A Better Way to Budget for Government Loans, Guarantees, and Equity Investments

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Abstract

The federal government's method for budgeting for loans and loan guarantees has two major flaws. First, it records the expected fiscal returns from a loan the moment it is made, rather than spreading them over its full life. Loans thus get immediate budget credit for returns that may not occur until years in the future, often beyond the standard budget window that applies to conventional tax and spending policies. This can make lending programs appear to be magic money machines and gives lending programs a budgetary advantage over other policies. Second, current practice does not distinguish the potential fiscal gains from lending from the fiscal costs of any subsidies to borrowers. This failure encourages legislators to structure policies as lending programs—which require beneficiaries to go into debt—rather than as grants. The Congressional Budget Office has proposed an alternative that levels the playing field between loans and grants. But its fair value method violates budget principles in another way, bringing non-budget factors—the cost of financial risk—into the budget.

This paper proposes two innovations to resolve these problems. First, the budget should record the fiscal effects of loans and guarantees as they occur over time, not frontload them at origination. My preferred approach is projecting a loan's *expected returns* year by year. Expected returns accurately reports a loan's fiscal effects without violating the budget window that applies to other policies. Second, the budget should distinguish the financial returns of lending from any subsidies provided to borrowers. The budget should manage the financial returns like other financial transactions. It should manage the subsidies like conventional tax and spending programs. This disaggregation works under any budgeting approach, including expected returns and current practice. Disaggregating lending returns this way creates a level playing field between lending and grants. The same principles should guide budgeting for equity investments, including in the Social Security Trust Fund.

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1. Introduction

The federal government makes fiscal policy not only through traditional spending and tax programs, but also by extending direct loans, guaranteeing private loans, and making equity investments. Notable examples include student loans, mortgage guarantees, the Troubled Asset Relief Program, the Export-Import Bank, and clean energy lending. Together, these and other credit programs are enormous, accounting for more than $1.2 trillion in outstanding loans and more than $2.4 trillion in guarantees (Office of Management and Budget 2017).

The federal government has struggled to find a coherent, accurate way of budgeting for these programs.[2] Things are so bad that the Congressional Budget Office (CBO) publishes budget estimates for lending using two different approaches. One is the approach required by law, known as credit reform. The other is CBO's preferred alternative, known as fair value. In a comprehensive analysis of three major lending programs—for mortgages, student loans, and the Export-Import Bank—those two methods produced estimates that differed by more than $300 billion (CBO 2014). Under credit reform, these programs were scored as making more than $200 billion over a decade. Under CBO's fair value approach, they were scored as losing more than $100 billion.

Budgeting for lending programs sparks confusion for two reasons.

First, cash budgeting—the approach the government uses for almost all tax and spending activities—does not work well for lending programs. Loans can appear misleadingly costly on a cash basis because the principal goes out the door immediately, but principal repayments don't arrive until years in the future, often beyond the standard budget window. Loan guarantees, in contrast, appear misleadingly profitable since origination fees occur inside the budget window, while many defaults won't happen until later. The challenge for policymakers is designing a non-cash approach to budgeting that works well for lending programs *and* integrates well with cash budgeting for spending and tax policies.

The Federal Credit Reform Act of 1990 (FCRA) achieved the first goal but failed the second. FCRA requires the budget effects of lending programs to be recorded as the net present value of expected cash flows when a loan or guarantee is made. Cash flows

[2] These programs also raise significant management questions. For a good analysis, see Stanton, Rhinesmith, and Easterly (2017).

are discounted using government borrowing rates. The net present value reflects all expected cash flows, so loans no longer appear misleadingly costly and guarantees no longer appear misleadingly profitable. This improvement came with a downside, however. Loans get immediate budget credit for returns that do not occur until years in the future, often beyond the standard budget window. This gives lending programs a budgetary advantage over conventional tax and spending policies. Under credit reform, lending programs get to count their fiscal chickens as soon as eggs are laid, while tax and spending programs have to wait for them to hatch.

Second, lending programs involve two distinct activities—lending money and subsidizing borrowers—but current budgeting does not distinguish them. The budget records only the net accounting gain or loss from making a loan. Suppose the government makes a $1,000 loan for one year, expects a 4 percent return, and pays 2.5 percent on Treasury bonds to finance it. Under current practice, the budget would record a $15 gain from making this loan (= $1,000 x (4% - 2.5%)). This tells lawmakers how much the loan is expected to bring in. But it provides no information about how much the government is giving up by subsidizing this loan.

To track the subsidy, we need one more piece of information: the rate of return that a competitive lending market would require for this loan. Suppose that rate is 5 percent. By requiring only a 4 percent expected return, the government is providing a 1 percent subsidy to the borrower. The government would net $25 if it made this loan at market rates (= $1,000 x (5% - 2.5%)). It provides a $10 subsidy to the borrower by charging below-market interest. And it nets $15 from the loan.

Under current practice, policymakers see only the $15 net figure. CBO's fair value alternative reports only the $10 subsidy. Budget experts have spent more than a decade debating which of these figures is the right one. But that's a false choice. Both these figures provide useful information. So budgeting should report both. To do so, budget estimates should unpack the fiscal effects of lending and report three components:

- The financial return to lending at market rates (here $25),
- The subsidies to borrowers ($10), and
- The net return on subsidized loans ($15).

Policymakers can then decide how best to use that information. If they want subsidized loans to be on a level playing field with direct grants, for example, they can focus on the subsidy amounts. Does it make sense to provide $15 in assistance through a loan—which requires the beneficiary to go $1,000 into debt—or would it make more sense to give the beneficiary a simple $15 grant?

