

Financial
Performance

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◆ *Risk Management Strategy & Solutions* ◆

The NEV Supervisory Test “Perfect Storm” Has Arrived with a Vengeance!

Issues & Challenges for Credit Unions and Why you NEED to be Overly Prepared

July 14, 2022



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US 10 year Treasury

US10YT

YIELD TODAY'S CHANGE 1 YEAR CHANGE
3.04 ↓ -0.065 / -2.11% ↑ +123.56%

Data delayed at least 20 minutes, as of Jul 11 2022 13:44 BST.

Summary

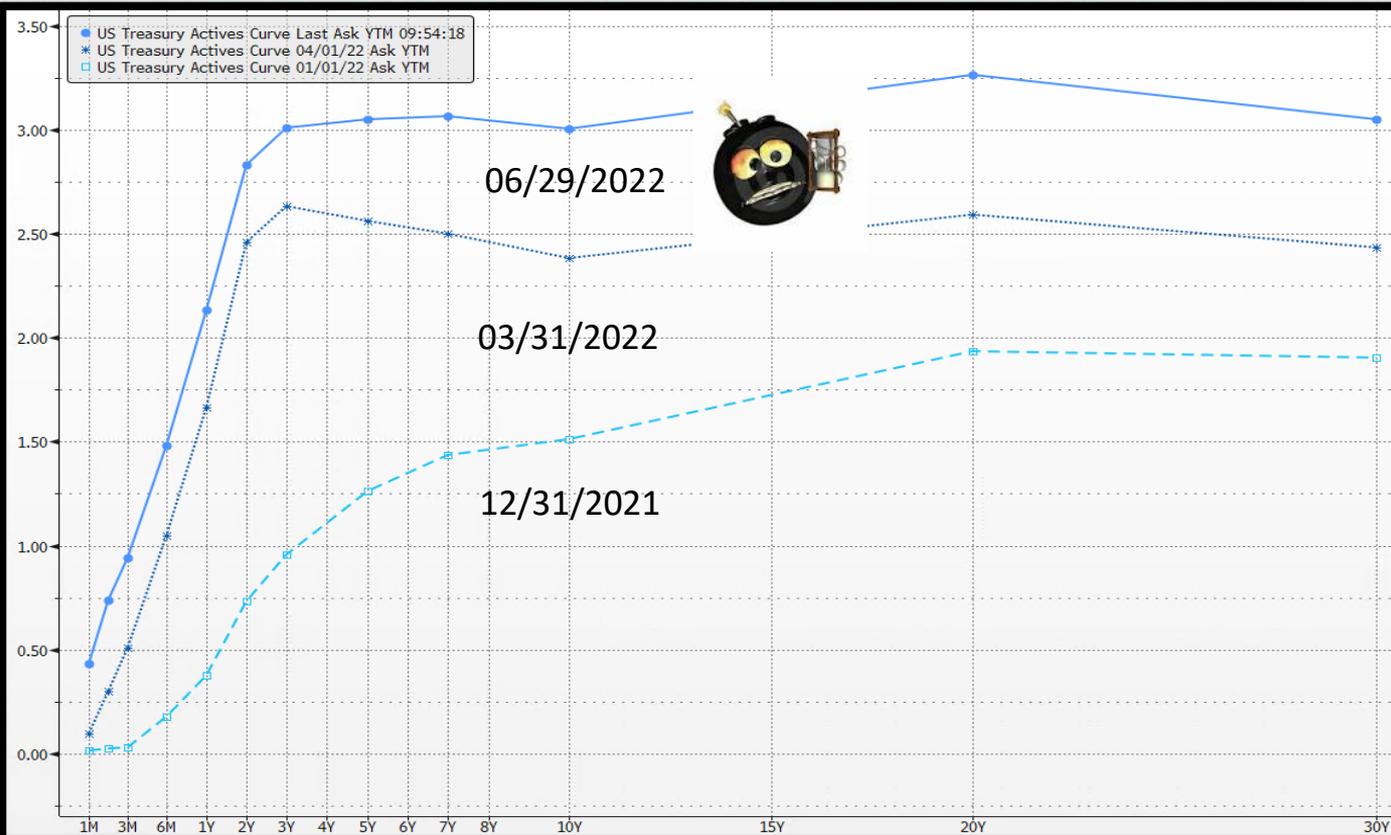
Charts



IT WAS THE BEST OF TIMES, IT WAS THE WORST OF TIMES.

—CHARLES DICKENS, 1859





Questions:

- What's Happening?
- Why Curve So STEEP?
- Impact to Earnings? (Nirvana!)
- Impact to NEV SUP Test?



- ◆ “Net Economic Value” Basic Fundamentals (a “Real World” Approach)
- ◆ Key Drivers of NMD values and Premiums
 - NEV Calculations using *real NMD values*
- ◆ De-mystifying the NEV Supervisory Test
 - Premiums are “fixed”: One Size Fits All
 - Valuations are **seriously undervalued**
 - “Free Beer Tomorrow” Concept
- ◆ Eye of the Storm: **DORs soon the New Normal?**
- ◆ The CU Paradox: “Fixing” the fictitious NEV Sup Test risk is **COUNTERPRODUCTIVE...**
(medicine worse than the poison)
- ◆ Case Studies & Strategies (“de-risking” considerations...a conundrum)



- ◆ **NEV = Economic Value of Assets *minus* Economic Value of Liabilities**
 - “Present value” of all cash flows in various rate environments (+300bp for CUs)
 - Projected cash flows “discounted” to ***market rates***
 - ***Think of as replacement cost for each asset and liability***

- ◆ **Non-Maturity Deposits (NMD) are **Critical Assumption****
 - No contractual “life” therefore need to estimate Valuations(premiums) based on:
 - ✓ Price Sensitivity
 - ✓ Decay Rates
 - ✓ Volatility
 - ✓ Average lives (truncation period)

BETAS

BETA SUMMARY

Account Type	Balance	Rate	Floor Rate	Down		Up	
				Prior Study	Prior Study	Prior Study	Prior Study
Regular Shares	418,826,022	0.06%	0.01%	62%	10%	62%	10%
Total Interest Bearing NMDs	418,826,022	0.06%	0.01%	62%	10%	62%	10%
Total NMD	418,826,022	0.06%	0.01%	62%	10%	62%	10%

“Beta” 10%

BETA ESTIMATES

Account Type	Balance	Rate	Floor Rate	Prior Model		Deposit Study Regression Results				Study Betas	
				Down	Up	Full Rising	Full Falling	Up 100bp	Down 100bp	Down	Up
Regular Shares	418,826,022	0.06%	0.01%	62%	62%	0%	9%	0%	29%	10%	10%
Total Interest Bearing NMDs	418,826,022	0.06%	0.01%	62%	62%	-	-	-	-	10%	10%
Total NMD	418,826,022	0.06%	0.01%	62%	62%	-	-	-	-	10%	10%

Scenarios

Full Rising Cycle 437bp for 03/31/2004 to 06/30/2006						
Account Type	Ending Balance	Avg. Balance	Beta	R-Squared	Func Result	Reason
Regular Shares	122,767,977	138,085,192	0%	58.20%	No	Negative Beta

Full Falling Cycle -337bp for 08/31/2007 to 12/31/2009						
Account Type	Ending Balance	Avg. Balance	Beta	R-Squared	Func Result	Reason
Regular Shares	110,423,863	107,865,097	9%	79.04%	Possible	Moderate R-Squared

Up 100bp Cycle 106bp for 11/30/2005 to 06/30/2006						
Account Type	Ending Balance	Avg. Balance	Beta	R-Squared	Func Result	Reason
Regular Shares	122,767,977	116,807,433	0%	79.77%	Possible	Moderate R-Squared

Down 100bp Cycle -101bp for 02/28/2009 to 11/30/2009						
Account Type	Ending Balance	Avg. Balance	Beta	R-Squared	Func Result	Reason
Regular Shares	120,065,205	117,879,532	29%	85.95%	Yes	High R-Squared

AVERAGE LIFE

AVERAGE LIFE SUMMARY

Account Type	Balance	Rate	Baseline Scenario		Stress Scenario	
			12 Mo.	36 Mo.	12 Mo.	36 Mo.
Regular Shares	418,826,022	0.06%	7.50	7.73	7.10	7.17
Total	418,826,022	0.06%	7.50	7.73	7.10	7.17

“Average Life” 7.5 years

VOLATILITY

VOLATILITY SUMMARY

Account Type	Balance	Rate	Probable Non-Core %		Stress Non-Core %		Core %		Probable Non-Core \$		Stress Non-Core \$		Core \$	
			12 Mo.	36 Mo.	12 Mo.	36 Mo.	12 Mo.	36 Mo.	12 Mo.	36 Mo.	12 Mo.	36 Mo.	12 Mo.	36 Mo.
Regular Shares	418,826,022	0.06%	4.2%	3.8%	7.3%	6.4%	95.8%	96.2%	17,590,693	15,915,389	30,574,300	26,804,865	401,235,329	402,910,633
Total	418,826,022	0.06%	4.2%	3.8%	7.3%	6.4%	95.8%	96.2%	17,590,693	15,915,389	30,574,300	26,804,865	401,235,329	402,910,633

VOLATILITY BALANCES SUMMARY

Account Type	Balance	Rate	Probable Non-Core %		Stress Non-Core %		Core %	
			12 Mo.	36 Mo.	12 Mo.	36 Mo.	12 Mo.	36 Mo.
Regular Shares	418,826,022	0.06%	4.2%	3.8%	7.3%	6.4%	95.8%	96.2%
Total	418,826,022	0.06%	4.2%	3.8%	7.3%	6.4%	95.8%	96.2%

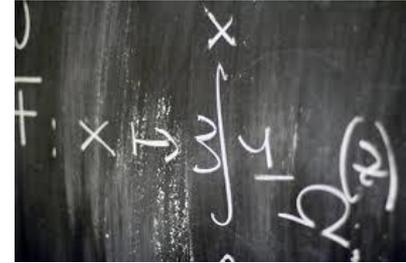
96% “Core”

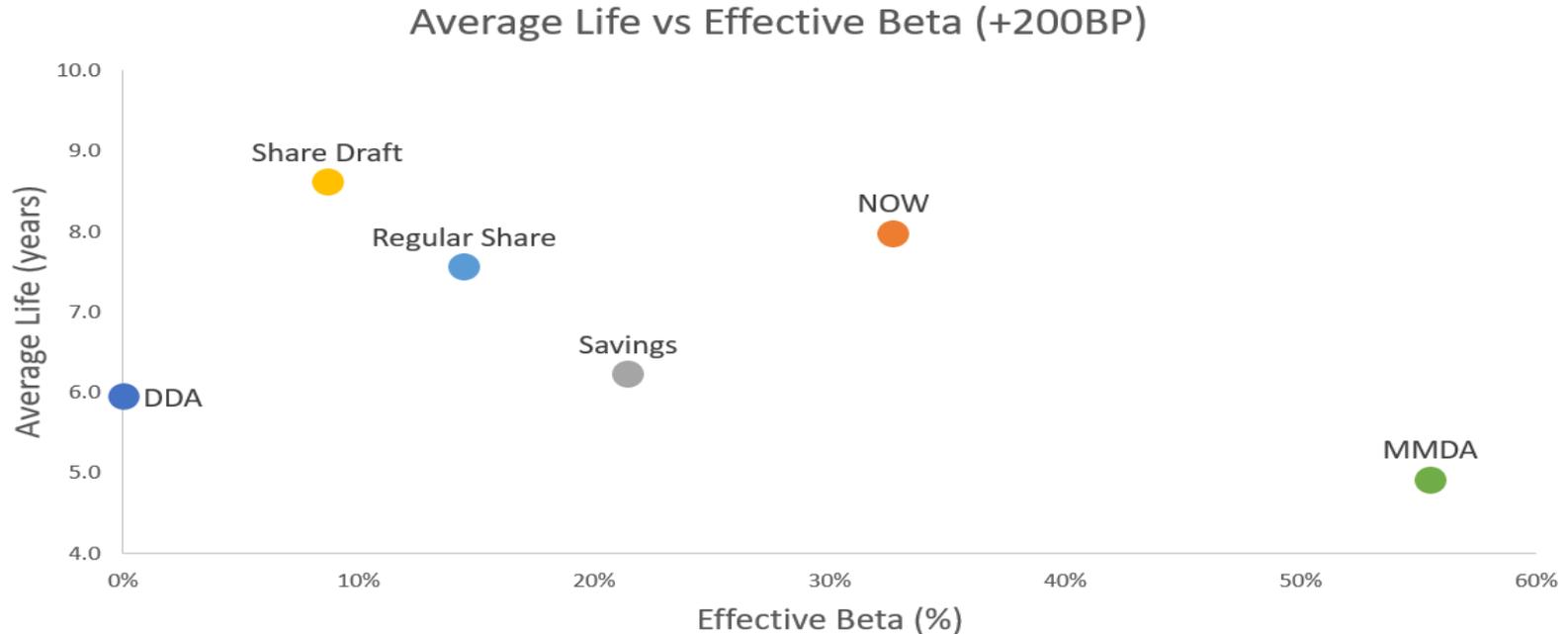
DECAY

DECAY SUMMARY

Account Type	Balance	Rate	Baseline Decay		Stress Decay	
			12 Mo.	36 Mo.	12 Mo.	36 Mo.
Regular Shares	418,826,022	0.06%	8.20%	7.73%	8.60%	8.60%
Total	418,826,022	0.06%	8.20%	7.73%	8.60%	8.60%

