



# Credit Subsidy Cost Estimates and the CSC2

OMB Annual Training  
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# Presentation Overview

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- What are cash flows?
- What are the different types of cash flows?
- How do I format a cash flow for the CSC2?
- Examples
- Questions?



# What are cash flows?

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- Reflect cash transactions to and from the government that result from direct loan or loan guarantee programs
- Used in original subsidy rate formulation, reestimates, and financing account interest
- Must be presented in a spreadsheet (Excel)
- Must be specifically formatted to be read by OMB's Credit Subsidy Calculator 2 (CSC2)



# Basic Cash Flow Components

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## Direct Loans

- Disbursements
- Scheduled principal payments (P)
- Scheduled interest payments (I)
- Defaults (P&I not received)
- Recoveries

## Loan Guarantees

- Disbursements (private lender)
- Fees to government
- Default claim payments to private lenders
- Recoveries on default claim payments



# Basic Direct Loan Cash Flow

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	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
<b>Obligations</b>	<b>200,000</b>			
<b>Disbursements</b>	<b>200,000</b>			
<b>Scheduled Principal Payments</b>	<b>50,000</b>	<b>50,000</b>	<b>50,000</b>	<b>50,000</b>
<b>Scheduled Interest Payments</b>	<b>8,000</b>	<b>6,000</b>	<b>4,000</b>	<b>2,000</b>
<b>Defaults</b>	<b>(20,000)</b>	<b>(10,000)</b>	<b>(10,000)</b>	<b>(10,000)</b>
<b>Recoveries</b>	<b>5,000</b>	<b>5,000</b>	<b>5,000</b>	<b>5,000</b>



# Basic Guaranteed Cash Flow

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	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>
<b>Commitments (Full Face Amount)</b>	<b>200,000</b>			
<b>Disbursements (Private Lenders)</b>	<b>200,000</b>			
<b>Annual Fees Received</b>	<b>1,600</b>	<b>1,200</b>	<b>800</b>	<b>400</b>
<b>Default Payments</b>	<b>0</b>	<b>0</b>	<b>(80,000)</b>	<b>0</b>
<b>Lost Fees</b>	<b>0</b>	<b>0</b>	<b>(800)</b>	<b>(400)</b>



# Types and Sources of Cash Flow Assumptions

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## Technical Assumptions:

- Contract terms (explicit)
  - Maturity
  - Borrower's interest rate
  - Fees
  - Grace periods
- Estimated factors (forecast)
  - Defaults
  - Recoveries
  - Prepayments
  - Workouts
- Methodology
  - Equations
  - Models

## Economic Assumptions:

- Discount rates
- Other

## Sources:

Technical assumptions are developed by the agency, using:

- Historical cash reports and loan performance
- Actuarial studies
- Sensitivity analysis
- Legislation or regulations
- Loan contracts and guarantee agreements

Economic assumptions are provided by OMB in preparation of the budget and the mid-session review.



# Two Types of Cash Flow Modeling

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- Loan-by-Loan
  - One loan: payments, defaults and recoveries are all attributable to one borrower
  - Default rates are usually cumulative and expressed as a percentage, multiplied by the sum of the principal and interest payment for any given year
- Portfolio
  - Many small, similar loans: payments, defaults and recoveries are attributable to many borrowers
  - Default and recovery rates may fluctuate with various subgroups within the risk category or cohort





# Formatting Budget Cash Flows for the CSC2

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- CSC2 has specific formatting requirements
  - Named Range
    - CSC2 only reads data within the named range
    - Make sure all cash flow data is included within your range
  - Keywords
    - 3 required for **ALL** cash flows
      - “Name”, “Program Type”, “Disbursements”
    - Many more for different calculations
    - Specific keywords for direct loan and loan guarantee data
  - Timing
    - **Frequency** - how often (i.e. annual)
    - **Period alignment** - at what point during the period (i.e. beginning)
    - **Starting point** (optional) - specify a starting point later than the beginning of the cohort year
  - Organized by cohort
  - Commenting out
    - 3 ways to comment out a line of data



# Guidance on Cash Flows:

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- OMB Circular A-11, Sec. 185, especially Section 185.5
  - [http://www.whitehouse.gov/sites/default/files/omb/assets/a11\\_current\\_year/s185.pdf](http://www.whitehouse.gov/sites/default/files/omb/assets/a11_current_year/s185.pdf)
- Federal Credit Support Page (<https://max.omb.gov/community/x/6gLuFQ>)
  - Credit Subsidy Calculator 2 (CSC2) User Guide
    - Section 3: “How to organize cash flows for the CSC2”
    - Appendix A: Keywords
  - Examples (<https://max.omb.gov/community/x/vRAWJQ>)
    - Direct loan example - lifecycle. This example shows all of the calculations necessary for a 2005 cohort loan for the entire lifecycle of the loan, from the initial budget subsidy estimate to the closing reestimate.
    - Direct loan examples – budget formulation. Variations on a single type of calculation (subsidy estimate) with increasing levels of complexity and different assumptions.
    - Guaranteed loan examples – budget formulation. Variations on a single type of calculation (subsidy estimate) with increasing levels of complexity and different assumptions.
    - Example cash flow organization

Note: The CSC2 and user guide can only be accessed through the MAX community by approved users in the “CSC2 Access” group. To request access email [CSC2@omb.eop.gov](mailto:CSC2@omb.eop.gov)