This paper develops these arguments in five steps. Section 2 illustrates how four budgeting methods—cash, credit reform, fair value, and a new approach, expected returns—handle a simple loan. Cash, credit reform, and fair value all have significant weaknesses. Expected returns, in contrast, spreads the fiscal effects of the loan intuitively over time and integrates well with traditional budgeting methods, including the budget window.

Section 3 extends this analysis to below-market loans, and shows that expected returns again provides the most natural projections of budget impacts. A close variant—amortized returns—also performs better than cash, credit reform, and fair value approaches.

Section 4 distinguishes the fiscal benefits of lending from the subsidies provided to borrowers. Disaggregating effects this way can be done under any budgeting system, including expected returns, amortized returns, and credit reform. It informs policymakers of the full effects of loans and allows them to treat lending programs on the same footing as grant programs.

Section 5 argues that the same principles should apply to equity investments, including those that might take place in the Social Security Trust Fund. Section 6 then concludes.

2. Budgets Should Record the Fiscal Effects of Loans over Time, Not at Origination

Budgeting for a Simple Loan

The clearest way to compare budgeting approaches is to see how each would handle an example loan (see Appendix A for a parallel analysis of a loan guarantee). Consider the following case:

- The federal government lends $1,000 at a 6 percent annual interest rate for four years, with the full principal outstanding until the end of the loan.

- There is a chance the borrower will default on interest payments; those defaults, net of any recoveries, are expected to average 1 percent of the outstanding principal each year but could be more or less. On average, the government thus expects a 5 percent annual return.

- To get the money to make the loan, the government borrows by issuing $1,000 of Treasury bonds that pay 2.5 percent interest.

- The government thus anticipates making a 2.5 percent spread on the loan—the 5 percent expected return less the 2.5 percent cost of financing it.

For this initial case, we assume the government lends on the same terms available in financial markets. Competitive private lenders would also ask 6 percent interest and expect a 5 percent return net of defaults. This scenario is not typical—the government usually offers below-market interest rates—but it sometimes happens, and it makes this example as simple as possible.

Given this information, it is easy to measure the expected lifetime fiscal effects of making the loan.[3] The government would expect to

- Receive $240 in interest payments ($1,000 × 6 percent × 4 years);

- Lose $40 in defaults ($1,000 × 1 percent × 4 years); and

- Pay $100 in extra borrowing costs ($1,000 × 2.5 percent × 4 years)

The government would thus expect to net $100 ($240 - $40 - $100) on this loan.

[3] Throughout this paper, I use the phrase "fiscal effect" to mean the accounting gains or losses that a loan generates over its life. This phrase, which I take from Kamin (2013), is useful because it avoids confusion that arises when analysts use terms like "cost" or "profit." I try to avoid those terms unless there is no room for confusion. Cost means different things to accountants and economists. Accountants focus on financial costs, while economists focus on opportunity costs. When the government makes a loan, the accounting costs are the borrowing costs that the government incurs to finance the loan. The opportunity costs, however, consider how else the government could have used those resources. The opportunity cost is thus the rate of return the government could have earned making a market-rate loan with identical risks. Profit similarly comes in two flavors. A loan makes an accounting profit if it returns more than the government's cost of borrowing. A loan makes an economic profit if it returns more than market rate of return.

To analyze the timing of these returns, we need to know when the loan is first made. For simplicity, assume the loan is made on the last day of the first fiscal year in the budget window and will be repaid on the last day of the fifth year. The fiscal effect in the first year will then reflect what happens at the moment the loan is originated, and the fiscal effects in years two through five will reflect any returns from holding the loan.

Table 1 shows four ways of projecting the fiscal effects of this simple loan:

Table 1
Budgeting for a Market-Rate Loan
Annual budget effects of a four-year loan (dollars)

	Years					
	1	2	3	4	5	Total
Cash Flows						
Smart cash	-1,000	25	25	25	1,025	100
Present Value at Origination						
Discounted at government rates (FCRA)	94	0	0	0	0	94
Discounted at market rates (CBO)	0	0	0	0	0	0
Returns over the Term of the Loan						
Expected returns / amortized returns	0	25	25	25	25	100

Note: The government borrows $1,000 at 2.5%, lends at 6% (matching the market rate), and expects a 1 percent default rate.

Cash flows

The first row in Table 1 shows the year-by-year net cash flows from the loan. In year 1, the government issues the $1,000 loan. In year 2 it expects to net $25, reflecting expected interest payments, defaults, and financing costs. It expects to receive the same in years 3 and 4. In year 5, it again receives $25 plus $1,000 from repayment of the loan. Over the loan's life, the government expects to net $100. (I describe this approach as "smart" cash budgeting to distinguish it from the naïve cash budgeting used before FCRA; that approach ignored the interest costs of financing loans and thus made loans appear to be "profitable" even if their returns were less than the government borrowing rate.[4])

[4] The projections used in the Congressional budget process typically omit any increases or decreases is government interest payments. My analyses follow that convention as well. For example, the net returns that appear in early years of the projection don't result in reduced government interest costs in later

Present values at origination

The next two rows in Table 1 show the official, FCRA way of recording a net present value at origination and CBO's fair value alternative. They differ only in the discount rates they use to calculate the present value.

FCRA's credit reform approach calculates the net present value of the loan's cash flows using government borrowing rates. Because Treasury borrows at 2.5 percent, a dollar in the second year is worth about 97.5 cents, a dollar in the third year is worth about 95 cents, and so on. Using that approach, the net present value of the loan is $1,094 at origination.[5] Making the loan requires $1,000 in new Treasury borrowing, so the net fiscal gain is $94. FCRA reports that $94 as a budget gain at origination and nothing thereafter.

