United States Government Accountability Office

Report to the Ranking Member, Subcommittee on Financial Services and General Government, Committee on Appropriations, U.S. Senate

GAO

CREDIT REFORM

Current Method to Estimate Credit Subsidy Costs Is More Appropriate for Budget Estimates Than a Fair Value Approach

Accessible Version

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Current Method to Estimate Credit Subsidy Costs Is More Appropriate for Budget Estimates Than a Fair Value Approach

Why GAO Did This Study

Federal direct loans and loan guarantees outstanding have nearly doubled from $1.5 trillion at the end of fiscal year 2008 to $2.9 trillion at the end of fiscal year 2014. For the past several years, concerns have been raised by some experts both in and out of the federal government that FCRA may understate credit program subsidy costs. Some of these experts have suggested that FCRA be modified with an approach—referred to as the fair value approach—to include certain market risk not currently considered under FCRA.

GAO was asked to examine the budgetary treatment of the cost of federal credit programs. This report addresses (1) whether trends exist in subsidy cost reestimates and what factors, if any, help explain any significant trends in reestimates and (2) the implications of using the fair value approach to estimate subsidy costs in the budget and whether GAO believes such concepts should be incorporated into subsidy cost estimates for the budget.

GAO analyzed reestimate data from fiscal years 2001 to 2014 as reported in the President's Budgets and conducted interviews with 30 experts.

What GAO Recommends

GAO supports maintaining the current FCRA method for estimating credit subsidy cost for the budget and therefore is not making any recommendations. The Congressional Budget Office and the Office of Management and Budget provided technical comments on a draft of this report, which have been incorporated as appropriate.
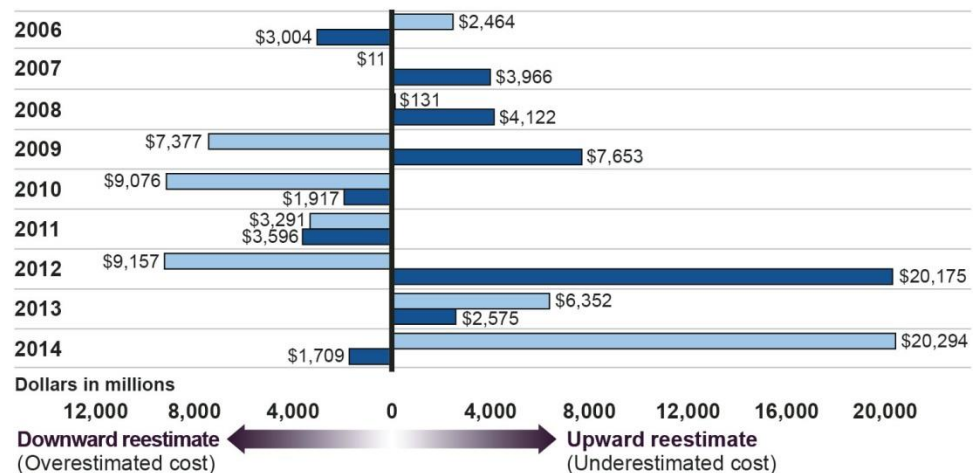
View GAO-16-41. For more information, contact Cheryl E. Clark at (202) 512-9377 or clarkce@gao.gov, Susan J. Irving at (202) 512-6806 or irvings@gao.gov, or Susan Offutt at (202) 512-3763 or offutts@gao.gov.

What GAO Found

The Federal Credit Reform Act of 1990 (FCRA) requires agencies to estimate the cost to the government of extending or guaranteeing credit. This cost, referred to as subsidy cost, equals the net present value of estimated cash flows from the government (e.g., loan disbursements and claim payments to lenders) minus estimated cash flows to the government (e.g., loan repayments, interest payments, fees, and recoveries on defaulted loans) over the life of the loan, excluding administrative costs. Discount rates that reflect the federal government's cost of financing are used to determine the net present value of estimated cash flows. Agencies generally update—or reestimate—subsidy costs annually to reflect both actual loan performance and changes in expected future loan performance.

Based on GAO's analyses of credit program reestimates for direct loans and loan guarantees obligated or committed from fiscal years 2001 through 2014 and considering various factors to identify trends, GAO did not identify any overall consistent trends in under- or overestimates of subsidy costs across federal credit programs government-wide. Overall, both direct loan and loan guarantee programs government-wide underestimated costs by $3.1 billion and $39.0 billion, respectively, over the 14-year period. These amounts represent less than 1 percent of the amounts disbursed or guaranteed during the period. Annual reestimates fluctuated from year to year, indicating both under- and overestimates of subsidy costs. Further, significant lifetime reestimates could generally be explained by specific events affecting a few large programs. For example, the Department of Housing and Urban Development's Mutual Mortgage Insurance Program reported underestimating costs over this period because of a variety of factors, including long-term housing prices and interest rate changes stemming from the mortgage and financial crises in the late 2000s.

Fluctuations in Direct Loan and Loan Guarantee Programs' Annual Net Reestimates, 2006-2014

Source: GAO analysis of President's Budgets. | GAO-16-41

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While subsidy cost estimates under the fair value approach may provide useful information to decision makers for evaluating the costs against the benefits of credit programs, GAO does not support the use of the fair value approach to estimate subsidy costs for the budget. Proponents of the fair value approach have asserted that beyond the cash flows associated with a direct loan or loan guarantee, costs are imposed on taxpayers who would, in a similarly risky private market transaction, require compensation for bearing the risk associated with making the loan or guarantee. Taxpayers as investors with diversified portfolios would still demand compensation, or a premium, for bearing the risk that the macroeconomy—the national or global economy—may falter. This risk—referred to as aggregate risk (a portion of overall market risk)—arises from the possibility of significant economic downturns, when even a well-diversified portfolio of financial investments will decrease in value. To incorporate the cost of bearing aggregate risk into subsidy cost estimates for the budget, the fair value approach adds an aggregate risk premium to the discount rate used in FCRA calculations, which is based on interest rates of Treasury securities. Including the aggregate risk premium incorporates a noncash cost into the subsidy cost estimate. The actual cash flows to and from the federal government associated with a credit program are the same under the fair value approach and FCRA. The debate over the fair value approach rests on whether the cost associated with aggregate risk should be considered in the subsidy cost estimates for the budget of the federal government.

Differences between Market and Treasury Interest Rates

Why are interest rates provided in the market to private investors higher than the Department of the Treasury's (Treasury) borrowing cost?

While Treasury borrowing rates are established based on public auctions of Treasury securities, the interest rates on these securities may differ significantly from private-sector market rates because investors require additional compensation for risks and other factors relevant to market rates. In contrast, Treasury rates are generally viewed as being riskless because they are backed by the full faith and credit of the United States.

Do the differences between market and Treasury interest rates apply to private investors and the federal government?

Private lender borrowing cost (market rate)		Private investors	Federal government
Higher rates	**Liquidity premium** — Investors require additional compensation to hold a less liquid asset. This cost is not relevant to the government because it can easily borrow in the Treasury securities market.	✓	✗
	Expected losses — Investors require compensation for potential losses because of default. Including this cost in discount rates for credit programs would lead to double counting given that expected losses are explicitly included in estimated cash flows used to determine subsidy costs.	✓	✗
	Tax differential — Investors require additional compensation for taxable investments, and since Treasury securities are exempt from state income taxes, this creates a difference in interest rates. This cost is less relevant to the government because the government does not pay taxes, but it may have lost tax revenue.	✓	✗
	Administrative costs — Investors require compensation for administrative costs associated with lending. This is not relevant to the government because administrative costs are treated separately from subsidy cost estimates under current budget practices.	✓	✗
Lower rates	**Aggregate risk premium** — An uncertainty premium is required by investors as compensation for bearing the risk that remains after diversification across assets.	✓	?
Treasury borrowing cost (Treasury rate)			

✓ This element of market rate is relevant ✗ This element of market rate is not relevant ? This element of market rate may or may not be relevant

Source: GAO. | GAO-16-41

Reflecting a different concern, some proponents of the fair value approach cited as motivation the perceived overreliance on federal credit programs as a policy tool and the desire to correct any bias toward underestimates of costs under FCRA. Raising the subsidy cost would likely result in fewer loans being made. In contrast, some proponents of FCRA stated that any overreliance on credit programs should be addressed as a policy decision, and that to the extent that agencies were underestimating subsidy costs under FCRA, improvements in the subsidy estimation process should be pursued.

The additional market risk recognized under the fair value approach does not reflect additional cash costs beyond those already recognized by FCRA. The introduction of market risk into subsidy costs under the fair value approach would (1) be inconsistent with long-standing federal budgeting practices primarily based on cash outlays; (2) be inconsistent with the budgetary treatment of similarly risky programs; (3) introduce transparency and verification issues with respect to inclusion of a noncash cost in budget totals; and (4) involve significant implementation issues, such as the need for additional agency resources. Consequently, GAO does not support the use of the fair value approach to estimate subsidy costs for the budget and believes the current FCRA methodology is more appropriate for this purpose as it represents the best estimate of the direct cost to the government and is consistent with current budgetary practices.

Contents

Figures

Abbreviations

CBO	Congressional Budget Office
DOE	Department of Energy
Ex-Im	Export-Import Bank
FASAB	Federal Accounting Standards Advisory Board
FCRA	Federal Credit Reform Act of 1990
FCS	*Federal Credit Supplement*
FFEL	Federal Family Education Loan
GAAP	generally accepted accounting principles
GSE	Government Sponsored Enterprises
HUD	Department of Housing and Urban Development
MBS	Mortgage Backed Securities
MMI	Mutual Mortgage Insurance

OMB	Office of Management and Budget
SBA	Small Business Administration
SBIC	Small Business Investment Company
TARP	Troubled Asset Relief Program
Treasury	Department of the Treasury
USDA	Department of Agriculture
VA	Department of Veterans Affairs

January 29, 2016

The Honorable Christopher A. Coons
Ranking Member
Subcommittee on Financial Services and General Government
Committee on Appropriations
United States Senate

Dear Senator Coons:

The federal government uses credit programs that extend direct loans and loan guarantees as tools to support specific social and public policy objectives, such as those for housing, education, and small businesses. Twenty-five years ago, the enactment of the Federal Credit Reform Act of 1990 (FCRA) changed the method used to budget for the cost of federal credit programs.[1] Before fiscal year 1992, when FCRA took effect, the cost of credit programs was recorded in the budget on a cash basis (the expected amount of cash paid out minus the cash received in a given year). As a result, the budget cost associated with a loan guarantee was not recorded until a default occurred, which may have been many years after the guarantee was made. Further, direct loans appeared to cost the same as grants because the total amount of a loan was recorded as a cost when the loan was made and loan repayments were not recorded until the year received. Under FCRA, the budget records the federal government's estimated net long-term cost—referred to as the subsidy cost—in the year the direct loan or loan guarantee is made. Agencies generally update—or reestimate—these subsidy costs annually to reflect both actual loan performance and changes in expected future loan performance, which could be based on economic changes.

For the past several years, concerns have been raised by experts both in and out of the federal government that subsidy costs may be underestimated under FCRA procedures. Some of these experts have suggested that FCRA be modified to include an approach—referred to as the fair value approach in this report—that would account for certain

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[1]Pub. L. No. 101-508, § 13201(a), 104 Stat. 1388, 1388-609 (Nov. 5, 1990), *classified, as amended, at* 2 U.S.C. §§ 661-661f.

market risk not currently considered in FCRA subsidy cost estimates.[2] Specifically, taxpayers as investors with diversified portfolios would still demand compensation, or a premium, for bearing the risk that the macroeconomy—the national or global economy—may falter. This risk—referred to as aggregate risk (a portion of overall market risk)—arises from the possibility of significant economic downturns, when even a well-diversified portfolio of financial investments will decrease in value. The fair value approach would increase initial subsidy cost estimates for direct loan and loan guarantee programs because of the added market risk. As a result, because of the higher estimated initial subsidy cost, less federal credit would be available, assuming the same level of spending was provided for in the budget. Other experts, both in and out of the federal government, did not agree that the fair value approach would be beneficial in estimating credit subsidy costs for the budget.

Since the 2008 financial crisis, the amount of federal credit outstanding, consisting of direct loans and loan guarantees, has nearly doubled from $1.5 trillion at the end of fiscal year 2008 to $2.9 trillion at the end of fiscal year 2014. In light of this growing portfolio of outstanding direct loans and loan guarantees, as well as concerns about underestimates of subsidy costs and the suggestions to modify FCRA, you asked us to review issues related to the budgetary treatment of the cost of federal credit programs. Our objectives were to determine (1) the extent to which trends exist in the size and direction of subsidy cost reestimates across, or within, federal credit programs and, based on this analysis of reestimates, what factors, if any, help explain any significant trends in reestimates and (2) the implications of using subsidy cost estimates developed under the fair value approach in the budget and whether we believe such concepts should be incorporated into subsidy cost estimates for the budget.[3] Also at your request, we will issue a follow-up report addressing the factors agencies should consider when developing subsidy cost estimates and to what extent selected agencies are using those factors.

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[2]Market risk is the potential for loss resulting from movements in market prices, including interest rates, commodity and stock prices, and foreign exchange rates.

[3]For purposes of this report, "budget" includes the development and consideration of the President's Budget; congressional budget resolutions, allocations, and appropriations; and compliance with budget controls.

To analyze trends in subsidy cost reestimates, we used direct loan and loan guarantee reestimate data for fiscal years 2001 through 2014, which are reported in the fiscal years 2003 through 2016 President's Budgets as presented in the *Federal Credit Supplement*.[4] We categorized these programs by seven loan purposes (e.g., housing or education) and by the type of budget spending. We examined reestimate trends by agency, program, purpose, cohort fiscal year (the fiscal year of obligation for direct loans or commitment for loan guarantees), and the type of budget spending (discretionary or mandatory).[5] We focused on identifying trends in lifetime reestimate amounts,[6] annual reestimate amounts,[7] and a comparison of original subsidy rates to reestimated subsidy rates. We encountered some limitations with the data reported in the President's Budgets, which we individually evaluated based on professional judgment. For each data limitation, we adjusted the data, identified alternative data calculation methods when available, or determined that the data were reliable for our purposes. Our conclusions about possible trends were based on our professional judgment in assessing the data and not based on a statistical analysis.[8] To evaluate implications of using subsidy cost estimates developed under the fair value approach for the budget, we reviewed literature related to FCRA, the purpose and uses of the federal budget, and the fair value approach.

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[4]The *Federal Credit Supplement* is supplementary material issued along with the federal budget. It provides summary information about federal direct loan and loan guarantee programs subject to FCRA. It includes information related to estimated (1) original subsidy rates, obligations, commitments, and average loan sizes for future cohorts; (2) certain loan terms and assumptions underlying original subsidy rates; and (3) annual and lifetime reestimates, as well as loan disbursements to date for existing cohorts. (A cohort refers to the fiscal year of obligation for direct loans or commitment for loan guarantees.)

[5]Funding for discretionary spending programs is provided in appropriations acts. Mandatory programs are those programs whose funding is provided for in laws other than appropriations acts. In general, mandatory credit programs are entitlement programs for which the amount of funding depends on eligibility and benefits rules contained in law.

[6]The term lifetime reestimate refers to total reestimates reported for a cohort of loans since inception of the cohort. Lifetime reestimates are presented by program, agency, or type of direct loan or loan guarantee program for cohorts over a given period of time. For example, if an agency recorded annual reestimates of $100, $50, and $20 over a 3-year period for a cohort, the lifetime reestimate would be $170 ($100 + $50 + $20).

[7]The term annual reestimates refers to reestimates of a cohort of loans or a group of cohorts for a given fiscal year.

[8]We did not use statistical analysis to estimate trends because, in our professional judgment, the quantity of data (e.g., number of years and number of programs) was insufficient to provide a credible statistical result.

We also conducted semistructured interviews with 30 individuals with expertise in one or more of the following: FCRA; financial economics; and federal budgeting, auditing, and accounting. See appendix I for additional details on our scope and methodology.

We conducted this performance audit from June 2014 to January 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Federal credit programs provide assistance to borrowers through two principal methods: direct loans and loan guarantees. Direct loans are a disbursement of funds by the government to a nonfederal borrower under a contract that requires the repayment of such funds with or without interest. Loan guarantees are any guarantees, insurance, or other pledges with respect to the payment of all or a part of the principal or interest on any debt obligation of a nonfederal borrower to a nonfederal lender.[9] As shown in figure 1, since the 2008 financial crisis, the amount of federal direct loans and loan guarantees outstanding has nearly doubled from $1.5 trillion at the end of fiscal year 2008 to $2.9 trillion at the end of fiscal year 2014.[10]

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[9]Loan guarantees do not include the insurance of deposits, shares, or other withdrawable accounts in financial institutions. Further, the credit and insurance activities of the Federal Deposit Insurance Corporation, National Credit Union Administration, Pension Benefit Guarantee Corporation, National Flood Insurance Program, National Insurance Development Fund, Crop Insurance, and Tennessee Valley Authority are statutorily exempted from FCRA and are therefore not considered "credit programs" for budgetary purposes. 2. U.S.C. § 661e(a).

[10]The amount for direct loans is the total face value outstanding and for loan guarantees is the principal amount outstanding of the underlying loans that are guaranteed by the federal government.

Figure 1: Federal Direct Loans and Loan Guarantees Outstanding, 2001-2014

Dollars in billions

Fiscal year	Direct loans	Loan guarantees	Total
2001	$244	$904	$1,148
2002	$249	$936	$1,185
2003	$251	$898	$1,149
2004	$266	$936	$1,202
2005	$258	$938	$1,196
2006	$261	$939	$1,200
2007	$270	$950	$1,220
2008	$308	$1,149	$1,457
2009	$561	$1,451	$2,012
2010	$713	$1,628	$2,341
2011	$777	$1,732	$2,509
2012	$860	$1,805	$2,665
2013	$985	$1,834	$2,819
2014	$1,106	$1,827	$2,933

Loan guarantees
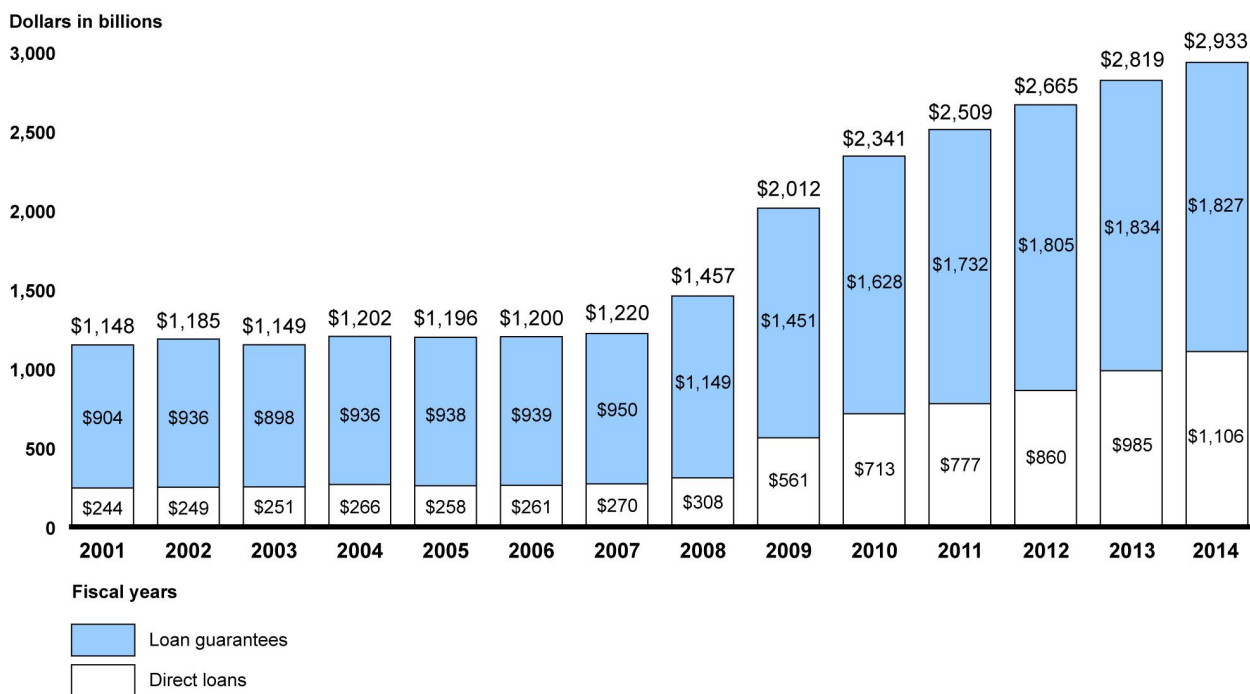
Direct loans

Source: GAO analysis of data from the *Financial Report of the United States Government*, 2001-2014. | GAO-16-41

As of September 30, 2014, 21 federal agencies reported that they had direct loans or loan guarantees outstanding. As shown in figure 2, the Department of Education (Education) (largely through its direct student loan program) and the Department of Housing and Urban Development (HUD) (largely through its single-family mortgage guarantee program) held the largest share of federal direct loans and loan guarantees outstanding, respectively.

Figure 2: Agencies with the Highest Direct Loans and Loan Guarantees Outstanding as of Fiscal Year 2014 and Types of Credit Programs

The federal government uses credit programs to achieve policy objectives such as assistance for housing, farming, education, small businesses, and U.S. exports. Federal credit programs consist of both direct loans and loan guarantees.

