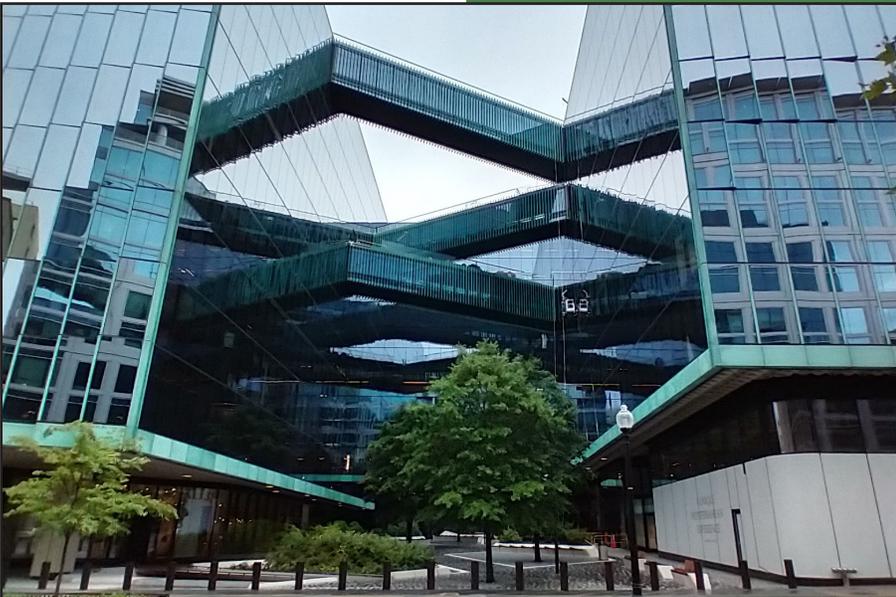


CBO

Effects of Recapitalizing Fannie Mae and Freddie Mac Through Administrative Actions



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At a Glance

Fannie Mae and Freddie Mac are government-sponsored enterprises (GSEs) that play a central role in the U.S. housing finance system. In September 2008, their regulator, the Federal Housing Finance Agency, used its authority to take over management of the GSEs' assets and business, a concept known as conservatorship. Since then, Fannie Mae and Freddie Mac have relied on federal support to remain financially solvent. They have also paid most of their earnings to the Treasury, which owns dominant stakes in the two GSEs.

In late 2019, the Treasury allowed the GSEs to retain more of their earnings to rebuild their capital reserves. The Treasury also recommended administrative actions aimed at returning the GSEs to private ownership—including recapitalization and an end to their conservatorships—and called for legislative action to resolve the GSEs' status.

In this report, the Congressional Budget Office examines options for recapitalizing the GSEs by allowing them to retain all of their profits for an initial period, after which they would sell new common stock to investors to replace the Treasury's ownership stake. Those actions would be taken administratively. The analysis looks at how the recapitalization options would affect various factors:

- CBO's budgetary treatment of the GSEs and its baseline budget projections;
- Cash flows between the GSEs and the Treasury and other shareholders;
- The possibility that the GSEs would be released from conservatorship, remain in conservatorship, or be put in receivership; and
- Mortgage markets and other federal institutions that play a role in the housing finance system.

In some of the scenarios that CBO analyzed, the GSEs would be able to raise enough funds to meet their capital requirements, repurchase all of the outstanding preferred shares issued before their conservatorships, compensate the Treasury for its stake in the GSEs, and become privately owned firms. In other scenarios, the GSEs would not be able to raise enough to meet their capital requirements. In those cases, their regulator and the Treasury would need to explore other plans, such as putting the GSEs in receivership (which would involve liquidating their assets or transferring the assets to other entities).



Contents

Introduction and Summary	1
The Treasury’s 2019 Proposals for Fannie Mae and Freddie Mac	1
Challenges in Determining the Budgetary Treatment of Changes to the GSEs	1
CBO’s Analysis of Options to Recapitalize the GSEs	2
Key Findings	2
Evolution of the GSEs’ Operations in Conservatorship	3
CBO’s Budgetary Treatment of the GSEs	4
Illustrative Options for Recapitalizing the GSEs Administratively	5
BOX 1. OTHER ADMINISTRATIVE APPROACHES TO RECAPITALIZING THE GSES	6
Key Factors That CBO Incorporated in Its Analysis of the Options	6
Regulatory Structure and Value of the GSEs’ Business After Recapitalization	6
Capital Requirements	7
Assets	9
Earnings	9
Existing Claims by Shareholders	9
Investors’ Required Returns	9
BOX 2. THE IMPACT OF THE CORONAVIRUS PANDEMIC ON FANNIE MAE AND FREDDIE MAC	10
Potential Administrative or Legislative Actions	11
Disposition of the Treasury’s Stake in the GSEs	11
CBO’s Modeling of the Recapitalization Options	12
CBO’s Modeling Approach	12
Redemption of Shareholders’ Claims in CBO’s Model	13
Results for Recapitalization With a Common-Stock Offering in 2023	14
Results for Recapitalization With a Common-Stock Offering in 2025	16
Potential Budgetary Treatment of Recapitalization	17
Treatment of Changes to the Treasury’s Senior Preferred Shares and Warrants	18
Treatment of the GSEs as Government Entities	19
Other Considerations in Recapitalizing the GSEs	19
Potential Status of the GSEs as Systemically Significant Institutions	19
Effects on the Primary and Secondary Mortgage Markets	19
Effects on Other Government Institutions	20
List of Tables	21
About This Document	22

Notes

Unless this report indicates otherwise, all years referred to are calendar years.

Numbers in the text and tables may not add up to totals because of rounding.

Supplemental data for this analysis are available on the Congressional Budget Office's website (www.cbo.gov/publication/56496).

The results in this report do not reflect the adverse-market refinance fee that Fannie Mae and Freddie Mac announced on August 12, 2020, with the approval of their conservator, the Federal Housing Finance Agency. According to their announcements, Fannie Mae and Freddie Mac will assess an up-front fee equal to 0.5 percent of the original loan amount for certain refinance mortgages with settlement dates on or after September 1, 2020. The fee will increase Fannie Mae's and Freddie Mac's earnings, but the extent of that increase will depend on several factors, including how long the fee is assessed.



Effects of Recapitalizing Fannie Mae and Freddie Mac Through Administrative Actions

Introduction and Summary

Fannie Mae and Freddie Mac are government-sponsored enterprises (GSEs) that help finance a large share of home loans in the United States. They do so by purchasing mortgages that meet certain standards from lenders and pooling the loans into mortgage-backed securities. The GSEs guarantee that investors who buy those securities will receive the principal and any interest that is due even if borrowers default on the underlying mortgages.¹ In September 2008, during the financial crisis, the GSEs' federal regulator placed Fannie Mae and Freddie Mac in conservatorship—in response, it said, “to a substantial deterioration in the housing markets that severely damaged each Enterprise’s financial condition and left both of them unable to fulfill their missions without government intervention.”²

More than a decade later, the Administration has recommended restructuring the government’s support for the GSEs and returning them to private ownership through administrative actions. It has also called for future legislation to resolve the status of the GSEs.

One key administrative action—which has begun to a limited extent—is letting Fannie Mae and Freddie Mac pay less of their earnings to the Treasury so they can rebuild their capital reserves as a cushion against future losses. This report examines what could happen if the Treasury changed its agreements with the GSEs to allow them to build up capital reserves similar to those required for other large, federally regulated financial firms.

1. For more details about the part that Fannie Mae and Freddie Mac play in the housing finance system, see Congressional Budget Office, *Fannie Mae, Freddie Mac, and the Federal Role in the Secondary Mortgage Market* (December 2010), Chapter 1, www.cbo.gov/publication/21992.
2. See Federal Housing Finance Agency, “History of Fannie Mae and Freddie Mac Conservatorships” (accessed July 10, 2020), <https://go.usa.gov/xf9tT>.

The Congressional Budget Office analyzed two illustrative options for recapitalizing the GSEs through administrative actions. Under the options, the GSEs would retain their annual earnings for three or five years and then sell new shares of common stock to investors. This report looks at how the options could affect CBO’s budget projections for the GSEs; cash flows between the GSEs and their shareholders, including the Treasury; the status of the GSEs; conditions in the mortgage markets; and the operations of other federal institutions involved in the housing finance system.

The Treasury’s 2019 Proposals for Fannie Mae and Freddie Mac

As the economy recovered from the financial crisis of the late 2000s, the number of foreclosures declined and Fannie Mae and Freddie Mac returned to profitability. In September 2019, after the GSEs had several years of positive earnings, the Treasury recommended allowing them to increase their capital reserves as a step toward raising the capital they would need as fully private entities.

The Treasury also proposed that the GSEs’ regulator and conservator, the Federal Housing Finance Agency (FHFA), develop a longer-term plan for full recapitalization and an end to the GSEs’ conservatorships. The Treasury recommended that those actions occur in conjunction with FHFA’s proposed capital requirements for the GSEs, which were announced in May 2020.

Challenges in Determining the Budgetary Treatment of Changes to the GSEs

Since the conservatorships began, CBO has treated Fannie Mae and Freddie Mac as government entities and included their activities in its baseline budget projections. Thus, actions to move the GSEs back toward private ownership and control would affect CBO’s budget estimates. Such actions would raise a number of conceptual and measurement challenges for CBO:

- Determining how its baseline should reflect administrative actions that change the status of the GSEs;
- Assessing what payments to and from investors could occur during recapitalization;
- Determining how to recognize those payments in the federal budget; and
- Deciding at what point, in consultation with the Congress, to stop treating the GSEs as government entities for budgetary purposes.