8.2% “Decay”





- Can't analyze these metrics in isolation
- Premium/Effective Duration depend on both

*Data sourced from DCG's Deposits360[®] database
2.5b+ account records from hundreds of institutions across the nation

Deposit Study Average Life Assumptions

Net Economic Value Model

Decay & Average Life

<i>Account</i>	<i>Core Percent*</i>	<i>Non-Core Percent**</i>	<i>Decay Rate</i>	<i>Avg Life</i>
Share Drafts - Non-Interest	95.40%	4.60%	8.10%	7.51
Share Drafts - Business Checking	94.80%	5.20%	13.53%	5.62
Share Drafts - Corporate Checking	81.30%	18.70%	10.35%	5.69
Regular Shares - Commercial	47.20%	52.80%	0.00%	6.04
Regular Shares - Holiday Club	52.40%	47.60%	20.78%	2.23
Regular Shares - IRA Shares	98.60%	1.40%	10.44%	6.85
Regular Shares - Mint Share	97.00%	3.00%	8.30%	7.55
Regular Shares - Mortgage Holding	66.10%	33.90%	14.53%	3.75
Regular Shares - Other	98.20%	1.80%	16.04%	5.15
Regular Shares - Owners Choice	95.60%	4.40%	11.98%	6.13
MMDA - Preferred	98.90%	1.10%	6.92%	8.30
MMDA - Preferred Plus	98.60%	1.40%	12.77%	6.08

Which NMDs most valuable?

Betas and decay assumptions are based on the 12/31/2017 deposit study analysis.

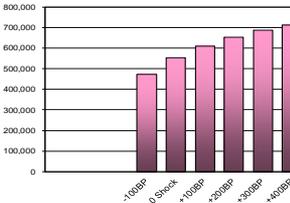
*Use 12.5Y Final Decay for Core Funds.

**Use 6 Month Final Decay and 3 Month Avg Life for Non-Core Funds.

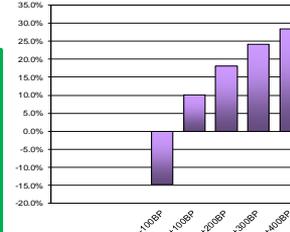
10.25% Premium Base Case in 2017

RATE SHOCK SCENARIOS							
	Book Value	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	1,382,114	1,385,818	1,367,046	1,344,390	1,318,634	1,290,303	1,259,292
Loans	2,254,000	2,246,817	2,206,411	2,161,435	2,118,553	2,078,096	2,039,273
Other Assets	175,626	174,828	174,828	174,828	174,828	174,828	174,828
TOTAL ASSETS (EVA)	3,811,740	3,807,463	3,748,285	3,680,654	3,612,015	3,543,227	3,473,393
% Chg from 0 Shock	1.69%	1.58%	-1.80%	-3.64%	-5.47%	-7.33%	
LIABILITIES							
Non Maturity Deposits	3,238,524	3,044,029	2,906,478	2,785,355	2,675,507	2,575,782	2,485,054
Time Deposits	234,795	234,275	231,118	228,038	225,030	222,094	219,226
Borrowings	0	0	0	0	0	0	0
Other Liabilities	56,531	56,531	56,531	56,531	56,531	56,531	56,531
TOTAL LIABILITIES (EVL)	3,529,850	3,334,834	3,194,127	3,069,924	2,957,068	2,854,407	2,760,811
% Chg from 0 Shock	10.51%	4.41%	-4.41%	-3.89%	-7.42%	-10.64%	-13.57%
NET ECONOMIC VALUE (NEV)							
NET ECONOMIC VALUE (NEV)	281,891	472,629	554,158	610,730	654,947	688,821	712,582
% Chg from 0 Shock		-14.7%	10.2%	18.2%	24.3%	28.6%	
NEV Ratio (NEV/EVA)							
NEV Ratio (NEV/EVA)	7.40%	12.41%	14.78%	16.59%	18.13%	19.44%	20.52%
BP Chg from 0 Shock							
BP Chg from 0 Shock		-237	181	335	466	573	

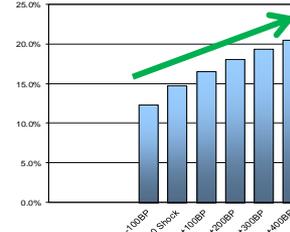
Net Economic Value(\$000s)



NEV (\$) - Pct. Chg from 0 Shock



NEV Ratio (NEV/EVA)



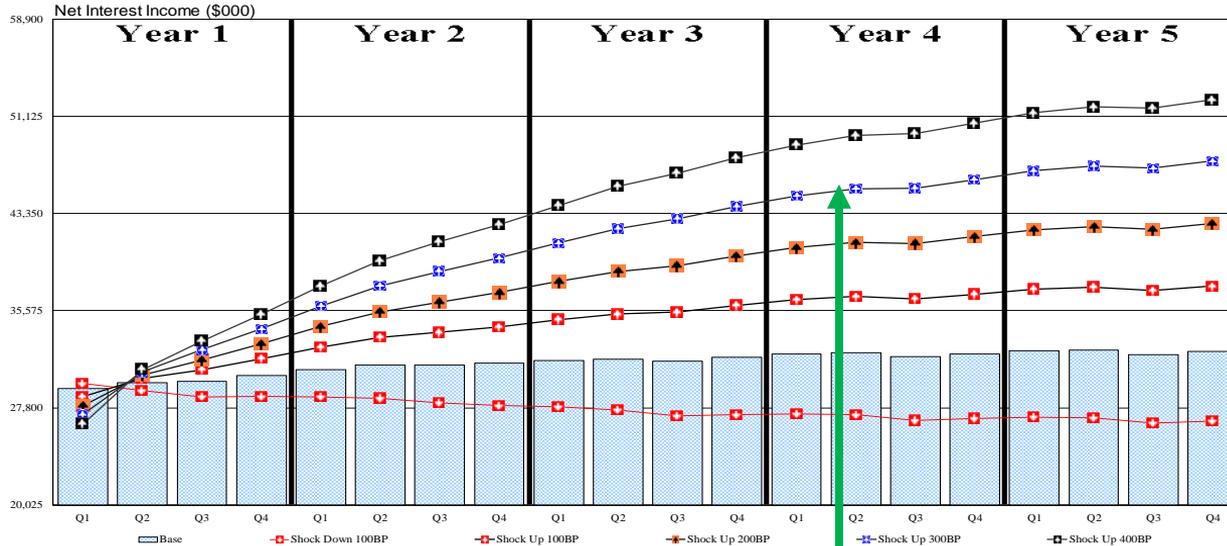
Risk Summary Grid*				
Post Shock NEV/EVA Ratio	0 to 100bp	100 to 200bp	200 to 400bp	Over 400bp
Over 10%	Min. Risk -1	Min. Risk -1	200 to 400bp	Mod. Risk -2
6.00% to 10.00%	Min. Risk -1	Min. Risk -1	MIN. RISK (1)	Sig. Risk -3
4.00% to 6.00%	Min. Risk -1	Mod. Risk -2	Sig. Risk -3	High Risk -4
Below 4.00%	Mod. Risk -2	Sig. Risk -3	High Risk -4	High Risk -4

*Included for discussion purposes only. Grid evaluates +200/-100 scenarios for risk assessment.
*Current risk assessment for Risk Summary Grid is based on -100 scenario.

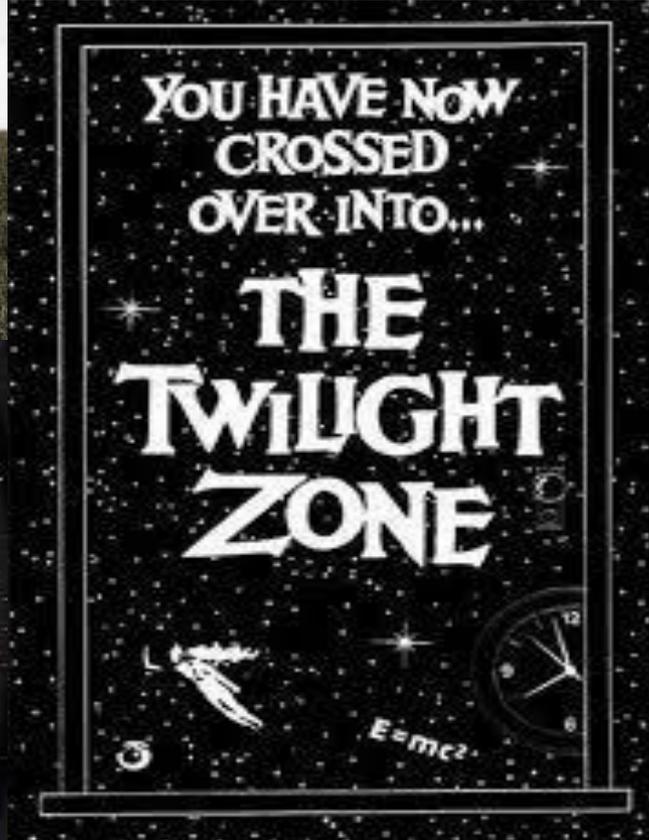
Average lives of non-maturity deposits are based upon the 12/31/2017 DCG deposit study. The aggregate average life based upon the current deposit mix is 7.4 years. Please refer to the Deposit Study Tear Sheet on the following page for an executive level summary.

Note +300bp Scenario: HIGHER Rates is "Best Case" Scenario for INCOME

SHOCK ANALYSIS



NII SUMMARY						
	<u>Shock Down 100BP</u>	<u>Base</u>	<u>Shock Up 100BP</u>	<u>Shock Up 200BP</u>	<u>Shock Up 300BP</u>	<u>Shock Up 400BP</u>
Year-1 NII	116,341	119,485	121,425	122,953	124,469	125,763
Year-2 NII	113,484	124,706	134,247	143,090	152,004	160,665
Year-3 NII	109,920	126,701	141,631	155,787	170,007	183,925
Year-4 NII	108,311	128,325	146,589	164,080	181,574	198,744
Year-5 NII	107,351	129,211	149,472	168,990	188,419	207,501



- ◆ **Prescribed Premiums for Non-Maturity Shares in NEV (Root of problem)**
 - 1% in 0-Shock (vs Book)
 - 4% premium +300 Shock (vs 0-Shock)

- ◆ **Risk Assessment Based on Following Matrix**

Risk Level	Post-shock Net Economic Value Ratio	Base to Shock Net Economic Value Ratio Sensitivity (%)
Low	Above 7%	Below 40%
Moderate	4% up to 7%	40% to 65%
High	2% up to 4%	65% to 85%
Extreme	Below 2%	Above 85%

- ◆ **Floor level for “IRR” rating in NCUA Exams**



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Navigating Through A Fed Tightening Rate Cycle Different From all the Rest

Strategy Development for Credit Unions

Salt Lake City, Utah, September 25, 2018

St. Louis, Missouri, September 26, 2018

Frank L. Farone, Managing Director

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RATE SHOCK SCENARIOS

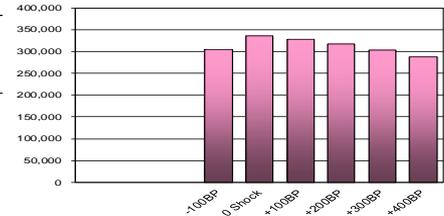
	Book Value	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	242,887	247,684	243,069	237,692	232,006	226,227	220,573
Loans	2,561,662	2,578,642	2,521,060	2,458,110	2,396,478	2,337,645	2,281,860
Other Assets	189,818	186,503	188,108	188,368	188,420	188,432	188,438
TOTAL ASSETS (EVA)	2,994,367	3,012,830	2,952,237	2,884,170	2,816,904	2,752,305	2,690,871
% Chg from 0 Shock	1.43%	2.05%	-2.31%	-4.58%	-6.77%	-8.85%	
LIABILITIES							
Non Maturity Deposits	1,783,980	1,737,109	1,652,005	1,597,681	1,548,317	1,503,399	1,462,471
Time Deposits	520,685	523,007	518,948	514,978	511,094	507,292	503,570
Borrowings	419,500	420,175	418,710	417,272	415,860	414,472	413,109
Other Liabilities	25,500	26,343	25,722	24,985	24,214	23,501	22,765
TOTAL LIABILITIES (EVL)	2,749,666	2,706,634	2,615,385	2,554,917	2,499,485	2,448,664	2,401,914
% Chg from 0 Shock	5.13%	3.49%	-2.31%	-4.43%	-6.37%	-8.16%	

