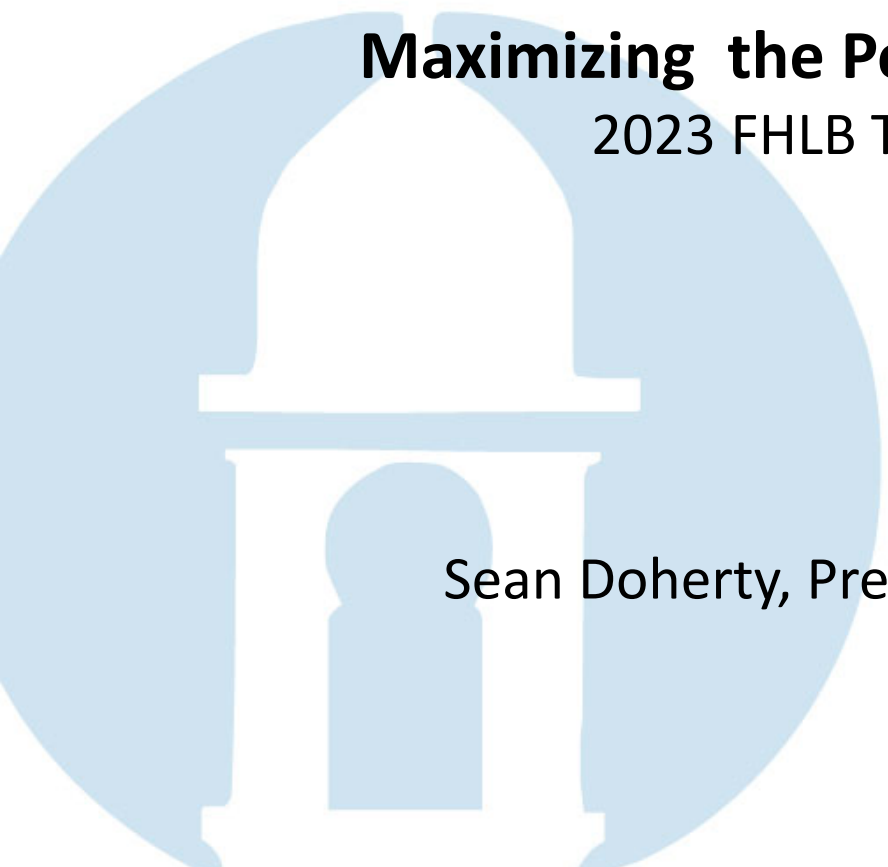


The logo for the Federal Home Loan Bank of Topeka is a light blue circular emblem. Inside the circle is a white silhouette of a classical building with a large dome and a portico supported by columns.

Maximizing the Potential of Your Balance Sheet

2023 FHLB Topeka Regional Meetings

Sean Doherty, President, Asset Management Group, Inc.

Asset Management Group, Inc.

This information is for institutional investors only. The material provided in this document/presentation is for informational purposes only and is intended solely for private use. Past performance is not indicative of future results. This material is not intended as an offer or solicitation for the purchase or sale of any financial instruments.

The report data is static as of the time it was pulled, so rates may have changed. Treat data as *indication levels only* as market may have moved and availability of product may have changed. This information was pulled from sources we believe to be reliable.

Not FDIC Insured

No Bank Guarantee

May Lose Value



Today's Discussion

- Understanding Rate Cycles
- Understanding Loan Pricing
- Understanding Data



Understanding Rate Cycles

- We often look to the Fed for guidance on future interest rate moves
 - Fed Policy is backward looking, not forward looking
- Is there anything we can use to help us understand the current/future rate cycle?
- What can we learn from previous rate cycles?

