.

[11] U.S. Congress, Senate Committee on Banking, Housing, and Urban Affairs, "Chairman Crapo Releases Outline for Housing Finance Reform," press release, February 1, 2019, at https://www.banking.senate.gov/newsroom/majority/chairman-crapo-releases-outline-for-housing-finance-reform.

[12] The White House, "President Donald J. Trump Is Reforming the Housing Finance System to Help Americans Who Want to Buy a Home," fact sheet, March 27, 2019, at https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-reforming-housing-system-help-americans-want-buy-home/.

ability to purchase and securitize mortgages may depend upon certain legal protections that loan originators receive when their mortgages are sold to the GSEs. The regulation, which is known as the GSE patch (or QM patch), expires on January 10, 2021, and it is difficult to predict how secondary-market participants—loan originators, the GSEs, and investors—will respond if it expires as scheduled.

The GSEs' Secondary Mortgage Market Intermediation Activities

Borrowers obtain their mortgages from loan originators in the primary market; loan originations may be bought and sold in the secondary market. By law, the GSEs cannot originate mortgages directly to borrowers in the primary market. Instead, the GSEs operate in the secondary mortgage market, interacting with loan originators (that sell mortgages to the GSEs) and investors (that purchase the GSEs' debt and MBS issuances).

The GSEs purchase *conforming mortgages*, single-family mortgages that meet certain eligibility criteria based on size and creditworthiness, from loan originators.[13] The GSEs use two methods to acquire conforming mortgages. A GSE may pay cash directly from its cash window to a loan originator for delivery of a small number of mortgages. Alternatively, the GSEs may enter into a *swap agreement* with a loan originator to purchase a large number (pool) of mortgages. In exchange for a pool(s), the purchasing GSE delivers one (or more) MBS that is linked to the *MBS trust* that will hold the mortgages. An MBS trust is a legal entity established to hold pools of conforming mortgage loans; the streams of principal and interest are deposited as borrowers repay their mortgages.[14]

The GSEs issue MBSs to investors. MBSs are essentially derivative products that contain one, rather than both, of the financial risks attached to the original mortgages that the GSE purchased.[15] Investors that purchase an MBS receive a *coupon*, which is the yield composed of the principal and interest repayments from borrowers whose mortgages are held in MBS trusts.[16] However, various fees are subtracted before the coupons are paid to investors.[17] For example, a designated mortgage servicer retains a fee to collect borrowers' regular payments, resolves borrower delinquency and default problems, and disburses payments to the GSEs (which subsequently disburse payments to MBS investors). Other fees related to the home purchase (e.g., settlement costs) that borrowers may have chosen not to pay upfront may also be subtracted.

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[13] These mortgages tend to have fixed interest rates with a 30-year maturity.

[14] The MBS trusts are bankruptcy-remote or special-purpose entities, meaning that the parent company (e.g., one of the GSEs) isolates and holds these assets in the trust rather than on its own balance sheets. If, for example, a parent company goes bankrupt, then the stipulated activities of a special-purpose entity are not disrupted given that the trust assets are legally not owned by the parent company. In this case, the assets (mortgages) held in the MBS trusts are funded by MBS issuances.

[15] In finance, a *derivative* is a financial instrument with value linked to at least one but not all of the risks contained in a reference bond. In this case, the MBS derivative instruments have the prepayment risk but not the default risk that is contained in the underlying reference mortgage.

[16] For detailed descriptions of loan securitizations and MBS trust guarantees, see Fannie Mae, *Basics of Fannie Mae Single-Family MBS*, January 2019, at http://www.fanniemae.com/resources/file/mbs/pdf/basics-sf-mbs.pdf.

[17] For example, if the average interest rate of the underlying pool of mortgages is 4% or 400 basis points, a GSE may retain an average of 56 basis points and pass the remaining 344 basis points to the MBS holders after subtracting additional basis points for mortgage servicers (typically 25 basis points) and paying for other costs to originate the loan. See FHFA, "FHFA Issues 2017 Report to Congress on Guarantee Fees," news release, December, 10, 2018, at https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Issues-2017-Report-to-Congress-on-Guarantee-Fees.aspx.

Simply put, the coupon is the rate of return net of fees that an investor receives for purchasing or investing in an MBS.

The GSEs, like banks, are financial intermediaries that match mortgage borrowers with ultimate lenders. Under a traditional banking model, banks borrow funds from their depositors and use the funds to originate longer-term consumer and business loans. Consumers and businesses pay higher interest rates to banks for these longer-term loans than the banks pay to their depositors for successive sequences of relatively lower-rate loans (e.g., recurring deposits) for shorter periods of time. *Lending spreads* are the difference between lending at higher rates (revenues) and borrowing at successive sequences of shorter rates (costs). A bank can retain all of the profits generated by its lending spreads if the entire lending process and associated financial risks are retained on its balance sheet.

Similar to banks, the GSEs create profitable lending spreads to finance assets retained in their lending portfolios (on-balance sheet) and the conforming mortgages held in the MBS trusts (off-balance sheet). The GSEs issue to investors debt securities, referred to as unsecured *debentures*, with shorter maturities relative to the longer-term assets retained in portfolio. By borrowing via successive sequences of lower-rate debentures, the GSEs create portfolio lending spreads. In addition, the GSEs fund mortgages held in the MBS trusts. Rather than issuing debentures, the GSEs fund the MBS trusts via issuing MBSs in the *to-be-announced (TBA)* market.[18] When issuing MBSs, however, the GSEs act more like monoline bond insurers, meaning they retain credit risk and transfer prepayment risk to private investors.[19] These concepts, which are key to understanding the GSEs' securitization activities, are described in detail in the sections below.

Retention of Mortgage Credit Risk, Transfer of Prepayment Risk

Another important fee, the *guarantee fee (g-fee)*, is deducted from the streams of principal and interest payments before an MBS investor receives a coupon payment. The g-fee compensates the GSEs for retaining *credit risk*, the risk that borrowers might default or fail to repay their mortgage loan obligations. Although the g-fee is typically charged to loan originators (and frequently passed onto borrowers), the benefit of the mortgage insurance accrues to MBS investors.[20] Should a delinquency or default occur, the GSEs guarantee timely payment of the coupon (net of fees) to MBS investors.[21] After a borrower defaults, the applicable GSE purchases the defaulted mortgage (for the amount of the remaining balance owed) out of the MBS trust. The purchase effectively reimburses the associated MBS trust and, therefore, prevents MBS investors from losing their initial principal investments. The MBS coupon is subsequently adjusted for the reduced stream of interest payments, thus making it appear to investors that mortgage obligations have been repaid ahead of schedule (rather than defaulted).

[18] Ginnie Mae, a government corporation that purchases federally insured mortgage loans, also creates MBSs that are issued in the TBA market. Ginnie Mae, therefore, transfers its prepayment risk in a similar manner as the GSEs, but it does not retain the default risk. The default risk is retained by the federal agencies—FHA, VA, and USDA—that provide mortgage insurance.

[19] See FHFA, "Enterprise Capital Requirements," 83 *Federal Register* 137, July 17, 2018. Bond insurers guarantee (for a fee) that the interest payment streams generated from a bond (or loan) will be made on time and, if a default occurs, the initial principal investment will be returned to investors. Likewise, the GSEs facilitate the equivalent transaction on a larger scale via a process referred to as *securitization*.

[20] In 2017, the average single-family guarantee fee was 56 basis points. See FHFA, "FHFA Issues 2017 Report to Congress on Guarantee Fees," press release, December 10, 2018, at https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Issues-2017-Report-to-Congress-on-Guarantee-Fees.aspx.

[21] The GSEs define default as 120 days late.

The other key mortgage risk, *prepayment risk*, is transferred from the GSEs to MBS investors. Prepayment risk is the risk that borrowers will repay their mortgages ahead of schedule, resulting in lenders earning less *interest* revenue than initially anticipated. For example, if mortgage rates decline, some borrowers may repay their existing mortgages early by refinancing (replacing) them into new mortgages with lower rates. Borrowers also prepay their mortgages when they move. In this case, the GSEs pass on the principal repayment but reduce the investors' MBS coupons by the amount of interest forgone.[22]

In sum, the GSEs' securitization process entails detaching two mortgage risks into separate components.[23] The GSEs retain the default risk component for a g-fee and transfer the prepayment risk component to MBS investors. For this reason, MBSs are considered derivative securities because they contain only one of the risks linked to the original underlying mortgages held in the MBS trusts.