NET ECONOMIC VALUE (NEV)	244,701	306,196	336,852	329,254	317,419	303,640	288,957
% Chg from 0 Shock		-9.1%	-2.3%	-5.8%	-9.9%	-14.2%	
Policy Limits							

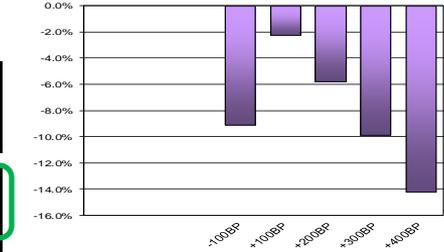
NEV Ratio (NEV/EVA)	8.17%	10.16%	11.41%	11.42%	11.27%	11.03%	10.74%
Policy Limits							
BP Chg from 0 Shock		-125	1	-14	-38	-67	

Still looking great as rates rise;
Exposure to falling rates

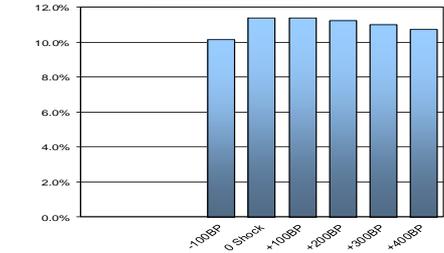
Net Economic Value(\$000s)



NEV (\$) - Pct. Chg from 0 Shock



NEV Ratio (NEV/EVA)



Risk Summary Grid*

Post Shock NEV/EVA Ratio	0 to 100bp	100 to 200bp	200 to 400bp	Over 400bp
Over 10%	Min. Risk -1	MIN. RISK (1)	Min. Risk -1	Mod. Risk -2
6.00% to 10.00%	Min. Risk -1	Min. Risk -1	Mod. Risk -2	Sig. Risk -3
4.00% to 6.00%	Min. Risk -1	Mod. Risk -2	Sig. Risk -3	High Risk -4
Below 4.00%	Mod. Risk -2	Sig. Risk -3	High Risk -4	High Risk -4

*Included for discussion purposes only. Grid evaluates +200/-100 scenarios for risk assessment.
*Current risk assessment for Risk Summary Grid is based on -100 scenario.

Non-maturity deposit betas and average lives are based upon DCG deposit study.
The aggregate average life based upon the current deposit mix is 7.36 years. Please refer to the Deposit Study Tear Sheet for additional documentation.

NCUA SUPERVISORY NEV TEST

	Book Value	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	199,816	204,645	200,075	195,093	189,844	184,573	179,482
Loans	2,715,251	2,718,029	2,653,811	2,587,716	2,523,746	2,462,412	2,404,250
Other Assets	189,761	187,049	188,839	188,982	189,041	189,031	189,031
TOTAL ASSETS (EVA)	3,104,827	3,109,723	3,042,725	2,971,791	2,902,631	2,836,016	2,772,762
% Chg from 0 Shock	2.04%	2.20%		-2.33%	-4.60%	-6.79%	-8.67%
LIABILITIES							
Non Maturity Deposits	1,863,268	1,863,268	1,844,635	1,807,743	1,789,296	1,770,850	1,752,403
Time Deposits	515,239	516,206	511,646	507,182	502,812	498,531	494,337
Borrowings	454,500	454,698	453,569	452,461	451,374	450,306	449,258
Other Liabilities	23,369	39,129	26,967	15,610	5,000	(4,918)	(14,194)
TOTAL LIABILITIES (EVL)	2,856,375	2,873,301	2,836,818	2,782,996	2,748,482	2,714,769	2,681,804
% Chg from 0 Shock	0.69%	1.29%		-1.90%	-3.11%	-4.30%	-5.46%
NET ECONOMIC VALUE (NEV)							
NET ECONOMIC VALUE (NEV)	248,452	236,422	205,907	188,795	154,149	121,247	90,958
% Chg from 0 Shock		14.8%		-8.3%	-25.1%	-41.1%	-55.8%
NEV Ratio (NEV/EVA)							
NEV Ratio (NEV/EVA)	8.00%	7.60%	6.77%	6.35%	5.31%	4.28%	3.28%
BP Chg from 0 Shock							
BP Chg from 0 Shock		84		-41	-146	-249	-349

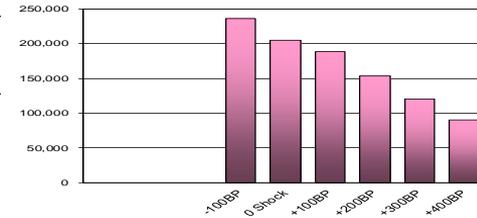
Best case is falling? →
Worst case is rising? →

Exposure MODERATE:
Premiums equate to Ave. lives NMD < 6 months;
NMD costs 19bps (vs. 2.46%, 1 yr advance rate)

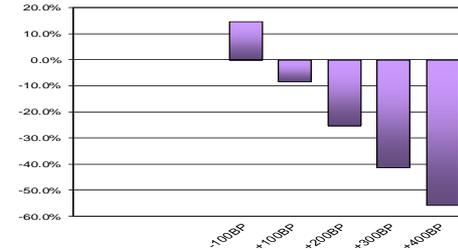
NCUA Supervisory Test Thresholds +300 Shock Scenario		
Risk Level	Post-Shock NEV	NEV Sensitivity (%)
Low	> 7%	< 40%
Moderate	4% up to 7%	40% to 65%
High	2% up to 4%	65% to 85%
Extreme	< 2%	> 85%

Just inside "Moderate" at 4.28%...likely to HIGH next 25-50 BP rise in rates if <4.00% (How reconcile with earnings?)

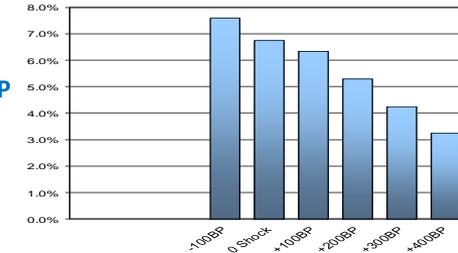
Net Economic Value (\$000s)



NEV (\$) - Pct. Chg from 0 Shock



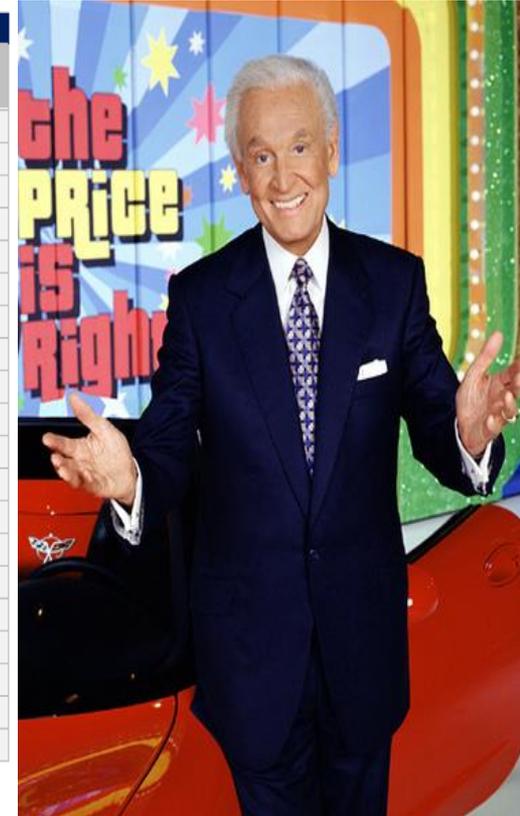
NEV Ratio (NEV/EVA)



NMD pricing for 0 shock and +300 based on NCUA guidance and all other scenarios are interpolated. NEV calculations are provided for informational purposes only.
 -100 Shock Scenario = Book Value (interpolated from NCUA guidance)
 0 Shock Scenario = 1% Premium from Book Value
 +100 Shock Scenario = 2% Premium from 0 Shock (interpolated from NCUA guidance)
 +200 Shock Scenario = 3% Premium from 0 Shock (interpolated from NCUA guidance)
 +300 Shock Scenario = 4% Premium from 0 Shock
 +400 Shock Scenario = 5% Premium from 0 Shock (interpolated from NCUA guidance)

Compare Market Values of Deposit Study to NCUA Premiums!

Account Type	Balance	Rate	Funct. Cost	Eff Dur (Yrs)	Market Price								
					-400	-300	-200	-100	0	100	200	300	400
Share Drafts	306,250,551	0.00%	1.80%	6.0	110.546	110.546	105.498	99.086	93.230	87.914	83.079	78.676	74.658
Share Drafts-Business NIB	1,149,821	0.00%	1.80%	2.0	103.653	103.653	102.160	100.001	97.920	96.003	94.235	92.600	91.084
Share Drafts-NIB	2,478,875	0.00%	1.80%	0.1	100.168	100.168	100.168	100.128	100.019	99.910	99.801	99.692	99.584
Share Drafts	2,135,051	0.01%	1.80%	6.4	111.713	111.713	105.862	98.803	92.396	86.918	81.959	77.464	73.384
Share Drafts-	62,046,504	0.01%	1.80%	4.8	110.096	110.096	105.387	99.279	93.686	90.233	87.088	84.217	81.595
Share Drafts-	22,255,401	0.26%	1.80%	5.4	113.102	113.102	107.457	100.523	94.267	90.375	86.846	83.642	80.729
Share Drafts-G	38,986,491	0.15%	1.80%	6.7	115.434	115.434	107.617	99.029	91.417	86.745	82.556	78.797	75.420
Share Drafts-HSA	15,476,653	0.25%	1.80%	5.0	116.525	116.525	108.729	100.029	92.208	90.836	89.608	88.508	87.523
Share Drafts-M	68,988,140	0.20%	1.80%	6.8	115.988	115.988	108.088	99.475	91.746	87.056	82.864	79.106	75.732
Share Drafts-Public	35,218	0.01%	1.80%	8.9	116.363	116.363	106.565	96.877	88.276	81.078	74.697	69.037	64.014
Regular Shares	347,560,931	0.06%	1.39%	4.9	107.340	107.340	103.203	97.503	92.272	88.516	85.078	81.927	79.032
Regular Shares-Business	14,910,432	0.05%	1.39%	4.8	107.212	107.212	103.075	97.437	92.250	88.542	85.150	82.043	79.193
Regular Shares-Club	3,108,273	0.05%	1.39%	3.3	104.940	104.940	102.623	98.735	95.068	92.394	89.911	87.603	85.453
Regular Shares-IRA	3,982,127	0.10%	1.39%	4.9	107.664	107.664	103.314	97.566	92.291	88.530	85.098	81.961	79.090
Regular Shares-M	482,780,642	0.45%	1.39%	4.7	113.824	113.824	106.605	98.454	91.115	89.876	88.773	87.785	86.900
Regular Shares-P	90,174,554	0.31%	1.39%	3.8	110.112	110.112	104.896	98.361	92.416	91.390	90.459	89.614	88.846
Regular Shares-S	8,216,303	0.05%	1.39%	4.4	106.587	106.587	103.086	97.910	93.111	89.652	86.470	83.536	80.828
MMDA	198,120,733	0.17%	0.86%	4.4	105.253	105.253	100.515	94.396	88.801	86.546	84.498	82.632	80.930
MMDA-Business	5,462,314	0.18%	0.86%	3.4	103.739	103.739	99.711	94.256	90.147	88.086	86.202	84.478	82.897
MMDA-IRA	18,192,948	0.17%	0.86%	3.7	104.420	104.420	100.753	95.571	90.797	88.830	87.025	85.368	83.843
Total	1,692,311,962	0.20%	1.45%	5.0	110.415	110.415	104.810	97.966	91.754	88.760	86.044	83.573	81.324



Great News: Rates HIGHER, CU Margins Widening, Earnings HIGHER, Loans growing, Capital Growing but,...

NEV SUP Test Nightmare!!!

(Higher Income, but Lower Valuation!?)

