



Entry Form 2018 Annual Awards for Program Excellence

Entry Deadline: Friday, June 15, 2018, Midnight ET

Each entry must include a completed entry form. Please complete a form for each entry your HFA is submitting. The completed entry form will become the first page of your entry.

This form is a fillable PDF. Type your information into the entry form and save it as a PDF. Please do not write on or scan the entry form. **Questions: Call 202-624-7710 or email awards@ncsha.org.**

Entry Title: Enter your entry's title exactly as you wish it to be published on the NCSHA website and in the awards program.

Category:

Subcategory:

Entry Summary: A 15-word (max) summary of the program, project, or practice you are entering.

HFA:

HFA Staff Contact:

Phone:

Email:

Visual Aids:

Are you mailing to NCSHA 10 copies of any visual aids that cannot be included in your entry PDF? Yes No

Payment:

My HFA is mailing a check to NCSHA.
My HFA is emailing the credit card authorization form to awards@ncsha.org.

2018 NCSHA Award Nomination

HFA: Colorado Housing and Finance Authority

Category: Management Innovation – Financial

Entry Name: Single Family Life of Loan Pricing – Removing Barriers for Our Borrowers

Brief Description

Colorado Housing and Finance Authority (CHFA) plays a critical role in assisting low- and middle-income homebuyers bridge the financial gap between renting and purchasing a home. This assistance has never been more critical, as demand for housing assistance far exceeds available resources.

To aid in meeting this demand CHFA has created the Single Family Life of Loan Pricing Tool (SFLLP); a tool used to integrate current market data, life of loan valuation figures, and forecasting information in order to actively manage cash flow and margin targets for various single family loan products.

When a new loan product is being contemplated or CHFA is considering changes to a current product, an analysis is conducted to show the overall yield or return to CHFA over the life of the loan (from purchase through servicing) based on certain loan characteristics. As CHFA makes adjustments to those characteristics, the tool displays the results allowing staff to better analyze liquidity needs, the cost/benefit of balance sheet growth versus TBA sales, and expected principal repayments to a down payment assistance fund. The tool allows the user to adjust the product mix, execution (sale versus retention), prepayment speeds and product assumptions quickly, as needed, to see the individual and cumulative impact of a particular pricing or programmatic change. In this way, CHFA can combine historic and year-to-date information with its forecasting module in order to lower rates for borrowers and increase volume, while yielding a higher combined internal rate of return.

What it accomplished

CHFA historically measured the current year's single-family loan production volume, secondary market gross margin, and servicing operation net income separately. This practice failed to recognize the impact each of these had on the other and the long-term (i.e. life of loan) impacts on CHFA's net income and liquidity. The SFLLP tool allows CHFA to measure dynamically across these functions for both current-period and life-of-loan net present value (NPV) and internal rate of return (IRR).

In addition, the SFLLP tool gives CHFA the ability to ensure staffing and operations are appropriately scaled to meet demand, thus providing better customer service by utilizing employees to meet base origination needs while hiring an external contractor to supplement internal capacity in higher volume months. It also delivers new insights and metrics in lender performance. Most important, it allows CHFA to establish firm margin targets necessary to offer products at the lowest possible rates to borrowers while providing reasonable assurance that products will enhance the sustainability of the single family program.

Innovative

Gene Slater, Chairman of CSG Advisors, emphasized the import of CHFA's tool saying, "CHFA has the most sophisticated pricing/modeling tool of any HFA I have seen for comprehensively analyzing, in real time, the long-term impact of changes in pricing and production across the Authority."

CHFA has moved beyond assessing individual loans or loan products to developing a portfolio pricing strategy that allows near-real-time data to be integrated in the task of daily pricing across products. By shifting rate differentials between products, CHFA balances current period liquidity and earnings with higher average lifetime return across the portfolio. The technical solution allows this to be done with great transparency to the organization.

Replicable

The ability to understand all revenue and cost for the life of the loan investment yields opportunities for products and offerings that were previously unimaginable. The power of the tool is unlocked by integrating data that is, for the most part, already available within CHFA.