CBO's fair value alternative calculates the net present value of the loan's cash flows using market discount rates. In this example, the market discount rate is 5 percent, the expected return on the loan. That rate is higher than the 2.5 percent rate on Treasuries, so the net present value of the loan's cash flows is lower. A dollar in year two, for example, is worth about 95 cents rather than the 97.5 cents under FCRA. Because the discount rate equals the expected return, the net present value of the loan turns out to be exactly $1,000.[6] CBO's alternative takes that amount, subtracts the $1,000 cost of the loan, and reports a $0 budget effect at origination and nothing thereafter.

CBO uses the higher, market rate of return because of the financial risks of lending (CBO 2012, Financial Economists Roundtable 2012, Lucas and Phaup 2008, 2012). One of the fundamental principles of financial economics is that present values should be calculated using discount rates that reflect the riskiness of the projected cash flows. FCRA correctly accounts for expected losses (in this case 1 percent each year), but it does not consider the riskiness of those losses. If the economy is weak, for example, those losses could be much larger. Or it may be difficult to sell the loans quickly if a sudden need for liquidity arises. People do not like bearing such risks and require

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years. My analysis does, however, deduct borrowing costs from the gross returns on the loan. This deduction is necessary because of the interest being paid on the loan. For balance, it is necessary to exclude the government's borrowing rate from the loan returns. In earlier work, I have suggested that the government include borrowing costs in official budget projections for all programs (Marron 2010).

[5] The FCRA net present value is: $\frac{50}{1.025} + \frac{50}{1.025^2} + \frac{50}{1.025^3} + \frac{1{,}050}{1.025^4} = 1{,}094.$

[6] CBO's fair value net present value is: $\frac{50}{1.05} + \frac{50}{1.05^2} + \frac{50}{1.05^3} + \frac{1{,}050}{1.05^4} = 1{,}000.$

compensation for doing so. That is why stocks return more than bonds, on average, and corporate bonds return more than Treasuries. Loans are similarly risky, so it is inappropriate to discount them using the government borrowing rate. Put another way, taxpayers are being asked to bear financial risk when the government makes a loan, and the cost of that risk-bearing should be included in valuing the loan. CBO's fair value approach thus calculates a net present value just like FCRA, but it uses market rates rather than Treasury rates to discount the expected cash flows.

Returns over the term of the loan

A final approach is recording the returns from the loan as they happen over time. The final row of Table 1 shows this approach. The government expects $60 in interest payments each year less $10 in defaults and $25 in extra borrowing costs. It thus expects to net $25 each year of the loan's four-year term.

Two distinct budgeting methods yield this result. The first, which I call *amortized returns*, simply spreads the fiscal gains from the loan over its lifetime. The loan is expected to net $100 over its four-year life with the same amount of principal, $1,000, outstanding in each year. It thus makes sense to amortize the returns equally across the years. The loan thus nets $25 annually.

The second approach reports the loan's *expected returns* year by year. In the first year, the government's expected returns are zero. When it makes the loan, its assets go up $1,000 (the value of the new loan), but its liabilities go up the same amount (the value of the new debt). The government's net worth is unchanged, so there is no immediate financial gain or loss and thus no return.

In year two, the government expects $60 in interest payments less $10 in defaults and $25 in extra borrowing costs, making its expected return $25. The same is true in years three and four. In year 5, the government again gets a $25 return. In addition, the borrower pays off the loan. Their $1,000 repayment matches the value of the loan, so it has no effect on reported returns. The loan's expected returns match its amortized returns because it was made at market rates. As discussed later, the two approaches differ for below-market loans.

Comparing the approaches

These budgeting approaches differ in the timing of reported budget effects, and in their overall amount. Expected returns and amortized returns yield the same $100

lifetime net gain as cash budgeting. But FCRA reports only $94, and CBO's alternative reports zero.

FCRA under-reports expected fiscal gains because it is a net present value. The $94 FCRA amount equals the net present value of $25 annually in years two through five. The FCRA understatement of lifetime fiscal gains is undesirable because it means the fiscal effects of federal lending programs are measured with a different yardstick than used for other programs. A tax increase of $25 in years two through five, for example, would have the same fiscal effects as the loan, but it would be scored as raising $100 over the budget window, more than the $94 FCRA reports for the loan. The FCRA understatement is larger when loans have longer terms and when interest rates are higher.

A bigger concern is that FCRA reports the $94 gain at origination. This makes lending look like a *magic money machine*. Credit reform makes it appear that the government gets an instant profit on the loan before the ink is even dry. But taxpayers have not earned anything at that point. The value of the loan is exactly offset by the value of new Treasury debt. The government expects gains in the future if it holds onto the loan. Like any lender or investor, however, it must be patient to receive those returns. It must hold the loan and bear the associated financial risk. The government could sell the loan before maturity and give up any later returns. Or it could decide to forgive some or all of the loan balance. Or borrower defaults might exceed original expectations. For all those reasons, the expected fiscal gains should not be attributed to the moment of origination. Such front-loading distorts the budget process by making the gains from lending appear more rapidly than they do from other comparable policies. It is as though a tax increase of $25 annually in years two through five were reported instead as a $94 tax increase in year one, even though the government could later change its mind.

