CHART 2.1 How do we minimize risk and costs while maximizing impact?

Know the customer: How well can we target the actual beneficiaries -- so there is no duplicative, unused or otherwise unnecessary intervention?

Do only what needs to be done: What lending functions are absolutely essential for the federal government to perform -- and which can be done less expensively by the private sector?

Be the best at it**:** Are we using the best technologies and practices among those functions we retain?

Manage it effectively**:** what metrics can we get from the private sector to help ensure that we are optimally managing our products, processes and portfolios?

CHARTs 2.2-2.4 CALCULATION OF THE FINANCIAL BENEFITS AND WHO RECEIVES THEM

CHART 2.2 Ex-Im Global Express

Loan Size

$ 500,000		Ex-Im Working Capital Program		Global Credit Express	
Agency					
Interest				4.00%	$20,000
Fees	25%	1.50%	$1,875	2.50%	$12,500
Total Revenues			$1,875		$32,500
Interest Expense					$0
Operating Expense		1.50%	$7,500	0.75%	$3,750
Loss Expense (90% guarantee)	90%	1.25%	$5,625	3.00%	$15,000
Total Costs			$13,125		$18,750
Agency net revenues			**($11,250)**		**$13,750**
Intermediary					
Interest		4.25%	$21,250	0.00%	$0
Fees		1.00%	$5,000	flat	$2,500
Total Revenues			$26,250		$2,500
Interest Expense		0.28%	$1,400	0.00%	$0
Operating Expense		3.00%	$15,000	0.05%	$250
Loss Expense (10% unguaranteed)	10%	1.25%	$625	0.00%	$0
Other				0.00%	$0
Total Costs			$17,025		$250
Intermediary net revenues			**$9,225**		**$2,250**
ROA		1.85%		Infinite	
ROE		13.18%		Infinite	
Borrower					
Actual Interest Expense			$21,250		$20,000
Actual Fee Expense			$6,875		$15,000
Actual Other Costs					
Total Costs			$28,125		$35,000
Borrower Net Cost			**$28,125**		**$35,000**
		Credit Card			
Alternative Interest		16%	$80,000		
Alternative Fees		$75	$75		
Total Alternative Borrower Cost			**$80,075**		

CHART 2.3 CALCULATION OF THE BENEFITS OF THE SBA 7a

Loan Size

$ 500,000	Regular Bank Loan			SBA 7a	
Agency					
Interest					$0
Fees	75%			3.00%	$11,250
Total Revenues			$0		$11,250
Interest Expense				0.00%	$0
Operating Expense					$4,500
Loss Expense (75% guarantee)	75%			3.00%	$11,250
Total Costs			$0		$15,750
Agency net revenues			**$0**		**($4,500)**
Intermediary					
Interest		6.00%	$30,000	6.00%	$30,000
Fees		2.00%	$10,000	3.00%	$11,250
Total Revenues			$40,000		$41,250
Interest Expense		0.28%	$1,400	0.28%	$1,400
Operating Expense		0.75%	$3,750	1.25%	$6,250
Loss Expense (25% unguaranteed)	25%	2.00%	$10,000	2.00%	$2,500
Other (Fee to SBA)					$11,250
Total Costs			$15,150		$21,400
Intermediary net operating revenues			**$24,850**		**$19,850**
ROA			4.97%		3.97%
ROE			35.51%		28.37%

This doesn't look so good - at least in the first year -- due to the one time fees to the SBA which exceed the expected loss rate. In subsequent years, however, the SBA deal looks better: ROE of 28.37% for the SBA options versus 21.22% for the regular bank option. And that is before the sale of the guarantee below.

Gain/(Loss) on Sale of Gty	110.0%		$0		$37,500
Intermediary net revenues			**$24,850**		**$57,350**
ROA			4.97%		11.47%
ROE			35.51%		81.96%
Borrower					
Actual Interest Expense			$30,000		$30,000
Actual Fee Expense			$10,000		$11,250
Total Costs			$40,000		$41,250
Borrower Net Cost			**$40,000**		**$41,250**

	Credit Card	
Alternative Interest	16%	$80,000
Alternative Fees	$75	$75
Total Alternative Cost		**$80,075**

CHART 2.4 CALCULATION OF THE BENEFITS OF THE CDFI Fund NMTC

Size of the Project	**$ 10,000,000**	PV of NMTC	**$ 3,150,000**	
Size of the Tax Credit	**$ 3,900,000**	Mkt Price	**$ 3,000,000**	
		Debt Incurred	**$ 7,000,000**	

The tax credit investor puts in $3mm of equity and borrows $7mm to buy "$10mm" of tax credits with a mkt price of $3mm. The $7mm in debt is repaid by the project being built