CBO's budgetary treatment of the GSEs would affect the types of changes in federal spending and revenues shown over time in CBO's baseline projections. For example, Fannie Mae and Freddie Mac could be treated as private firms whose activities did not affect the budget deficit—as they were before being put in conservatorship, even though they were widely seen at that time as benefiting from an implicit guarantee by the federal government to cover their losses. That guarantee (which taxpayers were not compensated for in advance) was thought to result from the GSEs' federal charters and their vital role in the housing finance system.³

If Fannie Mae and Freddie Mac were returned to private ownership without any indication of how the government would support them during future financial difficulties, the implicit federal guarantee could reemerge. Whether that guarantee was reflected in the GSEs' budgetary treatment would depend on various features of the housing finance system after conservatorship. One important feature would be whether the government charged the GSEs a fee for a commitment to provide certain contingent support. In other words, would a federal guarantee be made explicit? Or would the government return to the situation before the financial crisis, in which taxpayers' exposure to losses was implicit but still a reality as long as the GSEs' operations remained central to the housing finance system?

CBO's Analysis of Options to Recapitalize the GSEs

CBO examined two hypothetical options for recapitalizing Fannie Mae and Freddie Mac through administrative actions by FHFA and the Treasury rather than through

legislation. Under the options, the GSEs would keep all of their profits for an initial period—either three or five years—to build up capital. After that, they would try to raise enough funds to complete their recapitalization by selling common stock to investors. The GSEs would use any proceeds left over from the common-stock sale to repurchase (redeem) previously issued senior preferred shares held by the Treasury and junior preferred shares held by investors.⁴

CBO's analysis focuses on key outcomes of recapitalization, including the following:

- The effects on cash flows to the Treasury from eliminating or redeeming some or all of its liquidation preference in the GSEs (the amount of money the Treasury is eligible to receive before more junior investors are paid);
- The size of the payments to and from investors as a part of recapitalization; and
- The legal and financial considerations of recapitalizing the GSEs through the sale of new common stock during conservatorship or through other approaches, such as receivership. (In receivership, FHFA or a designated agent would restructure the GSEs by liquidating some or all of their assets or transferring those assets to other entities, including the Treasury and existing shareholders.)

To analyze the options, CBO had to make projections about various factors related to recapitalization, such as FHFA's final capital requirements for the GSEs, the growth rate of their earnings, and how potential shareholders would estimate the value of the GSEs. In its analysis, CBO created multiple scenarios using different combinations of estimates for those factors.

Key Findings

In some scenarios, the GSEs would raise enough from the common-stock sale to achieve three goals: meeting their capital requirements, redeeming their outstanding

3. See Congressional Budget Office, *Federal Subsidies and the Housing GSEs* (May 2001), www.cbo.gov/publication/13072.

4. Shares of stock, which represent ownership interests in a company, come in different types that are ranked according to their priority for receiving dividend payments from the company or a share of the company's assets if it is liquidated. That ranking is known as a liquidation preference. Senior preferred stock ranks higher than junior preferred stock, which in turn outranks common stock.

senior and junior preferred shares, and providing the Treasury with some value for the warrants it received from the GSEs. (Those warrants give the Treasury the right, though not the obligation, to buy common stock in the GSEs for a nominal price in the future.) In other scenarios—such as with higher capital requirements and lower growth in the GSEs’ earnings—the estimated proceeds from the common-stock sale would not be sufficient to achieve all three of those aims. As a result, the Treasury and other shareholders might have to accept a reduction in the value of their stakes in the GSEs, a situation that might cause FHFA to put the GSEs in receivership.

Many other factors would affect recapitalization plans for the GSEs. Those factors include the prospect that the government might designate the GSEs as “systemically significant” institutions, which are subject to additional regulation; the potential impact of recapitalization on the markets in which mortgages are originated, bought, and sold; and the impact on other federal institutions that guarantee mortgages or mortgage-backed securities.

Evolution of the GSEs’ Operations in Conservatorship

When Fannie Mae and Freddie Mac were placed in conservatorship, FHFA suspended the rules that had required them to fund themselves with a certain amount of capital. In addition, the Treasury committed to injecting enough capital into the GSEs to ensure their continued operation. Using its authority under the Housing and Economic Recovery Act of 2008 (HERA), the Treasury signed agreements with the GSEs to buy senior preferred stock from them. Under those agreements, in any quarter in which Fannie Mae’s or Freddie Mac’s net worth becomes negative, the Treasury must purchase enough senior preferred stock from that GSE (subject to a total cap) to restore it to positive net worth—a financial structure known as a keepwell agreement.

The agreements require the GSEs to pay dividends to the Treasury on the government’s holdings of their senior preferred stock. Amendments made in August 2012 to the agreements specify that when Fannie Mae’s or Freddie Mac’s net worth exceeds a certain threshold, that GSE must pay the amount of the surplus to the Treasury. Thus, the 2012 amendments essentially require that all of the GSEs’ profits be paid as dividends to the Treasury once they reach the net worth threshold. As of December 31, 2019, Fannie Mae and Freddie Mac had

paid the Treasury a total of \$301 billion in dividends during their conservatorships.

Those dividend payments do not reduce the outstanding amount of senior preferred stock held by the Treasury. The agreements between the Treasury and the GSEs do not include any provisions for the government’s holdings of preferred shares to be redeemed.

As compensation for its commitment to inject capital into the GSEs, the Treasury has also received warrants that give it the right (but not the obligation) to buy common stock in each of the GSEs—equal to 79.9 percent of total outstanding shares—for a nominal amount. Those warrants expire on September 7, 2028. Together, the authority granted in HERA, the common-stock warrants, and the purchase agreements for senior preferred stock ensure that Fannie Mae and Freddie Mac maintain a positive net worth and that the government retains control and effective ownership of them.

Between November 2008 and March 2012, the Treasury bought \$189 billion of senior preferred stock from the GSEs to cover their losses and ensure that they could continue to operate in the secondary (resale) market for mortgages. The GSEs returned to profitability in 2012 as the economy and housing markets stabilized. As a result, they have each needed only one infusion of funds from the Treasury since then.⁵

The Treasury’s authority to assist the GSEs by purchasing senior preferred stock is subject to a cap that has changed over the years.⁶ At the end of December 2019, \$254 billion of the available Treasury assistance remained unused. That undrawn amount effectively serves as a capital cushion. It ensures that under most circumstances, the GSEs would be able to pay investors who held their mortgage-backed securities or the debt securities they sell to finance their investments and activities. Without that backstop from the Treasury, the GSEs would have to pay a higher interest rate to sell their debt securities, in CBO’s assessment, and investors would have less

5. Both GSEs needed to draw on Treasury assistance in 2018 after the 2017 tax act (Public Law 115-97) lowered corporate tax rates, thereby reducing the value of the GSEs’ deferred tax assets.

6. For a description of changes to the Treasury’s commitment to the GSEs, see Federal Housing Finance Agency, “Senior Preferred Stock Purchase Agreements” (November 4, 2019), <https://go.usa.gov/xf9z8>.

confidence in their mortgage guarantees. As a result, interest rates would rise for borrowers who took out a GSE-guaranteed mortgage.

In September 2019, the Treasury took two steps toward changing the government's level of ownership and control of the GSEs. The first step was amending the preferred-stock purchase agreements to allow Fannie Mae and Freddie Mac to increase their capital reserves. That recapitalization—from \$3 billion each to \$25 billion for Fannie Mae and \$20 billion for Freddie Mac—will be accomplished by letting the GSEs retain profits rather than paying them as dividends to the Treasury. Under the amended agreements, each dollar of retained capital will increase the Treasury's stake in the GSEs but will not reduce the amount of Treasury assistance available to them.⁷

The Treasury's second step was to issue a housing reform plan that recommends a series of administrative actions by FHFA and the Federal Housing Administration.⁸ The proposed actions include tailoring the GSEs' support for certain types of mortgages (such as refinance loans that increase the balance of a mortgage, mortgages for second homes or investment properties, and mortgages for multifamily properties). The Treasury's plan also suggests addressing overlap between the GSEs and the Federal Housing Administration in their required support for affordable housing. In addition to those administrative actions, the plan recommends that the Congress and the President enact legislation chartering competitors to Fannie Mae and Freddie Mac.

CBO's Budgetary Treatment of the GSEs

When FHFA put Fannie Mae and Freddie Mac in conservatorship, CBO (after consulting with the House and Senate Budget Committees) began treating the GSEs as government entities in its budget estimates.⁹ Before, CBO had treated the GSEs as private companies

whose activities did not affect the federal budget deficit. CBO's rationale for its change was that the conservatorships gave the federal government operational control of Fannie Mae and Freddie Mac, while the warrants and senior preferred shares gave the government effective ownership of the GSEs.¹⁰

CBO's current budgetary treatment of the two GSEs is based largely on fair-value accrual accounting. For most of the fiscal years in its 10-year baseline budget projections, CBO looks at the new mortgage guarantees that the GSEs are projected to make in a given year and estimates the present value of the guarantees' total potential costs to the government over their lifetime.¹¹ CBO calculates those accrual estimates on a fair-value basis by effectively incorporating market prices for the guarantees.¹²

In its budget projections for the current fiscal year, however, CBO instead presents cash-based estimates of the GSEs' transactions with the Treasury during that year, treating the GSEs as nongovernmental entities. CBO does that so its estimates of budget totals for the current year are comparable with those of the Administration's Office of Management and Budget. The Administration continues to treat Fannie Mae and Freddie Mac as nongovernmental entities for budgetary purposes and records in the budget only the two GSEs' cash transactions with the Treasury.

After the Treasury and FHFA agreed in September to let the GSEs retain more of their earnings to build up capital, CBO's next baseline projections (published in January 2020) showed a small budgetary cost associated with that action. Under CBO's approach, that projected cost (for fiscal years other than the current year) stems from the government's increased exposure to potential

7. Specifically, earnings retained by the GSEs will increase the Treasury's liquidation preference without increasing the outstanding balance of the Treasury's senior preferred shares.

8. See Department of the Treasury, *Housing Reform Plan* (September 2019), <https://home.treasury.gov/news/press-releases/sm769>.

