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The Center On Federal Financial Institutions (COFFI) is a nonprofit, nonpartisan, non-ideological policy institute focused on federal lending and insurance activities.

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## Budgeting for Credit Programs: A Primer

\$1.4 trillion of outstanding loans were made or guaranteed by direct arms of the federal government as of the end of fiscal year 2004. These loans make a significant difference in the lives of many citizens, assisting them to attend college, buy a house, maintain a farm, expand a business, or fund other activities. Federal lenders dominate entire credit categories, making the government one of the world's largest lending institutions.

Congress and the Administration decide the size and shape of these critical programs with an eye to the projected subsidy costs contained in the federal budget. Subsidy estimates are the result of a conceptually simple process that, in practice, requires a complex series of calculations. Unfortunately, this process is ill understood by many.

This primer provides a non-technical explanation of the budget process for credit programs, organized around a series of basic questions. A companion piece will delve into conceptual issues about the process and potential improvements. (See "Budgeting for Credit Programs: Fundamental Issues," forthcoming.)

These papers assume a very basic understanding of the federal budget process in general. A novice reader may wish to consult the website for the Center on Budget and Policy Priorities ([www.cbpp.org](http://www.cbpp.org)) for their "Introduction to the Federal Budget Process." More detailed explanations are available on the [omb.gov](http://omb.gov) website, under budget documents.

The author owes a considerable debt of gratitude to Tom Stanton for his "Primer on Credit Reform" written in 1998 for the Federal Credit Policy Working Group coordinated by the Office of Management and Budget. Although it was written with a different audience in mind, numerous passages bear quotation or paraphrase. With his kind permission, I have generally not noted short quotes or paraphrases, in order to improve readability. A copy of his original work is available on COFFI's website. A number of other selfless individuals, in and out of government, helped educate me on this topic. I would particularly like to thank Barry Anderson, Doug Criscitello, Bob Kilpatrick, Robert S. Seiler, Jr., Arthur Stigile, and Courtney Timberlake. Any mistakes, of course, are my own.

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## Chapter One: Structure of Federal Credit Program

### How is the government involved?

The federal government has helped borrowers to obtain loans since the early days of the Republic. However, most of the large programs stem from the New Deal, particularly from subcomponents of the Reconstruction Finance Corp. that became their own agencies after the RFC was abolished.

The government currently provides credit assistance through many Cabinet departments, independent agencies, and government corporations. (For simplicity, all will be referred to as “credit agencies.”) Federal credit programs generally are intended to meet specific social and public policy objectives by providing access to credit to borrowers who cannot obtain loans from the private sector at reasonable rates. Credit programs assist borrowers through two principal methods: direct loans and loan guarantees.

### How does direct lending work?

Direct loans are funds disbursed by a credit agency directly to borrowers, under contracts that require repayment of the funds, with or without interest.

### How do loan guarantees work?

Other programs assist borrowers in securing credit from the private sector by extending loan guarantees or credit insurance. Lenders originate and service the loans and the federal government guarantees payment to the lenders if borrowers default. Often, there is a risk-sharing arrangement where only a portion of any loss is covered by the guarantee. In most cases, the government takes over the bad loan and attempts to recover as much as possible from the borrower. In other situations, the lender performs this function and bills the government for the net loss.

A few guaranteed loan programs, such as guaranteed student loans and the Department of Agriculture’s farm operating guarantees, also provide interest rate “buydowns.” Lenders agree to lower the rate charged to borrowers, in exchange for compensating payments from the government.

### How does the government choose between direct loans and guarantees?

The government can usually choose whether to set up a new credit program on the basis of direct lending or guarantee issuance. Either approach can accommodate a wide variety of choices for eligibility criteria, level of interest rate charged to the borrower, and contractual terms, such as the

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maturity of the loans. The government absorbs the credit risk, either directly, or by compensating lenders for loan losses through the guarantee mechanism.

One difference is that the guarantee structure allows risk-sharing with private sector lenders, although even this could be mimicked to some extent by buying insurance for a portion of the government's direct lending. Another is that direct loan programs tend to have more lenient terms in general than do government-guaranteed loans, although this is not directly determined by economic or legal differences between the approaches.

There are a number of more subtle advantages and disadvantages of each approach that help determine which method is used. Additionally, politics and ideology enter into the picture. The politics is situational, while the ideological influences are a bit more predictable. Conservatives tend as a rule to favor cooperation with the private sector and liberals tend to prefer direct government lending. These tendencies are by no means absolute. For example, the government's policy of favoring guarantees over direct loans, expressed in OMB Circular A-129, has been in effect during recent administrations of both parties. "Budgeting for Credit Programs: Fundamental Issues" will discuss the pros and cons of the two approaches in greater detail.

