Report Overview

MountainView SmartRamps are projections of individual ALM model driver rates based on statistical analyses of long-term historical interest rate relationships. The goal is to define practical and regulatory defensible IRR tests for basis risk, arising from differential driver rate changes, and for the risk from changes in the shape of the yield curve. The test design bridges the IRR analysis gap between linear rate ramps (which are too simplistic because driver rates move at the same speed) and econometric model-based interest rate forecasts (which often present inconsistent predictions from period to period). The stable, yet evolving over time, set of alternate IRR tests complement standard rate shock testing. MVRA offers two types of alternative rate scenario projections (SmartRamps and SmartTwists) to address the limitation of typical ALM models instantaneous rate shock assumptions and to meet differing needs for alternate IRR testing.

MountainView Alternate IRR Rate Tests are based on advanced econometric analyses of historical time series rates data. The estimations use a sophisticated simultaneous equations statistical approach that quantifies all interest rate inter-relationships. Projections properly incorporate all relevant behaviors, at the "historical average" level of behavior that is preferred for regulatory IRR analyses.

Deliverable Description

- Two types of rate projections for alternate IRR testing.

  MountainView SmartRamps:

  MVRA SmartRamps provides selected driver rate forecasts in a set of alternative rate scenarios in which the 3-month Treasury is assumed to shift by 1/12 of the final shock amount from period 1 to 12.
  - The SmartRamps rate shock scenarios include +/- (50/100/150/200/300/400/500 bps).

  MountainView SmartTwists:

  MVRA SmartTwists provides selected driver rate forecasts based off the controlled change in the 3-month and 10-year Treasury curves by flattening or steepening the curve. Like SmartRamps, a change of 1/12 of the indicated final shock on 3-month Treasury and 10-year Treasury will be imposed in from period 1 to 12 in the forecast.
  - The SmartTwists scenarios, defined as the combination of 3-month/10-year Treasury rates changes (in bps), are: -300/30, -200/20, -150/15, -100/10, -50/5, +100/10, +200/20, +300/30, +400/40, +500/50

- Twenty common ALM model driver rates projection under all the scenarios are included in each report.

  10 Treasury curve rates
  - UST 1M, UST 3M, UST 6M, UST 1Y, UST 2Y, UST 3Y, UST 5Y, UST 7Y, UST 10Y, UST 20Y

  4 points on the short-term LIBOR curve
  - Libor 1M, Libor 3M, Libor 6M, Libor 12M

  10 other driver rates
  - Fed Funds, Prime, Auto, Mort30, Mort15, ARM1, REAL5, REAL7, REAL10, REAL20

- Multiple result presentation options are provided for ease of use.

