CBO

The Role of the Federal Housing Administration in the Reverse-Mortgage Market

MAY 2019

At a Glance

The Federal Housing Administration's (FHA's) Home Equity Conversion Mortgage (HECM) program guarantees repayment on reverse mortgages made by private lenders. In this report, the Congressional Budget Office examines the program's effects on the federal budget and options to reduce costs and risks to the government or borrowers.

- **Reverse-Mortgage Basics.** A reverse mortgage lets older homeowners convert equity in their home into payments while they reside in the home. For a reverse mortgage guaranteed by FHA (called a HECM), if proceeds from the home's eventual sale cannot fully repay the loan, FHA covers the shortfall. FHA's costs are offset by the guarantee fees it charges and the interest it earns on HECMs sold to it by lenders.

- **Budgetary Effects.** Under the accounting rules of the Federal Credit Reform Act of 1990 (FCRA), the new HECMs that FHA is projected to guarantee in 2020 would decrease the budget deficit by a small amount, CBO estimates. Under fair-value accounting—in which estimates of costs are based on the market value of the government's obligations—that 2020 cohort of HECMs would increase the deficit by $350 million.

- **Options.** CBO analyzed four approaches for altering the HECM program: converting it to a federal direct loan program, reducing the amount that FHA guarantees to repay lenders, sharing the risk of losses with lenders, and slowing the growth of funds available to borrowers who do not draw their loan's full amount initially.

Contents

Notes

Unless otherwise indicated, all years referred to in this report are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end.

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

CBO's estimates of the average federal cost per loan guaranteed under the Home Equity Conversion Mortgage program are rounded to the nearest $100, and its estimates of the total federal cost of the program are rounded to the nearest $10 million.

Summary

Reverse mortgages let households that have at least one member age 62 or older borrow money by using the equity in their home as collateral. The borrowed funds can be used to repay an existing mortgage or to fund other expenses. The federal government plays a large role in supporting the market for reverse mortgages, and policymakers have shown interest in modifying that support—for example, through changes that would reduce costs to the federal government or make reverse mortgages less risky for borrowers.

How Does the Federal Government Support the Reverse-Mortgage Market?

The Federal Housing Administration (FHA) guarantees repayment on qualifying reverse mortgages made by private lenders. Through its Home Equity Conversion Mortgage (HECM) program, FHA has guaranteed more than 1 million reverse mortgages since 1992. (Loans that receive an FHA guarantee through that program are called HECMs, pronounced "heckums.")

Homeowners who take out a HECM are eligible to borrow an amount equal to a given fraction of their home's current value. They may draw on the available funds—known as the available principal limit—either immediately or over time. FHA, the lender, and the entity administering (servicing) the loan charge the borrower various fees, including a fee intended to compensate FHA for its guarantee. The loan balance (what the borrower owes) increases as interest and fees accrue on the amount outstanding.

A HECM becomes due and payable under a number of circumstances, such as if the borrower (and spouse, if any) dies or moves to a different primary residence. The borrower or the borrower's estate must then satisfy the loan obligation, either by repaying the outstanding balance or by forfeiting the home. In general, if the funds received from the borrower do not equal the outstanding balance of the HECM, the lender may claim the difference from FHA. By offering lenders a guarantee against losses, the

federal government encourages them to issue reverse mortgages more readily than they would otherwise.

What Are the Budgetary Effects of FHA's Guarantees?

The HECM program affects the federal budget primarily through FHA's payments to lenders and the fees that FHA charges borrowers. The Congressional Budget Office projects that if current laws generally remained the same, the roughly 39,000 new HECMs that FHA is expected to guarantee in 2020 would produce a very small budgetary savings over their lifetime. (That projected lifetime amount is recorded in the budget in the year in which the guarantees are made.) That estimate is based on the accounting procedures specified by the Federal Credit Reform Act of 1990 (FCRA) for federal programs that make or guarantee loans.

Using fair-value accounting—an alternative method that more fully accounts for the cost of the risk that the government is exposed to when it guarantees loans—CBO projects that the 2020 cohort of new HECMs would instead cost the government about $350 million over their lifetime (see Summary Figure 1).

How Might the Federal Role in the Reverse-Mortgage Market Be Changed?

Policymakers modified the HECM program after the 2008 financial crisis to reduce defaults by borrowers and costs to the federal government, but the program continues to face scrutiny. In particular, policymakers have expressed concern about the risks that the program generates for FHA and borrowers and the potential costs of those risks for the government. CBO analyzed four approaches for altering FHA's reverse-mortgage guarantees (based on other federal credit programs):

- Converting the HECM program to a direct loan program, in which the government would fund reverse mortgages itself rather than guarantee loans funded by private lenders;

Summary Figure 1.

Budgetary Effects of the Home Equity Conversion Mortgage Program in 2020 in CBO's Baseline and Under Various Options

Millions of Dollars
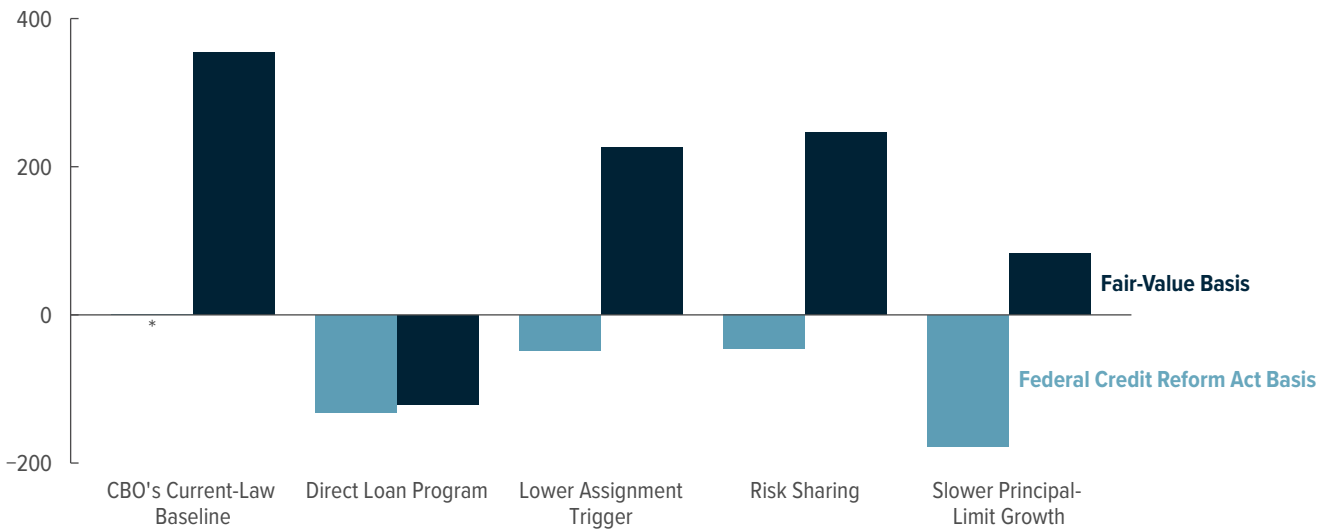
Source: Congressional Budget Office.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

The budgetary effects shown here are for new home equity conversion mortgages guaranteed by the Federal Housing Administration in 2020.

Negative numbers indicate savings to the federal government.

* = between -$5 million and zero.

- Reducing the amount of a loan's outstanding balance that FHA guarantees to repay lenders by requiring lenders to sell (or "assign") an active HECM to FHA earlier than they generally do under current policies (specifically, reducing the loan balance that triggers the option for lenders to assign HECMs);

- Sharing the risk of losses with lenders by requiring them to hold on to an active HECM much longer than they typically do now before assigning it to FHA; and

- Slowing the growth of the funds available to a borrower who does not draw the full amount of a HECM initially.

The number of HECMs guaranteed and the amount of budgetary savings or costs under each option would depend on several factors, including the ways in which FHA, lenders, and borrowers responded to the changes

(see Summary Table 1). Under the first three options, lenders would increase fees to borrowers or reduce the availability of HECMs, CBO estimates. (In the direct loan program, private lenders would continue to originate HECMs and charge borrowers closing costs.) Under the fourth option, lenders would be largely unaffected, CBO forecasts, but borrowers would either draw more of their available funds immediately or forgo a HECM in favor of other ways to tap into the equity in their home (such as through a refinancing loan or a home equity line of credit).

Measured on a FCRA basis, the fourth option would have the largest budgetary effect under the parameters that CBO analyzed. Under that approach to slowing the growth of the borrower's available principal limit, the new HECMs projected to be guaranteed in 2020 would save the federal government $180 million over their lifetime, CBO estimates, compared with the negligible savings projected in CBO's current-law baseline (see

Summary Table 1.

Effects of Various Options for the Home Equity Conversion Mortgage Program

	Direct Loan Program	**Lower Assignment Trigger**	**Risk Sharing**	**Slower Principal-Limit Growth**
Effects on the Availability and Cost of HECMs to Borrowers	Fewer lenders originate HECMs FHA lowers interest rates	Lenders raise their spread (the interest rate premium they charge borrowers) to offset lost income, increasing costs for borrowers	Fewer lenders originate HECMs Remaining lenders raise their spread to offset the risk of losses they assume, increasing costs for borrowers	Fewer borrowers opt for HECMs Some remaining borrowers choose to draw more funds when a HECM is originated
Effects on Lenders	Lenders lose their spread income Lenders continue to charge fees for originating HECMs Lenders may act as loan servicers for FHA	Lenders offset the income they lose from assigning HECMs to FHA earlier by increasing their spread	Lenders offset the risk of losses they assume by increasing their spread	Except for a reduction in originations, lenders are largely unaffected by this option
Budgetary Effects	Generates second-largest FCRA savings Generates largest fair-value savings	Generates second-smallest FCRA savings Generates second-smallest fair-value savings	Generates smallest FCRA savings Generates smallest fair-value savings	Generates largest FCRA savings Generates second-largest fair-value savings

Source: Congressional Budget Office.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

These options could be designed in various ways to produce different effects. The effects described here were estimated for the specific versions of these options that CBO analyzed.

FCRA = Federal Credit Reform Act; FHA = Federal Housing Administration; HECM = home equity conversion mortgage.

Summary Figure 1). The savings from the 2020 cohort of HECMs would be smaller under the other options on a FCRA basis: $130 million under a program of direct loans, or about $50 million if the risk of losses was shared with lenders or if the trigger for assigning reverse mortgages to FHA was reduced.

Measured on a fair-value basis, by contrast, the option to create a direct loan program would have the biggest budgetary impact of the four approaches that CBO examined. Under the direct loan program, the new

HECMs projected to be guaranteed in 2020 would *save* the government about $120 million over their lifetime on a fair-value basis, CBO estimates, rather than *cost* $350 million as under current policy. Under the other three options, the 2020 cohort of HECMs would still generate costs on a fair-value basis, but the costs would be smaller than under current policy: $250 million if FHA shared the risk of losses with lenders, $230 million if the assignment trigger was reduced, and $80 million if the borrower's available principal limit grew more slowly than it does now.

Overview of the Reverse-Mortgage Market

Reverse mortgages enable older homeowners to withdraw some of the equity in their home in the form of monthly payments, a lump sum, or a line of credit. As long as they reside in the property, borrowers are not required to make any payments on the loan. When the home is no longer the primary residence of the borrower (or, in some cases, the borrower's spouse), the outstanding balance comes due, including the total principal borrowed by the homeowner and any interest and fees that have accrued. The borrower or the borrower's estate can repay the loan in full and keep the home or can relinquish the home and repay the loan with proceeds from its sale. If the proceeds are not sufficient to repay the outstanding balance, neither the borrower nor the borrower's estate is responsible for the shortfall.

With almost all reverse mortgages, that shortfall is covered by the Federal Housing Administration under its Home Equity Conversion Mortgage program. The HECM program guarantees reverse mortgages originated by private lenders for amounts below a specified value ($726,525 as of January 2019) for properties that meet specific criteria.[1] A small fraction of reverse mortgages originated by private lenders do not qualify for an FHA guarantee. Those fully private loans generally share many of the features of FHA-guaranteed HECMs, but they cater to homeowners who live in higher-value properties or are otherwise ineligible for an FHA-insured loan. Because this report examines the federal government's role in the reverse-mortgage market, the discussion focuses on HECMs rather than on fully private reverse mortgages.

Basics of Home Equity Conversion Mortgages

HECMs enable people age 62 or older to borrow against their home equity in a way that is not possible with other forms of equity-extraction loans, such as a cash-out refinance (in which a homeowner refinances a mortgage for more than the amount owed and receives the difference in cash), a home equity loan (which is disbursed as a lump sum), or a home equity line of credit (which a borrower can draw on as often as desired, up to a maximum amount). Unlike those types of credit, HECMs have no fixed term and generally do not require any payments as long as the borrower is alive and residing in the home. Those features help borrowers feel secure when extracting equity from their home but also create risk and costs to FHA.

The effects of HECMs on borrowers, lenders, FHA, and investors who buy securities backed by those loans depend on several key features of HECMs: limits on the amount of principal that can be borrowed, borrowers' options for accessing their funds, interest rates and fees charged on HECMs, and the rules under which lenders can sell (assign) a loan to FHA and under which FHA deals with terminated loans.

Principal Limits

Borrowers who qualify for an FHA-insured reverse mortgage are eligible to take out a loan in an amount equal to a fraction of the current value of their home, known as the principal limit factor. That limit is based mainly on the age of the youngest borrower (or nonborrowing spouse) and the interest rate on the loan. Principal limits are higher for older borrowers because the time between the origination and termination of the loan is expected to be shorter, reducing the likelihood that the outstanding loan balance (which grows over time with fees and interest) will exceed the future value of the home. Loans with lower interest rates also have higher principal limits.

FHA periodically adjusts the schedule of principal limit factors and the premiums it charges borrowers to control losses on its guarantees. Recent adjustments, the latest

---

1. To qualify for the HECM program, a property must be a single-family home, a two- to four-unit home with one unit occupied by the borrower, a condominium project approved by the Department of Housing and Urban Development, or a manufactured home that meets FHA's requirements. In addition, the borrower must have paid real estate taxes and premiums for hazard or flood insurance on time.

of which took effect in October 2017, have reduced principal limits. For example, the current principal limit factors for a loan with an interest rate of 6 percent range from 35.7 percent of the home's current value for a 62-year-old borrower to 61.8 percent for a 90-year-old borrower. Before the 2017 change, those factors were 39.5 percent and 64.8 percent, respectively. The cohort of new reverse mortgages that FHA guaranteed in 2017 had an average principal limit factor of approximately 60 percent, CBO estimates.

