Session 4
July 12, 10:45-12:15pm

Managing Operating Costs and Credit Risk

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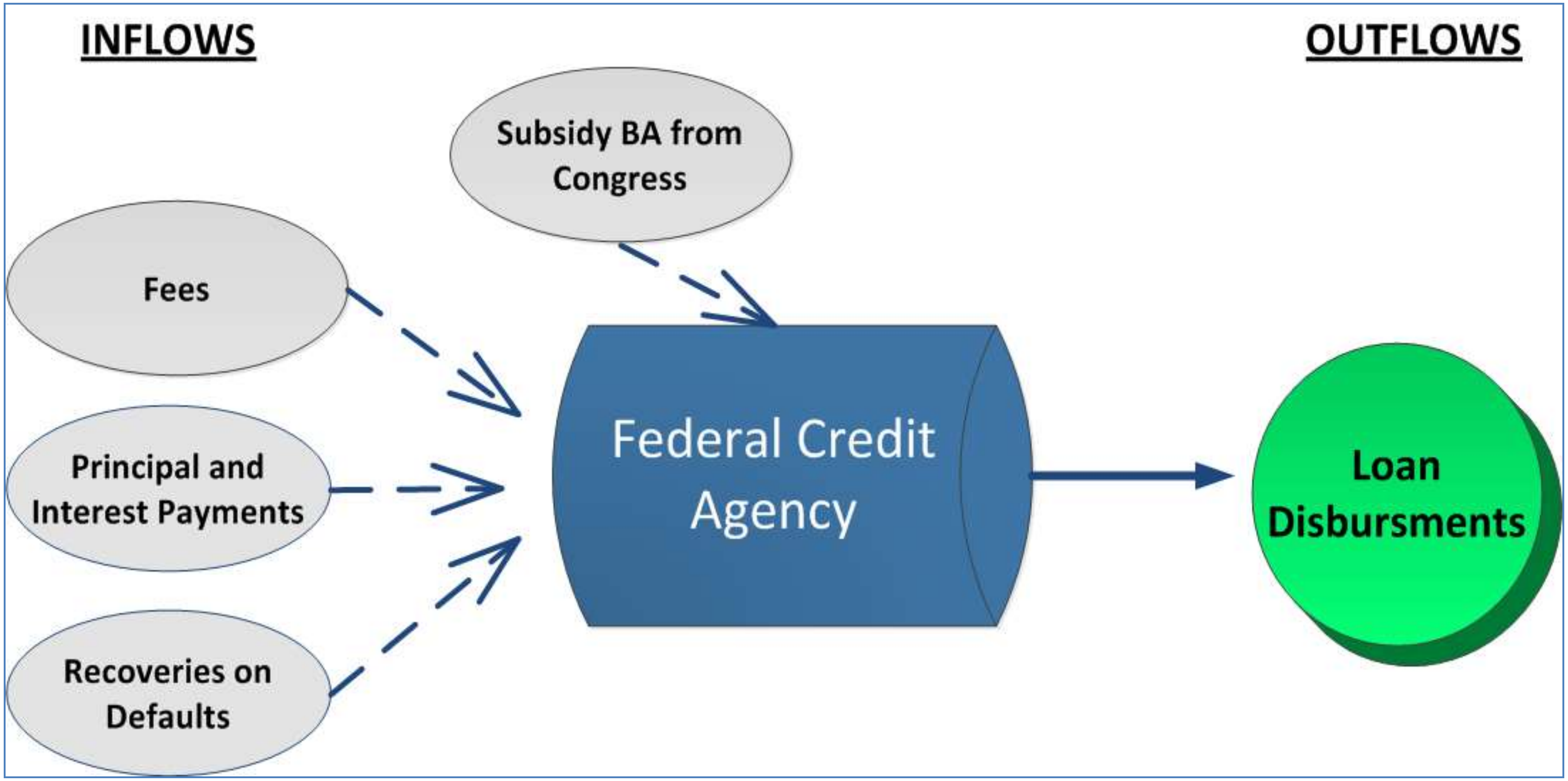
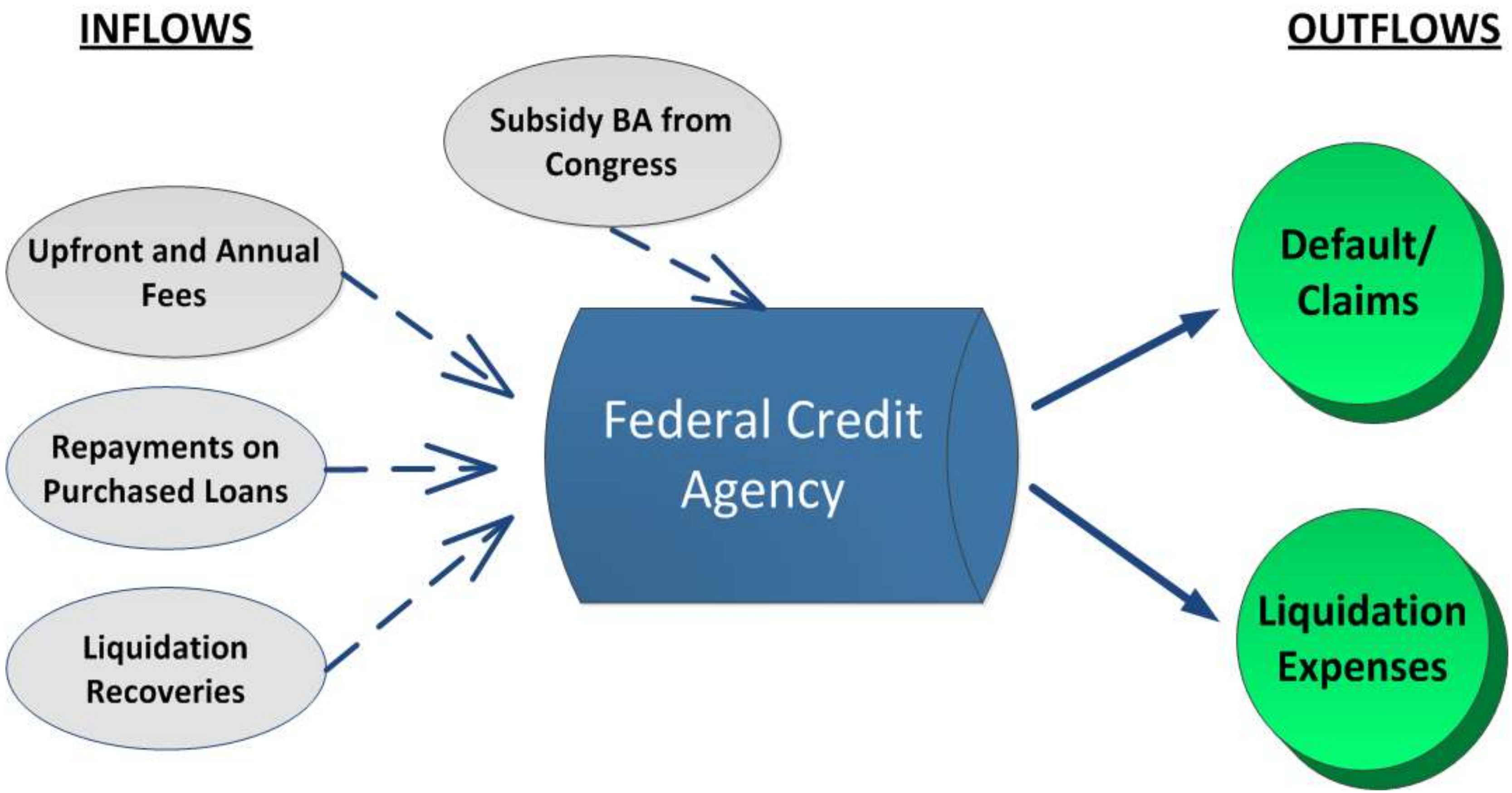
Credit costs from a budgetary view