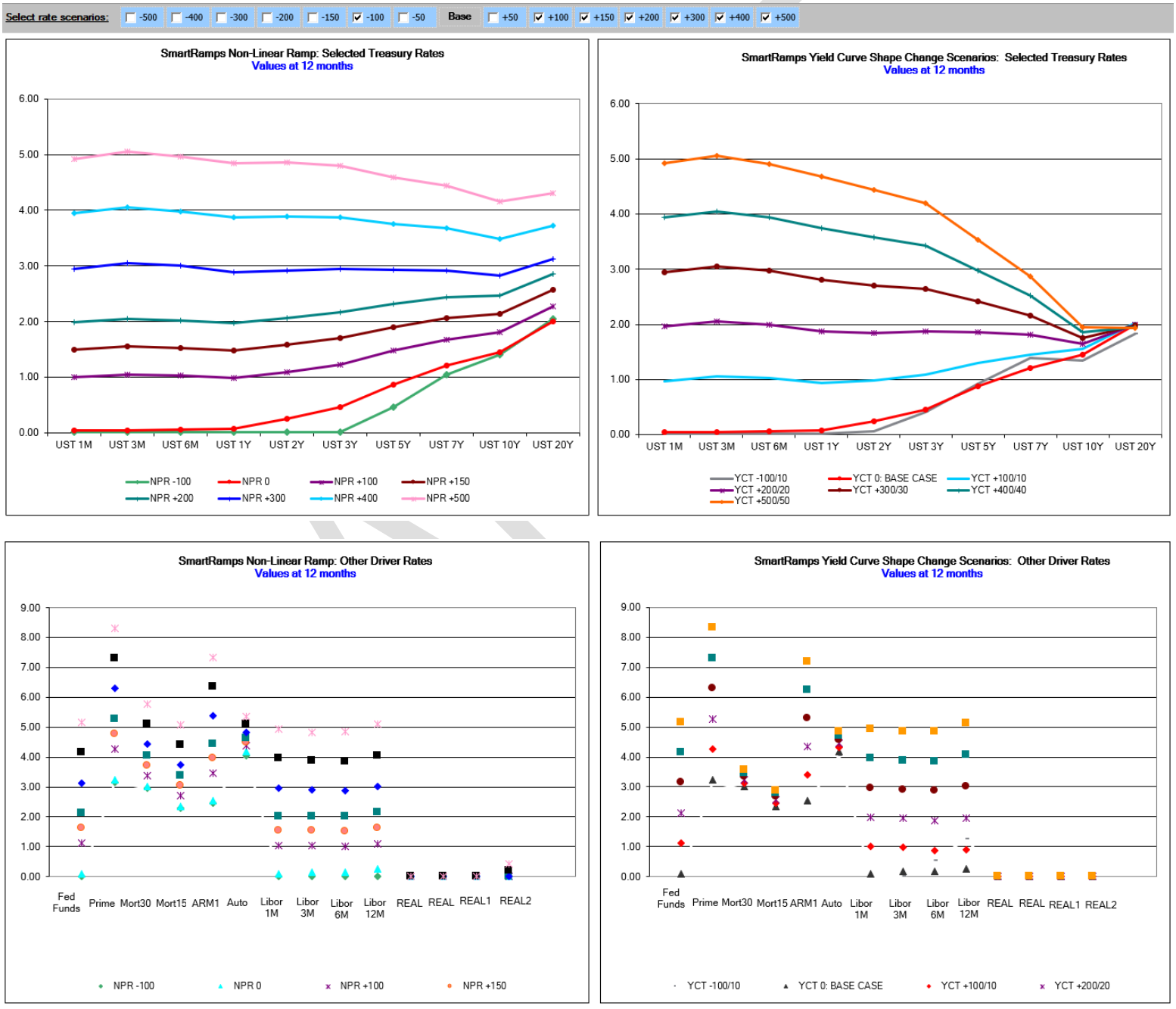
  View 1: SmartRamps and SmartTwists by month across driver rates
  View 2: SmartRamps and SmartTwists by driver rates across month
  SmartShocks (View3): Driver Rates across rate shocks (12-month or 24-month ramp or twist views)

Graphs

1. "Summary" tab display:

- SmartRamps Non-Linear Ramps for Selected Treasury Rates
- SmartRamps Non-Linear Ramps for Other Driver Rates
- SmartRamps Yield Curve Shape Change Scenarios for Selected Treasury Rates (SmartTwists)
- SmartRamps Yield Curve Shape Change Scenarios for Other Driver Rates (SmartTwists)