It is worth mentioning that there are other ways the government assists borrowers. In some cases, it guarantees the interest payments on a bond issued by a borrower. In another instance, the Small Business Administration (SBA) guarantees the timely payment of interest and principal on pools of SBA-guaranteed loans. These, and other forms of credit enhancement that are theoretically possible, are governed by the budget rules that are illustrated in this document with examples of direct and guaranteed loans.

## Chapter Two: Overview of Budgeting for Credit Programs

### How does the federal budget show credit programs?

Most federal credit programs intentionally operate at a loss, providing a “subsidy” to the borrowers. The federal budget projects the annual cost by forecasting the loss from a fiscal year’s approved lending and by separately budgeting for administrative expenses. This differs sharply from virtually all other programs, which use the annual cash disbursement as the budget cost.

### Why aren’t the credit programs on a cash basis?

Until 1992, the budget cost for credit programs was simply the expected amount of cash paid out, minus cash received, but this simplistic approach created major distortions in government decision-making. For direct loans, lending money appeared equivalent to providing an outright grant to the recipient. This ignored the fact that the government expects money back, primarily in the form of principal and interest payments. The bias caused by ignoring this essential fact tended to wash out for programs that were in a steady state, as repayments of old loans acted as receipts to offset the costs of disbursements on new loans.

However, sensible policymaking was hindered in a number of ways by budget figures that ignored the underlying economic reality. The problems stemmed from the strong political incentives to minimize budget costs in the near-term, particularly the first year, even if long-term costs were increased. Three distortions stand out:

**There was a significant disincentive to expand even worthy direct loan programs.** The new outlays would hit the budget in the politically critical first year, while the offsetting repayments would be years in the future.

**Incentives existed to destroy economic value** by taking certain actions that raised a great deal of cash up-front. For instance, packaging government loans together and selling them to the private sector at a distinct economic loss would still reduce the near-term budget deficit by bringing in cash. (This is not to say that loan sales were necessarily uneconomical, but rather to point out a structural bias.)

**Cash budgeting heavily tilted the playing field in favor of loan guarantees,** even when direct loans made more programmatic sense. Loan guarantees were essentially costless in their first year, since defaults rarely occur that quickly. They would even show a profit if there were an up-front guarantee fee that more than covered administrative expenses.

A related structural problem stemmed from the use of “revolving funds” as the basis for many loan programs. Congress would start a program with an appropriation to its revolving fund and this would be used to fund loans. Loan repayments and interest went back into the revolving fund and could be lent out again, without further Congressional action. Many advocates of credit reform felt that this excessively limited Congressional scrutiny and control of loan programs.

## What are the governing rules?

The Federal Credit Reform Act of 1990 (FCRA) was enacted as part of the Omnibus Budget Reconciliation Act of 1990. It was intended to improve the measurement of the budgetary costs of Federal credit programs. A principal goal was to put direct loans, guaranteed loans, and direct grants on an equal footing, so that budget scoring conventions would not be a reason to choose which type of program to implement.

FCRA is supplemented by guidance from the Office of Management and Budget (OMB), especially OMB Circular A-129, "Policies for Federal Credit Programs and Non-Tax Receivables" and section 185 of OMB Circular A-11, "Preparation, Submission and Execution of the Budget." The Federal Accounting Standards Advisory Board (FASAB) provides more specific accounting guidelines in Statement of Federal Financial Accounting Standards (SFFAS) 2.

## How are the budgetary costs defined?

FCRA recognized that the true cost of a loan or guarantee is not captured by its cash flows in any one year. The true cost is the net value of its cash flows over the life of the loan. This value is the "subsidy cost" of the loan or guarantee, which is the "net present value" (see below) of the expected cash inflows and outflows over the life of the loan.

Therefore, the subsidy cost is defined by FCRA as the "estimated long-term cost to the Government of a direct loan or loan guarantee, calculated on a net present value basis, excluding administrative costs." Administrative costs remain on a cash basis and are totally excluded from the subsidy calculations. It is important to remember that the total economic cost is divided in the budget into these two components: administrative costs and credit subsidy.

## What is "net present value"?

There are many times when one needs to compare payments or receipts that fall into different time periods. Economists, accountants, and financial markets generally calculate "present values" to make these comparisons. A dollar received today is worth more than one received in ten years, principally because one could earn interest and have considerably more than one dollar in ten years. (Economists and others also note other aspects of human nature that lead us to prefer value today over value in the future.)

Each payment or receipt is "discounted" to an equivalent value in the present moment (present value) by using (1) a factor based on the number of years before money is exchanged and (2) an interest rate called a "discount rate." Decisions can then be based on the "net present value," calculated by subtracting the present value of cash payments from the present value of receipts.