Liquidation vs. Ongoing Concern



	BOOK	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	2,403,171	2,462,888	2,396,365	2,320,499	2,238,763	2,155,944	2,074,969
Loans	2,888,988	2,895,006	2,835,836	2,774,582	2,714,178	2,657,191	2,602,586
Other Assets	331,020	330,222	330,222	330,222	330,222	330,222	330,222
Total Assets	5,623,179	5,688,116	5,562,422	5,425,302	5,283,163	5,143,357	5,007,777
% Change from 0 Shock	1.09%	2.26%		-2.47%	-5.02%	-7.53%	-9.97%
LIABILITIES							
Non-Maturity Deposits	4,948,234	4,251,202	4,000,229	3,799,290	3,618,176	3,454,714	3,306,984
Time Deposits	324,306	323,046	319,991	316,931	313,929	310,981	308,088
Borrowings	0	0	0	0	0	0	0
Other Liabilities	61,628	61,628	61,628	61,628	61,628	61,628	61,628
Total Liabilities	5,334,168	4,635,875	4,381,848	4,177,850	3,993,733	3,827,324	3,676,700
% Change from 0 Shock	21.73%	5.80%		-4.66%	-8.86%	-12.66%	-16.09%
NET ECONOMIC VALUE (NEV)	289,012	1,052,241	1,180,574	1,247,452	1,289,430	1,316,033	1,331,077
NEV % Change from 0 Shock		-10.9%		5.7%	9.2%	11.5%	12.7%
Policy Limits						-10.0%	
NMDs 7.7-YR life	5.1%	18.5%	21.2%	23.0%	24.4%	25.6%	26.6%

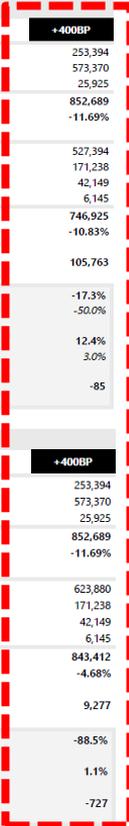
	BOOK	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	2,403,171	2,462,888	2,396,365	2,320,499	2,238,763	2,155,944	2,074,969
Loans	2,888,988	2,895,006	2,835,836	2,774,582	2,714,178	2,657,191	2,602,586
Other Assets	331,020	330,222	330,222	330,222	330,222	330,222	330,222
Total Assets	5,623,179	5,688,116	5,562,422	5,425,302	5,283,163	5,143,357	5,007,777
% Change from 0 Shock	1.09%	2.26%		-2.47%	-5.02%	-7.53%	-9.97%
LIABILITIES							
Non-Maturity Deposits	4,948,234	4,948,234	4,898,751	4,800,776	4,751,789	4,702,801	4,653,814
Time Deposits	324,306	323,046	319,991	316,931	313,929	310,981	308,088
Borrowings	0	0	0	0	0	0	0
Other Liabilities	61,628	61,628	61,628	61,628	61,628	61,628	61,628
Total Liabilities	5,334,168	5,332,907	5,280,370	5,179,336	5,127,346	5,075,411	5,023,530
% Change from 0 Shock	1.02%	0.99%		-1.91%	-2.90%	-3.88%	-4.86%
NET ECONOMIC VALUE (NEV)	289,012	355,209	282,052	245,966	155,817	67,947	-15,753
NEV % Change from 0 Shock		25.9%		-12.8%	-44.8%	-75.9%	-105.6%
NEV Ratio (NEV/EVA)	5.1%	6.2%	5.1%	4.5%	2.9%	1.3%	-0.3%

Risk Level	Post-shock Net Economic Value Ratio	Base to Shock Net Economic Value Ratio Sensitivity (%)
Low	Above 7%	Below 40%
Moderate	4% up to 7%	40% to 65%
High	2% up to 4%	65% to 85%
Extreme	Below 2%	Above 85%

NCUA Defined

ASSETS	BOOK	-100BP	Rate Shock Scenarios as of 03/31/2022				
			0 Shock	+100BP	+200BP	+300BP	+400BP
Investments	303,383	315,074	303,408	291,285	278,375	265,589	253,394
Loans	649,070	652,940	636,191	619,244	603,099	587,857	573,370
Other Assets	25,925	25,925	25,925	25,925	25,925	25,925	25,925
Total Assets	978,378	993,939	965,524	936,454	907,399	879,371	852,689
% Change from 0 Shock	1.33%	2.94%		-3.01%	-6.02%	-8.92%	-11.69%
LIABILITIES							
Non-Maturity Deposits	663,349	645,303	609,479	585,956	564,580	545,126	527,394
Time Deposits	179,970	179,560	177,851	176,143	174,472	172,837	171,238
Borrowings	44,501	44,703	44,126	43,554	43,038	42,583	42,149
Other Liabilities	6,145	6,145	6,145	6,145	6,145	6,145	6,145
Total Liabilities	893,966	875,711	837,601	811,798	788,235	766,692	746,925
% Change from 0 Shock	6.73%	4.55%		-3.08%	-5.89%	-8.47%	-10.83%
NET ECONOMIC VALUE (NEV)	84,412	118,228	127,923	124,655	119,164	112,679	105,763
NEV % Change from 0 Shock		-7.6%		-2.6%	-6.8%	-11.9%	-17.3%
Policy Limits		-25.0%		-25.0%	-30.0%	-30.0%	-50.0%
NEV Ratio (NEV/EVA)	8.6%	11.9%	13.2%	13.3%	13.1%	12.8%	12.4%
Policy Limits		3.0%		3.0%	3.0%	3.0%	3.0%
NEV Ratio BP Change from 0 Shock		-135		6	-12	-44	-85

ASSETS	BOOK	-100BP	Rate Shock Scenarios as of 03/31/2022				
			0 Shock	+100BP	+200BP	+300BP	+400BP
Investments	303,383	315,074	303,408	291,285	278,375	265,589	253,394
Loans	649,070	652,940	636,191	619,244	603,099	587,857	573,370
Other Assets	25,925	25,925	25,925	25,925	25,925	25,925	25,925
Total Assets	978,378	993,939	965,524	936,454	907,399	879,371	852,689
% Change from 0 Shock	1.33%	2.94%		-3.01%	-6.02%	-8.92%	-11.69%
LIABILITIES							
Non-Maturity Deposits	663,349	663,349	656,716	643,582	637,014	630,447	623,880
Time Deposits	179,970	179,560	177,851	176,143	174,472	172,837	171,238
Borrowings	44,501	44,703	44,126	43,554	43,038	42,583	42,149
Other Liabilities	6,145	6,145	6,145	6,145	6,145	6,145	6,145
Total Liabilities	893,966	893,757	884,839	869,423	860,669	852,013	843,412
% Change from 0 Shock	1.03%	1.01%		-1.74%	-2.73%	-3.71%	-4.68%
NET ECONOMIC VALUE (NEV)	84,412	100,181	80,685	67,030	46,730	27,358	9,277
NEV % Change from 0 Shock		24.2%		-16.9%	-42.1%	-66.1%	-88.5%
NEV Ratio (NEV/EVA)	8.6%	10.1%	8.4%	7.2%	5.1%	3.1%	1.1%
NEV Ratio BP Change from 0 Shock		172		-120	-321	-525	-727



D·C·G
DARLING CONSULTING GROUP

DCG Client Alert: NCUA NEV Supervisory Test

Despite myriad indications that net interest income, balance sheet spread, Net Economic Value analysis with mathematically-based core deposit assumptions, and net worth have improved meaningfully, the NCUA's NEV Supervisory Test results suggest widespread elevated levels of risk across the industry and a growing list of credit unions moving toward "Extreme Risk."

As of March 31st, a significant number of credit unions have shifted into the NCUA's risk classifications of "High" and "Extreme" risk. Further consider that the FOMC has increased the fed funds rate by 125bps and medium/long term US treasury rates are on average 100bps higher since March 31. This will undoubtedly place additional downward pressure on asset valuations in the NEV analysis.

We may conclude that the only meaningful influences on these negative trends in Supervisory Test results are the standardized assumptions for NMD premiums and higher market rate levels. Neither of these variables can be controlled by credit unions themselves.

Currently, credit unions that fall within the Extreme Risk classification are being told by field examiners that they are categorically "unsafe and unsound."

In the absence of regulatory change, credit unions should be prepared for the possibility of a DOR and "De-Risk" mandate.

For more information about the NCUA NEV Supervisory Test and potential steps for credit unions to consider, please download our latest thinking: ["The NEV Supervisory Test "Perfect Storm."](#)

You may also click to [hear from DCG Managing Director Frank Farone](#) on why the Sup Test is a critical issue for all credit unions.

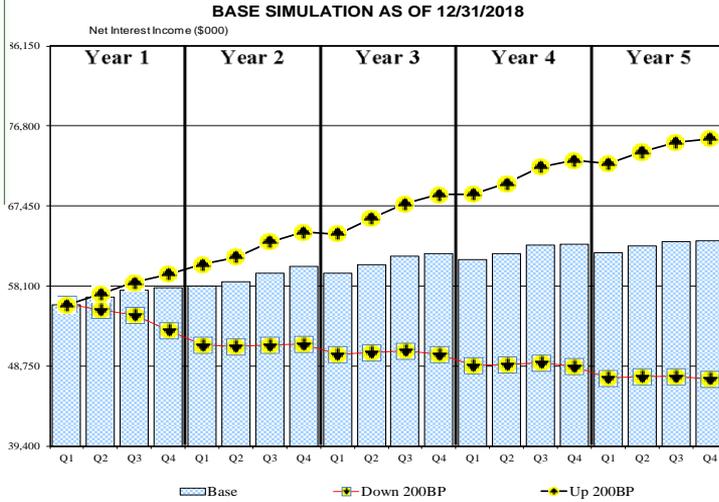


- ◆ **NMD Premiums are a “One-Size Fits All Approach”**
 - Product type, rate paid, beta, volatility, average life **DOES NOT MATTER, only in SUP Test World!**
(e.g., 5bps Share Draft, 7.5-year life has same value as 1.25% High Yield MM Account...WHAT? Really?)

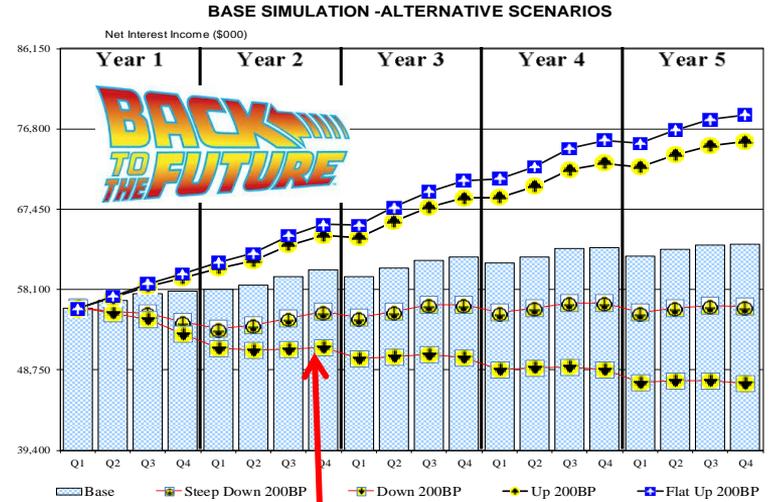
- ◆ **NMD Premiums are “Fixed”**
 - “Base” premium of 1% on all NMDs remain the same today despite market rates higher by 250bps (what happened to the extra 2% premium expected? See **Free Beer Tomorrow** example)
 - Conversely, asset valuations continue to be marked LOWER to the Higher rate environment

- ◆ **NMD Premiums vs. Average Lives are “Unrealistic” ...not even close!**
 - **Conversion of prescribed premium to average life is @ 4 months...** (15bps NMD cost given a 1% premium when 5-year borrowings @ 3.15%? C’mon!)
 - 300bp savings = 25bp per month which equals 4 months at 1% premium!!!
 - DCG performed 50 CU deposit studies in 2018 with 7-year life on average (Huge disconnect!)

The Opposite: Financial Wisdom
From George Costanza



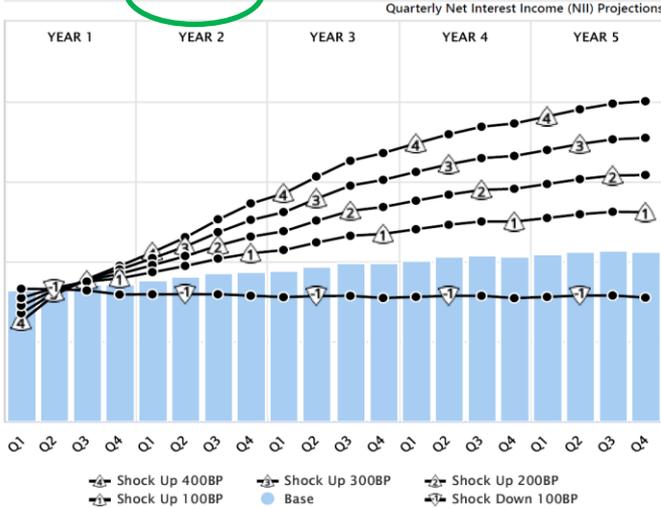
NII SUMMARY			
	<u>Down 200BP</u>	<u>Base</u>	<u>Up 200BP</u>
Year-1 NII	218,921	228,230	230,920
Year-2 NII	204,795	236,656	249,687
Year-3 NII	201,028	243,548	266,582
Year-4 NII	195,639	248,854	283,707
Year-5 NII	189,546	251,446	296,287



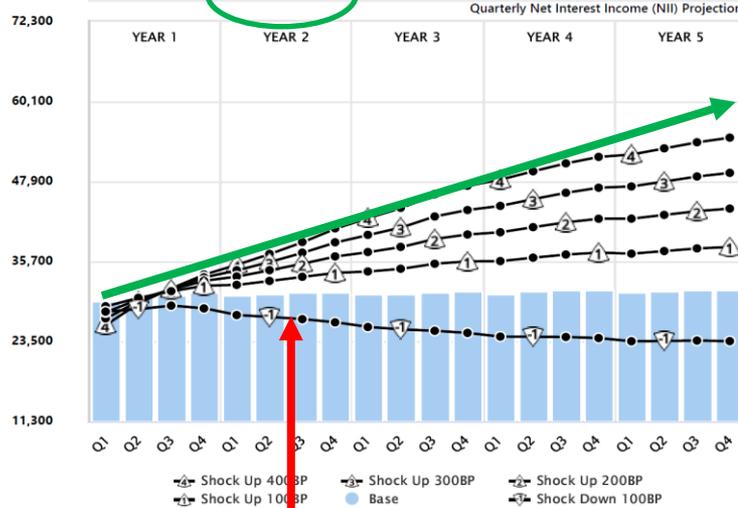
NII SUMMARY					
	<u>Steep Down 200BP</u>	<u>Down 200BP</u>	<u>Base</u>	<u>Up 200BP</u>	<u>Flat Up 200BP</u>
Year-1 NII	221,303	218,921	228,230	230,920	231,907
Year-2 NII	217,819	204,795	236,656	249,687	253,638
Year-3 NII	223,031	201,028	243,548	266,582	273,548
Year-4 NII	224,468	195,639	248,854	283,707	293,356
Year-5 NII	223,704	189,546	251,446	296,287	308,113

Plausibility?: When Did Rates Ever Move UP 300bp so Fast and STAY UP?