CBO's fair value alternative reports no lifetime gain at all. In reality, the government expects to end up $100 ahead. By discounting at the market rate, however, CBO's approach makes those gains disappear. This *missing money* problem arises because CBO's approach is not measuring the loan's fiscal effects. Instead, it is measuring the subsidy at origination—i.e., the amount that taxpayers are giving to borrowers.[7] That value is zero for this loan, as CBO's approach correctly reports.

[7] Throughout this paper I use subsidy in its economic sense: the amount the government gives up by offering loans to borrowers at below-market rates. In the budget community, subsidy has a different meaning: the net gain or loss the government receives from making a loan. My definition compares the loan's interest rates to market rates; a loan is subsidized if its interest rate is below market. The budget

Expected returns and amortized returns provide the most intuitive and economically accurate representation of the fiscal effects of this loan. Indeed, their projections are the approach most individuals, businesses, and organizations use when projecting the effects of loans and other financial investments.[8] There is no magic money at origination; the government has a loan worth $1,000 offset by $1,000 more in outstanding Treasury debt. The government earns its return by holding the loan and bearing its risks. If the government holds the loan for a year, it can expect to net $25. If it holds for another year, it can expect to net another $25. And so on.

Using either expected returns or amortized returns to budget for this loan would be a dramatic improvement over current practice.

Credit Reform Violates the Budget Window

Another concern about current budgeting is that credit reform violates the budget window. To illustrate, suppose Congress uses a 5-year budget window (it currently uses a 10-year window, but 5 years are sufficient to illustrate the issues here). Our example loan fits entirely within that window. It gets originated in year 1 and gets paid off in year 5.

Now consider a loan that pays the same annual interest and has the same annual default risk but has a term of eight years, not four. Table 2 shows how this loan would appear under different budgeting approaches.

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definition compares the loan's expected returns (interest less defaults) to government borrowing rates; a loan is subsidized if its expected returns are below the government rate.

[8] Question: Are there other organizations that use accounting similar to FCRA, recording instant gains on loans or investments made at market rates? Outside some misuse of fair value principles in the private sector (e.g., Enron) or gaming of internal compensation systems (e.g., Kidder Peabody), I am unaware of any. There are many cases, of course, of organizations not recording losses on these transactions and just holding them at original value. What I am looking for are cases in which they actively mark a position as profitable the moment it's made.

Table 2
Budgeting for a Market-Rate Loan Maturing Outside the Budget Window
Annual budget effects of an eight-year loan with a five-year budget window (dollars)

	Years					Budget Window	Beyond Window	
	1	2	3	4	5	Years 1-5	Years 6-9	Total
Cash Flows								
Smart cash	-1,000	25	25	25	25	-900	1,100	200
Present Value at Origination								
Discounted at government rates (FCRA)	179	0	0	0	0	179	0	179
Discounted at market rates (CBO)	0	0	0	0	0	0	0	0
Returns over the Term of the Loan								
Expected returns / amortized returns	0	25	25	25	25	100	100	200

Note: The government borrows $1,000 at 2.5%, lends at 6% (matching the market rate), and expects a 1 percent default rate.

The first row of Table 2 demonstrates a key flaw with cash budgeting. The budget window captures the cash outflow of making the loan, but misses principal repayments and net interest beyond the window. Under cash budgeting, this eight-year loan would be scored as losing $900, even though it's expected to bring in $200 over its full life. Cash projections are essential for managing the government's balance sheet and planning for debt issuances. But they do not provide a sound basis for Congressional budgeting.

Credit reform tried to solve this problem. And it largely did for loans that mature inside the budget window. The second row of Table 2 reveals, however, that it introduces a new problem for loans that mature beyond the budget window. By claiming all projected gains at origination, credit reform takes budget credit for returns that occur outside the budget window. In this case, credit reform scores the eight-year loan as bringing in $179 immediately. That's almost double the $94 generated by the four-year loan. But all the extra gains occur in years six through nine, beyond the official budget window. A twelve-year loan would similarly yield $238 in immediate fiscal gains, most of which occur in years six through thirteen.

This is not a sound basis for budgeting. Using net present values could make sense if all federal programs were similarly measured using net present values. But they aren't. Conventional tax and spending programs are scored over a fixed budget window. Lawmakers can't use a tax increase in 2030 to pay for increased spending today. But credit reform allows them to do the equivalent when loans stretch beyond the budget window.

Under CBO's approach (the third row), the eight-year loan has the same score as the four-year one: zero. When you discount using market rates, a market-rate loan yields a zero return regardless of its term.

Under expected returns / amortized returns, finally, the loan is scored as netting $25 each year. That generates $100 in net returns inside the budget window, $100 beyond the budget window, and $200 in total. Once again, expected returns / amortized returns yields the most reasonable, useful result. Lawmakers get budget credit for the returns that occur within the budget window, but they don't get to claim any gains that occur later. Expected returns / amortized returns thus score this loan on a level playing field with conventional tax and spending programs.

3. Budgeting for Below-Market Loans

Expected returns and amortized returns clearly provide a better way of reporting the fiscal effects of simple, market-rate loans. We now examine how they work for the more typical case in which the government makes loans at below-market interest rates.

Consider a loan identical to our original, four-year example except the government charges 5 percent interest rather than 6 percent. After defaults, the government's expected return is then 4 percent, higher than its cost of borrowing (2.5 percent) but lower than the market return (5 percent).

If the government holds this loan to maturity, it expects to net $15 each year ($1,000 × the 1.5 percent spread) for a total of $60. The $100 return from the original, unsubsidized loan has fallen to $60 because the borrower receives a $40 subsidy ($10 each year = $1,000 × 1 percent lower rate).