For example, a payment of \$1,000 in 2 years, discounted at 5%, has a present value of \$907. It tends to be easier to understand this by reversing the process. If we put \$907 today into a savings account earning 5% per year, it will grow to a value of \$1,000 in 2 years. That is, \$907 earns \$45 in interest at 5% and totals \$952 at the end of year 1. \$952 earns \$48 in interest and equals \$1,000 at the end of year 2. The mathematics can become complicated, but the logic

always remains that of a present value growing at an interest rate for some number of periods to equal the ultimate target amount.

FCRA applies this net present value concept to calculating the credit subsidy. For example, if the estimated present value of a direct loan's cash outflows equals \$100 and the present value of its inflows (such as, repayments, interest, and fees) equals \$90, its subsidy cost is \$10. The "subsidy rate," the cost divided by the loan volume, would be 10%. If an agency proposed to make \$2,000 of these loans, it would seek an appropriation of 10% of the desired face value, or \$200.

## How is the discount rate chosen?

The level of the discount rate is critical to calculating the net present value of future cash flows. Broadly, there are two ways to choose this rate when applied to loans. It can be: (a) the interest rate a prudent lender would demand on a specific loan or (b) the cost of money to the lender. The first approach produces different discount rates for different borrowers, reflecting their relative risks. The second approach discounts everyone's loans the same.

FCRA chose the second method and uses the government's cost of money as the discount rate for all loans and loan guarantees. The rate employed is that of "zero coupon" Treasury bonds with the same maturities as the loan cash flows. (A zero coupon bond has a single principal payment at maturity and pays no interest.) Note that a program that lends to borrowers at the Treasury rate and has no defaults would have zero subsidy cost for budget purposes. This can cause confusion with common usage, where the difference between the rate available in the private market and that from the government program may be referred to as a subsidy.

The choice of using the cost of funds as the discount rate differs from that in the private sector and remains controversial. It is discussed in detail in the companion paper, "Budgeting for Credit Programs: Fundamental Questions."

## How are discount rates applied in practice?

The expected annual cash flows for a group of loans are discounted at the Treasury rate to determine the cost in present value terms. OMB provides agencies with the Treasury discount rates to be used in subsidy rate estimates, consistent with the Budget's overall economic forecast for the coming fiscal year.

The rate remains unchanged throughout the period that the government reviews loan applications and commits to making or guaranteeing loans. The theoretically purer approach of using the current interest rate at the time that each loan is disbursed would be prohibitively complicated to administer.

The effect on subsidy costs of changes from forecast interest rates and in technical assumptions are captured after obligation or commitment, through agencies' annual subsidy reestimates (see below).

## What “long-term costs” are analyzed?

The subsidy is calculated as the net present value of the net inflow or outflow for each year resulting from this year’s new loans and guarantees. It also includes the effects of modifications to those of previous years, such as a reduced interest rate or longer repayment provisions for a troubled borrower. All significant cash effects are estimated, including:

### **Inflows**

- Principal repayments, including prepayments
- Interest payments
- Loan and guarantee fees
- Recoveries on bad loans
- Proceeds on loan sales

### **Outflows**

- Loan disbursements
- Purchases of bad guaranteed loans
- Liquidation expenses on bad loans
- Interest supplements or other payments to lender

## How are the government’s funding costs factored in?

Virtually all major lenders are intermediaries that borrow money from depositors or the financial markets and lend it on to borrowers. Their biggest lending expense is the cost of obtaining funds. The federal government is no exception, funding its credit programs indirectly from the proceeds of Treasury bills, notes, and bonds. The Treasury Department raises funds and then provides financing for the credit agencies. We assume here, as FCRA implicitly does, that federal financial activities are financed solely by borrowed funds and not with taxes or other revenue.

The net present value techniques automatically factor in the cost of funds, by using the appropriate Treasury rate as the discount rate. For example, assume a program lends \$100 million and receives the same amount back in one year, without loan defaults or other complications. If the 1-year Treasury rate is 5%, then the inflow in a year will be worth approximately \$95 million, for a net cost of \$5 million. This will be shown as the subsidy for the program year.

## What happens if the net costs are negative?

A small number of programs, such as the Federal Housing Authority’s Mutual Mortgage Insurance program, frequently show a negative subsidy cost. This represents a profit, ignoring the effects of administrative costs, and effectively acts as revenue for budgetary purposes, just as taxes or other receipts do. It is worth noting that a program with a negative subsidy for budget purposes may still provide a subsidy in an economic sense. Administrative costs, which are not included in subsidy calculations, may more than offset the negative subsidy. Plus, the borrower may receive an interest rate considerably below market levels, although higher than the rate at which the government borrows.