		Conventional Development Loan		NMTC Structured Loan
Agency				
Interest				
Fees				
Total Revenues		$0		$0
Funding cost			1.34%	$52,260
Operating cost			$5,000	$5,000
Credit Losses				
Grant				$3,900,000
Total Costs		$0		$3,957,260
Agency net revenues		**$0**		**($3,957,260)**
Intermediary (Bank)				
Interest (Sr & Sub Debt/NMTC Note A)	7.50%	$750,000	5.00%	$350,000
Fees	3.00%	$300,000	3.50%	$245,000
Total Revenues		$1,050,000		$595,000
Interest Expense	0.28%	$28,000	0.28%	$19,600
Operating Expense	3.00%	$300,000	3.00%	$210,000
Loss Expense	3.00%	$300,000	0%	$0
Total Expenses		$628,000		$229,600
Intermediary net revenues		**$422,000**		**$365,400**
Pretax ROA		4.22%		5.22%
Pretax ROE		27.70%		38.27%

The NMTCs are awarded at a rate of 39 cents on the dollar of investment. They are awarded over a 7 year period resulting in a present value of $3.1mm. Banks will pay 80-95 cents on the dollar in cash for them. In this example: 93.5 cents

In this example, the Conventional Development Loan is for $10 million dollars, broken down into two parts, a $7mm senior loan at 5% and a $3mm subordinated loan at 13.5%.

The NMTC Loan is broken down into two parts: a senior loan ("A") for $7mm and a quasi-equity loan ("B") of $3.0mm. Loan B is funded by the purchase of the tax credits, and the proceeds are transferred to the developer at the end of the 7 year term, typically for $1,000.

This is a Treasury based interest rate, and the interest expense is incurred by the reduction of tax revenue annually once the TCs are fully used.

The operating cost represents the cost of underwriting the Agency application

The $3.9mm is the notional dollar value of the Tax Credits awarded over a 7 year period

A Bank would not typically make both the senior and the subordinated loan but for this example it is assumed that one bank does both.

The .28% interest expense is based on the small bank rate in CHART 2.6 and is the same for all of the bank's products

The operating cost is lower for the NMTC option because some of the costs are being picked up by the investor

In this case, the bank is exposed to loss in its subordinated note in the conventional loan, but that same credit risk is absorbed by the investor in the NMTC loan

CHART 2.4 CALCULATION OF THE BENEFITS OF THE CDFI Fund NMTC (Continued)

Project Developer				In this case, the Project Developer is the umbrella term for the various entities involved in purchasing, building, leasing and/or otherwise managing the property. The collective target is a net return on assets of @ 1.5%.
Fees	$1,500,000		$1,250,000	
Total Revenues	$1,500,000		$1,250,000	
Actual Interest Expense	$750,000		$500,000	With the NMTC, the Project Developer in this case is also paying interest on the quasi-equity "B" Note held by the Tax Credit Investor
Actual Fee Expense	$300,000		$245,000	
Actual Other Costs	$300,000	3.50%	$350,000	These are paid to the Intermediary Bank
Total Costs	$1,350,000		$1,095,000	The NMTC option carries more legal and accounting costs
Developer net revenues	**$150,000**		**$155,000**	This example Of an NMTC loan effectively takes the element of risk out of the transaction, thereby freeing up and additional $250,000 for construction and other project costs.
Funds available for construction	$ 8,500,000		$ 8,750,000	
ROA	1.50%		1.55%	
ROE (with equity at 15%)	10.00%		10.33%	Here the developer's equity goes to the predevelopment costs and the full $10mm is the hard cost of the project fully bank financed.
Tax Credit Investor				
Interest received (NMTC B Note)		5%	$150,000	The TC investor in this case is charging interest on the quasi-Equity B Note as well as getting the tax credits
Fees received		0%		
Total Revenues			$150,000	Operating expenses are primarily legal and accounting fees
Operating Expenses (Fees)		2%	$60,000	The investor paid $10.0mm for tax credits with a present value of $3.15mm and mkt value of $3mm. The ROE for that part of the transaction is estimated at 7%
Total Costs			$60,000	
Gain/Loss on Purchase of Credits			$150,000	
Investor net revenues			**$240,000**	This a riskless return: once the tax credit is awarded, the investor has no further credit or operating exposure to the project and has already made a return of 4% on the purchase of the tax credits. The interest income over the next 7 years is simply extra.
ROA			Infinite	
ROE			Infinite	

CHART 2.5 WHY IS THERE A CREDIT GAP?

How these factors affect the private sector lender

Attributes of the Deal:	**Volume**	**Size of Deal**	**Credit History**	**Term of Deal**	**Capacity to Pay**	**Collateral**	**Location**	**Regulation**
Attributes of the Lender's Portfolio:								
Revenue	x	x	x	x			x	
Financing Cost		x		x				
Operating Cost		x	x				x	
Credit Losses			x		x	x		
Liquidity		x		x				
Return on Equity	x	x	x	x	x	x	x	x
Capital Requirement		x	x	x	x	x		x

Notably, every attribute of lending transaction affects the lender's Return on Equity. We shall see how these attributes play out for a range of different lenders, and why they may or may not be inclined to provide credit to certain sectors in the marketplace at any point in time. Conversely, we may also see how changes in the market and/or their capacity may prompt them to open up to these sectors at other times. It must be kept in mind, however, that these are simply broad estimates to gauge where the lenders are. They are in no way precise or conclusive.