9. See the testimony of Douglas W. Elmendorf, Director, Congressional Budget Office, before the Senate Committee on the Budget, *Addressing the Ongoing Crisis in the Housing and Financial Markets* (January 28, 2009), www.cbo.gov/publication/41757.

10. See Congressional Budget Office, *How CBO Determines Whether to Classify an Activity as Governmental When Estimating Its Budgetary Effects* (June 2017), www.cbo.gov/publication/52803.

11. A present value is a single number that expresses a flow of current and future income or payments in terms of an equivalent lump-sum amount received or paid at a specific time. A present value depends on the rate of interest (known as the discount rate) that is used to translate future cash flows into current dollars.

12. For more details, see Congressional Budget Office, *Accounting for Fannie Mae and Freddie Mac in the Federal Budget* (September 2018), www.cbo.gov/publication/54475.

losses incurred by the GSEs.¹³ As the GSEs build up capital reserves, the amount of losses they could bear expands beyond the \$254 billion of assistance available to them under the Treasury's agreements. But putting \$45 billion in retained earnings (the total capital currently allowed to the GSEs) at risk in addition to the \$254 billion of available Treasury assistance is only a modest increase in risk, so the additional budgetary cost of that risk is modest as well, CBO estimated.¹⁴

In the case of proposed administrative actions, such as those in the Treasury's housing reform plan, CBO's budget projections do not incorporate finely tuned probabilities that the actions will occur. (CBO adopted that approach, in keeping with guidance from the budget committees, for the sake of simplicity and transparency.) In general, until the Administration takes action on a proposed policy change, the baseline reflects none of the budgetary effects that CBO expects would result from the new policy.

Once the Administration takes action—such as by issuing proposed rules and time lines for implementing a new policy—CBO updates its baseline to include 50 percent of the policy's expected budgetary effects. That probabilistic estimate reflects uncertainty about whether the change will be implemented as designed, and within the time frame announced, and about what the outcome may be. Once it becomes clear that a policy change will be implemented under current law, and the Administration issues final rules for the new policy, CBO updates its baseline to reflect 100 percent of the anticipated budgetary effects.

13. For a description of that approach, see Congressional Budget Office, *The Effects of Increasing Fannie Mae's and Freddie Mac's Capital* (October 2016), www.cbo.gov/publication/52089.

14. The budgetary cost of the additional taxpayer resources at risk corresponds to the modest impact on mortgage interest rates that would result from requiring the GSEs (either while still in conservatorship or fully privatized) to fund themselves with more capital once they had attained an amount of capital that was adequate to protect them against losses from a future housing downturn. Once the GSEs had enough capital that they were safe from failure in all but the most catastrophic economic scenarios, requiring them to fund themselves with more capital would translate into only a modest increase in costs, as measured by higher interest rates. That is, once the GSEs had enough capital to be safe, additional capital would not be expensive. And if the additional capital had a large impact on mortgage interest rates, then the GSEs were not safe in the first place.

In the case of proposed legislative actions, by contrast, the projected impact of an action is reflected in CBO's baseline only after legislation is enacted.

Illustrative Options for Recapitalizing the GSEs Administratively

In response to the 2019 changes to the preferred-stock purchase agreements, Fannie Mae and Freddie Mac have begun increasing their capital reserves. Further recapitalization would be a step toward releasing the GSEs from their conservatorships and reducing the government's control and ownership of the enterprises. A release plan based on administrative actions that aimed to return Fannie Mae and Freddie Mac to private ownership might necessitate changes in CBO's baseline and, eventually, a change in CBO's budgetary treatment of the GSEs.

To illustrate the effects of such a plan, CBO analyzed two hypothetical options for recapitalizing Fannie Mae and Freddie Mac. Both options would be carried out through administrative actions by FHFA and the Treasury (using authority granted to them under HERA) rather than through legislation.¹⁵

- In the first option, the GSEs would retain all of the profits they earned for three years. After that, they would sell common stock to investors in an effort to raise enough funds to complete their recapitalization.
- In the second option, the GSEs would retain their profits for a longer period—five years—and then use a smaller sale of common stock to try to complete their recapitalization.

In addition, under both options, the Treasury and FHFA would alter the preferred-stock agreements to enable the GSEs to redeem the Treasury's shares at their current face value, a total of about \$191 billion (which CBO rounded to \$190 billion for this analysis). The GSEs might also use proceeds from their sales of common stock to negotiate the repurchase of privately held junior preferred shares. (Other approaches exist for recapitalizing the GSEs through administrative actions; for details, see Box 1.)

15. The primary legal limit on FHFA and the Treasury is HERA's definition of FHFA's role as a conservator or receiver, which includes broad authority to change the preferred-stock agreements. As conservator or receiver, FHFA also has significant leeway to authorize the GSEs to modify their existing common and junior preferred shares and to issue new common shares.

Box 1.

Other Administrative Approaches to Recapitalizing the GSEs

The Congressional Budget Office's analysis of options to recapitalize government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac focuses on retained earnings and the sale of common stock. However, the Treasury or the GSEs' conservator, the Federal Housing Finance Agency (FHFA), could take other administrative actions to help the GSEs rebuild their capital reserves. For example, the Treasury could delay redeeming its stake in the GSEs, perhaps by converting its senior preferred shares to common shares, junior preferred shares, or debt.

Alternatively, FHFA could use the power it received under the Housing and Economic Recovery Act of 2008 to place the GSEs in receivership. That status would allow FHFA or a designated agent to restructure the GSEs by liquidating some or all of their assets or by transferring those assets to other entities, including the Treasury and existing shareholders. Receivership could give FHFA

more flexibility and control over the recapitalization process, particularly over addressing the claims of holders of existing junior preferred and common shares. However, receivership could eliminate the value of the warrants that permit the Treasury to buy common stock in the GSEs in the future for a nominal price.

One option for receivership would be for FHFA to create a new corporation (or one for each GSE) and transfer to it all of the GSEs' assets and liabilities, such as their mortgage guarantees. The new corporation could sell common stock to raise its required amount of capital. Any remaining proceeds from that sale could be allocated to the GSEs' shareholders on the basis of their seniority—starting with the Treasury's senior preferred shares before paying the private holders of junior preferred shares or common shares. The Treasury would be paid the same for its warrants as the existing holders of common shares.

Once the recapitalization process was complete, the federal government could release the GSEs from their conservatorships, or it could keep them in that status until lawmakers enacted legislation to address the GSEs and the broader housing finance system. The conservatorships might continue if regulators determined that legislation was necessary for the GSEs to operate in a safe manner without federal control.¹⁶

Key Factors That CBO Incorporated in Its Analysis of the Options

To estimate the budgetary effects of options to recapitalize Fannie Mae and Freddie Mac, CBO must incorporate values in its recapitalization model for a host of factors, including the following:

- The GSEs' future regulatory structure and business prospects,
- FHFA's capital requirements for the GSEs,
- The GSEs' assets and annual earnings,

- The resolution of existing claims by private shareholders,
- Investors' expectations about returns on capital,
- Other administrative or legislative actions occurring during the recapitalization process or expected to occur in the future, and
- The federal government's disposition of its stake in the GSEs.

The importance of those factors and the values that CBO used for them in this analysis are described below.

Regulatory Structure and Value of the GSEs' Business After Recapitalization

If Fannie Mae and Freddie Mac issued new common stock to complete their recapitalization, potential investors would need to make projections about several aspects of the future business prospects of the GSEs. One key area they would need to assess is the degree to which the recapitalized GSEs would have access to a federal backstop—either implicit or explicit—and what its terms would be. For example, would a backstop be implemented through administrative changes to the

16. See Michael Krimminger and Mark A. Calabria, *The Conservatorships of Fannie Mae and Freddie Mac: Actions Violate HERA and Established Insolvency Principles*, Working Paper 26 (Cato Institute, February 9, 2015), <https://tinyurl.com/y7wxaagl>.

GSEs' preferred-stock agreements and charters, through new legislation, or implicitly? Would it cover only Fannie Mae and Freddie Mac or other entities as well? And would a backstop guarantee the solvency of the GSEs themselves or just the securities they issue? Investors would also need to assess the degree to which the recapitalized GSEs would have access to other benefits they have now, such as exemption from state and local taxes.

In addition, investors would need to estimate how the federal government's potential regulatory influence over Fannie Mae and Freddie Mac would affect prospects for the growth of their assets and earnings after recapitalization. For example, greater restrictions on the types of mortgages the GSEs could guarantee or on the fees they could charge for those guarantees would reduce the potential growth of their earnings, making the GSEs less valuable to investors. That would also be true if a federal backstop was available to more firms than just the two GSEs.

The prospect of higher growth in annual earnings after recapitalization would increase the value of the GSEs to investors, making it easier to recapitalize them through the sale of common stock and to repay the Treasury for its stake in the enterprises. The prospect of lower, or even negative, growth in annual earnings after recapitalization would decrease the GSEs' value to investors, making it more difficult to recapitalize the enterprises by selling common stock.

For this analysis, CBO used a range of values for the annual growth of the GSEs' earnings in the first five years after recapitalization: from zero to 8 percent (see Table 1). That range includes an earnings growth rate (4 percent) that is consistent with CBO's current expectations about the growth of annual earnings during the recapitalization period, as well as values above and below that rate to capture potential volatility in the GSEs' financial results. Beyond the first five years after recapitalization, CBO used a value of 3 percent a year for the GSEs' earnings growth, consistent with its estimate of the long-term increase in annual earnings for the recapitalized firms.