## What happens when the subsidy estimates are wrong?

In the words of a Congressional Budget Office (CBO) report from 2000:

From the beginning of credit reform, many budget analysts expressed concern about the ability and willingness of agencies to estimate subsidies accurately. To ensure that the estimates of subsidy costs in the budget are consistent with subsequent cash flows, and to inform policymakers about the performance of federal loans, the Credit Reform Act requires agencies to update those estimates periodically for outstanding direct loans and loan guarantees. Those revisions, or reestimates, appear in the President's annual budget submission ... and other budget documents.

For most credit programs, funding for new credit subsidies is limited in annual appropriations acts. In contrast, there is an automatic indefinite appropriation to cover upward reestimates to the subsidy. In effect, upward reestimates are free. However, they could indicate that the subsidy rate for new loans should be increased. This, in turn, would reduce the amount of credit that the agency could extend, unless it received additional funding from Congress.

Reestimates can also be downward, meaning that the agency budgeted too much for the subsidy cost when it made or guaranteed a loan. The agency "trues up" by transferring some of the original subsidy, plus interest, back to a budget account for the credit program. These amounts are not available to the agency and are instead transferred to the General Fund of the Treasury.

## Don't agencies have an incentive to underestimate subsidy costs?

Critics argue that the automatic nature of the appropriations authority for reestimates gives agencies a "free pass" to lowball their initial estimates. They can lend more up-front and revise their cost estimates later, in a less politically sensitive way. Others counter that the estimation process is difficult and agencies should not be punished for honest misestimates.

The CBO report reviewed the history of subsidy reestimates from 1993 through 1999. As of that point in time, the fairly muddied data available did not indicate a significant bias towards initial underestimates. This important issue of estimation bias will be discussed in greater detail in "Budgeting for Credit Programs: Fundamental Questions."

## How are allowable loan levels determined?

Congress may place specific limits on the total loan obligations or guarantee commitments that can be made by a program. In addition, the appropriated subsidy level and the estimated subsidy rates of different loans may combine to produce a lower practical limit, according to the formula: Subsidy Budget Authority divided by Subsidy Rate = Supportable Loan Level. For example, if an agency receives a subsidy appropriation of \$50,000 and the program's subsidy rate is 5%; the agency can obligate or commit \$1,000,000 in loans or guarantees.

As subsidy rates change, program managers must also anticipate changes in the program's loan levels. Each million dollars of subsidy implicitly provides funding for a specific number of loans. If, for example, the subsidy rate *decreases* to 4%, that \$50,000 subsidy appropriation will allow the

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agency to obligate or commit \$1,250,000, an increase of \$250,000 in loans. If the average loan size for this program is \$5,000, the program can serve 250 borrowers (\$1,250,000 divided by 5,000), fifty more than if the program had a 5% subsidy rate. If, on the other hand, the subsidy rate *increases* to 6%, that \$50,000 appropriation will only support \$833,333 and 166 borrowers.

## Chapter Three: Detailed Credit Subsidy Calculation Process

### Who makes the subsidy estimates?

FCRA requires that OMB act as the Executive Branch’s coordinator for subsidy estimates and that it consult with the credit agencies. It further authorizes OMB to delegate authority to the agencies, provided that written guidelines are provided and certain other procedures followed.

In practice, the cash flow estimates initially are made by the credit agencies. These are discounted back to present values by using discount rates that OMB builds into a “credit subsidy calculator” provided to the agencies. OMB then provides comments and guidance on the agencies’ estimates. The agency and OMB work out any differences, with the final results dependent both on the technical facts and on the legal and practical level of independence of the credit agency. Ultimately, however, OMB has the legal authority to override the estimates provided by the credit agencies.

### How are the cash flow estimates made?

Credit agencies are charged with estimating the future cash flows using the best available information and judgment. Given the underlying differences between the credit programs, very different modeling approaches can be used by different agencies. However, all credit agencies must comply with guidance from the Federal Accounting Standards Advisory Board for their financial statements. The reporting of subsidy estimates on financial statements is controlled in part by SFFAS 2, Accounting for Direct Loans and Loan Guarantees.

Three points of guidance are central:

- Use of comprehensive information about the historical performance of classes of loans in estimating future cash flows.
- Clear documentation of how default rates and other inputs to the model were determined, including an explanation of judgmental factors.
- A ranking of acceptable methods for subsidy estimation: (1) econometric models; (2) historical averages; and (3) “informed opinion.” Agencies are urged to move from informed opinion towards econometric models.