Statistical Regression

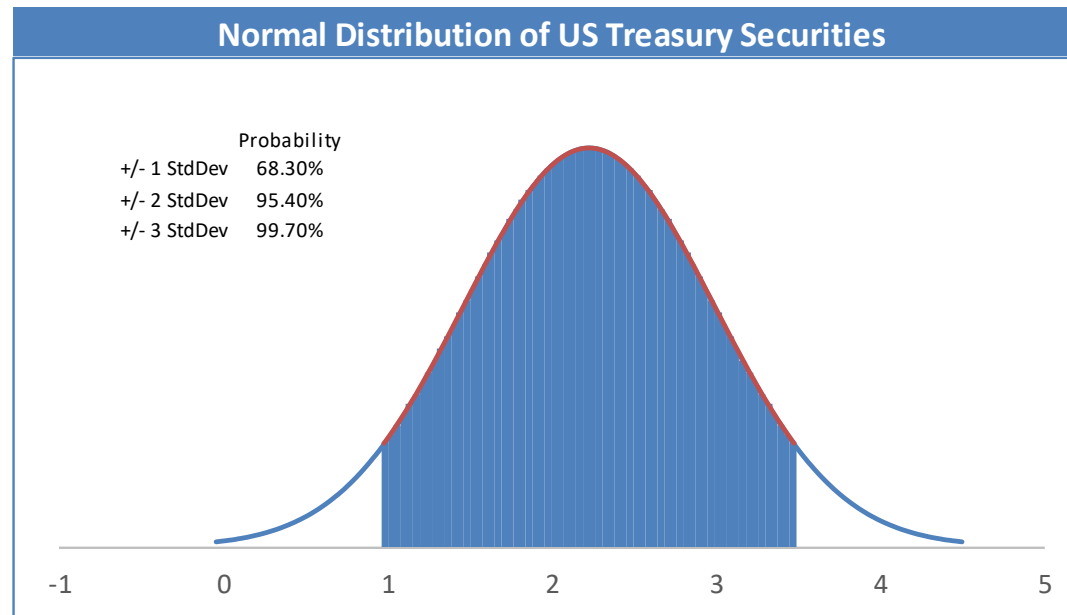


Understanding Rate Cycles: Statistical Regression

Regression data must be normally distributed

Instrument	10Y
Time Frame	10Y
Show	+/- 2 StdDev

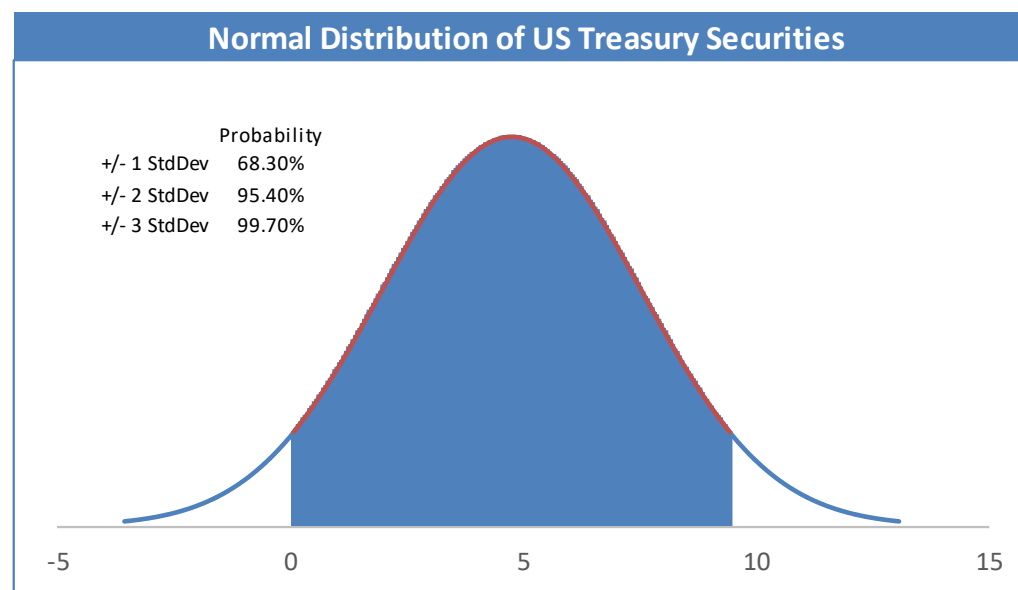
Settings	
Mean	2.23
StdDev	0.76
NumRows	120
Zmin	-3
Zmax	3
PctClear	4.60%
PctShade	95.40%
Calculations	
ShadeLeft	0.9497491
ShadeRight	3.5047503
CurveMin	-0.0473121
CurveMax	4.5018114



Regression data must be normally distributed; even over long periods of time

Instrument	10Y
Time Frame	100Y
Show	+/- 2 StdDev

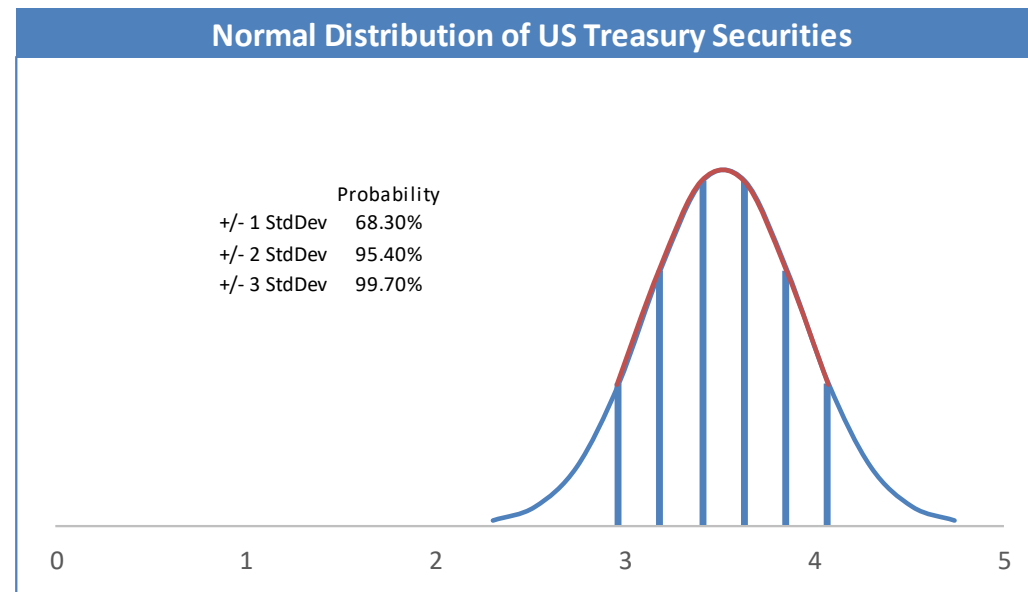
Settings	
Mean	4.76
StdDev	2.77
NumRows	1200
Zmin	-3
Zmax	3
PctClear	4.60%
PctShade	95.40%
Calculations	
ShadeLeft	0.0876643
ShadeRight	9.4265974
CurveMin	-3.5567517
CurveMax	13.071013



