



CONGRESSIONAL BUDGET OFFICE
U.S. Congress
Washington, DC 20515

Douglas W. Elmendorf, Director

May 18, 2011

Honorable Paul Ryan
Chairman
Committee on the Budget
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

In response to your request, the Congressional Budget Office (CBO) has prepared the attached analysis of accounting for the Federal Housing Administration's (FHA's) single-family mortgage insurance program on a fair-value basis. (Over the past two years, that program has guaranteed more than 17 percent of new and refinanced mortgages in the United States.) The fair-value approach is an alternative to the current accounting methodology, which is specified in the Federal Credit Reform Act of 1990 (FCRA).

Fair-value estimates differ from estimates produced using the FCRA methodology in an important way: By incorporating a market-based risk premium, fair-value estimates recognize that the financial risk that the government assumes when issuing credit guarantees is more costly to taxpayers than FCRA-based estimates suggest. Including an adjustment for market risk increases the estimated subsidy rate of the FHA's single-family mortgage program to such a degree that the program would show costs in 2012 rather than savings, CBO estimates.

I hope you find this information useful. If you would like further details, we would be glad to provide them. The primary staff contact for the analysis is Damien Moore.

Sincerely,

Douglas W. Elmendorf

Attachment

Honorable Paul Ryan

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cc: Honorable Chris Van Hollen
Ranking Member

Honorable Kent Conrad
Chairman
Senate Committee on the Budget

Honorable Jeff Sessions
Ranking Member

CONGRESSIONAL BUDGET OFFICE

Accounting for FHA's Single-Family Mortgage Insurance Program on a Fair-Value Basis

May 18, 2011

Over the past two years, the Federal Housing Administration (FHA) has guaranteed more than 17 percent of new and refinanced mortgages on single-family homes in the United States. The costs of FHA's single-family mortgage insurance program are recorded in the federal budget using a methodology spelled out in the Federal Credit Reform Act of 1990 (FCRA).¹ This analysis examines the budgetary impact of using a different accounting approach—fair-value estimating—which provides a more comprehensive measure of the cost of that program.

Both the FCRA approach and the fair-value approach use an accrual basis of accounting, and they rely on the same projections of future cash flows.² Both approaches take into account the lifetime cost of the new FHA loan guarantees made in a given year (including the expected cost of defaults, net of fees collected). But fair-value estimates differ in an important way from estimates produced using the FCRA methodology: They recognize that the government's assumption of financial risk has costs for taxpayers that exceed the average amount of losses that would be expected from defaults. In practice, the main difference between FCRA estimates and fair-value estimates is the effective discount rates used (either explicitly or implicitly) to calculate the present value of future guarantee costs and receipts: Whereas projected cash flows under FCRA are discounted using interest rates on Treasury securities, fair-value estimates are calculated using discount rates that incorporate a premium for market risk.³

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1. 2 U.S.C. 661 et seq. In this document, the term “single-family mortgage insurance program” refers to various FHA initiatives supported by the Mutual Mortgage Insurance Fund that guarantee mortgages on single-family homes. The term excludes programs that guarantee home-equity conversion mortgages or mortgages on multifamily homes.
 2. With accrual accounting, expenses are recorded when they are incurred and revenues when they are earned, rather than when payments are made or received.
 3. Market risk is the component of financial risk that investors cannot avoid by diversifying their portfolios. Investors require additional compensation for market risk—known as a market risk premium—because investments exposed to such risk are more likely to have low returns when the economy as a whole is weak and resources are scarce and highly valued. That premium is reflected in the fact that assets carrying more market risk have higher expected returns and lower prices.

The two approaches yield very different estimates of the impact of FHA's single-family mortgage insurance program on the federal budget. Under the FCRA methodology, the program would produce budgetary *savings* of \$4.4 billion in fiscal year 2012, the Congressional Budget Office (CBO) estimates. That result stems from an estimated subsidy rate of -1.9 percent applied to an estimated loan volume of \$233 billion. (The negative subsidy rate means that the present value of expected payments *to* the government for the loans guaranteed in 2012 exceeds the present value of expected payments *from* the government for those loans by an amount equal to 1.9 percent of the loan volume.)⁴ On a fair-value basis, in contrast, the program would have a *cost* of \$3.5 billion in 2012, CBO estimates—reflecting an estimated positive subsidy rate of 1.5 percent applied to the same projected loan volume.⁵ Thus, the effect of including an adjustment for market risk would be to increase the estimated subsidy rate for FHA's single-family guarantee program.