Borrowers' Options for Accessing Their Funds

A borrower who takes out a HECM has several options for drawing on the available funds, such as a lump-sum withdrawal when the loan is originated, regular monthly withdrawals for a specified number of months, regular monthly withdrawals as long as the borrower occupies the home, a line of credit that can be drawn on when needed, or a combination of regular monthly withdraw-als and a line of credit.[2] Borrowers may change their draw option at any point during the life of the loan.

Both the principal limit and the outstanding balance of the loan (the amount the borrower owes) increase at the loan's interest rate plus FHA's annual insurance premium. For example, consider a hypothetical HECM with an initial principal limit of $100 and an interest rate of 10 percent (which, in this example, includes FHA's annual premium). If the borrower draws $30 at origination, leaving $70 available for future draws, the outstanding balance of the HECM will be $33 after one year—equal to the original $30 withdrawal plus $3 in interest (including premiums) accrued on that draw. The principal limit also grows by 10 percent in this example, so after one year, the borrower's principal limit will be $110, and the amount available for future draws will be $77. The increasing principal limit is a feature of the HECM program designed to ensure that borrowers do not lose access to undrawn funds because of growth in the outstanding loan balance associated with interest and fees.

Interest Rates and Fees

The interest rate on a HECM is negotiated between the lender and the borrower and can be either fixed for the life of the loan or adjustable, with adjustments occurring either monthly or yearly. In 2018, nearly 90 percent of the reverse mortgages guaranteed by FHA were adjustable-rate loans.[3] For such loans, the interest rate is based on a short-term index—a monthly or annual Treasury rate or the London Interbank Offer Rate—and a fixed premium charged by the lender (known as the lender's spread). The offered spread is set at the discretion of the lender.

HECM borrowers are also charged various fees that are not included in the interest rate. As compensation for its guarantee, FHA charges borrowers both an up-front fee and an annual insurance premium. The up-front fee is set at a percentage of the maximum claim amount (the largest claim payment that a lender could receive from FHA for that loan, which typically equals the home's value when the loan was originated). The annual insur-ance premium is based on the outstanding balance of the loan in each period. Those fees and premiums are typically added to the loan balance rather than paid by the borrower directly to FHA.

Lenders also charge a number of fees to borrowers, including an application fee, an origination fee, and fees collected on behalf of third parties who participate in the loan's closing (such as appraisers, credit bureaus, and title agents). Those fees can be paid in cash by the borrower or added to the loan balance at origination. In addition, servicers charge fees for administering the loan on behalf of lenders and FHA. Those fees are assessed monthly and added to the borrower's outstanding balance.

Assignment and Termination

In many cases, lenders can sell active HECMs to FHA once the outstanding loan balance reaches or exceeds 98 percent of the maximum claim amount. In that sale process—known as assignment—the lender is paid either the outstanding loan balance or the maximum claim amount, whichever is lower. (If the original value of the home exceeds the $726,525 size limit for a new HECM,

---

2. With the small subset of HECMs that have fixed interest rates, borrowers are required to draw the entire balance of the loan at origination. With adjustable-rate HECMs, unless the funds are used to pay off an existing mortgage on the home, borrowers are limited in their ability to make a lump-sum withdrawal at origination.

3. See Department of Housing and Urban Development, *Fiscal Year 2018 Independent Actuarial Review of the Mutual Mortgage Insurance Fund: Cash Flow Net Present Value From Home Equity Conversion Mortgage Insurance-in-Force* (prepared by Pinnacle Actuarial Resources, November 15, 2018), https://tinyurl.com/yxgsueju (PDF, 3.7 MB).

the maximum claim amount is set to that loan limit.) Assignment is a transaction between the lender and FHA that does not affect the underlying HECM, so borrowers are probably indifferent about whether their loan is assigned.

Not all loans with a current unpaid balance of 98 percent of the maximum claim amount can be assigned to FHA. To be eligible for assignment, a HECM must meet various criteria, including having no delinquent payments of property taxes and insurance by the borrower. Lenders are also not required to assign a HECM to FHA once it is eligible, but doing so generally makes sense given that the lender could not receive a claim payment from FHA greater than the maximum claim amount. CBO's analysis of loan-level HECM data from FHA suggests that, in practice, nearly all nondelinquent loans are assigned once the required threshold has been reached. After assignment, FHA earns the interest that accrues on the loan in addition to its annual insurance premiums and continues to be at risk for any shortfall when the loan is repaid.

HECMs become due and payable—or terminate—under a number of conditions, including when the borrower and nonborrowing spouse (if any) die, move to another primary residence, or fail to make required payments of property taxes and insurance. At termination, the borrower or the borrower's estate must either repay the outstanding balance of the loan, sell the home and pay the proceeds to the lender (up to the loan's outstanding balance), or surrender the home through a foreclosure proceeding. Under foreclosure, the home can either be sold by the lender (if the loan has not yet been assigned) or turned over to FHA for sale.

If the loan terminates prior to assignment and there is a shortfall between the outstanding balance and the funds that the lender receives from the borrower or from a postforeclosure sale, the lender can make a claim to FHA under the terms of the HECM guarantee. FHA will pay that claim up to the maximum claim amount. If, instead, the loan terminates after assignment, FHA receives the loan repayment from the borrower or the funds from a postforeclosure sale, absorbing any shortfall.

Advantages and Disadvantages of Reverse Mortgages for Households

Households that have at least one member age 62 or older make up a large and growing share of the U.S. population. Those senior households may not have enough income, liquid assets, or access to credit to fund their regular expenses (including health care costs and mortgage payments) or to cover unexpected costs.

Home equity is a significant asset for many seniors, but it can be difficult to convert to cash without selling the home or taking on debt that requires monthly payments, as standard home equity loans and lines of credit do.[4] Those forms of debt may increase the strain on households' monthly income.

Reverse mortgages help seniors tap into their home equity to supplement their monthly income, pay large or unexpected costs, and pay off existing debt. Some seniors use a reverse mortgage to pay off their traditional mortgage, eliminating their monthly payments of principal and interest. Others use a reverse mortgage to pay for upgrades to their home, such as modifications designed to accommodate reduced mobility or other challenges associated with "aging in place."[5]

Reverse mortgages have disadvantages for borrowers, however. They are complicated to understand and often require seniors to pay high fees. In addition, the balance of a reverse mortgage accrues interest charges, further reducing remaining home equity that seniors might need for future expenses. Those disadvantages may contribute to the relatively low share of seniors who have used a reverse mortgage to extract equity from their home. Although FHA has guaranteed more than 1 million HECMs since 1992, that number is small compared with the more than 20 million homeowning households with at least one member age 65 or older, according to the 2010 census.

---

4. According to the Census Bureau, the median net worth of households that contained someone age 65 or older in 2014 was $198,000 with home equity included and $53,540 with home equity excluded. See Census Bureau, "Wealth, Asset Ownership, and Debt of Households Detailed Tables: 2014" (September 17, 2018), www.census.gov/data/tables/2014/demo/wealth/wealth-asset-ownership.html.

5. In this analysis, CBO did not estimate the budgetary impact of any effects on health and longevity that might result from more people aging in place.

Federal Guarantees of Home Equity Conversion Mortgages Under Current Policy

The Congress authorized the Federal Housing Administration to run a temporary demonstration Home Equity Conversion Mortgage program in 1987 and converted it to a permanent program in 1998. Although the authorizing statute limits FHA to guaranteeing 275,000 loans in total, that limit is regularly raised as a part of the appropriation process, as it was most recently in February 2019.[1] At the end of fiscal year 2018, approximately 402,000 HECMs were outstanding.[2] Together, those reverse mortgages had a maximum claim amount of more than $111 billion, a limit on the amount that could be borrowed of over $87 billion, and an outstanding balance of more than $72 billion.

The Role of FHA

By law, FHA has discretion to modify the parameters and premiums of the HECM program to align expected revenues with expected costs and to improve the program's benefits to borrowers. Most of the changes that FHA has made have involved adjusting premiums and principal limit factors to more closely match revenues with costs.

FHA has also made changes to the HECM program to better protect and serve borrowers. For example, the complexity associated with reverse mortgages has led FHA to require all borrowers to complete counseling with an approved housing counselor before receiving a HECM.[3] In addition, FHA has revised policies to let a spouse who is not a cosigner on the loan remain in the

home if the borrower dies. FHA has also modified the program to help borrowers manage future repairs and other property-related expenses (such as property taxes and premiums for homeowner's insurance) through assessments of the financial state of potential borrowers, limits on the amount that can be drawn in the early years of a loan, and requirements that borrowers set aside funds to pay property-related costs in the future.

The Role of Ginnie Mae

With traditional mortgages, lenders raise funds to make new loans by selling the mortgages they originate, often to securitizers such as Fannie Mae and Freddie Mac. Securitizers pool those loans to create mortgage-backed securities, which they sell to investors with a guarantee against most losses from defaults on the underlying loans.

HECMs are also used to create securities, but in a slightly different way. A lender keeps a HECM it originates but securitizes the amount drawn by the borrower, thus allowing it to recoup its outlay to the borrower by selling an investor a security for the amount drawn. The lender remains responsible for servicing the loan and funding future draws by the borrower.

Since 2007, HECM-backed securities—called HMBSs—have been guaranteed by the Government National Mortgage Association (Ginnie Mae), an agency of the Department of Housing and Urban Development. Ginnie Mae guarantees that investors who buy HMBSs will receive payments of principal and interest on the securities in a timely manner, supplementing FHA's guarantee against default on the underlying reverse mortgages. When the HECMs reach 98 percent of the principal limit and are assigned to FHA, HMBS investors are repaid. At the end of 2018, HMBSs guaranteed by Ginnie Mae had a total outstanding principal balance of $55 billion.[4]

---

1. Title II of Division G of the Consolidated Appropriations Act, 2019, P.L. 116-6, 133 Stat. 13.

2. See Department of Housing and Urban Development, *Annual Report to Congress Regarding the Financial Status of the FHA Mutual Mortgage Insurance Fund: Fiscal Year 2018* (November 15, 2018), www.hud.gov/fhammifrpt.

3. For a review of HECM counseling, see Government Accountability Office, *Reverse Mortgages: Product Complexity and Consumer Protection Issues Underscore Need for Improved Controls Over Counseling for Borrowers*, GAO-09-606 (June 29, 2009), www.gao.gov/products/GAO-09-606.

4. See Ginnie Mae, *2018 Report to Congress* (December 2018), https://tinyurl.com/ybdhsj36.

Those securities help lenders fund HECMs in the capital markets at a lower cost than using alternatives such as carrying the loans on their books or selling the loans individually. In addition to increasing liquidity and reducing cost, Ginnie Mae's securitization program generates a small budgetary savings, CBO estimates, because the fees that Ginnie Mae charges for its guarantees slightly exceed the costs of those guarantees when measured according to the Federal Credit Reform Act of 1990.

Before the widespread use of HMBSs, the main investor in FHA-insured reverse mortgages was Fannie Mae, which bought those loans directly rather than bundled in securities.[5] By September 2009, Fannie Mae's share of outstanding HECMs had dropped to about 10 percent, the result of both a change in its investment strategy related to reverse mortgages and an increase in the use of HMBSs by HECM originators.[6]

The Budgetary Effects of Federal Guarantees for Reverse Mortgages

The HECM program has an impact on the federal budget because of FHA's credit guarantee, which requires it to cover any shortfall between the outstanding balance of a loan and the funds it receives from the borrower when the loan terminates. The costs of covering such a shortfall are offset by the up-front fee and annual insurance premiums that FHA charges for its guarantee and by the accrued interest that FHA earns after assignment.

In its May 2019 baseline budget projections, CBO forecast that FHA would guarantee roughly 39,000 new HECMs in 2020—8 percent more than the forecast for 2019 but about 20 percent less than in 2018. The projected decline between 2018 and 2019 results mainly

from the expectation that more stringent program features introduced in recent years—such as lower principal limit factors and financial assessments of potential borrowers—will cause homeowners to choose other ways of extracting equity (such as getting a cash-out refinancing loan or home equity loan or selling their home).[7]

Using the accounting approach specified by the Federal Credit Reform Act, CBO projects that HECMs would reduce the federal budget deficit in 2020 by a negligible amount—meaning that for the cohort of new loans guaranteed in that year, the present value of projected cash outflows from FHA is slightly smaller than the present value of the payments that FHA is projected to collect over the lifetime of those loans.[8] On a FCRA basis, the average lifetime cost per loan guaranteed in 2020 would be near zero, and the federal subsidy rate on those loans (the budgetary cost per dollar of new guarantees) would be slightly less than zero, CBO estimates.[9] Programs with negative subsidy rates generate savings for the federal budget, whereas programs with positive subsidy rates generate costs for the federal budget. (For an overview of the model that CBO uses to produce estimates for the HECM program, see Appendix A. For a comparison of CBO's model and results with those of FHA and its actuary, see Appendix B.)

Although FCRA estimates are used in the federal budget for most credit programs, CBO often prepares fair-value

---

5.   At the end of December 2008, Fannie Mae's portfolio included nearly $42 billion in outstanding principal of reverse mortgages, the majority of which were HECMs, representing nearly 90 percent of the reverse mortgages outstanding. See Fannie Mae, *Form 10K for 2008 Annual Filing* (February 2009), p. 179, https://tinyurl.com/yc8szza3.

6.   See Theodore W. Tozer, "The Rise of Ginnie Mae," *Reverse Review* (April 2012), www.housingwire.com/articles/45197-feature-the-rise-of-ginnie-mae. Fannie Mae's portfolio strategy may have been influenced in part by a cap on the outstanding balance of mortgages it can retain in its investment portfolio. See Federal Housing Finance Agency, "Senior Preferred Stock Purchase Agreements" (accessed October 18, 2016), http://go.usa.gov/xZH9B.

7.   CBO's forecast for guarantees in 2019 and 2020 is consistent with the Administration's estimates in the 2020 *Federal Credit Supplement*. See Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2020: Federal Credit Supplement* (March 2019), www.whitehouse.gov/omb/supplemental-materials.

8.   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 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. For example, if $100 is invested on January 1 at an annual interest rate of 5 percent, it will grow to $105 by January 1 of the following year. Hence, with a discount rate of 5 percent, $105 payable a year from now has a present value of $100.

