

### Report Overview

This report provides benchmark estimates of core deposit behavior and value to use in equity at risk modeling for your institution. Average lives are based on national peer averages of charter specific, statistical forecasts of core deposit existing balances runoff (decay) over time. User inputs for institution specific category level balances and rates paid customize the analysis. As necessary, users may also specify their own repricing, non-interest expense, and truncation inputs, plus adjust for surge balances.

Based on the peer benchmark and user inputs, present values and premiums are calculated for a set of regulatory oriented rate shock scenarios. To reflect geographic location and enhance precision, discount rates are matched to the FHLB district in which the institution is located. Behavior and value outcomes are provided for a baseline analyses and two alternate analyses using shorter average lives.

### Deliverable Description

MountainView core deposit index data are designed as equity at risk analysis inputs. Present values and premiums, and underlying cash flows, are available for the core deposit categories listed below. For each category, national averages of franchise specific forecasts of existing balances runoff are produced for Base Case (current interest rates) and a range of -300 bp to +500 bp rate shock scenarios (+/-50 and +/-150 tests are optionally available).

Categories are defined to represent depositor supply motivations (i.e. transactions - checking, liquidity - savings, investment - MMDA) and deposit type (i.e. personal versus business if applicable). Note that "Low" and "High" normally refer to rate paid/tier while "Premium" refers to categories whose repricing is *de facto* tied to an index (generally high rate paid, "hot money" types of funding). The types of categories available are as follows:

#### Banks/Thrifs

DDA-Personal  
DDA-Business  
NOW-Personal  
NOW-Business  
MMDA-Pers Low  
MMDA-Pers High  
MMDA-Indexed  
Savings-Personal  
Savings-Business

#### Credit Unions

NIB Share Drafts  
IB Share Drafts  
MMDA Low  
MMDA High  
MMDA Premium  
Regular Shares

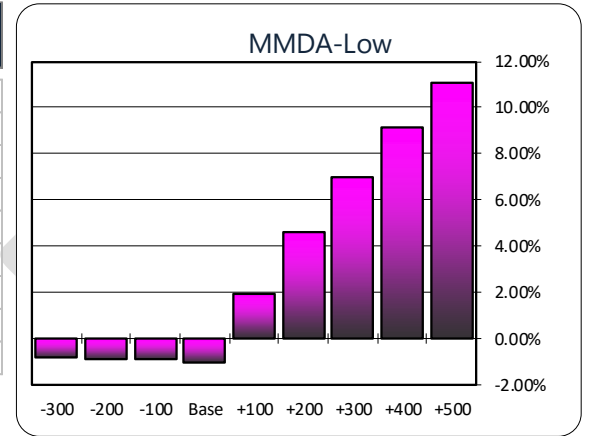
### Applying Index Information in ALM Models

The information provided in this report is flexible in how it can be applied in ALM models. Examples are:

1. Premium or present value data can be directly input as category level override values in ALM models or entries into spreadsheet type IRR reports. Be sure to keep such override inputs up to date, as values change whenever rates paid or discount rates change.
2. Exact runoff balances by time period and interest rate scenario can be input into the model and value related information calculated by the model. Check with your vendor to determine which type of input (dollar values, runoff, or decay) is required by your model. Almost all models have a "cut and paste" capability to input runoff data. Some models have a direct interface to MountainView Index runoff or decay data. Check with your vendor to assess the availability of this function in your model.
3. Average lives can be used to define approximate runoff balances (a "spread even" approach) and values calculated in the model. This method is less precise than using specific forecast data because runoff balances are not generally constant across time.

**Category Level Value Profile**

MMDA	Present Value	Avg Life	Rate Paid	Effective Duration	% Premium	\$ Advantage
Low						
+500	888,901	4.27	2.00%	-2.18	11.11%	111,099
+400	908,272	4.39	1.65%	-2.37	9.17%	91,728
+300	929,820	4.53	1.30%	-2.58	7.02%	70,180
+200	953,837	4.67	0.95%	-2.81	4.62%	46,163
+100	980,640	4.82	0.60%	-3.04	1.94%	19,360
<b>Base</b>	<b>1,010,424</b>	<b>4.95</b>	<b>0.25%</b>	<b>-1.71</b>	<b>-1.04%</b>	<b>-10,424</b>
-100	1,008,877	4.99	0.00%	0.15	-0.89%	-8,877
-200	1,008,726	4.98	0.00%	0.01	-0.87%	-8,726
-300	1,008,615	4.96	0.00%	0.01	-0.86%	-8,615
Book Value:	1,000,000					



Inputs:	Truncation	Beta	NIE
	5.5	0.35%	1.25%

Above profile is provided for all the categories, which are not included in this sample.