Budget Procedures Specified by the Federal Credit Reform Act

FCRA requires that the subsidy costs of the government's direct and guaranteed loans be calculated on an accrual basis—unlike most items in the federal budget, which are shown on a cash basis—and that such subsidy costs be recorded in the budget when the loans are disbursed. As a result, the lifetime cost of a credit commitment is recognized in the year that the loan is made, when resources are committed. The budgetary impact of most of the government's credit programs, including FHA's mortgage guarantee programs, is calculated in that way.

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4. In the case of loan guarantees, the subsidy cost is the net present value of estimated payments by the government to cover defaults and delinquencies, interest subsidies, or other expenses, offset by any payments to the government, including origination fees, other fees, penalties, and recoveries on defaulted loans. (In the case of direct government loans, subsidy costs equal the net present value of loan disbursements minus repayments of interest and principal, adjusted for estimated defaults, net of recoveries, and for prepayments, fees, and penalties.) 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) today. The present value depends on the rate of interest (the discount rate) that is used to translate future cash flows into current dollars.
 5. For details about how CBO calculated the 1.5 percent fair-value subsidy rate, see the appendix on page 11. CBO's fair-value estimate for FHA insurance does not include the costs and revenues associated with securities issued by the Government National Mortgage Association (Ginnie Mae) that are backed by FHA-insured mortgages. Through its mortgage-backed security program, Ginnie Mae is responsible for guaranteeing securities backed by pools of mortgages that are insured by federal agencies, including FHA. In exchange for a fee paid by lenders or issuers of the securities, Ginnie Mae guarantees the timely payment of scheduled principal and interest due on the mortgages underlying those securities. Under FCRA, Ginnie Mae's mortgage-backed security program produces small net receipts for the federal government. CBO has not separately estimated the value of those guarantees on a fair-value basis, but it expects that the value of the net receipts generated by Ginnie Mae would be slightly smaller than the value indicated by FCRA-based estimates.

Specifically, the budgetary cost of a direct loan or loan guarantee is calculated as the net present value of expected cash flows over the life of the loan. Under FCRA, net present value is estimated by discounting cash flows to the time of loan disbursement using the interest rates on Treasury securities of comparable maturity. (For example, a year after disbursement, cash flows are discounted using a rate on one-year Treasury securities; five years out, they are discounted using a five-year rate; and so on.)

Funds for discretionary credit programs must be appropriated in advance, according to FCRA, to cover the estimated subsidy cost of providing direct loans or loan guarantees. Credit programs that are estimated to result in net savings to the government do not require an appropriation for a credit subsidy, but appropriation acts must specify the total amount of loans that the government may provide or guarantee.

A stated purpose of FCRA accounting is to make the budgetary cost of credit programs equivalent to that of other federal spending. FCRA estimates do not fully achieve that goal, however. Most federal spending takes place at prices that cover the costs to private entities of producing the goods and services that the government buys. But with FCRA estimates, the costs of federal loans and loan guarantees are recorded in the budget at prices that do not fully reflect such costs, for two reasons:

- By using Treasury rates for discounting, FCRA accounting implicitly treats market risk—a type of risk that is reflected in market prices because investors require compensation to bear it—as having no cost to the government. (FCRA procedures do, however, incorporate the expected cost of defaults on federal loans or loan guarantees.)
- Subsidy rates computed under FCRA exclude the administrative costs of federal credit programs—even costs that are essential for preserving the value of the government’s claim to future repayments, such as costs for servicing and collecting on loans. Such administrative costs are accounted for separately in the budget on a cash basis each year as they are incurred.

Because the cost of market risk is omitted and essential administrative costs are treated separately, the estimated budgetary cost of a federal loan or loan guarantee is systematically lower than that of an economically equivalent grant or benefit payment. Moreover, federal loans and loan guarantees tend to appear less costly than comparable activities undertaken in the private sector, even if the government is not intrinsically more efficient at providing them.

By omitting the cost of market risk and thus understating the economic cost of federal credit obligations, FCRA accounting could lead policymakers to favor credit programs over other forms of aid that have a similar economic cost. For example, low-income home buyers could receive assistance of equivalent economic value through grants that cover their down payments or through loan guarantees that subsidize their borrowing costs. However, FCRA accounting makes the loan program appear less

costly than an equivalent grant program. As another example, under FCRA accounting, buying or selling securities at competitive prices in the open market would produce an estimated budgetary gain for security purchases and an estimated loss for security sales, even though those transactions would entail no economic gain or loss.