Liquidity Risk in the Markets for MBSs

Many types of bonds and derivatives trade directly (via broker-dealers) between two parties in what are referred to as *over-the-counter* (OTC) market transactions.[24] Bonds generally trade infrequently, and the trade sizes vary, which may cause valuation (pricing) challenges—sometimes leading investors and market-makers to perceive that the bonds may be *illiquid*.[25] Illiquid securities cannot easily be converted into cash or traded within a reasonable time, that is, without affecting their quoted prices. Investors arguably might offer (bid) "too much" to buy or sell (ask) for a price "too low" when trading illiquid securities. Consequently, investors require additional compensation, referred to as a *liquidity premium*, to buy or sell illiquid securities.[26] Widening bid-ask spreads might signal the emergence of a liquidity premium being incorporated in securities prices.[27]

After being issued in the TBA market, the GSEs' MBSs trade in the OTC market and are considered to be almost as liquid as the U.S. Treasury bond market.[28] Prior to conservatorship, the GSEs could actively trade their own MBSs to facilitate market liquidity.[29] By conducting market trades when the bid-ask spreads for MBS widened, the GSEs could abate rising liquidity premiums and reduce mortgage costs for borrowers.[30] Persistent liquidity premiums could result

[22] The process for holders of Ginnie Mae MBSs is the same.

[23] For more on default and prepayment risk, see CRS InFocus CRS In Focus IF10993, *Consumer Credit Markets and Loan Pricing: The Basics*, by Darryl E. Getter.

[24] See Financial Industry Regulatory Authority, "Unraveling the Mystery of Over-the-Counter Trading," *The Alert Investor*, January 4, 2016, at https://www.finra.org/investors/unraveling-mystery-over-counter-trading.

[25] The increase in electronic trading has increased price transparency in many OTC markets. See Randall Dodd, *Markets: Exchange or Over-the-Counter*, International Monetary Fund, at https://www.imf.org/external/pubs/ft/fandd/basics/markets.htm.

[26] See Douglas J. Elliott, *Market Liquidity: A Primer*, The Brookings Institution, June 2015, at https://www.brookings.edu/wp-content/uploads/2016/07/Market-Liquidity.pdf.

[27] See Rich Podjasek et al., *Has MBS Market Liquidity Deteriorated?*, Federal Reserve Bank of New York, Liberty Street Economics, February 8, 2016, at https://libertystreeteconomics.newyorkfed.org/2016/02/has-mbs-market-liquidity-deteriorated.html.

[28] Karan Kaul and Laurie Goodman, *Declining Agency MBS Liquidity Is Not All about Financial Regulation*, Urban Institute, November 2015, at https://www.urban.org/sites/default/files/publication/72621/2000503-Declining-Agency-MBS-Liquidity-Is-Not-All-about-Financial-Regulation.pdf.

[29] See Scott Richardson and Diogo Palhares, "(Il)liquidity Premium in Credit Markets: A Myth?," *The Journal of Fixed Income*, vol. 28, no. 3 (Winter 2019), pp. 3-21.

[30] See Deborah Lucas and David Torregrosa, *Fannie Mae, Freddie Mac, and the Federal Role in the Secondary*

in higher mortgage rates for borrowers if investors demand greater compensation to account for the risk of selling their MBSs in the future for a price presumed to be too low.[31] Furthermore, the TBA market is a forward market, meaning MBSs are purchased in advance of a specific future date. Investors wanting to hedge against adverse interest rate movements prior to delivery of their MBS purchases would, therefore, pay higher costs to cover the possibility of liquidity premiums emerging before the settlement date.[32] Investors' larger hedging costs could also be passed on to borrowers wanting to lock in interest rates for a period of time prior to closing on their mortgages. Hence, high-volume trading by the GSEs facilitated narrower bid-ask MBS spreads in both the TBA and OTC markets.[33] (The GSEs held their own MBSs to show incentive alignment with investors, meaning the GSEs were willing to hold the same risks that they were selling.)[34]

The current $250 billion cap on the GSEs' lending portfolios (resulting from the PSPAs) may limit their ability to buy and sell MBSs at the volumes necessary to influence market pricing. Although the Federal Reserve has purchased large amounts of the GSEs' MBS while carrying out its lender-of-last-resort responsibilities, it has largely retained them in its portfolio rather than actively trading them.[35] Hence, less active trading of MBSs by the GSEs and more holding (rather than actively trading) of MBSs by the Federal Reserve might explain any declines in market liquidity.[36]

FHFA's Initiatives for the GSEs Under Conservatorship

Since conservatorship, the FHFA has focused primarily on (1) the credit risks retained by the GSEs (posing a direct risk to U.S. taxpayers) and (2) the liquidity of their MBS issuances. The FHFA has released various versions of strategic plans and performance goals to inform the public. This section highlights FHFA initiatives that focus on those specific risks.

Initiatives Regarding the GSEs' Credit Risks

As previously mentioned, the PSPAs require the GSEs to pay dividends to the U.S. Treasury in exchange for its financial support while they are under conservatorship. The PSPAs also require the GSEs to reduce taxpayers' credit risk. The FHFA has subsequently required the GSEs to

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Mortgage Market, U.S. Congressional Budget Office, December 2010, at https://www.cbo.gov/sites/default/files/111th-congress-2009-2010/reports/12-23-fanniefreddie.pdf.

[31] Whether investors found MBSs attractive due to their lack of credit risk or their OTC market liquidity is subject to debate. See James Vickery and Joshua Wright, *TBA Trading and Liquidity in the Agency MBS Market*, Federal Reserve Bank of New York, at http://www.newyorkfed.org/research/epr/2013/1212vick.pdf.

[32] A counter-party may require higher compensation to insure against future adverse price movements when securities are illiquid because of the greater likelihood that the future bid-ask spread will be wider than the initial bid-ask spread.

[33] See Karan Kaul, *The Past, Present and Future of Agency MBS Liquidity*, Ginnie Mae, Prepared for Ginnie Mae by State Street Global Advisors and the Urban Institute's Housing Finance Policy Center, October 2016, at https://www.ginniemae.gov/newsroom/publications/Documents/agency_mbs_liquidity.pdf.

[34] See Robert Van Order, "Government-Sponsored Enterprises and Resource Allocation: Some Implications for Urban Economics," Brookings Institute, *Brookings-Wharton Papers on Urban Affairs*, 2007, pp. 151-203.

[35] See Board of Governors of the Federal Reserve System, "Authority to Lend to Fannie Mae and Freddie Mac," press release, July 13, 2008, at http://www.federalreserve.gov/newsevents/press/other/20080713a.htm.

[36] Karan Kaul and Laurie Goodman, *Declining Agency MBS Liquidity Is Not All about Financial Regulation*, Urban Institute, November 2015, at https://www.urban.org/sites/default/files/publication/72621/2000503-Declining-Agency-MBS-Liquidity-Is-Not-All-about-Financial-Regulation.pdf.

increase the private sector's role in credit risk sharing. The various programs to facilitate these objectives are discussed in this section.

Loan-to-Value Requirements for Borrowers

By statute, additional credit enhancements (discussed in the next paragraph) are required if the GSEs purchase mortgages with a loan-to-value (LTV) above 80% such that the mortgage balance exceeds 20% of the residential property value.[37] If a borrower defaults, the GSE generally recovers losses by foreclosing (repossessing) and then liquidating (selling) the property. The 80% LTV requirement ensures that a property would need to sell for at least 80% of its original value for the GSE to recover enough proceeds to cover the remaining mortgage balance.[38]

Borrowers lacking sufficient funds to make a 20% downpayment have alternative options.[39] One option is to purchase private mortgage insurance (PMI), an insurance policy that would assume the first 20% of losses associated with a mortgage default. In this case, the FHFA currently requires the GSEs to pay PMI initially and be reimbursed later by borrowers via interest rate adjustments on their loans. The GSEs currently contract with a limited group of private mortgage insurers that accept the GSEs' underwriting standards, thereby streamlining the process to obtain PMI.[40] Fannie Mae calls its program Enterprise-Paid Mortgage Insurance (EPMI) Option and Freddie Mac calls its program Integrated Mortgage Insurance (IMAGIN).[41] By doing business with a select group of PMI providers, the GSEs (and FHFA) can closely monitor their financial health and ensure their ability to pay any PMI claims after borrower defaults, thus reducing counterparty risk.