Capital Requirements

Fannie Mae and Freddie Mac reported a combined total of \$24 billion in capital at the end of December 2019, equal to 0.4 percent of their \$5.7 trillion in total assets

at that time.¹⁷ As long as the preferred-stock purchase agreements remain in place, the GSEs potentially have access to \$254 billion in additional capital from the Treasury. In May 2020, FHFA proposed a new framework for risk-based capital requirements for the GSEs, to replace the regulatory capital requirements it suspended when it put the GSEs in conservatorship.¹⁸ Until that framework is finalized, the exact amount of capital that the GSEs will need to build and keep is unknown.

Also unknown is how the amount and composition of the GSEs' guarantees will change during recapitalization. Some of the recommendations in the Treasury's housing reform plan focus on reducing the volume of riskier loan guarantees made by the GSEs. Another important consideration is how new capital requirements will treat transactions that the GSEs currently use to transfer some of the credit risk of their guarantees to investors.¹⁹

Despite those uncertainties, CBO made judgments about how much capital the GSEs would require based on FHFA's proposed new framework and the capital requirements in place for other financial institutions. FHFA's new risk-based capital requirements for the GSEs are likely to differ for different types of assets. But for simplicity in this analysis, CBO used one value for all assets—representing the weighted average of potential capital requirements for specific types of assets (unadjusted for the risk of those assets). In CBO's modeling, that value ranges from 3 percent to 6 percent of the total assets on Fannie Mae's or Freddie Mac's balance sheet. That range includes the capital requirement that CBO expects on the basis of its analysis of FHFA's proposed framework (4.5 percent of total assets, unadjusted for asset risk), as well as values above and below that

17. That figure for the value of the GSEs' assets, like others in this report, is not adjusted for the riskiness of the assets.

18. See Federal Housing Finance Agency, "Enterprise Regulatory Capital Framework" (notice of proposed rulemaking, May 20, 2020), <https://go.usa.gov/xwndH>. The new framework is based on a proposal that FHFA released in 2018.

19. For more information about those transactions, see Congressional Budget Office, *Transferring Credit Risk on Mortgages Guaranteed by Fannie Mae or Freddie Mac* (December 2017), www.cbo.gov/publication/53380. Credit-risk transfers by the recapitalized GSEs might have different structures and economic returns if investors viewed those firms as less secure parties to engage in transactions with than the current GSEs.

Table 1.

Values CBO Used in Modeling Scenarios for Recapitalization

	Type of Value	Value(s) Used
GSEs' Combined Assets Before Recapitalization	Point estimate	<ul style="list-style-type: none"> ▪ \$5.7 trillion as of December 31, 2019 ▪ 4 percent growth per year during the recapitalization period
GSEs' Combined Annual Earnings Before Recapitalization	Point estimate	<ul style="list-style-type: none"> ▪ \$20 billion in 2019 ▪ Reduced to \$10 billion in 2020 because of the coronavirus pandemic ▪ 4 percent growth per year (based on amount of 2019 earnings) during the recapitalization period
Senior Preferred Shares in the GSEs	Point estimate	<ul style="list-style-type: none"> ▪ \$190 billion outstanding ▪ No dividends paid before the sale of new common shares ▪ Retired, to the extent possible, as part of the sale of new common shares
Junior Preferred Shares in the GSEs	Point estimate	<ul style="list-style-type: none"> ▪ \$35 billion outstanding ▪ No dividends paid before the sale of new common shares ▪ Retired, to the extent possible, as part of the sale of new common shares
Existing Common Shares in the GSEs	Point estimate	<ul style="list-style-type: none"> ▪ 1.8 billion shares outstanding in 2020 ▪ 7.2 billion additional shares outstanding with the exercise of the Treasury's warrants, to the extent possible, as part of the sale of new common shares ▪ No dividends paid before the sale of new common shares
Cost of the GSEs' Debt	Point estimate	<ul style="list-style-type: none"> ▪ 3 percent per year
GSEs' Capital Requirement as a Percentage of Total Assets (Unadjusted for assets' risk)	Range	<ul style="list-style-type: none"> ▪ 3 percent, 4 percent, 4.5 percent, 5 percent, and 6 percent
Investors' Required Annual Rate of Return on Capital Invested in the GSEs	Range	<ul style="list-style-type: none"> ▪ 8 percent, 9 percent, 10 percent, 11 percent, and 12 percent
Annual Growth of the GSEs' Earnings After Recapitalization	Range	<ul style="list-style-type: none"> ▪ zero, 2 percent, 4 percent, 6 percent, and 8 percent ▪ Earnings grow at that annual rate for five years after recapitalization ▪ After five years, earnings grow at an annual rate of 3 percent

Source: Congressional Budget Office.

GSEs = government-sponsored enterprises (specifically, Fannie Mae and Freddie Mac).

percentage to capture potential increases and decreases in capital based on that framework.²⁰

Assets

Of the \$5.7 trillion in total assets that the GSEs had at the end of December 2019, nearly all were mortgages that the GSEs pooled and guaranteed in the form of mortgage-backed securities (MBSs).²¹ Other assets included portfolios of MBSs held as investments and mortgages removed from MBSs because of delinquency.

The amount and growth rate of the GSEs' assets affect the amount of capital that the GSEs would need to raise as a part of their recapitalization efforts. Because capital requirements are set as a percentage of assets, larger asset balances increase the amount of capital necessary. In addition, under risk-based capital requirements, riskier assets require more capital, consistent with the approach that the federal government uses for other financial institutions that it regulates.

For this analysis, CBO estimated that the GSEs' assets would grow at a rate of 4 percent per year during the recapitalization period. That value is consistent with CBO's expectations about the annual growth of the GSEs' portfolio of guarantees and other assets during that period.

Earnings

In calendar year 2019, Fannie Mae and Freddie Mac earned a combined net income of approximately \$20 billion. In conservatorship, the GSEs' total yearly earnings have ranged from a loss of \$109 billion in 2008 to a gain of \$133 billion in 2013. Higher annual earnings before the end of the recapitalization period would increase the amount that the GSEs could use to rebuild their capital

before selling common stock and would increase the GSEs' value to potential buyers of that stock.

Ordinarily, CBO would estimate that the GSEs would have annual earnings of about \$20 billion at the beginning of the recapitalization period and that their earnings would increase by about 4 percent a year (based on CBO's expectations about the growth of the GSEs' annual earnings during the recapitalization period). CBO used such estimates for 2021 and later years. But in 2020, the coronavirus pandemic and responses to it may reduce the amount of earnings that the GSEs can retain as capital (see Box 2). Thus, for this analysis, CBO estimated that only half of the GSEs' expected annual earnings, or \$10 billion, would go toward recapitalization in 2020.

Existing Claims by Shareholders

Investors other than the Treasury currently hold about 1.8 billion shares of common stock in Fannie Mae and Freddie Mac, as well as about \$32 billion in junior preferred shares (which CBO rounded to \$35 billion for this analysis). All of those shares were issued before the conservatorships. Any recapitalization plan would probably need to address existing shareholders' claims to the future earnings of the GSEs, which would affect the price that investors would be willing to pay as part of the GSEs' sale of new common stock.

Investors' Required Returns

Investors weighing whether to buy common stock in Fannie Mae or Freddie Mac would require a rate of return on that investment commensurate with the perceived risks. Determining the risks associated with the GSEs' common stock would be difficult, however, for two main reasons. First, no exact proxy exists for investors to look at because no private firms perform precisely the same business function as the GSEs—guaranteeing mortgage-backed securities with government sponsorship. Second, the nature of the relationship between the GSEs and the federal government might not be resolved before the common-stock sale, leaving investors unsure about the amount of oversight and competition the privately held GSEs might face.

Despite those difficulties, investors would probably look at estimated returns on capital for similar firms in the banking, real estate, and insurance sectors to help determine their own requirements for returns from the GSEs. Investors typically use the expected rate of return

20. CBO's expected capital requirement of 4.5 percent is larger than the 4.0 percent combined leverage ratio and prescribed leverage buffer amount (PLBA) in FHFA's Enterprise Regulatory Capital Framework. Part of the reason is that CBO's analysis is based on assets on the GSEs' balance sheets and does not include adjustments for off-balance-sheet assets. CBO's figure is also larger because of the possibility that the amount of capital required under the 4.0 percent combined leverage and PLBA may be smaller than the amount of capital required under the calculation for risk-based capital requirements.

21. See Fannie Mae, *2019 Annual Report* (February 2020), <https://tinyurl.com/y7xqyr8r>; and Freddie Mac, *2019 Annual Report* (February 2020), www.freddiemac.com/investors/financials.

Box 2.

The Impact of the Coronavirus Pandemic on Fannie Mae and Freddie Mac

In the last financial statements that Fannie Mae and Freddie Mac issued before the coronavirus outbreak in the United States, the two government-sponsored enterprises (GSEs) reported that they had accumulated a total of nearly \$24 billion in capital as of December 31, 2019, compared with \$5.7 trillion in assets. The resulting ratio of capital to assets (unadjusted for the risk of the assets) was only 0.4 percent, far below the capital ratios of other federally regulated financial institutions. But that figure was much higher than the unadjusted capital ratio of 0.2 percent that the GSEs had at the end of 2018.

Fannie Mae and Freddie Mac also reported that between 0.6 percent and 0.7 percent of the mortgages they held or guaranteed were seriously delinquent (at least 90 days past due or in foreclosure) at the end of 2019. That share was down from about 1.2 percent at the end of 2017 and well below the peaks seen during the 2008 global financial crisis.

Since the end of 2019, however, the rapid spread of the coronavirus and the resulting economic slowdown have had a negative effect on the GSEs' financial condition. In response to the slowdown, the GSEs' conservator, the Federal Housing Finance Agency (FHFA), announced that borrowers with GSE-backed loans could reduce or suspend mortgage payments for up to 12 months. It also announced that the GSEs would suspend foreclosures during the crisis.¹ Those actions, along with others designed to help struggling renters in multifamily properties with GSE-guaranteed mortgages, caused a marked decrease in the GSEs' net earnings during the first quarter of 2020. As a result, their combined capital remained about the same at the end of March 2020 as it had been at the end of December 2019.²

1. See Federal Housing Finance Agency, "FHFA Suspends Foreclosures and Evictions for Enterprise-Backed Mortgages" (press release, March 18, 2020), <https://go.usa.gov/xwwwWt>.