CHART 2.6 EXAMPLES OF DIFFERENT KINDS OF LENDERS

The Summary Expenses of Lending 2014	Large Bank	Small Bank	Credit Union	Finance Company	Online Lender	Credit Card Company	CDFI Non-profit Lender	State HFA
	(000's)							
Total Assets	$1,687,155,000	$6,760,879	$5,831,677	$47,880,000	$792,362	$159,103,000	$38,718	$5,306,000
Gross Income (Revenues) to Assets	5.00%	4.47%	3.40%	7.57%	19.95%	22.56%	31.90%	6.01%
Interest Expense to Assets	0.24%	0.28%	0.68%	2.27%	2.17%	1.07%	0.98%	2.85%
Operating Expense to Assets	2.91%	2.33%	2.08%	3.67%	10.16%	14.55%	23.52%	2.00%
Loss Expense to Assets	0.08%	0.27%	0.09%	0.21%	8.51%	1.28%	2.85%	0.05%
Total Expenses	3.23%	2.88%	2.85%	6.15%	20.84%	16.91%	27.35%	4.89%
Net Profit After Tax to Assets	**1.37%**	**1.85%**	**0.58%**	**1.42%**	**-2.36%**	**3.70%**	**7.50%**	**1.00%**
Total Equity	$185,262,000	$946,188	$490,222	$9,063,000	$310,605	$20,673,000	$15,885	$1,112,000
Ratio of Capital to Assets	10.98%	14.00%	8.41%	18.93%	39.20%	12.99%	41.03%	20.96%
Return on Equity/Subsidy	12.45%	13.22%	6.89%	7.51%	-6.02%	28.47%	18.28%	4.77%
Total Loans	$824,997,000	$5,074,883	$3,265,738	$19,148,000	$454,303	$70,104,000	$22,745	$3,379,000
Delinquency Rate	3.84%	1.14%	1.20%	0.16%	13.18%	1.87%	1.79%	0.34%

Note: due to the need to simplify, the NPAT is not intended to reconcile to Revenues minus Total Expenses

Went public in 2014: 700% TA growth in 3 yrs

(The revenue includes $7.1mm in grants)

CHART 2.7 "QUICK AND DIRTY" UNIT COST ANALYSIS

What are the primary price drivers of a lending product?

The price of a credit product is affected by a wide range of factors: competition, borrower capacity, demand -- and the cost to provide it. In determining whether a product can be rolled out, it is important to see first what it will cost. Once that has been established, the lender can determine how much flexibility there is in meeting borrower need and competitive pressures.

"Quick and Dirty" Unit Cost Analysis	FINANCE COMPANY	BRB	
The cost of the loan on a per loan basis (unit cost) is one of the key tools that banks use to determine whether or not to lend to a market segment. Agencies can use it in the same way the bank uses it: to determine whether it fits within their "equity" or subsidy rate parameters. We show how, using a small business loan of $500,000 to a 5 year old battery recycling business in the Bronx, "BRB" that has an SBA credit score of 200 and whose principal owners have a combined average credit score of 710.			
Business Loan Assets	$47,880,000	$500,000	
Loan Revenues to Assets	7.50%	9.00%	In order to cover the additional risk, the interest rate must be increased
Interest Expense to Assets	2.22%	2.22%	This cost is the same for all products at the bank
Operating Expense to Assets	3.67%	4.00%	Because the $500k loan is smaller than the bank's average loan, the operating cost is higher
Loss Expense to Assets	0.21%	1.72%	This is the loss rate for loans with a 200 SBA credit score
Total Expenses	6.10%	7.94%	
Net Profit After Tax to Assets	2.36%	1.06%	
Total Equity	$9,063,000	$9,063,000	
Capital to Assets	18.93%	$94,650	
Return on Equity	12.47%	**5.60%**	The ROE on this loan type is lower than the existing ROE so the lender has no motivation to participate.

In this example, the BRB small business loan segment might be attractive to the bank if the interest rate is raised at least to 9.0%. That is to allow for the uncertainties associated with going into a new credit segment, plus an underlying goal of generating a higher ROE than that which the lender is currently generating. But the lender will want to be sure that this higher rate is low enough to be: (a) affordable for the borrower; and (b) competitive with other lenders. The issue of competitiveness is critical: banks do not generally gravitate to "one-off" deals because of the higher cost to do them. Moreover it is hard to generate ongoing loan volume with customized transactions. These both are of particular concern in the small business arena, where growth is essential to cover the cost of what is essentially a specialized and expensive discipline.

While not conclusive, this "back of the napkin" kind of analysis can help the agency perform two critical functions: (i) identify the financial metrics that indicate the credit gap and provide indicators of how to structure the federal product solution; and (ii) identify what financial goals must be achieved before the target constituency is ready to be guided back to a private sector solution.