Fair-Value Estimates

For the reasons outlined above, estimates prepared using FCRA procedures provide a less-than-comprehensive measure of the cost to taxpayers of federal credit commitments. In particular, discounting expected cash flows at Treasury rates—and thus ignoring market risk—yields an estimate of the cost of a loan guarantee that is lower than what competitive financial institutions would charge for such protection.

Using fair-value (or risk-adjusted) estimates is an alternative approach that more fully incorporates the cost to the government of the risk inherent in its credit transactions. That approach produces estimates of the value of assets and liabilities that either correspond to or approximate market prices. The fair value of an asset is defined as the price that would be received if the asset was sold in an orderly transaction (one that occurs under competitive market conditions between willing participants and does not involve forced liquidation or a distressed sale). The fair value of a liability, such as an FHA loan guarantee, is the price that would have to be paid to induce a market participant to assume the liability.

The main conceptual difference between FCRA estimates and fair-value estimates is in the choice of discount rates. Instead of using Treasury rates to discount future cash flows, fair-value estimates employ rates that are consistent with the risk of a specific credit obligation.⁶ Fair-value estimates of federal subsidy costs also may incorporate administrative expenses that are essential to preserving the value of an asset, such as servicing and collection costs.

A common argument against using fair-value estimates is that market risk does not involve costs to the federal government because the government can borrow at Treasury rates. However, when the government finances a risky loan or loan guarantee by selling a safe Treasury security, it is effectively shifting risk to members of the public. If such a loan is paid off as expected, the interest and principal payments cover the government’s obligation to the holder of the Treasury security, but if the borrower

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6. As a practical matter, incorporating a risk premium would require making technical adjustments to the system of budget accounts used to reconcile accruals under FCRA with actual cash flows. Each credit program has an associated budget account (called its “program account”) that receives and obligates appropriations to cover the subsidy cost of a direct loan or loan guarantee. It also has a nonbudgetary “financing account” that records the program’s cash flows and reconciles them with the subsidy payments it receives from the program account so that all accounts are in balance when the credit obligation reaches maturity. To accommodate the inclusion of a risk premium, the flows between the financing account, the Treasury, and the program account would have to be modified.

defaults, the security must be paid for through higher future taxes or lower future government spending.

Fair values are generally based on actual market prices, but that is not always the case. When comparable assets or obligations are not publicly traded—or during a financial crisis, when the few transactions that occur are likely to be at distressed prices—fair values must be approximated. In such cases, fair value can be estimated in several ways, including by looking at the market prices of similar assets or by employing standard financial valuation techniques (such as discounting expected cash flows with risk-adjusted discount rates or using options-pricing models). To estimate the fair value of FHA guarantees, CBO used the prices of private mortgage insurance and of credit guarantees offered by the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac) to infer the market risk premium associated with FHA guarantees.⁷ (For more details about that approach, see the appendix on page 11.)

Fair-value estimates have made several appearances in the federal budget process. The legislation that established the Troubled Asset Relief Program specified the use of a fair-value approach—in particular, that the estimated cost of the program’s obligations be recorded in the budget on a FCRA basis but that the discount rate used for such estimates be adjusted for the cost of market risk.⁸ In addition, CBO uses a fair-value approach to incorporate the cost of Fannie Mae and Freddie Mac into its baseline budget projections. And in recent years, CBO has provided supplementary information to the Congress about the fair-value cost of several federal credit and insurance programs.⁹

Using different budgetary treatments for similar federal programs can cause confusion and hamper an accurate comparison of programs’ costs. Currently, most credit programs—including the large housing programs run by FHA and smaller programs operated by the Departments of Veterans Affairs and Agriculture—use FCRA accounting, as required by law. But Fannie Mae and Freddie Mac are accounted for in