- Subsidy Rate Calculation
  - Subsidy Rate = (NPV outflows - NPV inflows) / gross loan amount
- In addition to economic assumptions needed for NPV analysis, must develop technical assumptions:
  - Cash flows specified in loan contract
  - Deviations from contract terms such as defaults, recoveries, prepayments, forgiveness
  - Management assumptions about future business or legislative authority

Estimating direct loan subsidy costs



Estimating loan guaranty subsidy costs



Data elements used to populate subsidy calculator

Illustrative example

		Year 1		Year 2		Year 3		Year 4		Year 5
Name	Section 502 loans									
Program type	Direct loan									
Obligations	$	1,238,295,563								
Disbursements	$	1,057,311,433	$	152,384,782	$	15,062,406	$	7,170,335	$	3,903,427
Principal payments, scheduled	$	4,798,244	$	10,843,855	$	12,919,103	$	13,964,966	$	14,955,592
Interest payments, scheduled	$	31,839,380	$	69,318,033	$	77,360,794	$	77,696,847	$	77,159,022
Prepayments, net	$	1,410,597	$	5,397,157	$	10,484,994	$	14,910,515	$	19,645,788
Default effect on cash flows	-$	304,675	-$	1,500,893	-$	3,014,195	-$	3,768,513	-$	3,916,205
Losses other than defaults	-$	9,948,988	-$	24,777,547	-$	30,853,466	-$	30,905,966	-$	29,625,912
Recoveries	$	-	$	-	$	3,090,306	$	10,310,645	$	11,195,526
Other outflows	$	615,991	$	1,568,316	$	2,416,707	$	3,423,361	$	3,970,961
Other inflows	$	2,608	$	6,928	$	66,126	$	172,663	$	371,358
End										

* 1st five years; cash flows continue for life of loan cohort

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Adjusting for actuals - reestimates

Illustrative example

# of loans..................	50
Loan amount	1,000
Borrower's rate..........	5.0%
Maturity......................	10 years
Annual P&I per loan....	129.50
Discount rate...............	4.0%

Original Subsidy Rate:	
Outstanding..............	50,000
PV of cash flows...........	(44,575)
Subsidy cost.............	5,425
Subsidy rate..................	10.85%

Reestimated Subsidy Rate:	
Outstanding..............	50,000
PV of cash flows...........	(42,385)
Subsidy cost.............	7,615
Subsidy rate..................	15.23%

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**	**Year 7**	**Year 8**	**Year 9**	**Year 10**
Default assumptions:										
Original..................	0.0%	2.0%	3.0%	5.0%	5.0%	2.0%	0.0%	0.0%	0.0%	0.0%
Reestimate.............	0.0%	2.0%	3.0%	7.0%	7.0%	5.0%	2.0%	0.0%	0.0%	0.0%
Cash Flows										
Original:										
Contractual P&I.......	6,475	6,475	6,475	6,475	6,475	6,475	6,475	6,475	6,475	6,475
Less defaults..........	0	(130)	(324)	(648)	(971)	(1,101)	(1,101)	(1,101)	(1,101)	(1,101)
Estimated...............	6,475	6,346	6,151	5,828	5,504	5,374	5,374	5,374	5,374	5,374
Reestimate:										
Contractual P&I.......	6,475	6,475	6,475	6,475	6,475	6,475	6,475	6,475	6,475	6,475
Less defaults..........	0	(130)	(324)	(777)	(1,230)	(1,554)	(1,684)	(1,684)	(1,684)	(1,684)
Estimated...............	6,475	6,346	6,151	5,698	5,245	4,921	4,792	4,792	4,792	4,792