SAMPLE

## CORE DEPOSIT BEHAVIOR AND VALUE INPUTS

Sample Institution  
Analysis Date: MM DD, YYYY

### Category Level Decay/Runoff (Behavior) Input Vectors

% Runoff	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR 11	YR 12	YR 13	YR 14	YR 15	YR 16	YR 17	YR 18	YR 19	YR 20
MMDA_L (Base)	0.0404	0.0376	0.0346	0.0332	0.0309	0.8233	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP 100)	0.0557	0.0444	0.0402	0.0353	0.0315	0.7927	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP 200)	0.0813	0.0489	0.0410	0.0357	0.0318	0.7613	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP 300)	0.1072	0.0540	0.0399	0.0346	0.0309	0.7334	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP 400)	0.1324	0.0577	0.0399	0.0326	0.0293	0.7081	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP 500)	0.1559	0.0618	0.0389	0.0309	0.0278	0.6847	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (DN 100)	0.0411	0.0331	0.0300	0.0278	0.0287	0.8393	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (DN 200)	0.0483	0.0305	0.0270	0.0252	0.0244	0.8445	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (DN 300)	0.0559	0.0291	0.0253	0.0233	0.0210	0.8454	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

\* This presents dollar runoff values as a percent of initial category balance.

% Decay	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR 11	YR 12	YR 13	YR 14	YR 15	YR 16	YR 17	YR 18	YR 19	YR 20
MMDA_L (Base)	0.0404	0.0392	0.0375	0.0374	0.0362	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP100)	0.0557	0.0471	0.0447	0.0411	0.0382	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP200)	0.0813	0.0532	0.0472	0.0431	0.0400	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP300)	0.1072	0.0605	0.0476	0.0433	0.0404	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP400)	0.1324	0.0665	0.0492	0.0423	0.0398	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (UP500)	0.1559	0.0732	0.0497	0.0415	0.0390	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (DN100)	0.0411	0.0345	0.0324	0.0310	0.0331	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (DN200)	0.0483	0.0321	0.0293	0.0282	0.0281	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MMDA_L (DN300)	0.0559	0.0308	0.0277	0.0262	0.0242	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

\* This presents dollar runoff values as a percent of the previous period category balance.

\$ Runoff	YR 1	YR 2	YR 3	YR 4	YR 5	YR 6	YR 7	YR 8	YR 9	YR 10	YR 11	YR 12	YR 13	YR 14	YR 15	YR 16	YR 17	YR 18	YR 19	YR 20
MMDA_L (Base)	40,405	37,625	34,594	33,163	30,946	823,267	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (UP 100)	55,731	44,435	40,241	35,321	31,527	792,746	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (UP 200)	81,287	48,885	41,020	35,709	31,763	761,336	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (UP 300)	107,217	54,040	39,898	34,606	30,872	733,367	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (UP 400)	132,411	57,691	39,873	32,572	29,315	708,139	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (UP 500)	155,935	61,771	38,885	30,864	27,817	684,728	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (DN 100)	41,134	33,114	30,003	27,788	28,688	839,273	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (DN 200)	48,344	30,534	26,988	25,195	24,441	844,498	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MMDA_L (DN 300)	55,922	29,067	25,306	23,299	20,957	845,449	0	0	0	0	0	0	0	0	0	0	0	0	0	0

\* This Represents the annual dollar runoff values.

Above vectors are provided for all the categories, which are not included in this sample.

Note: MVRA also provides various templates/guides on implementation in different ALM systems.

**Non-Core (Surge and Transient) Balances Adjustments**

Not all core deposits are truly “core” in nature. Seasonal or otherwise transient balances are short term and must not be assigned the long average lives that apply to traditional core deposit balances. A similar treatment is required by surge balances – funding that entered the balance sheet on a faster than normal supply path. Surge balances likely do not have traditional supply motivations.

Users can adjust current balances for surge and transient balances in the Summary tab, at the upper left. Enter the percentage considered to be surge or transient balances in the indicated cells. A “1.00” entry assigns 100% of the balances to run off in year one, a “0.00%” entry implies zero surge, etc. Estimate the percent of surge and transient balances by examining historic general ledger balances by category.