9.   To estimate subsidy rates for this analysis, CBO used the maximum claim amount as a measure of the dollar volume of guarantees. An alternative measure of the dollar volume of guarantees is the borrower's potential draw in the year the HECM is originated. Although those different measures of the volume of guarantees produce different subsidy rates, the impact on the federal budget deficit is the same.

estimates as well to provide a more comprehensive picture of programs' long-term costs.[10] The fair-value approach recognizes that, in the private sector, uncertain cash flows that grow or shrink along with the economy are less valuable than cash flows that are stable regardless of economic conditions. Fair-value estimates account for market risk—the element of financial risk that is correlated with overall economic conditions (and thus that cannot be eliminated by diversifying a portfolio of investments). For example, for assets (such as loans or loan guarantees) that are more likely to go into default when economic conditions turn out to be poor, fair-value estimates would discount the value of future cash flows at a higher rate than interest rates on Treasury securities, which are considered risk-free. Those fair-value estimates would be lower than present-value estimates made by discounting future cash flows at Treasury rates—the method prescribed for federal loan programs by FCRA.

On a fair-value basis, the new HECMs that FHA is projected to guarantee in 2020 would increase the federal budget deficit by approximately $350 million, CBO estimates. The average lifetime cost per loan guaranteed in 2020 would be almost $9,100 on a fair-value basis, and the federal subsidy rate on those loans would be about 2.6 percent.

The roughly $9,100 difference between the estimated average cost per HECM on a fair-value basis and the estimated average savings on a FCRA basis is the net result of two opposing effects: the impact of differences in the discount rates used to calculate the present value of future cash flows and the impact of differences in the treatment of market risk. The fair-value method uses a series of projected interest rates on one-year Treasury securities to discount future cash flows, whereas the FCRA method uses interest rates on longer-term Treasury securities. Given CBO's projected path for interest rates, that difference causes the estimated savings per loan under current policy to be about $3,400 higher than on a standard FCRA basis. That increase in estimated savings per loan is more than offset by the incorporation of market risk in fair-value measures, which decreases the estimated savings by almost $12,500 per loan. For an explanation of the methodological

differences between FCRA and fair-value accounting and how those differences affect estimates, see Box 2-1.

Sensitivity Analysis of CBO's Estimates of Budgetary Effects

Estimates of federal subsidies and subsidy rates are sensitive to factors such as interest rates and the growth rate and volatility of home prices, which in this analysis are based on CBO's macroeconomic forecast. Those estimates are also sensitive to the values for various aspects of the HECM program used in CBO's model (which are outlined in Appendix A).

Effects of Changes to Interest Rates and Home Prices

The subsidy on a federally guaranteed reverse mortgage goes up with higher interest rates for borrowers or higher discount rates and down with lower rates (assuming no other changes to the features of the HECM program, such as the up-front fee and annual insurance premiums charged by FHA or the lender's spread). The short-term interest rate used for CBO's baseline subsidy estimate comes from CBO's forecast of the rate on one-year Treasury notes in 2020. In CBO's HECM model, that rate is used to construct the borrower's interest rate—both at origination and at each adjustment period for an adjustable-rate loan—and to discount cash flows for fair-value estimates. The yields on the Treasury securities that make up the "basket of zeros" rates used to discount cash flows for FCRA estimates (as explained in Box 2-1) also come from CBO's forecast for interest rates.

Raising those interest rates by, for example, 0.5 percentage points increases the estimated subsidy on a HECM on both a FCRA and a fair-value basis (see Table 2-1 on page 14). A rise in interest rates causes the outstanding balance of a HECM to grow more quickly (because of higher rates for borrowers) and causes more severe discounting of future cash flows received by FHA (such as recoveries on homes sold to satisfy the balance of terminated loans). That increase in the estimated subsidy is partially offset because borrowers with higher interest rates receive lower principal limit factors (the total amount they can borrow) and because FHA earns more income on assigned HECMs with higher interest rates.

Lowering those interest rates by 0.5 percentage points—thereby slowing the growth of the outstanding loan balance—has the opposite effect: decreasing the estimated subsidy on both a FCRA and a fair-value basis. That decrease is offset in part by higher principal limit

---

10. See, for example, Congressional Budget Office, *Fair-Value Estimates of the Cost of Federal Credit Programs in 2019* (June 2018), www.cbo.gov/publication/54095, and *How CBO Produces Fair-Value Estimates of the Cost of Federal Credit Programs: A Primer* (July 2018), www.cbo.gov/publication/53886.

Box 2-1.

Differences Between FCRA and Fair-Value Estimates

In this report, the Congressional Budget Office discusses two approaches that are used to estimate the cost to the federal government of the Home Equity Conversion Mortgage (HECM) program:

- The accounting procedures prescribed by the Federal Credit Reform Act of 1990 (FCRA), which are currently used in the federal budget for credit programs, including the HECM program;[1] and

- An alternative approach in which costs are estimated on the basis of the market value of the government's obligations—termed a fair-value approach. (The fair value of a liability, such as a loan guarantee, is the price that would have to be paid to induce a private financial institution to assume the liability.)

CBO estimates that, on average, the reverse mortgages projected to be guaranteed in 2020 by the HECM program would save the government a negligible amount on a FCRA basis but cost almost $9,100 apiece on a fair-value basis. The difference between those estimates results from the opposing effects of two factors: the approach used to discount future cash flows to present values and the treatment of market risk (the element of financial risk that is correlated with overall economic conditions and thus that cannot be eliminated by diversifying a portfolio of investments).[2]

Approach for Discounting Future Cash Flows

The discounting approaches used for FCRA and fair-value estimates differ because of the adjustable interest rates on most HECMs rather than because of market risk. Although CBO commonly uses an adjusted discount rate to capture market risk, in the case of HECMs, it incorporates market risk into its projections of cash flows. The difference in discount rates between the two approaches results entirely from differences in how cash flows from adjustable-rate loans are discounted under FCRA and how a private investor would finance and value those cash flows.

A private lender generally tries to match its own borrowing to the characteristics of the loans it makes. Such matching helps protect lenders from the consequences of unexpected changes in market interest rates. If such changes occur, the effects on lenders' income from HECMs are offset by the effects on lenders' interest expenses to finance their own debt. A financing strategy that matched the characteristics of adjustable-rate HECMs would involve either issuing floating-rate debt (with interest rates that reset each year) or rolling over one-year borrowing. In the latter case, the lender might borrow money for a period whose end date (maturity) matched the reset period of the adjustable rate rather than the maturity of the loan and would discount cash flows using interest rates of that shorter maturity.

Under FCRA, however, the rates used to discount the cash flows of federal credit programs must be based on interest rates on Treasury securities of similar maturity to the cash flows of the loan or loan guarantee, regardless of whether the loan has a fixed or adjustable interest rate. In practice, that requirement has meant that under FCRA, the present value of expected future cash flows is calculated by discounting those flows using the interest rates on longer-term, fixed-rate, zero-coupon Treasury securities that match the maturity of the cash flows of the HECM program.[3] In that discounting method, known as the "basket of zeros" approach, the yield on a Treasury security maturing in one year would be used to discount cash flows one year from disbursement, a two-year rate would be used for cash flows two years from disbursement, and so on.

For the fair-value estimates in this analysis, by contrast, future cash flows are discounted using a sequence of estimated interest rates on one-year Treasury securities, reflecting the matching strategy that private investors would probably use to fund HECMs. For example, the cash flows that the Federal Housing Administration (FHA) is projected to receive in year

---

1. Sec. 504(d) of the Federal Credit Reform Act of 1990, 2 U.S.C. §661c(d) (2016).

2. 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 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.

3. A zero-coupon security is one whose face value is repaid when the security matures. It is typically sold for much less than its face value but earns no interest. That approach to discounting for HECMs was established before January 2014, when the Treasury began issuing floating-rate notes. The existence of those notes raises the possibility of an alternative means of complying with FCRA's requirement that discount rates equal Treasury rates of similar maturity: Projected interest rates on the Treasury's floating-rate notes could be used to discount the government's adjustable-rate obligations.

Box 2-1.

Continued

Differences Between FCRA and Fair-Value Estimates

three of a HECM are discounted using the one-year Treasury rates estimated for years one, two, and three—rather than the rate estimated for a zero-coupon Treasury security maturing in three years, as under the FCRA approach.

Given CBO's projections for interest rates, modifying a FCRA estimate by using the fair-value discounting approach (but not incorporating market risk) reduces the average federal cost of a HECM guarantee by nearly $3,400—from a savings per loan of almost zero on a standard FCRA basis to a savings of about $3,400. That increase in the present-value savings per loan results from less severe discounting of future cash flows (such as funds that FHA recovers from the repayment of terminated loans that have been sold to the agency by lenders and funds that FHA recovers from disposing of homes with terminated loans). Although the amount of cash that FHA is projected to receive in the future is the same under both discounting approaches, the present value of those cash flows is greater when they are discounted using one-year Treasury rates rather than rates on zero-coupon Treasury securities that match the maturity of the cash flows.

Treatment of Market Risk

The second way in which the fair-value estimates in this report differ from FCRA estimates is by accounting for the cost of the market risk that the government faces in guaranteeing reverse mortgages. For HECMs, CBO estimates that the cost of market risk is equivalent to an annual risk premium of approximately 1 percent. (The risk premium represents the additional return, above Treasury interest rates, that private mortgage insurers would require to bear the market risk of HECMs.) That adjustment for market risk raises the average cost of FHA's HECM guarantee by nearly $12,500 per loan—from a *savings* of about $3,400 (with only the discount rates changed) to a *cost* of nearly $9,100.

Federal costs per loan are sensitive to CBO's estimate of the premium for market risk. For example, raising that risk premium from about 1 percent to 1.25 percent increases

the fair-value cost from almost $9,100 per loan to $12,600, whereas reducing the risk premium to 0.75 percent decreases that fair-value cost to $5,700 per loan.

Effects on Estimates

In CBO's baseline estimates for the HECM program, the federal cost per loan is greater on a fair-value basis than on a FCRA basis (by roughly $9,100) because the effect of incorporating market risk ($12,500 per loan) is larger than the effect of using different discount rates ($3,400 per loan).

The cost reduction associated with the change in discounting methods would be even larger if the HECM program was a direct loan program—one of the options analyzed in this report—rather than a loan guarantee program. That larger reduction reflects the higher present values of future cash flows stemming from borrowers' repayments and from recoveries on homes sold to satisfy the balance of terminated HECMs. Under the direct loan approach that CBO examined, FHA (rather than lenders) would make loan disbursements directly to borrowers, collect their repayments of principal and interest, and dispose of all homes associated with terminated loans if those homes had not been sold by the borrowers.

As an example of how the change in discounting methods would affect the cash flows associated with a direct loan program, consider a scenario in which FHA makes a $100,000 reverse mortgage directly to a borrower and each year earns a return on that loan equal to the average of CBO's baseline projections for one-year Treasury rates plus 1.75 percent. If that loan was expected to be repaid by the borrower in 12 years, the present value of the loan under the fair-value approach, using a discount rate equal to the product of the one-year Treasury rates (but without an adjustment for market risk), would be approximately $121,000. Under the standard FCRA discounting approach, by comparison, the loan would have a present value of only about $115,000.

factors for borrowers and lower interest receipts for FHA on assigned HECMs.

Although estimated subsidies move in the same direction as changes in interest rates, they move in the opposite direction as changes in home prices. Higher growth in home prices decreases the subsidy on a HECM, and lower growth in home prices increases that subsidy.

CBO's baseline economic forecast includes projections for the average national growth of home prices.

Lowering the average growth rate of home prices nationwide by, for example, 10 percent in each year increases FHA's projected credit losses by increasing claims and foreclosures and by reducing the future value of homes when a claim is made or a foreclosure occurs. Together,

Table 2-1.

CBO's Baseline Estimates for the HECM Program in 2020 and Sensitivity to Changes in Values for Key Variables

	FCRA Estimates for 2020 Cohort of Guarantees		Fair-Value Estimates for 2020 Cohort of Guarantees	
	Average Federal Cost per Loan (Dollars)	**Total Federal Cost (Millions of dollars)**	**Average Federal Cost per Loan (Dollars)**	**Total Federal Cost (Millions of dollars)**
CBO's Current-Law Baseline	*	**	9,100	350
Sensitivity to Interest Rate on One-Year Treasury Notes				
Rate higher by 0.5 percentage points	1,400	50	10,100	390
Rate lower by 0.5 percentage points	-1,600	-60	7,900	310
Sensitivity to Average Growth Rate of Home Prices				
Rate higher by 10 percent	-2,100	-80	6,000	230
Rate lower by 10 percent	2,500	100	12,600	490
Sensitivity to Lender's Spread				
Spread higher by 0.5 percentage points	400	20	9,900	390
Spread lower by 0.5 percentage points	-300	-10	8,400	330
Sensitivity to Rate of Terminations				
Rate higher by 20 percent	-1,200	-50	6,900	270
Rate lower by 20 percent	1,500	60	11,700	460
Sensitivity to Principal Limit Factors				
Factors higher by 10 percent	6,300	250	17,500	680
Factors lower by 10 percent	-4,800	-190	2,200	90
Sensitivity to Disposition Costs				
Costs higher by 20 percent	1,500	60	11,300	440
Costs lower by 20 percent	-1,500	-60	6,900	270
Sensitivity to Borrowers' Average Age				
Age higher by 4 years	-200	-10	7,900	310
Age lower by 4 years	200	10	10,200	400
Sensitivity to Borrowers' Draw Behavior				
All borrowers draw full amount at loan origination	-1,300	-50	8,600	330
All borrowers draw 50 percent at loan origination and none thereafter	-11,800	-460	-11,200	-440
All borrowers draw 50 percent at loan origination and 50 percent in year 7	900	40	10,900	430

Source: Congressional Budget Office.

CBO projects that under current policies, the Federal Housing Administration will guarantee 39,000 new HECMs in fiscal year 2020.

The values for these variables used in CBO's baseline estimates are described in Appendix A.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

Negative numbers indicate savings to the federal government.

FCRA = Federal Credit Reform Act; HECM = home equity conversion mortgage; * = between -$50 and zero; ** = between -$5 million and zero.

those effects increase the estimated subsidy per HECM on both a FCRA and a fair-value basis. Conversely, raising the growth rate of home prices by 10 percent decreases the subsidy on both a FCRA and a fair-value basis by reducing FHA's future credit losses.

Effects of Changes to Other Factors

Estimates of federal subsidies and subsidy rates are also sensitive to other projections for the 2020 cohort of guarantees (see Appendix A). Changing those projections has the following general effects on CBO's subsidy estimates:

- **Lender's spread**—Increasing the interest rate premium that lenders charge causes the outstanding balances of HECMs to rise more quickly, increasing projections of FHA's credit losses and both FCRA and fair-value subsidy estimates (see Table 2-1). Decreasing the projected lender's spread has the opposite effect. Changes to that spread are offset in part because principal limit factors shift with the lender's spread and because FHA will earn that spread on assigned HECMs (for the period from assignment to termination).