Guarantee Fees

The GSEs can generate revenues to cover potential credit losses by increasing g-fees, thus mitigating losses to taxpayers. The GSEs have two types of g-fees. First, the upfront g-fee is determined by the borrower's risk characteristics (e.g., credit score, loan-to-value ratio). Second, the ongoing g-fee, which is collected each month over the life of the loan, is determined by the product type (e.g., fixed rate, adjustable). In December 2011, Congress directed the FHFA to

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[37] 12 U.S.C. §1717.

[38] The property value would have been determined by an appraisal when the mortgage was originated. Property values, however, are not constant and might increase or decrease by the time a borrower officially defaults. The GSEs' definition of default is 120 days delinquent. A loss mitigation or workout option may be able to resolve a default if the property's value exceeds the outstanding mortgage balance. If, however, the property value falls below the outstanding mortgage balance, the likelihood that a loss mitigation option will succeed diminishes.

[39] Certain borrowers may also qualify to obtain federal mortgage insurance from the Federal Housing Administration (FHA), Department of Veterans Affairs (VA), or U.S. Department of Agriculture (USDA). Because federally insured mortgages are backed by the full faith and credit of the U.S. government, the GSEs face no counterparty credit risk when borrowers choose this option. Another option for borrowers may be to obtain a junior (second) loan for some or all of the 20% downpayment requirement. After the property is liquidated in a foreclosure sale, the recovered proceeds would be distributed first to the GSE; the junior lender would receive any proceeds leftover to cover the unpaid portion of the junior loan. Given that foreclosure costs can be substantial, the mortgage insurer or second lender faces a greater possibility of a small or no recoupment of loan proceeds.

[40] See FHFA, "Fannie Mae & Freddie Mac Private Mortgage Insurer Eligibility Requirements (PMIERs)," at https://www.fhfa.gov/PolicyProgramsResearch/Policy/Pages/Fannie-and-Freddie-Private-Mortgage-Insurer-Eligibility-Requirements-(PMIERs).aspx.

[41] See Rob Schaefer, "Fannie Mae's Enterprise-Paid Mortgage Insurance Option," Fannie Mae, *Perspectives*, July 10, 2018, at http://www.fanniemae.com/portal/research-insights/perspectives/enterprise-paid-mortgage-insurance-schaefer-071018.html; and Freddie Mac, "Integrated Mortgage Insurance (IMAGIN)," at https://crt.freddiemac.com/offerings/imagin.aspx.

increase the ongoing g-fees for all loans by 10 basis points.[42] The increase took effect on December 1, 2012, for loans exchanged for MBSs.[43] (A single basis point is equal to 1/100 of a percent; 100 basis points is 1%.) The FHFA also increased g-fees in 2013.[44] In 2017, FHFA reported that the average guarantee fee of 56 basis points was unchanged from 2016.[45]

Credit Risk Transfer Programs

In July 2013, the GSEs initiated new credit risk transfer (CRT) programs to share a portion of the credit risk linked to their guaranteed single-family mortgages with the private sector.[46] Both GSEs now offer another separate set of CRT financial instruments that are linked only to the *credit risk* of the mortgages held in the MBS trusts.[47] Investors preferring exposure only to mortgage *prepayment risk* may continue to purchase MBSs; however, the private sector may now purchase CRT issuances, which function similarly to MBSs, to earn revenue in exchange for assuming exposure to the credit risk.

Fannie Mae's CRT instruments are known as Connecticut Avenue Securities (CAS); Freddie Mac's CRT instruments are known as Structural Agency Credit Risk (STACR). The GSEs transfer the credit risk linked to mortgages with LTVs greater than 60% (or borrowers with 40% or less in accumulated home equity, making them more vulnerable to the possibility of owing more than the initial value of their homes if housing market prices were to fall) to investors.[48] After defaults occur, the GSEs write down the coupons paid to CRT investors (similar to writing down the coupons on MBSs after prepayments occur). The GSEs retain the credit risk for mortgages with lower LTVs (or borrowers with 41% or more in accumulated home equity such that their outstanding balances are significantly below the value of their residential properties), which are less likely to default.[49]

[42] The Temporary Payroll Tax Cut Continuation Act of 2011 (P.L. 112-78).

[43] See FHFA, "FHFA Announces Increase in Guarantee Fees," press release, August 31, 2012, at https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Announces-Increase-in-Guarantee-Fees.aspx.

[44] See FHFA, *Fannie Mae and Freddie Mac Single-Family Guarantee Fees in 2017*, December 10, 2018, at https://www.fhfa.gov/AboutUs/Reports/Pages/Fannie-Mae-and-Freddie-Mac-Single-Family-Guarantee-Fees-in-2017.aspx.

[45] The average upfront component was 15 basis points, and the average ongoing component was 41 basis points. See FHFA, *Fannie Mae and Freddie Mac Single-Family Guarantee Fees in 2017*, December 2018, at https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/GFee-Report_12-10-18.pdf.

[46] The GSEs had existing programs to redistribute more than 90% of the credit risk on their multi-family programs. Fannie Mae issues instruments linked to credit risk stemming from its multi-family mortgages through its Delegated Underwriting and Servicing Program (DUS); the corresponding Freddie Mac instruments are known as K-Deals. See U.S. Government Accountability Office, *Financial Audit: Federal Housing Finance Agency's Fiscal Years 2018 and 2017 Financial Statements*, GAO-19-183R, November 15, 2018, at https://www.gao.gov/assets/700/695479.pdf.

[47] See FHFA, *Overview of Fannie Mae and Freddie Mac Credit Risk Transfer Transactions*, August 2015, at https://www.fhfa.gov/aboutus/reports/reportdocuments/crt-overview-8-21-2015.pdf.

[48] See FHFA, *Performance and Accountability Report*, FY2018, at https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/FHFA-2018-PAR.pdf.

[49] The GSEs may also transfer the credit risk of mortgages retained in their portfolios (typically because they lack the standardized features that would make them eligible for placement into an MBS trust for securitization).

CAS and STACR Risk-Tiering Structures

The CAS and STACR issuances are structured in a tiered system consisting of tranches: a first-loss tranche, two mezzanine tranches, and a senior tranche. The first-loss tranche is the first to receive reduced payments in the event of losses. Once the credit losses exceed those contractually agreed to by the first-loss tranche investors, then the two sets of mezzanine tranche investors absorb the losses up to their maximum thresholds, followed by the senior tranche investors. The GSEs retain 5% of the issuances associated with each tranche (also referred to as a 5% vertical slice), signaling to investors their willingness to hold the same risks that they sell at each tranche, as they do by holding their own MBSs. The GSEs transfer *expected* and *unexpected* credit risks but retain *catastrophic* credit risk.