2. The GSEs' first-quarter results also reflect the effect of their implementation of the Current Expected Credit Loss (CECL) accounting methodology. CECL requires the GSEs to change their approach to establishing a "loss reserve" for future losses on their guarantees. Prior to CECL, the GSEs increased their reserve for potential losses (by showing an expense on their income statement, which reduces net earnings) once an asset became impaired. Under CECL, they must increase their reserve for expected losses once an

asset is acquired. That change in approach generated a one-time increase of about \$2 billion in the GSEs' loss reserve on January 1, 2020. For more details, see Federal Housing Finance Agency, Office of Inspector General, *The Current Expected Credit Loss (CECL) Methodology and the Enterprises and FHLBanks*, White Paper 2019-004 (September 24, 2019), <https://go.usa.gov/xwnsg>.

Both GSEs reported higher net earnings in the second quarter of 2020 than in the first quarter. Compared with the same quarter in 2019, Freddie Mac's earnings were nearly 20 percent higher, but Fannie Mae's earnings were about 25 percent lower. In their second-quarter earnings reports, both GSEs emphasized the uncertainty of their financial outlook because of the economic effects of the coronavirus pandemic. And on August 12, 2020, both GSEs announced that they would soon start imposing an adverse-market refinance fee on certain refinance mortgages in response to "risk management and loss forecasting precipitated by continued economic and market uncertainty."³

Besides the impact on capital accumulation, the risks exposed by the pandemic may change other aspects of the GSEs' recapitalization process. For example, FHFA might seek to add a "pandemic buffer" to its capital requirements for the GSEs, mandating that they retain more capital per dollar of assets than would have been the case before the crisis. In addition, investors might increase the rate of return they require on capital invested in the GSEs, recognizing the risks associated with housing guarantees in an era of large-scale forbearance and a moratorium on foreclosures. Finally, the likelihood that the GSEs could be released from their conservatorships after recapitalization may have declined, given the GSEs' importance as a tool in the policy response to the pandemic. In all, those circumstances could make recapitalization more difficult for the GSEs than it would have been before the coronavirus outbreak.

3. See Freddie Mac, *Guide Bulletin 2020-32: Adverse Market Refinance Fee* (August 12, 2020), <https://tinyurl.com/y4vu7avv>. Also see Fannie Mae, *Lender Letter LL-2020-12—New Adverse Market Refinance Fee* (August 12, 2020), <https://tinyurl.com/y4cpu3sa>. The fee, which will equal 0.5 percent of the original loan amount, will be assessed on most cash-out and no-cash-out refinance loans with settlement dates on or after September 1, 2020.

to discount the future income they expect to receive to calculate its present value. (For equity investments, such as stock purchases, the price an investor pays is essentially the present value of all future expected dividends, discounted to the present at the investor's required rate of return.) Thus, higher required rates of return would decrease the value of the GSEs to investors, making it harder for the GSEs to recapitalize through common-stock sales and to repay the Treasury for its stake in the enterprises.²²

For this analysis, CBO used a range of values for the annual rate of return that investors would require to buy the GSEs' common stock. That range—from 8 percent to 12 percent—is based on CBO's summer 2020 projections of the interest rates on Treasury securities at the recapitalization dates, the additional return that investors would require above Treasury rates to purchase the GSEs' stock (known as the equity premium), and the variability of the GSEs' shares relative to the variability of the stock market as a whole.

Potential Administrative or Legislative Actions

Besides proposing the development of a recapitalization plan for the GSEs, the Treasury's housing reform plan recommends a number of changes to the GSEs and their business both during and after the recapitalization process. Among administrative actions, the plan recommends that FHFA consider tailoring the GSEs' support for certain types of mortgages and address overlap in the GSEs' and the Federal Housing Administration's support for affordable housing. Such changes might reduce the future amount of the GSEs' guarantees, thus decreasing their need for capital to absorb losses, but the changes could also reduce the GSEs' future earnings and their

value to investors.²³ The Treasury's plan also recommends legislation to give FHFA the authority to charter competitors to Fannie Mae and Freddie Mac, which would reduce the GSEs' future assets and earnings, as well as their existing value to investors.

In this analysis, CBO did not incorporate the effects of any specific administrative or legislative actions during the recapitalization period. However, the range of values it used for the growth of the GSEs' annual earnings after that period and for investors' required returns may imply some expectation by investors of future federal action that would affect the recapitalized GSEs.

Disposition of the Treasury's Stake in the GSEs

The value of any private investment in Fannie Mae and Freddie Mac would depend heavily on the status of the Treasury's senior preferred shares and on the Treasury's plans to exercise its warrants for common shares. In the two options that CBO analyzed, the preferred-share agreements would be modified to allow the GSEs to retain all of their earnings and to eventually pay dividends to holders of common stock sold as part of the recapitalization process. One way in which the Treasury could modify the agreements would be to convert its preferred shares into common shares, into warrants for common shares, or into some form of debt in the GSEs.²⁴ Alternatively, the Treasury could modify the agreements to make its preferred shares redeemable—either at their face (par) value or for a different amount—as part of the sale of common stock. That approach is the one used in the options that CBO analyzed for this report.

Whether or when the Treasury would exercise its warrants to buy common stock in the GSEs for a nominal amount is also unknown. The Treasury could choose to exercise all of its warrants as part of the GSEs' sale of common stock, or it could keep some warrants to exercise in the future. Either choice would affect the number of common shares outstanding and the dividends available to holders of those shares, which in turn would

22. The rate of return required by investors would probably decline (all else being equal) as a firm's capital reserves increased. In theory, a company that financed itself with more capital would be safer (all else being equal) than a company that financed itself with more debt and less capital. That effect would be sufficient to increase the value of the company by an amount equal to the increase in capital, if the capital was raised under certain conditions identified in a classic finance theorem by Franco Modigliani and Merton Miller. In reality, however, those conditions are not likely to exist in full. See Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance, and the Theory of Investment," *American Economic Review*, vol. 48, no. 3 (June 1958), pp. 261–297, www.jstor.org/stable/1809766.

23. Not all types of business are equally profitable for the GSEs, CBO estimates. As a result, curtailing or selling certain segments of their business could have a larger or smaller effect on the GSEs' profitability than the change in total assets would imply if all segments were equally profitable.

24. Converting preferred shares into common shares would be similar to the approach that the Treasury took during the financial crisis when it intervened to help other firms, such as the American International Group, known as AIG.

affect the price that investors would be willing to pay as part of the common-stock sale.

In addition, the Treasury could require the GSEs to pay it a portion of their annual earnings as dividends or as a “commitment fee.”²⁵ Such payments would reduce the amount of capital that the GSEs could accumulate before selling common shares. For this analysis, CBO estimated that the Treasury would not require payments from the GSEs during the period when they were retaining their earnings prior to the common-stock sale.

CBO’s Modeling of the Recapitalization Options

To estimate the cash flows associated with recapitalizing Fannie Mae and Freddie Mac, CBO used a model based on estimates of the GSEs’ operations when they were initially retaining their earnings and based on investors’ valuation of the GSEs when the enterprises offered new common stock to try to finish the recapitalization process.

The factors described in the previous section create uncertainty in modeling how recapitalization would occur and how the federal government would be compensated for its support of the GSEs. In its modeling for this analysis, CBO used specific values (point estimates) for some of those factors based on the recent performance of the GSEs (see Table 1 on page 8). For other factors, CBO used a range of values and created multiple scenarios with different combinations of estimates from those ranges. CBO repeated that process for both of the illustrative options it analyzed—three years of retained earnings followed by a common-stock sale in 2023, and five years of retained earnings followed by a common-stock sale in 2025.

In CBO’s simulations, the GSEs have three primary goals for recapitalization: to use a common-stock offering to fill the shortfall between their current and required capital; to redeem their outstanding senior preferred shares, which are held by the Treasury; and to redeem their outstanding junior preferred shares, which are

held by investors. The simulations yielded the following results:

- In some of the scenarios that CBO modeled, the GSEs’ estimated equity value would be large enough to achieve all three of those goals and also provide the Treasury with some value for its warrants.
- In other scenarios, the GSEs’ estimated equity value would not be sufficient to accomplish all three aims. In some of those cases, all of the senior preferred shares and some of the junior preferred shares would have to be forgiven in order for the GSEs to cover their capital shortfall.
- Under some combinations of values for the parameters in CBO’s model, the GSEs’ estimated equity value would be too low to cover their capital shortfall. In such cases, FHFA might keep the GSEs in conservatorship or place them in receivership.

CBO’s Modeling Approach

CBO used ranges of values for several key parameters in its recapitalization model. The capital requirement for the GSEs ranged from 3 percent to 6 percent of their assets (unadjusted for risk), in 0.5 percentage-point and 1 percentage-point increments. Investors’ required annual return on capital ranged from 8 percent to 12 percent, in 1 percentage-point increments. And the annual growth of the GSEs’ earnings in the first five years after recapitalization ranged from zero to 8 percent, in 2 percentage-point increments.

During the period of earnings retention—either three or five years—the GSEs’ assets (mainly guarantees on mortgage-backed securities) and their earnings grow at a rate of 4 percent per year in CBO’s modeling, consistent with CBO’s expectations about annual growth of the GSEs during that period. In those years, the GSEs build capital by keeping all of their annual earnings.