Integrating performance & budgeting

- Monitor performance from budgetary & programmatic POV
  - Assess past performance; take action
  - Adjust budgeted amounts (looking back but, importantly, going forward) and/or risk thresholds
  - Key is to balance policy goals with risks and taxpayer costs
- Inform policies, practices, underwriting standards & budgeting with performance metrics tied to statutory purpose
- Develop oversight/control functions sufficiently independent of program management
  - Develop expertise within agency to identify emerging issues using real-time information re outstanding portfolio, including credit & operational risks

Monitoring loan performance

- Monitor, diagnose & report
  - Include regular collections, analysis & reporting of information/trends on aggregate and cohort basis
  - Flexible to deliver analysis necessary to identify & respond to developing issues
  - Coordinate closely with budget staff and enable virtuous feedback loop within agency
- Use dashboards, watch-lists, pipeline reports & other tools to track performance in real-time and to serve as early-warning indicators
- See Appendix D in A-129 for templates of various dashboards and other reports

Shared services

- Shared services gaining traction in other areas
  - Federal financial management (payroll, financial systems)
  - Procurement (strategic sourcing)
  - Information technology (category management)
- Is there an opportunity for shared services across federal credit community?
  - Subsidy rate estimation
  - Loan servicing
  - Lender monitoring
  - Debt collection
  - Asset disposition

Interesting to ponder a centralized credit unit

- Assess budgetary impacts of credit programs
- Ensure uniformity of approach in planning/evaluation
- Consider need for loan programs / assist in design
- Develop analytically rigorous risk management practices
- Establish automated and consistent underwriting systems
- Recommend policies aimed at improving program cost efficiency
- Develop consistent performance measures across credit agencies
- Design ways to close out programs that become irrelevant or no longer justify public subsidization

Analyzing the Five Staff Functions Involved in the Extension of Credit

What are (five of) the seven essential functions in the extension of credit that all lenders must perform or cause to have performed?		
The configuration of these functions for any program or portfolio will define the cost of the credit instrument as well as its effectiveness in achieving its purpose.		
1.	**Marketing**	
·	Message	What it is. Why you need it. Why us?
·	Medium	The full range of communications: signage, billboards, media, personal networks, social networks
·	Location	International, national, state, local, community
2.	**Origination**	
·	Advisory	Interface with the client that ends in a "go" or "no-go" decision
·	Application	The commitment of time in assisting the borrower and ensuring the information is complete
·	Due diligence	Vetting the data submitted by the applicant, obtaining data from relevant sources
·	Credit analysis	Evaluating the borrower data, assessing feasibility and the capacity to pay, structuring the transaction
·	Approval	Approving the transaction in line with the standards, authorities, and procedures of the institution
·	Documentation	Assembling complete and consistent documents of the agreement, obtaining signatures
·	Closing	Funding the loan or the grant; commiting the credit of the institution
3.	**Servicing**	
·	Billing and collections	Calculating the proper amounts of principal and interest due, invoicing and collection payments
·	Customer service	Questions about the transaction, institutional policies and procedures, the client relationship
4.	**Monitoring**	
·	Loan payments	Tracking how much of what is being paid and when, relative to the agreement is the first and most important indicator
·	Borrower	Performing routine due diligence, through contact and available data on the client is key to anticipating risk
·	Lender	Performing portfolio reviews, and where pertinent, field audits of lending partners, implementing remedial steps
·	Service provider	Performing work and contract reviews, implementing remedial steps
5.	**Default**	
·	Maturity	Deferral, modification, rewrites: altering the credit to suit the borrower's needs
·	Termination	Payment and/or payment capacity is sufficiently impaired to warrant termination of the agreement
·	Asset Sale/Liquidation	The loan and/or assets securing the loan are sold

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Calculating Operating Costs by Function