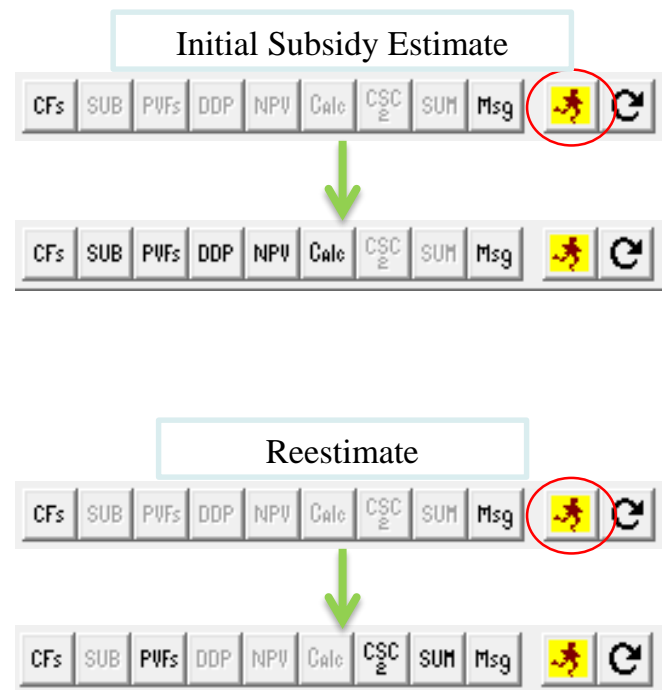


# Appendix: CSC2 Tabs / Displays

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After selecting the run icon, the relevant display buttons (depending on what calculation is being done) will change black, these correspond to the different tabs that will be created in the Excel output.

- **CFs (Source data):** Shows cash flow data similar to the way it is shown in the CSC2 input, use this tab to verify that all of the intended data was correctly recognized by the calculator
- **SUB (Subsidy and components):** Shows a summary of the subsidy calculation for initial subsidy estimates (shown in next slide). Use this tab to verify that subsidy and components are as expected (see checklist). Only relevant for budget subsidy estimates
- **PVFs (Present value factors):** Shows the discount factors used to convert future cash flows to present value. For reestimates, the SER is used to discount cash flows so display is simplified to only shows cohort SERs. Use this tab to verify that the correct discount factors/rates were used for the calculation
- **DDP (Distributions to disbursement periods):** Only relevant for initial estimates with multiple disbursement periods. Payments are discounted to the time of disbursement; this display shows the distribution of payments to disbursement periods. Only relevant for budget subsidy estimates
- **NPV (Derivation of present values):** Shows calculation of present value amounts for each cash flow type. Only relevant for budget subsidy estimates
- **Calc (Details of the subsidy calculation):** Shows detail of the subsidy calculation shown on SUB display. Only relevant for budget subsidy estimates
- **CSC2 (CSC2 data display):** Provides detailed information for CSC2 dollar reestimates and financing account interest calculations. Not relevant for budget subsidy estimates
- **SUM (Summary):** Provides summary of reestimate and financing account interest calculations, including numbers that need to be entered into MAX. Not relevant for budget subsidy estimates
- **Msg (Warning messages):** Shows warnings regarding unexpected data or items in cash flow. Use to investigate possible issues with a cash flow. Verify that any warning messages are resolved or explained





# Appendix: Components of Subsidy

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In addition to the total subsidy rate available on the “SUB” tab, the CSC2 calculates the several components

- **Financing** – present value of principal and interest as a fraction of disbursements
- **Default/Recovery** – present value of defaults + recoveries as a fraction of disbursements
- **Fee** – present value of fees as a fraction of disbursements
- **All other** – present value of all other inflows and outflows as a fraction of disbursements

Year	Subsidy components					Single effective Discount rate
	Total Subsidy	Financing Subsidy	Default Subsidy	Subsidy Reduction for Fees	All Other components	
2005	6.23	-4.19	10.42	0.00	0.00	3.2540 (C)

Credit Subsidy Calculator 2 - v1.4.2a - [CF\_directloan.xls]

CS2 version 1.4.2a  
Run date/time: Thu 06 Oct 2011 18:19:41  
Display type: Subsidy and components display  
Program name: Direct Loan Example D-1  
Description: Original Subsidy estimate  
Program type: direct loan  
Spreadsheet name: G:\CR CREW\TRAINING\New Examiner\Hands on Training 11\CF\_directloan1.xls  
Range name and coordinates: Budget !B14..!F29  
Last updated on: Thu 06 Oct 2011 18:01:06  
Pro-rata method: Construction model  
All content displayed: See Tips-Views-Limitations menu for potential problems  
Purpose of this calculation: Budget formulation

Interest rate assumptions: Budget forecast rates, Budget 2005 (2003-12-03)

Year	Subsidy components					Single effective Discount rate
	Total Subsidy	Financing Subsidy	Default Subsidy	Subsidy Reduction for Fees	All Other components	
2005	6.23	-4.19	10.42	0.00	0.00	3.2540 (C)

Footnotes:  
The single effect rate is stated in terms of effective annual yield. For more details, see the help topics "How the single effective rate is calculated" or "Definitions related to the discounting method."  
(E) - Single effective rate was computed (see "Actions" "Preferences").  
(F) - Single effective rate from the spreadsheet was used instead of basket-of-zero method.  
(X) - Single effective rate was not provided in the spreadsheet and computation was disabled (see "Actions" "Preferences").

See the “Calc” tab within the CSC2 for details of each component’s calculation