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7. CBO produced a related estimate of the private-sector cost of FHA insurance for earlier program years in “[Assessing the Government’s Costs for Mortgage Insurance Provided by the Federal Housing Administration](#),” an attachment to a letter to the Honorable Jeb Hensarling (July 19, 2006). The current analysis reflects changes that have occurred in FHA’s pricing and in borrowers’ characteristics since that time, as well as refinements in CBO’s modeling approach.
 8. That legislation was the Emergency Economic Stabilization Act of 2008, Division A of Public Law 110-343.
 9. See, for example, Congressional Budget Office, *The Budgetary Impact and Subsidy Costs of the Federal Reserve’s Actions During the Financial Crisis* (May 2010); letter to the Honorable Judd Gregg about the budgetary impact of the President’s proposal to alter federal student loan programs (March 15, 2010); *Costs and Policy Options for Federal Student Loan Programs* (March 2010); and *Federal Financial Guarantees Under the Small Business Administration’s 7(a) Program* (October 2007).

the budget on a cash basis (and, in CBO’s budget projections, on a fair-value basis).¹⁰ Those differing approaches create an incentive to shift activities to programs that receive the most favorable budgetary treatment. For example, because costs recorded on a FCRA basis are generally below fair value, if legislation would cause mortgage borrowers who would otherwise obtain a guarantee from Fannie Mae or Freddie Mac to instead use an FHA program on the same terms, the legislation could appear to produce budgetary savings, even though the government’s exposure to losses from defaults would be identical.

FHA Mortgage Insurance

Since its inception in 1934, FHA has insured mortgages on single-family and multi-family homes. The insurance helps protect lenders against losses from defaults and increases the availability of funds for higher-risk borrowers. In particular, the single-family mortgage insurance program, FHA’s largest, is aimed at extending access to home ownership to people who lack the savings, credit history, or income to qualify for a conventional mortgage. Under that program, FHA insures 15-year and 30-year fixed-rate and adjustable-rate amortizing mortgages for home purchases or for refinancing, in exchange for an up-front fee and annual premiums.

To target the program toward low- and moderate-income borrowers, the law limits the size of a mortgage that may be insured. The limits vary by geographic region and depend on such factors as the ceilings that apply to mortgages that are legally eligible for purchase by Fannie Mae and Freddie Mac, appreciation in home prices, and the cost of living in an area. Currently, the limit for a one-unit property in most areas is \$271,050, although in some high-cost areas FHA can insure loans up to \$729,750. (By comparison, the median sales price of existing single-family homes in the United States in 2010 was \$173,000, according to the National Association of Realtors.)

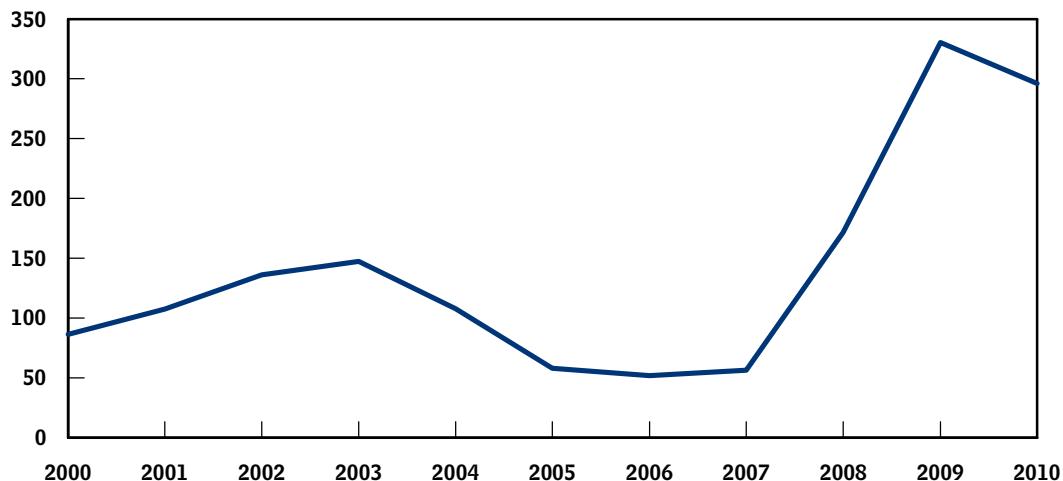
In fiscal year 2010, FHA guaranteed about \$296 billion in new mortgage loans—down slightly from the \$329 billion it guaranteed in 2009 but a much higher volume than earlier in the decade (see Figure 1 on page 7). The share of single-family mortgages that FHA guaranteed rose sharply in recent years, following a long-term decline that began in the mid-1990s as private lenders increased their offerings of low-down-payment and higher-risk mortgages. That decline was abruptly reversed in 2008 during the financial crisis, when private lenders withdrew almost completely from offering loans that did not carry some type of federal backing. FHA’s market share surged from about 2 percent to 11 percent that year and is now more than 17 percent (see Figure 2 on page 8).