Breakdown of Expenses (using the numbers from the most recent year)							
	Direct Staff Expenses	Indirect Staff and Resources	Total Direct and Indirect		Administrative Allocation		Total Expenses
Marketing	$250,000	$750,000	$1,000,000		$300,000		$1,300,000
Origination	$5,920,000	$2,250,000	$8,170,000		$2,451,000		$10,621,000
	$0	$0	$0		$0		$0
	$0	$0	$0		$0		$0
Servicing	$3,600,000	$6,000,000	$9,600,000		$2,880,000		$12,480,000
Monitoring	$750,000	$1,200,000	$1,950,000		$585,000		$2,535,000
Default Management	$750,000	$900,000	$1,650,000		$495,000		$2,145,000
Totals	$11,270,000	$11,100,000	**$22,370,000**		**$6,711,000**		**$29,081,000**

The Unit Cost Analysis (Activity-Based Costing)

Agency Cost Per Unit of providing a loan

Average Size of the Loans Originated	$350,000	Annual Loans Closed $	$175,000,000	Annual Loans Closed #	500

	Total Costs	Total Number of Loans	$ Cost per Loan by Function	% Cost per Loan by Function	% Cost per Loan Closed to Annual
Marketing	$1,000,000	2,000	$500	0.14%	0.57%
Origination	$3,950,000	1,000	$3,950	1.13%	2.26%
Underwriting	$2,900,000	600	$4,833	1.38%	1.66%
Closing	$1,320,000	500	$2,640	0.75%	0.75%
Subtotal: Providing the Loan	$9,170,000		$11,923	3.41%	**5.24%**

The Cost per Loan by Function is the amount the agency pays on average for any individual loan. The Cost per Loan Closed is derived from the total expense for each function divided by the actual number of loans closed. The differences in the amounts reflects: (i) all loans that are originated do not generate a complete application; and (ii) all loans that generate a complete application do not go to closing. If all loans originated generated applications, all applications were approved and all went to closing the numbers would be the same. The difference indicates the cost of all of the activities that are performed that do not produce a loan.

The Unit Cost Analysis (cont.)

Agency Cost Per Unit of keeping and managing the loan							
Average Size of the Loans Serviced	$350,000	Annual Loans Serviced	$1,050,000,000		3,000		
	Total Costs	Total Number of Loans		Cost per Loan by Function	Cost per Loan by Function		Cost per Loan Serviced to Total Loans Serviced
Servicing	$9,600,000	3,000		$3,200	0.91%		0.91%
Monitoring	$1,950,000	3,000		$650	0.19%		0.19%
Exit	$1,650,000	300		$5,500	1.57%		0.16%
Subtotal: Managing the Loan	$13,200,000			$9,350	2.67%		1.26%
Total Operating Cost	**$22,370,000**						
Allocation of General Agency Costs to the Loan							
Agency allocation	30%	The Agency allocation covers all of the institutional costs, including management, rent, communications, etc					
Total Operating Cost	**$29,081,000**		**Per loan**	**$9,693.67**		**To Total Loans**	**2.77%**

Staff Productivity

Staff Productivity						
	Total # of FTE	Number of Loans Handled		Loans per FTE	National Benchmarks*	Benchmark Performance
Loans per Marketing FTE	2	2,000		1,000	10,000	(9,000)
Loans per Originating FTE	60	1,000		17	150	(133)
Loans per Servicing FTE	40	3,000		75	500	(425)
Loans per Monitoring FTE	10	3,000		300	750	(450)
Loans per Loan Default FTE **	8	300		38	100	(63)
	120	**9,300**				

* National Benchmarks. There is no one source for benchmarks at this level of specificity. However, general indicators are available from trade associations such as the Mortgage Bankers Association or the Consumer Bankers Association. These can be used to help determine whether a function can be or should be outsourced.

** Loans per loan exit are loans that are delinquent and/or have defaulted, and which require elevated levels of due diligence and management. They are generally under 10% of the portfolio

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Shared Services

There is no need to wait months or years to award a contract for outside services, or to "reinvent the wheel." Among the federal credit agencies, there is a wide range of specialties and capabilities that can be tapped cheaply (and without a profit margin) and quickly (without a formal bidding process). This is allowed by the Economy Act of 1932.