- **Rate of terminations**—Decreasing the rate at which loans are projected to terminate because of the death of the borrower raises the likelihood that loan balances will exceed future home values, boosting projections of FHA's credit losses and both FCRA and fair-value subsidy estimates. Increasing the projected termination rate has the opposite effect.

- **Principal limit factors**—Modifying the percentage of a home's value that borrowers can draw on is one of the main ways in which FHA manages the risks and costs of HECMs. (FHA has adjusted those principal limits twice since 2013.) Although CBO's baseline estimates are based on the principal limit factors in effect in 2019, those factors could be adjusted again before 2020. Lower principal limit factors reduce the likelihood that loan balances will exceed future home values, decreasing projections of FHA's credit losses and both FCRA and fair-value subsidy estimates. Higher principal limit factors have the opposite effect.

- **Disposition costs**—Increasing the projected costs incurred when FHA or the lender sells a property to satisfy the balance of a terminated HECM increases projections of FHA's credit losses and of subsidies on both a FCRA and a fair-value basis. Decreasing projected disposition costs has the opposite effect.

- **Borrowers' average age**—Increasing the average age of HECM borrowers reduces subsidy estimates by accelerating terminations and reducing the likelihood that loan balances will exceed future home values. That reduction is partly offset, however, because older borrowers receive higher principal limits and thus can potentially borrow a larger share of their home's value. Decreasing the average age of borrowers has the opposite affect—raising subsidy estimates by slowing terminations and increasing the likelihood that loan balances will exceed future home values (although that effect would be offset to some extent by the lower principal limits for younger borrowers).

- **Borrowers' draw behavior**—In general, if borrowers draw a greater share of their available principal limit, either at origination or in later years, credit costs to FHA will increase. The reason is that a higher outstanding loan balance increases the likelihood that the amount owed to the lender will exceed the home's value at termination. For HECMs that do not result in a claim on FHA, by contrast, higher balances increase revenues to FHA and reduce net credit costs. For example, a scenario in which all borrowers drew their full principal limit at origination would result in higher average claims than those in either CBO's baseline or a scenario in which all borrowers drew 50 percent of their principal limit at origination and 50 percent in year seven. However, those higher average claims would be more than offset by the higher average fee income that FHA receives on loans with a full initial draw, resulting in a lower subsidy, CBO estimates. Because of the interaction between claims and fee income, changing projections of borrowers' draw patterns has varying effects on estimates of FHA subsidies.

Options for Modifying the Federal Role in the Reverse-Mortgage Market

I n the 32 years since the Home Equity Conversion Mortgage program began, the Federal Housing Administration has periodically changed the program's parameters to more closely align expected revenues with expected costs. Most of those changes— including the most recent set, which took effect in October 2017—have involved adjustments to premiums and principal limit factors.[1]

In addition, in response to the 2008 financial crisis, FHA modified other features of the HECM program to reduce defaults by borrowers and to lower the program's cost to the federal government. For example, in November 2014, FHA announced that it would require prospective borrowers to undergo financial assessments (to reduce the frequency of defaults on property taxes and insurance payments) and that it would limit the amount borrowers could draw when a loan was originated.[2]

The HECM program continues to face scrutiny from policymakers because of the risks it poses to FHA and borrowers and because of the costs of those risks for the federal government. CBO analyzed four approaches— adapted from other federal credit programs—that would reduce the budgetary cost of future guarantees:

- Converting the HECM program to a direct loan program, in which the government would fund HECMs, although private lenders would still handle the loan origination process;

- Reducing the trigger for assigning HECMs to FHA from 98 percent of the maximum claim amount to a lower percentage;

- Sharing the risk of losses with lenders; and

- Slowing the growth of the borrower's available principal limit.

The number of HECMs guaranteed and the amount of budgetary savings under each option would depend on various factors, including how lenders and borrowers reacted to the changes. Under the first three options, CBO estimates that lenders would increase fees to borrowers or reduce the availability of HECMs. Under the option to slow the growth of the borrower's available principal limit, lenders would be largely unaffected, but some borrowers would either draw more of their available funds immediately or forgo a HECM in favor of other equity-extraction options, CBO forecasts.

Converting the HECM program to a direct loan program would probably require action by lawmakers, but FHA might be able to implement the other three options without legislation. In addition, some of the options could be combined to further change the nature of FHA's risk exposure or the composition of its guarantees. CBO did not examine the results of combining options.

Converting the HECM Program to a Federal Direct Loan Program

Under a direct loan approach, FHA—rather than private lenders—would fund HECMs, make loan disbursements directly to borrowers, and dispose of all homes that were not sold by borrowers after loans terminate. Private lenders would continue to be responsible for the procedures involved in originating HECMs (such as contacting customers and handling the application process), but FHA would be responsible for servicing the loans after they were originated.

---

1. See Department of Housing and Urban Development, "Home Equity Conversion Mortgage (HECM) Program: Mortgage Insurance Premium Rates and Principal Limit Factors," Mortgagee Letter 2017-12 (August 29, 2017), www.hud.gov/sites/documents/17-12ML.PDF (90 KB).

2. See Department of Housing and Urban Development, "Revised Changes to the Home Equity Conversion Mortgage (HECM) Program Requirements," Mortgagee Letter 2014-21 (November 10, 2014), www.hud.gov/sites/documents/14-21ML.PDF (97 KB).

FHA's servicing costs would increase with the agency's expanded responsibilities. (Currently, FHA only services HECMs that have been assigned to it when the outstanding loan balance equals at least 98 percent of the maximum claim amount.) Those additional servicing costs would be offset by the servicing fees paid by borrowers, which FHA would receive. The agency could use that fee income either to fund its own servicing operation or to pay an outside party to perform those duties. In addition, FHA could set its up-front fee, its annual insurance premiums, and the borrower's interest rate at levels that would cover its costs and achieve a target FCRA subsidy rate (the budgetary cost per dollar of new guarantees).[3]

Savings under this option would stem from the ability of FHA, as the sole direct lender of HECMs, to achieve economies of scale in nonfinancing costs that are not available to individual private lenders.[4] FHA would also be able to eliminate some marketing costs associated with competing for customers, although marketing might still be needed to keep homeowners aware of the availability and benefits of HECMs. In addition, FHA would be able to generate economies of scale in the monitoring and servicing of HECMs.

Those savings would be offset to some extent by higher disposition costs. On the basis of feedback from market participants, CBO estimates that if FHA was solely responsible for maintaining and selling foreclosed properties, it would not be able to manage the scale of those dispositions as effectively as when it shared that responsibility with lenders.

Lenders would feel a direct impact from the loss of spread income because they would no longer fund HECMs and would not service the loans (unless they were paid by FHA to do so). Although lenders would still play some part in the origination process—earning fees from performing the tasks necessary to set up a new loan—they might choose to raise their fees for those services to make up for lost spread income or might decide to leave the HECM origination business altogether.

The impact on borrowers would depend on how FHA implemented the direct loan program. If FHA charged borrowers an interest rate comparable to what private lenders would charge, borrowers would see no savings. However, FHA might opt to reduce that interest rate, benefiting borrowers directly. Some homeowners would not borrow using a HECM because decreased marketing would leave them uncertain about or unaware of the program. Moreover, if a larger government role in the HECM market led to greater inefficiencies and less innovation over the long term, taxpayers could suffer and borrowers could miss an opportunity to tap into their home equity.

CBO's Estimates of the Direct Loan Option

Changing the HECM program to a direct loan program would have some of the largest budgetary effects of the options examined in this analysis. CBO estimates that if FHA implemented the program in 2020, the savings per loan on a Federal Credit Reform Act basis would increase from a negligible amount in the baseline to about $3,400 (see the top panel of Figure 3-1).[5]

That estimate includes the expectation that FHA would decrease the borrower's interest rate by about 1 percentage point, with a goal of achieving a FCRA subsidy rate for the program of –1 percent. The estimate also includes the expectations that disposition costs would rise by

---

3. FHA uses an accounting device called a capital ratio to track the net value of its insurance obligations and to guide it in setting premiums. The agency aims to maintain a 2 percent capital ratio for the combination of its HECM program and its single-family mortgage guarantee program. The capital ratio is measured as the programs' existing net capital resources plus the present value of projected fees and premiums (net of projected claims) on currently insured mortgages, divided by the total unpaid balance of those mortgages, using the same present-value concept used to compute the budgetary cost of the program. To satisfy the capital-ratio requirement, FHA generally sets fees and premiums on newly insured mortgages so that the present value of fees and premiums exceeds the present value of expected insurance losses on those mortgages. If incurred losses cause FHA's capital ratio to fall below 2 percent, the agency may increase the fees and premiums it charges new borrowers to return the capital ratio to the desired level over a given period.

4. In addition, lenders may not have much incentive to compete on the basis of price if borrowers do not search for the lowest-cost reverse mortgage. Unlike for other financial products, no websites currently exist where borrowers can compare prices for HECMs. Given the complexity and unfamiliarity of reverse mortgages, borrowers may tend to use the first lender they come in contact with and not consider alternatives. In such circumstances, lenders could charge prices above their economic cost.

5. Having the federal government fund HECMs would eliminate the need for lenders to securitize those loans through HECM-backed securities and for Ginnie Mae to guarantee the securities. CBO estimates that the budgetary effect of eliminating Ginnie Mae's HMBS program would be a small cost on a FCRA basis and no cost on a fair-value basis.

Figure 3-1.

Estimates for the HECM Program in 2020 in CBO's Baseline and Under Various Options
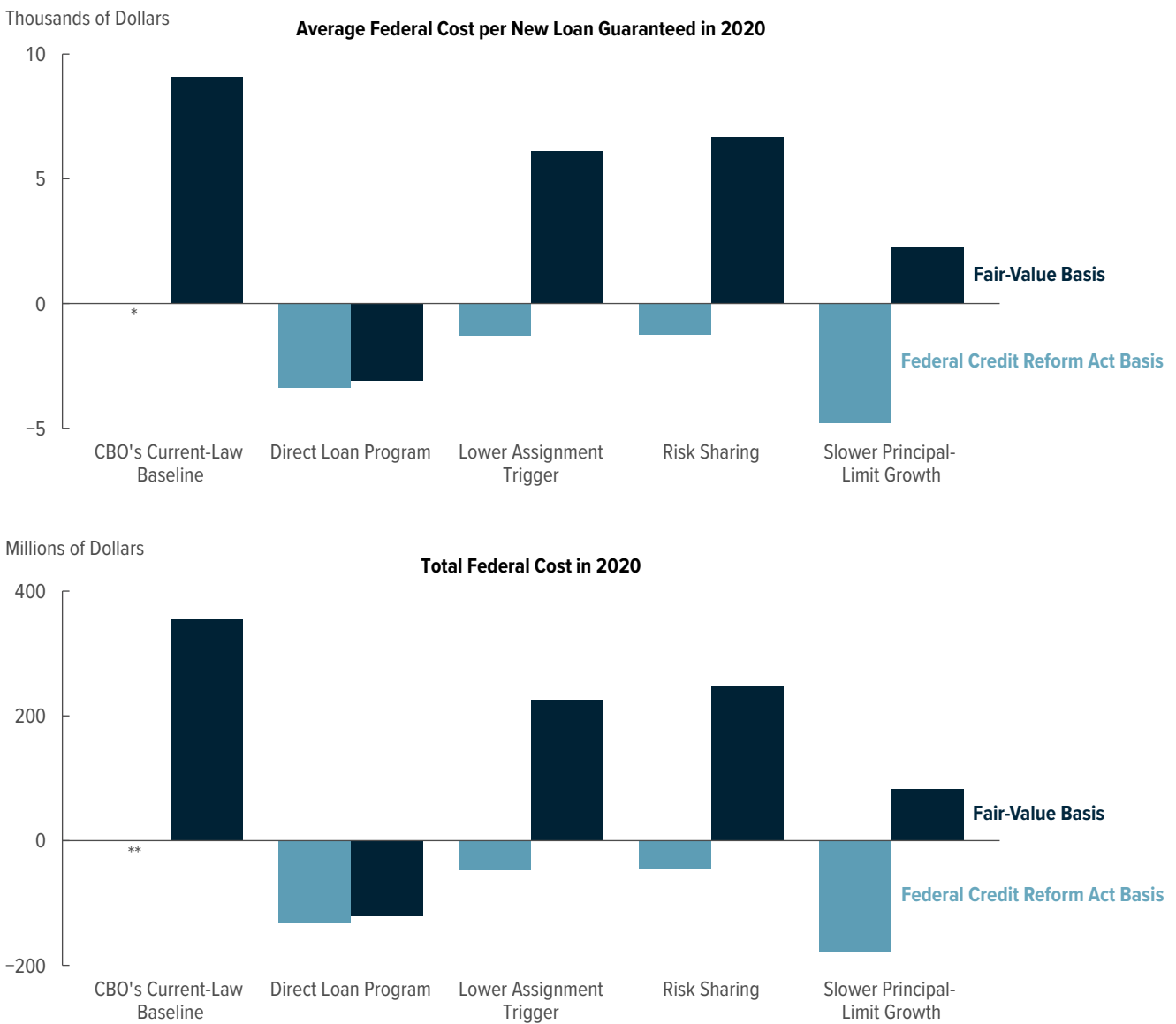
Source: Congressional Budget Office.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

Negative numbers indicate savings to the federal government.

HECM = home equity conversion mortgage; * = between -$50 and zero; ** = between -$5 million and zero.

2.5 percent (because FHA would not be able to manage the increased number of foreclosed properties it would be responsible for under this option as effectively as multiple private lenders do under the current program) and that lenders would leave their origination fee and closing costs on a HECM unchanged from the baseline amounts.[6]

The number of new HECMs originated in 2020 would remain the same under this option, CBO estimates—the net result of reduced consumer awareness of HECMs relative to other equity-extraction alternatives, offset by the lower interest rate that FHA would charge borrowers. Measured on a FCRA basis, the loans originated in 2020 under a direct loan program would save the federal government approximately $130 million over their lifetime—rather than generating almost no savings, as in the baseline—for a total decrease in the budget deficit of about $130 million in 2020, CBO projects.

Measured on a fair-value basis, the budgetary effects of switching to a direct loan program would be larger. CBO projects that under this option, the cost per loan would decline by approximately $12,200 on a fair-value basis—from a *cost* per HECM of almost $9,100 in the baseline to a *savings* per loan of about $3,100 (see the top panel of Figure 3-1).