At the end of that period—in either 2023 or 2025—the amount of capital amassed from retained earnings is compared with the GSEs’ capital requirement. Any difference between that requirement and the GSEs’ current capital is considered a capital shortfall that must be covered with the proceeds from selling new common stock. Once the capital shortfall is covered, any remaining proceeds are allocated to retiring the roughly \$190 billion

25. When the GSEs and the Treasury entered into the preferred-stock purchase agreements, they agreed that the GSEs would owe a commitment fee on every dollar of support received from the Treasury. To date, the Treasury has not charged a commitment fee, but it has retained the right to do so on past and future support.

in senior preferred shares owned by the Treasury and \$35 billion in junior preferred shares owned by investors.

The value of the GSEs' equity to investors is estimated using a two-stage dividend discount model. That value is based on the GSEs' annual earnings at the end of the recapitalization period, the annual growth rate of their earnings, and a single return on capital.²⁶ The model focuses on the growth rate of the GSEs' core business earnings (earnings from their mortgage guarantees and portfolio investments) in two stages. During the first stage—starting just after recapitalization and lasting for five years—annual growth ranges between zero and 8 percent in the model, representing the potential for extraordinary volatility of earnings around the period of recapitalization. After that, in the second stage, earnings growth settles to a steady rate of 3 percent a year.²⁷ Earnings are discounted to their present value using the annual rate of return on capital required by investors, which in the model ranges from 8 percent to 12 percent.²⁸

26. The range of required rates of return on capital (which, in general, decline as the share of assets funded by capital increases) combined with the projected 4 percent growth rate for the GSEs' assets results in valuations that are consistent with those of large, fully private financial institutions with similar amounts of earnings. Those assumptions result in price-to-earnings ratios (ratios of market price to net earnings) for the GSEs that range from about 10 to 1 to about 20 to 1, compared with an average ratio of 15 to 1 for large banks in November 2019. See Aswath Damodaran, "PE Ratio by Sector (US)" (accessed November 21, 2019), <https://tinyurl.com/88nrut9>.

27. Modifying the length of the first stage will change the share of equity value between the first stage and the period of steady growth that follows it (known as the terminal value stage). Changing the length of the first stage may also affect the total equity value. For example, in one of CBO's scenarios—in which the GSEs finish recapitalizing in 2023, their capital requirement is 4.5 percent, investors' required rate of return on capital is 10 percent, and the annual growth rate of earnings during the first stage is 4 percent—the share of total equity value attributed to the terminal value stage is about 50 percent if the first stage lasts for five years. If the first stage is extended to 10 years, the share of total equity value attributed to the terminal value stage drops to about 38 percent. Extending the first stage to 10 years also increases the GSEs' total equity value slightly, from about \$283 billion to \$289 billion.

28. Using an options-based approach, rather than the discounted cash flow approach of CBO's model, would more directly reflect other aspects of the analysis, including the value of the GSEs' implicit government guarantee, the link between returns on capital and equity, and the volatility of the GSEs' earnings. But

In those calculations, the amount of the GSEs' annual earnings available to investors as dividends is decreased by the additional capital the enterprises would need to retain in future years as their assets grew. (With capital requirements set as a percentage of assets, the growth of assets raises the dollar amount of capital required.)²⁹ At the same time, the GSEs' earnings are increased by the expectation that the enterprises will use the cash raised from their common-stock sale to reduce their outstanding debt, thus decreasing their annual interest costs and increasing their income. That debt is assumed to cost the GSEs an after-tax rate of 3 percent per year, an estimate of long-term borrowing costs during recapitalization. In the model, the additional income stemming from the reduction in the GSEs' debt does not grow over time, unlike their core earnings.

Redemption of Shareholders' Claims in CBO's Model

CBO's model incorporates the judgment that in scenarios in which the GSEs' common-stock sale did not raise enough funds to redeem the full face value of both the senior preferred and junior preferred shares, the Treasury would take a reduction (known as a haircut) in the value of its senior preferred stake before requiring junior preferred shareholders to do so.³⁰ That outcome would be inconsistent with the priority of interest between junior and senior preferred shares. But it recognizes that changing the GSEs' commitments to junior preferred shareholders would be difficult outside a receivership scenario, in which the Treasury, as owner of the senior preferred shares, also owned the GSEs' common stock (through its warrants).

Junior preferred shareholders are in line to receive the dividends associated with their shares before holders of new or existing common shares. Thus, they might refuse

such an approach would be more complex and less transparent than the approach used in this analysis.

29. In CBO's model, the GSEs pay 60 percent of their earnings to holders of common shares after the new common-stock offering in either 2023 or 2025 and keep the other 40 percent of their earnings to meet increases in capital requirements because of asset growth.

30. Section 902.2 of title 31 of the Code of Federal Regulations sets forth standards for the "compromise of debts" by the Administration. On the basis of its review of those standards, CBO believes that a reduction in the value of the Treasury's preferred shares could be undertaken as part of the recapitalization of the GSEs.

to allow the GSEs to retire their claims on the GSEs' assets and income at less than the face value of their shares in the lead-up to a sale of new common stock. That refusal would reduce the value of the new common shares, making recapitalization more difficult. Even though the Treasury's preferred shares have seniority over the preconservatorship preferred shares owned by investors, the Treasury would have an incentive to make an arrangement that took into account its ownership stake in the GSEs' common stock.

Alternatives to the approach used in CBO's model—such as having holders of junior preferred shares take reductions before the Treasury, or reducing both classes of preferred shares equally—would increase the proceeds received by the Treasury. However, those alternatives would not have a large effect on the results of this analysis, CBO estimates.

If FHFA put the GSEs in receivership, it might be able to transfer some of their assets and liabilities to a new corporation to which no existing shareholders had a claim. The new corporation could then sell common stock and use the proceeds to capitalize itself and to reimburse shareholders in the old GSEs according to the priority of their claims. That priority order would require senior preferred stock to be redeemed before any junior preferred or common stock.

If, however, the Treasury wanted to raise capital through the sale of new common shares without resorting to receivership for the GSEs, the claims of junior preferred shareholders would have to be addressed. In this analysis, those shareholders are paid the full \$35 billion face value of their shares from the proceeds of the common-stock sale, if possible, thus retiring their claims on the assets and income of the recapitalized GSEs. In addition, if possible, the Treasury liquidates its senior preferred shares and its warrants for common shares at the time of the common-stock sale. (Previously, when the Treasury provided financial commitments to private firms during the financial crisis, it exited from those commitments in multiple stages.³¹ A staged exit might work with the GSEs, but for simplicity, CBO's recapitalization scenarios do not incorporate that approach.)

31. See Department of the Treasury, "Treasury Sells Final Shares of AIG Common Stock, Positive Return on Overall AIG Commitment Reaches \$22.7 Billion" (press release, December 11, 2012), <https://go.usa.gov/xwnAU>.

Results for Recapitalization With a Common-Stock Offering in 2023

In this option, Fannie Mae and Freddie Mac would keep 100 percent of their earnings from 2020 to 2022 and try to raise the remaining capital they needed by selling common stock to investors at the beginning of 2023. Completing the GSEs' recapitalization in 2023 would place more private capital (that of investors) at risk sooner. However, this option would give the GSEs less time to raise capital through retained earnings, leaving a larger share to be raised through the common-stock sale.

CBO analyzed the results of this option under multiple scenarios with different combinations of values for some of the key parameters in the model (see Table 2 and the supplemental spreadsheet released with this report). For example, in a scenario with a capital requirement of 4.5 percent, an expected return on capital of 10 percent, and earnings growth of 4 percent a year—values consistent with CBO's summer 2020 macroeconomic forecast and its expectations about FHFA's proposed risk-based capital requirements, investors' required return on the GSEs' shares, and the GSEs' annual earnings—the GSEs would have trouble recapitalizing with three years of retained earnings and a common-stock sale while redeeming the full value of the Treasury's senior preferred stock.

In that scenario, with projected assets of about \$6.2 trillion at the beginning of 2023, the GSEs would need \$278 billion in capital to meet the 4.5 percent requirement (see Table 2, Scenario 2). By the end of 2022, they would have accumulated about \$78 billion in capital (\$24 billion on hand at the end of December 2019 plus \$54 billion from three years of retained earnings). As a result, they would need to cover a shortfall of approximately \$200 billion through the sale of common stock.

If investors required a 10 percent return on their capital, they would value the GSEs' combined equity at \$283 billion, CBO estimates. That equity valuation—which represents the total amount investors would pay for their stake in the GSEs' projected future earnings—would not be large enough to cover the expected capital shortfall of \$200 billion, the \$190 billion in outstanding senior preferred stock owned by the Treasury, and the \$35 billion in outstanding junior preferred stock owned by investors. If the junior shares were redeemed in full before the senior shares (for reasons explained in the previous section), the GSEs would be able to pay

Table 2.

Scenarios for Recapitalization With a Common-Stock Offering at the Beginning of 2023

	Scenario 1	Scenario 2	Scenario 3
Parameters of the Scenario			
Earnings Retention Period (Years)	3	3	3
Capital Requirement (As a percentage of unadjusted assets)	3	4.5	6
Investors' Required Return on Capital (Percent)	8	10	12
Annual Growth Rate of Earnings for First Five Years After Recapitalization (Percent)	8	4	0
Results of the Scenario (Billions of dollars)			
Amount of Capital Required	185	278	370
Minus: Capital on Hand at the End of 2022	78	78	78
Equals: Capital Shortfall at the End of 2022	107	200	292
GSEs' Total Equity Value (Amount available from sale of common stock)	402	283	224
Amount Available After Covering Capital Shortfall	294	83	-69
Amount of the Treasury's senior preferred shares redeemed (Total face value of \$190 billion)	190	48	0
Amount of investors' junior preferred shares redeemed (Total face value of \$35 billion)	35	35	0
Value of the Treasury's warrants ^a	55	*	0

Source: Congressional Budget Office.

Scenario 1 uses the lowest values from CBO's ranges of estimates for the GSEs' capital requirement and investors' required return on capital and the highest value for the growth rate of the GSEs' earnings after recapitalization (see Table 1).

Scenario 2 uses values at the center of CBO's ranges for all three variables.