Regression data must be normally distributed; over ANY period of time

Instrument	10Y
Time Frame	1Y
Show	+/- 2 StdDev

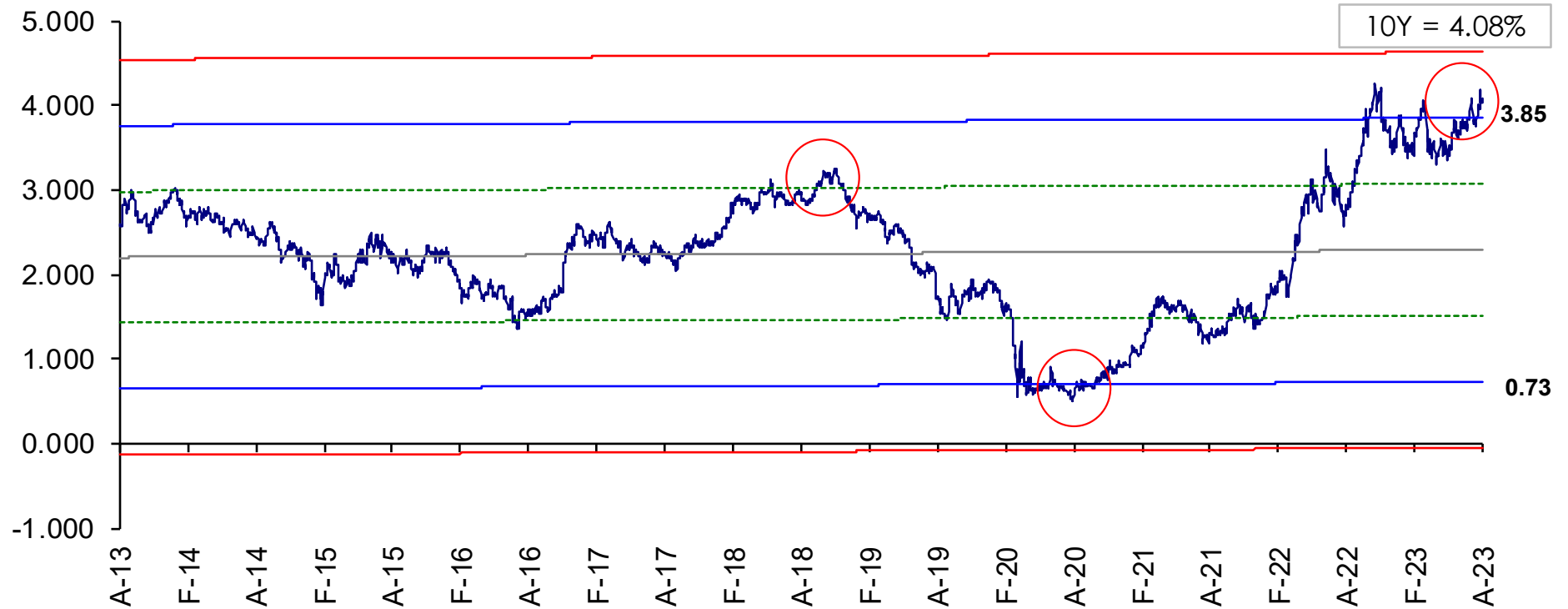
Settings	
Mean	3.52
StdDev	0.41
NumRows	12
Zmin	-3
Zmax	3
PctClear	4.60%
PctShade	95.40%
Calculations	
ShadeLeft	2.835136
ShadeRight	4.2055689
CurveMin	2.3003396
CurveMax	4.7403653



10 Year Treasury Regression

10Y Regression Aug, 2013 - Aug, 2023 (over 10 years)