- FHFA defines *expected* credit risk as credit losses likely to occur during periods of stable housing market conditions when some borrowers fail to repay their mortgages, perhaps due to unforeseen life circumstances (e.g., job loss, disability, divorce). The first-loss tranche purchases the GSEs' instruments to assume expected credit risks. Stated in terms of basis points (1 basis point equals 1/100th or 0.01%), the first-loss tranche assumes 0-50 basis points, or the initial 5%, of credit risk losses linked to mortgages held in MBS trusts. Transferring credit risk via these issuances reduces counterparty risk, the risk that the insurer fails to reimburse the GSE after a default. The GSEs simply adjust the coupons on these issuances or retain the investors' initial principal.
- FHFA defines *unexpected* credit risk as credit losses that exceed expected credit losses and result from macroeconomic events, such as a recession. The mezzanine tranches begin to absorb mortgage credit risk after 5% and up to 45% (50-450 basis points) of losses. For the mezzanine tranches, the credit risk is distributed as follows.[50] As previously mentioned, the GSEs hold 5% of mezzanine risk. The private sector assumes 60% of mezzanine risk via purchasing credit-linked instruments issued by the GSEs. For the remaining 35% of mezzanine risk, the GSEs rely upon another set of CRT risk-sharing programs in which they directly obtain insurance or reinsurance.[51] Just as the GSEs charge g-fees to assume credit risk, they pay credit insurance premiums to insurance and reinsurance firms to assume a predetermined dollar amount of the credit risk.[52] Fannie Mae's program is known as Credit Insurance Risk Transfer (CIRT); Freddie Mac's corresponding program is known as Agency Credit Insurance Structure (ACIS). Participating insurers and reinsurers may use CIRT and ACIS proceeds to diversify their portfolios if they have assets that are not highly correlated to U.S. residential mortgage credit risk.
- The GSEs retain all of the senior tranche risk, which contains *catastrophic* risk. Catastrophic credit risk refers to potential losses (exceeding unexpected losses) that are highly unlikely to occur. The senior tranche absorbs credit losses after the mezzanine and first-loss tranches have absorbed the initial 45% (450-10,000 basis points) of the mortgage credit risk.[53] Because the probability of a catastrophic event is historically low, the potential costs borne by U.S. taxpayers are minimized if the GSEs retain catastrophic risk.[54] If, however, a catastrophic risk event does occur, taxpayers incur large costs.

Sharing risk at both the front end (before the mortgages are purchased) via the PMI programs and the back end (after the mortgages are purchased) via the CRT programs has reduced the federal government's exposure to mortgage credit risk.[55] The CRT programs have grown rapidly,

[50] See FHFA, *Performance and Accountability Report*, FY2018, at https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/FHFA-2018-PAR.pdf.

[51] See David Finkelstein, Andreas Strzodka, and James Vickery, "Credit Risk Transfer and De Facto GSE Reform," Federal Reserve Bank of New York ,Staff Report no. 838, February 2018, at https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr838.pdf; and FHFA, *Performance and Accountability Report*, FY2008, at https://www.fhfa.gov/AboutUs/Reports/ReportDocuments/FHFA-2018-PAR.pdf.

[52] The term *reinsurance* may be used because the credit risk is insured twice—once by the GSEs and a second time by another insurance company.

[53] FHFA acknowledges that a bright line distinction between unexpected and catastrophic loss risk has yet to be defined. The distinction between risk types, however, may not be pertinent because credit risk is measured in basis points and the total amounts transferred to the private sector occur after certain basis point thresholds.

[54] See Joshua D. Coval, Jakub W. Jurek, and Erik Stafford, "Economic Catastrophic Bonds," *American Economic Review*, vol. 99, no. 3 (June 2009), pp. 628-666.

[55] See David Finkelstein, Andreas Strzodka, and James Vickery, "Credit Risk Transfer and De Facto GSE Reform,"

arguably filling the gap left by the private-label mortgage-backed securities market that existed prior to 2008.[56] Nevertheless, the Congressional Budget Office reports that the GSEs' CRT transactions have not necessarily reduced taxpayers' costs.[57] The GSEs pay more to the private sector to assume credit risk relative to what they collect in g-fees from borrowers, and the g-fees have not been raised to cover the additional costs.[58]

Proposed Capital Framework

Although the exact definition of *capital* for financial firms is determined by law and regulation, it generally refers to common or preferred equity (as a percentage of assets), which can absorb financial losses. The FHFA suspended the GSEs' capital requirements during conservatorship, as required by the PSPAs with Treasury.[59] The GSEs can pay dividends only to the Treasury as opposed to private shareholders while they are under conservatorship. The FHFA has solicited feedback on how to establish a prospective capital framework for the GSEs (see text box below) that would allow them to continue operating after an event similar to the recent financial crisis.[60]

The statutory minimum leverage (unweighted) capital requirement, specified in the Federal Housing Enterprises Safety and Soundness Act of 1992, is equal to 2.5% of on-balance sheet (portfolio) assets and 0.45% of off-balance sheet (MBS trust) obligations.[61] HERA, however, gave FHFA the authority to increase capital standards above the statutory minimum as necessary. Given the deteriorated financial conditions that caused the GSEs to be placed in conservatorship, FHFA's proposed capital framework would result in higher capital requirements.

Federal Reserve Bank of New York, Staff Report no. 838, February 2018, at https://www.newyorkfed.org/medialibrary/media/research/staff_reports/sr838.pdf.

[56] See Laurie Goodman, *Credit Risk Transfer: A Fork in the Road*, Urban Institute, June 2018, at https://www.urban.org/sites/default/files/publication/98578/credit_risk_transfer_a_fork_in_the_road_0.pdf. For more information about private-label mortgage securities markets from 2001 through 2015, see Laurie Goodman, *The Rebirth of Securitization: Where Is the Private-Label Mortgage Market?*, Urban Institute, September 2015, at https://www.urban.org/sites/default/files/publication/65901/2000375-The-Rebirth-of-Securitization.pdf.

[57] See Congressional Budget Office, *Transitioning to Alternative Structures for Housing Finance: An Update*, August 2018, at https://www.cbo.gov/system/files/2018-08/54218-GSEupdate.pdf.

[58] The higher costs to transfer credit risk to the private sector may be another reason that retaining the senior tranche risk is more economical for the GSEs. See FHFA, *Overview of Fannie Mae and Freddie Mac Credit Risk Transfer Transactions*, August 2015, at https://www.fhfa.gov/aboutus/reports/reportdocuments/crt-overview-8-21-2015.pdf.

[59] Both GSEs appointed two of their employees to CSS's board of managers and jointly announced a CEO. See FHFA and HUD (Office of Federal Housing Enterprise Oversight), "Enterprise Capital Requirements," 83 *Federal Register* 33312-33430, July 17, 2018.

[60] See FHFA, "Enterprise Capital Requirements," 83 *Federal Register* 137, July 17, 2018.

[61] P.L. 102-550, the Federal Housing Enterprises Financial Safety and Soundness Act of 1992, created OFHEO and set the current leverage capital requirements in statute.

FHFA's Proposed Alternative Capital Frameworks

FHFA's proposed capital rule focuses on both guaranteed assets (held in MBS trusts) and nontrust assets (held in the GSEs' portfolios). FHFA acknowledges that, because only the default risk of MBS trust assets is guaranteed, the GSEs arguably retain less risk relative to financial firms that hold whole loans and all their associated risks. The GSEs' portfolios, however, are similar to those of more traditional lenders. The GSEs' retained portfolios consist of (1) whole mortgages in pipeline to be securitized, (2) delinquent whole mortgages that qualify for loan modifications, and (3) whole mortgages that support the GSEs' affordable and underserved mortgage goals (but may not be eligible for securitization). For these reasons, the FHFA is proposing two alternative regulatory capital frameworks:

- Minimum Leverage Alternative. Under this approach, the GSEs would be required to hold 2.5% of capital for total assets, which includes both nontrust (on-balance sheet) assets and trust (off-balance sheet) assets, regardless of types and levels of associated risks.
- Bifurcated Alternative. Under this approach, the GSEs would be required to hold 1.5% of capital for trust assets and 4% for nontrust assets.

Under the minimum leverage alternative, the unweighted capital requirement is not adjusted for risks that have been transferred off the GSEs' balance sheets. If, for example, credit risk was sold to private-sector investors, the GSEs would be required hold the same capital amounts for whole mortgages held in MBS trusts as for whole mortgages held directly in their portfolios. If no longer in conservatorship, the GSEs may lack the incentive to sell credit risk under the minimum leverage alternative. Under the bifurcated risk-weighted alternative, the risk weights may be incorrect. If a sudden and significantly sharp decline in house prices generated widespread underwater mortgages (held in MBS trusts and in their portfolios), the GSEs' capital buffers could be insufficient to allow them to continue safe and sound operations.[62] Hence, the FHFA seeks comments on these two frameworks and guidance to develop a stress-testing framework operations for the GSEs (i.e., a diagnostic tool to evaluate their ability to weather adverse macroeconomic or financial conditions).