Base Simulation as of 03/31/2022



Base Simulation as of 12/31/2021



Earnings climb as cash flow is replaced into the higher rate environment

The replacement of cash flow means the Credit Union is measured as an "on-going" concern

NEV is Liquidation at Point in Time!

NII RESULTS

	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
SHOCK UP 400BP	125,183	163,160	198,010	221,749	236,604	4,571	11,760	18,625	21,878	23,236	120,612	151,400	179,385	199,871	213,368
SHOCK UP 300BP	126,146	156,377	183,897	203,063	215,134	4,720	10,807	17,229	20,648	22,289	121,425	145,570	166,668	182,415	192,844
SHOCK UP 200BP	126,873	149,249	169,599	184,188	193,404	4,870	9,728	15,701	19,313	21,316	122,004	139,522	153,899	164,875	172,089
SHOCK UP 100BP	127,485	142,083	155,479	165,387	171,643	5,403	10,015	15,771	19,647	21,976	122,082	132,068	139,709	145,740	149,667
BASE	127,837	134,261	140,446	145,474	148,621	6,700	11,174	16,941	21,095	23,734	121,138	123,088	123,505	124,379	124,887
SHOCK DOWN 100BP	124,814	122,431	121,150	121,198	121,359	10,941	14,498	20,321	24,677	27,215	113,873	107,933	100,829	96,521	94,144

DIFFERENCE

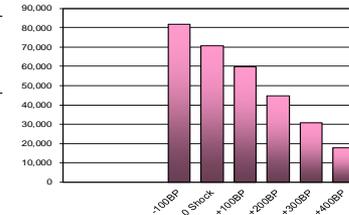
Long Rates Move "Ahead" of Short Rates-2018 Peak in Rates



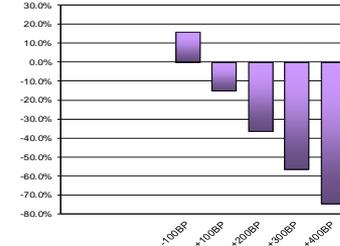
NCUA SUPERVISORY NEV TEST

	Book Value	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS							
Investments	153,982	158,544	153,981	147,369	140,167	133,130	126,507
Loans	629,946	632,922	617,524	601,556	586,157	571,706	558,053
Other Assets	25,703	25,703	25,703	25,703	25,703	25,703	25,703
TOTAL ASSETS (EVA)	809,632	817,169	797,209	774,629	752,027	730,539	710,263
% Chg from 0 Shock	1.56%	2.50%		-2.83%	-5.67%	-8.36%	-10.91%
LIABILITIES							
Non Maturity Deposits	395,186	395,186	391,235	383,410	379,498	375,585	371,673
Time Deposits	197,751	200,229	197,581	194,883	192,260	189,709	187,227
Borrowings	135,442	137,614	135,495	134,164	133,141	132,201	131,287
Other Liabilities	2,103	2,103	2,103	2,103	2,103	2,103	2,103
TOTAL LIABILITIES (EVL)	730,483	735,133	726,414	714,560	707,001	699,598	692,291
% Chg from 0 Shock	0.56%	1.20%		-1.63%	-2.67%	-3.69%	-4.70%
NET ECONOMIC VALUE (NEV)							
NET ECONOMIC VALUE (NEV)	79,149	82,036	70,795	60,070	45,026	30,941	17,972
% Chg from 0 Shock		15.9%		-15.1%	-36.4%	-56.3%	-74.6%
NEV Ratio (NEV/EVA)							
NEV Ratio (NEV/EVA)	9.78%	10.04%	8.88%	7.75%	5.99%	4.24%	2.53%
BP Chg from 0 Shock							
BP Chg from 0 Shock		116		-113	-289	-464	-635

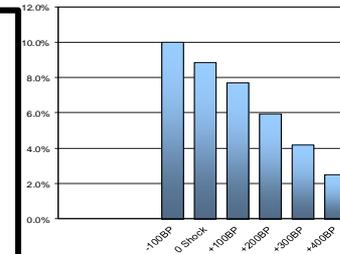
Net Economic Value (\$000s)



NEV (\$) - Pct. Chg from 0 Shock



NEV Ratio (NEV/EVA)



As of 12/31/2016:

NMD cost = 24bp
 1 Mo FHLB = 0.84%
 6 Mo FHLB = 0.96%
 12 Mo FHLB = 1.13%

As of 9/30/2018:

NMD Balances +\$35MM
 NMD cost = +19bp
 1 Mo FHLB = +1.67%
 6 Mo FHLB = +1.78%
 12 Mo FHLB = +1.79%

After +200bp rate rise:

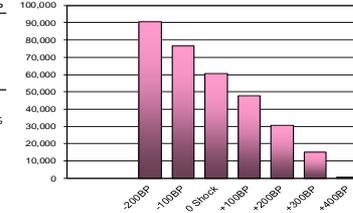
\$16MM gain vs BV expected; fast fwd.
 200bps later next slide...

NCUA SUPERVISORY NEV TEST

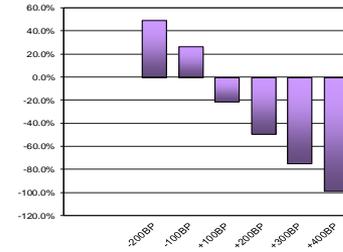
	Book Value	-200BP	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS								
Investments	149,298	158,389	155,462	149,247	142,108	134,553	127,327	120,648
Loans	690,981	693,306	678,830	661,313	643,974	627,383	611,940	597,331
Other Assets	26,564	26,564	26,564	26,564	26,564	26,564	26,564	26,564
TOTAL ASSETS (EVA)	866,843	878,259	860,856	837,123	812,645	788,500	765,831	744,543
% Chg from 0 Shock	3.55%	4.91%	2.84%		-2.92%	-5.81%	-8.52%	-11.06%
LIABILITIES								
Non Maturity Deposits	429,553	429,553	429,553	425,258	416,752	412,500	408,247	403,995
Time Deposits	207,934	210,684	207,916	205,212	202,568	199,984	197,457	194,987
Borrowings	140,376	141,842	140,947	140,263	139,897	139,637	139,381	139,128
Other Liabilities	5,571	5,571	5,571	5,571	5,571	5,571	5,571	5,571
TOTAL LIABILITIES (EVL)	783,435	787,651	783,988	776,304	764,789	757,692	750,657	743,681
% Chg from 0 Shock	0.32%	1.46%	0.93%		-1.48%	-2.40%	-3.30%	-4.20%
NET ECONOMIC VALUE (NEV)	83,408	90,608	76,868	60,819	47,857	30,809	15,174	862
% Chg from 0 Shock		49.0%	26.4%		-21.3%	-49.3%	-75.1%	-98.6%
NEV Ratio (NEV/EVA)	9.62%	10.32%	8.93%	7.27%	5.89%	3.91%	1.98%	0.12%
BP Chg from 0 Shock		305	166		-138	-336	-528	-715

Where's \$16MM Gain?
Why only \$4.3MM Gain?
Moved the Goal Post!

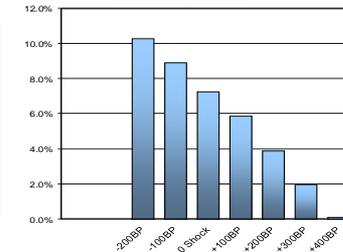
Net Economic Value (\$000s)



NEV (\$) - Pct. Chg from 0 Shock



NEV Ratio (NEV/EVA)



Exposure Extreme?

Premiums equate to Avg. lives NMD <6 months
NMD costs 43bps
(vs. 2.92% for 1-YR Advance)

As of 9/30/2018:
NMD cost = 43bp
1 Mo FHLB = 2.51%
6 Mo FHLB = 2.74%
12 Mo FHLB = 2.92%

NMD Premiums
set in stone
regardless of NMD
balance composition,
rates, betas, etc.

+400 Shock Scenario = 5% Premium from 0 Shock (interpolated from NCUA guidance)



Falling Rate Shock Scenarios = Book Value (interpolated from NCUA guidance)

0 Shock Scenario = 1% Premium from Book Value

+100 Shock Scenario = 2% Premium from 0 Shock (interpolated from NCUA guidance)

+200 Shock Scenario = 3% Premium from 0 Shock (interpolated from NCUA guidance)

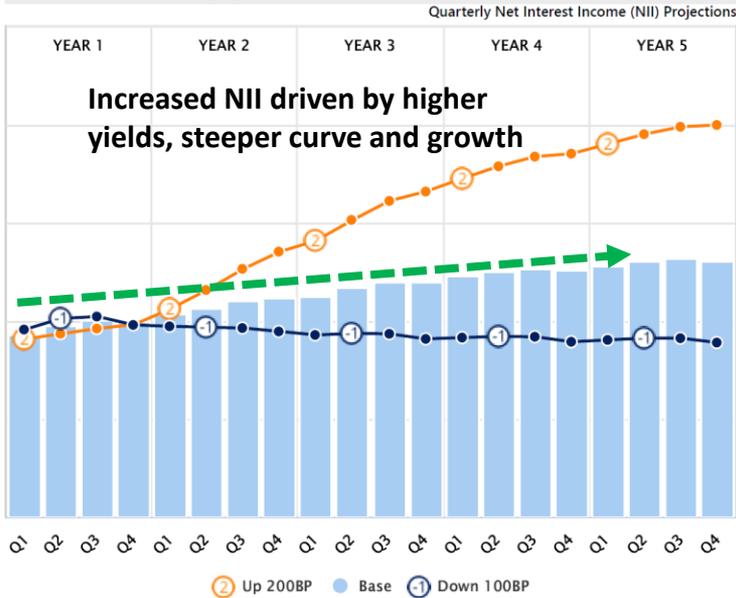
+300 Shock Scenario = 4% Premium from 0 Shock

+400 Shock Scenario = 5% Premium from 0 Shock (interpolated from NCUA guidance)

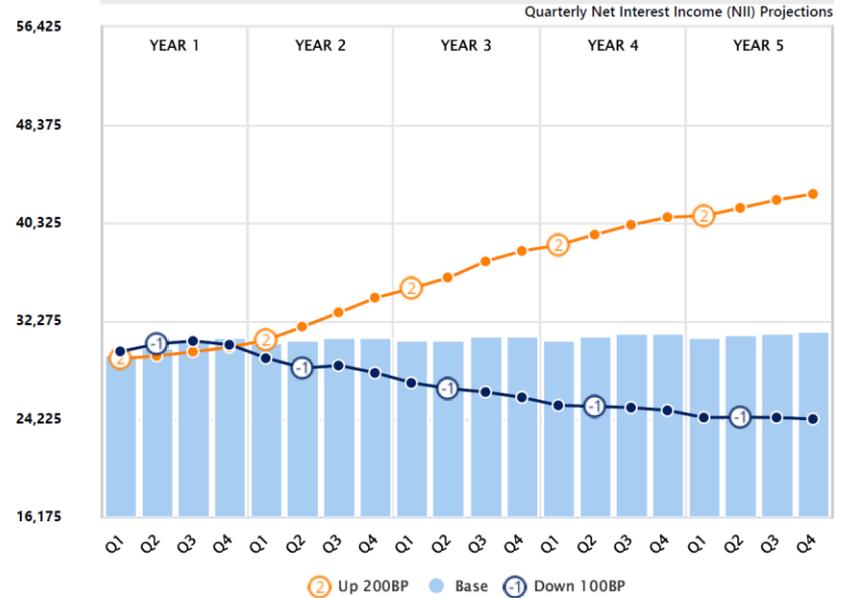
Case Study 3/31/2022

(How Would YOU Characterize the CUs IRR Profile?)