The total value of direct loans outstanding was **$1,106 billion.**

The total value of loan guarantees outstanding was **$1,827 billion.**

Five Agencies with the Highest Direct Loans and Loan Guarantees Outstanding

Dollars in billions
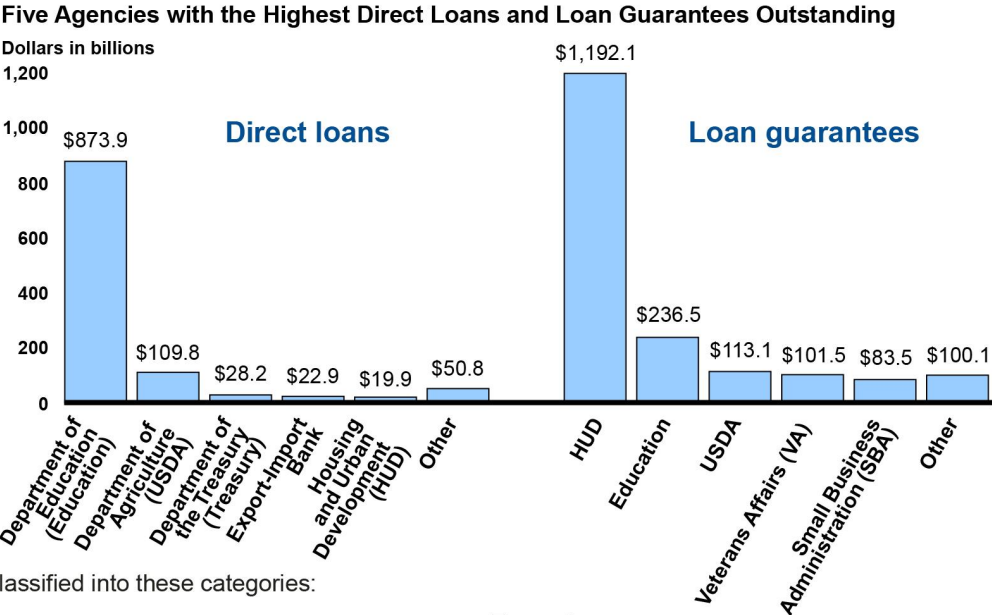
Credit programs can be broadly classified into these categories:

Category		Examples
Housing	Promotes homeownership and housing among low- and moderate-income people, veterans, rural residents, and others	Rural Housing Service (USDA), Mutual Mortgage Insurance Fund (HUD), Veterans Housing Benefit Programs (VA)
Education	Provides financing to assist students in obtaining vocational, undergraduate, and graduate schooling	Direct Student Loans (Education)
Energy, transportation, and infrastructure	Promotes clean energy and infrastructure development through various credit programs	Title 17 Loan Guarantees (Department of Energy), Water and Waste Disposal Loans (USDA), Rural Utilities Service programs (USDA)
Small business and agriculture	Direct loans and loan guarantees to small businesses and farmers, who may have difficulty obtaining credit elsewhere	7(a) Loan Guarantee Program (SBA), Farm Operating Program (USDA)
International	These programs are intended to assist U.S. exporters, stabilize international financial markets, and promote sustainable development	Export-Import Bank programs
Other	Credit programs that do not fall into one of the above categories	Troubled Asset Relief Program (Treasury), Disaster Assistance Loans (SBA)

Source: GAO analysis of data from the Office of Management and Budget and the Department of the Treasury. | GAO-16-41

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The Federal Credit Reform Act of 1990

Prior to the enactment of FCRA, credit programs—like most other federal programs—were recorded in budgetary accounts on a cash basis (the expected amount of cash paid out minus the cash received in a given year). Because a loan guarantee does not require a cash outlay at the time the guarantee is issued, guarantees initially appeared to be of no cost to the federal budget; conversely, because the entire amount of a direct loan is disbursed and recognized as a budget cost when the loan is made, the cost of direct loans was recorded the same as grants in the federal budget. Both were inaccurate and provided policymakers with distorted information for comparing credit programs to noncredit programs and to each other. This created a bias in favor of loan guarantees over direct loans because loan guarantees appeared to be less expensive than direct loans regardless of the actual lifetime cost to the government.

FCRA was enacted with the intent of improving the accuracy of the cost of federal credit programs reported in the budget by requiring agencies to measure the government's net long-term cost of federal credit programs to permit better cost comparisons both among credit programs and between credit and noncredit programs. The policies enacted under FCRA, sometimes referred to simply as credit reform, recognized that the actual cost of a direct loan or loan guarantee was not captured by its cash flows in any one year, but rather is the net present value—worth in terms of money paid immediately—of its cash flows over the life of the loan.[11] Therefore, FCRA specified an approach using estimates of expected cash flows, including future loan repayments and defaults as elements of the cost to be recorded in the budget.

Subsidy Cost Estimates and Reestimates

FCRA requires agencies to estimate the cost to the government of extending or guaranteeing credit. This cost, referred to as subsidy cost, equals the net present value of estimated cash flows from the government minus estimated cash flows to the government over the life of the loan and excluding administrative costs. This approach puts direct loans and loan guarantees on an equal footing in terms of cost in the federal budget and permits the costs of credit programs to be compared with each other and with the costs of noncredit programs. Figure 3

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[11]The present value of a stream of future returns or costs is its worth in terms of money paid immediately. In calculating present value under FCRA, prevailing interest rates on Treasury securities provide the basis for converting future amounts into their "money now" equivalents.

illustrates the types of cash flows that affect the subsidy cost for direct loans and loan guarantees. If the present value of estimated cash outflows exceeds cash inflows, there is a subsidy cost. If the present value of estimated cash inflows exceeds cash outflows, there is a negative subsidy cost, referred to as subsidy income.

Figure 3: Calculation of Subsidy Costs for Direct Loans and Loan Guarantees

Source: GAO. | GAO-16-41

GAO-16-41 Credit Subsidy Cost Estimates
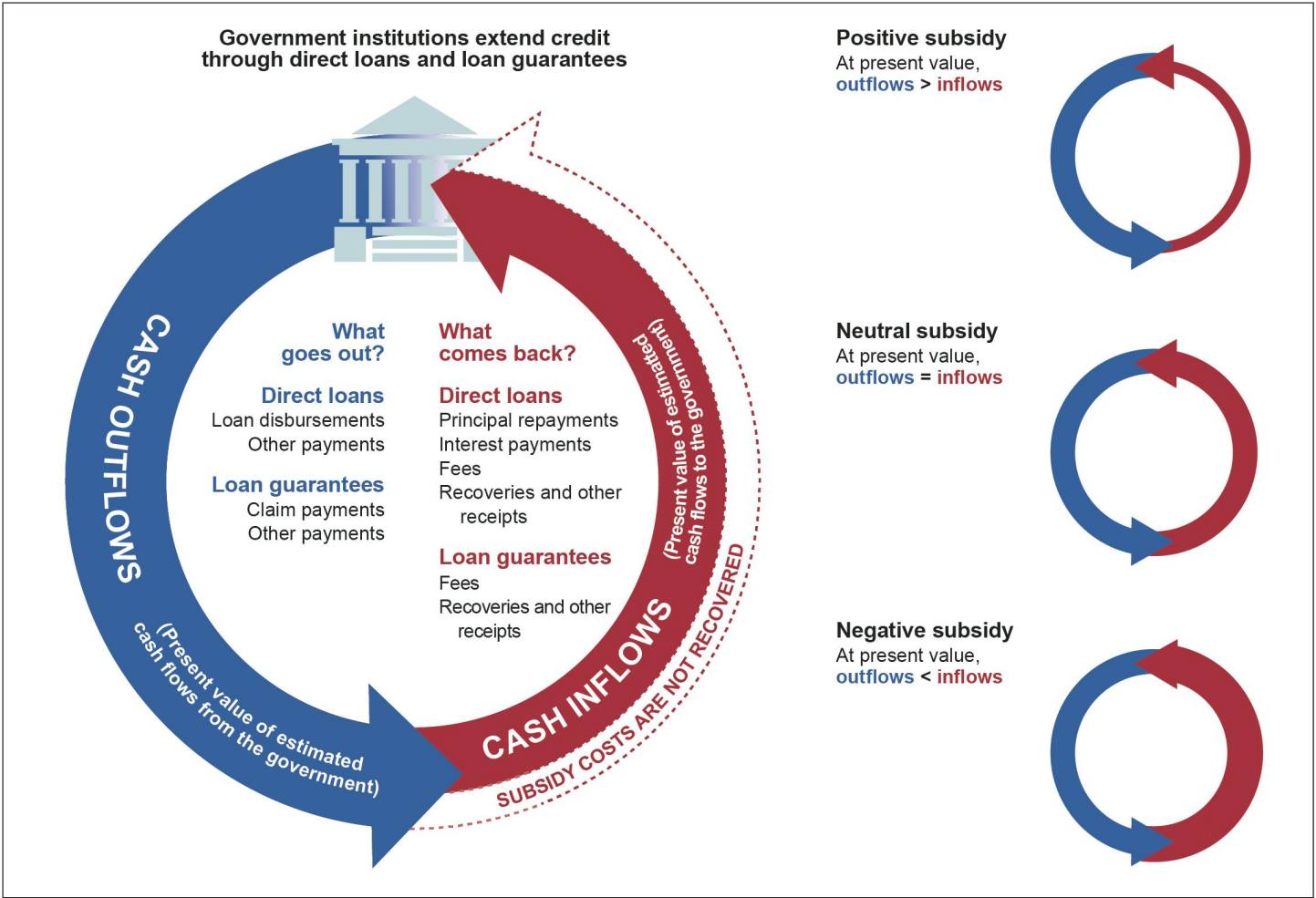
To calculate subsidy costs, agencies begin by estimating the expected cash outflows and inflows over the life of the loans for each cohort of direct loans obligated or loan guarantees committed in the cohort year.[12] Agencies use historical information and various assumptions, including the probabilities of default, borrower prepayments, or recoveries, and the projected timing of these events, to make informed predictions about expected future cash flows. These expected cash flows are then discounted to the point of loan disbursement to determine the net present value. A credit subsidy rate—the cost per dollar of credit assistance—is then determined by dividing the subsidy cost by direct loan obligations or loan guarantee commitments estimated to be made in that year.

The subsidy cost represents the net present value cost of making or guaranteeing new loans and is included in the President's Budget. FCRA requires that agencies have budget authority to cover a program's subsidy cost to the government in advance—before new direct loan obligations are incurred and new loan guarantee commitments are made.

The subsidy cost of credit programs may be categorized as either discretionary or mandatory. Discretionary spending is provided for through annual appropriations acts, typically in definite amounts. Mandatory spending, however, is provided for in laws other than appropriations acts. Often, these mandatory programs are entitlement programs wherein the Congress controls spending indirectly by defining eligibility and setting payment rules, with indefinite budget authority provided by law to pay for the entitlements of all qualifying beneficiaries.

The data used for budgetary subsidy cost estimates are generally updated—or reestimated—annually after the end of the fiscal year to reflect actual loan performance and to incorporate any changes in assumptions about future loan performance. Reestimates that increase subsidy costs are referred to as upward reestimates (an agency would need additional funds), while reestimates that decrease subsidy costs are referred to as downward reestimates (an agency would return funds). Regardless of whether the credit programs are discretionary or mandatory, agencies do not need to request additional appropriations to cover upward reestimates because FCRA provides permanent indefinite

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[12]Cohort refers to the fiscal year of obligation for direct loan obligations or loan guarantee commitments of a program.

budget authority for this purpose.[13] Accordingly, an upward reestimate does not use up room under any discretionary spending caps and a downward reestimate does not "free up" room under such caps.

Program and Financing Accounts under FCRA

FCRA established a special budgetary accounting system to record the cash flows and budget information necessary to implement credit reform. Direct loans and loan guarantees made on or after October 1, 1991—the effective date of credit reform—use program and financing accounts to handle credit transactions (see fig. 4).[14] The program account is included in budget totals, receives appropriations for the subsidy cost of a credit program, and records the budget authority and outlays for these costs.[15] The program account is used to pay the associated subsidy cost to the financing account when a direct or guaranteed loan is disbursed. The financing account, which is nonbudgetary,[16] is used to (1) collect the subsidy cost from the program account, (2) borrow from the Department of the Treasury (Treasury) to provide financing for loan disbursements, and (3) record the cash flows between the government and the borrower or lender associated with direct loans or loan guarantees over the life of the loan. These cash flows include loan disbursements, default payments to lenders, loan repayments, interest payments, recoveries on defaulted loans, and fee collections.

[13]Permanent indefinite budget authority is available for obligation and expenditure without fiscal year limitation and is not limited to a specified amount or ceiling.

[14]A liquidating account was also established to handle credit transactions on a cash basis for direct loans and loan guarantees made before the implementation of FCRA.

[15]Funding for administrative costs of credit programs varies by program, depending on the language of the relevant authorizing statutes and appropriations acts. In some cases, administrative costs are provided for as part of appropriations made to the program account, while other programs charge their administrative costs to other accounts, such as an agency's general lump-sum appropriation.

[16]Transactions from nonbudgetary accounts do not belong in the budget because they do not represent net budget authority or outlays, but rather are a means of financing. This contrasts with "off-budget," which refers to activities that are budgetary in nature but are required by law to be excluded from budget totals.

Figure 4: Federal Credit Reform Act of 1990 Program and Financing Account Transactions for Direct Loans and Loan Guarantees
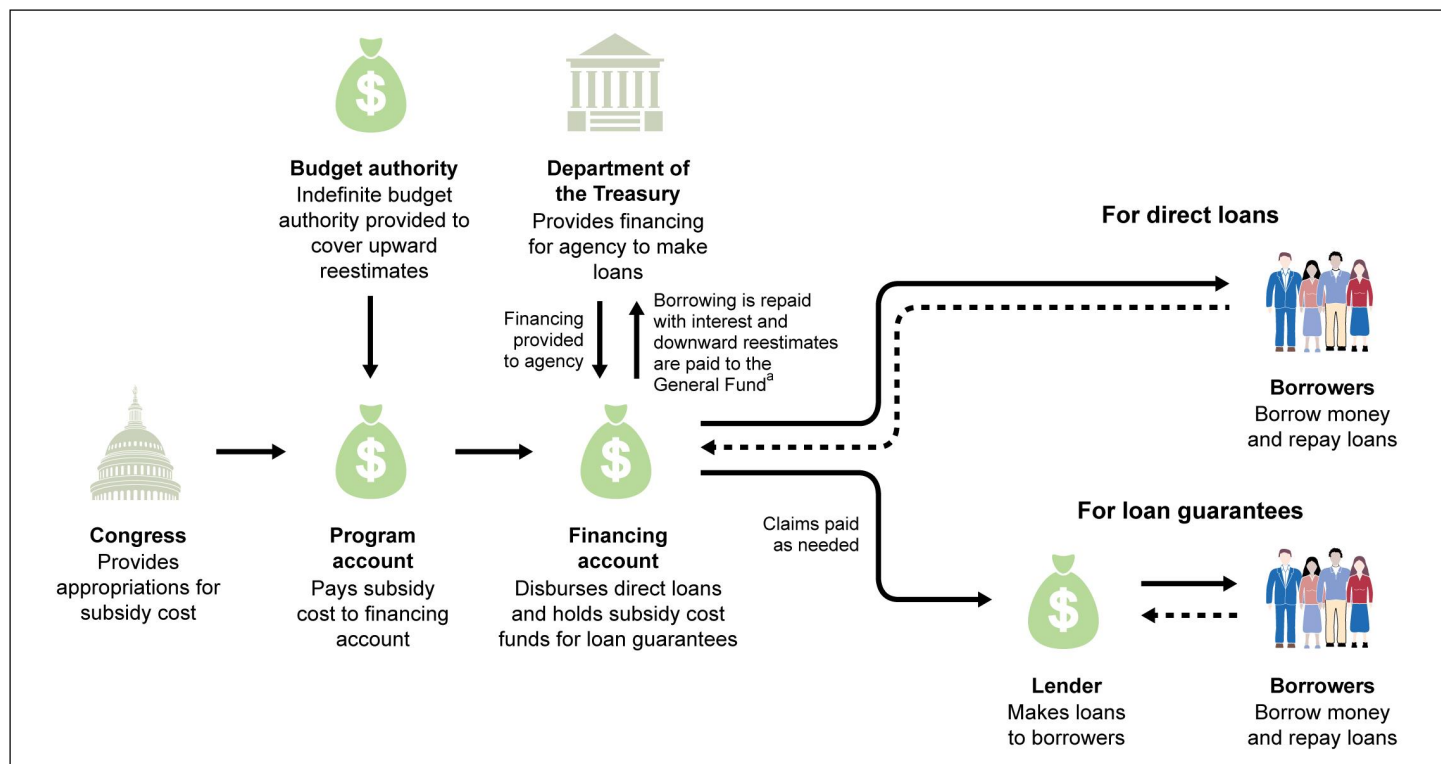
Source: GAO. | GAO-16-41

[a]General Fund accounts in the U.S. Treasury hold all federal money not allocated by law to any other fund account.

Discount Rates under FCRA

When calculating the net present value of expected cash flows, FCRA requires that discount rates be based on interest rates of marketable U.S. Treasury securities with similar maturities as the cash flows being discounted. In addition, FCRA requires that the rate of interest charged on financing account transactions with Treasury be the same as the final discount rate used to calculate the net present value of cash flows when

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estimating the subsidy cost of a credit program.[17] Figure 5 illustrates how the discount rate would affect the value of future loan repayments and the subsidy cost for a direct loan.

Figure 5: Effect of Discount Rates on the Value of Loan Repayments and Subsidy Costs for a Direct Loan

This figure illustrates the effect of different discount rates on measuring the repayment of a loan over 5 years.

To estimate the present value of loan repayments in the future, the future repayments should be discounted–or valued–to their worth today. Discounting is based on the concept that $1 received in the future (e.g., in 1 year) is worth less than $1 received today because the dollar received today can be invested and grow with interest over that year.

For a direct loan, as the discount rate increases, the value today decreases and the subsidy cost increases

$101 Subsidy cost $399 value today

8.0% discount rate

$90 Subsidy cost $410 value today

7.0% discount rate

$79 Subsidy cost $421 value today

6.0% discount rate

$67 Subsidy cost $433 value today

5.0% discount rate

$55 Subsidy cost $445 value today

4.0% discount rate

$500 loan

Disbursed and repaid $100 per year over 5 years

Source: GAO. | GAO-16-41

Note: This figure illustrates a simplified example of an interest-free loan and assumes that it performs as required with no defaults

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[17]For loans made or guaranteed in fiscal year 2001 and thereafter, the discount rate is based on interest rates on marketable zero-coupon Treasury securities with similar maturities from the date of disbursement as the cash flow. For loans made or guaranteed before fiscal year 2001, the discount rate is based on a disbursement-weighted average of interest rates for marketable Treasury securities with similar maturities as the loans or loan guarantees.

The final discount rate for a cohort of direct loans or loan guarantees is determined based on interest rates of Treasury securities prevailing during the period when the loans are disbursed. Specifically, once a cohort of loans is substantially disbursed (at least 90 percent), the final discount rate for that cohort is determined, and this rate is used to calculate reestimates of subsidy costs and for financing account interest calculations. Using the same rate for reestimates and interest on the financing account ensures that the financing account will break even over time as it uses its collections to repay its Treasury borrowing. As a result, the discount rate reflects the federal government's actual borrowing cost and incorporates into the subsidy cost calculation an agency's cost of financing its lending. For loan guarantee programs, which may or may not borrow from Treasury, the financing account receives the subsidy cost from the program account and holds these funds to serve as a reserve against future loan guarantee defaults or other costs. FCRA requires that these funds—referred to as uninvested funds—earn interest from Treasury at the same rate as the discount rate used to calculate the present value when estimating the subsidy cost. The Office of Management and Budget (OMB) provides tools for agencies to use to discount estimated cash flows and calculate interest on financing account balances.

Fair Value Approach and the Current Basis of the Budget

For several years, the Congressional Budget Office (CBO) and others have raised the concern that FCRA subsidy cost estimates recorded in the budget underestimate the costs of federal credit programs and do not completely reflect the costs imposed on taxpayers. Some have suggested revising FCRA to include in the subsidy cost an additional estimated cost related to certain market risk. This suggestion has been referred to as the fair value approach and centers around the debate that beyond the cash flows associated with the direct loan or loan guarantee, which are recognized under FCRA, costs are imposed on taxpayers who would, in a similarly risky private market transaction, require compensation for bearing the aggregate risk associated with making the loan.[18] However, it is important to note that this cost to the taxpayer does not represent a monetary cost to the government as it is not a cash outlay by Treasury. Instead, it can be thought of as representing a noncash social cost of federal lending.

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[18]See Deborah Lucas and Marvin Phaup, "Reforming Credit Reform," *Public Budgeting & Finance* (Winter 2008).