Table 3
Budgeting for a Below-Market Loan
Annual budget effects of a four-year loan (dollars)

	Years					
	1	2	3	4	5	Total
Cash Flows						
Smart cash	-1,000	15	15	15	1,015	60
Present Value at Origination						
Discounted at government rates (FCRA)	56	0	0	0	0	56
Discounted at market rates (CBO)	-35	0	0	0	0	-35
Returns over the Term of the Loan						
Amortized returns	0	15	15	15	15	60
Expected returns	-35	23	24	24	25	60

Note: The government borrows $1,000 at 2.5%, lends at 5% (below the 6% market rate), and expects a 1% default rate.

Under cash budgeting, this loan would appear as you would expect, with a $1,000 outflow at origination, three years of $15 in net interest less defaults, and a final year inflow of $1,015, for a total fiscal gain of $60.

Under credit reform, the present value at origination will be positive, since the expected return is above the government's borrowing rate, but less than before. FCRA values this loan at $1,056. After subtracting $1,000 in new borrowing, the up-front fiscal gain is $56.

Under CBO's fair value alternative, the loan is worth only $965, less than the $1,000 cost of making it. This gap exists because the expected return on the loan is less than the market return. Fair value thus reports an up-front loss of $35.

These figures again demonstrate that credit reform and CBO's fair value approach are measuring different things. Credit reform measures the lifetime fiscal effects of the loan, falling short ($56 versus $60) because of the way the present value calculation handles the time value of money. Fair value, however, measures the subsidy to borrowers. It also falls short ($35 versus $40) because of the present value calculation.

Amortized returns and expected returns now differ. The government expects to net $60 over the four-year life of the loan. The face value of the loan outstanding is the

same each year, $1,000. Amortizing those returns, the government thus expects to net $15 annually in years two through five.

To implement expected returns, we track the value of the loan each year, including the initial subsidy, net interest less defaults, and gains from the loan's value increasing. To do this, we apply the fair-value approach to each year of the loan's life, not just the first year. The loan is worth $965 at origination, calculated as the net present value of expected cash flows using the 5 percent expected market return. Using the same approach, the loan is expected to be worth $973 at the end of year two. The government thus expects a capital gain of $8 ($973 - $965) from the increasing value of the loan. Similar gains accrue in the following years as the value of the loan rises to $981 (year three), $990 (year four), and $1,000 (just before repayment in year five).

The government thus expects returns of $15 in net interest less defaults each year plus a stream of capital gains and losses. The government loses $35 when it first originates the loan, and then expects capital gains in each of the subsequent four years ($8, $8, $9, and $10). The capital gains exactly offset the initial loss because the value of the loan rises from $965 at origination to $1,000 just before it gets paid off. On net the government expects to get $60 in fiscal gains from making this loan.

Expected returns provides the most accurate projection of the fiscal effects of this loan. Credit reform errs by taking immediate credit for returns before they happen, the magic money machine problem. CBO's fair value alternative makes those potential returns disappear, the missing money problem. Expected returns, in contrast, fairly reflects both those features of subsidized lending. Like CBO's fair value approach, expected returns records an immediate loss for the subsidy. The subsidy in the loan is an unavoidable commitment that cannot be broken or avoid by selling. In short, the government can't change its mind about the subsidy. A loan subsidy is thus different from those provided by tax credits or direct spending. Tax and spending subsidies can be, and often are, reversed by future Congresses and are should be treated as spread across time. When the government lends at below-market rates, however, the subsidy becomes unavoidable and is rightly recorded at origination.

Like credit reform, expected returns also accounts for the potential gains from holding the loan to maturity. The initial fiscal loss can be overcome, at least in part, if the government holds onto the loan. Like any investor, the government gets compensated for bearing the risks associated with the loan. Those returns show up as combination of net interest payments and capital gains if—and only if—the government holds the loan. If it chooses to sell it to investors, however, it will realize the initial loss.

These advantages exist for any loan and for any loan guarantee, not just the two examples considered here (see Appendix B). Expected returns consistently provides better information about the fiscal effects of federal lending than do FCRA or fair value.

Expected returns is the way that banks and other large businesses account for loans, including below-market ones. In the private sector, this approach is known as fair value accounting. Unfortunately, CBO already describes its approach as fair value. This confusion arises because CBO developed its approach to answer a different question. FCRA created a norm in which budgeting for lending programs focuses on their net present value at origination. FCRA calculated that present value using government borrowing rates. CBO argued, correctly, that calculating the present value that way violated fundamental principles of financial economics. The right way to calculate a present value is to use the market rate of return. However, CBO did not address FCRA's original sin: using a net present value at origination. In the private sector, fair value *accounting* does not limit itself to recording a present value at origination. When a bank prepares pro forma financial statements, it reports the fair value of its financial investments in each year, not just the first one. That is the approach expected returns takes here. If CBO had not already taken the term for its net present value approach, it would be fair to describe expected returns as fair value budgeting for lending programs.

For an organization as large as the United States, using expected returns should be the standard. It is worth noting, however, that amortized returns has two advantages: it does not require an estimate of market returns, and it is intuitive. It's natural to think of the loan as netting $15 each year. Amortized returns might make sense if policymakers want to focus solely on the net fiscal effects of lending and if they believe the benefit of simplicity outweighs the imperfect timing. However, lawmakers should look beyond the net fiscal effects of lending.

4. Budgets Should Distinguish the Subsidies in Loans from their Financial Returns

The cash, credit reform, expected returns, and amortized returns methods of budgeting share one common feature: they focus on the net fiscal effects of lending. CBO's fair value approach, in contrast, focuses on the subsidy that the government provides to borrowers.