Base Simulation as of 03/31/2022



Base Simulation as of 12/31/2021

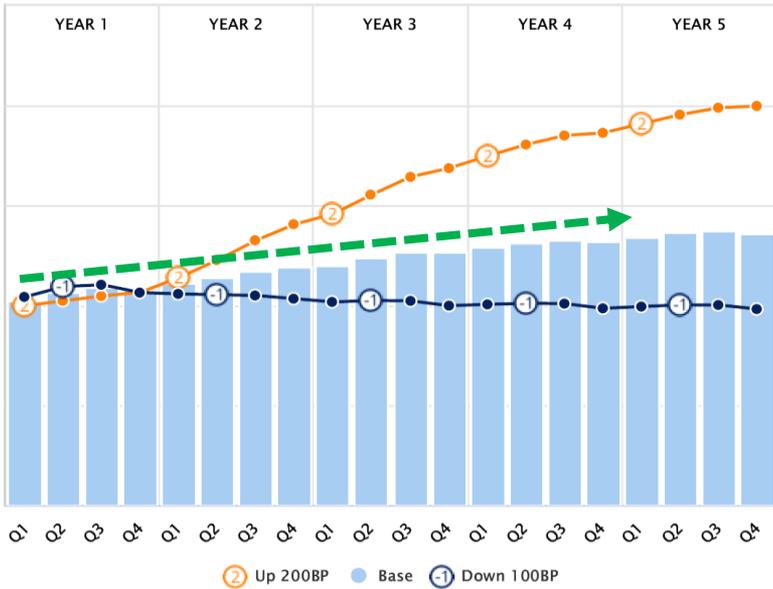


NII RESULTS

	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
UP 200BP	125,669	142,650	164,534	180,778	191,063	7,182	12,921	18,504	21,910	23,635	118,488	129,729	146,029	158,869	167,427
BASE	127,837	134,261	140,446	145,474	148,621	6,700	11,174	16,941	21,095	23,734	121,138	123,088	123,505	124,379	124,887
DOWN 100BP	128,661	126,728	124,423	123,482	122,968	7,516	12,465	18,067	22,779	25,682	121,145	114,263	106,356	100,703	97,285
						DIFFERENCE									

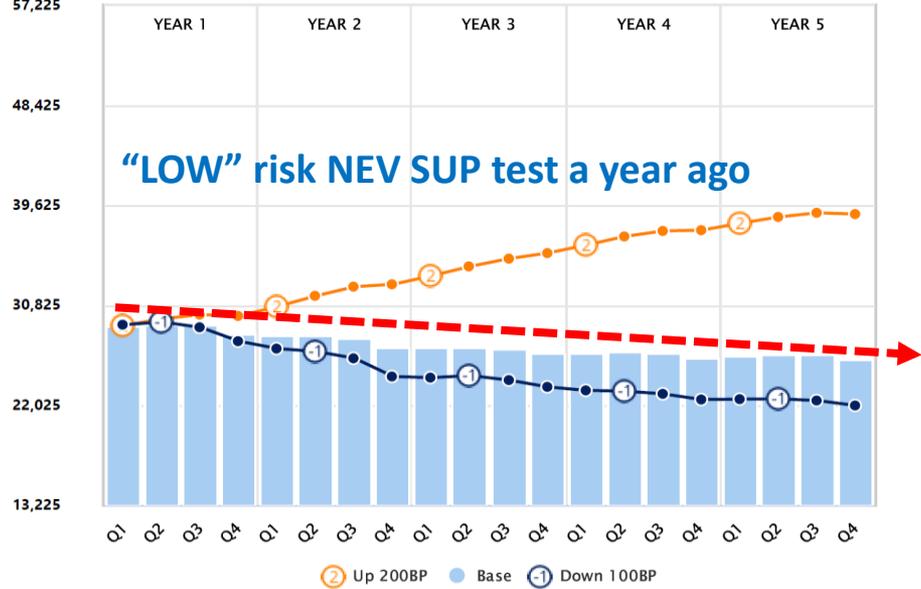
Base Simulation as of 03/31/2022

Quarterly Net Interest Income (NII) Projections



Base Simulation as of 03/31/2021

Quarterly Net Interest Income (NII) Projections

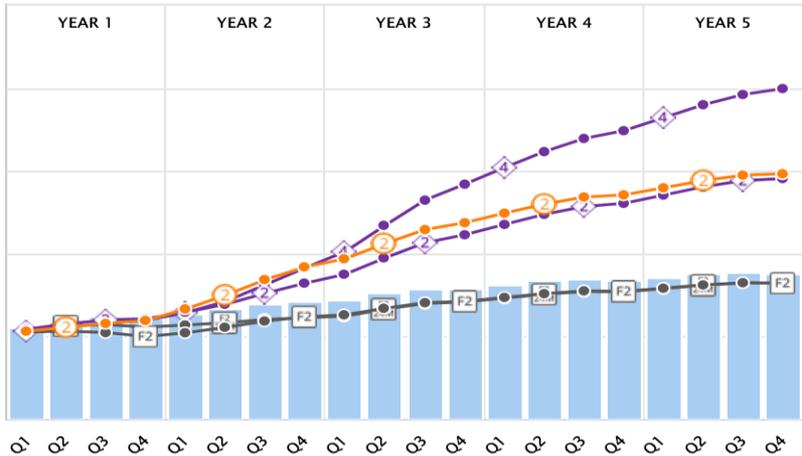


NII RESULTS

	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
UP 200BP	125,669	142,650	164,534	180,778	191,063	7,057	15,083	26,455	32,913	36,548	118,613	127,567	138,079	147,865	154,515
BASE	127,837	134,261	140,446	145,474	148,621	12,293	22,858	32,377	39,241	43,080	115,544	111,403	108,069	106,234	105,541
DOWN 100BP	128,661	126,728	124,423	123,482	122,968	13,593	22,196	27,398	31,278	33,332	115,068	104,531	97,025	92,204	89,636
						DIFFERENCE									

Rising Rate Scenarios as of 03/31/2022

Quarterly Net Interest Income (NII) Projections



Asset yields benefit from further increase in rates

Less incremental asset yield benefit from here

Note: Includes the Following Avg. NMD Betas:
 IRA Shares = 40%
 High Yield Shares = 25%
 Platinum Shares = 40%

NMD Peak Last Cycle = 63bps

(FF @ 2.50% / 10yr TSY @ 3.05%)

Model Flat +200 peak = 65bps

(FF @ 2.50% / 10yr TSY @ 3.24%)

NII RESULTS

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
UP 400BP 24M	125,732	140,887	174,963	205,461	225,913
FLAT UP 200BP 24M	125,091	127,605	133,659	139,808	143,792
FLAT UP 200BP	122,319	126,158	134,064	140,084	143,917
UP 200BP 24M	126,864	137,920	158,377	176,374	188,402
UP 200BP	125,669	142,650	164,534	180,778	191,063
BASE	127,837	134,261	140,446	145,474	148,621

ASSETS	BOOK	Rate Shock Scenarios as of 03/31/2022					
		-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
Investment	2,403,171	2,462,888	2,396,365	2,320,499	2,238,763	2,155,944	2,074,969
Loan	2,888,988	2,895,006	2,835,836	2,774,582	2,714,178	2,657,191	2,602,586
Other	331,020	330,222	330,222	330,222	330,222	330,222	330,222
Total Assets	5,623,179	5,688,116	5,562,422	5,425,302	5,283,163	5,143,357	5,007,777
% Change from 0 Shock	1.09%	2.26%		-2.47%	-5.02%	-7.53%	-9.97%
LIABILITIES							
Non-Maturity Deposit	4,948,234	4,251,202	4,000,229	3,799,290	3,618,176	3,454,714	3,306,984
Time Deposit	324,306	323,046	319,991	316,931	313,929	310,981	308,088
Borrowing	0	0	0	0	0	0	0
Other	61,628	61,628	61,628	61,628	61,628	61,628	61,628
Total Liabilities	5,334,168	4,635,875	4,381,848	4,177,850	3,993,733	3,827,324	3,676,700
% Change from 0 Shock	21.73%	5.80%		-4.66%	-8.86%	-12.66%	-16.09%
NET ECONOMIC VALUE (NEV)	289,012	1,052,241	1,180,574	1,247,452	1,289,430	1,316,033	1,331,077
NEV % Change from 0 Shock		-10.9%		5.7%	9.2%	11.5%	12.7%
<i>Policy Limits</i>						<i>-10.0%</i>	
NEV Ratio (NEV/EVA)	5.1%	18.5%	21.2%	23.0%	24.4%	25.6%	26.6%
<i>Policy Limits</i>						<i>6.0%</i>	
NEV Ratio BP Change from 0 Shock		-273		177	318	436	536

Quarter	2021Q1	2021Q2	2021Q3	2021Q4	2022Q1
NCUA Deposit Values					
% NCUA Low Risk	48%	45%	43%	34%	28%
% NCUA Mod Risk	42%	43%	45%	47%	40%
% NCUA High Risk	8%	10%	10%	15%	20%
% NCUA Extreme Risk	2%	2%	2%	4%	12%

Treasury Curve				FHLB Curve			
Tenor	3/31/2022	12/31/2021	Change	Tenor	3/31/2022	12/31/2021	Change
3-MO	0.52	0.06	0.46	3-MO	0.79	0.35	0.44
1-YR	1.63	0.39	1.24	1-YR	1.91	0.61	1.30
2-YR	2.28	0.73	1.55	2-YR	2.68	1.11	1.57
3-YR	2.45	0.97	1.48	3-YR	2.85	1.36	1.49
5-YR	2.42	1.26	1.16	5-YR	2.86	1.69	1.17
7-YR	2.40	1.44	0.96	7-YR	2.95	1.91	1.04
10-YR	2.32	1.52	0.80	10-YR	3.12	2.16	0.96

- ◆ Market rates increased over the quarter
- ◆ Asset market values declined as legacy investments and loans are valued (“discounted”) against higher current rates
- ◆ Non-maturity deposit market value remained at a 1% premium to book, even though market rates rose, and the rate the credit union paid on those deposits remained flat
- ◆ Given the construction of the Supervisory Test, non-maturity deposits do not have any additional value compared to last quarter even though market rates are higher, while assets were devalued due to higher market rates
- ◆ This causes the NEV ratio to decline more than in the normal CU specific NEV (with a longer, mathematically based deposit life), which leaves less of a buffer to withstand greater assets devaluations in a hypothetical Shock +300

Asking the Right Questions Leads to Effective Strategy Discussion

◆ Deposit Pricing

- How long can we lag my cost of funds? Time lag vs a beta lag? Both?
- How long can we wait to make a move (*this time is different*)? Do I strategically get ahead of rate increases now?
- How much can we afford to see walk out the door vs how much are we willing to allow?
- How do we want to position deposit products/terms, tiers, etc.? Key drivers to consider this time? Future Betas?
- Do we fully understand a marginal cost of funds analysis and paying up across the board for potentially hot money?
- Have I quantified how much of the COVID related deposit surge that has already left my institution?