As with estimates of the HECM program under current policy, the difference between the estimated savings per loan on a fair-value basis and a FCRA basis under this option ($300) is the net result of two opposing factors: the effect of differences in the discount rates used to calculate the present value of future cash flows and the effect of differences in the treatment of market risk (see Box 2-1 on page 12). The difference in discount rates causes the estimated savings per HECM under this option to be $11,000 greater than on a standard FCRA basis. That increase is more than offset by the incorporation of market risk in fair-value measures, which decreases the estimated savings per loan by $11,300. Typically, the effect of incorporating market risk is much larger than the effect of using different discount rates. However, the effect of using different discount rates is particularly large for the direct loan option because of

the increased present value of future cash flows stemming from borrowers' repayments and from recoveries on homes sold to satisfy the balance of terminated HECMs.

With those estimated average per-loan effects, the direct loans projected to be originated in 2020 under this option would result in *savings* of $120 million on a fair-value basis, compared with the estimated fair-value *cost* of approximately $350 million in the baseline, for a total decrease in the budget deficit of about $470 million in 2020.

Uncertainty Surrounding the Direct Loan Estimates
The estimates of budgetary savings for this option are subject to significant uncertainty. In addition to uncertainty about projections for interest rates, home prices, and other variables included in CBO's model of the HECM program (described in Chapter 2 in the section titled "Sensitivity Analysis of CBO's Estimates of Budgetary Effects"), uncertainty exists about how FHA would perform under a direct loan program and about how lenders and borrowers would react to the new program.

In a cost estimate for legislation requiring FHA to convert the HECM program to a direct loan program, CBO's estimates of budgetary savings or costs would depend on the specific language of the legislation. Features of that program could cause CBO's estimate of the effects of the change to differ significantly from the estimates included in this report.

Uncertainty About FHA's Performance. FHA might set a target FCRA subsidy rate for the HECM program that was higher or lower than –1 percent. If, for example, FHA aimed for a FCRA subsidy rate of approximately –2 percent—which is consistent with CBO's estimate of the long-term subsidy rate for FHA's single-family mortgage guarantee program—the savings per HECM under a direct loan program would increase to about $6,800 on a FCRA basis and $6,100 on a fair-value basis (compared with $3,400 and $3,100, respectively). Alternatively, if FHA set a target FCRA subsidy rate near zero, the savings per HECM would decrease to $300 on a FCRA basis and $200 on a fair-value basis (see Table 3-1).

FHA might be more or less effective at disposing of the larger number of properties it would be expected to handle under the direct loan program. Disposition costs are estimated to equal 25 percent of a home's value at

---

6. The 2.5 percent increase in disposition costs is based on CBO's estimates that FHA's disposition costs are 25 percent higher than lenders' disposition costs and that the direct loan option would shift all of the homes currently disposed of by lenders (estimated to be 10 percent of all dispositions under this option) to FHA.

Table 3-1.

Estimated Effects of Converting the HECM Program to a Federal Direct Loan Program

	Number of HECMs Guaranteed in 2020	FCRA Estimates for 2020 Cohort of Guarantees		Fair-Value Estimates for 2020 Cohort of Guarantees	
		Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)	Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)
		Under Current Law			
CBO's Baseline	39,000	*	**	9,100	350
		With the HECM Program Converted to a Federal Direct Loan Program			
CBO's Central Estimate for the Option (Incorporates 2.5 percent increase in disposition costs and 1 percentage-point reduction in borrower's interest rate to achieve a target FCRA subsidy rate of -1 percent)	39,000	-3,400	-130	-3,100	-120
Sensitivity to Target FCRA Subsidy Rate					
Target subsidy rate of -2 percent[a]	39,000	-6,800	-260	-6,100	-240
Target subsidy rate of zero[a]	39,000	-300	-10	-200	-10
Sensitivity to Disposition Costs					
Disposition costs do not increase[a]	39,000	-3,500	-140	-3,300	-130
Disposition costs increase by 5 percent[a]	39,000	-3,200	-130	-2,900	-110
Sensitivity to Closing Costs					
Lender's closing costs increase to $600	39,000	-3,400	-130	-3,100	-120
Lender's closing costs decline to zero	39,000	-3,400	-130	-3,100	-120
Sensitivity to Number of Guarantees					
Guarantees increase by 25 percent[a]	48,750	-3,400	-160	-3,100	-150
Guarantees decline by 25 percent[a]	29,250	-3,400	-100	-3,100	-90

Source: Congressional Budget Office.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

Negative numbers indicate savings to the federal government.

FCRA = Federal Credit Reform Act; HECM = home equity conversion mortgage; * = between -$50 and zero; ** = between -$5 million and zero.

a. Other changes included in this option remain the same.

termination in CBO's baseline and to be 2.5 percent higher under this option. If, instead, disposition costs did not rise under the direct loan program, the savings per HECM would increase slightly: to about $3,500 on a FCRA basis and $3,300 on a fair-value basis. Alternatively, if disposition costs rose by 5 percent rather than 2.5 percent, the savings per loan would decline slightly: to about $3,200 on a FCRA basis and $2,900 on a fair-value basis. With either higher or lower disposition costs, FHA could adjust its up-front fee, its annual insurance premiums, or the borrower's interest rate to

achieve its target FCRA subsidy rate, leaving per-loan HECM costs unchanged.

Uncertainty About Lenders' Behavioral Changes. Under a direct loan program, lenders could set origination and closing costs for a HECM lower or higher than the costs included in CBO's estimates for this option. Altering the costs that lenders charge borrowers does not directly change costs for FHA, but it does have an indirect effect on FHA because closing costs are added to the loan balance at origination (rather than paid directly by the borrower).

Raising the loan balance has offsetting effects on FHA: increasing the fees that the agency receives, which are based on that balance, but also increasing costs by raising the possibility that the loan balance will exceed the home's value at termination. Both of those effects are likely to be small, however. For example, if lenders doubled closing costs (to $600 rather than the $300 included in CBO's estimates for this option) or charged no closing costs, the savings per loan would remain almost the same as under this option, approximately $3,400 on a FCRA basis and $3,100 on a fair-value basis.

Under a direct loan program, lenders might also make it more difficult for borrowers to access the HECM program. For example, they might steer borrowers to other forms of equity extraction—including private reverse mortgages, home equity loans, and home equity lines of credit—that offer lenders the opportunity to earn more than just fees associated with origination costs and closing costs. The resulting decline in the volume of HECMs would not affect costs per loan (unless lenders were able to steer risky borrowers to HECMs and keep the less risky borrowers themselves, which CBO did not model in this analysis). But that decline in loan volume would decrease the total savings to FHA from moving to a direct loan program.

For this option, CBO's central estimate is that the net effects of behavioral changes by borrowers and lenders would leave the number of HECMs originated in 2020 unchanged from the baseline. If, instead, behavioral changes by lenders reduced that number by 25 percent, CBO projects that the 2020 HECMs would save the federal government approximately $100 million over their lifetime on a FCRA basis (rather than $130 million under this option) and $90 million on a fair-value basis (rather than $120 million).

Uncertainty About Borrowers' Behavioral Changes. Borrowers might be more or less likely to obtain a HECM under the direct loan program than CBO estimates. For example, borrowers might react more positively to the reduction in interest rates offered by FHA as a direct lender, increasing HECM originations. If originations in 2020 rose by 25 percent (rather than remaining unchanged, as in CBO's estimates for this option), they would save the federal government approximately $160 million over their lifetime on a FCRA basis and $150 million on a fair-value basis.

Alternatively, lower consumer awareness of HECMs relative to other equity-extraction alternatives might more than offset the attractiveness of lower interest rates, decreasing total originations relative to CBO's estimates for this option. If, for example, changes in borrowers' behavior reduced HECM originations by 25 percent, CBO projects that the budgetary effect of the 2020 guarantees would be the same as with the 25 percent decrease in originations caused by lenders' steering borrowers away from HECMs.

Reducing the Trigger for Assigning HECMs to FHA

As an alternative to the direct loan approach, in which lenders would lose all of their spread income, FHA could modify the HECM program to reduce lenders' spread income to a lesser degree. For example, under this option, the point at which lenders sold an active HECM to FHA would change from when the loan's outstanding balance equaled at least 98 percent of the maximum claim amount (the maximum amount that FHA reimburses the lender) to when that balance equaled 80 percent of the maximum claim amount.[7] In addition, lenders would be required to assign all nondelinquent loans to FHA once the loan balance reached the new trigger (whereas now, lenders have the option to retain HECMs after the loan balance reaches 98 percent of the maximum claim amount, although they rarely do so).

Savings under this option would result from increasing the length of time during which FHA would earn spread income without increasing the agency's risk of losses.[8] The savings would be partly offset by FHA's higher disposition costs for those loans, if the agency was unable to effectively manage the increased number of foreclosed properties resulting from earlier assignments.

Lenders would not face any additional risk of losses if the assignment trigger was reduced—they would still assign a HECM to FHA and receive the loan's full outstanding balance at that time, regardless of the current value of

---

7. The assignment trigger would need to be higher for loans that had a principal limit factor greater than 80 percent. (Under the current schedule of principal limit factors, which took effect in October 2017, the highest factor is 75 percent.)

8. Losses to FHA on a HECM depend on such factors as the maximum claim amount, the length of time that the borrower stays in the home, and changes in home prices and interest rates. Those factors are not affected by the timing of a loan's assignment to FHA.

Box 3-1.

The Market for Originating Home Equity Conversion Mortgages

Although many lenders originate home equity conversion mortgages (HECMs), a small number account for most of the market in every part of the United States. For example, although about 400 lenders originated HECMs guaranteed by the Federal Housing Administration (FHA) in 2017, 10 lenders accounted for more than 60 percent of those loans, and just 3 of the lenders originated nearly 40 percent of those loans.[1] By comparison, in FHA's guarantee program for standard single-family mortgages, nearly 6,000 lenders originated FHA-guaranteed mortgages in September 2017, and the 10 largest lenders accounted for only 19 percent of those loans.[2]

In each of the areas covered by FHA's 81 field offices, the largest lender originated nearly 30 percent of the HECMs in that area, on average, in 2017. One of the top three lenders

nationwide (which together account for 40 percent of the national market) was the largest lender in all but 5 of those 81 regions.

Lenders may decide not to originate HECMs for various reasons. In a February 2018 survey, lenders cited four main rationales for not participating in the HECM market: potential risk to their reputation, worries about profitability, the complexity of reverse mortgages, and distraction from the standard mortgage origination market.[3]

The potential for reverse mortgages to harm a lender's reputation was the highest-ranked concern; the possibility that HECMs would not be profitable was the lowest-ranked concern. In the past, reverse mortgages received negative publicity when elderly residents—such as nonborrowing spouses or people who did not pay their property taxes and insurance—were evicted from their homes. FHA has attempted to address those issues through changes to the HECM program, but some lenders may worry that the changes have not gone far enough or that the program still has a stigma attached to it.

---

1. See Federal Housing Administration, *HECM Endorsement Summary Reports—September 2017* (accessed June 15, 2018), https://apps.hud.gov/pub/chums/f17fvc/hecm.cfm.

2. See Federal Housing Administration, *Single-Family Portfolio Snapshot—September 2017* (accessed June 15, 2018), www.hud.gov/program_offices/housing/rmra/oe/rpts/sfsnap/sfsnap.

3. See Jim Cameron, "Moving Forward in Reverse," *Stratmor Insights*, vol. 3, no. 2 (February 2018), p. 15, https://tinyurl.com/y8e28pcs (PDF, 4.5 MB).

---

the home. Lenders would also be reimbursed for losses (up to the maximum claim amount) on HECMs that terminated before assignment. However, they would stop earning interest on the loan after the earlier assignment; that interest would go to FHA instead, along with its annual premiums for guaranteeing the loan. Increasing the amount of time between assignment and termination—and thus decreasing lenders' potential to earn income from a HECM—could cause lenders to leave the market for reverse mortgages. (For information about the number of lenders that originate HECMs, see Box 3-1.)

Borrowers would be unaffected by this change, unless lenders chose to increase their spread in an attempt to regain some of the income lost from earlier assignments. In that case, borrowers might choose other options for extracting equity instead of HECMs.

CBO's Estimates of the Option to Reduce the Assignment Trigger

CBO estimates that if FHA lowered the assignment trigger to 80 percent, the savings per HECM in 2020 would increase from almost zero in the baseline to about $1,300 on a FCRA basis (see the top panel of Figure 3-1 on page 19).[9] That estimate includes the expectation that disposition costs would rise by 1.25 percent and that lenders would increase their spread by 0.25 percentage points (to 2 percent of a loan's balance).[10]

Measured on a FCRA basis, the savings produced by the lower assignment trigger would be partly offset by the

---

9. Implementing a lower assignment trigger would have no effect on Ginnie Mae's HMBS program.

10. The 1.25 percent increase in disposition costs is based on CBO's estimates that FHA's disposition costs are 25 percent higher than lenders' disposition costs and that this option would shift a portion of the homes currently disposed of by lenders (estimated to be 5 percent of all dispositions under this option) to FHA.

increase in disposition costs. In addition, the change in the lender's spread would slightly increase the budgetary savings per HECM under FCRA accounting. The reason is that the higher spread income that FHA would earn after lenders' required assignment at 80 percent of the maximum claim amount would more than offset the higher probability that the borrower's outstanding balance would exceed the home's value at termination. That would not be the case in the baseline, with the current optional assignment trigger of 98 percent.

The number of new HECMs originated in 2020 would decline by 5 percent under this option, CBO estimates, reflecting the increase in borrowers' costs from the higher lender's spread. Measured on a FCRA basis, the loans originated in 2020 under this option would save the federal government approximately $50 million over their lifetime—rather than producing almost no savings, as in the baseline—for a total decrease in the budget deficit of about $50 million in 2020, CBO projects.

Measured on a fair-value basis, this option would reduce the cost per loan by about $3,000, CBO estimates—from slightly below $9,100 in the baseline to approximately $6,100.[11] The HECMs projected to be originated in 2020 would result in costs of $230 million over their lifetime on a fair-value basis, compared with the estimated fair-value cost of about $350 million in the baseline, for a total decrease in the budget deficit of more than $120 million in 2020.

Uncertainty Surrounding the Estimates for Reducing the Assignment Trigger

CBO's estimates for this option are subject to significant uncertainty—although the amount of uncertainty is less than for estimates of the direct loan approach, which would make larger changes to the HECM program than this option would. If lawmakers drafted legislation to reduce the assignment trigger, the budgetary savings or costs that CBO would report in a cost estimate for that legislation would depend on the specific legislative language; CBO's estimate of the effects of that change could differ greatly from the estimates provided in this analysis.

---

11. As in the direct loan option, the difference between the estimated savings per HECM on a fair-value basis and on a FCRA basis results from the opposing effects of differences in the discount rates used to calculate the present value of future cash flows and differences in the treatment of market risk (see Box 2-1 on page 12).