Standardization Initiatives to Foster MBS Liquidity

The FHFA has introduced initiatives to standardize many aspects of the GSEs' operations, which include their mortgage data collection processes, securitization processes, mortgage servicing policies (e.g., resolving delinquencies), and MBS issuances. Such standardization arguably increases transparency, reduces the length of the single-family mortgage origination and securitization processes, and ultimately increases the liquidity and uniform pricing of the GSEs' MBS and CRT issuances.[63]

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[62] A mortgage is underwater when the home value declines far below the amount of the outstanding loan balance, providing the borrower with the financial incentive to default. See Neil Bhutta, Jane Dokko, and Hui Shan, *The Depth of Negative Equity and Mortgage Default Decisions*, Board of Governors of the Federal Reserve System, Finance and Economics Discussion Series no. 2010-35, May 2010, at http://www.federalreserve.gov/pubs/feds/2010/201035/201035pap.pdf.

[63] For more information on the mortgage servicing and loss mitigation initiatives, see FHFA, "Mortgage Servicing," at https://www.fhfa.gov/PolicyProgramsResearch/Policy/Pages/Mortgage-Servicing.aspx; and Karan Kaul et al., *The Case for Uniform Mortgage Servicing Data Standards*, Urban Institute, November 2018, at https://www.urban.org/sites/default/files/publication/99317/uniform_mortgage_servicing_data_standards_0.pdf. The standardization of servicing may enhance the attractiveness of CRT investments by clarifying the procedures for handling nonperforming mortgages, thus clarifying how losses will be distributed among the various tranche classes. For more information, see Basel Committee on Banking Supervision: The Joint Forum, *Report on Asset Securitisation Incentives*, July 2011, at https://www.bis.org/publ/joint26.pdf; and Patricia A. McCoy, *Barriers to Federal Home Mortgage Modification Efforts During the Financial Crisis*, Joint Center for Housing Studies: Harvard University, August 2010, at https://www.jchs.harvard.edu/sites/default/files/mf10-6.pdf.

Mortgage Data Standardization

The FHFA's mortgage data standardization initiative requires the GSEs to support standardizing the single-family mortgage data information used by the industry. Data collected on loan applications, property appraisals, loan closings, and disclosures are the focus of the standardization efforts.

Mortgage Data Standardization's Anticipated Benefits

Greater uniformity is expected to provide greater data integrity for appraisers, servicers, and secondary-market investors.

- Mortgage originators would be able to prepare more standardized and streamlined loan packages that can be sent to either GSE, which would reduce duplication, paperwork, and the length of time to close loans.[64] Standardization could translate into a faster mortgage origination process for borrowers and better disclosures for MBS investors.
- The GSEs' automated underwriting processes would be enhanced, particularly making it easier to assess risk and use compensating factors. In addition, standardization reduces *put-back risk*, the risk that loan originators must repurchase loans the GSEs determine are unacceptable.[65] (Both GSEs use a delegated underwriting process, meaning they rely on the sellers (loan originators) of conventional single-family mortgages to provide information about the mortgage and underwriting standards.[66] Fraudulent information about the borrower, underlying property, or loans could be provided by the borrower, property seller, title agent, or servicer and result in significant financial losses. Rather than independently verifying the information, the GSEs review various samples of their loans to see what percentage meets the contractual standards. For this reason, the GSEs purchase most loans using *representations and warranties* (reps and warrants), contracts that require loan originators to repurchase mortgages that fail to meet contractual standards.
- Standardizing data reporting would enhance FHFA's ability to standardize and modify underwriting guidelines, not only for the GSEs, but also for any private-sector guarantors that enter this industry.[67]
- The broader financial industry, including the mortgage industry, is focusing on data standardization and further automation.[68] Standardizing data increases the speed with which irregularities can be identified, making it possible to mitigate credit and operational risks that arise from fraud.[69]

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[64] FHFA, "Standardizing Mortgage Data through the Uniform Mortgage Data Program," press release, October 10, 2017, at https://www.fhfa.gov/Media/Blog/Pages/standardizing-mortgage-data-through-the-UMDP.aspx.

[65] See FHFA, "FHFA, Fannie Mae and Freddie Mac Launch New Representation and Warranty Framework," press release, September 11, 2012, at https://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Fannie-Mae-and-Freddie-Mac-Launch-New-Representation-and-Warranty-Framework.aspx; and Laurie Goodman, Ellen Seidman, and Jun Zhu, *Sunset Provisions on Reps and Warrants: Can They be More Flexible While Still Protecting the GSEs?*, Urban Institute, November 27, 2013, at https://www.urban.org/research/publication/sunset-provisions-reps-and-warrants-can-they-be-more-flexible-while-still-protecting-gses.

[66] See Freddie Mac, *U.S. Securities and Exchange Commission Form 10-K*, December 31, 2018, p. 186, at http://www.freddiemac.com/investors/financials/pdf/10k_021419.pdf; and Fannie Mae, *U.S. Securities and Exchange Commission Form 10-K*, December 31, 2018, p. 33, http://www.fanniemae.com/resources/file/ir/pdf/quarterly-annual-results/2018/q42018.pdf.

[67] See Written Testimony of Edward J. DeMarco, president, Housing Policy Council, in U.S. Congress, Senate Committee on Banking, Housing, and Urban Affairs, *Chairman's Housing Reform Outline*, 116th Cong., 1st sess., March 26, 2019.

[68] See Experian, "Data Standardization," at http://www.experian.com/data-quality/data-standardization.html; and The Electronics Payment Association, "API Standardization Industry Group Release White Paper Outlining Group's Approach, Progress and Future Efforts Toward Advancing API Standardization Across the Financial Services Ecosystem," at https://www.nacha.org/news/api-standardization-industry-group-releases-white-paper-outlining-groups-approach-progress-and.

[69] See J.P. Morgan Chase & Co., Office of Regulatory Affairs, *Data Standardization: A Call to Action*, May 2018, at https://www.jpmorganchase.com/corporate/news/document/call-to-action.pdf; and Basel Committee on Banking

The Common Securitization Platform

In 2012, FHFA determined that both technology platforms the GSEs used to securitize (the process of transferring the underlying mortgage payments into MBSs) were "antiquated and inflexible."[70] Rather than updating two separate systems, the FHFA required the GSEs to jointly develop a new platform to facilitate the various tasks associated with their securitization processes.[71] The GSEs entered into a joint venture, the Common Securitization Solutions (CSS), which operates the Common Securitization Platform (CSP).[72] The GSEs continue to acquire mortgages from originators; establish separate loss-mitigation practices for delinquent and defaulted mortgages for their mortgage servicers to follow; choose the underlying mortgages for placement in each MBS trust; and guarantee the credit risk linked to the MBS trusts they individually create. The CSS, however, acts as a technology service provider for the GSEs.[73]

Supervision, *Principles for the Sound Management of Operational Risk*, Bank for International Settlements, June 2011, https://www.bis.org/publ/bcbs195.pdf.

[70] FHFA, *Building a New Infrastructure for the Secondary Mortgage Market*, October 4, 2012, p. 4, at http://www.fhfa.gov/PolicyProgramsResearch/Research/PaperDocuments/FHFA_Securitization_White_Paper_N508L.pdf.

[71] See FHFA, *2015 Scorecard Progress Report*, March 2016, p. 24, at http://www.fhfa.gov/AboutUs/Reports/ReportDocuments/Progress-Report-2015-Scorecard.pdf.

[72] Fannie Mae, "CEO, Board Members Named at Common Securitization Solutions, LLC," press release, November 3, 2014, at http://www.fanniemae.com/portal/about-us/media/corporate-news/2014/6187.html. The employees who began working at CSS to develop the CSP were the GSE employees because CSS depended on the GSEs for certain office functions, including accounting and human resources. The GSE employees were converted to CSS employees, and CSS is its own corporate entity. See *Common Securitization Solutions*, at http://www.commonsecuritization.com/.

