

# Case Study

- Cashflow-based Analyses
- Uses public & proprietary data
  - Proprietary portfolio data is generated for our sample bank, and must be provided by client banks
- Focuses on forecasting revenue and performance, and managing/mitigating risk factors
  - Simulation data may be presented monthly, quarterly, or annually for up to 5 years based on
    - Currently existing portfolio
    - Defined bank operation policies
    - Rate/yield information

# Initial cashflow output via web (1/3)

Simulation Name: "1000 Each Instrument Created on 2012-09-08T14:04:33-04:00" - Overall View

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Annualized Discount Rate:  %

Change in Discount Rate:  %

Clearly documented  
 model assumptions,  
 triggered policies, and  
 analysis

Several formats

	2012-09-01 2012-09-30	2012-10-01 2012-10-31	2012-11-01 2012-11-30	2012-12-01 2012-12-31	2013-01-01 2013-01-31
<b>Beginning Balance</b>					
Notional Amount	0	0	0	0	
Beginning Balance	0	0	0	3,889,997,800	3,887,000
Beginning Rate	0%	0%	0%	4.42%	
<b>Repricing Activity</b>					
Reprice Balance	0	0	0	0	
Before Reprice Rate	0%	0%	0%	0%	
After Reprice Rate	0%	0%	0%	0%	
<b>Cash Flow Activity</b>					
Scheduled Principal Runoff	0	0	0	3,061,210	3,061,210
+ Principal at Maturity	0	0	0	0	
+ Prepayments	0	0	0	0	
+ Unsched. Principal Runoff	0	0	0	0	
Annual Prepay Rate	0%	0%	0%	0%	
Total Principal Runoff	0	0	0	3,061,210	3,061,210
Rate on Runoff Balance	0%	0%	0%	4.23%	
+ Interest Cash Flow	0	0	6,500,546	14,066,669	14,300,000
- Interest Credited	0	0	0	0	
+ Loss Sharing Credit	0	0	0	0	
<b>Total Cash Flow</b>					

All numbers  
 available as graphs  
 & spreadsheets

# Initial cashflow output via web (2/3)

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Annualized Discount Rate:  %      Change in Discount Rate:  %

	2012-12-01 2012-12-31	2013-01-01 2013-01-31	2013-02-01 2013-02-28	2013-03-01 2013-03-31	2013-04-01 2013-04-30
+ Loss Sharing Credit	0	0	0	0	0
Total Cash Flow	17,127,879	17,403,379	19,949,587	19,991,451	21,517,796
NPV of Total Cash Flow	16,901,397	17,116,200	19,555,209	19,531,141	20,952,500
NPV w/ Chg in Discount Rate	16,789,560	16,974,745	19,361,434	19,305,536	20,676,131
Change in NPV	-111,837	-141,455	-193,775	-225,605	-276,369
% Change in NPV	-0.6618%	-0.8265%	-0.991%	-1.1552%	-1.3191%
Funds Transfer Rate	0.95%	0.95%	0.95%	0.95%	0.95%
Funds Transfer Percentage	4.59%	4.6%	4.6%	4.6%	4.6%
Funds Transfer Spread	9,786,613	10,766,139	9,469,113	9,131,613	10,424,624
<b>Accrual Income</b>					
Interest Accrual	14,028,418	14,299,782	16,845,911	16,891,885	18,414,121
Deferred Runoff	0	0	0	0	0
<b>New Business Activity</b>					
Originations	0	0	0	0	0
- Purchase Discount	0	0	0	0	0
Rate on Originations	0%	0%	0%	0%	0%
Rolling Balances	0	0	0	0	0
Rate on Rolling Balances					

Loss Sharing Credits:  
less prevalent now, but  
still supported

Funds transfer  
pricing

# Initial cashflow output via web (3/3)

Simulation Name: "1000 Each Instrument Created on 2012-09-08T14:04:33-04:00" - Overall View

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Annualized Discount Rate:  %