The CHFA solution utilizes a combination of source systems such as accounting, loan origination, loan servicing, and secondary market trading. Microsoft Excel generates product scenario analysis at different pricing levels. Trading information comes from PowerSeller. Data integration takes place via a SQL Server data warehouse. Reporting and visualizations come from Tableau, Excel, and SQL Reporting Services.

The largest hurdle to overcome with a project of this scope is to maintain the vision to keep it moving forward. None of the pieces by themselves is insurmountable. One key to success has been the opportunistic development of these individual pieces. Most technological advancement has come through the need to answer specific questions, such as CHFA's ability to offer new products, to lower prepayment speeds, or to develop a new execution model. Bill Spencer, one of CHFA's BI architects, describes the process: "Our collaborative team identified a set of single family profitability drivers across the life of a loan. The technical team incorporated each of those drivers into a user-friendly model. We were able to create an entirely new paradigm for evaluating short and long-term success."

Respond to a management challenge opportunity

A great deal of CHFA's operating budget comes from its single family line of business. Prepayment speeds on single family loans were high, reducing or eliminating the revenue potential of loans CHFA was acquiring. A near-term goal was to lower prepayment speeds so, whether loans were sold in the TBA market or retained on the balance sheet, the investment was prudent and viable.

Achieve measurable improvements in agency operation

The Single Family Life of Loan Pricing tool has assisted CHFA in accomplishing the following strategic goals:

- Expanded a single family down-payment program to include a grant option in addition to second mortgages and price it to not only cover its costs but to be self-sustaining over time.
- Improved pricing on the down-payment program to attract more production. Loan production grew from \$0.4B in 2014 to \$1.9B in 2017.
- Decreased per-loan operational cost from \$3,110 to \$1,141.
- Forecast to lower prepayment speeds from over 1000 for grant-assisted loans to a predicted average of 200 and provide constant monitoring of actual prepayment results.

- Expected to contribute a projected \$60M-\$80M to a single family down-payment assistance fund over the next five years while providing reasonable assurance of sustainability through future cash flow projections.

Provide benefits that outweigh costs

The cost and staff resources required to develop the tool, though not insignificant, were relatively minor when compared to the benefit. The initial framework development and deployment were completed primarily with 1.5 to 2 existing employees working part time. The SFLLP tool added forecasting and additional visualization over the past 12 months with one full-time employee working part-time on the project. Direct employee cost for the entire project is approximately \$450k.

Benefits include unprecedented growth in volume, added transparency, and the ability to measure the whole system rather than just its individual components. Overarching all of this is the ability to serve more borrowers while providing key management information to aid with long-term liquidity and profitability planning.

Demonstrate effective use of resources

The primary goal for the project was to build an infrastructure that generates timely, quantifiable information for decision making. This yielded not only better decisions, but the ability to act quickly and decisively while managing a product mix through changing market conditions.

Achieve strategic objectives

This project represents a deep dive into CHFA's largest line of business. The project was conceived and carried out with the idea of bringing highly competitive products to borrowers. The strategic imperative is to be wise stewards of resources now and in the future in order to best serve CHFA's mission.

Conclusion

The Single Family Life of Loan Pricing tool supports fact-based decision making, transparency, and collaboration. The creation of this tool transformed the way CHFA approaches, manages, and plans for its largest line of business. The project has yielded great return and CHFA intends to continue to use this resource for the benefit of its mission.

Exhibits

Exhibits A – C are screenshots of the SFLLP model synopsis, forecasting/scenario generation tool, and an example of product mix yield comparisons.