CBO has provided information on fair value estimates to aid congressional decision making regarding the value of resources being devoted to federal credit programs for several years. In a 2004 report, CBO initially laid out the conceptual foundation for the fair value approach and subsequently issued several more reports more fully examining the implications of using the fair value approach in the decision-making and the budget process.[19] In a 2014 testimony, CBO compared and contrasted the use of the fair value approach versus FCRA in informing decisions and in budget formulation and execution, laying out advantages and disadvantages of each method.[20] At present, CBO provides congressional budget committees with cost estimates for credit programs using both the fair value approach and the FCRA methodology.[21]

The term fair value in the context of suggested revisions to FCRA subsidy costs is similar in concept to its use in private-sector generally accepted accounting principles (GAAP) for financial accounting; however, there are differences in how the two would be applied.[22] The fair value approach discussed in this report relates to budgeting for federal credit programs, while the term "fair value" under private-sector GAAP applies to the valuation of certain assets and liabilities of private-sector entities and is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. In a general sense, the "fair value" label for federal budgeting purposes suggests a parallel between federal and private-sector notions of appropriate compensation for making loans. The label "fair value" reflects the perspective that this compensation—the risk premium—that taxpayers demand can be found by observing what they would require to make similarly risky investments

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[19]For example, Congressional Budget Office, *Fair-Value Accounting for Federal Credit Programs* (Washington, D.C.: March 2012); *Accounting for FHA's Single-Family Mortgage Insurance Program on a Fair-Value Basis* (Washington, D.C.: May 2011); and *Estimating the Value of Subsidies for Federal Loans and Loan Guarantees* (Washington, D.C.: August 2004).

[20]Congressional Budget Office, *Testimony on Estimates of the Cost of the Credit Programs of the Export-Import Bank* (Washington, D.C.: June 2014).

[21]CBO regularly reports a variety of cost estimates to the Congress related to both current government programs and pending legislation. See, e.g., 2 U.S.C. §§ 602, 653.

[22]"Generally accepted accounting principles" has a specific meaning for accountants and auditors. Private-sector GAAP, established by the Financial Accounting Standards Board, provides guidance that businesses follow in preparing their general purpose financial statements, which provide users such as investors and creditors with useful information that allows them to assess a business's ongoing financial performance.

in private financial markets. That view provides the analogue to the situation contemplated in private-sector GAAP fair value.

The federal budget has for decades represented a system of cash accounts. FCRA, therefore, was designed to put credit programs on the same plane as noncredit programs: FCRA reflects only the cost associated with estimated cash flows between the government and the borrower or lender, such as repayment of principal, payments of interest and fees, and claim payments to lenders. All federal programs, including those for spending programs or tax provisions whose cash costs appear in the budget, also have associated noncash costs and benefits that accrue to society at large. However, these noncash costs and benefits are not included in the budget. Accordingly, budget decisions demand trade-offs beyond just the cash cost; such decisions need to also consider noncash costs and benefits. For example, a project supported by federal spending could reduce unemployment—while at the same time result in detrimental environmental effects. Because the federal budget was not envisioned to present a complete picture of the total costs and benefits to society of government programs and policies, it should not be used as the sole rationale for federal activities. Specifically, OMB guidance in Circular No. A-94, *Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs*, directs agencies to perform program evaluations, including consideration of social costs and not just the costs to the federal government. The compensation cost to taxpayers of making risky investments, grants, or loans would be a noncash social cost considered in performing benefit-cost analysis.

A fuller examination of the fair value approach, including the nature of the social, noncash costs and the arguments for and against their inclusion in the budget, is presented later in this report.

No Overall Consistent Trends Identified in Under- or Overestimates of Subsidy Costs, and Various Economic and Portfolio Changes Caused Certain Significant Reestimates

We analyzed direct loan and loan guarantee programs' annual and lifetime reestimates from fiscal years 2001 through 2014[23] by cohort, program, agency, and purpose to identify any trends.[24] We also considered whether a program's funding was discretionary or mandatory. Our analysis considered many factors, including magnitude of reestimates, consistency in reestimate patterns over time, as well as the number of programs with either upward or downward reestimates. Based on our analyses of these factors related to reestimate data for the fiscal years 2001 through 2014 cohorts, we did not identify any overall consistent trends in under- or overestimates of subsidy costs across federal credit programs government-wide.[25] However, there were some programs with significant upward or downward reestimates, which could generally be explained by specific events. For example, the 2008 financial crisis likely contributed to upward annual reestimates for housing, small business, and agriculture loan guarantee programs because borrowers' ability to repay weakened with rising unemployment and falling market revenue. Unless otherwise noted, the amounts discussed in this section are based on information reported by OMB in the President's Budgets. See appendix II for additional detailed reestimate trend information.

No Clear Overall Trends in Subsidy Cost Reestimates across Federal Credit Programs Government-Wide

Based on our analysis of reestimates for fiscal years 2001 through 2014 cohorts, we found that through fiscal year 2014, both direct loan and loan guarantee programs had net lifetime upward reestimates, meaning that original subsidy costs were underestimated. However, in concluding about overall trends, we considered many factors, including magnitude of reestimates, consistency in reestimate patterns over time, as well as the number of programs with either upward or downward reestimates. Based on our analyses of these factors related to reestimate data for the fiscal years 2001 through 2014 cohorts, we did not identify any overall

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[23]Reestimates are generally prepared at the end of fiscal years. Therefore, our analysis of reestimates from fiscal years 2001 through 2014 indicates that we evaluated reestimates prepared after the end of those fiscal years. Further, our analysis included the fiscal years 2001 through 2014 cohorts.

[24]Unless otherwise noted, we have excluded the Troubled Asset Relief Program (TARP) from this analysis because the size of the TARP lifetime downward reestimate is significantly larger than all the reestimates of other credit programs combined, and its inclusion would make any trend analysis less meaningful.

[25]Our conclusions about trends were based on our professional judgment in assessing the data, and not based on a statistical analysis.

consistent trends in under- or overestimates of subsidy costs across federal credit programs government-wide.

Reestimates provide information to improve the estimation process and yield insights into program performance. For example, upward reestimates could indicate that borrowers are delinquent in repaying loans, and as a result, loan performance is worse than initially expected. Reestimates take into account actual loan performance and expected changes in future loan performance, which can both vary because of portfolio changes (e.g., changes in the credit-worthiness of borrowers) and changes in the economy—external events that affect borrower behavior. Reestimates of subsidy costs are to be expected as loan cohorts age and as the economy deviates from the paths assumed when subsidy costs were originally estimated. When estimating or reestimating subsidy costs, agencies must respond to changes in their credit program portfolios and the economy. While forecasting future loan performance can be challenging, the goal is to avoid consistent bias, reflected in either recurring upward or downward reestimates. Consistent bias in forecasting loan performance would result in subsidy cost estimates that provide misleading information about program performance. At the same time, a period of recurring overestimates or underestimates does not necessarily mean that the original estimates were biased. A particularly challenging period for forecasting loan performance was the onset of the 2008 financial crisis. A key question in evaluating subsidy cost estimates is whether agencies were able to foresee deteriorating performance in credit program portfolios.

Government-wide, a total of 101 direct loan programs reported reestimates for the fiscal years 2001 through 2014 cohorts. As shown in table 1, 42 programs had lifetime upward reestimates and 59 programs had lifetime downward reestimates. Overall, the reestimates for these programs totaled a net lifetime upward reestimate of $3.1 billion, meaning that the original subsidy costs of the cohorts obligated during this period were underestimated by $3.1 billion, which is less than 1 percent of the amount of loans disbursed by the cohorts in our review. Based on data reported in the President's Budget, the estimated lifetime subsidy income, meaning negative subsidy cost, of the fiscal years 2001 through 2014 cohorts of direct loan programs totaled about $91 billion, after considering

the effects of lifetime reestimates.[26] Therefore, the net lifetime upward reestimate of direct loan programs' fiscal years 2001 through 2014 cohorts, represents about 3 percent of the lifetime subsidy income.

Table 1: Direct Loan Programs Lifetime Upward and Downward Reestimates, 2001-2014

Note: Dollars in billions

	Programs	**Reestimates**
Lifetime upward reestimates	42	$32.6
Lifetime downward reestimates	59	(29.5)
Overall net lifetime upward reestimate	**101**	**$3.1**

Source: GAO analysis of President's Budgets. | GAO-16-41

Further, as shown in figure 6, four direct loan programs accounted for 88 percent of the lifetime upward reestimate of $32.6 billion, with Education's Direct Student Loan Program accounting for 71 percent.[27] Similarly, four direct loan programs accounted for 88 percent of the lifetime downward reestimates of $29.5 billion, with Treasury's Government Sponsored Enterprises (GSE) Mortgage Backed Securities (MBS) Purchase Program accounting for 55 percent.[28]

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[26]This was calculated by multiplying the most recently reported original subsidy rate and disbursements for a cohort and adding the most recently reported lifetime reestimates for that cohort.

[27]Education's Direct Student Loan Program provides financing to students or their parents to help students obtain postsecondary education. This program is currently the largest federal direct loan program with $694 billion outstanding as of September 30, 2014. Disbursements were $130 billion and $134 billion during fiscal years 2013 and 2014, respectively.

[28]Treasury established the GSE MBS Purchase Program in response to the 2008 financial crisis to provide stability and prevent disruption in the financial markets.

Figure 6: Direct Loan Programs Representing a Significant Percentage of Lifetime Upward and Downward Reestimates, 2001-2014

Upward reestimates - $32.6 billion

70.8%
$23.1 billion

8.7%
$2.8 billion

4.8%
$1.6 billion

3.3%
$1.1 billion

12.4%
$4.0 billion

- Direct Student Loan Program (Department of Education)
- Direct Loans (Export-Import Bank)
- Government Sponsored Enterprises (GSE) Mortgage Backed Securities (MBS) New Issue Bond Program Single Family (Department of the Treasury)
- Disaster Loans (Small Business Administration)
- 38 Remaining programs

Downward reestimates - $29.5 billion

54.5%
$16.1 billion

17.4%
$5.1 billion

9.1%
$2.7 billion

6.9%
$2.0 billion

12.1%
$3.6 billion

- GSE MBS Purchases (Department of the Treasury)
- Federal Family Education Loan - Direct Participation Agreement (Department of Education)
- Advanced Technology Vehicles Manufacturing (Department of Energy)
- Federal Family Education Loan - Standard Put (Department of Education)
- 55 Remaining programs

Source: GAO analysis of President's Budgets. | GAO-16-41

Government-wide, a total of 76 loan guarantee programs reported reestimates for the fiscal years 2001 through 2014 cohorts. As shown in table 2, 35 loan guarantee programs had lifetime upward reestimates and 41 programs had lifetime downward reestimates. Overall, the reestimates for these programs totaled a net lifetime upward reestimate of $39 billion, which is less than 1 percent of the amount of loans guaranteed by the cohorts in our review. Based on data reported in the President's Budget, the estimated lifetime subsidy cost of the fiscal years 2001 through 2014 cohorts of loan guarantee programs totaled about $26 billion, after considering the effects of lifetime reestimates.[29] Therefore, for the fiscal

[29]This was calculated by multiplying the most recently reported original subsidy rate and disbursements for a cohort and adding the most recently reported lifetime reestimates for that cohort.

years 2001 through 2014 cohorts, loan guarantee programs initially estimated subsidy income of $13 billion.

Table 2: Loan Guarantee Programs Lifetime Upward and Downward Reestimates, 2001-2014

Note: Dollars in billions

	Programs	Reestimates
Lifetime upward reestimates	35	$104.5
Lifetime downward reestimates	41	(65.5)
Overall net lifetime upward reestimate	**76**	**$39.0**

Source: GAO analysis of President's Budgets. | GAO-16-41

Further, as shown in figure 7, five loan guarantee programs accounted for 91 percent of the $104.5 billion lifetime upward reestimates, with HUD's Mutual Mortgage Insurance (MMI) Fund accounting for 65 percent.[30] Similarly, three loan guarantee programs accounted for 95 percent of the $65.5 billion lifetime downward reestimates, with Education's Federal Family Education Loan (FFEL) program accounting for 91 percent.[31]

[30]HUD's MMI Fund provides insurance to lenders for single-family homeowners and is supported by insurance premiums paid by borrowers. This is the largest federal loan guarantee program, with $1,169 billion of outstanding guarantees as of September 30, 2014. New loan guarantees of $240 billion and $135 billion were approved during fiscal years 2013 and 2014, respectively.

[31]Education's FFEL program was the loan guarantee complement to the Direct Student Loan Program. The Health Care and Education Reconciliation Act of 2010, Pub. L. No. 111-152, § 2201, 124 Stat. 1029, 1074 (Mar. 30, 2010), terminated Education's authority to guarantee new loans under the FFEL program after June 30, 2010.

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Figure 7: Loan Guarantee Programs Representing a Significant Percentage of Lifetime Upward and Downward Reestimates, 2001-2014

Upward reestimates - $104.5 billion

65.2%
$68.2 billion
10.1%
$10.5 billion
6.8%
$7.1 billion
4.6%
$4.8 billion
3.9%
$4.1 billion
9.4%
$9.8 billion
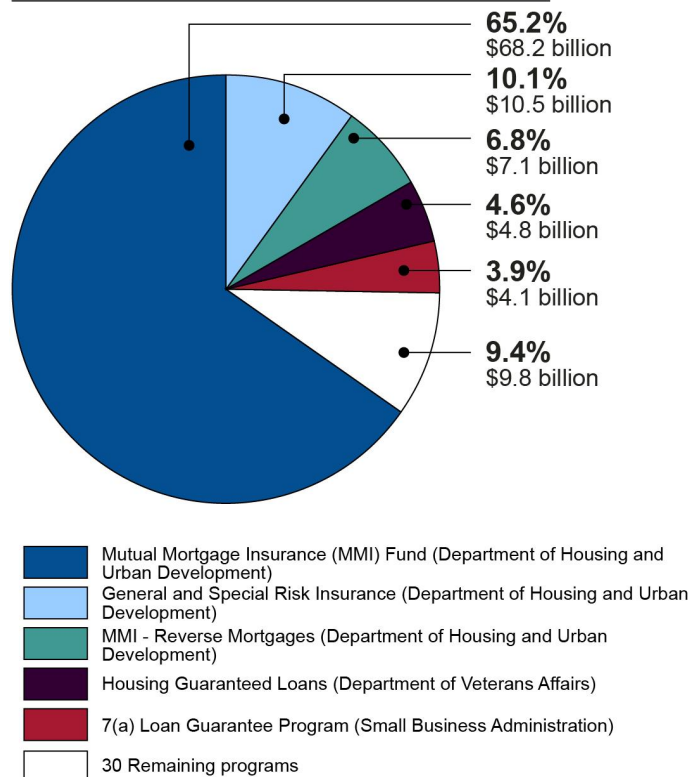
Downward reestimates - $65.5 billion

90.9%
$59.6 billion
3.0%
$2.0 billion
1.3%
$0.9 billion
4.8%
$3.0 billion

Mutual Mortgage Insurance (MMI) Fund (Department of Housing and Urban Development)

General and Special Risk Insurance (Department of Housing and Urban Development)

MMI - Reverse Mortgages (Department of Housing and Urban Development)

Housing Guaranteed Loans (Department of Veterans Affairs)

7(a) Loan Guarantee Program (Small Business Administration)

30 Remaining programs

Federal Family Education Loan program (Department of Education)

Mortgage Backed Securities Guarantees (Department of Housing and Urban Development)

Export Credit Guarantee Program (GSM-102) (Department of Agriculture)

38 Remaining programs

Source: GAO analysis of President's Budgets. | GAO-16-41

In concluding about overall trends, we considered many factors, including magnitude of reestimates, consistency in reestimate patterns over time, and the number of programs with either upward or downward reestimates. Based on our analyses of these factors related to reestimate data for the fiscal years 2001 through 2014 cohorts, we did not identify any overall consistent trends in under- or overestimates of subsidy costs across federal credit programs government-wide. Specifically, although both direct loan and loan guarantee programs government-wide had overall lifetime upward reestimates for the cohorts over the 14-year period of our analysis, the reestimates fluctuated significantly from year to year. For example, as shown in figure 8, from fiscal years 2006 through 2014, direct loan programs recorded overall net upward reestimates for 4 years and overall net downward reestimates for 5 years. Also during this period, loan guarantee programs recorded overall net upward reestimates for 5

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years and overall net downward reestimates for 4 years. The large upward reestimates in fiscal year 2012 for loan guarantees and in fiscal year 2014 for direct loans were primarily attributed to HUD's MMI Fund and Education's Direct Student Loan Program, respectively, which are discussed later.

Figure 8: Fluctuations in Direct Loan and Loan Guarantee Programs' Annual Net Reestimates, 2006-2014
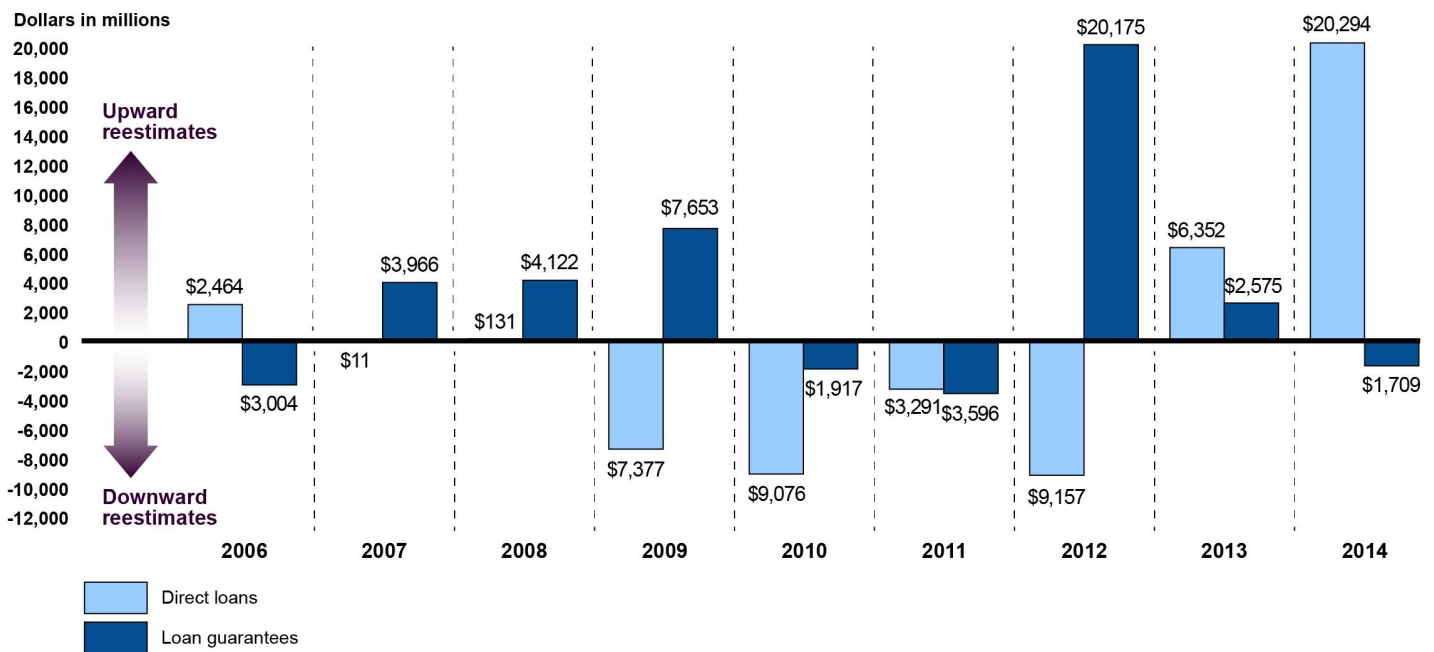
We also analyzed reestimates over time based on whether programs are discretionary or mandatory. Under FCRA, as previously discussed, appropriations for initial subsidy costs of discretionary programs are typically limited to a definite amount. Mandatory credit programs are funded by the operation of their authorizing statutes, typically in indefinite amounts. However, both discretionary and mandatory programs automatically receive permanent indefinite budget authority for the cost of upward reestimates. Thus, agencies with discretionary credit programs theoretically could have an incentive to initially underestimate subsidy costs so that they could make more loans or loan guarantees within a given appropriation level. If this incentive did not exist and absent any overriding economic trend, one could expect reestimates to lower the

original subsidy cost estimates as often as they raise it, and the patterns would be similar for discretionary and mandatory programs.

Overall, we did not identify any consistent trends that would indicate whether for some discretionary programs there was an effort to benefit from initially underestimating subsidy costs. As shown in table 3, generally the same proportion of discretionary and mandatory credit programs had upward and downward reestimates. The one pattern we observed was in relation to the magnitude of loan guarantee reestimates. Specifically, regarding the dollar amount of reestimates, about 95 percent of the upward reestimates were from discretionary loan guarantee programs, while about 93 percent of the downward reestimates were from mandatory loan guarantee programs. These trends are primarily driven by two programs—upward reestimates for HUD's discretionary MMI Fund and downward reestimates for Education's mandatory FFEL program. The reestimates for these programs, which can generally be explained by economic events and portfolio changes, are described in more detail in the following section.