+/- 3 StD 99.70%
+/- 2 StD 95.40%
+/- 1 StD 68.30%
Mean



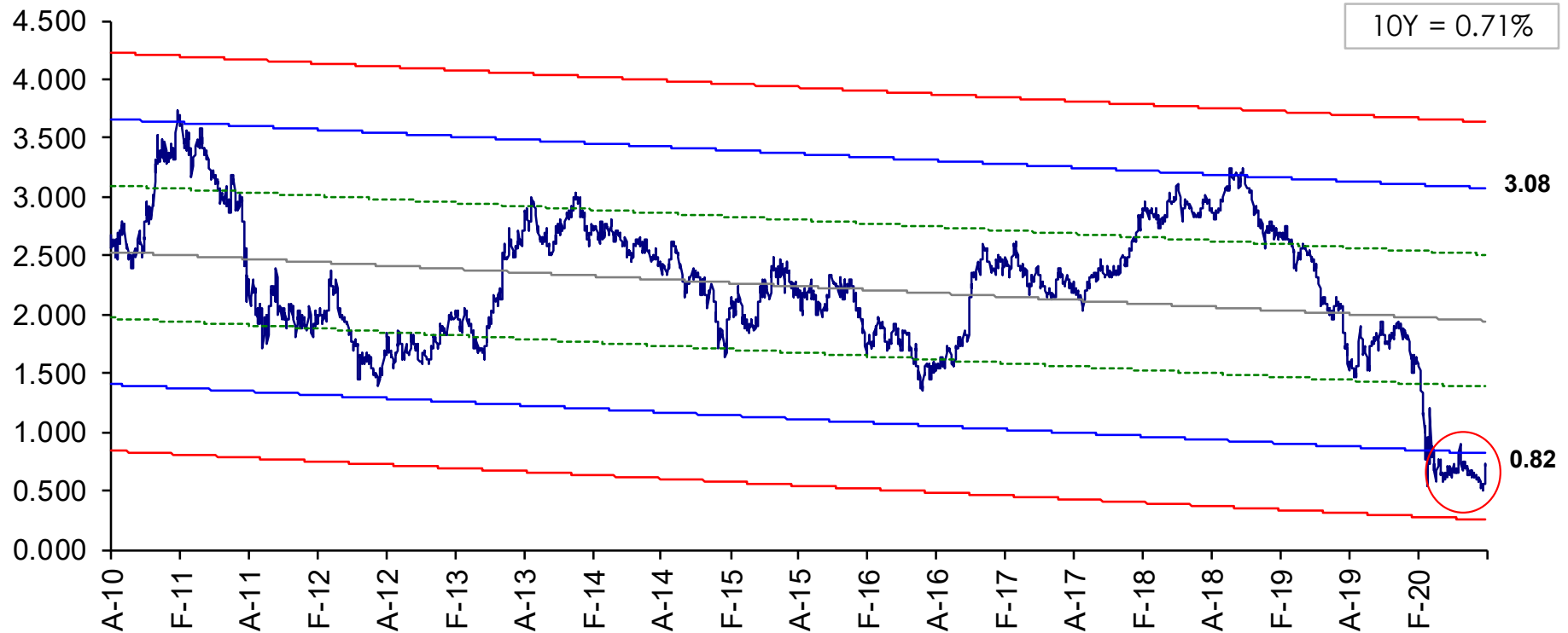
Source: Bloomberg™



10 Year Treasury Regression

10Y Regression Aug, 2010 - Aug, 2020 (over 10 years)

+/- 3 StD 99.70%
+/- 2 StD 95.40%
+/- 1 StD 68.30%
Mean



Source: Bloomberg™

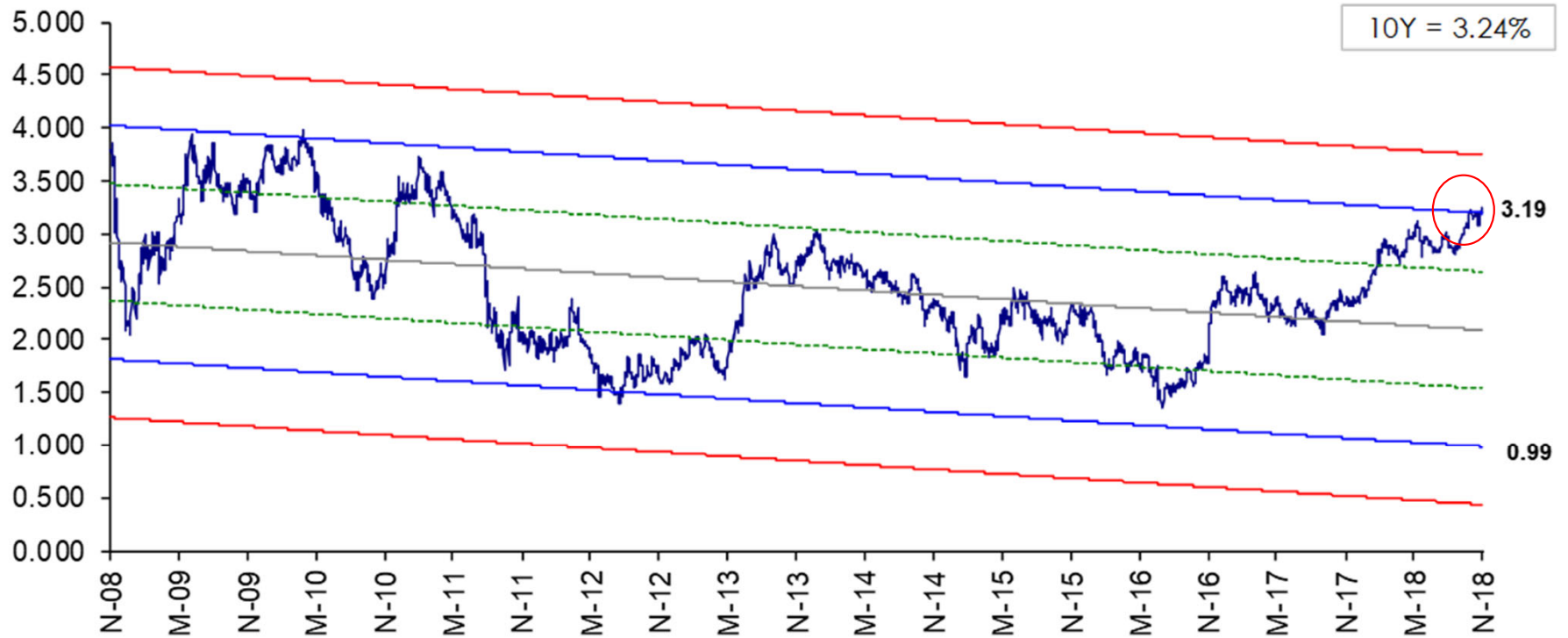


10 Year Treasury Regression

10Y Regression Nov, 2008 - Nov, 2018 (over 10 years)

+/- 3 StD 99.70%
+/- 2 StD 95.40%
+/- 1 StD 68.30%
Mean

10Y = 3.24%



Source: Bloomberg™



Regression/Decision Matrix

DECISION MATRIX								
10Y Trsy	Yld Crv	Likely Rate Move	Liabilities	Loans	Credit	Investment	Off Bal Sheet	Leverage
+2 Std	Inverted	Lower	Short/Call? Whlsle; Rate NOT Term	More Fixed; Prepay Penalties; Prime	Tighter Credit Standards	Max Dur; Min Options/CF	Asset: Var > Fix Liab: Fix > Var	Max Leverage (Max Invest)
+1 Std	Flattening	Lower/Higher	Shorter Mat Call Wholesale	Prefer Fixed; Prepay Penalties; Prime	Begin Tighter Credit	Extend Dur; Fewer Options	Hedge Int. Rate Exp as Needed	Incr Leverage (More Invest)
-1 Std	Steepening	Higher/Lower	Longer Mat Call Wholesale	Prefer Float; Prepay Penalties; Tsy	Begin Easier Credit	Shorten Dur; Increase CF	Hedge Int. Rate Exp as Needed	Incr Leverage (More Loans)
-2 Std	Very Steep	Higher	Longest Mat Bullet Wholesale	More Var; Tsy Index; No Caps/Ceil	Easiest Credit Standards	Min Dur; Max CF; Long Mat = HTM	Asset: Fix > Var Dep: Var > Fix	Max Leverage (Max Loans)