The debate between credit reform and fair value has usually been framed in terms of the cost of financial risk, the government's ability (or taxpayers' ability) to bear financial

risk, and the appropriateness of including a cost of risk in the federal budget.[9] As interesting as it's been, that debate is an unnecessary distraction from a more fundamental and more vital question. Should the budget process focus on the net fiscal effects or the subsidy?

My answer: Why choose? Both figures reflect important information that lawmakers may want to consider. Budget projections should let policymakers know, for example, that our below-market loan is expected to net $60 over its life *and* that it provides $40 of subsidy to the borrower. The $60 fiscal effect is important for understanding the fiscal stance of the government. And the $40 subsidy is important for comparing the subsidized loan to other policy options.

Subsidized Loans Involve Two Distinct Decisions: Lending and Subsidizing

The broader point here is that the decision to make subsidized loans is actually two distinct decisions rolled together. The first is whether the government should take the financial risks—and earn the potential rewards—of extending loans or otherwise participating in financial markets. The second is whether the government should use loans as a way of providing subsidies to borrowers.

Today, the budget process treats these as a single, unified decision. That may simplify the budgeting, but it distorts fiscal policymaking. Programs that can be structured as loans have a significant advantage over those that involve direct spending or tax incentives. Our example loan, for example, provides a $40 benefit to the borrower, yet scores as bringing in $60 for the government. A $40 grant to the borrower, however, could score as a $40 cost to the government.

[9] CBO (2012, 2014), Delisle and Richwine (2014), and Lucas and Phaup (2008, 2010) present the affirmative case for CBO's fair value approach. The Government Accountability Office (2016), Kamin (2013), and Kogan, Van de Water, and Horney (2013) provide strong critiques. In my view, the critics are correct about the rationale CBO offers for its approach. The budget does not and should not include a specific element tracking the cost of financial risk. And if it did, the budget would need to include similar elements tracking the costs of risk associated with many other aspects of the budget, including capital gains receipts and unemployment insurance. CBO and its allies are right, however, that the budget should highlight the subsidies provided to borrowers, not just the net fiscal returns to lending. The disaggregation proposed here satisfies both sides of this debate. It focuses solely on fiscal effects—thus avoiding the cost of financial risk problem—and it distinguishes subsidies from the returns to lending.

Does this mean that lending is a fundamentally better way of making policy? Does it open win-win opportunities to help borrowers while increasing resources for the rest of the government?

No and no.

The government always has the option to make loans at market rates. For example, it could invest in a portfolio of publicly-traded corporate bonds. The expected return on those bonds is higher than the yield on government bonds. So the government could record an expected gain—either immediately under credit reform or over time under expected returns or amortized returns—from making those investments. But grant programs aren't allowed to use this option to fund themselves. Lawmakers can't propose to make a new $40 grant, couple it with a $1,000 investment in corporate debt, and declare that they've netted $60 for the government.

But lawmakers make exactly this claim when they provide subsidies through lending programs. Advocates who want the government to do more often view this as a positive feature—it makes it easier for the government to enact new policies and expand existing policies. But it's also a bug: To get assistance from lending programs, intended beneficiaries have to go into debt, with all the risks and costs it entails.

CBO's fair value approach tries to level the playing between grants and lending by making the normal returns to lending disappear. CBO's specific reasoning is faulty—the budget does not and should not include a non-cash charge for the cost of financial risk. But its basic insight is sound. The budget can and should distinguish the subsidies borrowers receive from the general returns to lending.

We can easily do so—while avoiding any concerns about non-fiscal costs—by unpacking the returns to lending into three pieces: the normal returns to lending, the subsidy to borrowers, and the net fiscal effect. Table 4 shows how this works.

Table 4

Distinguishing Financial Returns and Subsidies for a Below-Market Loan

Annual budget effects of a four-year loan (dollars)

	Years					
	1	2	3	4	5	Total
Cash Flows						
Smart cash						
Financial returns to lending	-1,000	25	25	25	1,025	100
Subsidy to borrowers	0	-10	-10	-10	-10	-40
Net returns on loan	-1,000	15	15	15	1,015	60
Present Value at Origination						
Discounted at government rates (FCRA)						
Financial returns to lending	94	0	0	0	0	94
Subsidy to borrowers	-38	0	0	0	0	-38
Net returns on loan	56	0	0	0	0	56
Discounted at market rates (CBO)						
Financial returns to lending	0	0	0	0	0	0
Subsidy to borrowers	-35	0	0	0	0	-35
Net returns on loan	-35	0	0	0	0	-35
Returns over the Term of the Loan						
Amortized returns						
Financial returns to lending	0	25	25	25	25	100
Subsidy to borrowers	0	-10	-10	-10	-10	-40
Net returns on loan	0	15	15	15	15	60
Expected returns						
Financial returns to lending	0	25	25	25	25	100
Subsidy to borrowers	-35	-2	-1	-1	0	-40
Net returns on loan	-35	23	24	24	25	60

Note: The government borrows $1,000 at 2.5%, lends at 5% (below the 6% market rate), and expects a 1% default rate.

The first panel shows this disaggregation under cash budgeting. The first row shows the returns to making a loan at a market interest rate. The second row shows the subsidy to borrowers. The third row shows the net fiscal effect. Together, this way of disaggregating the loan provides all the information that policymakers need: the fiscal gains from participating in the lending market ($100), the subsidy to borrowers ($40), and the net fiscal gain for the government ($60).