CHARTS 2.8a-2.8e PRODUCT DELIVERY PLATFORMS

CHART 2.8a Platform type: Agency Operating Co	Grants	Direct Loans	Credit Gtys	Deposit Gtys
Marketing		X		
Origination		X	X	
Underwriting	X	X	X	
Closing		X		
Servicing		X		
Monitoring	X	X	X	X
Workout Termination		X	X	X
Federal Control	Weak	Strong	Modest	Weak
Administrative Cost	Low	Very high	Moderate	Modest

As presently structured with the deposit guarantee, the regulator has minimal direct control over a loan. When it becomes impaired -- and the regulator becomes aware of it -- considerable force can be brought to bear on the lender to take a certain course of action, but the control remains indirect: "the horse is out of the barn."

CHART 2.8b Platform type	Grants	Direct Loans	Credit Gtys	Deposit Gtys
The Platforms fund $10,000,000 in loans				
Credit loss rate	4%			
Federal Dollars committed	$10,000,000	$10,000,000	$10,000,000	$10,000,000
Federal $ expended this year	$10,000,000	$0	$0	$0
Federal $ expended in the future	$0	$400,000	$400,000	$400,000
Total federal $ expended	$10,000,000	$400,000	$400,000	$0
Dollars expended due to bad loans	$0	$400,000	$400,000	$400,000
$ Assets on federal balance sheet	$0	$9,600,000	$0	$0
Contingent Liability	$0	$0	$9,600,000	$10,000,000
Total dollars expended (not incl admin)	$10,000,000	$10,000,000	$400,000	$0

In this simplified example, the guaranteed deposits belong to a lending entity with 8% capital which covers the 4% loss.

CHART 2.8c Leveraging the Platform	Grants	Direct Loans	Credit Gtys	Deposit Gtys
Indicative Examples	CDFI Fund	Disaster Loan	SBA 7a	FDIC
Maximum loans outstanding	$40,000,000	$10,000,000	$13,333,333	$11,111,111
Loans made over 14 years	$80,000,000	$10,000,000	$13,333,333	$22,222,222
Federal Commitment % to Loans made	12.50%	100.00%	75.00%	45.00%
Dollars expended % to Loans made	12.50%	4.00%	3.00%	0.00%

In this simplified example, the maximum target leverage for CDFIs is 4:1 but is, in fact, often less. Most of the SBA 7a program loans carry a 75% guarantee. The FDIC deposit guarantee requires a minimum capital level to support assets, and in this example we assume 10%. Hence, at a minimum, the deposit guarantee leverages an additional 10% of asset value. The direct loans are 100% federal dollars.

Where the federal commitment comes in the form of a grant or a deposit guarantee to an entity that relends the money, the funds roll over at maturity into other loans, without affecting federal administrative costs much or the federal financial commitment at all. In this example, the loans that are generated through the grant and the deposit guarantee turn over once every 7 years. For budget purposes, this rollover feature is not allowed for direct loans or loan guarantees; each new loan represents a commitment that ends when the loan matures.

CHART 2.8d BUT: Downside Risk	Grants	Direct Loans	Credit Gtys	Deposit Gtys
The Platforms fund $10,000,000 in student loans				
Credit loss rate	12%			
Federal Dollars committed	$10,000,000	$10,000,000	$10,000,000	$10,000,000
Federal $ expended this year	$10,000,000	$0	$0	$0
Federal $ expended in the future	$0	$1,200,000	$1,200,000	$200,000
Total federal $ expended	$10,000,000	$1,200,000	$1,200,000	$200,000
Dollars expended due to bad loans	$0	$1,200,000	$1,200,000	$200,000
$ Assets on federal balance sheet	$0	$8,800,000	$0	$0
Contingent Liability	$0	$0	$8,800,000	$10,000,000
Total dollars expended (not incl admin)	$10,000,000	$10,000,000	$1,200,000	$200,000

The 12% loss rate is would be exceptionally high for home mortgages, but not for student loans or for small business loans in a down cycle. The cost to the government of the deposit guarantee in the example is the amount by which credit losses exceed the lender's capital. It is assumed that the deposits are purchased by another lender and that the depositors lose no money.

CHART 2.8e Downside Risk	Grants	Direct Loans	Credit Gtys	Deposit Gtys
Indicative Examples	CDFI Fund	Disaster Loan	SBA 7a	FDIC
Maximum loans outstanding	$40,000,000	$10,000,000	$13,333,333	$11,111,111
Loans made over 14 years	$80,000,000	$10,000,000	$13,333,333	$22,222,222
Federal Commitment % to Loans made	12.50%	100.00%	75.00%	45.00%
Dollars expended % to Loans made	12.50%	12.00%	9.00%	0.90%

This example shows how, in a down cycle, the direct loan and the credit guarantee increase dramatically while the grant costs the same. The deposit guarantee remains the lowest cost option to the government. However, as with the credit guarantee, the deposit guarantee is not a balance sheet item and hence, the relationship between reserves and/or subsidies and the amount of credit losses is difficult to ascertain. The additional uncertainty this creates tends to occur just as the economy is hitting the bottom, which exacerbates the decline and adds to the damage. One of the key features: in order to protect its capital the bank typically (though not always) seeks to minimize credit risk and operating cost -- thereby creating the gaps which the agencies are called upon to fill.