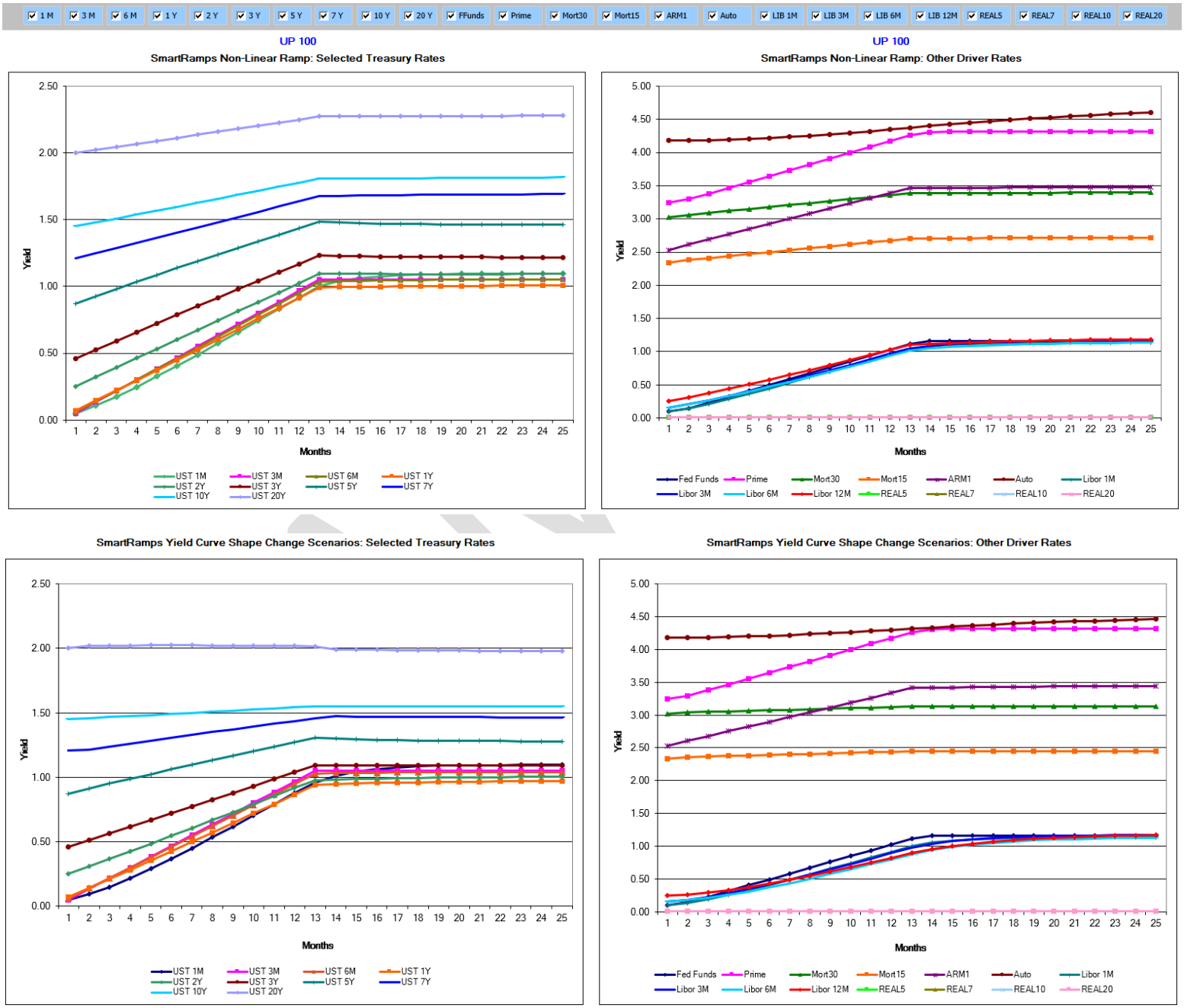
Note: The graphs are interactive and allow the user to select which rate shock scenarios to display in the graphs by checking the "Select Rate Scenarios" check boxes.



2. "Graphs" tab display:

- SmartRamps Non-Linear Ramps for Selected Treasury Rates
- SmartRamps Non-Linear Ramps for Other Driver Rates
- SmartRamps Yield Curve Shape Change Scenarios for Selected Treasury Rates (SmartTwists)
- SmartRamps Yield Curve Shape Change Scenarios for Other Driver Rates (SmartTwists)

Note: The graphs are interactive and allow the user to select which Treasury Rates or Other Driver Rates to display. The user can also select which rate shock scenario to display in the graphs by selecting the drop-down list (i.e. UP 100) at the top of the graph.