Table 3: Discretionary and Mandatory Credit Program Reestimates, 2001-2014

Note: Dollars in billions

		Direct loan programs			Loan guarantee programs		
	Category	Programs	Percentage of programs	Reestimates	Programs	Percentage of programs	Reestimates
Upward reestimates	Discretionary	34	34%	$7.0	33	43%	$99.8
	Mandatory	8	8%	25.6	2	3%	4.7
Downward reestimates	Discretionary	43	42%	(5.3)	35	46%	(4.3)
	Mandatory	16	16%	(24.2)	6	8%	(61.2)
Total	**n/a**	**101**	**n/a**	**$3.1**	**76**	**n/a**	**$39.0**

Source: GAO analysis of President's Budgets. | GAO-16-41

Our analysis of reestimates trend data excluded activity from Treasury's Troubled Asset Relief Program (TARP).[32] TARP is an example of a federal

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[32]TARP was authorized by the Emergency Economic Stabilization Act of 2008, which gave the Secretary of the Treasury broad and flexible authority to establish TARP to purchase and insure mortgages and other troubled assets. Among other things, this permitted the Secretary to inject capital into banks and other commercial companies by taking equity positions in those entities to help stabilize the financial markets. Pub. L. No. 110-343, div. A, 122 Stat 3765 (Oct. 3, 2008), *classified in part, as amended, at* 12 U.S.C. §§ 5201-5261.

program that implemented a budgeting process similar to the fair value approach. TARP was required by law to estimate the budgetary cost of purchases and guarantees of troubled assets in accordance with FCRA, except that such costs were required to be calculated by adjusting the discount rate for market risk. These cost estimates were reestimated annually, at fiscal year-end, to reflect revised assumptions for market risk, asset performance, and other key variables and economic factors. Interest earned or paid on financing account transactions with Treasury was based on FCRA discount rates (not adjusted for market risk). As a result, as program funds were repaid, reestimates reflected reduced costs because of improvements in the economy and also because the noncash cost that was considered in the market-risk-adjusted discount rates was not reflected in the actual federal cash flows. Overall, TARP has had lifetime downward reestimates of nearly $177 billion through fiscal year 2014. If the FCRA methodology had been used to initially estimate the subsidy cost of TARP, the lifetime downward reestimate would have been significantly less—meaning that the overestimate of initial subsidy costs would have been less. As of September 30, 2014, TARP has reported an estimated lifetime subsidy cost of $54.6 million for its direct loan, investment, and guarantee programs.

Significant Upward and Downward Reestimates Could Generally Be Explained by Specific Events Affecting a Few Large Credit Programs

We identified a few programs with significant upward or downward lifetime reestimates for the fiscal years 2001 through 2014 cohorts, which could generally be explained by portfolio or economic changes, as well as revisions in estimation methodologies.

We analyzed estimates of fiscal years 2001 through 2014 cohorts based on the purposes of the programs. Specifically, the types of direct loan programs with the largest lifetime reestimates were in the education, international, and other categories, and the types of loan guarantee programs with the largest lifetime reestimates were in the housing, education, and small business and agriculture categories. (See fig. 9.) These reestimates could generally be explained by specific events affecting a few large programs.

Figure 9: Primary Drivers of the Largest Overall Upward and Downward Lifetime Reestimates for Direct Loans and Loan Guarantees by Purpose of Program, 2001-2014

Direct loan reestimates			Loan guarantee reestimates		
Education-related $15.4 billion	**International** $3.3 billion	**Other** $13.1 billion	**Housing** $91.5 billion	**Education-related** $59.6 billion	**Small business and agriculture** $7.4 billion
Primarily driven by the Department of Education's Direct Student Loan Program and changes in discount rates, program terms, and assumptions related to income-driven repayment plans	Primarily driven by Export-Import Bank's Direct Loan Program and changes in estimation methods to better and more accurately measure risk	Primarily driven by the Department of the Treasury's Government Sponsored Enterprises Mortgage Backed Securities (MBS) Program and higher-than-anticipated proceeds from the repayment and sales of MBS purchased during the financial crisis	Primarily driven by the Department of Housing and Urban Development's Mutual Mortgage Insurance Fund and changes in long-term housing prices and interest rates as a result of the mortgage and financial crises	Primarily driven by the Department of Education's Federal Family Education Loan program and changes in interest rates	Primarily driven by the Small Business Administration's 7(a) Loan Guarantee and 504 Certified Development Companies Programs and the effect of the financial crisis

Source: GAO analysis of various agency reports and President's Budgets. | GAO-16-41

Education-Related Direct Loan Programs

The education-related category had the largest lifetime upward reestimate for direct loans and the biggest swings in annual reestimates.[33] For example, in fiscal year 2010, this category had a net downward reestimate of $11.4 billion and, in fiscal year 2014, a net upward reestimate of $18.7 billion, primarily driven by Education's Direct Student Loan Program. The reported estimated lifetime subsidy income for the Direct Student Loan Program's fiscal years 2001 through 2014 cohorts of direct loans totaled about $73.3 billion, after considering a lifetime upward reestimate of about $23.1 billion. The primary cost driver of the Direct Student Loan Program is the difference between borrowers' interest rates on their loans and Education's cost of borrowing to finance its lending, represented by the discount rate in the subsidy cost calculation. Consistent with the process to develop the President's Budget, Education prepares its initial subsidy cost estimates in advance of knowing the actual borrower interest rates on its lending and interest rates to finance its lending. Further,

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[33]The "education-related" direct loan category includes programs operated by the Department of Education, as well as a program operated by the Department of Veterans Affairs that provides financing to veterans with service-connected disabilities to obtain vocational rehabilitation.

interest rate changes are impossible to predict with certainty. As a result, changes in interest rates, which are outside the control of Education, can have a significant effect on subsidy cost reestimates for the program.

According to Education, this program experienced generally upward reestimates over the years mainly driven by discount rate changes; revised assumptions related to income-driven repayment plans[34] and public service loan forgiveness;[35] and rising borrower default rates.[36] After fiscal year 2014, the Direct Student Loan Program reported an upward reestimate of $21.0 billion, which, according to Education officials, was primarily related to newly implemented income-driven repayment plans for borrowers.[37] This reestimate had a significant effect not only on the reestimates in the education category but also on direct loan program reestimates government-wide. The size of the Direct Student Loan Program also contributes to the magnitude of its reestimates. For example, for the fiscal years 2001 through 2014 cohorts, Education has reported loan disbursements totaling about $825 billion. With this loan volume, a 1 percentage point change in the subsidy rate for all cohorts would result in an $8.25 billion reestimate. In comparison, a 1

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[34]Under the Direct Student Loan Program, if borrowers' outstanding federal student loan debt is higher than their annual income or if it represents a significant portion of their annual income, borrowers may want to repay their federal student loans under one of the income-driven repayment plans available to borrowers, which are designed to make student loan debt more manageable by reducing the monthly payment amount.

[35]Under the Public Service Loan Forgiveness program, certain borrowers employed full-time by certain public service organizations may have their remaining balances of Federal Direct Student Loans forgiven after making 120 qualifying payments while in public service employment. Qualifying payments must be made after October 1, 2007, under a qualifying repayment plan; the first forgiveness of loan balances won't be granted until October 1, 2017. Borrowers may request that Education certify their employment and loans in advance for eligibility purposes.

[36]However, in September 2015, Education released its updated 3-year default rate for the fiscal year 2012 cohort. The cohort default rate for the fiscal year 2012 cohort is based on the number of students who entered repayment in fiscal year 2012 and defaulted on or before the end of fiscal year 2015 (a 3-year window) divided by the number of students who entered repayment in fiscal year 2012. Based on these data for the fiscal year 2012 cohort, the 3-year default rate has decreased since the fiscal year 2010 cohort.

[37]Education officials told us that the reestimates it reported after fiscal year 2014 (included in the 2016 President's Budget) included an error. The reestimate should have been an upward reestimate of $19 billion. If this error had been identified and corrected prior to the preparation of the President's Budget, the lifetime reestimate for the fiscal years 2001 through 2014 cohorts of direct loan programs would have been an underestimate, or a lifetime upward reestimate, of $1.1 billion rather than $3.1 billion.

percentage point change in the subsidy rate of a loan program with less loan volume would have a smaller reestimate amount.

International Direct Loan Programs

The lifetime upward reestimates for the international category were primarily driven by the Export-Import Bank's (Ex-Im) Direct Loan Program. The reported estimated lifetime subsidy cost for the fiscal years 2001 through 2014 cohorts of Ex-Im's Direct Loan Program totaled about $1.1 billion, after considering a lifetime upward reestimate of $2.8 billion.[38] Ex-Im reported that upward reestimates were due to estimation modeling changes made in fiscal year 2012. Specifically, Ex-Im uses a loss estimation model to estimate subsidy costs. The model calculated loss rates based on historical data, including default and loss history of prior loan transactions, as well as variables that can be used to predict defaults and losses, such as transaction amount and length, obligor type, product type, and risk rating. According to Ex-Im, in 2012, it added qualitative factors (e.g., minimum loss rate; global economic risk; and region, industry, and aircraft portfolio obligor concentration risk) to account for specific risks associated with the agency's current portfolio. Ex-Im added qualitative factors to the estimation methodology to better and more accurately measure default risk. When Ex-Im added qualitative factors, there was also an increase in direct loan exposure because of the financial crisis, which magnified the impact of the qualitative factors. Ex-Im's direct loan exposure increased from $4.5 billion in 2008 to $32.7 billion in 2014.

Other Direct Loan Programs

The downward reestimates in the direct loan other category were primarily driven by Treasury's GSE MBS Purchase Program. The reported lifetime subsidy income of this program totaled about $21.8 billion, after considering a lifetime downward reestimate of $16.1 billion. Under this program, Treasury purchased $226 billion of GSE MBS from the secondary market from September 2008 through December 2009. As a result of scheduled principal repayments, the portfolio declined to $136 billion as of March 2011, when Treasury began the orderly disposition of the remaining MBS portfolio. Treasury completed the orderly disposition of this portfolio in March 2012. Following the principal repayments and sales, significant downward reestimates were recorded in fiscal years 2009 and 2011. These

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[38]Ex-Im's Direct Loan Program provides financing for international buyers of U.S. goods and services.

downward reestimates were the result of higher-than-projected proceeds from MBS repayments and sales because of improving market conditions following the 2008 financial crisis.

Housing Loan Guarantee Programs

The housing category had the largest lifetime upward reestimates for loan guarantee programs and experienced significant annual upward reestimates from fiscal years 2008 through 2012, ranging from $8.5 billion to $28.1 billion during this period. These reestimates were primarily driven by HUD's MMI Fund. The reported estimated lifetime subsidy cost for the fiscal years 2001 through 2014 cohorts of MMI loan guarantees totaled about $18.7 billion, after considering a lifetime upward reestimate of $75.3 billion.[39] A variety of economic, portfolio, and market changes contributed to upward reestimates for MMI's forward mortgages, which accounted for $68.2 billion of the MMI Fund's lifetime upward reestimate. Chief among these changes affecting the cost were downward adjustments to long-term housing price and interest rate assumptions stemming from the mortgage and financial crises in the late 2000s. Housing prices are an important variable in estimating the MMI Fund's subsidy costs because of their influence on the probability of mortgage default and the severity of losses in the event of default.[40] However, long-term housing price forecasts are inherently uncertain. In addition, the budget process requires these assumptions to be made more than a year in advance. HUD officials told us that the assumptions used to make the original credit subsidy estimates were more optimistic than the revised assumptions used to make the reestimates, which contributed to upward reestimates. Another key reason for the MMI Fund's upward reestimates was a downward adjustment in mortgage interest rate assumptions. Mortgage interest rates are an important variable in estimating the fund's subsidy

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[39]The MMI Fund insures both single-family forward and reverse mortgages. With forward mortgages, the borrower's monthly loan payments to the lender add to the borrower's home equity and decrease the loan balance. Reverse mortgages permit persons 62 years and older to convert their home equity into cash advances. With reverse mortgages, the borrower receives payments from the lender. The lender adds the principal and interest to the loan balance, reducing the homeowner's equity. In this report, we focus on MMI-insured single-family forward mortgages.

[40]For example, falling house prices reduce home equity. In general, lower levels of home equity as a percentage of home value are associated with relatively poorer loan performance because homeowners with negative equity may find it difficult to sell or refinance the property to avoid foreclosure. They may also have incentives to stop making mortgage payments to minimize their financial losses.

costs because of their influence on both mortgage prepayments and defaults.[41]

A number of portfolio and mortgage market developments associated with higher-than-expected losses also contributed to the MMI Fund's upward reestimates. For example, growth in the proportion of MMI-insured mortgages with seller-funded down-payment assistance and competition from private mortgage institutions in the low down-payment mortgage market contributed to upward reestimates that began in the early 2000s. MMI-insured loans with seller-funded down-payment assistance grew from about 6 percent of the MMI Fund's business in 2000 to about 30 percent in the mid-2000s. Unlike other key mortgage industry participants, HUD allowed borrowers to obtain down-payment assistance from nonprofits that operated programs supported partly by financial contributions and service fees from participating property sellers. The seller-funded down-payment assistance loans performed worse than comparable loans with down-payment assistance from other sources or with no assistance, possibly because these homebuyers had less equity in the transactions and thus may have been more likely to default. For example, the MMI Fund cost estimates reflected an estimated subsidy rate of positive 6.35 percent for seller-funded down-payment assistance loans, compared with negative 0.01 percent for non-seller-funded down-payment assistance.

Similar to Education's Direct Student Loan Program, the size of the MMI Fund also contributes to the magnitude of its reestimates. Because the amount of loan guarantees provided is so large, a minor change in the subsidy rate during the reestimate process can result in a significant reestimate in terms of dollars. For example, for the fiscal years 2001 through 2014 cohorts, HUD has reported loan guarantees totaling about $2.2 trillion under the forward mortgage issuance program. With this

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[41]For example, declining mortgage rates cause early mortgage terminations because of borrower refinancing. The refinancings can be expected to reduce the MMI Fund's expected premium income (thereby increasing estimated subsidy costs) in part because not all borrowers refinance into new MMI-insured mortgages. Additionally, borrowers who do not refinance (and are therefore paying interest rates higher than current market rates) have greater incentive to default because the present values of their mortgages are higher than their outstanding mortgage balances. As a result, the MMI Fund's projected losses for these borrowers can be expected to increase, resulting in higher estimated subsidy costs.

volume of loan guarantees, a 1 percentage point change in the subsidy rate for all cohorts would result in a $22 billion reestimate.

Education-Related Loan Guarantee Programs

The education-related category had the largest lifetime downward reestimates for loan guarantee programs, driven by Education's FFEL program.[42] The reported estimated lifetime subsidy income of the FFEL program totaled about $8.4 billion for the cohorts since fiscal year 2001, after considering the effects of lifetime downward reestimates of $59.6 billion. The significant downward reestimates were attributable to many factors; chief among them were interest rate changes. Programmatic changes, such as Education's ability to purchase outstanding guaranteed loans from lenders,[43] were reflected as modifications under FCRA.[44] In addition, the program was terminated by statute in 2010, prohibiting new loan guarantees after June of that year.

Small Business and Agriculture Loan Guarantee Programs

The small business and agriculture loan guarantee category had lifetime upward reestimates of $7.4 billion, which were primarily driven by reestimates from the Small Business Administration's (SBA) 7(a) Loan Guarantee and 504 Certified Development Company Loan Guarantee Programs.[45] The reported estimated lifetime subsidy cost for the fiscal years 2001 through 2014 cohorts of 7(a) Loan Guarantee and 504 Certified Development Company Loan Guarantee Programs' loan guarantees totaled about $5.0 billion and $3.9 billion, after the effect of lifetime upward reestimates of $4.1 billion and $3.8 billion, respectively. These

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[42]The "education-related" loan guarantee category includes a program operated by the Department of Education, as well as a program initiated by the Department of Health and Human Services that provided financing for medical students.

[43]The Ensuring Continued Access to Student Loans Act of 2008, Pub. L. No. 110-227, § 7 (May 7, 2008), classified as amended at 20 U.S.C. § 1087i-1, authorized the Secretary of Education to purchase or enter into forward commitments to purchase outstanding FFEL program loans from private lenders. This authority was to expire on July 1, 2009; however, a 2008 amendment to the statute extended this authority through July 1, 2010.

[44]A modification is a government action that (1) differs from actions assumed in the baseline estimate of cash flows and (2) changes the estimated cost of an outstanding direct loan (or direct loan obligation) or an outstanding loan guarantee (or loan guarantee commitment). Any cost associated with a modification is budgeted for separately from a reestimate.

[45]SBA's 7(a) Loan Guarantee Program is SBA's most common loan guarantee program; it provides financial help for businesses, and its special requirements of eligibility are based on specific aspects of each business and its principals. The 504 Loan Guarantee Program provides financial help to business applicants meeting certain eligibility requirements, and loan funds are to be used for major fixed assets, such as equipment or real estate.

programs experienced higher-than-normal reestimates for fiscal years 2009 and 2010. SBA reported that the cause of these reestimates was the downturn in the economy and an unprecedented continuing period of high unemployment, which increased default claim payments and the uncertain effects these events would have on future default claim payments. In addition, SBA reported that worse-than-expected performance in loans originated during fiscal years 2005 through 2008 also contributed to the upward reestimates.

Reestimates during the Financial Crisis

To further analyze reestimates, we evaluated annual reestimates for direct loan and loan guarantee programs from fiscal years 2006 to 2014 to determine whether the 2008 financial crisis had an effect on reestimates.[46] We found that the negative economic outlook caused by the economic downturn during the 2008 financial crisis likely increased the projected cost of housing, small business, and agriculture loan guarantee programs, as evidenced by upward reestimates during the financial crisis. For fiscal years 2008 through 2012, the housing loan guarantee programs' annual net upward reestimates ranged from $8.5 billion to $28.1 billion, while the small business and agriculture related loan guarantee programs' annual net upward reestimates ranged from $1.0 billion to $4.3 billion. These reestimates for both categories of programs were substantially larger than the reestimates before and after this period. In addition, rising default rates associated with Education's Direct Student Loan Program could likely also be, in part, attributed to the financial crisis. However, this program had upward reestimates before and after the financial crisis. (See fig. 10.)

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[46]We started this trend analysis with fiscal year 2006 to include a few years prior to the 2008 financial crisis.

Figure 10: 2008 Direct Loan and Loan Guarantee Programs' Reestimates during the Financial Crisis, 2006-2014

Dollars in millions
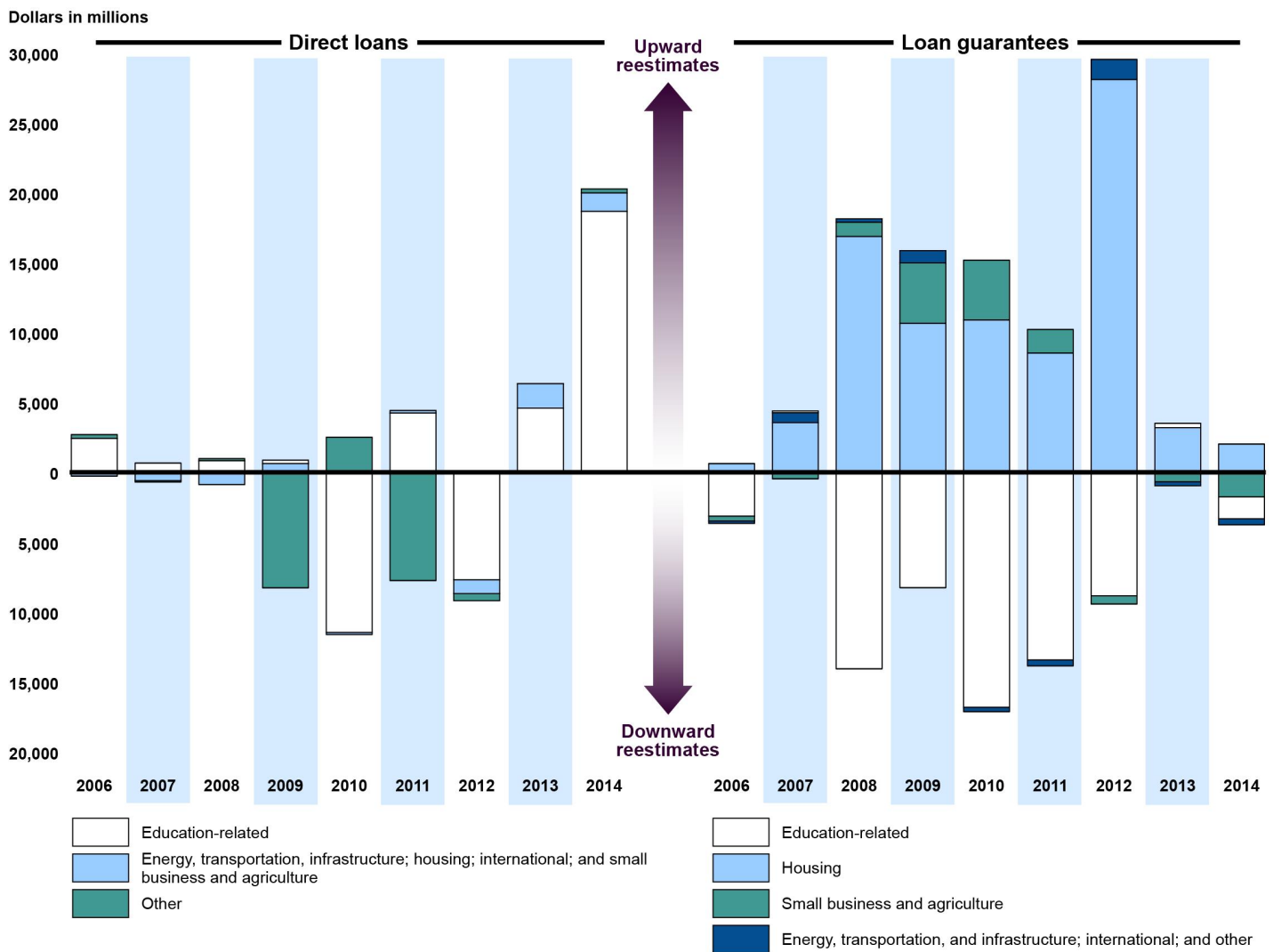
Source: GAO analysis of President's Budgets. | GAO-16-41

Fair Value Subsidy Cost Estimates May Be Useful, but They Are Not Consistent with Long-standing Federal Budgeting Practices, Involve Significant Implementation Challenges, and Should Not Be Recognized in Budget Costs

The fair value approach to estimate subsidy costs, supported by some experts we interviewed, would add market risk to what is recognized under FCRA. While credit program subsidy cost estimates under the fair value approach may provide useful information to decision makers for evaluating the costs against the benefits of credit programs, the additional market risk recognized under the fair value approach does not reflect additional cash costs beyond those recognized by FCRA. The introduction of market risk into credit program subsidy costs under the fair value approach would be inconsistent with long-standing federal budgeting practices and presents several implementation issues. More specifically, the fair value approach would (1) add noncash costs into the budgeting process, which is based on cash costs; (2) be inconsistent with the budget treatment of similarly risky programs; (3) lack transparency with respect to inclusion of a noncash cost in budget totals; (4) involve significant implementation issues; and (5) be complicated by comparisons to GAAP fair value. Further, as discussed in the prior section, we did not identify consistent trends in overall under- or overestimates of subsidy costs across federal credit programs government-wide. Consequently, we do not support the fair value approach to estimate subsidy costs for the budget and believe the current FCRA methodology is more appropriate, as it represents the best estimate of the direct cost to the government and is consistent with current budgetary practices .Other experts we interviewed, as well as OMB, opposed the fair value approach.