CHART 2.9 FEDERAL AGENCY PLATFORM

Select your Platform Strategy

Select your platform strategy from the dropdown list below:

We will provide a credit guarantee

Grant

You did not select this option - we suggest you enter $0 in the input cell below!

Grant $ per $ Final Product funded $0.00

Direct Loan

You did not select this option - we suggest you enter 0% in the input cell below!

% of the Final Product funded 0% (determines share of portfolio balances and

Credit Guarantee

You did not select this option - we suggest you enter 0% in the input cell below!

% of the Final Product Guaranteed 100%

quarters after charge-off before executed 4 (use whole numbers only - this is the amount

CHART 2.10 PRODUCT DESIGN: SUITABILITY FOR THE BORROWER. What credit product is now available in the market? What elements of the product need to be changed to make it suitable for the target borrower?

Example: Monthly Fixed Payment of Principal and Interest for home mortgages, student loans and small business term loans

Conventional Credit Product Currently Available in the Market	Amount of the Loan	Annual Interest Rate	PMI if applicable (%)	Term in Months	Monthly Payment	Borrower Credit Score	Maximum Borrower LTV	Debt Service to Income	Borrower Annual Income $	Borrower Equity Required %	Borrower Equity Required $
Inputs	$ 250,000	4.00%	0.60%	360	$1,281.61	680	96.50%	35.00%	$ 43,941	3.50%	$ 9,067

We are inputting the minimum guidelines for a conventional loan here. For consumers, the chief focus will be the Debt to Income ratio. For small businesses it will be the debt service coverage ratio. In both asset classes, cash equity invested, LTV and collateral coverage are factors as well, but it is the monthly cash flow coverage that is the key determinant of the suitability of the loan to the borrower. The reason: the borrower's ability to pay principal and interest as scheduled is an integral feature in all loans, while the value of collateral and amount of equity only come into play for those that are foreclosed.

The Credit Product that the Target borrower needs	Amount of the Loan	Annual Interest Rate	PMI if applicable (%)	Term in Months	Monthly Payment	Borrower Credit Score	Maximum Borrower LTV	Debt Service to Income	Borrower Annual Income $	Borrower Equity Required %	Borrower Equity Required $
Target Borrower	$ -	4.00%	0.60%	360	$0.00	600	0.00%	0.00%	34,000	100.00%	$ 1,250.00

Prior to making the loan, the lender is typically given three hard numbers: cash equity, borrower income and the amount of the loan (i.e., tuition, price of the house, needs of the business). We are going to alter that interest rate (plus PMI if it is required) and the number of months to see how much the monthly payment can be reduced to ensure a reasonable Debt Service to Income level. In a market where housing prices are rising faster than incomes, there will be pressure to increase the allowable debt service to income ratio. This should be done with care: in addition to the kinds of personal events that upset homebuyer finances, general items like rising interest rates, higher gas prices, insurance and local taxes can put pressure on the payment for consumer loans. There is an even larger range of potential threats to current payments for There are alternatives to lowering the rate and/or extending the term. Reducing the amount of the loan is often the first step for the lender. But this may not be an optimal option from a policy standpoint. There are many communities, low income and rural for example, where the cost of building or rehabbing a house exceeds the market value and/or the capacity of local residents to buy under conventional terms.

The borrower credit score is an important indicator of the borrower's general willingness and capacity to pay. The lender can use it as an indicator of how much flexibility should be allowed in the Debt to Income, LTV and cash equity requirements.

CHART 2.11 AGENCY PROGRAM DESIGN

CHART 2.11a Key Performance and Investment Indicators

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Agency Performance Analysis										
Gross Loans/Commitments O/S	$109,997,304	$413,475,441	$1,408,420,577	$2,706,343,575	$4,177,390,901	$5,144,941,550	$5,763,847,578	$5,490,447,383	$5,053,597,958	$5,164,725,967
AGENCY Surplus/Loss	$1,375,000	$6,049,336	$20,406,595	$24,297,042	$21,926,896	$1,405,650	($16,399,705)	($41,663,529)	($43,202,173)	($22,343,058)
Agency Investment Analysis										
Cap Rate	8%									
NPV - Net Credit Losses	$214,246,531									
NPV - Net Income	($7,712,762)									

Reprise of "Product Design" tab - INFORMATION ONLY, DOES NOT DRIVE COMPUTATIONS

The Credit Product that the Target borrower needs	Amount of the Loan	Annual Interest Rate	PMI if applicable (%)	Term in Months	Monthly Payment	Borrower Credit Score	Maximum Borrower LTV	Debt Service to Income	Borrower Annual Income $	Borrower Equity Required %	Borrower Equity Required $
Target Borrower	$ 250,000.00	4.00%	0.60%	360	$1,281.61	600	99.50%	45.23%	34,000	0.50%	$ 1,250.00

This is the credit product that we developed in the prior section for our target borrower. But it was a place-holder. There are several things we can do to tailor the product more precisely to the borrower's need.