[73] In a similar manner, banks and credit unions rely upon third-party service providers to develop the software and customer interfaces for customer account and payment services as well as maintain the digital technology. For more information, see CRS InFocus CRS In Focus IF10935, *Technology Service Providers for Banks*, by Darryl E. Getter. The CPS arguably would reduce the fixed start-up costs for private guarantors (should they be approved) because they will not have to invest in the technology to perform CPS functions. See Written Testimony of Mark Zandi, chief economist, Moody's Analytics, U.S. Congress, Senate Committee on Banking, Housing, and Urban Affairs, *Chairman's Housing Reform Outline*, 116th Cong., 1st sess., March 26, 2019.

Common Securitization Platform Services

The CSP was established to provide the following specific services for the GSEs (beginning June 2019):[74]

- The CSP will facilitate the initial issuance of MBSs to investors. After receiving a securitization request from a GSE, the CSP will validate the details related to the MBS trust and linked MBSs that will be issued to investors (e.g., confirming the mortgages held in a MBS trust, confirming the average principal and interest payment amounts as well as the maturity on the linked MBSs, and confirming the identification code on the security used to facilitate clearing and settlement of trades). The CPS will notify the GSEs of any identified data inconsistencies.[75]
- The CSP will release required disclosures for MBS investors.[76] Data about MBSs will be sent to the Federal Reserve Bank of New York (FRBNY) or the Depository Trust & Clearing Corporation (DTCC) typically two days before issuance, allowing information about MBSs to be disclosed to market participants. The FRBNY and DTCC facilitate the transfer of MBSs to investors in exchange for cash. The CSP will confirm issuance and payment information back to the issuing GSE.
- The CSP will provide ongoing administration of MBSs for investors. For example, the CSP will calculate repayments of principal and interest to MBS holders for tax reporting purposes. The CSP will provide monthly updates about the prepayment status of the underlying collateral to ensure investors have current disclosures about information relevant to the linked MBS's performance.
- Implementation of a master servicing model has been deferred until after the GSEs begin issuing uniform MBSs, which are discussed in the next section.

The Uniform MBS Single Security Initiative

In the TBA market, a loan originator selling mortgages to the GSEs would contract to deliver mortgages in exchange for an MBS at a specified future date. Specifically, the MBS buyer (loan originator) and MBS seller (one of the GSEs) negotiate in advance for future delivery and settlement date. The buyer and seller agree on six general *features* that the MBS should have: the issuer, maturity, coupon rate, sale price, approximate face value, and settlement date.[77] The exact features of the securities to be delivered are disclosed to the participants two days prior to settlement.

MBSs that meet the required criteria can be delivered as long as the underlying MBS pools are *fungible*, that is, sufficiently interchangeable with other MBSs. Because the MBS issuer is one of the trading features, MBSs have generally been fungible only with other MBSs issued by the

[74] See FHFA, *Building a New Infrastructure for the Secondary Mortgage Market*, October 4, 2012, p. 5, at http://www.fhfa.gov/PolicyProgramsResearch/Research/PaperDocuments/FHFA_Securitization_White_Paper_N508L.pdf; and FHFA, *An Update on the Common Securitization Platform*, September 15, 2015, pp. 10-12, at http://www.fhfa.gov/AboutUs/Reports/ReportDocuments/CSP-Update-Final-9-15-2015.pdf.

[75] The Mortgage Electronic Registration Systems (MERS) is the electronic system that tracks the ownership of mortgages in the United States and the servicing rights. The mortgage identification number (MIN) is used by MERS as the unique loan identifier for the CSP. See Letter from Bill Beckman, president and CEO of MERSCORP Holdings, to Federal Housing Finance Agency, Office of Strategic Initiatives, June 28, 2013, at https://www.fhfa.gov/PolicyProgramsResearch/Policy/Documents/Securitization-Infrastructure/6.28.2013.MERS_Response_to_FHFA_re_CSI.pdf; Fannie Mae, *Selling Guide*, July 3, 2019, at https://www.fanniemae.com/content/guide/selling/b8/7/01.html#Naming.20MERS.20as.20the.20Nominee.20for.20the.20Beneficiary.20in.20the.20Security.20Instrument; and Fannie Mae, *U.S. Securities Form 10-K*, December 31, 2015, at https://www.sec.gov/Archives/edgar/data/310522/000031052216000453/fanniemae201510k.htm.

[76] The GSEs are exempt from required Securities and Exchange Commission (SEC) disclosures.

[77] See James Vickery and Joshua Wright, *TBA Trading and Liquidity in the Agency MBS Market*, Federal Reserve Bank of New York, at http://www.newyorkfed.org/research/epr/2013/1212vick.pdf.

same GSE. Fannie Mae-issued MBSs and Freddie Mac-issued MBSs have not previously been interchangeable, and their MBSs do not trade at identical prices despite the fact that the GSEs have essentially the same federal charters and business (securitization) models.[78]

Freddie Mac's MBSs have been frequently traded at lower prices than Fannie Mae's.[79] Following declines in mortgage rates that prompt borrowers to refinance, the mortgage pools underlying Freddie Mac's MBSs historically have had faster prepayment rates (relative to Fannie Mae's MBSs). Faster prepayment translates into higher prepayment risk for Freddie Mac MBS investors, which would explain trading at lower prices. The persistent price difference led to an exploitable arbitrage opportunity, particularly for large originators that sell loans via swap agreements. By entering into a swap agreement with Fannie Mae, a large mortgage originator would immediately acquire a higher-priced MBS that could subsequently be sold in the OTC market. Freddie Mac could respond by lowering its g-fees, thereby slightly increasing its MBS coupons relative to Fannie Mae's MBS coupons to remain somewhat competitive. Besides the persistent pricing differential, Freddie Mac's MBS issuances were approximately 70% of Fannie Mae's MBS issuances, and Freddie Mac's MBSs accounted for only 9% of total trading activity in 2014.[80] Hence, the pricing differential between the GSEs' MBSs—especially while they are under conservatorship—is arguably transformed into a taxpayer subsidy for the larger loan originators.[81]

Under the single security initiative, the FHFA has directed the GSEs to align their key contractual and business practices by acquiring mortgages with similar prepayment speeds along with other features.[82] The GSEs may continue to separately purchase conforming mortgages and guarantee the credit risks linked to the MBS trusts they create. Nevertheless, harmonizing the financial characteristics of their mortgage purchases would allow the GSEs' MBS trusts to generate similar cash-flow predictability and prepayment speeds, thus facilitating the creation of uniform and fungible securities when issued through the CSP. The GSEs would be required to align their prepayment speeds such that they do not constitute a material misalignment, or a divergence by more than 2% over a three-month interval.[83]

Rather than separate MBS issuances (i.e., Fannie Mae's mortgage-backed security and Freddie Mac's participation certificates), the FHFA has directed the GSEs (via the CSP) to issue one common security, the uniform mortgage-backed security (UMBSs). (Private-sector guarantors would also be able to use the CSP to issue fungible UMBSs.) The FHFA argues that a combined market for the GSEs' UMBSs would enhance market liquidity and mitigate the rise of market liquidity premiums; the pricing differential would also be eliminated.[84] FHFA will monitor both

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[78] See Owen A. Lamont and Richard H. Thaler, "The Law of One Price in Financial Markets," *Journal of Economic Perspectives*, vol. 17, no. 4 (Fall 2003), pp. 191-202.

[79] Laurie Goodman, *The $400 Million Case for a Single GSE Security*, Urban Institute, September 5, 2014, at http://www.urban.org/urban-wire/400-million-case-single-gse-security. (Hereinafter, Goodman, *The $400 Million Case for a Single GSE Security*.)

[80] Goodman, *The $400 Million Case for a Single GSE Security*.

[81] One study estimated the annual amount of the subsidy at between $400 million and $600 million. See Goodman, *The $400 Million Case for a Single GSE Security*. Using a different method, an alternative analysis found the subsidy to be smaller, at approximately $100 million per year. See "Letter from Wells Fargo to FHFA," October 13, 2014, at https://www.fhfa.gov/AboutUs/Contact/Pages/input-submissions.aspx. Borrowers that have higher prepayment speeds tend to be of higher credit quality. Hence, the amount of additional credit risk borne by taxpayers is ambiguous because lower guarantee fees for higher credit quality borrowers arguably reflect efficient pricing of credit risk.