Fair Value Approach Cost Estimates May Be Useful to Decision Makers for Evaluating the Costs against the Benefits of Credit Programs

Fiscal Year 2014 Subsidy Costs

For fiscal year 2014, the estimated subsidy cost for new loans and guarantees across all credit programs was an estimated subsidy income of $35.7 billion. This represented about .01 percent of estimated federal outlays and receipts for the year.

Source: GAO analysis of fiscal year 2016 President's Budget. | GAO-16-41

The fair value approach to estimate credit program costs may be useful for evaluating the costs against the benefits of credit programs in that it accounts for market risks beyond those already recognized under FCRA. CBO and others have reported that subsidy cost estimates prepared under FCRA requirements do not completely reflect the costs imposed on taxpayers by federal credit programs, thus prompting proposals to modify FCRA subsidy cost estimates based on the fair value approach. More specifically, proposals calling for the adoption of the fair value approach are motivated by the idea that the social costs to taxpayers of making loans should be recognized. The social cost of making a loan includes not only the estimated cash cost to the government for making the loan and for providing for the possibility of default—both of which are currently recognized under FCRA requirements—but also the noncash cost to taxpayers for bearing the risk associated with the loan—which is not currently recognized under FCRA requirements. Because such social costs are not currently being accounted for, proponents of the fair value approach asserted that budget decisions may be distorted by an incentive to overly rely on risky credit programs as a policy tool because credit

programs look relatively less expensive than other forms of federal assistance (e.g., grants).
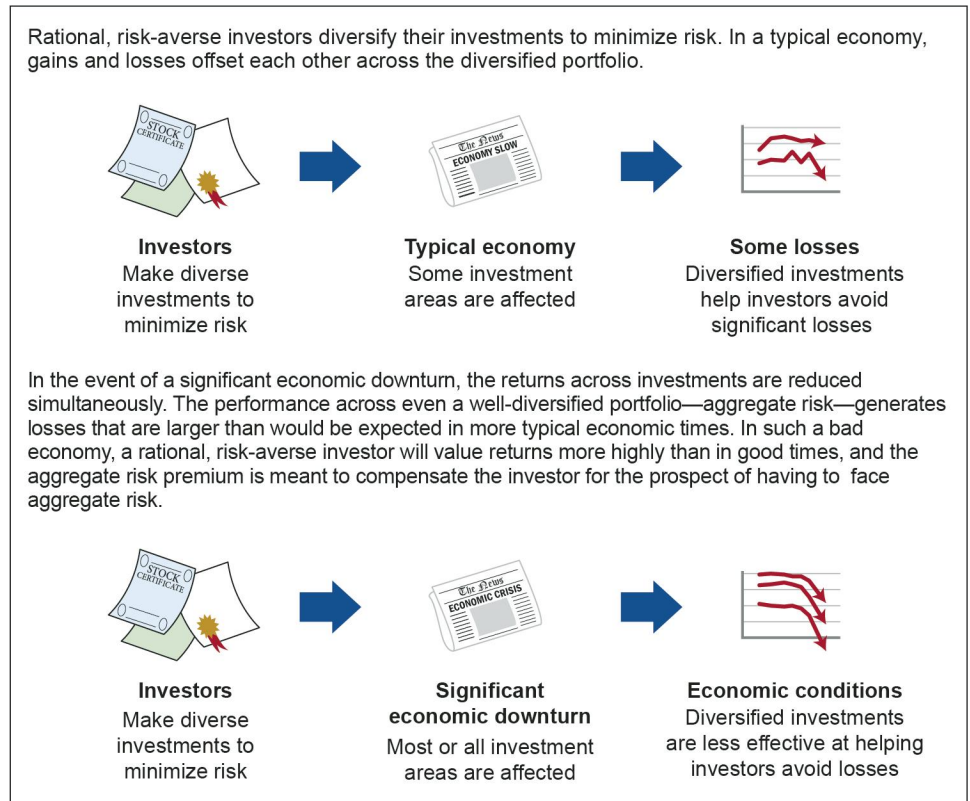
Proponents of the fair value approach have generally viewed the government as a pass-through to a collection of taxpayers who bear the cost of risk, recognizing that the government must ultimately either reduce spending or turn to taxation to recoup the cost of a defaulted loan. In this sense, taxpayers could be considered as analogous to investors in a private corporation who must contribute more resources if the corporation experiences losses. In private financial markets, taxpayers as investors with diversified portfolios would still demand compensation for bearing the risk that the macroeconomy—the national or global economy as a whole—may falter. As shown in figure 11, this risk—referred to as aggregate risk (which represents a portion of overall market risk)—arises from the possibility of significant economic downturns, when even a well-diversified portfolio of financial investments will experience a reduction in value. In such bad economic times, loan payments are likely to fall just when returns are worth most to investors. Compensation for taking on this aggregate risk—the aggregate risk premium—is over and above that demanded to account for the time value of money (i.e., the notion that a dollar today is worth more than a dollar in the future because it can earn interest). The fair value approach is based on the premise that the subsidy cost of credit programs should include this aggregate risk premium due to taxpayers, even if it is not a cash cost to Treasury.

Aggregate Risk Premium

In private financial markets, taxpayers as investors with diversified portfolios would still demand compensation for bearing the risk that the macroeconomy—the national or global economy as a whole—may falter. This risk—referred to as aggregate risk (which represents a portion of overall market risk)—arises from the possibility of significant economic downturns, when even a well-diversified portfolio of financial investments will experience a reduction in value.

Source: GAO. | GAO-16-41

Figure 11: Aggregate Risk

Rational, risk-averse investors diversify their investments to minimize risk. In a typical economy, gains and losses offset each other across the diversified portfolio.

Investors
Make diverse investments to minimize risk

Typical economy
Some investment areas are affected

Some losses
Diversified investments help investors avoid significant losses

In the event of a significant economic downturn, the returns across investments are reduced simultaneously. The performance across even a well-diversified portfolio—aggregate risk—generates losses that are larger than would be expected in more typical economic times. In such a bad economy, a rational, risk-averse investor will value returns more highly than in good times, and the aggregate risk premium is meant to compensate the investor for the prospect of having to face aggregate risk.

Investors
Make diverse investments to minimize risk

Significant economic downturn
Most or all investment areas are affected

Economic conditions
Diversified investments are less effective at helping investors avoid losses

Source: GAO. | GAO-16-41

While proponents of the fair value approach suggested several methods to estimate the cost of credit programs under the fair value approach, we are focusing on the most commonly discussed method for use in federal budgeting, which calls for adjusting the discount rate to account for the aggregate risk premium.[47] Some proponents of the fair value approach also viewed adjusting the discount rate as the most straightforward method to derive fair value approach measurements. Under this method

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[47]The adjustment to the discount rate can be gleaned from market data on the spreads on securities of comparable risk and maturity. Two other methods suggested to estimate subsidy costs under the fair value approach are (1) market prices of similar products offered by private companies adjusted to account for borrower and product differences and (2) an options pricing model, which is a type of model that many private-sector entities use to evaluate guarantees.

GAO-16-41 Credit Subsidy Cost Estimates

to implement the fair value approach, the difference between FCRA and fair value approach subsidy cost estimates arises from the choice of discount rates. The estimates of expected cash flows associated with the loan program, including repayments, interest, or the net amount lost through defaults or other loan performance, are the same in both approaches. However, the difference in discount rates means that those expected cash flows will have different present values under the fair value approach and FCRA.

To incorporate the cost of bearing this aggregate risk into budget costs for loans, the fair value approach adds an aggregate risk premium to the discount rate used in FCRA calculations, which is determined based on interest rates on Treasury securities. The Treasury rate is considered to be default-free because investors are protected against default by the government's ability to cover its debts by raising tax revenue or by cutting other federal spending.[48] Adding the aggregate risk premium to the discount rate incorporates a noncash social cost into the subsidy cost estimate. When the expected future cash flows (i.e., payments of interest and repayments of principal) associated with the loan are discounted using a discount rate above the Treasury rate, the resulting present value of these future payments to the government is lower than it would be if discounting were done using the Treasury rate. A lower present value for these future payments to the government translates into a higher subsidy cost to the government when the loan is made.[49] As shown in figure 12, the aggregate risk premium is one factor that may explain differences between market interest rates and Treasury interest rates. The debate over the fair value approach rests on whether the cost associated with aggregate risk should be considered in the subsidy cost of credit programs for the budget of the federal government.

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[48]Treasury securities are also often called riskless. However, investors are exposed to interest rate risk when they purchase Treasury securities.

[49]Applying the fair value approach to a loan guarantee program also results in a higher estimated cost to the government. For loan guarantees, the effect of a higher aggregate risk is to increase the cost to the government of future guarantee default payments above their estimated value using default-free or "riskless" Treasury rates. The aggregate risk increases the value of the guarantee because guarantee payments are most likely to be made when the economy is depressed and resources are scarce. Mathematically, to approximate this higher cost requires the use of discount rates that are effectively lower than default-free Treasury rates.

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Figure 12: Differences between Market and Treasury Interest Rates

Why are interest rates provided in the market to private investors higher than the Department of the Treasury's (Treasury) borrowing cost?

While Treasury borrowing rates are established based on public auctions of Treasury securities, the interest rates on these securities may differ significantly from private-sector market rates because investors require additional compensation for risks and other factors relevant to market rates. In contrast, Treasury rates are generally viewed as being riskless because they are backed by the full faith and credit of the United States.

Do the differences between market and Treasury interest rates apply to private investors and the federal government?

Private lender borrowing cost (market rate)		Private investors	Federal government
Liquidity premium	Investors require additional compensation to hold a less liquid asset. This cost is not relevant to the government because it can easily borrow in the Treasury securities market.	✓	✕
Expected losses	Investors require compensation for potential losses because of default. Including this cost in discount rates for credit programs would lead to double counting given that expected losses are explicitly included in estimated cash flows used to determine subsidy costs.	✓	✕
Tax differential	Investors require additional compensation for taxable investments, and since Treasury securities are exempt from state income taxes, this creates a difference in interest rates. This cost is less relevant to the government because the government does not pay taxes, but it may have lost tax revenue.	✓	✕
Administrative costs	Investors require compensation for administrative costs associated with lending. This is not relevant to the government because administrative costs are treated separately from subsidy cost estimates under current budget practices.	✓	✕
Aggregate risk premium	An uncertainty premium is required by investors as compensation for bearing the risk that remains after diversification across assets.	✓	?

Higher rates → Lower rates

Treasury borrowing cost (Treasury rate)

✓ This element of market rate is relevant   ✕ This element of market rate is not relevant   ? This element of market rate may or may not be relevant

Source: GAO. | GAO-16-41

The budget, as presented under FCRA, does not recognize an aggregate risk premium, and the cost of the government making loans is lower than it would be under the fair value approach. Some proponents of the fair value approach have stated that the disconnect of subsidy cost estimates under FCRA from market valuation is at odds with the presentation of other costs in the budget that do reflect values in private market transactions (e.g., purchase of office supplies or wages paid). Market prices are key benchmarks in assessing the costs to society of using its resources in one project versus another. In this context, the budget under FCRA does not reflect the social costs of making loans, which fair value approach proponents believed should be considered in making budget decisions that require trade-offs in the presence of a federal budget constraint.

The social benefits and costs of extending credit is an important consideration in decision making about funding levels. As stated in OMB Circular No. A-94, federal programs should be evaluated based on

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comprehensive estimates of the expected benefits and costs to society and not just the monetary benefits and costs to the government. Therefore, for credit programs, both cash costs to the government and social costs imposed on taxpayers could be weighed against benefits to borrowers and to the public at large. These social costs would include the cost of bearing risk that the government has transferred to taxpayers, represented by the aggregate risk premium. OMB Circular No. A-129, *Policies for Federal Credit Programs and Non-Tax Receivables*, requires agencies to provide benefit-cost analyses as part of biennial program reviews. These reviews are also intended to take account of changes in program risks and costs. In this context, the fair value approach aggregate risk premium could be classified as a cost imposed by a program and included in total societal costs along with the cash costs to the government. It is in this setting that several proponents of FCRA believed, and we concur, that the fair value approach would be most appropriately considered by decision makers, rather than in budget estimates.

Reflecting a different concern, some proponents of the fair value approach to budgeting for federal credit programs, cited as motivation the perceived over-reliance on federal credit as a policy tool and the desire to correct any bias toward underestimated costs under FCRA. Consistent with this view, some proponents of the fair value approach generally supported the approach for initial subsidy cost estimates that are used by congressional decision makers to determine loan levels to approve. After loan levels are approved, these proponents of the fair value approach generally expressed no preferences for the methodology used to determine subsidy cost estimates for existing credit program portfolios. The effects of the 2008 financial crisis on parts of the federal credit portfolio demonstrated the sensitivity of loan performance to conditions in the macroeconomy. Subsidy cost estimates of loan guarantee programs related to housing and small business and agriculture, in particular, had not anticipated the possibility of large losses associated with the crisis in the mortgage market and extreme weakness in market demand for goods and services experienced during the 2008 financial crisis. Repayment of student loans also declined significantly during this period. Some proponents of the fair value approach told us that adopting the fair value approach would help address concerns about the over-reliance on federal credit programs by raising the subsidy cost of credit programs, likely

resulting in fewer loans being made.[50] Also, according to some proponents of the fair value approach, raising the cost of credit programs would weigh against any bias in underestimating costs. In contrast, proponents of the FCRA methodology stated that to the extent that agencies were underestimating subsidy costs under FCRA, this would be more appropriately addressed through improvements in the subsidy estimation process rather than application of the fair value approach.

Going forward, there are some reasons to expect that agencies' estimates of expected loan losses will better reflect the possibility of a rise in defaults in a macroeconomic downturn. Typically, agencies project future losses based on historical experience. Before the 2008 financial crisis, program experience generally did not include the effect of a significant economic downturn. Therefore, expected loss projections made prior to 2008 would have likely underestimated the actual losses. Now, the depressing effects of the 2008 financial crisis across the government's credit portfolio are included in each program's historical data. Although agencies can project individual loan programs' expected losses with the downturn included in historical data, the possibility of extreme losses occurring simultaneously across loan programs would not be reflected in the loss estimates of any one program.[51] For that, the government would have to evaluate performance across its entire credit portfolio, trying to assess the potential size of total losses in a bad economy. However, our analysis of credit program reestimates over the course of the 2008 financial crisis revealed that only parts of the portfolio experienced significant increases in reestimates, implying some degree of diversification against the risk of aggregate losses. While performance of

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[50]Under the fair value approach, while credit programs would have higher initial subsidy rates, this may not affect the amount of loans that are made by programs with indefinite budget authority, such as Education's Direct Student Loan Program, because, under such programs, loans are made based on the eligibility of applicants and not budgetary spending limits.

[51]Considering that the federal government's entire portfolio comprises many different types of loans (e.g., housing, disaster, and alternative energy), overall losses will be higher the more loans of each type default. Some loan types experience losses under similar circumstances, for example, mortgage and small business loans default during recession, which would likely raise overall losses during a downturn. However, disaster or alternative energy loan performance is not likely related to a recession, and if these loan types do not experience defaults in downturns, then the government's overall losses would be limited to those that do. Projections of losses for a given loan type consider only that type's default history and not the possibility that other loan types might perform similarly.

parts of the federal credit portfolio does track with financial market outcomes, performance of others, such as disaster loans, may not.

Fair Value Approach Subsidy Cost Estimates Are Not Consistent with Long-standing Federal Budgeting Practices, Involve Significant Implementation Challenges, and Should Not Be Included in the Budget

While fair value approach estimates may provide useful information for evaluating the costs against the benefits of credit programs, the additional market risk recognized under that approach do not reflect additional estimated cash costs beyond those recognized by FCRA. The concept of the fair value approach to recognize the aggregate risk premium due to taxpayers beyond the FCRA-reflected risks (based on expected cash outlays) evolved from the consideration of investor behavior in private financial markets. Subsidy cost estimates prepared under the fair value approach would be inconsistent with long-standing budgeting practices and involve significant implementation challenges. More specifically, the fair value approach would

- add noncash social costs into the budget process, which is primarily based on cash costs to Treasury;
- result in inconsistency with the budgetary treatment of similarly risky programs;
- result in less transparency and cause verification issues related to noncash costs in budget totals;
- involve significant implementation issues; and
- be complicated by comparisons between the fair value approach and private-sector GAAP fair value.

Because of these issues, we do not support the fair value approach to estimate credit program subsidy costs for the budget and believe that the current FCRA methodology is more appropriate for this purpose. In addition, OMB has reported that it opposes the fair value approach because it would make the budgeting process less transparent and less accurate.[52]

Noncash Social Cost versus Cash Budget Cost to Treasury

Deployment of the fair value approach in the federal budget would provide a perspective on the cost of aggregate risk that is not currently represented in the budget for any type of federal program and would add noncash costs to primarily cash totals found in budget accounts. As previously discussed, the fair value approach would add the

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[52]Office of Management and Budget, *Statement from OMB Spokesman Steve Posner on H.R. 1871 and H.R. 1872* (Apr. 7, 2014).
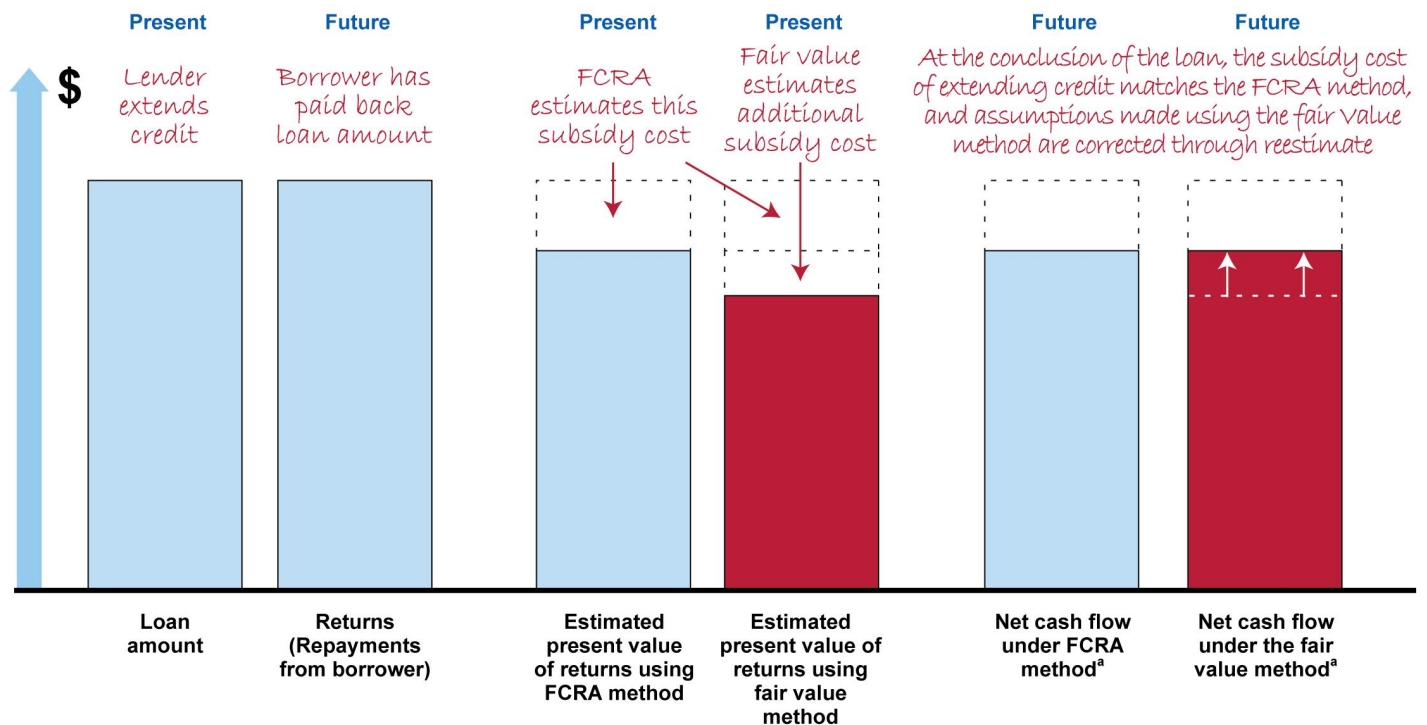
compensation cost to taxpayers of bearing aggregate risk to the FCRA subsidy cost estimate, thereby explicitly introducing noncash social costs into what is fundamentally a cash budgeting system. Proponents of both the fair value approach and FCRA recognized the aggregate risk premium as representing a social cost reflecting the ultimate transfer of the risk of making loans from the government to taxpayers. However, these social costs do not represent a cash cost to the federal government and would not be recognized under FCRA estimates because no money is disbursed or received by Treasury as a result of the different cost calculation and its inclusion in budget figures. As shown in figure 13, the initial subsidy cost would be higher under the fair value approach. As the loan is repaid in the future, the agency would reestimate the subsidy cost, creating a difference in the timing of the subsidy cost recognition compared to that under the FCRA methodology. If the loan performed as expected, the resulting reestimates under the fair value approach would be downward, in essence amortizing the aggregate risk premium initially estimated. In contrast, under the FCRA methodology, if the loan performed as expected, there would be no reestimate. If the loan performed worse than expected, under both the fair value approach and FCRA, the agency would update the estimated cash flows and record a reestimate. However, the resulting final lifetime subsidy cost under the fair value approach or FCRA would be the same, after completing reestimates, because the cash flows to and from the government are the same. The cash flows between the government and the borrower are not affected by the different discount rates used under the fair value approach or FCRA.