Curve Inversions



Source: Federal Reserve Bank of St. Louis/Board of Governors of the Federal Reserve System (US)/FRED



Loan Builder and understanding the “nuts and bolts” of pricing a deal

- Loan Builder is a tool developed by BancPath to assist lenders in properly valuing the options and risks inherent in every deal
- [BancPath© Loan Builder | BancPath© from the Asset Management Group \(ccbfmfinancial.com\)](http://ccbfmfinancial.com)
- FREE



Understanding Loan Pricing

4 Principals to EVERY deal

1. Credit Risk
2. Interest Rate Risk
3. Term Risk (Loss of Liquidity and/or Prepayment Risk)
4. Profit





BancPath[®] Loan Builder

[BancPath](#) / [Tools](#) / [BancPath[®] Loan Builder](#)

A FREE and EASY 10 Step Loan Pricing Tool

In the highly competitive market for pricing loans, it is vital that risk not only be identified, but also priced properly. By breaking a loan into its component parts, a lender can guarantee that they are properly compensated for both CREDIT RISK and INTEREST RATE RISK. [Have comments or feedback?](#)



MARKET INFORMATION AS OF 8/1/2023

DEAL NAME:

Deal Name

LOAN AMOUNT

\$ 1000000

Print

STEP 1 Term or Balloon ⓘ

5 Years

4.03%

STEP 2 Amortization ⓘ

20 Years

0.05%

Term + Amort Cost ⓘ

4.08% SOFR RATE

STEP 3 Prepayment Cost ⓘ

0 Years

1.50%

STEP 4 Liquidity Cost ⓘ

0.99%

STEP 5 Credit Cost ⓘ

3

1.50%
"A" Credit

**Prepay + Liquidity +
Credit Cost** ⓘ

3.98% SWAP SPREAD

RISK ADJUSTED OFFER RATE

8.06%



Loan Builder – Built around the 4 Principals

The Following Steps are Optional:

STEP 6 Relationship Adj.

%

NET OFFER RATE

8.06%

Total Adjusted Spread

3.98%

Duration of Loan

4.02

Walk Away Rate (Given Credit Consideration Above)

7.60%



TOTAL CHARGE
ANNUAL CHARGE

STEP 7 **Loan Loss Provision**

11,597
2,883

STEP 8 **Capital**

83,495

STEP 9 **Overhead Cost**

16,235

STEP 10 **Alt Cost of Funds**

4.60%

FEES **Additional Fee Income**

5,000

OR

0.134%

ANNUAL NET PROFIT (Before Tax)

14,227
17.04% ROE
1.53% ROAA



Loan Builder – Built around the 4 Principals

- Competitor is offering to make this loan closer to 7.00%, not 8.00%...
 - Should we do that?



NET OFFER RATE

COMPETITOR RATE >>>

7.00%

Total Adjusted Spread

2.92%

Duration of Loan

4.02

Walk Away Rate (Given Credit Consideration Above)

6.54%

TOTAL CHARGE
ANNUAL CHARGE**STEP 7 Loan Loss Provision**

1.29%

11,514
2,862**STEP 8 Capital**

99%

82,898

STEP 9 Overhead Cost

1.79%

16,119

STEP 10 Alt Cost of Funds

FHLB

4.60%

FEES Additional Fee Income

\$

5,000

OR

0.135%

0.50%

ANNUAL NET PROFIT (Before Tax)**4,371**5.27% ROE
0.47% ROAA

NET OFFER RATE

WALK AWAY RATE >>>

7.60%

Total Adjusted Spread	3.52%
Duration of Loan	4.02
Walk Away Rate (Given Credit Consideration Above)	7.14%

**TOTAL CHARGE
ANNUAL CHARGE****STEP 7 Loan Loss Provision**11,561
2,874**STEP 8 Capital**

83,242

STEP 9 Overhead Cost

16,186

STEP 10 Alt Cost of Funds

4.60%

FEES Additional Fee Income

OR

5,000
0.134%**ANNUAL NET PROFIT (Before Tax)****9,933**11.93% ROE
1.07% ROAA

Understanding the 4 Principals

- If you are going to “give away” an option, it is worth knowing the value of that option
- Spread matters, Pricing matters – more so now than ever before.
 - As our deposit base becomes more “rate sensitive”, we have to become as good at managing the assets of the bank as we have historically been in managing the liabilities.



Understanding your data

- Every institution here has a goldmine waiting to be discovered
- Your data is your insight into what drives risk and reward – spend your resources wisely to uncover what makes your institution profitable (or not?)
- If you don't have the expertise to uncover these gems yourself, partner with someone who can help you.