### What is an econometric model?

SFFAS 2 uses econometric model to refer to any quantitative model predicting cash flows by using historical relationships between economic inputs, such as growth in GDP or levels of interest rates, and loan behavior, such as defaults or prepayments. Some models are very simple, while others are the product of complex analyses that yield statistically significant results.

## How does that differ from “historical averages”?

Historical averages are just that: an average value for the historical period analyzed. Econometric models derive cause-and-effect relationships based on historical experience to make more refined predictions. For example, the historical average of default rates may be 5%, but may tend to be at 3% in a year when market interest rates are low and economic growth is good.

## To what level of detail are subsidies tracked?

Budgeting for credit programs extends down to the level of tracking annual “cohorts” of loans over the entire life of these loans. The dictionary definition of a cohort is “a generational group,” such as students who graduate in a given year. Here, it is used to mean a particular program’s total group of direct loans or loan guarantees that are funded by one fiscal year’s appropriation, regardless of whether the loans are disbursed in subsequent years. (Cohorts funded with multi-year or “no-year” appropriations are defined by the year of loan obligation.) For example, one cohort would be the Small Business Administration’s Disaster Program direct loans funded through subsidy appropriations for FY 1998.

The best estimate of the ultimate cost of a group of loans varies over time. Cash flow estimates are revised for changing economic conditions and technical assumptions, such as delinquency and default rates. Therefore, the performance of each cohort must be tracked separately so that they can be compared with those of the original subsidy estimate.

While converting agency accounting systems in order to track cohorts proved difficult in a number of cases, it provided many agencies with valuable management information and insight on where to devote their efforts, such as identifying in what years borrowers appear to be at highest risk of default. Depending upon the accuracy of the information that agencies use, the tracking of cohorts also may enable agencies to track whether their portfolio performance is improving over time.

## What are the specific budget accounts?

Each credit program has an on-budget “program account” and a non-budgetary “financing account.” The program account tracks subsidy costs and administrative expenses, the two categories that are viewed as true economic costs that ought to be reflected on the federal budget. The financing account tracks actual cash flows, such as the lending and repayment activity. Through this account structure, policymakers are focused on the net cost of loan activity, not the incidental cash inflows and outflows.

Programs with outstanding loans or commitments from before FY 1992 maintain an on-budget “liquidating account” to track activity on those loans on a cash basis.

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### **Program account**

This is an “on-budget” account that records the budget authority and outlays for the subsidy cost and the expenses of administering the program. When a loan or guarantee is committed, the amount of the subsidy associated with that loan or guarantee is charged to the program account and credited to the financing account.

The program account may have unused budget authority at the end of the fiscal year, if obligations or commitments are less than the appropriated level. With a few exceptions, the unused amounts will expire and cannot be carried over for the program to use later. The account cannot record activity in excess of amounts appropriated by Congress, except by serious mistake, since this would violate the Anti-Deficiency Act and bring severe legal penalties. Entitlement programs, such as the housing guarantees provided by the Veteran’s Administration, have mandatory appropriations that will automatically allow higher than expected activity.

### **Financing account**

This is a non-budgetary “means-of-financing” account. It records the financing cash flows, such as loan disbursements, borrowings from Treasury to fund loans and other cash needs, repayments from borrowers, fees, and interest payments. It also receives subsidy transfers from the program account. The subsidy transfers, together with the other cash flows, should be just enough to keep the financing account in a break-even position.

If loans do not perform as expected, credit reform provides for annual reestimates of subsidies that are intended to keep financing accounts in a break-even position (see below.)

### **Liquidating account**

This account records the cash flows of pre-1992 loan obligations and commitments on a cash basis, just as they were measured prior to FCRA. At this point, 12 years after implementation of FCRA, virtually all cash flows are loan repayments and interest or guarantee claims and recoveries. Balances in these accounts will gradually reach zero as all these prior loans mature, default or otherwise terminate. No subsidy calculations are performed for these accounts.

## How do the program and financing accounts interact?

The two examples below illustrate the most straightforward transaction, the making of a loan or loan guarantee and its subsequent repayment or default.

### **Direct Loan example**

Assume a federal agency disburses a direct loan of \$100 whose subsidy cost is \$10.

- The program account outlays the \$10 to the financing account.
- The financing account takes this \$10, borrows the other \$90 from Treasury, and disburses \$100 to the borrower.
- Over time, the financing account will receive cash flows from the borrower, including interest and loan repayments.

If the loan performs as expected, borrower repayments will enable the \$90 borrowed from Treasury to be repaid over time with interest and the financing account stays a “break-even” operation as intended. In practice, individual loans will perform better or worse. However, the aggregate of loans of this type is expected to perform this well.