Figure 13: Fair Value Costs versus Cash Cost over Time

How would FCRA and the fair value approach estimate the returns and costs of lending?

Credit extended by the federal government uses the Federal Credit Reform Act of 1990 (FCRA) to estimate returns and account for costs.

If the fair value approach were used, because of the additional risk considered, the initial present value of the estimated returns from the loan would be lower and the subsidy cost would be higher than under the FCRA methodology. In the future, when the loan is repaid, under both FCRA and the fair value approach, the actual cash returns are the same and, as a result, the subsidy cost is the same.

Present	Future	Present	Present	Future	Future
Lender extends credit	Borrower has paid back loan amount	FCRA estimates this subsidy cost	Fair value estimates additional subsidy cost	At the conclusion of the loan, the subsidy cost of extending credit matches the FCRA method, and assumptions made using the fair value method are corrected through reestimate	
Loan amount	Returns (Repayments from borrower)	Estimated present value of returns using FCRA method	Estimated present value of returns using fair value method	Net cash flow under FCRA method[a]	Net cash flow under the fair value method[a]

Source: GAO. | GAO-16-41

Note: This figure illustrates a simplified example of an interest-free loan and assumes that it performs as required with no defaults.

[a]Net cash flows are lower than actual returns because of financing costs associated with providing a loan to a borrower.

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The concepts that currently underlie the federal budget date to the 1967 *Report of the President's Commission on Budget Concepts*.[53] The commission identified the major purposes of the budget, which included processes to propose particular programs to advance policy goals and to propose total expenditures and revenues intended to promote stability and growth in the macroeconomy. In practice, OMB has observed that the budget provides "the means for the President and the Congress to decide how much money to spend, what to spend it on, and how to raise the money they have decided to spend." In other words, the budget supports decisions about which programs to fund and at what level given the presence of an overall budget constraint (in that government spending must be supported by tax revenues or debt). Government programs' fiscal effects on the macroeconomy are associated with financial inflows and outflows of Treasury.

The inclusion of social costs in the budget would depart from the concept of cash expenditures and revenues that currently underlies the budget. Some proponents of the fair value approach stated that in practice, the budget already includes noncash costs. Specifically, FCRA introduced this apparent anomaly by presenting the current and future costs of loan making in terms of today's dollars, meaning their worth today, so that the costs may be compared to the outlays made today when the loan is disbursed. The subsidy cost of the loan is the budget authority the Congress appropriates and is the net present value of outflows and inflows from the government over the life of the loan. Putting credit program costs in present value terms differs from the current cash basis used in other programs' budget accounts to reflect the time value of money. FCRA could be called modified cash budgeting and serves to represent the lifetime cost of the loan in today's dollars. This is consistent with the method used to compute the fiscal gap and discounts cash flows in and out of Treasury at the default-free Treasury rate of borrowing.[54] FCRA does not include in subsidy costs any estimates of costs that do not

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[53]*Report of the President's Commission on Budget Concepts* (Washington, D.C.: October 1967). The commission was appointed by the President on March 3, 1967. It was formed as a bipartisan commission to conduct a thorough and objective review of budget concepts and to address long-standing questions about the budget presentation and the treatment of individual accounts within the budget.

[54]The fiscal gap is the amount of spending reductions or tax increases on average over a 75-year period to keep debt held by the public as a share of gross domestic product from exceeding its current level.

represent cash flows to or from the government and will not eventually be paid to or from Treasury.

The adoption of the fair value approach would, all else equal, initially increase subsidy cost estimates and the federal budget deficit by including the cost of bearing aggregate risk.[55] The higher initial estimated subsidy cost under the fair value approach would increase the budget authority required for a given volume of loans compared to that required under FCRA, thereby raising the federal budget deficit through the effect on outlays. The federal budget deficit has significance in policy making and in analyzing the economy, and experts who opposed the fair value approach cautioned against the inclusion in the budget of what they termed phantom costs of aggregate risk under the fair value approach. Ultimately though, as noted above, net cash outlays under both the fair value approach and FCRA are the same, so any upward bias in initial subsidy cost estimates introduced by the fair value approach would be eliminated through downward reestimates as receipts from loan repayments are recognized.

Under the fair value approach, if actual cash flows were as initially estimated, there would be an additional amount in the financing account that represents the compensation to taxpayers for bearing risk, which is a social cost and not a cash cost to Treasury. Social costs do not produce fiscal effects insofar as they are not cash receipts or disbursements from Treasury. Consequently, to avoid misrepresenting the fiscal effect of credit programs on the federal budget deficit, some proponents of the fair value approach suggested recording a revenue to offset this noncash social cost to clear the additional amount in the financing account and correct deficit balances.

Several experts we spoke with disagreed with the fair value approach of reflecting social costs or the compensation to taxpayers for bearing risks associated with credit programs in subsidy cost estimates for the budget. These experts, who favored the current FCRA approach, rejected the characterization by some financial economists of the government's being a pass-through to a collection of taxpayers, no different than investors in a private corporation. Unlike private corporations, the federal government

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[55]The budget deficit is the amount by which the government's budget outlays exceed its budget receipts for a given period, usually a fiscal year.

is enduring and can avoid insolvency through exercise of its power to levy taxes and can more easily access credit through the Treasury securities market. These proponents of FCRA noted that the government has a lower cost of borrowing than a private financial institution, and as an entity, the government has the ability to more readily collect on loans through tax refund offsets and garnishment of wages.[56] In addition, some federal loans, such as student loans, may not be discharged through bankruptcy. Therefore, these experts claimed, the cost of providing a credit program is less expensive for the government than the private sector. The more fundamental disagreement over the fair value approach concerns whether the government's true cost of capital is represented by the "riskless" rate at which it borrows or whether that cost should also include compensation to taxpayers for bearing aggregate risk. This debate in the financial economics literature about the government's cost of capital dates back several decades and has not been settled.[57]

Inconsistency with the Budgetary Treatment of Similarly Risky Programs

If the fair value approach were deployed for the government's portfolio of direct loans and loan guarantees, inconsistency of treatment across budgetary accounts would have to be considered. Potential inconsistencies arise from (1) the comparability of loan program budget totals that include social costs with noncredit program cash costs that do not include social costs, (2) the exclusion of social costs associated with costs of programs that present risks similar to those of loans, and (3) the treatment of the presence of risk and uncertainty in federal activities other than loan making. These inconsistencies could distort the decisions the budget is intended to support by making loans appear relatively more expensive than other programs because of the inclusion of noncash social costs.

The federal budget is primarily recorded on a cash and obligations basis.[58] The inclusion of social cost in the form of the fair value approach risk premium raises the relative costs of loans compared to other programs budgeted

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[56]For example, the federal government has the ability to garnish wages without a court order, while other creditors must first obtain a court order to garnish wages.

[57]Kenneth J. Arrow and Robert C. Lind, "Uncertainty and the Evaluation of Public Investment Decisions," *American Economic Review*, vol. 60, no. 3, (1970).

[58]An obligation is a definite commitment that creates a legal liability of the government for the payment of goods and services ordered or received. Payment can be made immediately or in the future.

based on cash. However, many other federal programs impose social costs in addition to incurring cash outlays. One example would be the costs of environmental damage resulting from federally funded construction projects. Such social costs may not be priced in the market as an aggregate risk premium might be, but they are real costs to society in terms of losses in environmental quality and services. If the fair value approach were to be adopted for budgeting credit program costs, maintaining consistency in the budget would require recognition of the social costs of all federal programs across the board, presenting a daunting analytical problem, at a minimum.

The introduction of aggregate risk compensation in the budget would create another inconsistency in the budget's portrayal of the costs of uncertain outcomes. Under the fair value approach, an agency would—as it does now under FCRA—make an estimate of expected loan performance, including repayments, prepayments, defaults, and recoveries. The expected cash flows would be associated with average losses over the life of the loan cohort, implying equal weight on both lower and higher levels of loss. With the fair value approach, the addition of the aggregate risk premium implicitly weights the worse outcome more heavily by adding a cost associated with the possibility that losses are greater than expected. Elsewhere, the budget presents as point estimates the expected value of uncertain spending outcomes with the prospects of better and worse outcomes equally weighted. For example, the President's Budget includes funding requests for the costs of fighting forest fires. That request represents the expected value of the funding level required based on the probability of a good outcome (i.e., few fires) and a bad outcome (i.e., an active fire season). To the extent that this risk cannot be diversified—that is, offset by risk elsewhere in government spending—then, as with the fair value approach, a risk premium would be added. Weighting bad outcomes more heavily, as with the fair value approach, would thus be inconsistent with the treatment of risk and uncertainty in all other budget estimates.

Transparency and Verification Issues

Cost estimates prepared under the fair value approach in the budget would introduce a number of transparency and verification issues. Regarding transparency in the presentation of the budget, it may not be obvious that credit program costs included an aggregate risk premium, so the lack of comparability with other programs' cash budgeting would not be clear. Moreover, as previously discussed, some proponents of the fair value approach believed that the use of fair value would address the perceived over-reliance on federal credit and correct for any bias in underestimates of costs. However, as also previously discussed, our

analysis of reestimates for the fiscal years 2001 through 2014 cohorts of direct loans and loan guarantees did not identify any overall consistent trends in under- or overestimates of subsidy costs across federal credit programs government-wide. Further, some proponents of FCRA asserted that any problem with subsidy cost estimates will not be solved by revising a budget estimate via the fair value approach but by engaging decision makers in discussions about the types and amounts of federal credit that should be provided in the budget. For example, one expert stated that concerns about credit program losses could be addressed by tightening eligibility criteria or reducing appropriations. In addition, proponents of FCRA felt that any inaccuracy in estimating subsidy costs should more appropriately be tackled by strengthening the data and methods agencies use in forecasting expected cash flows.

Using the fair value approach may also mask information about direct loan and loan guarantee performance. Under FCRA, the annual reestimates may provide useful information to analyze actual loan performance and to evaluate the quality of the estimation process as, year by year, actual loan performance is recorded and expectations of future loan performance are updated. Under the fair value approach, such information may not be transparent because the effects of the adjusted discount rate would also be included.

Further, under the fair value approach, the accuracy of the estimate of the aggregate risk premium is not transparent and verifiable, which is an important consideration given its cost-increasing effect. A primary challenge in the fair value approach to budgeting is identifying the aggregate risk premium applicable to any particular program. If the credit program has a close counterpart in private credit markets, referred to as a comparable, the difficulty is reduced though not eliminated.[59] For example, private credit markets could likely provide a proxy for HUD's MMI Fund. However, there is likely not a private market comparable for SBA's Disaster

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[59]Using a private market comparable is a valuation technique in which a recently sold asset is used to help determine the value of a similar asset.

Loan Program.[60] In the absence of a market comparable, the analytical task would be significant and subjective, and in any event, resulting estimates could be subject to criticism and controversy that would be hard to resolve.[61]

Moreover, even when a market comparable exists, the task of extracting the aggregate risk premium from the difference between the default-free Treasury rate and the observed market rate would still be subjective. This complication arises because other kinds of costs and risks that are not applicable to government lending may be compensated in the market rate, as was illustrated in figure 12. Arriving at a verifiable and auditable estimate of the aggregate risk premium for each credit program is essential if there is to be confidence in decisions that depend on comparing their relative costs.

Some proponents of the fair value approach suggested that TARP illustrates successful implementation of the fair value approach. TARP was required to use market-risk adjusted discount rates when determining subsidy costs for the budget. For investment programs, TARP's valuations were based on market prices of securities for comparable institutions and not solely the aggregate risk. In addition, because the intention of TARP was to liquidate the assets when economically feasible rather than hold them to maturity, the use of market prices was an appropriate measure of expected cash proceeds to be received from liquidation when the assets were sold. Therefore, TARP's use of market-risk adjusted discount rates may not be directly comparable to other credit programs. Under FCRA and in accordance with OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget*, if an agency were

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[60]Under the Disaster Loan Program, SBA provides low-interest disaster loans to businesses of all sizes, private nonprofit organizations, homeowners, and renters. SBA disaster loans can be used to repair or replace the following items damaged or destroyed in a declared disaster: real estate, personal property, machinery and equipment, and inventory and business assets. By law, borrower interest rates depend on whether each applicant has credit available elsewhere. For applicants unable to obtain credit elsewhere, the interest rate will not exceed 4 percent. For those who can obtain credit elsewhere, the interest rate will not exceed 8 percent. Borrower interest rates are determined for each declared disaster. SBA will not decline a loan for lack of a particular amount of collateral.

[61]In the absence of comparable market prices, analysts must resort to alternative valuation methods, such as adjusting the discount rate for risk or applying options pricing. For example, in implementing the market-risk adjustment required for TARP, Treasury adjusted the discount rate using techniques applied to bank stock valuation and bank reserves. As proponents of the fair value approach have pointed out, making such estimates is complicated, although they have asserted that the approximations thus obtained are at least closer to market valuations than under FCRA, which makes no adjustment for market risk.

to plan to sell loan assets, the cash flows developed to estimate subsidy costs would include assumptions related to expected sale proceeds, which could be based on market information.

Additional Significant Implementation Issues

Several experts we spoke with stated that there would be significant challenges to implementation of the fair value approach. (See app. III for further details on these implementation challenges.) Several experts, including proponents of both the fair value approach and FCRA, stated that agencies and OMB do not currently have sufficient resources to implement the fair value approach for subsidy cost estimates in the budget. Some proponents of the fair value approach suggested that private-sector expertise could be recruited to address the challenges of identifying the appropriate aggregate risk premium for a program. However, other experts stated that for programs that lack a market comparable, private-sector expertise may or may not be more suited to address the challenge of identifying the aggregate risk premium.

Conceptual and practical implementation difficulties would also confront agency analysts. For example, a decision would need to be made about whether the aggregate risk premium for an existing cohort should be updated during the reestimate process. Updating the aggregate risk premium could add significant volatility to subsidy cost estimates, making it more difficult to understand reasons for reestimates (i.e., poor estimates or worse-than-expected performance). However, not updating the aggregate risk premium would result in cost estimates based on out-of-date or noncurrent estimates of risks. Further, to the extent that the financial accounting for credit programs continues to be consistent with the budgeting for credit programs, not updating the aggregate risk premium would be difficult for an agency to support during a financial statement audit because the auditor would expect credit program cost estimates to be based on current risk information. In addition, because fair value approach subsidy cost estimates would include noncash costs that would, if actual cash flows were as initially estimated, eventually result in downward reestimates, decisions would need to be made on whether to recognize these downward reestimates each year or as a one-time adjustment. If the fair value approach were used, decisions would also need to be made regarding the interest rate used to calculate interest income and expense amounts on financing account balances so that the financing account will break even over time as it uses its collections to repay its Treasury borrowing.

Other implementation challenges would relate to programs that are currently required to set borrower fees or interest rates to produce

subsidy-neutral cost estimates, such as the Department of Energy's Loan Guarantee Program,[62] or even negative-subsidy cost estimates to cover administrative costs or to generate reserves, such as HUD's MMI Fund loan guarantee program. Decisions would also be needed related to whether any increases to discretionary spending caps would be made if the fair value approach were implemented.[63] Lastly, because the financial accounting for credit programs currently mirrors FCRA and budgetary accounting, the Federal Accounting Standards Advisory Board would need to determine whether accounting standards would need to be revised for any changes made related to the use of the fair value approach for the budget.[64]

Comparisons between the Fair Value Approach and Private-Sector GAAP Fair Value

Consideration of the fair value approach has been complicated by the introduction of financial economics concepts and by the use of the term "fair value" in both FCRA and private-sector GAAP contexts. Financial economics aims to explain the behavior of private market participants when confronted with risk and uncertainty in making investment decisions. This requires an understanding of the alternatives available for managing risks and of their respective costs. Application of these private-sector concepts to a government setting is an unfamiliar exercise to many in the public sector. Further, awareness of the private-sector GAAP guidance on the use of fair value for measuring private financial

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[62]The Department of Energy's (DOE) Loan Guarantee Program was established by Title XVII of the Energy Policy Act of 2005 to encourage early commercial use of new or significantly improved technologies in energy projects. The act—specifically section 1703—originally authorized DOE to guarantee loans for energy projects that (1) use new or significantly improved technologies as compared with commercial technologies already in service in the United States and (2) avoid, reduce, or sequester emissions of air pollutants or man-made greenhouse gases. For loan guarantees approved under this authority, if no appropriation is provided to cover the subsidy cost of the program, DOE must collect payments from borrowers to offset the initial credit subsidy costs associated with their loan. See Pub. L. No. 109-58, tit. XVII, 119 Stat. 594, 1117 (Aug. 8, 2005), *classified as amended at* 42 U.S.C. §§ 16511-16516.

[63]Under the Balanced Budget and Emergency Deficit Control Act of 1985, as amended, federal program funds may be sequestered in the event that aggregate discretionary appropriations do not conform to previously established spending caps. See 2 U.S.C. § 901-907d.

[64]The Federal Accounting Standards Advisory Board (FASAB) was established by the Secretary of the Treasury, the Director of the Office of Management and Budget, and the Comptroller General of the United States to develop accounting standards and principles for the federal government. The American Institute of Certified Public Accountants recognized FASAB as the board that promulgates GAAP for federal entities. FASAB has nine members, three federal (selected by its sponsoring agencies) and six public or nonfederal members.

institutions' assets may mistakenly suggest relevance to federal budgeting. The label "fair value" as it relates to federal credit program subsidy cost proposals reflects the perspective that the risk premium taxpayers demand can be found by observing what they would require to make similarly risky investments in private financial markets. That view provides the analogue to the situation contemplated in private-sector GAAP uses of fair value, wherein the valuation of certain assets and liabilities of private-sector entities is based on the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. For those who advocate the application of private-sector accounting principles to the public sector, employing private-sector GAAP in estimating the costs of federal credit programs is attractive. However, any parallels between the public and private-sector settings are not straightforward. Consequently, the suggestion to apply private-sector GAAP to federal budgeting for credit programs creates the potential for misrepresentation of the costs of government programs.

While the concepts behind the fair value approach and private-sector GAAP fair value are similar, there are differences in how the two would be applied. First, under private-sector GAAP, fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. In contrast, because private-sector GAAP fair value—which is based on market prices— includes costs that may not be relevant to the federal government, such as liquidity costs,[65] the fair value approach extracts aggregate risk from overall market risk to recognize the risk applicable to federal credit programs in the view of a taxpayer. Consequently, the fair value approach does not reflect the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants because the aggregate risk premium recognized under the fair value approach represents only a portion of the risks and other factors that are reflected in market prices.

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[65]Liquidity cost represents compensation to investors for holding an asset that may be more difficult to sell quickly than Treasury securities of a corresponding maturity.

Second, under private-sector GAAP, generally loans that a bank holds for investment are recorded at amortized cost, net of an impairment allowance for estimated credit losses.[66] Such loans typically comprise the bulk of assets held by banks insured by the Federal Deposit Insurance Corporation. However, loans originated with the intent to sell in the secondary market to government-sponsored entities and other investors are measured at the lower of cost or fair value, unless the institution has elected to account for the loans at fair value under the fair value option. The private-sector GAAP fair value measurement provides information on the current value of the asset that is available for sale. In contrast, the fair value approach would be applied to all credit programs, regardless of whether the government plans to sell assets or hold them to maturity. Currently, Treasury is the only federal agency routinely selling some of its credit programs' assets.[67] However, under FCRA and in accordance with OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget*, if an agency were to plan to sell loan assets, the cash flows developed to estimate subsidy costs would include assumptions related to expected sale proceeds, which could be based on market information.