Uncertainty About FHA's Performance. As in a direct loan program, FHA might be more or less effective at disposing of the larger number of properties it would be expected to handle with a lower assignment trigger. CBO's estimates for this option incorporate a 1.25 percent increase in those costs. If, instead, disposition costs did not increase (remaining at 25 percent of a home's value at termination, as in the baseline), the savings per HECM would increase from about $1,300 to about $1,400 on a FCRA basis, and the cost per loan would decline from approximately $6,100 to $6,000 on a fair-value basis (see Table 3-2). Alternatively, if disposition costs rose by 2.5 percent rather than 1.25 percent, the savings per loan would decrease to slightly more than $1,200 on a FCRA basis, and the cost per loan would increase to $6,200 on a fair-value basis.

Uncertainty About Lenders' Behavioral Changes. Lenders might adjust their spread by an amount different from the 0.25 percentage-point increase included in CBO's estimates for this option. If, for example, that spread did not increase (remaining at 1.75 percent of a loan's balance, as in the baseline), the savings per HECM on a FCRA basis would decline to approximately $1,100 (rather than about $1,300), but the cost per HECM on a fair-value basis would be approximately the same as under this option, $6,100.

Lenders might also choose to leave the HECM market, although that incentive would be much weaker under this option than under a direct loan program because lenders would still have the opportunity to earn spread income before reaching the assignment trigger. For this option, CBO estimated that behavioral changes by borrowers (discussed below) would decrease the number of HECMs originated in 2020 by 5 percent. If behavioral changes by lenders reduced that number by, for example, an additional 5 percent, CBO projects that lowering the assignment trigger would cause the HECMs guaranteed in 2020 to save the federal government about $50 million over their lifetime on a FCRA basis (roughly the same as under this option) or cost the federal government slightly more than $210 million on a fair-value basis (compared with $230 million under this option).

Uncertainty About Borrowers' Behavioral Changes. Borrowers might also be more or less likely to obtain a HECM under this option, because of a change in the lender's spread, than CBO estimates. If, for example, there was no decrease in HECM originations in 2020

Table 3-2.

Estimated Effects of Reducing the Trigger for Assigning HECMs to FHA

	Number of HECMs Guaranteed in 2020	FCRA Estimates for 2020 Cohort of Guarantees		Fair-Value Estimates for 2020 Cohort of Guarantees	
		Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)	Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)
Under Current Law					
CBO's Baseline	39,000	*	**	9,100	350
With the Assignment Trigger Reduced to 80 Percent of the Maximum Claim Amount					
CBO's Central Estimate for the Option (Incorporates 1.25 percent increase in disposition costs, 0.25 percentage-point increase in lender's spread, and 5 percent decline in guarantees)	37,050	-1,300	-50	6,100	230
Sensitivity to Disposition Costs					
Disposition costs do not increase[a]	37,050	-1,400	-50	6,000	220
Disposition costs increase by 2.5 percent[a]	37,050	-1,200	-40	6,200	230
Sensitivity to Lender's Spread					
Lender's spread does not increase[a]	37,050	-1,100	-40	6,100	230
Sensitivity to Number of Guarantees					
Guarantees do not decline[a]	39,000	-1,300	-50	6,100	240
Guarantees decline by 10 percent[a]	35,100	-1,300	-50	6,100	210

Source: Congressional Budget Office.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

Under the HECM program's current rules, lenders can sell ("assign") active HECMs to FHA once the outstanding loan balance reaches or exceeds 98 percent of the maximum claim amount (the largest claim payment that a lender could receive from FHA for the loan, which typically equals the home's value when the loan was originated). Under this option, lenders would be required to assign active HECMs to FHA when the outstanding loan balance reached 80 percent of the maximum claim amount.

Negative numbers indicate savings to the federal government.

FCRA = Federal Credit Reform Act; FHA = Federal Housing Administration; HECM = home equity conversion mortgage; * = between -$50 and zero; ** = between -$5 million and zero.

a. Other changes included in this option remain the same.

because of borrower's behavioral changes (rather than the 5 percent decrease that CBO estimates for this option), CBO projects that the 2020 guarantees would save the federal government approximately $50 million on a FCRA basis over their lifetime (roughly the same as under this option) or cost the federal government $240 million on a fair-value basis (compared with $230 million under this option).

Alternatively, potential borrowers might react more strongly to a higher lender's spread than CBO estimates,

opting for other loan options instead of HECMs. If, for instance, larger changes in borrowers' behavior reduced HECM originations in 2020 by 10 percent rather than 5 percent, CBO projects that the budgetary effect of the 2020 guarantees would be the same as with the afore-mentioned additional 5 percent decrease in originations caused by behavioral changes by lenders.

Sharing the Risk of Losses With Lenders

FHA's guarantee of repayment makes lenders more willing than they would be otherwise to offer reverse

mortgages to all borrowers who qualify for HECMs. Changing FHA's guarantee to cover only a portion of losses—with lenders covering the rest—would reduce the risk of losses to the federal government. However, that change could make HECMs less available because lenders might be unwilling to accept their share of the risk on certain borrowers, or they might charge borrowers a higher interest rate or higher fees to recoup the fair-value cost associated with the risk of losses they were being asked to bear. FHA could offset that increase in costs to borrowers, either partly or fully, by reducing its annual insurance premiums. However, such a reduction would decrease the savings from sharing the risk of losses with lenders and could even cause this option to increase costs relative to CBO's baseline. Despite possibly lessening the availability of HECMs or increasing their cost to borrowers, a partial FHA guarantee could have benefits for the broader reverse-mortgage market, such as encouraging lenders to expand the availability of fully private reverse mortgages.

FHA could take several approaches to restructure its HECM guarantee so as to transfer some risk of losses to lenders. Under the option analyzed in this report, FHA would share risk by changing the trigger for lenders to assign an active HECM from when the outstanding balance of the loan equaled at least 98 percent of the maximum claim amount to when that balance equaled 200 percent of the maximum claim amount. As a part of this option, if a HECM terminated before assignment and was not repaid by the borrower or the borrower's estate, FHA would pay the lender the outstanding loan balance or the maximum claim amount, whichever was smaller.[12]

Savings under this option would result from delaying the assignment trigger, thus increasing the likelihood that loans would terminate before assignment and that the lender, rather than FHA, would pay for draws by borrowers and (in certain cases) handle property disposition. For example, consider a HECM with a maximum claim amount of $100,000 and a balance at termination of $150,000. With the current assignment trigger, the lender would sell the loan to FHA when the balance

reached $98,000, leaving FHA to pay for any draws between assignment and termination and to dispose of the property if the borrower or the borrower's estate did not repay the full balance at termination. Under this option, by contrast, the lender would continue to hold the loan until termination, leaving it exposed to the risk—now borne by FHA—that its payments to borrowers and the spread it added to the loan balance might not be paid in full at termination.

Partly offsetting those savings, FHA would receive less spread income under this option (because it would no longer receive the lender's spread on HECMs with balances between 98 percent and 200 percent of the maximum claim amount). In CBO's projection, this option would produce net savings because FHA's lost spread income would be more than offset by the value of the risk that FHA would transfer to lenders by delaying assignment. However, in some circumstances, FHA's loss of spread income would outweigh the effects of delaying assignment. For example, if home prices grew at a faster rate than CBO forecasts, FHA would experience less frequent losses from loans that terminated with an outstanding balance greater than the value of the home. Other forms of risk sharing—such as having lenders share a predefined portion of actual losses—might reduce uncertainty about the relative sizes of losses borne by lenders and spread income forgone by FHA.

CBO's Estimates of the Option to Share Risk With Lenders

If FHA shared its risk of losses with lenders by raising the assignment trigger to 200 percent, the average savings per HECM in 2020 would increase from near zero in the baseline to almost $1,200 on a FCRA basis, CBO estimates (see the top panel of Figure 3-1 on page 19).[13] That estimate includes the expectation that lenders would increase their spread by 0.35 percentage points (to 2.1 percent of a loan's balance) to recoup the fair-value cost associated with the risk of losses they would bear under the option. The rise in the lender's spread would slightly mute the increase in the average savings per loan because the higher spread income that FHA would earn after assignment would be more than offset by the probability of larger claim payments that would result when a borrower's outstanding balance exceeded the home's value at termination.

---

12. Under this option, if the lender assigned an active HECM when the balance reached 200 percent of the maximum claim amount and the loan had not yet suffered a loss, FHA would pay the lender the outstanding balance rather than the maximum claim amount.

---

13. Sharing the risk of losses with lenders would have no effect on Ginnie Mae's HMBS program.

The number of new HECMs originated in 2020 would decline by 5 percent under this option, CBO estimates, reflecting the increase in borrowers' costs from the higher lender's spread. Measured on a FCRA basis, the loans originated in 2020 under this option would save the federal government approximately $50 million over their lifetime—rather than generating almost no savings, as in the baseline—for a total decrease in the budget deficit of about $50 million in 2020, CBO projects.

Measured on a fair-value basis, this option would reduce the average cost per HECM by about $2,400, CBO estimates—from slightly below $9,100 in the baseline to approximately $6,700.[14] On a fair-value basis, the HECMs projected to be originated in 2020 under this option would cost the government $250 million over their lifetime—compared with approximately $350 million in the baseline—for a total decrease in the budget deficit of slightly less than $110 million in 2020.

Uncertainty Surrounding the Estimates for Sharing Risk With Lenders
CBO's estimates of savings for this option are subject to significant uncertainty—although the amount of uncertainty is less than for estimates of the direct loan option, which would make larger changes to the HECM program than this approach would. If lawmakers drafted legislation to introduce risk sharing, the budgetary savings or costs that CBO would report in a cost estimate for that legislation would depend on the specific legislative language; CBO's estimate of the effects of that change could differ greatly from the estimates provided in this analysis.

Uncertainty About FHA's Performance. Measured on a FCRA basis, the federal subsidy rate for the HECM program in 2020 under this option would be about –0.4 percent, CBO estimates. That rate is higher than the negative annual FCRA subsidy rates that are typical for FHA's single-family mortgage guarantee program. If, instead, FHA raised its annual insurance premiums to yield a FCRA subsidy rate of –1 percent (consistent with the target FCRA subsidy rate in the direct loan option), the savings per HECM would increase from slightly

less than $1,200 to about $3,600 on a FCRA basis, and the cost per HECM would decline from approximately $6,700 to $5,200 on a fair-value basis (see Table 3-3).

Alternatively, FHA could reduce its annual insurance premiums to offset the anticipated 0.35 percentage-point rise in the lender's spread and thereby keep borrowers' interest rates the same. In that case, the average subsidy for a new HECM guaranteed in 2020 would shift from a savings of almost $1,200 to a cost of $1,400 on a FCRA basis, CBO estimates. On a fair-value basis, the average cost per loan would rise from approximately $6,700 to $8,500.

Uncertainty About Lenders' Behavioral Changes.
Lenders might raise their spread less or more than the 0.35 percentage-point increase included in CBO's estimates for this option. If, for example, that spread did not increase (remaining at 1.75 percent of a loan's balance, as in the baseline), the 2020 cohort of HECMs would save the government an average of $2,900 per loan on a FCRA basis or cost $4,500 per loan on a fair-value basis.

Lenders might also choose to leave the HECM market, although that incentive is much weaker under this option than it would be with a direct loan program because lenders would still have the opportunity to earn spread income before reaching the assignment trigger. If behavioral changes by lenders reduced the number of HECMs originated in 2020 by, for example, 10 percent, CBO projects that sharing risk with lenders would cause those HECMs to save the federal government a total of about $40 million over their lifetime on a FCRA basis or cost the government $230 million on a fair-value basis.

Uncertainty About Borrowers' Behavioral Changes.
Borrowers might also be more or less likely to obtain a HECM under this option, because of a change in the lender's spread, than CBO estimates. If, for example, there was no decrease in HECM originations in 2020 because of borrower's behavioral changes (rather than the 5 percent decline that CBO estimates for this option), those 2020 guarantees would save the federal government about $50 million over their lifetime on a FCRA basis or cost $260 million on a fair-value basis (both roughly the same as under this option), CBO projects.

Alternatively, potential borrowers might react more strongly to a higher lender's spread than CBO estimates, opting for other loan options instead of HECMs. If, for

---

14. As in the direct loan option, the difference between the estimated savings per HECM on a fair-value basis and on a FCRA basis results from the opposing effects of differences in the discount rates used to calculate the present value of future cash flows and differences in the treatment of market risk (see Box 2-1 on page 12).

Table 3-3.

Estimated Effects of Sharing the Risk of Losses on HECMs With Lenders

	Number of HECMs Guaranteed in 2020	FCRA Estimates for 2020 Cohort of Guarantees		Fair-Value Estimates for 2020 Cohort of Guarantees	
		Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)	Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)
Under Current Law					
CBO's Baseline	39,000	*	**	9,100	350
With the Assignment Trigger Raised to 200 Percent of the Maximum Claim Amount					
CBO's Central Estimate for the Option (Incorporates 0.35 percentage-point increase in lender's spread and 5 percent decline in guarantees)	37,050	-1,200	-50	6,700	250
Sensitivity to Annual Insurance Premiums					
FHA raises premiums to achieve target FCRA subsidy rate of -1 percent[a]	37,050	-3,600	-130	5,200	190
FHA lowers premiums to keep borrowers' interest rates unchanged[a]	37,050	1,400	50	8,500	310
Sensitivity to Lender's Spread					
Lender's spread does not increase[a]	37,050	-2,900	-110	4,500	170
Sensitivity to Number of Guarantees					
Guarantees do not decline[a]	39,000	-1,200	-50	6,700	260
Guarantees decline by 10 percent[a]	35,100	-1,200	-40	6,700	230

Source: Congressional Budget Office.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

Under the HECM program's current rules, lenders can sell ("assign") active HECMs to FHA once the outstanding loan balance reaches or exceeds 98 percent of the maximum claim amount (the largest claim payment that a lender could receive from FHA for the loan, which typically equals the home's value when the loan was originated). Under this option, lenders would be required to hold active HECMs until the outstanding loan balance reached 200 percent of the maximum claim amount.

Negative numbers indicate savings to the federal government.

FCRA = Federal Credit Reform Act; FHA = Federal Housing Administration; HECM = home equity conversion mortgage; * = between -$50 and zero; ** = between -$5 million and zero.

a. Other changes included in this option remain the same.

instance, larger changes in borrowers' behavior reduced HECM originations in 2020 by 10 percent, sharing risk with lenders would have the same budgetary effects as with the 10 percent decrease in originations caused by lenders' leaving the HECM market, CBO projects.