10. The Administration treats those government-sponsored enterprises (GSEs) as nongovernmental entities, accounting for transactions between them and the Treasury on a cash basis. The budget records net outlays to the GSEs; those outlays equal the capital infusions that the Treasury makes to the GSEs minus the dividends that the GSEs pay to the Treasury.

Figure 1.

Volume of New Loans Guaranteed by FHA's Single-Family Mortgage Insurance Program

(Billions of dollars)



Source: Congressional Budget Office based on data from the Federal Housing Administration (FHA) and Haver Analytics.

Under FCRA accounting, FHA mortgage guarantees are generally projected to produce zero or positive net income for the government. Actual program performance has almost always fallen short of expectations, however, leading to losses or smaller-than-expected gains. FCRA requires agencies to update their projections of the subsidy costs of their loans and loan guarantees annually to reflect actual cash flows and revised forecasts of future collections and outlays. Those “reestimates” of the costs of credit programs are recorded in the budget as additional outlays (if projected subsidy costs have risen) or as savings in outlays (if projected costs have declined).

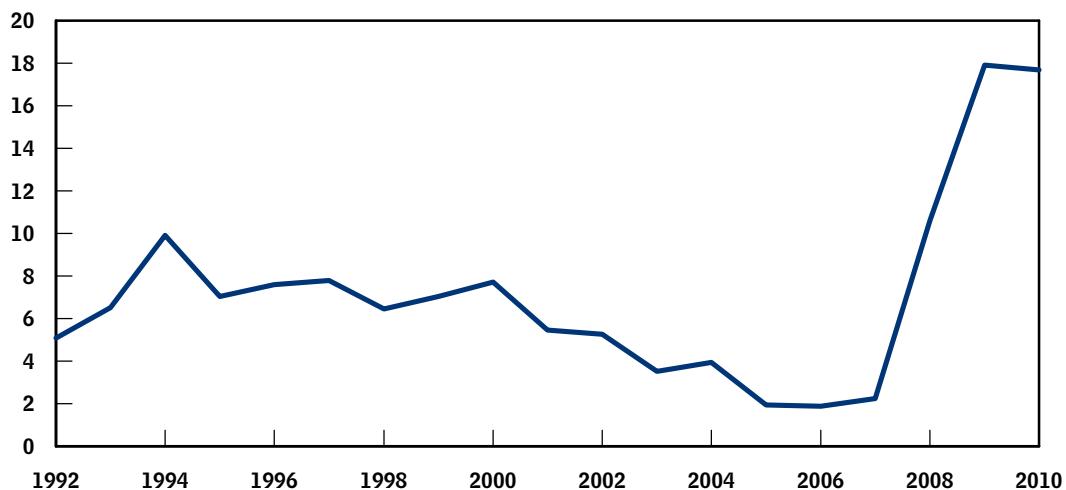
Over the 1999–2011 period, estimated subsidy costs for FHA’s single-family program were revised upward by a net total of \$44 billion—or more than \$3 billion per year, on average.¹¹ For each annual cohort of loans guaranteed between fiscal years 1993 and 2009, the estimate of lifetime subsidy costs has been revised upward, on net; for the 2010 cohort, however, the estimate has been revised downward (see Figure 3 on page 9). Most of the reestimates reflect larger-than-expected losses from defaults. In the case of loans guaranteed between 2002 and 2009, the upward reestimates have been large enough to turn the original negative subsidy estimates into positive subsidies.¹²

11. Those figures include an anticipated \$5 billion upward reestimate in 2011 and exclude any gains or losses from changes in interest rates between the time funds were committed and the time funds were disbursed.
12. An earlier CBO study analyzed reestimates in more depth for the 1992–2002 period; see Congressional Budget Office, *Subsidy Estimates for FHA Mortgage Guarantees* (November 2003).

Figure 2.

FHA's Share of the Market for Single-Family Mortgages

(Percentage of total originations)



Source: Congressional Budget Office based on data from the Federal Housing Administration (FHA) and Haver Analytics.