> The Economy Act of 1932, as amended, 31 U.S.C. § 1535, permits Federal Government agencies to purchase goods or services from other Federal Government agencies or other major organizational units within the same agency. An Economy Act purchase is permitted only if: (1) amounts for the purchase are actually available, (2) the purchase is in the best interest of the Government, (3) the ordered goods or services cannot be provided by contract from a commercial enterprise, i.e., the private sector, as conveniently or cheaply as could be by the Government, and (4) the agency or unit to fill the order is able to provide or get by contract the ordered goods or services.

Lowering Costs Through Technology and Outsourcing

WAY HOME BANK	Loan Volume		$175,000,000					
	Loans Outstanding		$1,050,000,000					
	Before Credit Scoring	After Credit Scoring		Before Automated Application	After Automated Application		Before Outsourcing Servicing	After Outsourcing Servicing
Revenues to Total Assets	4.47%	4.47%		4.47%	4.47%		4.47%	4.10%
Interest Expense to Total Assets	0.28%	0.28%		0.28%	0.28%		0.28%	0.28%
Operating Expense to Total Assets	2.77%	2.50%		2.77%	2.30%		2.77%	1.55%
Credit Losses to Total Assets	0.27%	0.27%		0.27%	0.27%		0.27%	0.27%
Total Expenses to Total Assets	3.32%	3.05%		3.32%	2.85%		3.32%	2.10%
Profit/Surplus to Total Assets	1.15%	1.42%		1.15%	1.62%		1.15%	2.00%
Capital (same % as Small Bank in Chart 1.6)	14.00%			14.00%			14.00%	
Capital	$147,000,000			$147,000,000			$147,000,000	
ROE	8.22%	10.18%		8.22%	11.59%		8.22%	14.25%

What kind of risk are we supposed to be preparing for?

Overarching issues

Points of view that often guide or govern the level of credit risk

- The banks aren't lending in my District
- The government ought not to be in the lending business: if borrowers aren't bankable they shouldn't borrow
- The government is not taking enough risk
- The government should keep credit losses under 2 %
- The program should be budget neutral
- The government should never lend to make a profit
- The government is here to help me: concessionary rates, modifications, waivers, less paperwork burden
- The government will (or should) never foreclose on me
- I have a right to participate in this credit program
- The government should never take a subordinate position
- The government should always take a subordinate position
- Risk-based pricing
- Usury begins at 9%
- All Other

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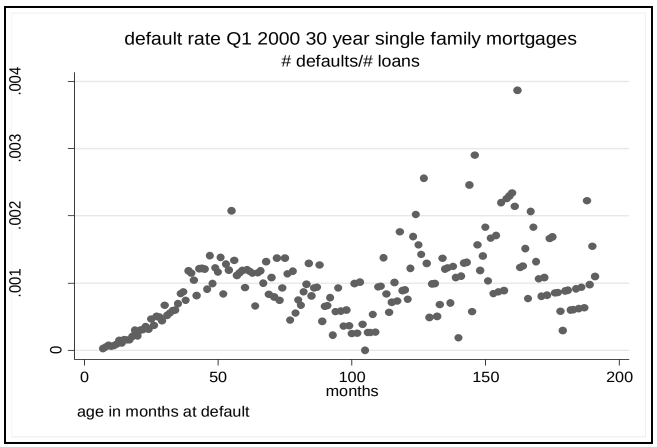
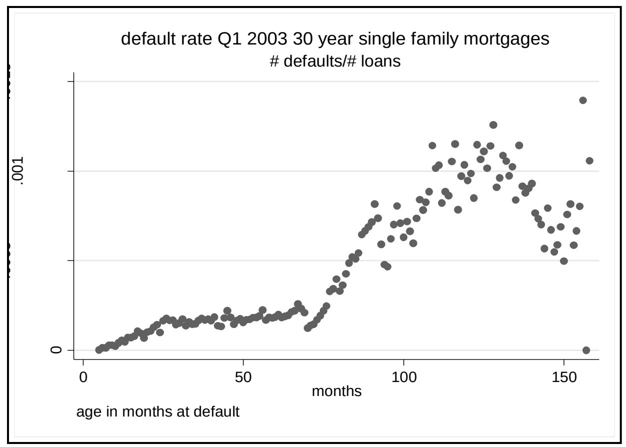
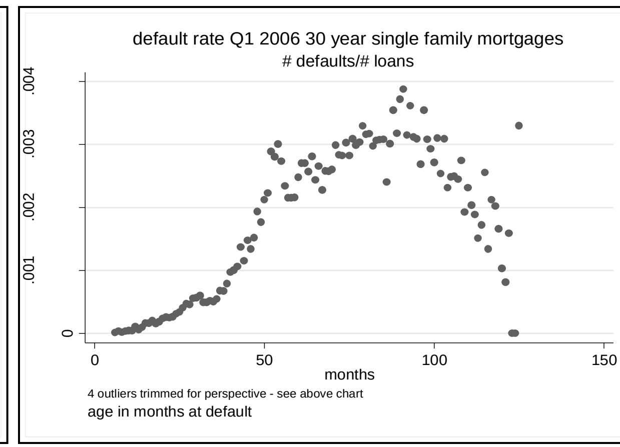
Key Problem: The Loss Curve