CHART 2.11b Loan Production Assumptions - THESE INPUTS DRIVE COMPUTATIONS

Amount of the loan ($) $ 250,000

enter starting year of model:	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
of loans made and/or guaranteed in year:	500	1500	5000	7500	10000	10000	10500	8000	7500	9500
amount made and/or guaranteed in year:	$ 125,000,000	$ 375,000,000	$ 1,250,000,000	$ 1,875,000,000	$ 2,500,000,000	$ 2,500,000,000	$ 2,625,000,000	$ 2,000,000,000	$ 1,875,000,000	$ 2,375,000,000

CHART 2.11c Interest rates and fees - THESE INPUTS DRIVE COMPUTATIONS

Interest Rate Index (choose 1)	Fed Funds	LIBOR	Prime	Swap	Other ST	6-Mo T Bills	10 Yr Treas	Other LT
Today's rate (information only)							1.75%	

What index will you use for pricing	10 Yr Treas	
What spread over the index will the	2%	
Will borrower's loan be fixed or floating rate?	Fixed	(click on cell and select from drop-down list)

Rate Forecast	ng	0	1	2	3	4	5	6	7	8	9
	Index	1.75%	2.00%	2.25%	4.00%	3.75%	2.00%	2.50%	2.50%	4.25%	4.25%

	Agency Fees %				Partner Fees %			
Fees	Origination	Servicing	Guarantee Fee Up Front	Guarantee Fee Ongoing	Origination	Servicing	Other Up Front	Other Ongoing
	0.00%	0.00%	2.00%	0.00%	2.50%		0.00%	0.00%

What loan structure will you use?	Level Payment	(click on cell and select from drop-down list)
Amortization term, quarters	90	for level payment and balloon loans
How many quarters before the balloon or bullet comes due:	20	for balloon and bullet loans
Interest-only period, for interest-only to equal amortization loans:	12	for Interest-only to equal quarterly
# quarters over which IO to equal amortization loans will amortize, after the IO period is over	4	for Interest-only to equal quarterly
# quarters over which equal amortization loans will amortize	20	for fixed principal quarterly

(for balloon loans be sure to enter a number smaller than the amortization term)

CHART 2.11e Loan Sales- THESE INPUTS DRIVE COMPUTATIONS

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Percent of active loan portfolio sold in year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Investor capitalization rate (discount rate) used	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%

CHART 2.11f Product Default Risk and Prepayment Characteristics - THESE INPUTS DRIVE COMPUTATIONS

	Age of loan in years: 1	2	3	4	5	6	7	8	9	10
Probability of default:	0.25%	0.75%	2.50%	5.00%	2.00%	1.00%	0.50%	0.50%	0.50%	0.50%
Probability of prepayment:	0.50%	1.00%	2.00%	3.00%	3.00%	3.00%	3.00%	3.00%	2.00%	2.00%

	Year of Model: 0	0	0	0	0	0	0	0	0	0
(Use this input for stress testing)										
Additional probability of default:	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%

	Year after default: 1	2	3	4	5	6	7	8	9	10
% of charge-offs recovered	5.00%	2.50%	1.25%	0.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

(as a percentage of the loan amount outstanding at the time of charge-off)

	Model year: 0	0	0	0	0	0	0	0	0	0
Delinquency losses	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

	0	0	0	0	0	0	0	0	0	0
Agency loan loss reserve (% gross loans owned	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%

	0	0	0	0	0	0	0	0	0	0
Percent of unrecovered charge-offs sold in year	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%	50.00%
Cents per $1 that investors will pay for	$ 0.60	$ 0.60	$ 0.60	$ 0.60	$ 0.60	$ 0.60	$ 0.60	$ 0.60	$ 0.60	$ 0.60

2.12 PRODUCT OPERATIONS

The Final Product Design

The Credit Product that the Target borrower needs	Amount of the Loan	Annual Interest Rate	PMI if applicable (%)	Term in Months	Monthly Payment	Borrower Credit Score	Maximum Borrower LTV	Debt Service to Income	Borrower Annual Income $	Borrower Equity Required %	Borrower Equity
Target Borrower	$ 250,000.00	$ 0.04	$ 0.01	$ 360.00	$ 1,281.61	$ 600.00	$ 1.00	$ 0.45	$ 34,000.00	$ 0.00	$ 1,250.00

Operating costs

Operating cost per loan can be an estimate. Generally the operating cost of a loan is largest in the first year and tends to decline in subsequent years. There are exceptions to this: project finance for example, can require substantial lender involvement over the life of the loan. Delinquent and defaulted loans also generate significant costs after the first year. One of the key challenges a lender has: do revenues cover operating costs on a year to year basis - or is it necessary to keep generating more loan volume in order to do so?