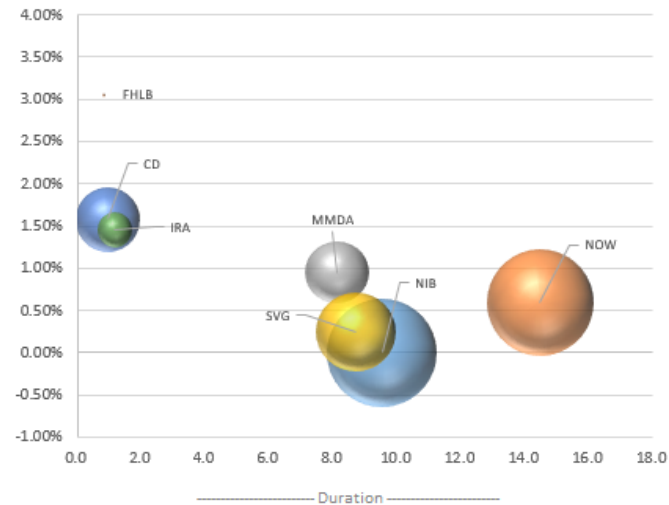


Understanding Your Data

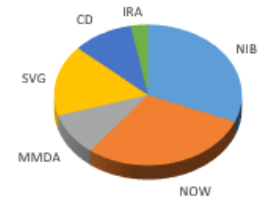
- Data mining allows banks to monitor performance metrics more granularly than ever before.
- Find a way to let YOUR data tell YOUR story
 - How is the Loan portfolio performing?
 - How are your Lenders Performing?
 - What about branch profitability?
 - What funding options should you exploit?
- Understanding YOUR data is one way you can answer these questions



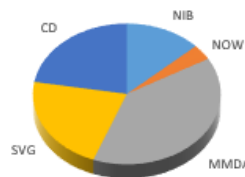
FUNDING PROFILE



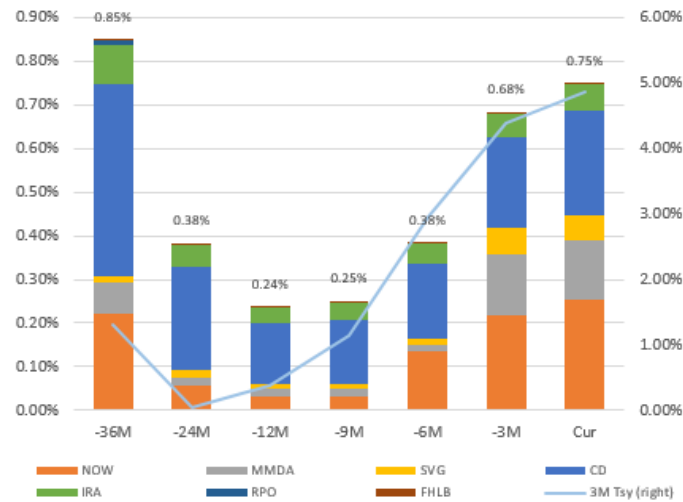
Liability Allocation



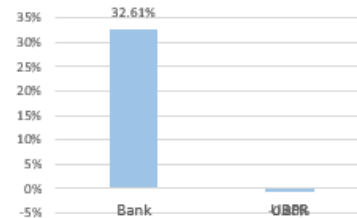
UBPR Liability Allocation



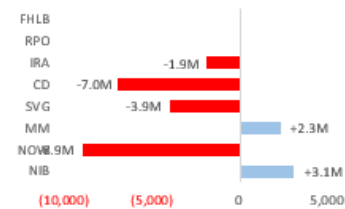
CONTRIBUTION TO COST OF FUNDS



FREE FUNDS RATIO

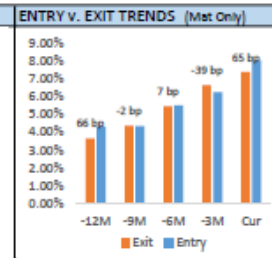
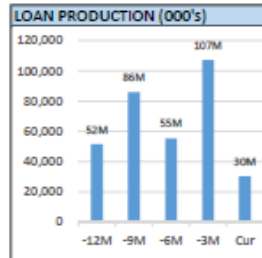


DEPOSIT FLOWS (chg from last mo)

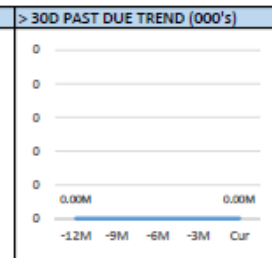
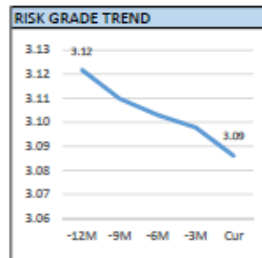