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Credit Scoring

Summary

Credit scoring has become the primary form of underwriting small ticket (under $750,000) high volume credit programs. In addition to personal credit scores of the business owners, there are highly accurate systems for scoring the business. The focus is not on evaluation of the company financials; business tax and financial data typically accounts for less than 15% weight of the business score.The business scores are largely reflective of the personal scores of the principal owners and the focus is on how they pay creditors over time. Recently business scoring systems have added tracking and analysis of business deposit balances. Systems can cost as little as $10 or $15 per business borrower -- a steep reduction in operating cost from the traditional range of $1,500 to $5,000 per loan. The credit scores have also proven more accurate than manual underwriting for loans of $750,000 or less. The accuracy diminishes as size of the loan and the business increases, however, and most small business loans still require some level of manual underwriting.

Example of a Credit Scoring Chart

Credit Score	Loan Volume	Charged-off	Loss Rate	Number of Loans
180-189	$665,787,329	$29,315,563	4.40%	2,124
190-199	$641,832,238	$20,946,992	3.26%	2,045
200-209	$581,054,849	$10,019,915	1.72%	1,805
210-219	$428,922,655	$6,197,609	1.44%	1,303
220-229	$213,636,108	$2,321,998	1.09%	647
230-300	$58,352,984	$194,577	0.33%	149
TOTAL	$25,895,876,163	$68,996,654	2.66%	8,073

Reading this Chart

This is an actual chart produced some years ago by a major lender with its own scoring system for businesses. The chart shows the riskiest businesss loans at the top with scores between 180 and 189 and a 4.40% loss rate, descending to the least risky with scores in the 230-300 range and an average loss rate of .33%. The balance among the different credit scores enables the lender to achieve an overall 2.66% loss rate -- not bad for a small business lender -- by using low risk loans to subsidize high risk loans. This lender developed the scores over a 15 year period using volume in the billions of dollars and thousands of loans. The lender has found the scores highly predictable, and uses them to ensure a proper portfolio balance going forward.

Loan Loss Reserves

The lender can use this data to establish a loss reserve of at least 2.66%. A prudent approach would be to incorporate uncertainty into the Loss Reserve by making a Provision for Losses that brings the Loss Reserve to something more in the range of 3.5 -4.0%. The reason: the balance of credit scores in the portfolio is likely to change, particularly if there is a change in economic conditions. This particular lender also routinely updates the scores of existing borrowers at least quarterly so that the financial standing of *all* of its loans are current. The Loan Loss Reserve is adjusted accordingly.