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[66]Essentially, amortized cost is outstanding principal adjusted for any charge-offs, deferred fees or costs, and unamortized discount or premium.

[67]TARP was required by law to estimate the budgetary cost of purchases and guarantees of troubled assets in accordance with FCRA, except that such costs were required to be calculated by adjusting the discount rate for market risk. In addition, for financial accounting purposes, TARP's investment programs were measured based on private-sector GAAP. However, the intention of TARP was to liquidate the assets when economically feasible rather than hold them to maturity, and private-sector GAAP fair value was an appropriate measure of expected proceeds to be received from liquidation for financial accounting purposes. Therefore, TARP's use of private-sector GAAP fair value is not directly comparable to its use for other federal credit programs.

Concluding Observations

GAO believes the current FCRA methodology is more appropriate to estimate credit program subsidy costs for the budget. The construction, use, and interpretation of the federal budget as a system of primarily cash accounts have been the norm for decades. Subsidy cost estimates prepared under the fair value approach would not be consistent with federal budgeting practices of recognizing expected cash outlays. Further, the application of the fair value approach to only credit programs, the loss in transparency and in the ability to verify the noncash cost, and significant implementation issues argue against change from the FCRA approach. In addition, to the extent that agencies were consistently underestimating subsidy costs under FCRA, this kind of bias would be more appropriately addressed through improvements in the subsidy estimation process, rather than application of the fair value approach. However, based on our analyses of reestimate data for the fiscal years 2001 through 2014 cohorts, we did not identify any consistent trends in overall under- or overestimates of subsidy costs across federal credit programs government-wide. Although the fair value approach may be useful to decision makers for evaluating the costs against the benefits of federal credit programs in that it accounts for market risks beyond those risks already recognized under FCRA, and the provision of this type of information is consistent with OMB's guidance in OMB Circular No. A-129 requiring biennial reviews of credit programs, it is not appropriate for use in estimating credit subsidy costs for the budget.

Agency Comments

We provided a draft of this report to CBO and OMB for their review and comment. Both CBO and OMB provided technical comments, which we have incorporated as appropriate.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to other interested parties. In addition, the report will be available at no charge on the GAO website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact Cheryl E. Clark at (202) 512-9377 or clarkce@gao.gov, Susan J. Irving at (202) 512-6806 or irvings@gao.gov, or Susan Offutt at (202) 512-3763 or offutts@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff members who made key contributions to this report are listed in appendix IV.

Sincerely yours,

Cheryl E. Clark
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Appendix I: Objectives, Scope, and Methodology

To determine whether there were similarities in the size and direction of reestimates across, or within, federal credit programs and, based on this analysis of reestimates, to identify factors, if any, that help explain any significant trends in reestimates, we examined reestimate data reported for all direct loan and loan guarantees by cohort for fiscal years 2001 through 2014. We chose loan cohorts beginning in fiscal year 2001 to ensure that our analysis covered a full business cycle. Reestimate data were obtained from the President's Budgets for fiscal years 2003 through 2016. Specifically, we used tables 7 and 8 reestimate data from the *Federal Credit Supplement* (FCS) to the *Budget of the U.S. Government* for fiscal years 2003 through 2016. The FCS for fiscal year 2003 is the first year in which data for the fiscal year 2001 cohorts were reported. Because of the 2-year lag between the timing of the loan cohort disbursement and the reporting in the FCS, the fiscal year 2014 cohort of direct loans and loan guarantees (from the fiscal year 2016 FCS) is the most recent cohort in our data.

The reestimate data were in spreadsheets that reproduce the data as they appear in the FCS. In spreadsheets, the first column contains five different fields: (1) the agency name, (2) the bureau name, (3) the program name, (4) the risk category name, and (5) the cohort year. We developed a computer algorithm to distinguish among these fields and identified the unique agency, bureau, and risk category combination as a "program." We retained this information for each cohort of direct loans and loan guarantees.

We reviewed the agency, bureau, and risk category data manually to look for inconsistencies such as spelling and formatting differences that could affect the number of distinct direct loan and loan guarantee programs identified by our computer algorithm. We found that some names were reported differently over time. For example, the risk category Farm Storage Facility Loan Program reported in the fiscal year 2003 to 2008 FCSs is the same as the risk category Farm Storage Facility Loans reported in the fiscal year 2009 to 2016 FCSs. In another example, the Indian Land Acquisition risk category, reported in fiscal year 2003 to 2008 FCSs, was called Indian Tribe Land Acquisition in subsequent years' FCSs. In cases such as these, we standardized the program names to facilitate our analysis of credit programs over time. We cleaned the data to remove footnotes, standardized the coding of missing values, and reformatted numeric values to permit mathematical calculations, as appropriate. For example, numbers saved as text characters were multiplied by 1 to obtain values that could be added, subtracted, multiplied, or divided.

GAO-16-41 Credit Subsidy Cost Estimates

We supplemented data from the FCS with information on whether
programs were mandatory or discretionary, which we obtained from
tables 1 and 2 of the FCS or based on research of the program's
budgetary funding type. We also used professional judgment to classify
the primary purpose of each program as one of seven possible
categories: (1) education-related; (2) energy, transportation, and
infrastructure; (3) housing; (4) international; (5) small business and
agriculture; (6) other; and (7) the Troubled Asset Relief Program (TARP).
Because TARP was a unique, one-time program implemented in
extraordinary circumstances, and because the amount of its lifetime
downward reestimate was so large in comparison to all other credit
programs, we excluded TARP from our analysis.

From the spreadsheets, we created a single file of cohort-level direct loan
data and a single file of cohort-level loan guarantee data. These data
were the basis for our examination of trends in reestimates across
programs and over time. We examined patterns in direct loan and loan
guarantee programs by agency, by program, by purpose, by fiscal year
the direct loan or loan guarantee was approved, and by program funding
type (mandatory and discretionary). Our analysis focused on lifetime
reestimate amounts, annual reestimate amounts, and a comparison of
most recently reported reestimated and original subsidy rates for each
program. For each year of the FCS, we calculated program-level lifetime
reestimate amounts as the sum of the lifetime reestimate amounts
reported for each cohort in the program. We examined the direction of the
most recent lifetime reestimate amounts by purpose and by agency. We
identified programs with relatively large lifetime reestimate amounts and
examined their influence on upward and downward reestimates
government-wide. For each program, we calculated the annual reestimate
amount as the annual change in the program-level lifetime reestimate
amounts. Our conclusions about possible trends were based on our
professional judgment in assessing the data, and not based on a
statistical analysis.[1]

We also examined reestimated subsidy rates for each program relative to
the most recently reported original subsidy rate. For each FCS, we
calculated these program-level relative reestimated rates as a weighted

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[1]We did not use statistical analysis to estimate trends because, in our professional judgment, the
quantity of data (e.g., number of years and number of programs) was insufficient to provide a
credible statistical result.

average of the cohort-level data. In these calculations, differences
between the reestimated rate and the most recently reported original
subsidy rate were weighted by the size of each cohort, as measured by
the cohort's reported total disbursements to date.

In assessing data reliability, we encountered some data limitations, which
we individually evaluated based on professional judgment. For each data
limitation, we adjusted the data, identified alternative data calculation
methods when available, or determined that the data were reliable for our
purposes. For example, not all programs reported data in the FCS each
year. In addition, one program did not report reestimate information by
cohort. Instead, all reestimates were combined and reported with the
most recent cohort. We also noted some discrepancies between the
lifetime reestimate amount reported for each cohort and the running total
of the annual reestimate amounts that had been reported since the cohort
of direct loans or loan guarantees was first disbursed.[2] These discrepancies
tended to be less prevalent for later cohort years because of quality controls
implemented by the Office of Management and Budget (OMB) in fiscal year
2008.

To evaluate implications of using subsidy cost estimates developed under
the fair value approach for the budget and to determine whether we
believe such concepts should be incorporated into subsidy cost estimates
for the budget, we reviewed literature related to the Federal Credit
Reform Act of 1990 (FCRA), the budget, and the fair value approach. This
literature included GAO reports, Congressional Budget Office reports,
Congressional Research Service reports, OMB guidance and budget
information, the 1967 *Report of the President's Commission on Budget
Concepts*, legislation, position papers, and academic reports. We
identified a diverse group of individuals or organizations with expertise in
FCRA, the fair value approach, financial economics, and federal
budgeting through our review of relevant reports in these issue areas,
based on internal discussions with GAO staff familiar with experts in this
area, and based on recommendations from experts interviewed. We
considered expert experience, work history, and published work relevant
to our engagement to help ensure expertise qualifications and to achieve
a balanced review. We conducted semistructured interviews with 30

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[2]To adjust for this limitation, rather than using the reported annual reestimate amount, we
calculated the annual reestimate amounts based on differences in the reported lifetime reestimate
amounts.

experts to achieve a variety of expertise and viewpoints. The views expressed by the experts should be interpreted in the context of the following qualification. Although we were able to secure the participation of a balanced, highly qualified group of individuals, we could not interview all of the individuals with expertise in relevant fields because of the need to limit the number of interviews conducted.

We conducted this performance audit from June 2014 to January 2016 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Analysis of Reestimates

We analyzed direct loan and loan guarantee programs' annual and lifetime reestimates by cohort, program, and agency purpose from fiscal years 2001 through 2014 to identify any trends. We also considered the purpose of the credit programs based on the following categories: (1) education-related; (2) energy, transportation, and infrastructure; (3) housing; (4) international; (5) small business and agriculture; and (6) other. We excluded the Department of the Treasury's (Treasury) Troubled Asset Relief Program (TARP) from our analysis because TARP was a unique, one-time program implemented in extraordinary circumstances. Further, the size of TARP downward reestimates dwarfs the reestimates of all other credit programs, and its inclusion would make any trend analysis less meaningful. The amounts discussed in this appendix are based on information reported in the President's Budgets.

Reestimates by Agency

We analyzed the reestimates for fiscal years 2001 through 2014 by agency. Table 4 illustrates the agencies with direct loan programs, the total loan disbursements from these programs during the period, the number of direct loan programs at each agency, the number of programs that had either upward or downward lifetime reestimates, and the amount of the upward or downward reestimates. For example, the Department of Education (Education) had seven direct loan programs, with one program comprising lifetime upward reestimates of $23.1 billion and six programs comprising lifetime downward reestimates of $7.7 billion. Overall, Education's direct loan programs represented a net lifetime upward reestimate of $15.4 billion. In contrast, Treasury had five direct loan programs, with two programs comprising lifetime upward reestimates of $2.4 billion and three programs comprising lifetime downward reestimates of $16.4 billion. Overall, Treasury's direct loan programs represented a net lifetime downward reestimate of $14.0 billion.

Table 4: Direct Loan Programs' Lifetime Reestimates by Agency, 2001-2014

Note: Dollars in millions

Agency	Programs	Programs with lifetime upward reestimate	Programs with lifetime downward reestimate	Loan amounts disbursed	Lifetime upward reestimate	Lifetime downward reestimate	Net lifetime reestimate
Department of Education	7	1	6	$940,574	$23,067	$(7,670)	$15,397
Export-Import Bank	1	1	0	29,329	2,843	0	2,843
Small Business Administration	5	2	3	15,114	1,078	(13)	1,065
International programs[a]	4	4	0	8,859	531	0	531
Department of Veterans Affairs	6	4	2	4,545	72	(13)	59
Department of Health and Human Services	4	1	3	1,374	44	(9)	35
Overseas Private Investment Corporation	3	3	0	2,829	20	0	20
Federal Communications Commission	1	0	1	3	0	(1)	(1)
Department of the Interior	2	1	1	29	1	(6)	(5)
Department of Housing and Urban Development	1	0	1	83	0	(10)	(10)
Department of State	1	0	1	26	0	(15)	(15)
Department of Commerce	7	2	5	756	5	(43)	(38)
Department of Transportation	3	2	1	6,910	39	(110)	(71)
Department of Agriculture	45	16	29	114,008	1,944	(2,020)	(76)
Department of Homeland Security	2	1	1	1,196	47	(259)	(212)
Department of Defense	1	0	1	1,464	0	(245)	(245)
Department of Energy	3	2	1	17,444	484	(2,678)	(2,194)
Department of the Treasury[b]	5	2	3	244,956	2,401	(16,382)	(13,981)
Total	**101**	**42**	**59**	**$1,389,499**	**$32,576**	**$(29,474)**	**$3,102**

Source: GAO analysis of President's Budgets. | GAO-16-41

[a]International programs include International Monetary Programs and International Security Assistance.

[b]Department of the Treasury excludes the Troubled Asset Relief Program reestimates.

Table 5 summarizes the lifetime reestimates for agencies with loan guarantee programs for fiscal years 2001 through 2014. As shown, the Department of Housing and Urban Development and Education accounted for the largest net lifetime upward and downward reestimates, respectively.

Table 5: Loan Guarantee Programs' Lifetime Reestimates by Agency, 2001-2014

Note: Dollars in millions

Agency	Programs	Programs with lifetime upward reestimate	Programs with lifetime downward reestimate	Value of loan amounts guaranteed	Lifetime upward reestimate	Lifetime downward reestimate	Net lifetime reestimate
Department of Housing and Urban Development	8	4	4	$7,171,143[a]	$85,958	$(2,000)	$83,958
Small Business Administration	19	10	9	312,263	10,170	(1,025)	9,145
Department of Veterans Affairs	2	1	1	860,273	4,795	(105)	4,690
Department of Agriculture	21	12	9	235,542	3,162	(1,851)	1,311
U.S. Agency for International Development	7	3	4	11,360	426	(40)	386
Department of the Treasury[b]	1	1	0	1,627	22	0	22
Department of Energy	1	1	0	3,740	2	0	2
Department of Defense	2	1	1	702	14	(16)	(2)
Department of the Interior	2	0	2	901	0	(21)	(21)
Department of Transportation	2	1	1	2,503	0	(27)	(27)
Department of Health and Human Services[c]	3	0	3	578	0	(40)	(40)
Department of Commerce	2	0	2	406	0	(102)	(102)
Export-Import Bank	1	0	1	166,910	0	(338)	(338)

Agency	Programs	Programs with lifetime upward reestimate	Programs with lifetime downward reestimate	Value of loan amounts guaranteed	Lifetime upward reestimate	Lifetime downward reestimate	Net lifetime reestimate
Overseas Private Investment Corporation	4	1	3	12,684	21	(415)	(394)
Department of Education	1	0	1	700,143	0	(59,552)	(59,552)
Total	**76**	**35**	**41**	**$9,480,775**	**$104,570**	**$(65,532)**	**$39,038**

Source: GAO analysis of President's Budgets. | GAO-16-41

[a]This amount includes the total amount of single- and multifamily loan guarantees issued by the Department of Housing and Urban Development (HUD) over the 14-year period. If a loan guaranteed under a HUD program is refinanced and the new loan is guaranteed under a HUD program, both guaranteed loan amounts would be included in this total. In addition, this amount includes guarantees issued by the Government National Mortgage Association (Ginnie Mae). Ginnie Mae guarantees the timely payment of principal and interest on securities issued by financial institutions and backed by pools of federally insured or guaranteed mortgage loans. Therefore, this amount would include the initial value of the security guaranteed by Ginnie Mae, as well as the initial value of the underlying federally guaranteed loan.

[b]Department of the Treasury excludes the Troubled Asset Relief Program reestimates.

[c]The Health Education Assistance Loan program is listed under the Department of Health and Human Services in this table. In 2014, this program was transferred to the Department of Education. The value of loan amounts guaranteed under this program was $450 million, and the program had $36 million in downward reestimates.

Reestimates by Program Purpose

We also analyzed the reestimates for fiscal years 2001 through 2014 based on the program purpose. Table 6 summarizes direct loan program reestimates by purpose. Direct loan programs related to education and international lending experienced net lifetime upward reestimates. The other category, which represents programs that do not fit in the other categories, including Treasury's Government Sponsored Enterprises Mortgage Backed Securities Purchase Program and the Small Business Administration's (SBA) Disaster Loan Program experienced net lifetime downward reestimates.

Table 6: Lifetime Upward and Downward Reestimates by Type of Direct Loan Program, 2001-2014

Note: Dollars in millions

Type of direct loan program	Programs	Programs with lifetime upward reestimate	Programs with lifetime downward reestimate	Loan amounts disbursed	Lifetime upward reestimate	Lifetime downward reestimate	Net lifetime reestimate
Education-related	8	2	6	$940,607	$23,067	$(7,670)	$15,397
International	9	8	1	41,402	3,393	(89)	3,304
Housing	20	9	11	29,634	478	(398)	80
Small business and agriculture	13	1	12	20,264	24	(1,024)	(1,000)
Energy, transportation, and infrastructure	25	13	12	94,462	2,038	(3,577)	(1,539)
Other	26	9	17	263,130	3,576	(16,716)	(13,140)
Total	**101**	**42**	**59**	**$1,389,499**	**$32,576**	**$(29,474)**	**$3,102**

Source: GAO analysis of President's Budgets. | GAO-16-41

As shown in table 7, loan guarantee programs related to housing and small business and agriculture experienced net lifetime upward reestimates, while loan guarantee programs related to education experienced net lifetime downward reestimates.

Table 7: Lifetime Upward and Downward Reestimates by Type of Loan Guarantee Program, 2001-2014

Note: Dollars in millions

Type of loan guarantee program	Programs	Programs with lifetime upward reestimate	Programs with lifetime downward reestimate	Value of loan amounts guaranteed	Lifetime upward reestimate	Lifetime downward reestimate	Net lifetime reestimate
Housing	15	9	6	$8,164,739	$93,580	$(2,121)	$91,459
Small business and agriculture	27	11	16	400,131	10,183	(2,826)	7,357
Energy, transportation, and infrastructure	14	9	5	21,681	325	(180)	145
Other	6	2	4	2,677	35	(25)	10
International	12	4	8	190,954	447	(792)	(345)
Education-related	2	0	2	700,593	0	(59,588)	(59,588)
Total	**76**	**35**	**41**	**$9,480,775**	**$104,570**	**$(65,532)**	**$39,038**

Source: GAO analysis of President's Budgets. | GAO-16-41

Differences between Original and Reestimated Subsidy Rates

We also compared the most recently reported original and reestimated subsidy rates for direct loan and loan guarantee programs.[1] To calculate the difference between the original and reestimated subsidy rates for each program, the difference for each cohort of direct loans or loan guarantees was weighted based on reported disbursements for direct loans or guaranteed loan amounts disbursed for loan guarantees. As shown in figure 14, we found that for most of the programs, reestimated subsidy rates were within 10 percentage points of the original subsidy rates. For example, if the calculated original subsidy rate for a program was 12 percent, with a 10 percentage point difference, the calculated reestimated subsidy rate would fall between 2 percent and 22 percent. However, as indicated in figure 14, there were a few programs that had larger differences between the most recently reported original and reestimated subsidy rates. For example, the Department of Energy's Advanced Technology Vehicles Manufacturing direct loan program reported an overall lifetime downward reestimate of $2.7 billion mostly attributable to a significant drop in the credit subsidy cost estimate for one loan, as a result of a significantly improved credit rating, reducing the original subsidy rate by 41.2 percentage points, from 45.3 percent to a reestimated rate of 4.1 percent.[2] As another example, SBA's Small Business Investment Company (SBIC) participating securities loan guarantee program reported an overall lifetime upward reestimate of $1.7 billion, primarily because of reestimates for fiscal years 2009 and 2010. SBA reported that these reestimates were due to the downturn in the economy during the financial crisis that resulted in lower-than-projected recoveries.[3] For SBIC, the calculated original subsidy rate of 0.3 percent increased to a calculated reestimated rate of 24.7 percent.

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[1]We used the most recently reported reestimated rate as it represents the most current estimate of the subsidy rate updated for the actual program performance. The difference between the most recent reestimated and the most recently published original rates indicates how accurate the initial cost estimate is based on the most recently available information.

[2]The Advanced Technology Vehicles Manufacturing loan guarantee program supports the development of advanced technology vehicles and associated components in the United States.

[3]The SBIC participating securities loan guarantee program facilitates the flow of long-term capital to America's small businesses.