Slowing the Growth of the Borrower's Available Principal Limit

Currently, the principal limit of a HECM—which comprises the outstanding balance of the loan and the amount of any undrawn funds—grows each year by the interest rate on the loan plus annual fees. For example, if a borrower with an initial principal limit of $100 and a loan interest rate and fees totaling 10 percent drew $40 at origination (leaving $60 in undrawn funds available as a future line of credit), the outstanding balance owed on the HECM after one year would be $44. The principal limit would also grow by 10 percent, meaning that after one year it would be $110, leaving the borrower with an available line of credit of $66. If the original principal

limit did not grow, the borrower's line of credit after one year would shrink to $56 (the original $100 principal limit minus the $44 outstanding balance), decreasing the homeowner's potential borrowing power.

The increasing principal limit ensures that borrowers do not lose access to undrawn funds because of growth in the loan balance associated with interest and fees. That feature also provides an incentive for seniors to open a HECM line of credit before they need to draw on the funds, because the size of the credit line may increase at a rate that results in more credit than they would receive if they waited until they were older and were eligible for a higher principal limit factor.[15] (The growing principal limit might also promote strategic behavior by borrowers, who could leave a HECM credit line completely undrawn until termination, at which point they could draw the entire available balance if it exceeded the current value of their home. However, research suggests that such behavior has not been widespread among HECM borrowers.)[16]

Under this option, the principal limit would grow at a slower rate than it does now: by just enough to keep the amount of a borrower's undrawn funds steady. In the example above, after the initial draw of $40, the borrower's available line of credit would remain at $60 until additional draws were made (instead of increasing to $66 after the first year). Slower growth of the principal limit would reduce budgetary costs to FHA by decreasing the likelihood that a loan would terminate with a balance greater than the home's current value.

Lenders would probably experience little direct impact from slowing the growth of principal limits. Borrowers, however, might be encouraged to increase their initial draw or to draw funds earlier than they would under the program's current parameters.

---

15. See Wade D. Pfau, "Understanding the Line of Credit Growth for a Reverse Mortgage," *Journal of Financial Planning* (March 2016), pp. 37–39, https://tinyurl.com/ya6vrvea.

16. See Thomas Davidoff and Jake Wetzel, *Do Reverse Mortgage Borrowers Use Credit Ruthlessly?* (working paper, Sauder School of Business, University of British Columbia, July 22, 2014), http://dx.doi.org/10.2139/ssrn.2279930.

CBO's Estimates of the Option to Slow the Growth of Principal Limits

CBO estimates that if FHA implemented the change to principal-limit growth in 2020, the savings per HECM would increase from almost zero in the baseline to about $4,800 on a FCRA basis (see the top panel of Figure 3-1 on page 19).[17] CBO's estimates for this option include the expectation that 50 percent of borrowers would draw their entire principal limit at origination, compared with 30 percent of borrowers in the baseline estimate for the current HECM program.[18] That increase is based on the expectation that with slower principal-limit growth, more borrowers would use their HECM to repay an existing mortgage.[19]

The number of new HECMs originated in 2020 would decline by 5 percent under this option, CBO estimates, reflecting the expectation that the reduced value of undrawn principal would cause some borrowers to forgo getting a HECM. Measured on a FCRA basis, the loans originated in 2020 under a HECM program with slower principal-limit growth would save the federal government approximately $180 million over their lifetime— rather than the negligible amount in the baseline—for a total decrease in the budget deficit of roughly $180 million in 2020.

Measured on a fair-value basis, this option would reduce the cost per loan by about $6,900, CBO estimates— from slightly below $9,100 in the baseline to about

---

17. Implementing a change to the growth of principal limits would have no effect on Ginnie Mae's HMBS program.

18. Borrowers' draw behavior in CBO's baseline estimate is based on an analysis of HECMs guaranteed in 2016 and 2017. In CBO's simplified approach, 30 percent of borrowers draw their entire principal limit at origination, 50 percent draw half of their principal limit at origination and the other half in year seven, 10 percent draw half of their principal limit at origination and make no further draws, and 10 percent draw their entire principal limit at termination (if the principal limit exceeds the home's current value). See Table A-1 on page 34 for details.

19. Under the current program, borrowers may view the ability to access their undrawn funds in the future (which grow at the interest rate on the loan plus annual fees) as more valuable than using those funds to eliminate the monthly payment associated with an existing mortgage. Under this option, those undrawn funds would no longer grow annually, so the relative value of postponing draws would decrease. Consequently, CBO estimates that some borrowers would make larger initial draws to repay their current mortgage.

$2,200.[20] The HECMs projected to be originated in 2020 would result in costs of about $80 million over their lifetime on a fair-value basis, compared with the estimated fair-value cost of approximately $350 million in the baseline, for a total decrease in the budget deficit of roughly $270 million in 2020.

Uncertainty Surrounding the Estimates for Slowing the Growth of Principal Limits

As with the other options, CBO's estimates of savings for this option are subject to uncertainty. However, the amount of uncertainty should be smaller than for the other approaches because lenders would be largely unaffected by the change in the growth of principal limits. If lawmakers drafted legislation to slow the growth of principal limits, the budgetary savings or costs that CBO would report in a cost estimate for that legislation would depend on the specific legislative language; CBO's estimate of the effect of that change could differ significantly from the estimates included in this report.

Uncertainty About FHA's Change. Rather than setting the growth of principal limits at a rate designed to keep the amount of a borrower's undrawn funds stable, FHA could tie that growth to some other rate lower than the loan's current interest rate plus annual fees. For example, if the principal limit was set to increase only at the interest rate on one-year Treasury securities, the savings per HECM would decline to approximately $4,000 on a FCRA basis (compared with $4,800 per loan under this option), and the cost per HECM would increase to

---

20. As in the direct loan option, the difference between the estimated savings per HECM on a fair-value basis and on a FCRA basis results from the opposing effects of differences in the discount rates used to calculate the present value of future cash flows and differences in the treatment of market risk (see Box 2-1 on page 12).

approximately $3,400 on a fair-value basis (compared with about $2,200 per loan under this option).

Uncertainty About Borrowers' Behavioral Changes. If borrowers' undrawn funds stayed the same size rather than growing each year, borrowers might alter their draw patterns to a greater or lesser extent than CBO estimates. If, for example, this option did not prompt any change in borrowers' draw patterns, CBO projects that slowing the growth of principal limits would increase the savings per loan on a FCRA basis from $4,800 to about $6,000 and would decrease the cost per loan on a fair-value basis from approximately $2,200 to $400 (see Table 3-4).

Alternatively, potential borrowers might react more strongly to a change in the growth of principal limits than CBO estimates, forgoing HECMs in favor of other alternatives. Because this option would result in savings per loan on a FCRA basis, reducing the volume of loans would decrease the degree to which this option would generate budgetary savings relative to the baseline. On a fair-value basis, loans would continue to generate a cost under this option (although a smaller cost than in the baseline), so reducing the volume of loans would increase savings relative to the baseline.

For example, if larger changes in borrowers' behavior reduced the number of HECMs originated in 2020 by 25 percent (rather than the 5 percent decrease that CBO estimates for this option), those 2020 guarantees would save the federal government about $140 million over their lifetime on a FCRA basis (compared with savings of $180 million under this option and almost no savings under the baseline). On a fair-value basis, the 2020 HECMs would cost the federal government $70 million over their lifetime (compared with about $80 million under this option and $350 million under the baseline).

Table 3-4.

Estimated Effects of Slowing the Growth of the Borrower's Available Principal Limit

	Number of HECMs Guaranteed in 2020	FCRA Estimates for 2020 Cohort of Guarantees		Fair-Value Estimates for 2020 Cohort of Guarantees	
		Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)	Average Federal Cost per Loan (Dollars)	Total Federal Cost (Millions of dollars)
Under Current Law					
CBO's Baseline	39,000	*	**	9,100	350
With Slower Principal-Limit Growth					
CBO's Central Estimate for the Option (Incorporates 5 percent decline in guarantees, 50 percent of borrowers drawing full loan at origination, and available principal limit growing only enough to keep borrowers' undrawn funds steady)	37,050	-4,800	-180	2,200	80
Sensitivity to Rate of Principal-Limit Growth Available principal limit grows at interest rate on one-year Treasury securities (more quickly than under this option but more slowly than under current policy)[a]	37,050	-4,000	-150	3,400	130
Sensitivity to Borrowers' Draw Behavior Borrowers' draws at origination do not change[a]	37,050	-6,000	-220	400	20
Sensitivity to Number of Guarantees Guarantees decline by 25 percent[a]	29,250	-4,800	-140	2,200	70

Source: Congressional Budget Office.

CBO uses two approaches to estimate the cost of federal credit programs: the accounting procedures currently used in the federal budget, which are prescribed by the Federal Credit Reform Act of 1990; and an alternative method, known as the fair-value approach, in which costs are estimated on the basis of the market value of the federal government's obligations.

The available principal limit of a HECM is the total amount a borrower is eligible to draw. It increases each year by the interest rate on the loan plus annual fees.

Negative numbers indicate savings to the federal government.

FCRA = Federal Credit Reform Act; HECM = home equity conversion mortgage; * = between -$50 and zero; ** = between -$5 million and zero.

a. Other changes included in this option remain the same.

Details of CBO's Model for the
Home Equity Conversion Mortgage Program

To estimate the budgetary cost of the Federal Housing Administration's (FHA's) program to guarantee home equity conversion mortgages (HECMs), the Congressional Budget Office uses a model that simulates the cash flows of those reverse mortgages on the basis of various factors, such as characteristics of borrowers who take out HECMs, the rules of the HECM program, the fees charged for those loans, the properties backing the loans, and the overall economic environment.[1] The model uses a Monte Carlo simulation of home prices and interest rates (drawing from 5,000 possible paths for those variables that are centered on CBO's baseline macroeconomic forecast).

CBO adjusted the model to reflect recent changes to the HECM program, its analysis of FHA's loan-level data set for HECMs, and its macroeconomic forecast for 2020. Features and variables of the model are described in Tables A-1 and A-2.

---

1. CBO's model is based on one developed by Deborah Lucas for "Hacking Reverse Mortgages" (draft, Massachusetts Institute of Technology Center for Finance and Policy, October 26, 2015), https://tinyurl.com/yc4nvvvt (PDF, 198 KB).

Table A-1.

CBO's Model for the HECM Program

Variable	Values Used in the Model	Support for Those Values	Role in the Model
Characteristics of Borrowers			
Age of Youngest Borrower at Loan's Origination	Ranges from ages 62 to 90	Based on HECMs guaranteed in 2016 and 2017	▪ Used to set the principal limit at origination ▪ Used to determine probabilities of borrowers' moving or dying each year during the life of the loan
Mortality Rates	Rates increase for a borrower as the borrower grows older, but rates for people of a given age decline over time	Based on CBO's *2019 Long-Term Budget Outlook*	▪ Used to determine the probability that borrowers will die during the year based on their current age ▪ Used (along with the moving rate) to determine whether a loan will terminate in the current year
Moving Rates	2 percent for borrowers age 65 or under, 3 percent for borrowers over age 65	Based on data from the Census Bureau	▪ Used to determine the probability that borrowers will move during the year based on their current age ▪ Used (along with the mortality rate) to determine whether a loan will terminate in the current year
Borrowers' Draw Behavior	Simplified set of draw patterns: 30 percent of borrowers draw their entire principal limit at origination, 50 percent draw half of their principal limit at origination and the other half in year seven, 10 percent draw half of their principal limit at origination and make no further draws, and 10 percent draw their entire principal limit at termination (if the principal limit exceeds the home's current value)	Based on an analysis of draw behavior for HECMs guaranteed in 2016 and 2017	▪ Used (along with the borrower's interest rate, FHA's annual insurance premium, and servicing fees) to establish the outstanding loan balance ▪ The loan balance (along with the maximum claim amount) determines the lender's assignment decision ▪ The loan balance (along with the home's current value) determines the borrower's decision to repay or default and the lender's decision to make a claim on the HECM program
Loan and Program Features			
Principal Limit Factors	Range from 31.2 percent of the home's current value (for a 62-year-old borrower with an interest rate of 7.0 percent) to 69.1 percent (for a 90-year-old borrower with an interest rate of 4.0 percent)	Based on the principal limit factors in effect in 2019	▪ Used (along with the home's original value) to establish the initial principal limit ▪ The principal limit grows each period on the basis of the borrower's interest rate and FHA's annual insurance premium
Maximum Claim Amount	Set equal to the home's original value	Based on the distribution for HECMs guaranteed in 2016 and 2017, adjusted to average approximately $349,000 for 2020 HECMs (consistent with the Administration's estimate of the size of 2020 HECMs)	▪ Used (along with the current loan balance) to determine the lender's assignment decision

Table A-1.