The second panel shows that this disaggregation works equally well under credit reform. The first row shows how FCRA scores a loan at market rates. The third row shows how FCRA scores the loan at below-market rates. And the second row shows the subsidy. As before, all three figures differ slightly from their true long-term values because they are calculated as net present values. The gross returns to lending are scored as $94 (rather than $100), the subsidy is scored as $38 (rather than $40), and the net fiscal returns are scored as $56 (rather than $60).

The third panel shows this disaggregation under CBO's version of fair value. This approach yields a reasonable estimate of the subsidy, $35 (again lower than the $40 correct value because of discounting). But this approach does not provide reasonable figures for the gross or net fiscal returns to lending.

Amortized returns (the fourth panel) yields perhaps the most intuitive representation of the loan's fiscal effects. A loan at market rates brings in $25 each year, the interest rate subsidy costs $10 each year, and the loan nets $15 each year.

Finally, expected returns (the fifth panel) provides the most economically accurate depiction of the loan's fiscal effects. A loan at market rates would yield $25 in years two through five. A below-market loan yields an immediate cost at origination, which is then offset by net interest and capital gains over the subsequent years. Most of the subsidy occurs at origination, with a small tail in later years, bringing the total to $40.[10]

One striking feature of this presentation is that the loan subsidy is very similar under all five approaches. Cash, expected returns, and amortized returns all report the correct value, $40. The FCRA breakdown reports $38. And CBO's version of fair value reports $35. One implication is that congressional budgeting can create a transparent, level playing field between loans and grants while still using FCRA. All that's necessary is to disaggregate the FCRA calculations into the market returns and the borrower subsidies. Expected returns (or, failing that, amortized returns) would be better because it gets the amount of the subsidy correct and tracks impacts over time. But the FCRA approach could still be acceptable if lawmakers adopt this disaggregated approach.

[10] The subsidy tail in years two through five reflects missing returns. If the government made the loan at market interest rates, the $1,000 loan would earn 5 percent each year. When the government makes the loan at a below-market rate, however, the loan is worth only $965. In effect, the government has only $965 invested at the market rate, rather than $1,000. In year two, this translates into an additional fiscal loss of $1.75 (= $35 x 5 percent), which rounds to $2. Those losses decline in subsequent years as the market value of the loan increases.

A final question is how lawmakers should use this information. In particular, how should these impacts be allocated to committees or appropriations sub-committees that are operating within budget constraints?

Congress generally does not allow these committees and sub-committees to claim budget credit for purely financial transactions. The Finance Committee can't pay for tax cuts by directing the Department of Treasury to buy a sufficient amount of corporate bonds. The Financial Services Committee can't pay for new housing programs by directing the Department of Housing and Urban Development to invest in mortgage-backed securities. The same should be true when committees consider lending programs. They should not get budget credit for the potential returns from lending at market rates. But they should be charged for any subsidies provided to borrowers. This allows for a head-to-head comparison with alternative policies, such as direct spending or tax incentives. And it allows lawmakers to establish separate procedures for managing the financial position and risk profile of the federal investment and lending portfolio.

Budgeting for Opportunity Costs

By disaggregating returns into a lending portion and a subsidy portion, the disaggregated approach makes clear the opportunity costs of subsidized lending. The opportunity cost is that the government could earn a higher return while bearing the same financial risks. Budgeting is often framed in terms of accounting costs—the flows of dollars into and out of federal coffers. That makes sense for most tax and spending programs because accounting and opportunity costs are the same. If you spend $25 on a new program, that's $25 you don't have for another priority. If you raise $25 in taxes, that is an additional $25 you can devote to another priority.

That equivalence between accounting and opportunity costs does not exist for lending programs. The government can bring in $60, as in our example subsidized loan, yet give up $40 in subsidy. That's why careful budgeting requires that we unpack the returns to lending into separate lending and subsidy components.

Lending is not the only context in which opportunity costs can differ from accounting costs and disaggregation becomes useful. The same situation arises anytime the government offers an asset for a below-market rate. If the government considers selling oil from the Strategic Petroleum Reserve at a discount, for example, it's useful to view that sale as two distinct choices. The first is to sell oil from SPRO. The second is to give select buyers a special discount.

A similar issue arises in proposals to create cap-and-trade systems to limit emissions of carbon dioxide and other pollutants. Under these proposals, the government would create allowances to emit a limited amount of the targeted pollutant. It might then give some of the allowances away for free and sell others at auction. In evaluating such proposals, the Congressional Budget Office (2009) recognizes the opportunity cost of free allowances. Suppose legislation would create tradable carbon allowances worth $900 billion, with 1/3 slated to be auctioned and 2/3 to be given away free. CBO won't simply record this proposal as a net fiscal gain of $300 billion, the proceeds from selling a third of the allowances. Instead, it would disaggregate the proposal into its constituent pieces: (a) a $900 billion fiscal gain from mandating the allowances, (b) $600 billion in new spending from giving them away, and (c) a net fiscal gain of $300 billion. This makes clear that giving the allowances away is effectively $600 billion in spending. This is exactly how I propose that we budget for subsidized lending programs.

Measuring Subsidies

Disaggregating lending returns requires that budget analysts be able to estimate the subsidies provided by loans and guarantees. To do so, they need a benchmark of what an appropriate return would be.

It's tempting to suggest that private lending rates be used as that benchmark. That approach would identify all instances in which borrowers benefit from federal lending. But that approach has a serious flaw: not all lending markets are fully competitive. As an extreme case, suppose that a loan shark manages to stifle competition in a specialty lending market and charges 20 percent interest on our example loan. If the government offers the same loan at 19 percent, we would not say the borrower is receiving a 1 percent subsidy. We would say that the government is a slightly nicer loan shark earning a healthy profit.