[82] See FHFA, "Uniform Mortgage-Backed Security," 84 *Federal Register* 7793-7801, March 5, 2019.

[83] Ibid.

[84] FHFA, *An Update on the Structure of the Single Security*, May 15, 2015, p. 4, at https://www.fhfa.gov/AboutUs/

GSEs to ensure that their underwriting policies remain intact to avoid material misalignment that compromises UMBS fungibility.[85] UMBS issuances began on June 3, 2019.[86]

Selected Policy Implications

Congress established the GSEs with a public policy mission that includes a variety of ways to support affordable housing. Following the Great Recession, Congress also established a macroprudential economic policy tool in the form of new mortgage market underwriting requirements to mitigate a systemic risk event. Given these broader public policy objectives, this section discusses selected challenges for the GSEs while they are under conservatorship.

Efforts to Support Broader Access to Mortgage Credit

The GSEs have statutory single- and multi-family goals along with other requirements designed to promote affordable housing. The affordable housing goals, duty to serve goals, and cash contributions make up the three sets of requirements:

1. The GSEs must satisfy specified housing goals that require them to purchase certain percentages of mortgages for families with very low incomes (at or below 50% of area median family income) and extremely low incomes (at or below 30% of area median family income).
2. HERA created a *duty to serve* for underserved markets, specifically manufactured housing, rural housing, and affordable housing preservation. The FHFA requires the GSEs to develop their own duty to serve plans to encourage lenders to increase their lending in these areas.
3. HERA requires the GSEs to contribute to the Housing Trust Fund (HTF) and the Capital Magnet Fund (CMF). The HTF funds states and state-designated entities for eligible activities that primarily support affordable rental housing for extremely low- and very low-income families, including homeless families.[87] The CMF awards competitive grants to financial institutions designated as Community Development Financial Institutions and qualified nonprofit housing organizations for which the development or management of affordable housing is one of their principal purposes.[88] The GSEs must set aside 4.2 basis points

Reports/ReportDocuments/Single%20Security%20Update%20final.pdf. For a discussion on the effects of standardization in the mortgage and MBS markets, see Adam J. Levitin and Susan M. Wachter, "Explaining the Housing Bubble," *The Georgetown Law Journal*, vol. 100, no. 4 (April 12, 2012), pp. 1177-1258.

[85] The Securities Industry and Financial Markets Association (SIFMA) is a trade association for broker-dealers, investment banks, and asset managers operating in the United States and global capital markets. SIFMA advocates for legislative, regulatory, and business policies on behalf of their members, which includes the TBA settlement guidelines, known as the Uniform Practices for the Clearance and Settlement of Mortgage-Backed Securities and Other Related Securities. Hence, the FHFA will serve a role similar to the SEC, meaning it will ensure that the GSEs do not deviate from the requirements to securitize mortgage originations with standardized borrower characteristics. In short, FHFA regulates mortgage purchasing and trust structuring activities. The TBA trading conventions are set by Securities Industry and Financial Markets Association (SIFMA).

[86] See FHFA, "Statement of FHFA Deputy Director Robert Fishman on the Launch of the New Uniform Mortgage-Backed Security (UMBS)," press release, June 3, 2019, at https://www.fhfa.gov/Media/PublicAffairs/Pages/Statement-of-FHFA-Deputy-Director-Robert-Fishman-on-the-launch-of-the-new-Uniform-Mortgage-Backed-Security.aspx.

[87] See U.S. Department of Housing and Urban Development, HUD Exchange, "Housing Trust Fund," at https://www.hudexchange.info/programs/htf/.

[88] See U.S. Department of Treasury, Community Development Financial Institutions Fund, "Capital Magnet Fund," at

(0.042%) of the unpaid principal balance of mortgages purchased in a year for these funds.

Achieving the affordable housing mission has been difficult for the GSEs while they are under conservatorship. For one reason, FHFA suspended the requirement that the GSEs make contributions to the HTF and the CMF between 2008 and 2014. The requirement was reinstated in 2015. Another factor may be that the PSPAs caps of $250 billion on both of the GSEs' portfolios potentially limit the amount of mortgages with nonstandardized characteristics they can purchase.[89] The GSEs retained portfolios consist primarily of (1) mortgages in the pipeline to be securitized, (2) non-performing mortgages that may receive loss-mitigation, and (3) mortgages that support affordable housing mission goals. The PSPA caps and changing mortgage market conditions may prompt the GSEs to be more deliberate when allocating their portfolios for certain purposes.

Under the current standardization initiatives, some mortgage purchases made to support the GSEs' affordable mission goals might not be securitized if they lack, for example, the prepayment characteristics required to be securitized into a UMBS. Hence, the standardization initiatives would not adversely affect low- and moderate-income borrowers whose prepayment speeds can be securitized into UMBSs; however, borrowers with prepayments speeds not acceptable for UMBS securitization could pay more for mortgages if the GSEs' portfolios are being used primarily as securitization pipelines for acceptable mortgages and operating closer to their PSPA caps while the GSEs are under conservatorship.

The *GSE Patch/QM Patch* and Possible Implications for CRT

On January 10, 2013, the Consumer Financial Protection Bureau (CFPB) released a final rule implementing the ability-to-repay (ATR) requirement of the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act; P.L. 111-203); the rule took effect on January 10, 2014.[90] The Dodd-Frank Act requires lenders to verify a borrower's ATR with documentation. The final rule provides multiple ways for a loan originator to comply, one of which is by originating a qualified mortgage (QM). If a loan meets certain underwriting and product-feature requirements, it receives QM status; the lender receives a presumption of ATR compliance for legal purposes. Specifically, QM loans provide *safe harbor* legal protection, meaning that a borrower would not be able to assert that the originator (and any subsequent secondary-market purchaser) failed to comply with any of the required underwriting criteria.

Limiting the borrower's debt-to-income (DTI) ratio to 43% is one of the underwriting requirements for a loan to receive QM status.[91] If, however, a loan's DTI exceeds 43%, it may

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https://www.cdfifund.gov/programs-training/Programs/cmf/Pages/default.aspx; and Department of the Treasury Community Development Financial Institutions Fund, "Funding Opportunities: Capital Magnet Fund; 2018 Funding Round," 83 *Federal Register*, p.34685-34698, July 20, 2018.

[89] See Treasury Department, "Treasury Department Announces Further Steps to Expedite Wind Down of Fannie Mae and Freddie Mac," press release, August 17, 2012, at https://www.treasury.gov/press-center/press-releases/Pages/tg1684.aspx.

[90] See Bureau of Consumer Financial Protection (CFPB), "Ability-to-repay and Qualified Mortgage Standards Under the Truth in Lending Act (Regulation Z)," 78 *Federal Register* 6408-6620, January 30, 2013.

[91] The qualified mortgage (QM) rule may be considered a macroprudential policy tool that may reduce the financial system's vulnerability to payment disruptions and systemic panics. Along with lender-of-last resort interventions, requirements on collateral, underwriting (for loans) margin (for securities purchases), and capital are examples of the variety of macroprudential tools available for governments to promote their financial system's stability and efficiency. (See Tobias Adrian et al., *Macroprudential Policy: A Case Study From a Tabletop Exercise*, Federal Reserve Bank of

still receive QM status if another federal agency that insures mortgage credit risk is willing to guarantee it. The *QM patch* allows the GSEs and other federal agencies to operate under their own QM rules for seven years (until January 10, 2021) or until the GSEs exit conservatorship, whichever is sooner.[92] Consequently, the Federal Housing Administration, U.S. Department of Veterans Affairs, and United States Department of Agriculture did not adopt a 43% DTI requirement for the mortgages they guarantee. Instead, these agencies adopted their own QM definitions, which included the exclusion of product features they considered would impede repayment from borrowers they predominantly serve—but they did not limit DTIs to 43%.[93] Furthermore, the CFPB's QM rule created an exemption from the 43% DTI cap for mortgages eligible for purchase by the GSEs.[94] Hence, loan originations either acquired by the GSEs while they are under conservatorship (or until January 10, 2021) or guaranteed by other federal agencies receive QM status.