◆ Liquidity Management

- How much do we have...want...and need? What to do now? What's wrong with wholesale funding? **NEV SUP Test impact?**

◆ Investments

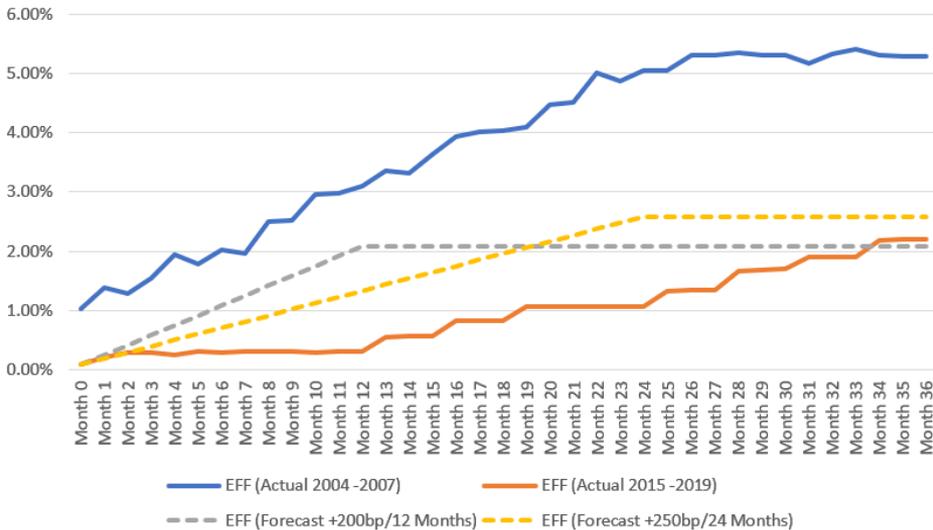
- Are we taking advantage of recent curve Steepening? Concerns? Impediments? How decide?
- Is our board and management team comfortable defending our current unrealized loss position and do they understand it could get worse? AFS vs HTM going forward? **NEV SUP Test impact?**

◆ Loan Strategies

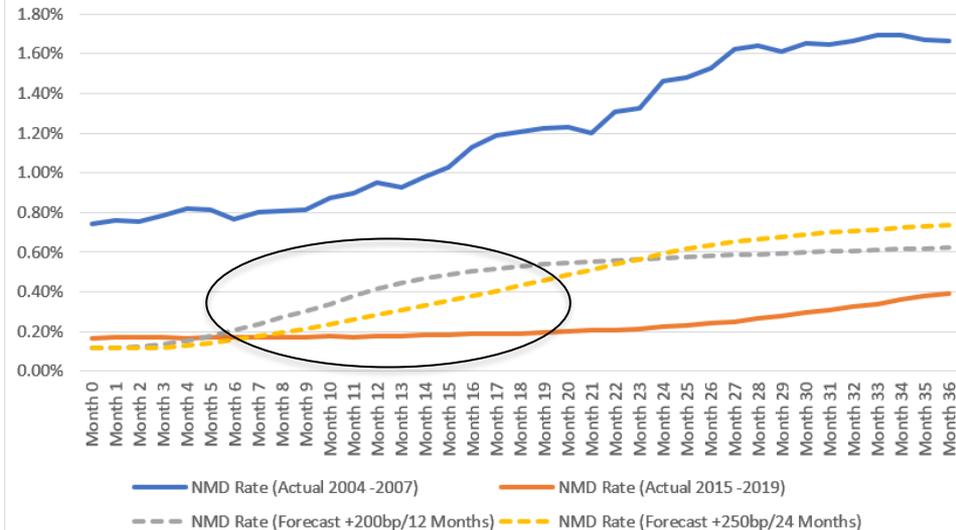
- Pricing & Spreads with steeper curve? (margins, floors, penalties, negotiation points?)
- Capacity to HOLD Fixed Rate Loans? Willingness! **NEV SUP Test impact**
- Hedging alternatives - how to best approach (if truly needed); Derivatives to match duration to offset **NEV SUP Test impact?**



Tightening Cycles - Effective Fed Funds

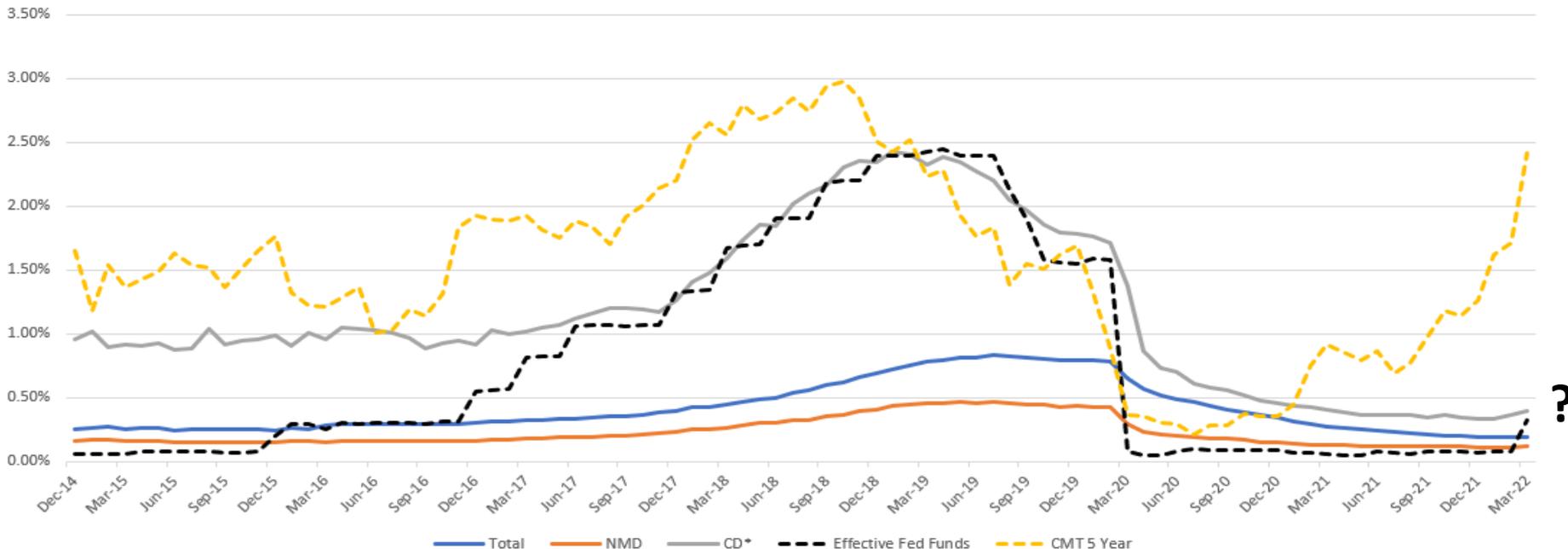


Tightening Cycle - NMD Avg Rate



*Forecast derived from Deposits360[®]

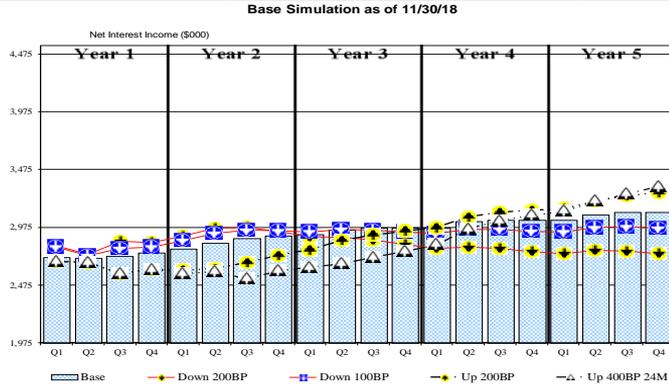
Deposits360[®] Avg Interest Rate Trends



*CD Rate reflects the average rate of newly opened accounts

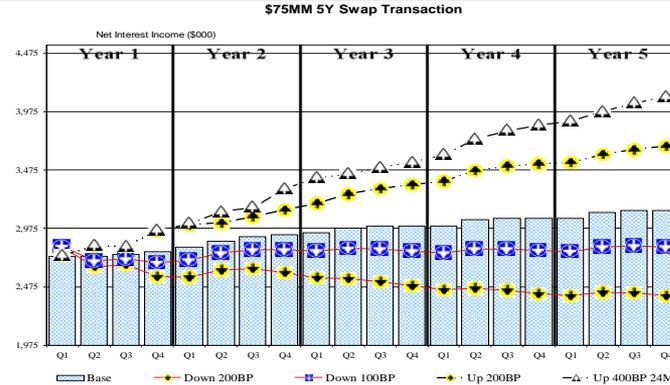
*Sourced from all institutions that have reported March data through April 25th

What Risk are we Hedging?: Falling Rate Risk HIGH Now!



NII SUMMARY

	Down 200BP	Down 100BP	Base	Up 200BP	Up 400BP 24M
Year-1 NII	11,247	11,129	10,892	10,533	10,531
Year-2 NII	11,774	11,671	11,395	10,621	10,290
Year-3 NII	11,471	11,778	11,789	11,498	10,763
Year-4 NII	11,147	11,773	12,058	12,263	11,893
Year-5 NII	11,027	11,852	12,319	12,860	12,900



NII SUMMARY

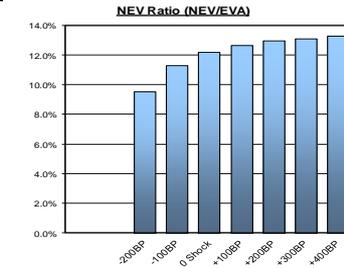
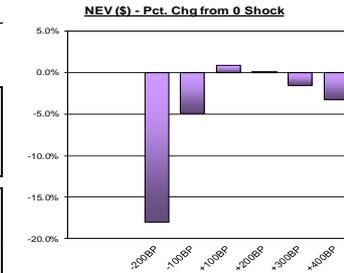
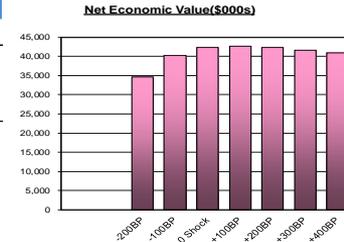
	Down 200BP	Down 100BP	Base	Up 200BP	Up 400BP 24M
Year-1 NII	10,687	10,913	11,019	11,348	11,346
Year-2 NII	10,402	11,049	11,523	12,248	12,605
Year-3 NII	10,099	11,155	11,917	13,126	13,891
Year-4 NII	9,774	11,150	12,186	13,891	15,021
Year-5 NII	9,654	11,229	12,447	14,487	16,027

CHANGE / DIFFERENCE IN RESULTS

	Down 200BP	Down 100BP	Base	Up 200BP	Up 400BP 24M
Year-1 NII	-560	-216	128	815	815
Year-2 NII	-1,373	-623	128	1,628	2,315
Year-3 NII	-1,373	-623	128	1,628	3,128
Year-4 NII	-1,373	-623	128	1,628	3,128
Year-5 NII	-1,373	-623	128	1,628	3,128

\$75MM 5Y interest rate swap paying fixed @ 2.56% and receiving 3 month LIBOR @ 2.73%

RATE SHOCK SCENARIOS								
	Book Value	-200BP	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS								
Investments	71,749	77,867	75,203	71,123	67,400	63,634	60,043	56,719
Loans	247,896	258,271	253,582	247,780	241,595	235,380	229,429	223,738
Other Assets	27,335	27,335	27,335	27,335	27,335	27,335	27,335	27,335
TOTAL ASSETS (EVA)	346,980	363,473	356,121	346,238	336,330	326,349	316,806	307,792
% Chg from 0 Shock	0.21%	4.98%	2.85%		-2.86%	-5.74%	-8.50%	-11.10%
LIABILITIES								
Non Maturity Deposits	111,733	112,919	105,638	99,042	93,859	89,113	84,903	81,067
Time Deposits	132,468	134,556	132,752	131,005	129,314	127,675	126,085	124,544
Borrowings	72,805	72,861	72,831	72,800	72,770	72,740	72,710	72,679
Other Liabilities	1,210	8,422	4,636	1,054	(2,336)	(5,545)	(8,583)	(11,460)
TOTAL LIABILITIES (EVL)	318,216	328,758	315,856	303,901	293,607	283,982	275,115	266,830
% Chg from 0 Shock	4.71%	8.18%	3.93%		-3.39%	-6.55%	-9.47%	-12.20%
NET ECONOMIC VALUE (NEV)	28,764	34,715	40,265	42,336	42,723	42,367	41,692	40,962
% Chg from 0 Shock		-18.0%	-4.9%		0.9%	0.1%	-1.5%	-3.2%
NEV Ratio (NEV/EVA)	8.29%	9.55%	11.31%	12.23%	12.70%	12.98%	13.16%	13.31%
BP Chg from 0 Shock		-268	-92		48	75	93	108



Risk Summary Grid*				
Post Shock NEV/EVA Ratio	0 to 100bp	100 to 200bp	200 to 400bp	Over 400bp
Over 10%	Min. Risk -1	Min. Risk -1	Min. Risk -1	Mod. Risk -2
6.00% to 10.00%	Min. Risk -1	Min. Risk -1	MOD. RISK (2)	Sig. Risk -3
4.00% to 6.00%	Min. Risk -1	Mod. Risk -2	Sig. Risk -3	High Risk -4
Below 4.00%	Mod. Risk -2	Sig. Risk -3	High Risk -4	High Risk -4

*Included for discussion purposes only. Grid evaluates +/-200 scenarios for risk assessment.
 *Current risk assessment for Risk Summary Grid is based on -200 scenario.