**Core Deposit Average Life Forecasts Summary Example**

	Category	Balances	Truncation	-300BP	-200BP	-100BP	BASE	+100BP	+200BP	+300BP	+400BP	+500BP
0.00	DDA_P	1,000,000	8.50	7.20	7.29	7.38	<b>7.44</b>	7.42	7.34	7.25	7.17	7.08
0.00	DDA_B	1,000,000	7.50	6.58	6.64	6.68	<b>6.69</b>	6.58	6.43	6.28	6.14	6.01
0.00	NOW_P	1,000,000	8.50	7.45	7.48	7.49	<b>7.46</b>	7.34	7.20	7.06	6.94	6.82
0.00	NOW_B	1,000,000	7.50	6.22	6.28	6.32	<b>6.29</b>	6.17	6.03	5.89	5.76	5.63
0.20	MMDA_L	1,000,000	5.50	3.74	3.73	3.70	<b>3.64</b>	3.57	3.50	3.44	3.37	3.32
0.00	MMDA_H	1,000,000	3.50	3.03	3.00	2.96	<b>2.91</b>	2.84	2.77	2.70	2.64	2.58
0.00	MMDA_P	1,000,000	2.50	2.27	2.27	2.21	<b>2.16</b>	2.06	1.93	1.82	1.72	1.64
0.00	SAV_P	1,000,000	8.50	7.29	7.25	7.24	<b>7.21</b>	7.10	6.98	6.87	6.76	6.66
0.00	SAV_B	1,000,000	7.50	5.89	6.04	6.19	<b>6.32</b>	6.30	6.19	6.09	6.00	5.91
	Total Rpt Deposits	9,000,000	6.61	5.52	5.55	5.58	<b>5.57</b>	5.49	5.37	5.27	5.17	5.07

## CORE DEPOSIT BEHAVIOR AND VALUE INPUTS

Sample Institution  
Analysis Date: MM DD, YYYY

### Alternate Behavior and Value Forecasts

Three separate projections of core deposit behavior and value are provided:

- 1) Standard Projection: Runoff/decay based on national peer averages using as input truncation points.
- 2) Alt-S: Shorter truncation and faster runoff; default is ~25% quicker overall run down of balances.
- 3) Alt-R: Shorter truncation and faster runoff; default is ~50% quicker overall run down of balances.

The intent of the Alt Scenarios is to facilitate conducting sensitivity and stress testing or to empower users with more conservative runoff inputs in baseline compliance IRR analyses.

#### Standard Average Life Forecasts

Category	Balances	Truncation	-300BP	-200BP	-100BP	BASE	+100BP	+200BP	+300BP	+400BP	+500BP
DDA_P	1,000,000	8.50	7.20	7.29	7.38	<b>7.44</b>	7.42	7.34	7.25	7.17	7.08
DDA_B	1,000,000	7.50	6.58	6.64	6.68	<b>6.69</b>	6.58	6.43	6.28	6.14	6.01
NOW_P	1,000,000	8.50	7.45	7.48	7.49	<b>7.46</b>	7.34	7.20	7.06	6.94	6.82
NOW_B	1,000,000	7.50	6.22	6.28	6.32	<b>6.29</b>	6.17	6.03	5.89	5.76	5.63
MMDA_L	1,000,000	5.50	3.74	3.73	3.70	<b>3.64</b>	3.57	3.50	3.44	3.37	3.32
MMDA_H	1,000,000	3.50	3.03	3.00	2.96	<b>2.91</b>	2.84	2.77	2.70	2.64	2.58
MMDA_P	1,000,000	2.50	2.27	2.27	2.21	<b>2.16</b>	2.06	1.93	1.82	1.72	1.64
SAV_P	1,000,000	8.50	7.29	7.25	7.24	<b>7.21</b>	7.10	6.98	6.87	6.76	6.66
SAV_B	1,000,000	7.50	5.89	6.04	6.19	<b>6.32</b>	6.30	6.19	6.09	6.00	5.91
Total Rpt Deposits	9,000,000	6.61	5.52	5.55	5.58	<b>5.57</b>	5.49	5.37	5.27	5.17	5.07

#### Alt-S Average Life Forecasts

Category	Balances	Truncation	-300BP	-200BP	-100BP	BASE	+100BP	+200BP	+300BP	+400BP	+500BP
DDA_P	1,000,000	6.50	4.47	4.51	4.55	<b>4.58</b>	4.57	4.54	4.50	4.46	4.42
DDA_B	1,000,000	5.50	3.77	3.79	3.81	<b>3.81</b>	3.76	3.71	3.65	3.60	3.55
NOW_P	1,000,000	6.50	4.59	4.60	4.60	<b>4.58</b>	4.53	4.47	4.40	4.35	4.30
NOW_B	1,000,000	5.50	3.63	3.65	3.66	<b>3.64</b>	3.60	3.55	3.49	3.45	3.40
MMDA_L	1,000,000	4.50	2.68	2.67	2.65	<b>2.62</b>	2.58	2.56	2.53	2.51	2.48
MMDA_H	1,000,000	2.50	1.63	1.60	1.59	<b>1.57</b>	1.56	1.56	1.55	1.54	1.54
MMDA_P	1,000,000	2.50	2.30	2.28	2.22	<b>2.17</b>	2.12	2.03	1.96	1.91	1.86
SAV_P	1,000,000	6.50	4.51	4.49	4.48	<b>4.46</b>	4.41	4.36	4.31	4.26	4.22
SAV_B	1,000,000	5.50	3.50	3.55	3.61	<b>3.66</b>	3.65	3.61	3.57	3.53	3.50
Total Rpt Deposits	9,000,000	5.06	3.45	3.46	3.46	<b>3.45</b>	3.42	3.37	3.33	3.29	3.25