Ramps (View 1)

SmartRamps by month across driver rates.

	NPR 0																						
	UST 1M	UST 3M	UST 6M	UST 1Y	UST 2Y	UST 3Y	UST 5Y	UST 7Y	UST 10Y	UST 20Y	Fed Funds	Prime	Mort30	Mort15	ARM1	Auto	Libor 1M	Libor 3M	Libor 6M	Libor 12M	REAL5	REAL7	REAL10	REAL20
0	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
1	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
2	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
3	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
4	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
5	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
6	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
7	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
8	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
9	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
10	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
11	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
12	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
13	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
14	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
15	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
16	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
17	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
18	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
19	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
20	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
21	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
22	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
23	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
24	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01

Ramps (View 2)

SmartRamps by Driver Rates across months.

	NPR 0																								
	Mo 0	Mo 1	Mo 2	Mo 3	Mo 4	Mo 5	Mo 6	Mo 7	Mo 8	Mo 9	Mo 10	Mo 11	Mo 12	Mo 13	Mo 14	Mo 15	Mo 16	Mo 17	Mo 18	Mo 19	Mo 20	Mo 21	Mo 22	Mo 23	Mo 24
UST 1M	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
UST 3M	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
UST 6M	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
UST 1Y	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
UST 2Y	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
UST 3Y	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
UST 5Y	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
UST 7Y	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
UST 10Y	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
UST 20Y	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Fed Funds	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Prime	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Mort30	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02
Mort15	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
ARM1	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53
Auto	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18
Libor 1M	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Libor 3M	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Libor 6M	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Libor 12M	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
REAL5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
REAL7	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
REAL10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
REAL20	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Twists (View 1)

SmartTwists by month across driver rates.

	YCT 0: BASE CASE																							
	UST 1M	UST 3M	UST 6M	UST 1Y	UST 2Y	UST 3Y	UST 5Y	UST 7Y	UST 10Y	UST 20Y	Fed Funds	Prime	Mort30	Mort15	ARM1	Auto	Libor 1M	Libor 3M	Libor 6M	Libor 12M	REAL5	REAL7	REAL10	REAL20
0	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
1	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
2	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
3	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
4	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
5	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
6	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
7	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
8	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
9	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
10	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
11	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
12	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
13	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
14	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
15	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
16	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
17	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
18	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
19	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
20	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
21	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
22	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
23	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01
24	0.05	0.05	0.06	0.07	0.25	0.46	0.87	1.21	1.45	2.00	0.10	3.25	3.02	2.34	2.53	4.18	0.10	0.16	0.16	0.25	0.01	0.01	0.01	0.01

Twists (View 2)

SmartTwists by Driver Rates across months.

	YCT 0: BASE CASE																							
	Mo 0	Mo 1	Mo 2	Mo 3	Mo 4	Mo 5	Mo 6	Mo 7	Mo 8	Mo 9	Mo 10	Mo 11	Mo 12	Mo 13	Mo 14	Mo 15	Mo 16	Mo 17	Mo 18	Mo 19	Mo 20	Mo 21	Mo 22	Mo 23	Mo 24
UST 1M	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
UST 3M	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
UST 6M	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
UST 1Y	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
UST 2Y	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
UST 3Y	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46	0.46
UST 5Y	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
UST 7Y	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21	1.21
UST 10Y	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
UST 20Y	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Fed Funds	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Prime	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Mort30	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02	3.02
Mort15	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34	2.34
ARM1	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53
Auto	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18	4.18
Libor 1M	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Libor 3M	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Libor 6M	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
Libor 12M	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
REAL5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
REAL7	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
REAL10	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
REAL20	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01

Ramp/Twist View #3 – "Smart Shocks"

The following table displays SmartShocks by driver rate across rate shock scenarios. The user can select 12 months or 24/Equilibrium. The user can also select to view Ramps or Twist views by selecting the Rates drop down list.