FCRA Versus Fair-Value Estimates for FHA's Single-Family Mortgage Insurance Program

FHA's mortgage guarantees expose the government (and ultimately taxpayers) to a significant amount of market risk. Thus, they have a higher subsidy cost when evaluated on a fair-value basis than when evaluated using the FCRA methodology. For example, CBO estimates that the single-family program will guarantee \$233 billion in mortgages in 2012. Under FCRA accounting, the subsidy rate for those guarantees would be -1.9 percent, CBO estimates, producing budgetary *savings* of \$4.4 billion in 2012. On a fair-value basis, however, those guarantees would have a positive subsidy rate of 1.5 percent, CBO estimates, and the program would have a *cost* in 2012 of \$3.5 billion. In other words, including an adjustment for market risk would have the effect of increasing the estimated subsidy rate for that program.

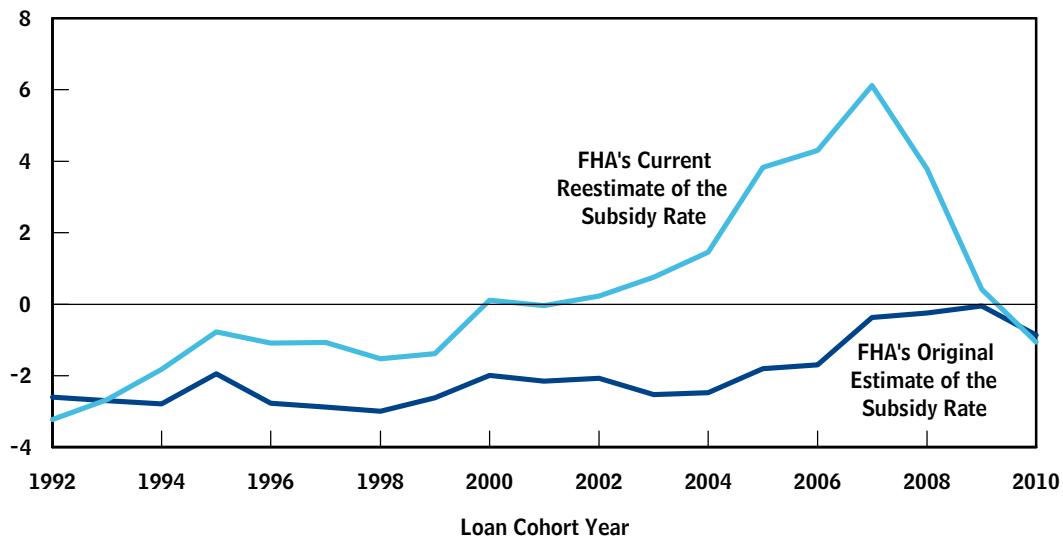
Although FHA has made several changes over the past 18 months to increase revenues and improve risk management in its mortgage guarantee programs—such as raising fees and strengthening its underwriting standards and operational controls—the risk of losses remains elevated. FHA offers guarantees on mortgages with high loan-to-value ratios, which makes the likelihood and severity of defaults very sensitive to even moderate declines in housing prices.¹³ Foreclosure rates are still high, and there is

13. The loan-to-value ratio is the mortgage principal divided by the property's appraised value. A high loan-to-value ratio increases the likelihood that a decline in housing prices will cause the value of the property to fall below the amount owed, which in turn increases the probability of default and reduces the expected recovery amount should a default occur.

Figure 3.

FHA's Original Estimates and Reestimates of Subsidy Rates for Its Single-Family Mortgage Insurance Program, by Loan Cohort Year

(Percent)



Source: Congressional Budget Office based on data from Office of Management and Budget, *Budget of the U.S. Government, Fiscal Year 2012: Federal Credit Supplement* (February 2011).

Notes: The subsidy rate is the dollar amount of the federal subsidy expressed as a percentage of the dollar amount of mortgage principal guaranteed. The subsidy rate shown for each "loan cohort year" is the rate estimated for the group of loans disbursed in that year.

FHA = Federal Housing Administration.

continuing uncertainty about whether housing prices will fall further than they have already. Even if housing prices stabilize, default rates are likely to be greater than they were in the period of rapid price appreciation that led up to the financial crisis. CBO expects the economy to recover gradually over the next few years, but the speed and strength of that recovery are uncertain. If losses from defaults increase, the increase is likely to occur when the overall economy is weak and the cost of resources to cover those losses is high—a risk that would be reflected in fair-value estimates.

