

single family life of loan analysis

A pricing tool to remove barriers
for our barrowers



*financing the places where
people live and work*

the issue at hand

- No way to quickly analyze the financial impact of new loan products or changes to current products.
 - Production volume, secondary market gross margin, bond production spread, and servicing operation net income all being tracked separately.
 - This practice failed to recognize the impact each had on the other and the long-term impacts on net income and liquidity.

the fix

- We created a tool (Single Family Life of Loan Pricing tool)
 - allows the Authority to measure dynamically across all single family functions for both current-period and life-of-loan net present value and internal rate of return.
 - cost allocation data & discount rate
 - current market interest rates & prepayment speeds
 - TBA premiums & pay-ups
 - servicing expense & revenue
 - DPA, SRP, and hedging costs

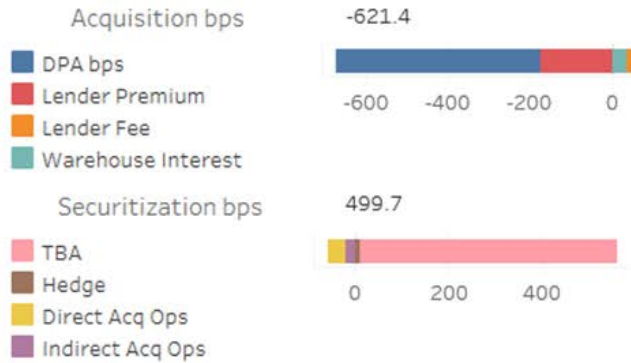
Security Pricing

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
			5	105.0	69.0
Pricing Window In Days	First Loan Rate		4.5	103.6	119.0
42	5.750%		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

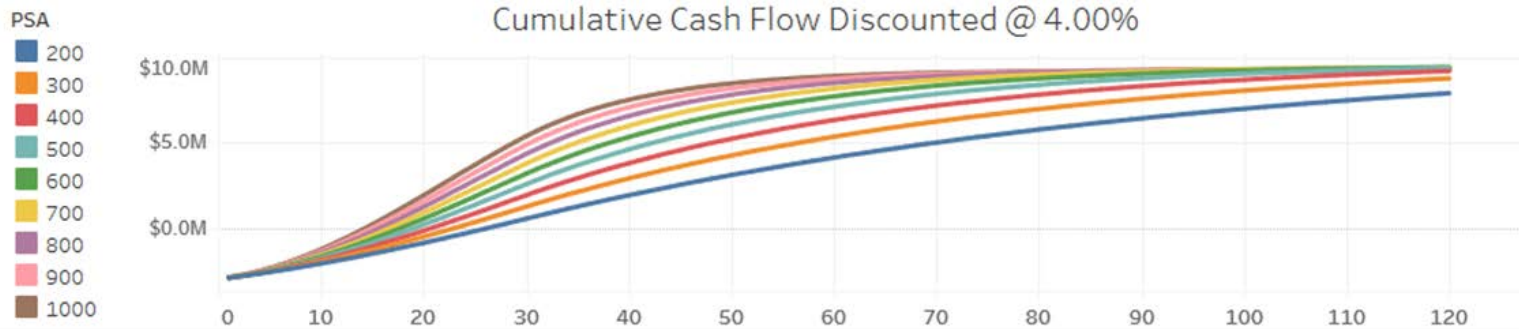
Up Front Results bps



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

Bonding bps: 0.0



yearly comparisons

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



projected impacts

Product	Months to Break Even	IRR	LOL bps	Current Period bps	Forecast \$(M)	Life of Loan \$(M)	Current Period \$(M)	Seconds \$(M)
Bonds w/ 5% second	47	15.6%	456.9	(459.3)	\$ 300	13.71	(13.78)	\$ 15.0
Conventional - par	0	22.4%	199.1	126.4	\$ 79	1.57	1.00	\$ -
Conventional w/ MI - par	0	21.2%	194.4	115.7	\$ 89	1.74	1.03	\$ -
Conventional w/ MI - 4% grant	0	8.7%	81.4	18.1	\$ 170	1.38	0.31	\$ -
Conventional w/ MI - 5% second	36	14.7%	261.6	(163.9)	\$ 187	4.90	(3.07)	\$ 9.4
Government - par	0	38.6%	301.7	259.9	\$ 13	0.38	0.33	\$ -
Government - 4% grant	0	16.9%	196.9	20.5	\$ 740	14.56	1.52	\$ -
Government - 5% second	21	20.5%	374.8	(76.8)	\$ 523	19.59	(4.01)	\$ 26.1
		17.3%	275.4	(79.44)	\$ 2,100	\$ 57.8	\$ (16.68)	\$ 50.5

measurable achievements

- expanded loan production to include DPA in the form of second mortgages and grants
- improved pricing on down-payment assisted loans, which increased loan production.
 - ~\$400 million in 2014 to \$1.9 billion in 2017
- decreased per-loan operational cost from \$3,110 to \$1,141
- Lower prepayment speeds