SmartShocks														
Period ending September 30, 2021		-300	-200	-150	-100	-50	Base	+50	**+100**	+150	+200	+300	+400	+500
[Select Month]	12	Driver rates for a set of rate ramp scenarios that depict the paths of key driver rates if the 3 month Treasury rate moves at a specified speed over a 12 month horizon and all other driver rates follow according to historic tendencies. This adds a specific test for basis risk to earnings at risk IRR analyses.												
[Select Rates]	Ramps													
UST 1M	1 month treasury rate	0.01	0.01	0.01	0.01	0.01	0.05	0.51	**1.00**	1.50	2.00	2.95	3.94	4.93
UST 3M	3 month treasury rate	0.01	0.01	0.01	0.01	0.01	0.05	0.55	**1.05**	1.55	2.05	3.05	4.05	5.05
UST 6M	6 month treasury rate	0.01	0.01	0.01	0.01	0.01	0.06	0.54	**1.04**	1.53	2.02	3.00	3.98	4.97
UST 1Y	1 year treasury rate	0.01	0.01	0.01	0.01	0.01	0.07	0.50	**0.99**	1.48	1.97	2.89	3.87	4.84
UST 2Y	2 year treasury rate	0.01	0.01	0.01	0.01	0.01	0.25	0.61	**1.09**	1.58	2.07	2.91	3.88	4.85
UST 3Y	3 year treasury rate	0.01	0.01	0.01	0.01	0.15	0.46	0.77	**1.23**	1.70	2.17	2.94	3.87	4.80
UST 5Y	5 year treasury rate	0.01	0.06	0.26	0.46	0.67	0.87	1.07	**1.49**	1.90	2.32	2.93	3.76	4.59
UST 7Y	7 year treasury rate	0.74	0.88	0.96	1.04	1.13	1.21	1.29	**1.68**	2.06	2.44	2.91	3.68	4.45
UST 10Y	10 year treasury rate	1.30	1.35	1.38	1.40	1.43	1.45	1.48	**1.81**	2.14	2.47	2.83	3.49	4.15
UST 20Y	20 year treasury rate	2.17	2.09	2.06	2.04	2.02	2.00	1.98	**2.27**	2.57	2.86	3.13	3.72	4.31
Fed Funds	Fed funds rate	0.01	0.01	0.01	0.01	0.01	0.10	0.61	**1.11**	1.62	2.13	3.14	4.16	5.17
Prime	Prime rate	3.16	3.16	3.16	3.16	3.16	3.25	3.76	**4.26**	4.77	5.28	6.29	7.31	8.32
Mort30	30 year mortgage rate	2.85	2.90	2.93	2.96	2.99	3.02	3.05	**3.39**	3.72	4.06	4.43	5.10	5.76
Mort15	15 year mortgage rate	2.17	2.22	2.25	2.28	2.31	2.34	2.37	**2.71**	3.04	3.38	3.75	4.42	5.08
ARM1	Adjustable rate mortgage	2.45	2.45	2.46	2.46	2.47	2.53	2.97	**3.46**	3.96	4.45	5.38	6.37	7.34
Auto	Auto rate	3.84	3.94	4.00	4.06	4.12	4.18	4.24	**4.37**	4.51	4.64	4.83	5.10	5.37
Libor 1M	1 month libor rate	0.01	0.01	0.01	0.01	0.01	0.10	0.55	**1.04**	1.53	2.03	2.97	3.95	4.94
Libor 3M	3 month libor rate	0.01	0.01	0.01	0.01	0.01	0.16	0.57	**1.05**	1.53	2.02	2.91	3.87	4.84
Libor 6M	6 month libor rate	0.01	0.01	0.01	0.01	0.01	0.16	0.52	**1.02**	1.51	2.01	2.87	3.86	4.85
Libor 12M	12 month libor rate	0.01	0.01	0.01	0.01	0.01	0.25	0.57	**1.10**	1.63	2.16	3.01	4.06	5.12
REAL5	5 year treasury (inflation adjusted)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	**0.01**	0.01	0.01	0.01	0.01	0.01
REAL7	7 year treasury (inflation adjusted)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	**0.01**	0.01	0.01	0.01	0.01	0.01
REAL10	10 year treasury (inflation adjusted)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	**0.01**	0.01	0.01	0.01	0.01	0.01
REAL20	20 year treasury (inflation adjusted)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	**0.01**	0.01	0.01	0.01	0.21	0.42