Scenario 3 uses the highest values from CBO's ranges for the GSEs' capital requirement and investors' required return on capital and the lowest value for the growth rate of the GSEs' earnings after recapitalization.

Those scenarios do not reflect the adverse-market refinance fee that the GSEs announced on August 12, 2020.

GSEs = government-sponsored enterprises (specifically, Fannie Mae and Freddie Mac); * = between zero and \$0.1 billion.

a. The Treasury has warrants from Fannie Mae and Freddie Mac that give it the right (though not the obligation) to buy common stock in each of the GSEs for a nominal amount. If the Treasury exercised all of its warrants, it would own 79.9 percent of the GSEs' common shares issued before the new stock offering. As a result, the Treasury would be in line to receive 79.9 percent of the equity value available to existing holders of common shares after the GSEs made up their capital shortfall and redeemed their senior and junior preferred shares.

only \$48 billion for the senior preferred shares, CBO estimates, far below their face value.³²

In that scenario, the Treasury could exercise its warrants for common stock, but it would receive very little value for them, CBO projects. The reason is that the shares

that the Treasury would purchase through its warrants would represent ownership of only a small portion of the GSEs after the sale of stock to new investors—an effect known as dilution.

Using the lowest values from the ranges for the GSEs' capital requirement (3 percent) and investors' return on capital (8 percent) and the highest annual growth rate for the GSEs' earnings after recapitalization (8 percent) would reduce the amount of the GSEs' capital requirement to \$185 billion at the end of 2022 and increase

32. Having holders of junior preferred shares take reductions before the Treasury, or reducing both classes of preferred shares equally, would increase the Treasury's proceeds to \$83 billion but would not affect the value of the Treasury's warrants.

their combined equity value to \$402 billion (see Table 2, Scenario 1). In that scenario, recapitalization and repayment of the Treasury's senior preferred stake would be feasible. CBO estimates that the Treasury would not only receive the full \$190 billion for its senior preferred shares but also receive \$55 billion from exercising its warrants.³³

Conversely, using the highest values from the ranges for the GSEs' capital requirement (6 percent) and investors' required return (12 percent) and the lowest value for earnings growth (zero) would make recapitalization and repayment after three years of earnings retention far more difficult. In that scenario, the GSEs would have a capital shortfall of about \$292 billion at the time of the common-stock sale and a total equity value of \$224 billion, CBO estimates (see Table 2, Scenario 3). As a result, the GSEs could not raise enough from the sale even to cover their capital shortfall. That situation would suggest receivership or continued conservatorship for the GSEs.

Results for Recapitalization With a Common-Stock Offering in 2025

In the second illustrative option that CBO analyzed, Fannie Mae and Freddie Mac would retain 100 percent of their earnings from 2020 to 2024 and try to raise the remaining capital they required by selling common stock to investors at the beginning of 2025. Completing the GSEs' recapitalization in 2025 would give the enterprises more time to accumulate capital through retained earnings, decreasing the capital shortfall they would need to fill through their common-stock offering. However, this option would leave the GSEs in conservatorship for a longer period with smaller capital cushions, increasing the possibility that the government would bear the costs of a crisis at either GSE.

In a scenario with a capital requirement of 4.5 percent, an expected return on capital of 10 percent, and earnings growth of 4 percent a year—values consistent with CBO's summer 2020 macroeconomic forecast and its expectations about FHFA's proposed capital requirements, investors' required return on the GSEs' shares,

and the GSEs' annual earnings—the GSEs would be able to recapitalize using five years of retained earnings and a common-stock sale while reimbursing the federal government for a portion of its support for the enterprises (see Table 3 and the supplemental spreadsheet released with this report). With projected assets of nearly \$6.7 trillion at the beginning of 2025, the GSEs would need about \$300 billion in capital to meet the 4.5 percent requirement (see Table 3, Scenario 2). By the end of 2024, they would have accumulated about \$128 billion in capital (the \$24 billion on hand at the end of December 2019 plus \$104 billion from five years of retained earnings). As a result, they would need to cover a shortfall of approximately \$172 billion through the sale of common stock.

If investors required a 10 percent return on their capital, they would value the GSEs' combined equity at \$306 billion, CBO estimates. That equity valuation would be large enough to cover the expected capital shortfall of \$172 billion and the \$35 billion in outstanding junior preferred shares, leaving about \$98 billion to pay the Treasury for its outstanding senior preferred stock.³⁴ In that scenario, the Treasury could exercise its warrants for common stock, but it would receive very little value for them, CBO estimates, because of the projected dilution of existing shares.

Using the lowest values from the ranges for the GSEs' capital requirement (3 percent) and investors' return on capital (8 percent) and the highest annual growth rate for the GSEs' earnings after recapitalization (8 percent) would reduce the amount of the GSEs' capital requirement to \$200 billion at the end of 2024 and increase their combined equity value to \$434 billion (see Table 3, Scenario 1). In that scenario, recapitalization and repayment of the Treasury's full stake would be much more feasible. CBO estimates that the Treasury would not only receive the full \$190 billion for its senior preferred shares but also receive \$110 billion from exercising its warrants.

Conversely, using the highest values from the ranges for the GSEs' capital requirement (6 percent) and investors' required return (12 percent) and the lowest value for earnings growth (zero) would make recapitalization

33. If it exercised all of its warrants, the Treasury would own 79.9 percent of the GSEs' common shares issued prior to the new stock offering. Thus, the Treasury would be in line to receive 79.9 percent of the \$69 billion in equity value available to existing holders of common shares after the GSEs made up their \$107 billion capital shortfall and redeemed the combined \$225 billion in senior and junior preferred shares.

34. Having holders of junior preferred shares take reductions before the Treasury, or reducing both classes of preferred shares equally, would increase the Treasury's proceeds to \$133 billion but would not affect the value of the Treasury's warrants.

Table 3.

Scenarios for Recapitalization With a Common-Stock Offering at the Beginning of 2025

	Scenario 1	Scenario 2	Scenario 3
Parameters of the Scenario			
Earnings Retention Period (Years)	5	5	5
Capital Requirement (As a percentage of unadjusted assets)	3	4.5	6
Investors' Required Return on Capital (Percent)	8	10	12
Annual Growth Rate of Earnings for First Five Years After Recapitalization (Percent)	8	4	0
Results of the Scenario (Billions of dollars)			
Amount of Capital Required	200	300	400
Minus: Capital on Hand at the End of 2024	128	128	128
Equals: Capital Shortfall at the End of 2024	72	172	273
GSEs' Total Equity Value (Amount available from sale of common stock)	434	306	242
Amount Available After Covering Capital Shortfall	362	133	-31
Amount of the Treasury's senior preferred shares redeemed (Total face value of \$190 billion)	190	98	0
Amount of investors' junior preferred shares redeemed (Total face value of \$35 billion)	35	35	0
Value of the Treasury's warrants ^a	110	*	0

Source: Congressional Budget Office.

Scenario 1 uses the lowest values from CBO's ranges of estimates for the GSEs' capital requirement and investors' required return on capital and the highest value for the growth rate of the GSEs' earnings after recapitalization (see Table 1).

Scenario 2 uses values at the center of CBO's ranges for all three variables.

Scenario 3 uses the highest values from CBO's ranges for the GSEs' capital requirement and investors' required return on capital and the lowest value for the growth rate of the GSEs' earnings after recapitalization.

Those scenarios do not reflect the adverse-market refinance fee that the GSEs announced on August 12, 2020.

GSEs = government-sponsored enterprises (specifically, Fannie Mae and Freddie Mac); * = between zero and \$0.1 billion.

a. The Treasury has warrants from Fannie Mae and Freddie Mac that give it the right (though not the obligation) to buy common stock in each of the GSEs for a nominal amount. If the Treasury exercised all of its warrants, it would own 79.9 percent of the GSEs' common shares issued before the new stock offering. As a result, the Treasury would be in line to receive 79.9 percent of the equity value available to existing holders of common shares after the GSEs made up their capital shortfall and redeemed their senior and junior preferred shares.

and repayment difficult even with five years of retained earnings. In that scenario, the GSEs would have a capital shortfall of about \$273 billion at the time of the common-stock sale and a total equity value of \$242 billion, CBO estimates (see Table 3, Scenario 3). As a result, the GSEs could not raise enough from the sale to cover their capital shortfall, which suggests that they would remain in conservatorship or be put in receivership.

Potential Budgetary Treatment of Recapitalization

The effects on the federal budget of recapitalizing Fannie Mae and Freddie Mac would be complex. How CBO would estimate those budgetary effects would depend on several factors, such as the timing of the transactions, the guidelines that govern CBO's budget estimates, and guidance from the House and Senate Budget Committees about the budgetary treatment of the GSEs.

Because CBO views the GSEs as effectively federal entities, its budget estimates of recapitalization could also reflect the government's increased exposure to losses from the GSEs as they retained their earnings. The Administration, by contrast, treats the GSEs as private companies that are outside the government, so its estimates of the budgetary effects of recapitalization would probably reflect only the changes in cash transactions between the Treasury and the GSEs.

Treatment of Changes to the Treasury's Senior Preferred Shares and Warrants

CBO expects that redeeming the Treasury's senior preferred shares or substantially modifying the preferred-stock purchase agreements or warrants would be a likely step in any recapitalization plan. In general, investors in the GSEs' new common stock would want to have the claims of preferred shareholders settled, leaving owners of common shares in a position to receive the GSEs' available profits after debtholders' claims were paid.³⁵

As the options analyzed by CBO illustrate, some recapitalization scenarios would allow the GSEs to meet their capital requirement and redeem some or all of the outstanding balance of senior preferred shares by selling new common stock to investors. In certain scenarios, however, the outstanding balance of preferred shares might be reduced as a part of the recapitalization.