Exhibit A

single family 2017 activity

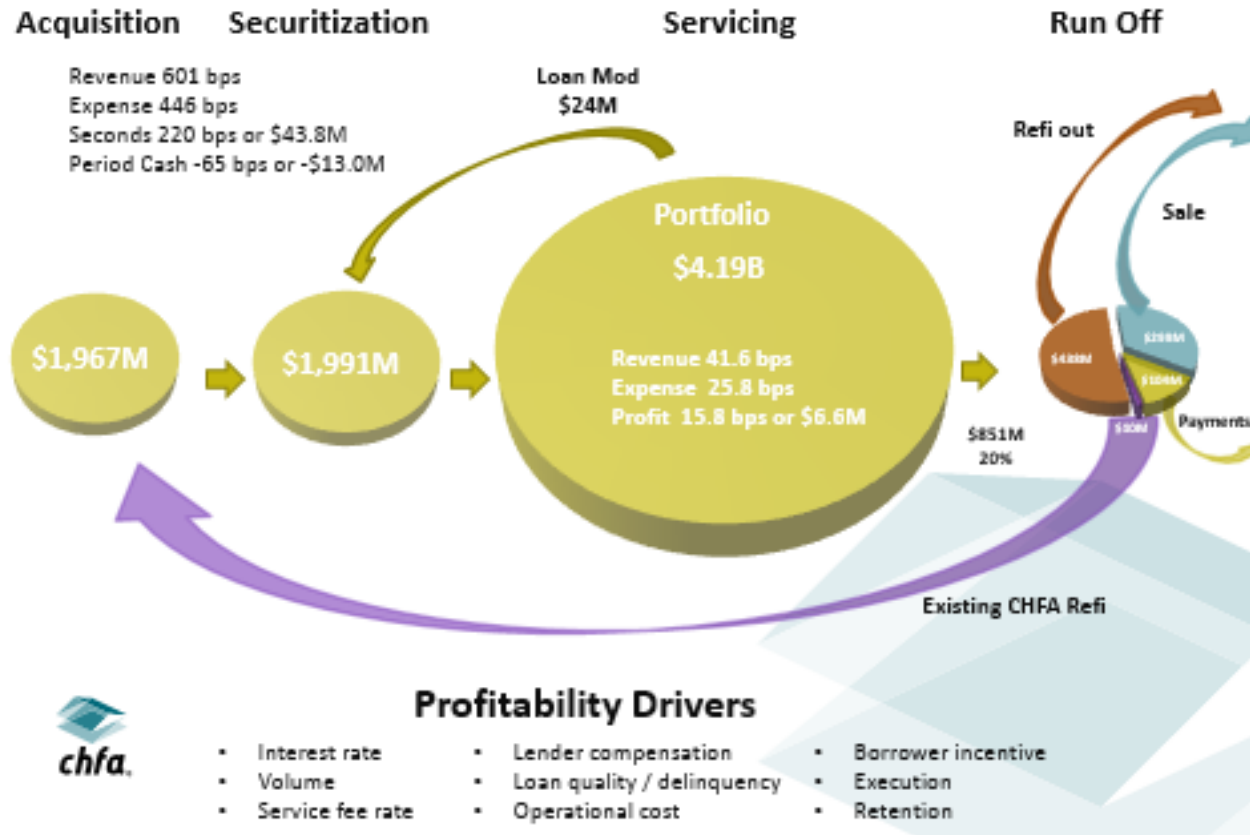


Exhibit B

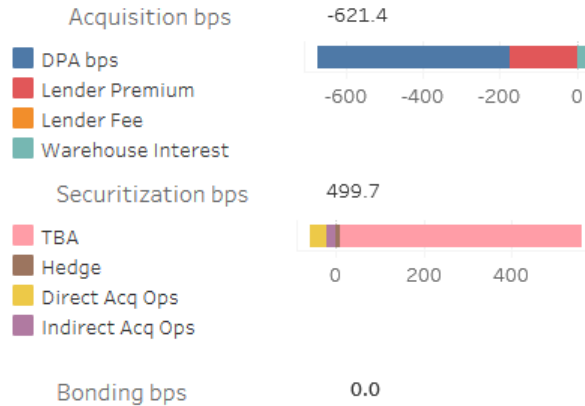
Security Pricing

Investor Instrument Name	Guarantee Fee bps	Investor Instrument Name	Coupon	Max. Price	Service Fee bps
30 gnma II mbs	6	30 gnma II mbs	5.5	105.5	19.0
Pricing Window In Days	First Loan Rate		5	105.0	69.0
42	5.750%		4.5	103.6	119.0
			4	102.0	169.0