The below table displays the change in rates from the Base Case scenario.

-300	-200	-150	-100	-50	Base	+50	**+100**	+150	+200	+300	+400	+500
Change from Base Case												
-0.04	-0.04	-0.04	-0.04	-0.04		0.46	**0.95**	1.45	1.95	2.90	3.89	4.88
-0.04	-0.04	-0.04	-0.04	-0.04		0.50	**1.00**	1.50	2.00	3.00	4.00	5.00
-0.05	-0.05	-0.05	-0.05	-0.05		0.48	**0.98**	1.47	1.96	2.94	3.92	4.91
-0.06	-0.06	-0.06	-0.06	-0.06		0.43	**0.92**	1.41	1.90	2.82	3.80	4.77
-0.24	-0.24	-0.24	-0.24	-0.24		0.36	**0.84**	1.33	1.82	2.66	3.63	4.60
-0.45	-0.45	-0.45	-0.45	-0.31		0.31	**0.77**	1.24	1.71	2.48	3.41	4.34
-0.86	-0.81	-0.61	-0.41	-0.20		0.20	**0.62**	1.03	1.45	2.06	2.89	3.72
-0.47	-0.33	-0.25	-0.17	-0.08		0.08	**0.47**	0.85	1.23	1.70	2.47	3.24
-0.15	-0.10	-0.07	-0.05	-0.02		0.03	**0.36**	0.69	1.02	1.38	2.04	2.70
0.17	0.09	0.06	0.04	0.02		-0.02	**0.27**	0.57	0.86	1.13	1.72	2.31
-0.09	-0.09	-0.09	-0.09	-0.09		0.51	**1.01**	1.52	2.03	3.04	4.06	5.07
-0.09	-0.09	-0.09	-0.09	-0.09		0.51	**1.01**	1.52	2.03	3.04	4.06	5.07
-0.17	-0.12	-0.09	-0.06	-0.03		0.03	**0.37**	0.70	1.04	1.41	2.08	2.74
-0.17	-0.12	-0.09	-0.06	-0.03		0.03	**0.37**	0.70	1.04	1.41	2.08	2.74
-0.08	-0.08	-0.08	-0.07	-0.06		0.44	**0.93**	1.43	1.92	2.85	3.84	4.81
-0.34	-0.24	-0.18	-0.12	-0.06		0.06	**0.19**	0.33	0.46	0.65	0.92	1.19
-0.09	-0.09	-0.09	-0.09	-0.09		0.45	**0.94**	1.43	1.93	2.87	3.85	4.84
-0.15	-0.15	-0.15	-0.15	-0.15		0.41	**0.89**	1.37	1.86	2.75	3.71	4.68
-0.15	-0.15	-0.15	-0.15	-0.15		0.36	**0.86**	1.35	1.85	2.71	3.70	4.69
-0.24	-0.24	-0.24	-0.24	-0.24		0.32	**0.85**	1.38	1.91	2.76	3.81	4.87
0.00	0.00	0.00	0.00	0.00		0.00	**0.00**	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00		0.00	**0.00**	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00		0.00	**0.00**	0.00	0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00	0.00		0.00	**0.00**	0.00	0.00	0.00	0.20	0.41