CBO's Model for the HECM Program

Variable	Values Used in the Model	Support for Those Values	Role in the Model
		Features Related to Home Prices	
Home's Original Value	Set at $100,000 for 5 percent of loans, $160,000 for 8 percent of loans, $270,000 for 50 percent of loans, $500,000 for 32 percent of loans, and $726,525 for 5 percent of loans	Based on the distribution for HECMs guaranteed in 2016 and 2017, with a target average of approximately $349,000	■ Used (along with the principal limit factor) to establish the initial principal limit ■ Used to set the maximum claim amount ■ Used (along with FHA's up-front fee rate) to establish the up-front fee amount
Forecast for Home Prices	Based on the Federal Housing Finance Agency price index (purchase transactions, seasonally adjusted)	Based on 5,000 possible paths for the annual growth of home prices, with the average growth rate equal to the rate in CBO's macroeconomic forecast. The average annual nominal growth rate across those 5,000 paths is about 3.25 percent.	■ Used (along with disposition costs, the HECM home price adjustment, and sales costs) to set the home's value at termination
Fair-Value Adjustment for Market Risk	To calculate fair values, annual growth rates for home prices are reduced by 1 percentage point, representing a risk-neutral growth process for home prices	Based on CBO's estimate of the market risk adjustment for the HECM program	■ Used (along with the annual growth of home prices) to set the home's current value in calculating the fair-value subsidy
Disposition Costs	25 percent of the home's value at termination	CBO's estimate (informed by the auditor's actuarial review of the HECM program) of how much either FHA or the lender will spend to sell a house that the borrower (or borrower's estate) has turned over at termination as part of a deed in lieu of foreclosure	■ Used (along with growth in the home's price since origination and the HECM home price adjustment) to calculate the proceeds available to the lender or FHA if the borrower (or borrower's estate) does not sell the home and repay the full loan balance at termination
HECM Home Price Adjustment	For loans sold by the borrower (or borrower's estate), set at 1 percent per year, with a maximum of 10 percent; for loans sold by FHA or the lender, set at 2.88 percent per year, with a maximum of 28.8 percent	CBO's estimate (informed by the auditor's actuarial review of the HECM program and academic research) of how much the value of homes owned by HECM borrowers will lag behind average home values because of the potential for elderly homeowners to spend less on home maintenance	■ Used (along with growth in the home's price since origination and disposition costs) to calculate the proceeds available to the borrower (or borrower's estate), the lender, or FHA
Sales Costs	6 percent of the home's value at termination	CBO's estimate based on standard realtor costs of 3 percent for the seller's agent and 3 percent for the buyer's agent	■ Used (along with growth in the home's price since origination) to calculate the proceeds available to the borrower (or borrower's estate) if the full loan balance is repaid at termination

Continued

Table A-1. Continued

CBO's Model for the HECM Program

Variable	Values Used in the Model	Support for Those Values	Role in the Model
		Fees	
FHA's Up-Front Fee	2 percent of the home's original value	Based on FHA's HECM fees in 2018	■ Used (along with the home's original value) to calculate the fee paid to FHA at origination ■ Added to the loan balance at origination
FHA's Annual Insurance Premium	0.5 percent of the loan balance	Based on FHA's HECM fees in 2018	■ Used (along with the loan balance) to calculate the fee paid to FHA each year ■ Added to the loan balance each year
Origination Fee and Closing Costs	The origination fee is set at the greater of $2,500 or 2 percent of the first $200,000 of the home's original value plus 1 percent of the amount over $200,000 (with a maximum of $6,000). Closing costs are set at $300.	The origination fee is based on FHA's HECM rules in 2018. Closing costs are CBO's estimate of third-party fees and include any credit that lenders may grant borrowers during the origination process.	■ Used (along with the home's original value) to calculate the fee paid to the lender at origination ■ Added to the loan balance at origination
Lender's Spread	1.75 percent of the loan balance	Based on HECMs guaranteed after the principal-limit changes that took effect in 2017	■ Used (along with the loan balance) to calculate the fee earned by the lender each year ■ Added to the loan balance each year
		Interest Rates	
Short-Term Rate	Follows CBO's simulation process for generating interest rates, with an average annual rate equal to the interest rate on one-year Treasury securities in CBO's macroeconomic forecast over the term of the HECMs guaranteed in 2020	Based on 5,000 paths for one-year Treasury rates, with the average rate across all of those paths equal to the one-year Treasury rate in CBO's macroeconomic forecast	■ Used (along with the lender's spread) to set the borrower's interest rate ■ All loans guaranteed in 2020 are assumed to be variable-rate HECMs with an annual interest rate adjustment based on the one-year Treasury rate
Discount Rates	For FCRA estimates, the present value of expected future cash flows is calculated by discounting them using the interest rates on Treasury securities with similar terms to maturity. For fair-value estimates, the present value of expected future cash flows is calculated by discounting them using a sequence of interest rates on one-year Treasury securities (consistent with the financing costs that private firms incur by matching their own borrowing to the characteristics of the loans they make).	For FCRA estimates, discount rates are based on CBO's "basket of zeros" (set of projected interest rates on longer-term zero-coupon Treasury securities) for 2020. For fair-value estimates, discount rates are based on 5,000 paths for one-year Treasury rates, with the average rate across all of those paths equal to the one-year Treasury rate in CBO's macroeconomic forecast.[a]	■ The discount rates are used to discount future cash flows to the present for subsidy calculations

Source: Congressional Budget Office.

FCRA = Federal Credit Reform Act; FHA = Federal Housing Administration; HECM = home equity conversion mortgage.

a. Using a "basket of zeros" approach for FCRA estimates of the HECM program is consistent with CBO's approach for other credit programs, although it results in higher costs than an approach using one-year Treasury rates. That increase results from the fact that interest rates on securities with a maturity greater than one year tend to be higher than a sequence of one-year rates with a similar total term. Those higher rates result in more severe discounting of future cash flows, which raises costs for HECMs because cash inflows to FHA from recoveries lag behind cash outflows from FHA for payments to lenders at assignment.

Table A-2.

Various Processes and Subsidy Calculations in CBO's Model for the HECM Program

Variable	Treatment in the Model
Loan Balance Growth Process	■ At origination, the loan balance is equal to the sum of the lender's origination fee, FHA's up-front fee, closing costs, and any initial draws by the borrower (including draws used to fund "set asides" for future payments of taxes and insurance). ■ In subsequent years, the loan balance is increased by additional draws by the borrower, FHA's annual insurance premium, and interest accrued on the outstanding loan balance (based on the borrower's interest rate).
Principal-Limit Growth Process	■ At origination, the initial principal limit is based on the product of the home's original value and the borrower's principal limit factor. ■ In subsequent years, the principal limit is increased by FHA's annual insurance premium and interest accrued on the outstanding loan balance (based on the borrower's interest rate).
Assignment Process	■ In each period, a check is made to see if the loan balance is greater than or equal to 98 percent of the maximum claim amount. If it is and the HECM has not yet been assigned to FHA, the lender is projected to assign the loan. ■ Although historical data show that not all HECMs are eligible for assignment, it is assumed that recent program changes (including financial assessments and "set aside" accounts) were sufficient to eliminate most ineligible loans. As a result, all HECMs are assumed to be eligible for assignment, and lenders are projected to assign all eligible loans. ■ At assignment, FHA pays the lender either the loan balance or the maximum claim amount, whichever is smaller.
Termination Process	■ In each year of each possible path for the growth of home prices (described in Table A-1), two random numbers between 0 and 1 are generated. If the borrower's probability of mortality is greater than the first random number, the borrower is projected to die during that period. If the borrower's probability of moving is greater than the second random number, the borrower is projected to move during that period. If the borrower is older than age 98, the loan is projected to terminate during that period. ■ At termination, if the current value of the borrower's home (minus the HECM home price adjustment and sales costs described in Table A-1) is greater than the loan balance, the borrower is projected to repay the loan balance. Such loans are considered to terminate without a claim on FHA. ■ If a loan is not repaid fully and has not yet been assigned, the home is projected to be transferred by the borrower through a "deed in lieu" process and sold by FHA or the lender. The proceeds of that sale are projected to equal the home's current value minus disposition costs and the HECM home price adjustment. FHA pays the lender either the loan balance or the maximum claim amount, whichever is smaller. ■ If a loan is not repaid fully and has already been assigned, the home is projected to be transferred by the borrower through a "deed in lieu" process and sold by FHA. The proceeds of that sale are projected to equal the home's current value minus disposition costs and the HECM home price adjustment. FHA retains those proceeds.
Subsidy Cost Calculation	■ For the combination of each scenario for a borrower's draw behavior, the home's original value, and the borrower's age at origination, cash inflows to FHA (up-front fees, annual insurance premiums, and recoveries) and cash outflows from FHA (claims) are calculated for each period from origination until termination for each of the 5,000 paths for the growth of home prices (either adjusted for market risk in the fair-value approach or unadjusted in the FCRA approach). ■ Those cash flows are averaged across the 5,000 paths for the growth of home prices and weighted by the expected distribution of each borrower draw scenario, original home value, and borrower age at origination. The weighted cash flows are then discounted back to the origination date using the appropriate FCRA or fair-value discount rate. ■ The sum of the discounted cash flows—which equals the subsidy cost per loan—is multiplied by the number of HECMs projected to be guaranteed in 2020 to calculate the total subsidy cost.
Subsidy Rate Calculation	■ The subsidy cost per loan is divided by the average maximum claim amount to calculate the subsidy rate per dollar of maximum claim amount.

Source: Congressional Budget Office.

FCRA = Federal Credit Reform Act; FHA = Federal Housing Administration; HECM = home equity conversion mortgage.

Comparing the Results of CBO's HECM Model With Those of FHA and Its Auditor

The Congressional Budget Office's cash flow model described in Appendix A is not the only model developed to assess the effect of home equity conversion mortgages (HECMs) on the federal budget. The Federal Housing Administration (FHA) maintains its own model of the HECM program and publishes estimates from that model each year in the *Federal Credit Supplement* (a volume of the President's budget) and in the agency's *Annual Report to Congress*.[1] In addition, the Congress has mandated that FHA undergo an actuarial review by an independent auditor each year. That audit, performed for 2018 by Pinnacle Actuarial Resources, is based on a model of the HECM program maintained by the auditor.[2]

FHA's Model and Results

Although FHA does not publish specific details about the equations or assumptions that underlie its HECM cash flow model, it publishes two different, but related, sets of results from that model. The first set is the subsidy rate estimates included in the government's annual *Federal Credit Supplement*. Those estimates are consistent with CBO's estimates of the federal subsidy rate for the HECM program calculated according to the methodology specified in the Federal Credit Reform Act of 1990 (FCRA). For example, FHA's estimate of the program's subsidy rate per loan (as a percentage of the maximum claim amount) is –0.08 percent for 2020, which

translates into a small budgetary savings for the HECM program in that year. That result compares with CBO's FCRA-based estimates of a subsidy rate of approximately zero for 2020 and essentially no budgetary savings for the HECM program in that year.

FHA's other assessment of the cost of the HECM program is published in its *Annual Report to Congress*, which describes the status of the Mutual Mortgage Insurance Fund (MMIF) for the most recent year. (That fund is a series of federal accounts that track transactions associated with FHA's single-family mortgage and HECM guarantees.) Under federal law, the MMIF must maintain a capital reserve ratio of at least 2 percent—measured as the economic net worth that would remain in the fund after covering expected future losses on all outstanding guarantees, divided by the total amount of those guarantees.[3] Although the total capital reserve ratio covers FHA's guarantees of both standard single-family mortgages and HECMs, FHA publishes stand-alone results for each program in its annual report. At the end of 2018, the stand-alone capital reserve ratio for the HECM program was –18.8 percent, and the program's economic net worth was –$13.6 billion. Those numbers mean that the net present value (on a FCRA basis) of expected future losses on HECM guarantees in effect at the end of 2018 exceeds the current capital resources of the HECM program in the MMIF.[4]

Directly comparing that result with CBO's FCRA-based estimate for the HECM program is difficult, for a number of reasons. First, CBO's estimate is based only on the 2020 cohort of guarantees, whereas FHA's estimate is based on all loans guaranteed in 2018 or earlier that were outstanding at the end of 2018. Second, FHA's measure

---

1. See Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2020: Federal Credit Supplement* (March 2019), www.whitehouse.gov/omb/supplemental-materials; and Department of Housing and Urban Development, *Annual Report to Congress Regarding the Financial Status of the FHA Mutual Mortgage Insurance Fund: Fiscal Year 2018* (November 15, 2018), www.hud.gov/fhammifrpt.

2. See Department of Housing and Urban Development, *Fiscal Year 2018 Independent Actuarial Review of the Mutual Mortgage Insurance Fund: Cash Flow Net Present Value From Home Equity Conversion Mortgage Insurance-in-Force* (prepared by Pinnacle Actuarial Resources, November 15, 2018), http://tinyurl.com/yxgsueju (PDF, 3.7 MB).

3. Sec. 332 of the Cranston-Gonzalez National Affordable Housing Act, 12 U.S.C. §1711(f)(2) (2018).

4. 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 received or paid at a specific time.

includes the capital resources of the HECM program on hand at the end of 2018, which are used to offset the net present value of expected future losses on existing guarantees, whereas CBO's estimate is based only on cash flows generated by the 2020 guarantees.

Auditor's Model and Results

Unlike FHA's reporting on its HECM model and results, the auditor's actuarial review of the HECM program includes both results and a description of the underlying model. In general, the actuarial model appears to be similar to the CBO model used for this analysis. Both reflect the basic cash inflows and outflows associated with FHA's guarantees: up-front fees, annual premiums, and recoveries on assigned loans received by FHA, and claims and expenses for property sales paid by FHA. Both models were also developed from an analysis of loan-level HECM data.

The auditor's model differs from CBO's model, however, in several important ways, most notably by including more detailed estimates of borrowers' behavior. For example, in CBO's model, estimates of how borrowers draw on their reverse mortgages are based on four simplified patterns (see Table A-1 on page 34). The auditor's actuarial approach is based on a two-stage model of the likelihood of a draw in a particular period and the size of the subsequent draw, both of which are based on a fuller array of draw options (involving lump-sum withdrawals, regular monthly withdrawals for a specified number of months, regular monthly withdrawals for the period in which the borrower occupies the home, a line of credit that can be drawn on when needed, and a combination of regular monthly withdrawals and a line of credit).

The way in which HECMs terminate also differs in the two models. In CBO's approach, a borrower's probability of moving or dying at a particular age and in a specific period is compared with a random number to determine whether the termination occurs. The actuarial approach uses models that determine whether a borrower moves, dies, or refinances in a particular period. Those models use a series of variables to estimate termination,

including the age of the loan, the remaining line of credit, and characteristics of the borrower such as age and sex.

Finally, CBO's and the auditor's models rely on different sets of macroeconomic forecasts for variables such as interest rates and home prices. CBO's model uses 5,000 possible paths for interest rates and home prices centered on the agency's baseline macroeconomic forecast, whereas the actuarial model relies on forecasts from the Office of Management and Budget and nine additional economic scenarios developed by Moody's.

The auditor's actuarial report is designed to update the Congress about the status of the MMIF and is used to validate the results produced by FHA's model. As part of that report for 2018, the auditor provided additional estimates related to the HECM program, some of which can be used to compare the auditor's model with CBO's results. In particular, the report provided an estimate of the net present value of cash flows for loans guaranteed in a particular year, without including the impact of the program's current capital resources.

For the 2017 cohort of guarantees, the auditor's central estimate of the net present value of expected future cash flows for those loans at the end of 2018 was –$1.502 billion. FHA reports that approximately 52,000 reverse mortgages guaranteed in 2017 remained active at the end of 2018.[5] The net present value of the expected future cash flows for those HECMs would be approximately –$29,000 per loan. Adjusting CBO's model to reflect the program parameters and macroeconomic forecast in effect in 2017 yields a net present value per HECM of about –$28,500 on a FCRA basis. As with CBO's estimates for loans projected to be guaranteed in 2020, that estimate for loans guaranteed in 2017 is uncertain and is sensitive to changes in a variety of modeling decisions documented in this report.

---

5. See Department of Housing and Urban Development, *Annual Report to Congress Regarding the Financial Status of the FHA Mutual Mortgage Insurance Fund: Fiscal Year 2018* (November 15, 2018), www.hud.gov/fhammifrpt.

List of Tables and Figures

About This Document