The right benchmark is the rate that a competitive private lender would charge. That is what analysts estimate when they look to financial markets to determine how cash flows and risks are priced. Bonds, loans, and complex debt securities trade actively in financial markets, revealing how investors value and price risks and potential returns. If the loan shark bundled together his 20 percent loans and sold them as a security on financial markets, investors in our example would be willing to accept a 5 percent expected return. That rate, not the interest rate set by the loan shark, is the right benchmark for identifying and measuring subsidies because it is the rate of return that

the government could otherwise earn by taking on this risk. Expected returns uses that market rate as the benchmark for identifying and measuring subsidies.

To estimate subsidies, budget analysts can thus look to financial markets for evidence about how risks are priced, much as CBO does today in preparing its fair value estimates. For large lending programs, the government could also go step further and sell a portion of its loans into public markets. Fannie Mae and Freddie Mac already do this with some of their securities. Market prices would provide important evidence about the real value of government loans and guarantees.

5. Budgets Should Apply the Same Principles to Equity Investments

This section will argue that the same principles should apply to budgeting for equity investments. Key points include:

- Lending programs often include equity elements. For example, loans and guarantees provided to airlines after 9/11 and to banks through TARP often included warrants, not just interest payments. Warrants should be valued in those transactions just like the underlying loans.

- Federal budgeting for equity investments is remarkably inconsistent. In some programs, equity investments are scored using cash accounting. An equity investment thus look extremely expensive. In other programs, they are scored as having no budget effect, similar to CBO's fair value approach.

- Equity investments are a particularly important issue for the Social Security Trust Fund. There have been many proposals to invest part of the Trust Fund in publicly-traded stock. Applying FCRA to these investments, as some observers recommend, would lead to undesirable effects. FCRA would record enormous immediate gains, for example, if a significant portion of the Trust Fund were invested in stocks.

6. Conclusion

In recent years, the debate over budgeting for lending programs has been trapped in an intellectual cul-de-sac. CBO and its allies correctly argue that current practice distorts budgeting by concealing the subsidies in lending and by making it appear that loans generate instant, spendable fiscal gains. Defenders of current practice rightly respond that CBO's fair value alternative violates fundamental budget norms by

including a non-fiscal cost—the cost of bearing financial risk—in the budget. Those criticisms are all valid. Credit reform and CBO's fair value approach are both flawed.

Two simple innovations can resolve this debate and create a rational basis for budgeting for loans, guarantees, and equity investments. First, the budget should spread the returns to lending over time, as they occur, rather than pretending that they occur instantly at origination. Second, the budget should distinguish the potential returns to lending (or any investment) from the subsidies provided to beneficiaries. Lawmakers should particularly focus on the subsidies. By adopting expected returns and disaggregated budgeting, policymakers can create a transparent, fair, and accurate approach to budgeting for loans, guarantees, and equity investments.

Appendix A: Budgeting for Loan Guarantees

Guarantees make up most of federal credit activity. In a typical guarantee, the government charges an up-front fee in return for covering any future defaults. If the lending market is sufficiently competitive, the value of the guarantee less any fees is passed on to borrowers. By setting the fee below the guarantee's market value, the government can thus reduce borrower interest rates.

Suppose the government wants private lenders to charge borrowers 5 percent on our example four-year loan, rather than the market rate of 6 percent. If the lending market is sufficiently competitive, the government could fully guarantee the loan in return for a $94 up-front fee. Under cash budgeting, this loan would appear as generating a $94 inflow in the first year, followed by $10 in expected outflows each year to cover defaults. The net fiscal gain would be $54. (This is the same as the $60 earned on the below-market direct loan except for the time value of money. If desired, cash budgeting could be adjusted to report identical, lifetime fiscal effects for equivalent loans and guarantees; the same is true for expected returns and amortized returns.)

FCRA would report this guarantee as generating a $56 gain in the first year, equal to the $94 fee less the $38 net present value of expected defaults. CBO's alternative would report the guarantee as generating a $35 loss, equal to the $94 fee less the $129 market value of the guarantee at origination. In both cases, the reported effects are identical to those for the equivalent direct loan.

Under amortized returns, the guarantee would be recorded as generating a $13.5 gain annually over four years, and $54 in total.

Under expected returns, the guarantee would be recorded as generating a $35 loss in the first year—the initial subsidy to borrowers—followed by four years of gains as the guarantee's life shortens and its value declines. From the government's perspective, the guarantee is a liability. By accepting a $94 fee in return for taking on a guarantee worth $129, the government starts out behind by $35. Over time, the value of the remaining guarantee declines, yielding the equivalent of the capital gains that occur for the below-market direct loan. Expected returns ultimately shows the guarantee bringing in $54, the same as under cash budgeting and amortized returns.

Appendix B: Budgeting for More Complex Loans, Guarantees, and Investments

Expected returns and amortized returns work just as well for complex loans and investments as they do for the simple examples considered in the main text. For expected returns, analysts simply need to track the fair value over time of all the potential cash flows. For amortized returns, analysts simply need to spread the expected net returns over the principal outstanding over time.

This appendix will illustrate how they work for loans that include real world complexities such as

- Amortizing principal (rather than balloon payments at maturity)
- Fees (in addition to interest payments)
- Borrowing rates that vary with maturity (rather than constant rates)
- Warrants (in addition to interest payments and principal)

I welcome suggestions for other complexities to include.

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