Figure 14: Percentage Point Differences between Direct Loan and Loan Guarantee Programs' Original and Most Recent Reestimated Subsidy Rates, 2001-2014

The data shown below represent the number of programs whose difference between original rate and reestimated rate falls between the numbers shown on the scale. For instance, a program with a reestimated rate +3.1 percentage points higher than the original rate would be shown in the data bar between 2.5 and 5.0 on the scale.
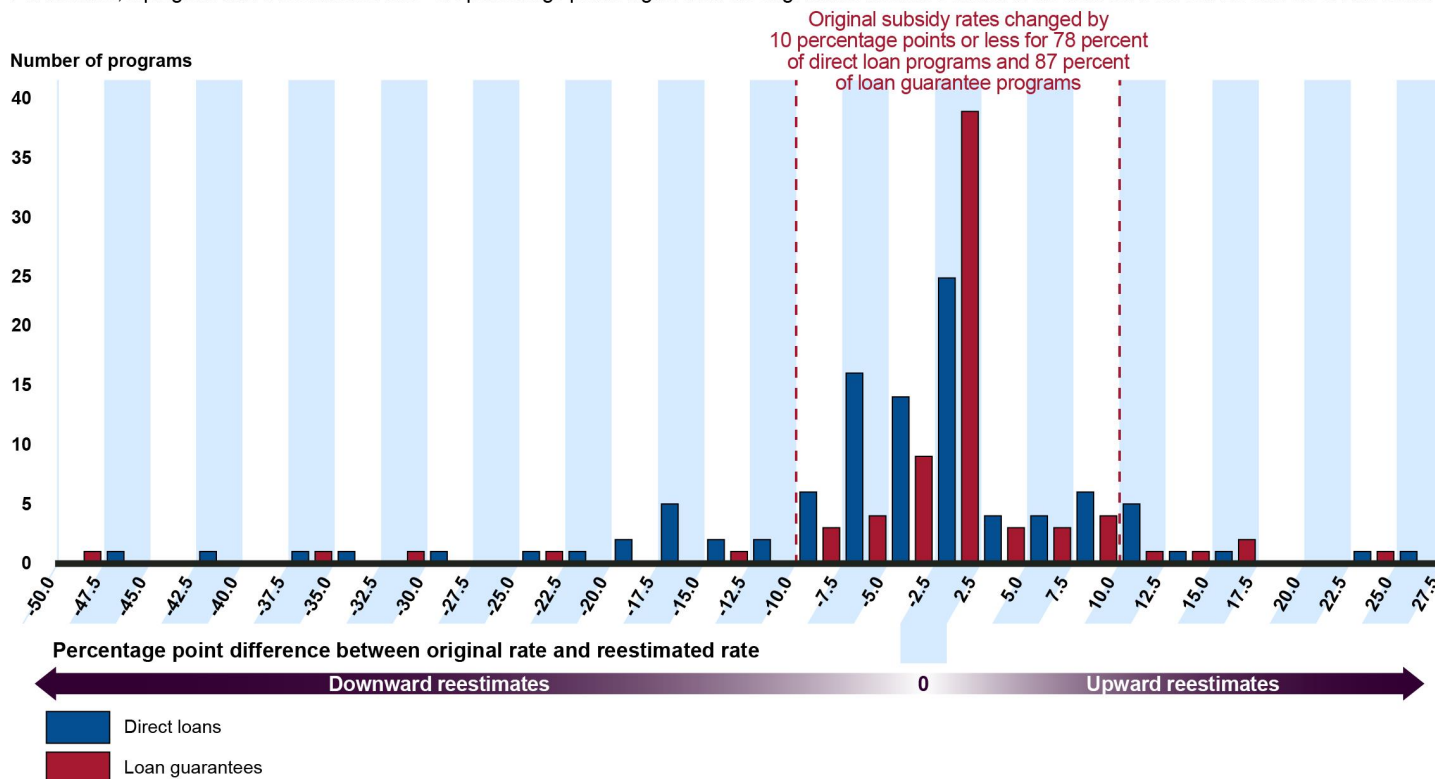
Source: GAO analysis of President's Budgets. | GAO-16-41

Appendix III: Fair Value Approach Implementation Considerations

Based on our review of literature and interviews with individuals knowledgeable about the Federal Credit Reform Act (FCRA), the federal budget, and the fair value approach, we identified a number of issues that would need to be considered if the fair value approach were implemented for credit program subsidy cost estimates in the federal budget.

Determining the Aggregate Risk Premium

The primary task in the fair value approach to budgeting for credit programs is identifying the risk premium applicable to any particular program. Generally, most proponents of the fair value approach whom we interviewed suggested that private market information could be used to determine the risk premium. If the type of federal lending has a close counterpart in private credit markets, the difficulty of this task is reduced, but not eliminated. However, most proponents of the FCRA methodology suggested that it would be difficult to find a private market comparable for federal credit programs because the federal government tends to intervene in either inefficient or nonexistent markets. In the absence of a private market comparable, the analytical task of arriving at an appropriate aggregate risk premium would be significant and subjective. Moreover, even when a market comparable exists, the task of extracting the aggregate risk premium from the difference between the default-free Treasury interest rate and the observed market rate would be subjective. This complication arises because some of the costs and risks that may be compensated in the market rate might be significant to an individual investor but not relevant to the federal government, such as a more or less favorable tax treatment or liquidity. Overall, the experts we interviewed could not provide clear insight into how aggregate risk premium applicable to the federal government could be extracted from the market rate. Arriving at a verifiable and auditable estimate of the aggregate risk premium for each credit program is essential if there is to be confidence in decisions that depend on comparing their relative costs.

Subjectivity

Under FCRA, when calculating subsidy cost estimates, all agencies use the same methodology to determine discount rates, which are based on interest rates of Treasury securities. Under the fair value approach, discount rates would be derived from a market comparable, if available, and each agency could use different methodologies to determine the aggregate risk premium. Of the experts we interviewed, proponents of the FCRA methodology generally believed that because of the addition of the risk premium in the fair value approach discount rate, fair value approach estimates would be more subjective than FCRA estimates, in part because more assumptions would be involved. Some proponents of the

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fair value approach, on the other hand, believed that fair value approach cost estimates would be as, or less, subjective than FCRA estimates because market information would inform the cost estimates. If the fair value approach resulted in more subjective estimates, this could create a wider variety of estimates, reducing transparency and consistency across programs. This inconsistency would be even greater if each agency estimating subsidy costs used a different methodology to determine the aggregate risk premium applicable to a program. Some experts we interviewed suggested, however, that the Office of Management and Budget (OMB) or the Department of the Treasury (Treasury) should be responsible for developing the fair value approach aggregate risk premium to add on to the discount rate for each credit program, which could reduce inconsistencies. Other experts suggested that OMB could develop guidance for agencies on appropriate methods for determining the aggregate risk premium to help ensure consistent and appropriate application of the fair value approach across programs.

Resources

Most experts we interviewed believed that implementing the fair value approach would require additional resources for agencies directly involved in making the subsidy cost estimates and for entities overseeing the fair value approach estimation process, such as OMB. The types of additional resources that would be needed include additional technical training for current employees, hiring of new staff, use of private-sector experts, and funds to cover additional administrative costs associated with development of fair value approach methodologies and estimates. Some experts stated that the resources used to implement the fair value approach would be better used by agencies to either (1) improve their estimates of expected cash flows used in both the FCRA or fair value approach subsidy cost estimates or (2) gain a more thorough understanding of, and reporting on, the benefits of credit programs.

Locking the Discount Rate

Under FCRA, the discount rate is locked—meaning that the discount rate is determined and cannot be changed—after a cohort of loans is substantially disbursed. This helps ensure that the reasons for reestimates are limited to changes in estimation methodologies or actual loan performance, rather than fluctuations in interest rates, which are outside the control of agencies. Based on our interviews, there were differing views as to whether the discount rate should be locked or should fluctuate under the fair value approach. Under the fair value approach, if the discount rate was allowed to fluctuate, reestimates could fluctuate significantly year to year based on the market. This volatility in the

reestimates would be caused by market conditions, which are outside the control of agencies. In addition, it would be more difficult to determine whether reestimates were due to estimates of expected cash flows that differed from actual loan performance or changes in the aggregate risk premium. Under the fair value approach, the accuracy of the estimate of the aggregate risk premium cannot be objectively assessed. For example, under FCRA agencies perform comparisons of estimated and actual loan performance to assess the estimation process. Because the aggregate risk premium reflects a noncash cost, there is no method that can be used to verify the reasonableness of the aggregate risk premium estimate. In addition, updating the risk premium increases the administrative activities and would require additional resources. Conversely, under the fair value approach if the discount rate were locked in order to avoid this volatility in the reestimates and to reduce workload burdens, then the resulting reestimates would be based on out-of-date risk information. The financial accounting for credit programs currently mirrors FCRA and budgetary accounting. If the financial accounting were to be revised to incorporate any changes to implement fair value approach subsidy cost estimates for the budget, then not updating the aggregate risk premium would result in cost estimates based on noncurrent risks. This would be difficult for an agency to support during a financial statement audit because auditors would expect estimates to be based on currently available risk information.

Auditability

As previously discussed, the financial accounting for credit programs is consistent with the budgeting for credit programs. Auditing credit program balances as part of an agency's financial statement audit includes determining whether direct loans and loan guarantees outstanding are properly reported in the agency's financial statements and footnotes. This auditing goal would not change if the fair value approach were adopted for financial reporting purposes. One expert noted that with the fair value approach, external auditors would need to focus on assessing whether agencies have identified an appropriate private market comparable to identify the aggregate risk premium, or if the agency claims there was no market comparable, the auditor will need to verify the reasonableness of that claim. Under the fair value approach, each agency could identify its own methodologies to identify a private market comparable and to derive the aggregate risk premium to add to the discount rate for a particular program. However, the current cash budgeting process allows federal credit program officials and auditors to see the outflows and inflows of accounts and permits the comparison of actual cash flows to estimated cash flows with the goal of verifying the reasonableness of subsidy cost

estimates and improving estimates going forward. With the fair value approach, there would be no mechanism to verify the reasonableness of the aggregate risk premium because it does not correlate to any cash flow of the program. Depending on how well agencies were able to (1) find a private-sector comparable, (2) establish methodologies to derive the aggregate risk premium, and (3) adequately document their decision-making process and resulting aggregate risk premiums, this could create financial statement auditability issues for agencies.

Volatility

Under the fair value approach, the aggregate risk premium included in discount rates would be derived from a market comparable, if available. If no market comparable is available, this task would be more complicated and assumptions would need to be made. Some experts we spoke with believed that market information could vary more widely than interest rates on Treasury securities, resulting in greater volatility in original subsidy estimates year to year. In addition, depending on how the fair value approach is implemented during the reestimate process, if the aggregate risk premium is updated for annual reestimates, many experts we interviewed believed that reestimates would be more volatile from year to year. If the fair value approach resulted in more volatile subsidy estimates and reestimates, this could lead to greater swings in the deficit than are currently experienced under FCRA.

Timing of Recognition of the Fair Value Approach Downward Reestimate

Under the fair value approach, the financing account would include the subsidy cost associated with the noncash cost reflected in the aggregate risk premium. Therefore, when a loan is fully repaid, and if actual cash flows were as initially estimated, there would be an additional amount in the financing account that represents a social cost and not a cash cost to Treasury. Social costs do not produce fiscal effects insofar as they are not cash receipts or disbursements from Treasury. Some proponents of the FCRA methodology referred to this as a phantom cost, which could cause swings in the federal deficit depending on how the social cost is cleared from the financing account. This could (1) occur immediately after the loans are disbursed, (2) be amortized over the life of the loan cohort through the reestimate process, or (3) be cleared by a closing reestimate after the entire loan cohort was repaid. To avoid misrepresenting the fiscal effect on the federal deficit, the social cost in the financing account would have to be liquidated by means of an offsetting "phantom" receipt immediately after the loans are disbursed. If the social cost is amortized over the life of a cohort or cleared at the end of the cohort, this would be reflected in downward reestimates for programs. Several of the

proponents of the fair value approach whom we interviewed were indifferent as to when this downward reestimate took place as it would be outside the congressional decision-making process.

Financing Account Interest Rate

Under FCRA, the discount rate is also used as the interest rate to calculate interest income and expense on financing account balances so that the financing account will break even over time as it uses its collections to repay its Treasury borrowing. Under the fair value approach, the financing account interest rate could continue to be based on the FCRA-defined discount rate based on interest rates on Treasury securities, as was done with Troubled Asset Relief Program, or it could be based on discount rates including the aggregate risk premium. If the financing account interest rate is based on the FCRA discount rate, then recording the annual interest income and expense on the financing account helps to amortize the additional amount in the financing account that represents the noncash social cost. If the interest rate includes the aggregate risk premium, this would in essence monetize the social cost but would result in interest payments between agencies and Treasury to be based on rates not tied to Treasury borrowing costs. Based on our interviews, most experts did not have a conclusive answer or did not provide an answer as to what the financing account interest rate should be under the fair value approach. Many proponents of the fair value approach did not have an opinion on which rate should be used because the financing account transactions are outside the congressional decision-making process.

Programs with Specific Subsidy Rate Requirements

Some federal credit programs, such as the Department of Energy's Loan Guarantee Program, have statutory mandates to charge borrowers fees at a level that will result in an initial subsidy cost of zero. Other programs, such as the Department of Housing and Urban Development's Mutual Mortgage Insurance Fund loan guarantee program, have statutory mandates to charge fees at a level to help establish reserves for unexpected future losses. For programs with these types of requirements, agencies estimate expected loan performance cash flows and then determine fees that are necessary to generate the required subsidy rate. Under the fair value approach, while the expected loan performance cash flows would be the same, because the discount rate includes the aggregate risk premium, the cost appears higher. As a result, agencies would need to charge borrowers higher fees to cover the initially estimated noncash social costs of a program. However, these noncash social costs would then be offset, or cleared, during the reestimate

process, meaning that borrowers would be charged more than is needed to cover the initially estimated cash costs of the program. These higher fees could affect borrower demand for the credit program. The experts we interviewed stated that this was a congressional decision on how fees should be charged. The experts also believed that borrower fees should not be returned if the estimated cost of a program turned out to be lower than originally estimated in part because of the administrative burden and the fact that if costs were underestimated, the government would not request more fees from borrowers.

Spending Caps

Recent concurrent budget resolutions have included spending cap limits on discretionary spending, which are enforceable during the congressional budget process. One expert pointed out that when FCRA was implemented, there was an adjustment to the spending caps then in place to reflect this "change in concept." If the fair value approach were implemented and were considered a "change in concept," the Budget Control Act of 2011 provided that the President's budget could include adjustments to discretionary spending limits, subject to consultation with the Senate and House, to reflect this conceptual change.[1] Because of the expected higher costs under the fair value approach, some experts speculated that these caps would likely be raised.

Consistency between Federal Budget and Financial Accounting Standards

The Federal Accounting Standards Advisory Board (FASAB)[2] established the primary accounting standard for federal credit programs, Statement of Federal Financial Accounting Standards No. 2, *Accounting for Direct Loans and Loan Guarantees*, which became effective in fiscal year 1994. When this standard was issued, FASAB stated that it recognized the value of having financial accounting support the budget. It also endorsed the logic underlying FCRA and recommended that accounting standards for credit be consistent with budgeting under FCRA. FASAB also stated that as more experience is gained, some modifications in budgetary requirements may be needed and that so long as the modifications are

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[1]Pub. L. No. 112-25, § 101 (Aug. 2, 2011) (amending the Balanced Budget and Emergency Deficit Control Act of 1985, Pub. L. No. 99-187, § 251(b)(1) (Dec. 12, 1985)), *classified as amended at* 2 U.S.C. § 901(b)(1).

[2]FASAB was created by OMB, Treasury, and GAO to develop accounting standards for the federal government. These accounting standards are considered generally accepted accounting principles for federal entities.

made on a credit reform basis and do not materially affect the basic recognition and measurement principles embodied in the accounting standards, it intended that accounting practices for direct loans and loan guarantees should change as needed to remain consistent with the budget. If the fair value approach were implemented for the budget, FASAB would need to determine if that approach is consistent with the basic recognition and measurement principles embodied in the accounting standards. Having the accounting standards for credit programs mirror the budgeting for credit programs means that the financial statement audit can help provide assurance that the agencies' budgeted amounts are reasonable.

Appendix IV: GAO Contacts and Staff Acknowledgments

GAO Contacts

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Appendix V: Accessible Data

Data Tables

Data Table for Highlights Figure: Fluctuations in Direct Loan and Loan Guarantee Programs' Annual Net Reestimates, 2006-2014Figure 1: Federal Direct Loans and Loan Guarantees Outstanding, 2001-2014

	Direct Loans	Loan Guarantees
2006	2464	-3004
2007	-11	3966
2008	131	4122
2009	-7377	7653
2010	-9076	-1917
2011	-3291	-3596
2012	-9157	20175
2013	6352	2575
2014	20294	-1709

Data Table for Figure 1: Federal Direct Loans and Loan Guarantees Outstanding, 2001-2014

Note: Dollars in billions

	Direct Loans	Loan Guarantees	Total
2001	244	904	1148
2002	249	936	1185
2003	251	898	1149
2004	266	936	1202
2005	258	938	1196
2006	261	939	1200
2007	270	950	1220
2008	308	1149	1457
2009	561	1451	2012
2010	713	1628	2341
2011	777	1732	2509
2012	860	1805	2665
2013	985	1834	2819
2014	1106	1827	2933

Data Table for Figure 6: Direct Loan Programs Representing a Significant Percentage of Lifetime Upward and Downward Reestimates, 2001-2014

	Category	Percentage	Dollars (in billion)
Upward Re-estimates	Direct Loan Student Program	70.8	23.1
	Direct Loans	8.7	2.8
	Government Sponsored Enterprises	4.8	1.6
	Disaster Loans	3.3	1.1
	38 Remaining Programs	12.4	4.0
Downward Re-estimates	GSE MBS Purchases	54.5	16.1
	Federal Family Education Loan	17.4	5.1
	Advanced Technology Vehicles Manufacturing	9.1	2.7
	Federal Family Education Loan	6.9	2.0
	55 Remaining Programs	12.1	3.6

Data Table for Figure 7: Loan Guarantee Programs Representing a Significant Percentage of Lifetime Upward and Downward Reestimates, 2001-2014

	Category	Percentage	Dollars (in billion)
Upward Re-estimates	Mutual Mortgage Insurance Fund	65.2	68.2
	General and Special Risk Insurance	10.1	10.5
	Mutual Mortgage Insurance – Reverse Mortgages	6.8	7.1
	Housing Guaranteed Loans	4.6	4.8
	7(a) Loan Guarantee Program	3.9	4.1
	30 Remaining Programs	9.4	9.8
Downward Re-estimates	Federal Family Education Loan Program	90.9	59.6
	Mortgage Backed Securities Guarantees	3.0	2.0
	Export Credit Guarantee Program (GSM-102)	1.3	0.9
	38 Remaining Programs	4.8	3.0

Data Table for Figure 8: Fluctuations in Direct Loan and Loan Guarantee Programs' Annual Net Reestimates, 2006-2014

	Direct Loans (in millions)	Loan Guarantees (in millions)
2006	2464	-3004
2007	-11	3966
2008	131	4122
2009	-7377	7653
2010	-9076	-1917
2011	-3291	-3596
2012	-9157	20175
2013	6352	2575
2014	20294	-1709

Data Table for Figure 10: 2008 Direct Loan and Loan Guarantee Programs' Reestimates during the Financial Crisis, 2006-2014

	Category	2006	2007	2008	2009	2010	2011	2012	2013	2014
Direct loans	Education	2416.1	651.4	815.8	238.4	-11431.2	4238.3	-7661.5	4585.4	18681.6
	Other	274.6	-103.5	157.1	-8233.0	2501.5	-7712.4	-505.2	9.8	299.6
	Energy, Transportation, Infrastructure; Housing; International; and Small Business and Agriculture	-226.7	-558.5	-842.3	617.2	-146.4	182.7	-990.2	1756.3	1312.8
Loan Guarantees	Education	-3100.2	125.7	-14027.6	-8219.5	-16788.7	-13401.9	-8804.5	313.6	-1577.4
	Housing	613.5	3548.3	16879.9	10659.0	10896.0	8531.6	28120.1	3189.1	2011.5
	Small Business and Agriculture	-349.4	-423.9	1021.1	4328.1	4281.9	1688.4	-584.8	-640.6	-1715.0
	Energy, Transportation, Infrastructure; International; and Other	-167.8	715.5	249	885.3	-306	-414.3	1443.7	-286.7	-428.3

Data Table for Figure 14: Percentage Point Differences between Direct Loan and Loan Guarantee Programs' Original and Most Recent Reestimated Subsidy Rates, 2001-2014

Percentage Difference between original estimate and reestimate	Loan Guarantees	Direct Loans
-47.5 to -49.99	1	0

Percentage Difference between original estimate and reestimate	Loan Guarantees	Direct Loans
-45.0 to -47.49	0	1
-42.5 to -44.99	0	0
-40.0 to -42.49	0	1
-37.5 to -39.99	0	0
-35.0 to -37.49	1	1
-32.5 to -34.99	0	1
-30.0 to -32.49	1	0
-27.5 to -29.99	0	1
-25.0 to -27.49	0	0
-22.5 to -24.99	1	1
-20 to -22.49	0	1
-17.5 to -19.99	0	2
-15.0 to -17.49	0	5
-12.5 -14.99	1	2
-10.0 to -12.49	0	2
-7.5 to -9.99	3	6
-5.0 to -7.49	4	16
-2.5 -4.99	9	14
-2.49 to 2.49	41	28
2.5 to 4.99	3	4
5.0 to 7.49	4	6
7.5 to 9.99	1	5
10.0 to 12.49	1	1
12.5 to 14.99	2	1
15.0 to 17.49	0	0
17.5 to 19.99	0	0
20 to 22.49	1	1
22.5 to 24.99	0	1
25.0 to 27.49	0	0
27.5 to 29.99	0	0
30.0 to 32.49	0	0
32.5 to 34.99	0	0
35.0 to 37.49	0	0
40.0 to 42.49	0	0
42.5 to 44.99	0	0
45.0 to 47.49	0	0

Percentage Difference between original estimate and reestimate	Loan Guarantees	Direct Loans
47.5 to 49.99	0	0
50.0 to 52.49	0	0
52.5 to 54.99	0	0
55.0 to 57.49	1	0

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