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Standard Banking Definitions

Definitions	
Delinquency	A delinquent loan is a loan that has missed at least one scheduled payment. Therefore, a "30-day" delinquent loan is past due by one payment as of the report date; a "60-day" is past due by two payments, etc. When a loan is delinquent, the full principal is accounted as delinquent, not just the missed monthly payment. There are no hard rules on when foreclosure should begin and practice can differ from one asset class to the next. But generally foreclosure proceedings aren't started before a loan is 90 days past due, and many don't start until a loan is 120 days. Agencies are directed to send loans that are delinquent 180 days to Treasury for collection. The term delinquency is used by agencies for programs involving direct lending. All lenders have discretion in remedying delinquency.
Default	In the context of mortgage pools, a defaulted loan is one that "no longer pays principal and interest, and then remains delinquent until liquidated. Federal agency programs that guarantee loans made by private sector lenders use the term "default" to indicate a loan has been purchased from the lending partner or on which a claim has been paid. There can be a time lapse between the time a loan goes delinquent at the lending partner and the time the loan is purchased or a claim is paid.
Charge-off	This is the amount of principal that the lender estimates will be written off on a delinquent loan. It is a non-cash item that is a debit to the Loss Reserve and a Credit to the Loan balance.
Recovery	This is the amount of principal that is recovered after all or a portion of a loan has been charged-off. It is often, but not always, the product of liquidating or foreclosing on the loan. Standard practice is to (i) credit the loss reserve and debit the Loan balance; and then (ii) credit the loan balance and debit cash. The ratio of recoveries to charge-offs is a critical indicator of (i) the type of loans; (ii) the level of risk being taken; and (iii) management discipline.
	Challenge for the agencies: standardizing definitions

Key Operating Data Points: Expanding on A-129

	This Month		Year to Date		YTD Prior Year		Annual Budget		Annual Prior Year		Annual 2nd Prior Year	
Volume	Dollar	# or %	Dollar	# or %	Dollar	# or %	Dollar	# or %	Dollar	# or %	Dollar	# or %
Loans Originated												
New Customers												
Percentage Increase (Decrease) vs prior period												
Existing Customers												
Percentage Increase (Decrease) vs prior period												
Total Approvals												
Percentage Increase (Decrease) vs prior period												
New Applications Declined												
Renewals Declined												
Processing												
New Customer Applications Submitted												
Approvals of New Applications												
Percentage to Total New Applications												
Closings												
Percentage to total Applications												
New Applications in process												
Percentage to total New Applications												
Renewals												
Percentage to total Loan Approvals												
Renewals Scheduled for Next Period												
Loan Approvals outstanding												
Percentage Increase (Decrease)												
Disbursements outstanding												
Percentage Increase (Decrease)												
Amendment/Waiver												
Amended Loans Outstanding												
Percentage to total loans outstanding												

Key Operating Data Points: Expanding on A-129 (cont.)

	THIS MONTH		YEAR TO DATE		YTD PRIOR YEAR		ANNUAL BUDGET		ANNUAL PRIOR YEAR		ANNUAL 2ND PRIOR YEAR	
Staff	Dollar	# or %	Dollar	# or %	Dollar	# or %	Dollar	# or %	Dollar	# or %	Dollar	# or %
Total Op Expenses / Number of Operating Staff												
Credit Providing FTE (Origination, etc.)												
Credit Managing FTE (Servicing, monitoring, etc.)												
Number of Applications Processed per Providing FTE												
Number of Renewals Processed per Providing FTE												
Number of Amendments Processed per Managing FTE												
Number of Loans in Workout per Managing FTE												
Operating Services provided by 3rd Parties												
3rd Party cost per loan originated												
3rd Party cost per loan underwritten												
3rd Party cost per loan serviced												
Other 3rd Party costs to total loans												
Backlog												
Beginning Applications on Hand												
Applications Submitted												
Applications Approved												
Applications Declined												
Commitments Made												
Ending Applications on Hand												
Percentage Increase (Decrease) over prior period												

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