### **Loan Guarantee example**

Assume a \$100 guaranteed loan whose subsidy is \$10. The program account outlays the \$10 to the financing account when the private lender provides the loan to the guaranteed borrower. This subsidy is essentially a “loss reserve” that earns interest, credited by the Treasury department. If the aggregate guarantees perform as expected, the subsidy will grow to equal the claim payments owed when loans default, and again the financing account breaks even.

## What are the mechanics of subsidy reestimates?

The CBO report referenced earlier explains the mechanics as follows:

For each federal credit program, subsidy reestimates are reported in the budget as increases or decreases in outlays at the time of the reestimate. Upward reestimates raise the cost of credit subsidies and thus lower the budget surplus (or increase the deficit). Downward reestimates reduce credit subsidies and thus increase the budget surplus (or lower the deficit) when the reestimate is made. In general, agencies must recalculate reestimates annually for each credit cohort – all of the loans or guarantees that a program obligates in a given fiscal year. Ideally, reestimates are based on new information, some of which comes from repayment experience as the loans age.

All credit reestimates have at least two components: revisions for errors in interest rates and reestimates for changes in default rates or other technical assumptions. Interest rate reestimates

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correct the projected subsidy for the difference between the discount rate (the interest rate used to calculate the present value of a future stream of receipts and spending) that was assumed in the initial estimate and the actual rate prevailing when the credit is disbursed. In most cases, interest reestimates are first made when 90 percent of a loan cohort has been disbursed. Final interest reestimates are made when disbursement is complete, which can be several years later. The [OMB] requires agencies to use its forecast of interest rates in formulating initial subsidy estimates. Thus, agencies have no control over the initial interest rate assumption or the errors that may result from it.

Technical or default reestimates correct for borrowers' actual performance in repaying loans. Those revisions adjust the subsidy estimate for unanticipated changes in delinquencies, default rates, recoveries, prepayments, and receipts from fees. Some credit programs require additional adjustments for changes in the interest rates that borrowers pay. (Student loans, for example, are made at variable interest rates, subject to a cap.) For most programs, technical or default reestimates are prepared at the end of each fiscal year; however, OMB may permit agencies to make them less frequently.

## Chapter Four: Estimating Loan Cash Flows

### What factors affect loan cash flow estimates?

Ideally, cash flow estimates reflect all of the important factors that affect each unique group of loans in each loan program, including idiosyncratic factors. Stanton describes the factors as follows:

Loan cash flow estimates start with those due under the contractual loan terms, and then adjusting for risk. Factors that affect the contractual cash flows for direct loans include:

1. the interest rate charged to borrowers (i.e., the borrower rate);
2. the term of the loan (maturity) and how often payments are due;
3. fees collected, upfront and/or annual;
4. grace periods or deferments of either principal and or interest; and
5. other “borrower rights” regarding repayment and prepayments.

Factors that affect the contractual cash flows for guaranteed loans include:

1. guarantee fees charged to borrowers or lenders;
2. the percent of the private loan that is covered by the Federal guarantee if a borrower defaults;
3. whether the government takes back the loan or collateral if a borrower defaults or whether a private lender is responsible for collecting; and
4. “borrower rights” regarding repayment and prepayments.

Risk adjustments to these contractual cash flows include:

1. the default rate; and
2. the recovery rate.

These risk adjustments are heavily based on historical data from similar loans to similar borrowers. Some agencies have loan performance data covering the last ten years or more, while some have essentially no cohort data on loans made before credit reform. In these cases, or when a new loan program is created, analysts can use performance data from similar private sector loans, or take clues from the interest rate that private lenders charge for similar loans (such as an adjusted bond rate for that industry). Subsidy estimates for Federal export loans have used foreign country bond ratings in their risk adjustments as a proxy for measuring country risk.

The timing of cash flows is critical to the subsidy estimate; for example, a key component is estimating when loan defaults and recoveries will occur. For direct loans, delinquent payments can delay cash flows and contribute to an increase in the subsidy rate. Because annual cash flows are discounted in determining subsidy costs, government losses or gains in year ten of a

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loan have less of an effect on subsidy rates than losses or gains in year two (due to the “time value of money”). Therefore, administrative actions that cause recoveries to occur sooner rather than later by even a year can considerably reduce subsidy costs. For example, if a 5%, 30 year direct loan program experienced a 15% default rate and recoveries were historically 40% the subsidy rate ... is 16.1 % [as calculated in supplemental material not provided here]. If credit managers increased recoveries from 40% to 60%, through more rapid property disposition, the subsidy estimate would drop to 14.1%.