\$75MM 5Y interest rate swap paying fixed @ 2.56% and receiving 3 month LIBOR @ 2.73%

Financial Institutions Group - Market Update

Chatham
FINANCIAL

Friday, July 8, 2022

Index Rates		Treasury Rates	
Term	Rate	Term	Rate
SOFR	1.530%	3 Month Bill	1.88%
1M Term SOFR	1.926%	6 Month Bill	2.61%
3M Term SOFR	2.276%	2 Year Note	3.10%
Eff. Fed Funds	1.580%	3 Year Note	3.14%
Prime	4.750%	5 Year Note	3.12%
1M LIBOR	1.120%	10 Year Note	3.08%
3M LIBOR	1.626%	30 Year Bond	3.24%

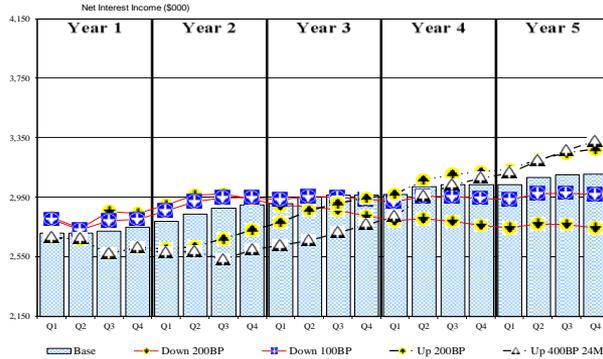


Market Rates			
Term	SOFR OIS	Fed Funds OIS	3 Month Term SOFR
1	3.07%	3.07%	3.07%
2	3.05%	3.06%	3.05%
3	2.94%	2.92%	2.95%
4	2.87%	2.86%	2.88%
5	2.83%	2.84%	2.84%
7	2.81%	2.82%	2.82%
10	2.84%	2.84%	2.85%
11	2.86%	2.86%	2.87%
12	2.88%	2.87%	2.89%
13	2.89%	2.89%	2.90%
14	2.91%	2.90%	2.91%
15	2.91%	2.91%	2.92%
20	2.89%	2.88%	2.90%
25	2.79%	2.79%	2.80%
30	2.68%	2.67%	2.69%

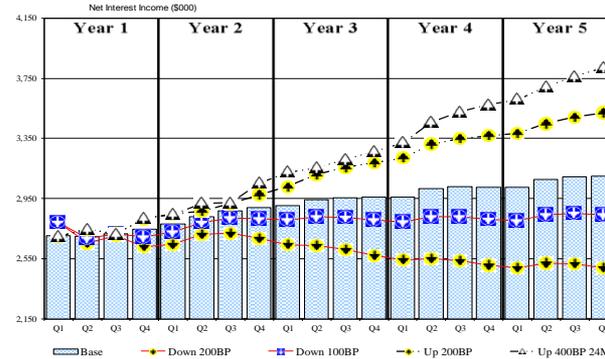
1 Month Term SOFR Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	3.08%	3.07%	3.07%	3.08%	3.08%	3.08%
2	3.05%	3.05%	3.05%	3.05%	3.05%	3.05%
3	2.95%	2.95%	2.95%	2.95%	2.95%	2.95%
4	2.88%	2.89%	2.89%	2.88%	2.88%	2.88%
5	2.83%	2.86%	2.85%	2.84%	2.84%	2.84%
7	2.81%	2.84%	2.83%	2.82%	2.82%	2.82%
10	2.84%	2.84%	2.84%	2.84%	2.84%	2.84%
11	2.86%		2.85%	2.86%	2.86%	2.86%
12	2.88%		2.86%	2.87%	2.87%	2.88%
13	2.90%		2.87%	2.88%	2.89%	2.89%
14	2.91%		2.87%	2.89%	2.90%	2.90%
15	2.92%		2.87%	2.89%	2.90%	2.91%
20	2.89%			2.89%	2.89%	2.89%
25	2.80%				2.87%	2.84%
30	2.68%					2.84%

Prime Swap Rates						
Term	Bullet	Amortization Period				
		10	15	20	25	30
1	6.30%	6.29%	6.29%	6.30%	6.30%	6.30%
2	6.25%	6.25%	6.25%	6.25%	6.25%	6.25%
3	6.11%	6.12%	6.11%	6.11%	6.11%	6.11%
4	6.04%	6.06%	6.05%	6.05%	6.04%	6.04%
5	6.01%	6.03%	6.02%	6.02%	6.01%	6.01%
7	5.98%	6.01%	6.00%	5.99%	5.99%	5.99%
10	6.00%	6.02%	6.00%	6.00%	6.00%	6.00%
11	6.01%		6.01%	6.01%	6.01%	6.01%
12	6.02%		6.02%	6.02%	6.02%	6.02%
13	6.03%		6.02%	6.03%	6.03%	6.03%
14	6.04%		6.02%	6.03%	6.03%	6.04%
15	6.04%		6.02%	6.03%	6.04%	6.04%
20	6.01%			6.03%	6.02%	6.01%
25	5.90%				6.00%	5.96%
30	5.79%					5.96%

Base Simulation as of 11/30/18



\$50MM 15Y Swap Transaction



NII SUMMARY

	Down 200BP	Down 100BP	Base	Up 200BP	Up 400BP 24M
Year-1 NII	11,247	11,129	10,892	10,533	10,531
Year-2 NII	11,774	11,671	11,395	10,621	10,290
Year-3 NII	11,471	11,778	11,789	11,498	10,763
Year-4 NII	11,147	11,773	12,058	12,263	11,893
Year-5 NII	11,027	11,852	12,319	12,860	12,900

NII SUMMARY

	Down 200BP	Down 100BP	Base	Up 200BP	Up 400BP 24M
Year-1 NII	10,774	10,885	10,877	10,976	10,974
Year-2 NII	10,759	11,156	11,380	11,606	11,733
Year-3 NII	10,456	11,263	11,774	12,483	12,748
Year-4 NII	10,132	11,258	12,043	13,248	13,878
Year-5 NII	10,012	11,337	12,304	13,845	14,885

CHANGE / DIFFERENCE IN RESULTS

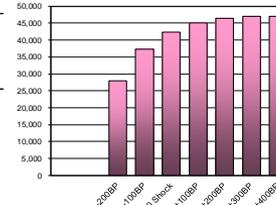
	Down 200BP	Down 100BP	Base	Up 200BP	Up 400BP 24M
Year-1 NII	-473	-244	-15	443	443
Year-2 NII	-1,015	-515	-15	985	1,443
Year-3 NII	-1,015	-515	-15	985	1,985
Year-4 NII	-1,015	-515	-15	985	1,985
Year-5 NII	-1,015	-515	-15	985	1,985

\$50MM 15Y interest rate swap paying fixed @ 2.76% and receiving 3 month LIBOR @ 2.73%

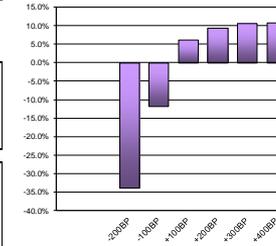
Problem Solved? What Problem? Increased RISK to Falling!

RATE SHOCK SCENARIOS								
	Book Value	-200BP	-100BP	0 Shock	+100BP	+200BP	+300BP	+400BP
ASSETS								
Investments	71,749	77,867	75,203	71,123	67,400	63,634	60,043	56,719
Loans	247,896	258,271	253,582	247,780	241,595	235,380	229,429	223,738
Other Assets	27,335	27,335	27,335	27,335	27,335	27,335	27,335	27,335
TOTAL ASSETS (EVA)	346,980	363,473	356,121	346,238	336,330	326,349	316,806	307,792
% Chg from 0 Shock	0.21%	4.98%	2.85%		-2.86%	-5.74%	-8.50%	-11.10%
LIABILITIES								
Non Maturity Deposits	111,733	112,919	105,638	99,042	93,859	89,113	84,903	81,067
Time Deposits	132,468	134,556	132,752	131,005	129,314	127,675	126,085	124,544
Borrowings	72,805	72,861	72,831	72,800	72,770	72,740	72,710	72,679
Other Liabilities	1,210	14,990	7,401	850	(4,810)	(9,705)	(13,945)	(17,620)
TOTAL LIABILITIES (EVL)	318,216	335,326	318,621	303,697	291,133	279,822	269,753	260,670
% Chg from 0 Shock	4.78%	10.41%	4.91%		-4.14%	-7.86%	-11.18%	-14.17%
NET ECONOMIC VALUE (NEV)								
NET ECONOMIC VALUE (NEV)	28,764	28,147	37,500	42,540	45,197	46,527	47,054	47,122
% Chg from 0 Shock		-33.8%	-11.8%		6.2%	9.4%	10.6%	10.8%
NEV Ratio (NEV/EVA)								
NEV Ratio (NEV/EVA)	8.29%	7.74%	10.53%	12.29%	13.44%	14.26%	14.85%	15.31%
BP Chg from 0 Shock								
BP Chg from 0 Shock		-454	-176		115	197	257	302

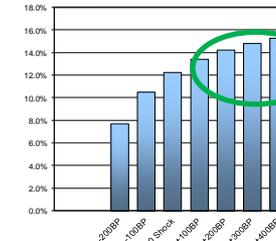
Net Economic Value(\$000s)



NEV (\$) - Pct. Chg from 0 Shock



NEV Ratio (NEV/EVA)

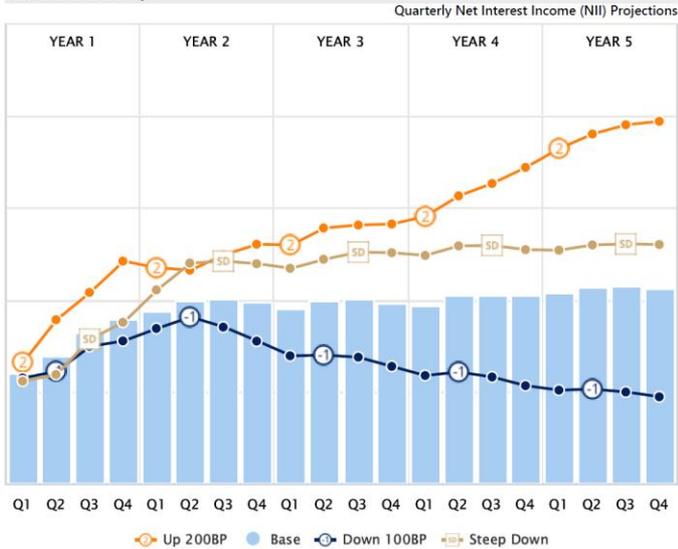


Risk Summary Grid*				
Post Shock NEV/EVA Ratio	0 to 100bp	100 to 200bp	200 to 400bp	Over 400bp
Over 10%	Min. Risk -1	Min. Risk -1	Min. Risk -1	Mod. Risk -2
6.00% to 10.00%	Min. Risk -1	Min. Risk -1	Mod. Risk -2	SIG. RISK (3)
4.00% to 6.00%	Min. Risk -1	Mod. Risk -2	Sig. Risk -3	High Risk -4
Below 4.00%	Mod. Risk -2	Sig. Risk -3	High Risk -4	High Risk -4

*Included for discussion purposes only. Grid evaluates +/-200 scenarios for risk assessment.
*Current risk assessment for Risk Summary Grid is based on -200 scenario.

\$50MM 15Y interest rate swap paying fixed @ 2.76% and receiving 3 month LIBOR @ 2.73%

Interest Rate Swap



Base Simulation as of 11/30/2019



NII RESULTS

	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5	Y1	Y2	Y3	Y4	Y5
UP 200BP	11,403	11,944	12,258	12,690	13,330	223	498	498	498	498	11,180	11,446	11,760	12,192	12,832
BASE	11,008	11,466	11,469	11,522	11,628	-102	-102	-102	-102	-102	11,110	11,568	11,571	11,624	11,730
DOWN 100BP	10,855	11,190	10,860	10,654	10,496	-166	-174	-174	-174	-174	11,021	11,364	11,034	10,828	10,670
STEEP DOWN	10,908	11,833	11,956	12,054	12,090	-172	-174	-174	-174	-174	11,080	12,007	12,130	12,228	12,264
DIFFERENCE															

. This simulation assumes the execution of \$30MM interest rate swaps
 . Paying fixed @ 0.59% and receiving Fed Funds (0.25%)

- ◆ Credit Unions are Sliding Down Risk Spectrum as Rates Rise
- ◆ This Trend Will Continue if Rates Stay SAME or Keep Rising (*NEV relief comes from falling long rates...not helpful to “earnings” though*)
- ◆ De-Risk Plans are Being Forced on CUs with “Extreme” Risk
- ◆ “Fixing” Risk Likely to Exacerbate Risk to Earnings and ultimately Capital Issues
- ◆ NEV Ignores Earnings at Risk (esp. to falling); **Counterproductive to assessing TRUE risk**
- ◆ DCG continues to educate CU Universe and continues dialogue with NCUA on this matter

- ◆ FHLB Borrowing or CD Extensions? Impact to Capital? Impact to Falling rates?
- ◆ Interest Rate Swaps or Caps: Don't create a falling rate risk you can't live with
- ◆ Sell Fixed Rate Mortgage Production (fee income), buy discounted Hybrid ARMs, laddered 1–2-year treasuries/agencies, cash
- ◆ TIME Heals! Measure impact over 12 -24 months of rolling CF into FFs as start. Run alternatives to show impact that improve position over time vs. cost/risk of immediate action to “fix”
- ◆ Pricing Loans & Deposits: Revisit pricing to ensure at or above market; dig into discount rates and prepayment speeds on loans to ensure accuracy
- ◆ Slow Growth through pricing; no need to chase rates or follow irrational competition
- ◆ Be Careful NOT to extend funding in flat or inverted curve because it appears cheap!
- ◆ Other...