#### Alt-R Average Life Forecasts

Category	Balances	Truncation	-300BP	-200BP	-100BP	BASE	+100BP	+200BP	+300BP	+400BP	+500BP
DDA_P	1,000,000	4.50	2.36	2.37	2.38	<b>2.39</b>	2.39	2.38	2.37	2.36	2.35
DDA_B	1,000,000	3.50	1.70	1.70	1.69	<b>1.69</b>	1.68	1.67	1.67	1.66	1.65
NOW_P	1,000,000	4.50	2.39	2.40	2.39	<b>2.39</b>	2.37	2.35	2.33	2.31	2.29
NOW_B	1,000,000	3.50	1.67	1.66	1.66	<b>1.65</b>	1.65	1.64	1.64	1.63	1.63
MMDA_L	1,000,000	2.50	0.93	0.92	0.91	<b>0.90</b>	0.90	0.91	0.92	0.92	0.93
MMDA_H	1,000,000	2.50	1.63	1.60	1.59	<b>1.57</b>	1.56	1.56	1.55	1.54	1.54
MMDA_P	1,000,000	2.50	2.30	2.28	2.22	<b>2.17</b>	2.12	2.03	1.96	1.91	1.86
SAV_P	1,000,000	4.50	2.36	2.35	2.35	<b>2.34</b>	2.33	2.31	2.29	2.28	2.27
SAV_B	1,000,000	3.50	1.64	1.65	1.65	<b>1.65</b>	1.65	1.65	1.64	1.64	1.63
Total Rpt Deposits	9,000,000	3.50	1.88	1.88	1.87	<b>1.86</b>	1.85	1.83	1.82	1.81	1.79

## Underlying Methodology

Statistically estimated core deposit runoff forecasts from a large number of charter specific, nationally distributed MountainView *Core Deposit Analysis Report* clients are used to produce the runoff balances underlying the core deposit index behavior and value data provided in this report. These experiences reflect the behavior of billions of dollars of aggregated core deposit balances, representing the individual decisions made by millions of depositors as observed in their individual monthly account level records.

MountainView *Core Deposit Index Report* behavior and value data are normally acceptable from a regulatory perspective when balance sheets are small, non-complex, and when other institution risks are limited. Higher levels of precision (e.g. an institution specific statistical analysis) may be required when the balance sheet is larger and more complex, or when other risk sources are unfavorable. A range of institution specific analysis solutions are available from MountainView to meet any special needs.

## Glossary

For reference, the following definitions apply to the report.

*Book Value:* Current balance sheet balance (e.g. quarter end general ledger balance)

*Surge Balances:* Current funding that entered the balance sheet at an accelerated pace during and after the financial crisis – likely does not have traditional supply motivations to long average life

*Transient Balances:* Seasonal or otherwise temporary balances – do not have long average lives

*Rate Paid:* Current (Base Case) rate paid and revised price in each interest rate scenario

*Beta:* The change in rate paid from one interest rate scenario to the next (usually per 100 bp)

*Truncation Point:* The time period in which retention is truncated (runoff ballooned) to recognize the chance that event risk becomes material after some point in time

*Non-Interest Expense (NIE):* The all-in cost of gathering, servicing, and retaining core deposits, net of direct fee income, expressed as a percent of average balances

*Standard Forecasts:* Runoff is taken directly from the MPS national peer base of statistical experience

*Alt Forecasts:* Standard forecast runoff data forced to run down faster and truncated sooner to shorten average lives

*Present Value:* Economic value of core deposit book value balances, assuming FHLB term advances as alternate funding source

*Average Life:* Weighted average term calculated from the existing balance runoff amounts (mid-points of the annual runoff periods as weights)

*Effective Duration:* The percent sensitivity of core deposit present value for a 100 basis point change in interest rates

*Percent Premium:* The difference between core deposit book value and present value as a percent of book value

*Dollar Advantage:* The dollar difference between core deposit book value and present value