Cash flow estimates must also take into account unique program characteristics, particularly those for resolving troubled or defaulted loans. Some direct loan programs provide extensive borrower rights, such as loan interest rates that vary with borrower income, payment “moratoria” or grace periods on delinquent loans, and loan write-downs to keep borrowers current. Many guaranteed loan programs take over ownership of the loan or collateral when a borrower defaults, and are responsible for foreclosing on the property, while others require the private lender to foreclose and then submit a claim payment for the Federal share of any net losses. These differences in procedure can make significant differences in annual cash flows and subsidy estimates.

### How do these variables usually affect subsidy levels?

The tables on the following pages illustrate the typical relationship between certain key variables and expected subsidy levels. The tables are taken directly from Stanton.

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Components of Direct Loan Credit Subsidy Estimate

PROGRAM FACTORS AFFECTING CONTRACTUAL CASH FLOWS	IMPACT
• Borrower Interest Rate	↑ □ as interest rate increases, subsidy decreases
• Loan Maturity	↑ ↑ as maturity increases, subsidy increases
• Upfront Fees	↑ □ as upfront fees increase, subsidy decreases
• Annual Fees	↑ □ as annual fees increase, subsidy decreases
• Grace Periods	↑ ↑ as grace period increases, subsidy increases

PERFORMANCE FACTORS AFFECTING CONTRACTUAL CASH FLOWS	IMPACT
• Prepayment Rate	↑ ↑ as prepayment rate increases, subsidy increases (assuming interest is above Treasury Rates)
• Delinquency Rate	↑ ↑ as delinquency rate increases, subsidy increases
• Default Rate	↑ ↑ as default increases, subsidy increases
• Timing of Defaults	Earlier ↑, Later □ the earlier default occurs, subsidy increases
• Recovery Rate	↑ □ as recovery rate increases, subsidy decreases
• Timing of Recoveries	Earlier □, Later ↑ the earlier the recovery, subsidy decreases
• Borrower Characteristics	Low risk □, High risk ↑ the lower the risk of the borrower, subsidy decreases

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Components of Loan Guarantee Credit Subsidy Estimate

PROGRAM FACTORS AFFECTING CONTRACTUAL CASH FLOWS	IMPACT
• Borrower Interest Rate	None, unless rate is so high that it increases default risk
• Loan Maturity	↑ ↑ as maturity increases, subsidy increases
• Upfront Fees	↑ □ as upfront fees increase, subsidy decreases
• Annual Fees	↑ □ as annual fees increase, subsidy decreases
• Percent of Loan Guaranteed	↑ ↑ as guarantee percentage increases, subsidy increases (w/ default rate greater than 0)

PERFORMANCE FACTORS AFFECTING CONTRACTUAL CASH FLOWS	IMPACT
• Prepayment Rate	↑ □ as prepayment rate increases, subsidy decreases
• Default Rate	↑ ↑ as default rate increases, subsidy increases
• Timing of Defaults	Earlier ↑, Later □ the earlier default occurs, subsidy increases
• Recovery Rate	↑ □ as recovery rate increases, subsidy decreases
• Timing of Recoveries	Earlier □, Later ↑ the earlier the recovery, subsidy decreases
• Borrower Characteristics	Low risk □, High risk ↑ the lower the risk of the borrower, subsidy increases

## Chapter Five: Beyond the Budget

### Does any of this matter outside of the budget process?

Better measurement in the budget process can encourage better performance at the credit agencies themselves, as well as being a major aid in decision-making by Congress and the top levels of the Administration. In the words of Stanton:

Credit reform has been portrayed as strictly an accounting change, an innovation in budgetary treatment intended to measure and record more accurately the cost of federal loan programs. But one of the most revolutionary aspects of this accounting change is that it also captures changes in behavior, not just of borrowers, but also that of credit program managers. An extra phone call to a delinquent borrower, a negotiation session with a bank that lowers the federal guarantee on a loan by 10 percentage points, an improvement in an automated accounting system that produces faster, more accurate management information - all can affect the cost of a loan program. Program managers have long known that these kinds of actions have a real effect on program costs, but it was not until credit reform that the effects of credit management actions could be reflected directly in the cost of loans themselves, and not just as entries in a salaries and expenses account.

With an understanding of basic credit reform principles and methodology, agency officials can make better-informed decisions about potential legislative, regulatory, and administrative reforms to loan programs. They can compare the savings possible from improvements in each stage of the credit cycle: from loan underwriting, to loan servicing, to foreclosure and collateral disposition reforms. They can quantify how these reforms would affect their loan subsidy appropriation request, the different amount of loans they can offer with a given amount of subsidy budget authority, and the budgetary savings that could be shifted to other programs (or the additional cost of more liberal loan terms). Credit reform accounting puts the spotlight on credit management, helps add focus to the performance measures that program managers review and are accountable for, and recognition of the budget impact of management changes.