Since 2007, the private-label securitizations market has diminished whereas the roles of GSEs and federal agencies that guarantee or issue residential mortgage loans have increased in importance. One reason might be related to the legal protections linked to QM loan originations. Many originators have limited themselves to making only QM loans to avoid exposure to potential liability and litigation risks.[95] Although they may be willing to assume customary lending risks, such as credit and prepayment, financial institutions historically have been less willing to originate mortgage loans with attached compliance or legal risks. For example, since the passage of the 1994 Home Ownership Equity Protection Act (HOEPA), mortgage originations

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New York, February 1, 2017, at https://www.newyorkfed.org/medialibrary/media/research/epr/2016/epr_2016-adrian-macroprudential-policy.pdf?la=en.) Likewise, governments worldwide have used public credit guarantees to increase access to financing for certain groups or when the nation's banking system is more vulnerable to sudden and frequent liquidity crunches. (See Facundo Abraham and Sergio L. Schmukler, *Are Public Guarantees Worth the Hype?*, World Bank Malaysia Hub, Research and Policy Briefs, November 2017, at http://documents.worldbank.org/curated/en/431261511201811430/pdf/Are-public-credit-guarantees-worth-the-hype.pdf; and Deniz Anginer, Augusto de le Torre, and Alain Ize, "Risk-Bearing by the State: When Is It Good Public Policy?," *Journal of Financial Stability*, vol. 10 (2014), pp. 76-89.) In the U.S. mortgage market, the federal government provides public credit guarantees (mortgage insurance) via the FHA, VA, and USDA programs. When Fannie Mae was created, limitations on U.S. bank branching prevented interstate banking; these remained largely in effect until 1994. (See Gary Richardson et al., *McFadden Act of 1927*, Board of Governors of the Federal Reserve System, November 22, 2013, at https://www.federalreservehistory.org/essays/mcfadden_act; and Bill Medley, *Riegle-Neal Interstate Banking and Branching Efficiency Act 1994*, Board of Governors of the Federal Reserve System, at https://www.federalreservehistory.org/essays/riegle_neal_act_of_1994.)

[92] See CFPB, "Ability-to-Repay and Qualified Mortgage Standards Under the Truth in Lending Act (Regulation Z)," 78 *Federal Register* 6049, January 30, 2013; Bing Bai, Laurie Goodman, and Ellen Seidman, *Has the QM Rule Made It Harder to Get a Mortgage?*, Urban Institute, March 2016, at https://www.urban.org/sites/default/files/publication/78266/2000640-Has-the-QM-Rule-Made-It-Harder-to-Get-a-Mortgage.pdf; and Karan Kaul and Laurie Goodman, *What, If Anything, Should Replace the QM GSE Patch?*, Urban Institute, August 2018, at https://www.urban.org/sites/default/files/publication/98949/2018_10_30_qualified_mortgage_rule_finalizedv2_0.pdf.

[93] See Department of Housing and Urban Development, "Qualified Mortgage Definition for HUD Insured and Guaranteed Single Family Mortgages," 78 *Federal Register* 75215-75238, December 13, 2013; Department of Veterans Affairs, "Loan Guaranty: Ability-To-Repay Standards and Qualified Mortgage Definition Under the Truth in Lending Act," 79 *Federal Register* 26620-26628, May 9, 2014; and Department of Agriculture, Rural Housing Service, "Single Family Housing Guaranteed Loan Program," 81 *Federal Register* 26461-26465, May 3, 2016.

[94] See CFPB, *Ability-to-Repay and Qualified Mortgage Rule Assessment Report*, January 2019, at https://files.consumerfinance.gov/f/documents/cfpb_ability-to-repay-qualified-mortgage_assessment-report.pdf.

[95] The few originators that offer non-QM loans charge higher rates to offset potential legal and compliance risks, even if the underlying credit risk is relatively low. As a result, some categories of creditworthy borrowers that should qualify for a QM have trouble accessing safe, sustainable, and affordable mortgage credit. See Karan Kaul and Laurie Goodman, *What, If Anything, Should Replace the QM GSE Patch?*, Urban Institute, August 2018, at https://www.urban.org/sites/default/files/publication/98949/qualified_mortgage_rule.pdf.

covered by the law make up a small share of the mortgage market and are concentrated among very few lenders.[96] HOEPA lending declined markedly after new regulations were implemented to amend the definition of a high-cost mortgage to cover more types of loans.[97] After the passage of the Georgia Anti-Predatory Lending Act of 2002, the GSEs announced that they would no longer purchase mortgages originated in the state of Georgia to avoid the legal risk of assignee liability.[98] Likewise, many mortgage originators have reportedly limited themselves to making QM safe harbor loans.[99]

If the QM patch expires in January 2021 as currently scheduled (or the GSEs are no longer in conservatorship), it is unclear whether the GSEs would purchase non-QM loans in the future. Because the GSEs currently purchase loans that meet the QM standards, questions that pertain to the legal liabilities of the GSEs (and holders of GSE issuances) if they were to purchase non-QM loans are largely unknown at this time.[100] If the GSEs did limit their non-QM purchases, some borrowers could find it more difficult to access mortgage credit and others could experience an increase in the cost of obtaining a mortgage. Furthermore, the MBS and CRT financial market conditions, in terms of demand, supply, and liquidity, could exhibit greater volatility after January 2021 if the patch expires.

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[96] The 1994 Home Ownership Equity Protection Act (HOEPA) is an amendment to the Truth-In-Lending Act (TILA) of 1968. TILA is contained in Title I of the Consumer Credit Protection Act, P.L. 90-301, 81 Stat. 146, as amended by 15 U.S.C. §1601 et. seq and implemented by the Federal Reserve through Regulation Z. In 2005, 10 lenders accounted for 70% of all HOEPA reported loan originations and 730 institutions reported making only one or two HOEPA loans. For more information, see Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner, "Higher-Priced Home Lending and the 2005 HMDA Data," *Federal Reserve Bulletin*, September 8, 2006, at https://www.federalreserve.gov/pubs/bulletin/2006/hmda/bull06hmda.pdf.

[97] For more information, see Rachel Leary, *The Expanded Scope of High-Cost Mortgages Under the Dodd-Frank Wall Street Reform and Consumer Protection Act*, Federal Reserve Bank of Philadelphia, Consumer Compliance Outlook, First Quarter 2015, at https://consumercomplianceoutlook.org/2015/first-quarter/expanded-scope-of-high-cost-mortgages-under-dodd-frank-wall-street-reform-consumer-protection-act-2/; and Neil Bhutta, Steven Laufer, and Daniel R. Ringo, "Residential Mortgage Lending in 2016: Evidence from the Home Mortgage Disclosure Act Data," Board of Governors of the Federal Reserve System, *Federal Reserve Bulletin*, vol. 103, no. 6, November 2017, at https://www.federalreserve.gov/publications/files/2016_HMDA.pdf.

[98] For more information, see Jennifer Ablan, "Georgia Law Sparks Mortgage 'Crisis'," *Wall Street Journal*, January 27, 2003, at https://www.wsj.com/articles/SB1043452328933437504; Office of the Comptroller of the Currency, Treasury, "Preemption Determination and Order," 68 *Federal Register* 46278, August 5, 2003; and Office of the Comptroller of the Currency, Treasury, "Remarks by John D. Hawke, Jr., Comptroller of the Currency Before The Federalist Society," press release, July 24, 2003, at https://www.occ.treas.gov/news-issuances/speeches/2003/pub-speech-2003-57.pdf.

[99] See Mortgage Bankers Association, "ATR/QM Improvements," at https://www.mba.org/issues/residential-issues/atr/qm-improvements.

[100] See Letter from Kenneth E. Bentsen, Jr., president, Securities Industry and Financial Markets Association, to U. S. Senate Committee on Banking, Housing, and Urban Affairs Chairman Tim Johnson and Ranking Member Michael Crapo, October 31, 2013, at https://www.sifma.org/wp-content/uploads/2017/05/sifma-submits-comments-to-the-us-senate-banking-committee-on-housing-finance-reform.pdf.

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