Product Configuration

First Loan Count	DPA Type	Second Loan Rate	Is Second Forgivable	TBA bps	Bond COI And Premium bps
1,000	Silent Second Due on Sale	0.000%	False	105.5	0
Average First Loan Amount	DPA bps	Second Loan Term	Second Loan Loss Percent	Net CHFA Svc Fee bps	Bond Annual Service Fee bps
\$247,000	500	360	7.00%	44	0

Up Front Results bps



Summary Results

Assumed PSA	Up Front bps	24 Month NPV bps	Life of Loan NPV bps	Borrower Monthly Payment
200	-121.7	-13.2	404.4	\$1,441
300	-121.7	5.8	393.1	\$1,441
400	-121.7	24.4	383.8	\$1,441
500	-121.7	42.7	376.6	\$1,441
600	-121.7	60.5	371.1	\$1,441
700	-121.7	78.3	366.8	\$1,441
800	-121.7	95.3	363.3	\$1,441
900	-121.7	112.3	360.4	\$1,441
1000	-121.7	128.9	358.0	\$1,441

PSA

- 200
- 300
- 400
- 500
- 600
- 700
- 800
- 900
- 1000

Cumulative Cash Flow Discounted @ 4.00%

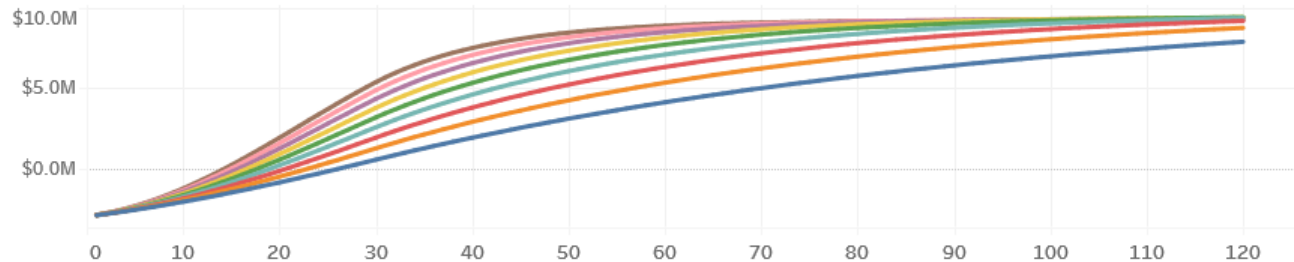


Exhibit C

Loan Type	2017 - Total					2018 - YTD					Expected Full Year Production 2018			
	UPB Purchased	% of UPB	NPV bps	NPV Dollars	% of NPV	UPB Purchased	% of UPB	NPV bps	NPV Dollars	% of NPV	UPB Purchased	% of UPB	NPV bps	NPV Dollars
Taxable Loans														
Conventional products														
Conventional 1	\$15,156,000	1%	98	\$148,000	1%	\$16,630,000	3%	67	\$ 111,000	1%	\$ 95,357,000	3%	67	\$ 640,000
Conventional 2	\$119,997,000	9%	107	\$1,278,000	4%	\$82,224,000	15%	84	\$ 690,000	6%	\$120,014,000	15%	84	\$ 1,009,000
Conventional 3	\$138,715,000	11%	271	\$3,753,000	13%	\$69,084,000	12%	268	\$1,849,000	17%	\$254,282,000	12%	268	\$ 6,809,000
Conventional Total	\$273,868,000	21%	158	\$5,179,000	18%	\$167,938,000	30%	140	\$2,650,000	25%	\$469,653,000	30%	140	\$ 8,458,000