Appendix: Estimating Subsidy Costs for FHA Guarantees Using a Fair-Value Methodology

The fair value of a mortgage guarantee by the Federal Housing Administration (FHA) is the value of the default losses expected to be absorbed by FHA. It can be calculated as the difference between the estimated value of a mortgage and the value of a security with the same promised cash flows but without the risk of default. The fair-value subsidy that FHA provides to borrowers is thus the difference between the value of expected losses from default and the fair value of expected fees collected. To compute the fair values of the mortgages insured by FHA and of FHA's fees, the Congressional Budget Office (CBO) inferred the appropriate discount rate for present-value calculations by looking at the pricing of private mortgage insurance (PMI) and the guarantee fees charged by two government-sponsored enterprises (GSEs), the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac).

In the PMI market, private insurers provide coverage of mortgages that are comparable with those guaranteed by FHA, and insurers quote prices for such coverage publicly. The market is large and active and appears to be competitive; at present, six insurers provide PMI coverage on \$750 billion of mortgage debt in the United States.¹ Current price quotes for private mortgage insurance appear to be only slightly higher than prices that prevailed before the recent financial crisis, but borrowers with poor credit scores can no longer obtain such insurance.

A significant number of borrowers who take out new mortgages guaranteed by Fannie Mae and Freddie Mac purchase private insurance, although the recent volume of PMI sales has been lower than in the past.² The reason for such purchases is that, by law, the GSEs cannot guarantee a mortgage with a loan-to-value ratio above 80 percent unless they obtain some credit enhancement, usually in the form of mortgage insurance bought by the borrower. Such insurance typically covers losses in excess of

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1. Other mortgage lenders provide competition not by selling mortgage insurance directly but by providing equivalent services through second mortgages and home-equity loans.
 2. According to the Mortgage Insurance Companies of America, more than 300,000 PMI policies were written in 2010, compared with nearly 2 million in 2007 and 1 million in 2008.

a home's value, up to some percentage of the amount owed (usually 25 percent to 35 percent).³ Any additional losses are absorbed by the GSEs. In a competitive market, the present values of the fees collected for PMI and of the guarantee fees charged by the GSEs (net of administrative costs) on a given mortgage should equal the fair value of the expected losses from default on that mortgage.⁴ However, because of their federal backing, Fannie Mae and Freddie Mac face lower capital costs than private financial institutions do, and that advantage is used in part to charge guarantee fees that are below fair market rates. To account for that effect, CBO included an upward adjustment in the assumed guarantee cost to reflect its estimate of the value of the government subsidy.

Unlike the GSEs, FHA absorbs all of the losses stemming from defaults on the mortgages it insures. Thus, the fair value of an FHA guarantee can be approximated by the combined value of the PMI and GSE guarantee fees (adjusted upward for the federal subsidy) on the same mortgage. Holding other loan characteristics constant, the subsidy provided by FHA is the difference between what the combined private guarantee fees are worth (or equivalently, the cost of losses from default) and the fair value of the fees collected by FHA.

Private Mortgage Insurance

Private mortgage insurers offer a variety of terms from which borrowers can choose. Fees are generally quoted on an annual basis, and there is no up-front fee. Premium rates for PMI vary with a borrower's down payment and credit rating, as commonly measured by Fair Isaac Corporation (FICO). Other variables, including the term of the loan and whether the interest rate is fixed or adjustable, also affect the premium for PMI. For example, a borrower with a FICO score of more than 720 who wished to take out a 30-year fixed-rate mortgage for an amount between 95 percent and 97 percent of a home's value would pay an annual fee of about 0.8 percent of the loan amount. If the borrower's FICO score was in the 680–710 range instead, the PMI fee for the same mortgage would increase to more than 1.0 percent. Current price quotes are not available for borrowers who have low FICO scores and whose prospective mortgages have high loan-to-value ratios, so CBO used historical PMI quotes to extrapolate pricing for those FHA borrowers. PMI coverage and premiums cease according to the process established by the Homeowners Protection Act of 1998. That process includes automatic termination (for example, when the amortized loan-to-value ratio reaches 78 percent of the original value of the home) as well as cancellation procedures initiated by the borrower.

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3. Since 2007, private mortgage insurers have paid Fannie Mae and Freddie Mac \$22 billion in claims and receivables because of defaults.
 4. Losses from default include claims payments made, minus the sales price of the property, plus associated costs (such as legal expenses, property maintenance costs, and forgone interest payments).