Description	Balance	Rate (TE)	Dur	Fix %	Fx Off %	Var %	Var Off %	Concent
Comm'l & Indust	125,602,775	5.785%	1.409	73.08%	7.14%	26.92%	8.35%	5.61%
Const & Develop	69,479,939	5.687%	1.837	29.91%	8.14%	70.09%	4.71%	3.11%
Municipal / Lease	535,317,261	4.041%	4.756	99.61%	6.40%	0.39%	7.75%	23.92%
Total Comm'l	730,399,976	4.498%	3.903	88.42%	6.69%	11.58%	7.56%	32.64%
CRE	0	0.000%	0.000	0.00%	0.00%	0.00%	0.00%	0.00%
CRE - Owner Occ	335,291,641	4.717%	2.743	39.90%	8.43%	60.10%	7.69%	14.98%
CRE - Non Owner Occ	328,045,314	4.775%	2.824	62.87%	7.58%	37.13%	7.04%	14.66%
Total Comm'l RE	663,336,955	4.746%	2.783	51.26%	8.01%	48.74%	7.37%	29.65%
1-4 Family (1st)	383,305,516	4.460%	4.097	46.44%	7.26%	53.56%	5.75%	17.13%
1-4 Family (Jr)	11,625,232	6.184%	1.977	33.42%	8.51%	66.58%	8.25%	0.52%
Residential Develop	24,692,192	6.085%	0.597	75.84%	8.88%	24.16%	7.70%	1.10%
Home Equity	35,918,801	8.739%	0.102	2.71%	8.86%	97.29%	8.49%	1.61%
Multi Family	37,872,399	5.191%	3.523	57.96%	7.75%	42.04%	7.75%	1.69%
Total Real Estate	493,414,140	4.949%	3.537	45.30%	7.52%	54.70%	6.26%	22.05%
Farmland	83,342,010	5.409%	3.090	34.24%	7.27%	65.76%	7.79%	3.72%
Ag	50,384,314	6.562%	0.992	51.20%	8.12%	48.80%	9.13%	2.25%
Total Farm/Ag	133,726,324	5.844%	2.299	40.63%	7.59%	59.37%	8.30%	5.98%
Credit Card / Revolv	97,576	17.246%	1.311	61.64%	7.75%	38.36%	7.75%	0.00%
Other Consumer	0	0.000%	0.000	0.00%	0.00%	0.00%	0.00%	0.00%
Auto	93,653,597	3.008%	1.907	100.00%	9.33%	0.00%	7.75%	4.19%
Consumer	107,998,350	3.412%	1.695	98.95%	9.85%	1.05%	3.20%	4.83%
Total Consumer	201,749,523	3.232%	1.793	99.42%	9.61%	0.58%	5.31%	9.02%
Depository	0	0.000%	0.000	0.00%	0.00%	0.00%	0.00%	0.00%
Other Loans	122,316	5.939%	1.923	100.00%	7.75%	0.00%	7.75%	0.01%
Unassigned	0	0.000%	0.000	0.00%	0.00%	0.00%	0.00%	0.00%
Total Other	122,316	5.939%	1.923	100.00%	7.75%	0.00%	7.75%	0.01%
NonAcc	14,784,733		1.312	82.11%		17.89%		0.66%
Total Loans	2,237,533,968	4.607%	3.187	65.99%	7.54%	34.01%	7.01%	100.00%

KEY RATIOS	
Loan/Deposit	66.33%
Loan/Asset	60.19%
LLR/Tot Loan	1.18%
Non Perf/Assets	0.56%
Loan Yield (YTD)	4.38%
Charge-Off (YTD)	0
Texas Ratio	4.31%
> 30 PD + NonAcc	0
Leverage Cap	328,420,875
CML % (100%)	222.40%
CRE % (300%)	201.98%



CASH FLOW	
12M Int:	75,396,285
12M Princ:	433,388,759
12M CF:	508,785,044
Exit Rate	7.37%
Loans Booked (#)	274
Loans Booked (\$)	30,046,533
Offer Rate	8.02%
Port Growth	0.39%
Loans Repr	41,531,245
Repr Exit Rate	6.02%
Repr New Rate	7.40%



Sample Bank & Trust
Sample, ST

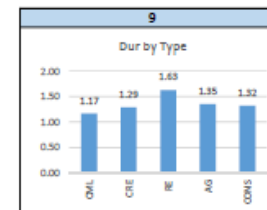
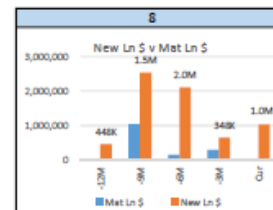
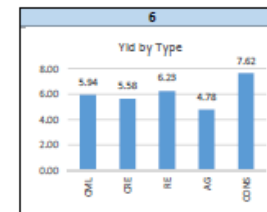
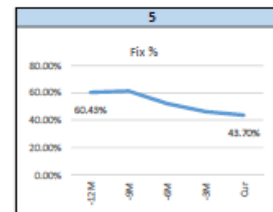
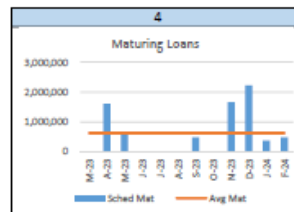
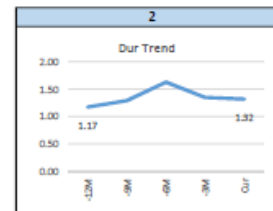
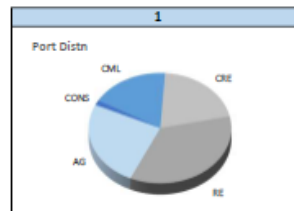
Lender 1
Officer Report

12/31/20xx

Loan Count 145	% Fix 43.70%	Yrs to Mat 7.358	12M Int: 1,151,313
Port. Bal 30,390,652	CML 17.75%	Yrs to Rpx 0.737	36% 12M Princ: 10,993,823
Avg Loan 209,591	CMLRE 20.47%	Dur 1.319	12M CF: 12,245,136
Wtd Rate 5.70%	RE 35.30%	PD 30-89 0.00%	Last 1M Exit: 5.89%
Med Loan 75,537	AG 25.07%	PD 90+ 0.00%	Last 1M Offer: 7.63%
Med Yield 5.55%	CONS 1.41%	Non Acc 0.00%	Diff: 1.74%

Excl. PPP and HFS Loans

TOP 10	Acctnbr	Borrower	Balance	Rate	Orig Dt	Mat Dt	Repx Dt	Dur	Days PD	Non Acc	Ann Inc (TE)
	000-0001	Borrower 1	2,968,734	4.00%	5/9/2022	9/6/2026		1.783			118,749
	000-0002	Borrower 2	1,772,175	4.00%	5/9/2022	9/6/2026		1.783			70,887
	000-0003	Borrower 3	1,677,000	7.75%	12/1/2020	12/1/2023	3/1/2023	0.083			129,968
	000-0004	Borrower 4	1,657,391	8.50%	11/4/2022	11/4/2023	3/1/2023	0.083			140,878
	000-0005	Borrower 5	1,471,004	6.25%	9/29/2014	8/15/2024	11/15/2023	0.694			91,938
	000-0006	Borrower 6	1,207,333	4.75%	12/23/2020	5/15/2024		0.862			57,348
	000-0007	Borrower 7	1,090,018	4.25%	12/31/2021	1/10/2032		4.096			46,326
	000-0008	Borrower 8	909,847	5.25%	3/10/2022	4/15/2023		0.166			47,767
	000-0009	Borrower 9	901,844	4.62%	5/28/2021	5/20/2041	5/28/2026	2.920			41,701
	000-00010	Borrower 10	742,415	4.17%	8/27/2020	11/28/2040	8/27/2023	0.482	0		30,988
	Remainder		15,992,890	5.98%				1.357			956,177
	Total		30,390,652	5.70%				1.319			1,732,727