Change in Discount Rate:  %

	2012-12-01 2012-12-31	2013-01-01 2013-01-31	2013-02-01 2013-02-28	2013-03-01 2013-03-31	2013-04-01 2013-04-30
Deferred Runoff	0	0	0	0	0
<b>New Business Activity</b>					
Originations	0	0	0	0	0
- Purchase Discount	0	0	0	0	0
Rate on Originations	0%	0%	0%	0%	0%
Rolling Balances	0	0	0	0	0
Rate on Rolling Balances	0%	0%	0%	0%	0%
Total New Business Activity	0	0	0	0	0
<b>Ending Balance</b>					
Ending Balance	3,887,002,060	3,883,997,760	3,880,983,150	3,877,953,270	3,874,916,390
Ending Rate	4.42%	4.42%	4.11%	4.11%	4.11%
Fully Indexed Rate	3.33%	3.33%	4.1%	4.1%	4.1%
<b>Average Balance</b>					
Average Balance	3,888,101,050	3,885,099,950	3,882,211,670	3,879,064,850	3,876,068,850
Average Rate	4.42%	4.42%	3.51%	3.51%	3.51%
Weighted Avg Rem Months	10	8	6	5	4

Purchase discounts added to go with FDIC brokered acquisitions

Track *unrealized* returns due to effects of caps and floors

# Simulation configuration

Configure (or import from spreadsheet) rates, new volumes of instruments, & prepayments

Item	Current Configuration	Actions
Rates Table	Table Configured	<a href="#">View or Modify</a>
Net Volumes Table	Table Configured	<a href="#">View or Modify</a>
Prepayments Table	Table Configured	<a href="#">View or Modify</a>
Prepayments Allocation Policy	Prepayments are Pro-Rated Across Comparable Instruments Based on Remaining Principal Due	<a href="#">Modify</a>
Deposit Distribution	Table Configured	<a href="#">View or Modify</a>
Derived Simulations		
For Liquidity Risk:		
<input type="checkbox"/>	New production at 90% projected levels	
<input type="checkbox"/>	New production at 75% projected levels	
<input type="checkbox"/>	New production at 50% projected levels	
<input type="checkbox"/>	New production at 25% projected levels	
<input type="checkbox"/>	No New Volumes	
<input type="checkbox"/>	Uninsured withdrawals increased by 25%	
<input type="checkbox"/>	All withdrawals increased by 25%	
<input type="checkbox"/>	Uninsured withdrawals increased by 50%	
<input type="checkbox"/>	All withdrawals increased by 50%	
<input type="checkbox"/>	Uninsured withdrawals increased by 75%	
<input type="checkbox"/>	All withdrawals increased by 75%	
<input type="checkbox"/>	Uninsured withdrawals increased by 100%	
<input type="checkbox"/>	All withdrawals increased by 100%	
<input type="checkbox"/>	Uninsured withdrawals increased by 200%	
<input type="checkbox"/>	All withdrawals increased by 200%	
<input type="checkbox"/>	Uninsured withdrawals increased by 300%	
<input type="checkbox"/>	All withdrawals increased by 300%	
For Interest Rate Risk:		
<input type="checkbox"/>	-300bp one-time rate shock	
<input type="checkbox"/>	-250bp one-time rate shock	
<input type="checkbox"/>	-200bp one-time rate shock	
<input type="checkbox"/>	-150bp one-time rate shock	
<input type="checkbox"/>	-100bp one-time rate shock	
<input type="checkbox"/>	-50bp one-time rate shock	
<input type="checkbox"/>	+50bp one-time rate shock	
<input type="checkbox"/>	+100bp one-time rate shock	
<input type="checkbox"/>	+150bp one-time rate shock	
<input type="checkbox"/>	+200bp one-time rate shock	
<input type="checkbox"/>	+250bp one-time rate shock	
<input type="checkbox"/>	+300bp one-time rate shock	
<input type="checkbox"/>	-200bp rate change over 12 month period	
<input type="checkbox"/>	-100bp rate change over 12 month period	
<input type="checkbox"/>	+100bp rate change over 12 month period	
<input type="checkbox"/>	+200bp rate change over 12 month period	

Interest rate risk simulations can incorporate shocks or ramps to yield curves. Other "one click" model adjustments can be easily added.

Liquidity risk simulations can accommodate tapering new production to 0, then increasing uninsured or total projected withdrawals.

# Liquidity Risk

Interest Rate Risk Reports are similar, but they show the difference between two models that have different yield curves. Current day floating rate instruments may have floors on rates that will mitigate the value of this report. Capalytics does provide IRR Reports.