In its baseline budget projections, CBO would show any cash inflows from the GSEs to the Treasury in the current fiscal year resulting from administrative actions—such as the redemption of preferred shares—as

offsetting receipts (negative outlays) for consistency with the Administration's cash-based approach to recording the GSEs' transactions in the budget. In subsequent fiscal years, such cash inflows would be considered intragovernmental transfers and would not affect CBO's baseline projections.

Any cash inflows from the public to the Treasury—such as from the Treasury's selling common stock it had received by exercising its warrants—would be shown on a cash basis in CBO's baseline. Those inflows would be reflected in the baseline using the approach described above for proposed administrative actions. For instance, if the Treasury issued proposed rules and time lines for executing transactions related to common-stock sales, CBO would update its baseline to include 50 percent of the policy's expected budgetary effects. Once it became clear that those transactions would be executed under current law, and the Administration issued final rules for the new policy, CBO would update its baseline to reflect 100 percent of the anticipated budgetary effects. (Other budgetary effects would depend on whether Fannie Mae and Freddie Mac continued to be viewed as government entities or were seen as fully private, as discussed in the next section.)

For legislation, CBO's cost estimates follow Congressional guidelines that govern how to treat various kinds of transactions that would result from enactment of the legislation. That treatment may differ from the approach used in CBO's baseline projections.

If, for example, lawmakers proposed legislation requiring the Treasury to sell its senior preferred shares or exercise its warrants (and no administrative actions were imminent), CBO would probably estimate the effects of that legislation in accordance with the Congressional guideline governing the budgetary treatment of asset sales.³⁶ Under that guideline, the net financial cost of an asset sale incorporates the present value of the expected proceeds from the sale, the loss of future revenues from the asset, and changes in future spending that would have occurred if the asset had remained in federal ownership. The discount rate that CBO would use to calculate present values might differ from the rate used to estimate the

35. The Treasury's senior preferred shares present a unique obstacle to common-stock investors because of the nature of the agreements between the GSEs and the Treasury. In particular, the dividends that the GSEs owe to the Treasury on the amount of senior preferred shares outstanding are subject to change. Originally, the Treasury was supposed to receive a fixed annual dividend equal to 10 percent of its outstanding share balance (12 percent if the dividend was paid in kind, with additional preferred shares, rather than in cash). In August 2012, the payment agreement was amended to require Fannie Mae and Freddie Mac to pay the Treasury essentially all of their profits (referred to as an income sweep). The income sweep was suspended in September 2019 to allow the GSEs to accumulate capital as a first step in their recapitalization. Because of that past variability in the dividends on the Treasury's senior preferred shares, potential stockholders in the GSEs would probably require that those shares be redeemed or retired as part of any common-stock offering.

36. See Section 15 of U.S. House of Representatives, *Balanced Budget Act of 1997: Conference Report to Accompany H.R. 2155*, House Report 105-217 (July 30, 1997), pp. 1007–1012, <https://go.usa.gov/xmpXJ>.

market value of the shares or warrants. Furthermore, if CBO estimated that the costs from the sale would exceed the proceeds to the federal government, the proceeds would not be attributed to the legislation.

Treatment of the GSEs as Government Entities

CBO's rationale for treating Fannie Mae and Freddie Mac as government entities for budgetary purposes—that FHFA's conservatorships and the Treasury's shares and warrants give the federal government operational control and effective ownership of the GSEs—suggests that the current treatment should continue until the conservatorships end and perhaps afterward. Even if the conservatorships were terminated, the government would still maintain effective ownership of the GSEs as long as the Treasury held its warrants and the preferred-stock agreements were still in force.

Moreover, even if FHFA and the Treasury fully recapitalized and released the GSEs through administrative actions, the GSEs' federal charters could not be revoked without Congressional legislation. The presence of those charters would preserve the implicit federal guarantee of the GSEs' obligations that existed before the conservatorships—especially if the GSEs remained linchpins of the housing finance system. That situation would leave open the question of how the government's relationship with the GSEs should be reflected in their budgetary treatment.

Other Considerations in Recapitalizing the GSEs

Changes to the federal government's relationship with Fannie Mae and Freddie Mac could have effects not just on the federal budget but also on the mortgage markets and the broader economy. Those effects could depend on whether the recapitalized GSEs were subject to extra regulation as “systemically significant” enterprises and on whether changes in their operations would have spillover effects on other federal entities that guarantee mortgages or MBSs.

Potential Status of the GSEs as Systemically Significant Institutions

The Treasury Department's Financial Stability Oversight Council is responsible for coordinating the regulations that govern different segments of the financial markets at the federal and state levels. The council—which consists of officials from various agencies, including the director of FHFA—has the authority to designate a nonbank

financial firm as systemically significant. A firm with that designation is subject to additional regulation and enhanced prudential standards (rules intended to reduce risk), such as higher capital requirements and expanded requirements for filing financial reports.

Members of Congress have discussed whether the GSEs, because of their size and role in the housing finance system, should be designated as systemically important after their recapitalization and release from their conservatorships.³⁷ Such a designation would affect the recapitalization process, because the prospect that the GSEs would face additional oversight or capital requirements could decrease their value. The Treasury's housing reform plan tries to address that issue by stating that one criterion for ending the conservatorships is that the GSEs not pose an undue risk to the housing finance system. The Treasury could also charge the GSEs a commitment fee for its financial backing. The federal government's ultimate decision about the status of the GSEs might not be known until after the common-stock sale, adding uncertainty for investors.

Effects on the Primary and Secondary Mortgage Markets

Recapitalization of Fannie Mae and Freddie Mac would probably have little effect on the markets for originating or buying and selling mortgages. The reason is that recapitalization, by itself, it would not alter the effective federal guarantee on mortgage-backed securities issued by the GSEs. The expectation of the government's financial support enables the GSEs to increase the availability of mortgage financing—particularly for borrowers with imperfect credit histories—and reduce the interest rates charged to borrowers who have mortgages backed by the GSEs.

New structures for the secondary market that emphasized more private capital and a reduced federal guarantee would generally lead to slightly higher interest rates and slightly lower home prices. Those changes would be larger during periods of financial stress, CBO estimates.³⁸

37. See, for example, Senate Committee on Banking, Housing, and Urban Affairs, “Full Committee Hearing: Should Fannie Mae and Freddie Mac Be Designated as Systemically Important Financial Institutions?” (June 25, 2019), <https://go.usa.gov/xwnAs>.

38. See Congressional Budget Office, *Transitioning to Alternative Structures for Housing Finance: An Update* (August 2018), www.cbo.gov/publication/54218.

The impact could be greater if investors believed that the federal government would not support the recapitalized GSEs when needed—that is, if the absence of explicit federal backing did not give rise to an implicit guarantee. However, that situation would be unlikely while the firms remained too important to the housing finance system to be allowed to fail.

For investors assessing the creditworthiness of the GSEs' MBSs, a federal guarantee, even if reduced, is far more important than the amount of capital the GSEs use to fund themselves. The Department of Justice delivered an opinion that, if Fannie Mae or Freddie Mac defaults on payments to the holders of its securities, the Treasury's preferred-stock purchase agreements give those investors enforceable claims against the Treasury.³⁹ Investors appear to incorporate that guarantee into their valuation of the GSEs' MBSs, which lowers the costs of issuing GSE-backed mortgages relative to the costs of mortgages without a federal guarantee. However, the GSEs' MBSs trade at higher yields than MBSs issued by Ginnie Mae, which are explicitly guaranteed by the full faith and credit of the federal government.⁴⁰

39. See Steven G. Bradbury, "Enforceability of Certain Agreements Between the Department of the Treasury and Government-Sponsored Enterprises" (letter opinion for the Secretary of the Treasury, September 26, 2008), <http://go.usa.gov/xKYKe> (PDF, 154 KB).

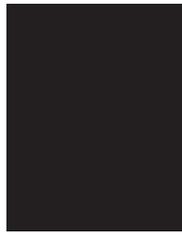
40. Ginnie Mae (formally the Government National Mortgage Association) is an agency in the Department of Housing and Urban Development. It performs a function similar to that of the GSEs, except that it creates and guarantees securities backed only by mortgages insured by federal agencies, such as

Effects on Other Government Institutions

Recapitalization would reduce the probability that the GSEs would need to draw on the remaining funds available under the preferred-stock agreements. However, if greater reliance on capital from investors increased the cost or reduced the availability of GSE-backed loans, some borrowers who would have taken out a GSE-backed mortgage under the current system would instead get a loan backed by the Department of Veterans Affairs, the Federal Housing Administration, or another government agency. The total impact of administrative or legislative actions to change the GSEs would depend on developments in the overall housing market, including effects on those other federally backed housing programs.

In addition, changing the federal government's relationship with Fannie Mae and Freddie Mac might prompt an assessment of the government's relationship with other government-sponsored enterprises that support mortgage lending. Those other GSEs include the Federal Home Loan Banks, which make low-cost loans to their member institutions (such as commercial banks, credit unions, and insurance companies), and the Farm Credit System, which provides financial assistance for rural mortgages and other loans guaranteed by the Department of Agriculture.

the Federal Housing Administration and the Department of Veterans Affairs. Other differences between the GSEs' and Ginnie Mae's MBSs—such as differences in defaults, prepayments, and liquidity—may contribute to the difference in yields. Those other factors make it difficult to value the direct effect of Ginnie Mae's explicit federal guarantee.



List of Tables

Tables

1. Values CBO Used in Modeling Scenarios for Recapitalization	8
2. Scenarios for Recapitalization With a Common-Stock Offering at the Beginning of 2023	15
3. Scenarios for Recapitalization With a Common-Stock Offering at the Beginning of 2025	17



About This Document

This Congressional Budget Office report was prepared at the request of the Ranking Member of the House Committee on Financial Services. In keeping with CBO's mandate to provide objective, impartial analysis, the report makes no recommendations.

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CBO continually seeks feedback to make its work as useful as possible. Please send any comments to communications@cbo.gov.

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