# FTEs	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Marketing	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Origination	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Underwriting	3.00	5.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Closing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Servicing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Monitoring	3.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Remediation	2.00	2.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Administration	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Total FTEs	12.00	16.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00

Annual inflation rate for operating costs	2.00%

STAFFING COSTS	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Marketing	120,000	122,400	124,848	127,345	129,892	132,490	135,139	137,842	140,599	143,411
Origination	-	-	-	-	-	-	-	-	-	-
Underwriting	75,000	76,500	78,030	79,591	81,182	82,806	84,462	86,151	87,874	89,632
Closing	-	-	-	-	-	-	-	-	-	-
Servicing	-	-	-	-	-	-	-	-	-	-
Monitoring	90,000	91,800	93,636	95,509	97,419	99,367	101,355	103,382	105,449	107,558
Remediation	80,000	81,600	83,232	84,897	86,595	88,326	90,093	91,895	93,733	95,607
Administration	60,000	61,200	62,424	63,672	64,946	66,245	67,570	68,921	70,300	71,706
Total staff costs	425,000	433,500	442,170	451,013	460,034	469,234	478,619	488,191	497,955	507,914

NONSTAFF OPERATING COSTS (OTHER THAN GRANTS)	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Marketing	200,000	204,000	208,080	212,242	216,486	220,816	225,232	229,737	234,332	239,019
Origination	-	-	-	-	-	-	-	-	-	-
Underwriting	160,000	163,200	166,464	169,793	173,189	176,653	180,186	183,790	187,466	191,215
Closing	-	-	-	-	-	-	-	-	-	-
Servicing	-	-	-	-	-	-	-	-	-	-
Monitoring	240,000	244,800	249,696	254,690	259,784	264,979	270,279	275,685	281,198	286,822
Remediation	-	-	-	-	-	-	-	-	-	-
Administration	100,000	102,000	104,040	106,121	108,243	110,408	112,616	114,869	117,166	119,509
Total nonstaff operating costs	700,000	714,000	728,280	742,846	757,703	772,857	788,314	804,080	820,162	836,565

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Operating Costs per year (you may choose to override)	1,125,000	1,147,500	1,170,450	1,193,859	1,217,736	1,242,091	1,266,933	1,292,271	1,318,117	1,344,479

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Opex as Percent of Principal Outstanding	No agency loans	No agency loans	No agency loans	No agency loans	No agency loans	No agency loans	No agency loans	No agency loans	No agency loans	No agency loans
Originations per origination FTE	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs
Originations per underwriting FTE	167	300	500	750	1,000	1,000	1,050	800	750	950
Originations per closing FTE	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs
Active loans per servicing FTE	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs	No FTEs
Annual servicing cost per active loan	-	-	-	-	-	-	-	-	-	-
Monthly servicing cost per active loan	-	-	-	-	-	-	-	-	-	-

CHART 2.13 AGENCY PORTFOLIO

Rudimentary Assessment of the Viability of the Product/Program

Forecast Years	#	2017	2018	2019	2020	2021	2022	2023	2024	2025	10-Year Totals
New Loan Volume $		375,000,000	1,250,000,000	1,875,000,000	2,500,000,000	2,500,000,000	2,625,000,000	2,000,000,000	1,875,000,000	2,375,000,000	17,500,000,000
New Loan Volume #	#	1,500	5,000	7,500	10,000	10,000	10,500	8,000	7,500	9,500	70,000
Prinipal Repayments		-	-	-	-	-	-	-	-	-	-
Net Loans Outstanding $		-	-	-	-	-	-	-	-	-	
Loans Outstanding #		1,971	6,875	14,157	23,605	32,132	39,373	41,111	40,032	39,570	

Program Income and Expenses

Origination fee income		-	-	-	-	-	-	-	-	-	-
Guarantee fee income at origination		7,500,000	25,000,000	37,500,000	50,000,000	50,000,000	52,500,000	40,000,000	37,500,000	47,500,000	350,000,000
Servicing income		-	-	-	-	-	-	-	-	-	-
Ongoing guarantee fee income		-	-	-	-	-	-	-	-	-	-
Interest income		-	-	-	-	-	-	-	-	-	-
Less Interest Revenue Lost Through Delinquenc		-	-	-	-	-	-	-	-	-	-
Recoveries on charge-offs		1,855	29,840	150,622	460,426	1,000,883	1,763,765	2,588,538	3,254,294	3,563,018	12,813,239
Income on sale of charge-offs		48,646	671,540	3,042,222	8,771,803	18,879,327	33,252,113	49,484,333	63,779,916	72,834,943	250,764,842
Total income		**7,550,501**	**25,701,380**	**40,692,844**	**59,232,228**	**69,880,209**	**87,515,878**	**92,072,871**	**104,534,209**	**123,897,961**	**613,578,082**
Operating expenses		1,147,500	1,170,450	1,193,859	1,217,736	1,242,091	1,266,933	1,292,271	1,318,117	1,344,479	12,318,436
Guaranty expense (paid to lenders)		353,665	4,124,335	15,201,943	36,087,596	67,232,469	102,648,650	132,444,129	146,418,266	144,896,540	649,407,592
Grants expense		-	-	-	-	-	-	-	-	-	-
Provision for Loss		-	-	-	-	-	-	-	-	-	-
Total expense		**1,501,165**	**5,294,785**	**16,395,802**	**37,305,333**	**68,474,560**	**103,915,583**	**133,736,400**	**147,736,383**	**146,241,019**	**661,726,028**
Gain (loss) on sale of active loans		-	-	-	-	-	-	-	-	-	-
Net income		**6,049,336**	**20,406,595**	**24,297,042**	**21,926,896**	**1,405,650**	**(16,399,705)**	**(41,663,529)**	**(43,202,173)**	**(22,343,058)**	**(48,147,946)**