Simulation Name: "1000 Each Instrument Created on 2012-09-08T14:04:33-04:00 (Copy)" (End of Period Dates & Balances Shown)

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Line graphs

Drill-down links; see next page

	2013-01-31	2013-02-28	2013-03-31	2013-04-30	2013-05-31
<a href="#">Fixed-Rate Bonds</a>	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000
<a href="#">Floating-Rate Bonds</a>	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000
<a href="#">Fixed-Rate Closed End Loans</a>	6,871,390	5,296,040	3,710,060	2,118,610	518,690
<a href="#">Fixed-Rate Open End Loans</a>	0	0	0	0	0
<a href="#">Hybrid ARMs</a>	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000
<a href="#">Balloon Loans</a>	9,887,640	9,831,460	9,775,280	9,719,100	9,662,920
<a href="#">Floating Rate Closed End Loans</a>	7,249,430	5,870,150	4,486,730	3,101,580	1,713,280
<a href="#">Floating Rate Open End Loans</a>	0	0	0	0	0
<a href="#">Fixed-Rate Mortgage-Backed Securities</a>	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000
<a href="#">Floating-Rate Mortgage-Backed Securities</a>	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000	1,000,000,000
<a href="#">Certificates of Deposit</a>	(100,000,000)	(100,000,000)	(100,000,000)	(100,000,000)	(100,000,000)
<a href="#">Demand Deposits</a>	(50,010,700)	(50,014,500)	(50,018,800)	(50,022,900)	(50,027,100)
<a href="#">Swaps</a>	0	0	0	0	0
<a href="#">Overall View</a>	3,883,997,760	3,880,983,150	3,877,953,270	3,874,916,390	3,871,867,790

# Cashflow Report Linked from Liquidity Risk Report

Simulation Name: "1000 Each Instrument Created on 2012-09-08T14:04:33-04:00 (Copy)" - Balloon Loans

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Annualized Discount Rate:  %

Change in Discount Rate:  %

	2012-12-01 2012-12-31	2013-01-01 2013-01-31	2013-02-01 2013-02-28	2013-03-01 2013-03-31	2013-04-01 2013-04-30	2013-05-01 2013-05-31
Deferred Runoff	0	0	0	0	0	0
<b>New Business Activity</b>						
Originations	0	0	0	0	0	0
- Purchase Discount	0	0	0	0	0	0
Rate on Originations	0%	0%	0%	0%	0%	0%
Rolling Balances	0	0	0	0	0	0
Rate on Rolling Balances	0%	0%	0%	0%	0%	0%
Total New Business Activity	0	0	0	0	0	0
<b>Ending Balance</b>						
Ending Balance	9,943,820	9,887,640	9,831,460	9,775,280	9,719,100	9,662,920
Ending Rate	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Fully Indexed Rate	0.41%	0.41%	0.41%	0.41%	0.41%	0.41%
<b>Average Balance</b>						
Average Balance	9,964,420	9,908,240	9,854,350	9,795,880	9,740,410	9,684,940
Average Rate	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Weighted Avg Rem Months	6	5	4	3	2	1

Displayed on Liquidity Risk Report

# Define Stress Test for Monthly Execution

**Q:** How does this impairment affect each type of asset at this bank?

**A:** 20% of the "1-4 Res' ..." loans that are newest will be defaulted at the start of a model with this impairment. The largest 10% of first mortgages will be modeled as defaulting between 6 and 12 months after the start of a simulation.

## Create New Impairment

This panel allows for describing a new or existing impairment. For each tag that can be attributed to an instrument, select the percentage of the dollars associated with that tag, and a function for sorting the instruments associated with that tag.

For instance, if this impairment models a "crisis" scenario, you might choose for 50% of all comparably tagged assets (say, 50%) to default; in that case, choosing a "sort criteria" that reflects ordering the application of this impairment to instruments based on their size, and entering a threshold of "50.0", would be appropriate.

Impairment name:

Tag Name	Sort Criteria	Threshold	Impairment Application Period
1-4 Family Residential Construction Loans	Loan Age (new-to-old) ↓	20.0 %	Begin impairment at simulation start ↓ Impose entire impairment immediately ↓
All Other Loans	Credit Score (low-to-high) ↓	30.0 %	Begin impairment 2 months after sim start ↓ Spread impairment over 4 months ↓
Closed-End Loans Secured by 1-4 Family Residential Property First Liens	Asset Size (large-to-small) ↓	10.0 %	Begin impairment 6 months after sim start ↓ Spread impairment over 6 months ↓
Closed-End Loans Secured by 1-4 Family Residential Property Junior Liens	Asset Size (large-to-small) ↓	10.0 %	Begin impairment 12 months after sim start ↓ Spread impairment over 12 months ↓
			Begin impairment at simulation start ↓