GSEs' Fees

The guarantee fees charged by Fannie Mae and Freddie Mac include an ongoing component, which continues for the life of a mortgage, and an up-front component, which is typically a risk-based fee designed to compensate for a specific characteristic of the borrower or property. Because the GSEs are protected both by mortgage insurance and by the collateral value of the property, they bear a relatively small portion of the risk of a mortgage. As a result, the fees they charge are significantly lower than those for private mortgage insurance. The fees for most mortgages are close to 0.25 percent of the outstanding loan amount on an annualized basis (although for borrowers identified as high-risk, fees are much greater).

FHA's Fees and Premiums

FHA charges borrowers both an up-front fee and annual premiums. Guarantees are available to qualifying borrowers on 15- and 30-year fixed- and adjustable-rate mortgages with down payments as low as 3.5 percent of a property's appraised value. Current law authorizes an initial fee of up to 3.0 percent of the loan amount and an annual premium of up to 1.55 percent of the unpaid balance for mortgages with a down payment of less than 5 percent. Starting on April 10, 2011, FHA set the up-front fee at 1.0 percent on all mortgages and the annual premium at 1.1 percent if the down payment is greater than 5 percent of the loan balance or at 1.15 percent if the down payment is less than 5 percent.⁵ Borrowers are required to make annual premium payments until the loan is repaid in full or the balance has been paid down below 78 percent of the original property value.

Comparing Fees Charged by Private Insurers and FHA

The difference in the value of fees collected by private mortgage insurers and by FHA cannot be accurately discerned through direct comparisons of fee schedules. In particular, FHA imposes a different balance of up-front and annual fees than private insurers do; its insurance cancellation and termination features differ; and the population of borrowers it serves may not be the same. The value of annual fees is quite sensitive to the prepayment and default behavior of borrowers (and, for private mortgage insurers, to the rate of growth in home prices), which determines the length of time over which the fees are collected. To account for those factors, CBO projected the fees paid to each entity (private mortgage insurers, the GSEs, and FHA) using a simulation model calibrated to reproduce the default and prepayment rates in CBO's baseline estimates for the FHA single-family program and to produce a path for average home prices consistent with CBO's economic forecast.

In making those calculations, CBO accounted for differences between the GSEs' and FHA's populations of borrowers by using the PMI pricing information to determine the FHA subsidy. Specifically, CBO used a mix of historical and current premium

5. Borrowers can finance the up-front fee by rolling it into the mortgage principal.

rates for private mortgage insurance that match the distribution of loan-to-value ratios and FICO scores it projects for FHA borrowers.

Calculating the Fair-Value Subsidy

The subsidy cost for FHA guarantees is the difference between the present value of FHA's receipts from premiums and the present value of default losses that FHA incurs. Estimating those values requires selecting appropriate discount rates. Because there is no direct way to infer the discount rate needed to compute the present value of default losses, CBO estimated that value as the difference between the discounted values of the expected payment streams on mortgages with and without an FHA guarantee.

To compute the present value of mortgages with an FHA guarantee, CBO inferred discount rates from the prices of mortgage-backed securities (MBSs). The MBSs issued on FHA mortgages pass the underlying mortgage cash flows, plus guarantee payments, on to investors; hence, MBS prices are a reliable indicator of the fair value of the underlying cash flows. Investors who buy MBSs usually demand an additional premium over rates on Treasury securities to compensate them for factors such as pre-payment risk (the risk that mortgages will be paid off more rapidly if interest rates fall), and that additional premium is included in the discount rate for the mortgages' expected cash flows. For new mortgages insured by FHA in fiscal year 2012, CBO's estimated discount rates are, on average, about 0.7 percentage points above the rates on 10-year Treasury bonds.

For mortgages without an FHA guarantee, CBO added a further 0.9 percentage points to the discount rate, reflecting the additional compensation that market participants are expected to demand to take on the risk of credit losses on FHA mortgages guaranteed in 2012. That risk premium is based on CBO's analysis, using its simulation model, of the pricing of private mortgage insurance and GSE guarantee fees.

Under those assumptions, the fair value of a typical FHA guarantee is about 6 percent of the initial loan amount. The fair value of fees collected by FHA, estimated by discounting the expected receipts from those fees at the same rate applied to the mortgages' cash flows, is about 4.5 percent. The difference—1.5 percent of the initial loan amount—is the fair-value subsidy rate for the program.