Program Loss Reserve Calculations, Balance Sheet Items, and Other Indicators

Starting Loss Reserve		-	-	-	-	-	-	-	-	-	
Charge-Offs		-	-	-	-	-	-	-	-	-	
Ending Loss Reserve		-	-	-	-	-	-	-	-	-	
Ending balance, gross loans receivable		-	-	-	-	-	-	-	-	-	
Less Allowance for Loan Loss		-	-	-	-	-	-	-	-	-	
Net loans receivable		-	-	-	-	-	-	-	-	-	
Face value of unrecovered charge-offs in portfo		270,733	3,245,995	13,226,946	34,234,446	69,000,487	114,465,184	161,846,886	198,710,999	218,652,949	
Credit losses (guarantee payments + provision for loss, less recoveries, guarantee fees, and income from sale of charge-offs)		303,164	3,422,955	12,009,099	26,855,368	47,352,259	67,632,772	80,371,257	79,384,057	68,498,579	385,829,510
Cash received for sales of active loans		-	-	-	-	-	-	-	-	-	-
Face value of loan sales of active loans		-	-	-	-	-	-	-	-	-	-

CHART 2.14 GUARANTEED LENDER PORTFOLIO

Rudimentary Assessment of the Viability of the Product/Program

Forecast Year	#	2017	2018	2019	2020	2021	2022	2023	2024	2025	10-year totals
New loan volume $		375,000,000	1,250,000,000	1,875,000,000	2,500,000,000	2,500,000,000	2,625,000,000	2,000,000,000	1,875,000,000	2,375,000,000	17,500,000,000
New loan volume #		1,500	5,000	7,500	10,000	10,000	10,500	8,000	7,500	9,500	70,000
Gross Loans Outstanding $		413,475,441	1,408,420,577	2,706,343,575	4,177,390,901	5,144,941,550	5,763,847,578	5,490,447,383	5,053,597,958	5,164,725,967	
Loans Oustanding #		1,971	6,875	14,157	23,605	32,132	39,373	41,111	40,032	39,570	
Principal repayments		67,184,702	239,068,465	539,127,198	958,250,846	1,424,503,782	1,866,815,403	2,119,426,391	2,159,475,871	2,116,905,200	11,505,388,638
Interest income		13,203,310	48,117,525	123,496,619	219,255,420	272,343,649	297,236,230	291,639,859	284,810,155	308,217,583	1,861,240,808
Fee Income:											
Origination		9,375,000	31,250,000	46,875,000	62,500,000	62,500,000	65,625,000	50,000,000	46,875,000	59,375,000	437,500,000
Servicing		-	-	-	-	-	-	-	-	-	-
Other Up Front		-	-	-	-	-	-	-	-	-	-
Other Ongoing		-	-	-	-	-	-	-	-	-	-
Charge-offs		4,337,161	15,986,400	37,949,804	70,701,828	107,945,570	139,278,568	153,973,805	152,373,554	146,966,791	829,885,396
Recoveries		126,212	531,448	1,427,182	2,833,400	4,619,313	6,297,310	7,362,308	7,553,377	5,500,106	36,259,982
Guarantee payments from lenders		353,665	4,124,335	15,201,943	36,087,596	67,232,469	102,648,650	132,444,129	146,418,266	144,896,540	649,407,592
Net credit losses		3,857,284	11,330,617	21,320,680	31,780,831	36,093,788	30,332,609	14,167,368	(1,598,090)	(3,429,854)	144,217,822
Interest Expense		8,269,509	31,689,463	108,253,743	156,652,159	102,898,831	144,096,189	137,261,185	214,777,913	219,500,854	1,125,324,798
Lender operating expenses as a % of assets		0%	0%	0%	0%	0%	0%	0%	0%	0%	
Operating costs		-	-	-	-	-	-	-	-	-	-
Total Profitability		10,451,518	36,347,445	40,797,196	93,322,430	195,851,030	188,432,432	190,211,306	118,505,332	151,521,584	1,029,198,188
Percent premium on sale of loans	#	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Potential profit for year if lender sells all loans upon origination		-	-	-	-	-	-	-	-	-	-

2.15 GRANT RECIPIENT PORTFOLIO

Rudimentary Assessment of the Viability of the Product/Program

Forecast Years	#	2017	2018	2019	2020	2021	2022	2023	2024	2025	10-year totals
New loan volume $											
New loan volume #											
Gross Loans outstanding $											
Loans outstanding #											
Principal Repayments											
Non-profit Portfolio Operating Statement											
Interest income											
Fee Income:											
Origination											
Servicing											
Other Up Front											
Other Ongoing											
Charge-offs											
Recoveries											
Guarantee payments from lenders											
Net credit losses											
Grant recipient cost of borrowed funds	#										
Grant recipient operating expenses as % of ass	#										
Interest Expense											
Operating costs											
Total Profitability											

RES.15-002 Mission and Metrics: Finance Training for Federal Credit Program Professionals

Summer 2016