### What can agencies do to affect subsidy costs?

Agencies can influence their subsidy costs, either by encouraging helpful legislation or by making administrative changes within their own control. Stanton again provides a useful discussion:

A program's authorization and appropriations language generally dictates certain program terms and conditions, and often determines how much administrative authority an agency has to implement changes affecting subsidy costs. Agencies may want to propose legislative changes in order to serve a different borrower population or to increase or decrease the amount of subsidy extended to borrowers. They may seek to reduce subsidy rates in order to further leverage credit reform

subsidy authority and make more loans. Agencies may also alter program operations for other reasons, such as to improve servicing or reduce administrative costs, and once in place, these actions can eventually impact subsidy rates.

### **Legislative Changes**

Legislation is generally required to change target populations and loan terms. For example, legislation may require a higher percentage of annual loans to be directed to low-income borrowers, which could increase the expected delinquency and default rates, or it could specify that borrower interest rates should be a constant percentage-point spread above or below Treasury rates rather than fixed permanently at a certain rate. Legislation or, for some programs, regulations can initiate guarantee fees to help defray a greater percentage of default costs. Take for example a 5 percent, ten year guaranteed loan with a 10% default rate and a 60% recovery rate; the [supplemental model, not provided here] shows a 21.6 % subsidy rate. If Congress were to enact legislation requiring the agency to collect an upfront fee of 3% of loan principal from borrowers the new subsidy rate ... would be reduced to 18.6%

When legislation changes the loan terms or expected performance of loans that have already been made, including pre-credit reform loans in liquidating accounts, it results in a “loan modification.” For example, legislation has reduced contractual prepayment penalties for some programs, increasing the government’s loss on the loans. Under FCRA, any legislation that results in a loan modification that increases loan costs must also appropriate or provide direct spending authority to cover the additional subsidy cost.

Conversely, legislation that reduces expected loan costs, such as by eliminating loan deferrals or permitting faster sales of agency inventory property acquired from defaults, is a modification that results in budgetary savings being scored to the legislation.

### **Administrative Changes**

Facing shrinking or flat credit subsidy and salaries and expenses appropriations, many credit agencies are taking administrative steps within existing authority to reduce loan costs. For example, some are improving loan underwriting through more careful screening of applicants, such as by buying commercial credit reports on prospective borrowers. Some guaranteed loan program administrators are likewise increasing their screening of lenders, tracking the performance of loans originated by each lender to weed out lenders who originate loans with higher than average default rates. The Department of Education case study [not provided here] on credit management improvements and the effects on budget estimates illustrates how terminating high-default schools’ eligibility to participate in the program, has reduced the defaults occurring early in a loan’s life.

Other guarantee programs are more closely matching the percentage of private loans they guarantee with borrower and lender requirements: if a lender is willing to extend a loan on the basis of an 80 percent Federal guarantee, an agency can reduce its subsidy cost by not providing a 90 percent guarantee. The subsidy rate changes to reflect the changes in default

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rate that result from the increase in private risk sharing. Using our guaranteed loan example, if the guarantee percentage were reduced from 100% to 80% the subsidy rate would experience a modest reduction from 21.6% to 20.7%.

Improved loan servicing also can reduce subsidy costs, often while improving customer service to borrowers. For example, when USDA's single family housing loan program centralized its servicing, an added expected benefit is a reduction to its subsidy costs in addition to offering the ability to escrow borrower real estate taxes and insurance costs. Borrowers in this program now have better access to their loan data, without worrying about setting aside large lump-sum payments; the agency now has better management information regarding delinquencies and is following up faster on delinquent payments.

Contacting delinquent borrowers promptly is a proven method to reduce default rates. A related benefit is that the agency also can reduce its salaries and expenses for loan servicing staff, which cannot be reflected in subsidy rates but could yield annual savings in required salaries appropriations or a redirection of servicing staff to other critical areas.

Many programs show potential for improvements in their "back-end" servicing of defaulted loans and property acquired through default. The cash flows associated with honoring guarantee claims, maintaining and selling acquired property can have the greatest impact on the subsidy estimate. Increasing the speed of recoveries through well designed loan asset sales can accelerate sale proceeds to the government while reducing holding and maintenance costs (maintenance costs are included in subsidy estimates if they are considered "recoverable costs" that get capitalized into the property sales price).

It is important that there be open and frequent communication among agency personnel responsible for estimating loan subsidy rates, loan accounting personnel who understand loan performance data and who may be asked to perform reestimates of subsidy rates, and program experts who manage the program and understand borrower behavior and the effects of program changes on it. This feedback between often-disparate parts of an agency is necessary to provide the most accurate subsidy rates and for program managers' understanding of how their actions affect costs.