12/31/20xx	LAST YEAR (20xx)													
	JUL		AUG		SEPT		OCT		NOV		DEC		TOTAL 20xx	
Description	Fix	Var	Fix	Var	Fix	Var	Fix	Var	Fix	Var	Fix	Var	Fix	Var
Comm'l & Indust	5.52%	5.48%	6.12%	6.46%	5.77%	7.24%	6.46%	7.41%	7.22%	7.66%	6.75%	7.92%	5.38%	6.27%
Const & Develop	0.00%	5.84%	5.66%	4.99%	7.55%	0.00%	3.75%	6.99%	6.37%	8.21%	7.75%	8.44%	5.56%	4.93%
Municipal / Lease	4.61%	0.00%	5.05%	0.00%	5.08%	0.00%	3.54%	0.00%	5.97%	0.00%	0.00%	0.00%	5.09%	0.00%
CRE - Owner Occ	5.86%	6.48%	5.47%	5.82%	4.58%	6.31%	0.00%	6.88%	6.48%	7.40%	0.00%	6.69%	4.56%	6.23%
CRE - Non Owner Occ	0.00%	5.50%	6.16%	6.00%	4.44%	7.25%	0.00%	0.00%	7.00%	0.00%	6.89%	6.31%	4.73%	4.41%
1-4 Family (1st)	5.17%	5.66%	5.21%	6.50%	6.49%	6.75%	6.87%	6.39%	6.67%	7.31%	5.38%	6.88%	5.29%	5.87%
1-4 Family (Jr)	6.76%	0.00%	6.50%	7.70%	0.00%	6.00%	8.18%	7.00%	0.00%	0.00%	7.77%	0.00%	5.56%	6.27%
Residential Develop	4.62%	6.21%	5.84%	0.00%	5.40%	6.25%	7.49%	6.75%	4.50%	0.00%	4.50%	7.66%	5.22%	6.29%
Home Equity	6.00%	6.17%	0.00%	6.36%	0.00%	6.89%	0.00%	7.38%	0.00%	7.71%	8.00%	8.63%	7.79%	5.90%
Multi Family	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.50%	0.00%	0.00%	0.00%	4.50%
Farmland	5.25%	5.46%	5.95%	6.35%	6.00%	7.50%	6.25%	6.00%	6.33%	6.31%	0.00%	6.58%	5.30%	5.99%
Ag	5.93%	6.71%	6.26%	6.45%	7.11%	6.66%	6.84%	6.66%	6.75%	8.07%	8.35%	6.21%	5.13%	5.35%
Credit Card / Revolv	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%
Other Consumer	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%
Auto	3.24%	0.00%	3.75%	0.00%	6.86%	0.00%	7.09%	0.00%	9.59%	0.00%	11.11%	0.00%	3.39%	0.00%
Consumer	5.31%	3.30%	4.29%	0.00%	7.65%	3.10%	7.34%	3.18%	8.06%	2.43%	7.63%	3.35%	4.55%	3.08%
Depository	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%
Other Loans	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%
Unassigned	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%
New Loan Rate	5.13%	6.07%	5.39%	6.05%	5.16%	6.75%	6.62%	6.60%	6.15%	6.91%	6.69%	7.18%	5.01%	5.51%
New Loan Volume	8,900,525	17,263,314	27,254,203	7,219,053	54,612,707	6,021,225	6,219,781	3,744,438	31,300,971	4,638,764	6,067,699	5,714,835	252,094,579	98,733,085
New Loan Avg Life	3.044	5.686	1.997	5.316	2.424	8.103	2.949	7.000	9.202	5.937	1.825	7.943	3.991	5.899
Loan Loss Reserve	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Capital Charge	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
Overhead Charge	1.21%	1.21%	1.23%	1.23%	1.27%	1.27%	1.34%	1.34%	1.39%	1.39%	1.38%	1.38%	1.21%	1.21%
Marg COF (SOFR)	80%	2.86%	2.79%	3.58%	3.13%	4.18%	3.67%	4.31%	3.88%	3.30%	3.42%	4.52%	3.60%	2.53%
Marg COF (INTERNAL)	20%	0.53%	0.53%	0.60%	0.60%	0.58%	0.58%	1.06%	1.06%	1.35%	1.35%	1.36%	1.36%	0.11%
Marg COF (TOTAL)		2.39%	2.34%	2.98%	2.63%	3.46%	3.05%	3.66%	3.31%	2.91%	3.01%	3.89%	3.16%	2.64%
Add'l Fee Income		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%
Ann'l Int Income		456,596	1,047,028	1,468,842	436,522	2,818,903	406,648	411,520	247,187	1,925,410	320,489	405,977	410,272	12,622,663
Ann'l Fee Income		7,310	7,590	34,122	3,395	56,324	1,858	5,272	1,337	8,504	1,953	8,312	1,799	157,927
Tot Ann'l Income		463,907	1,054,618	1,502,963	439,917	2,875,227	408,506	416,792	248,525	1,933,913	322,443	414,290	412,071	12,780,590
Capital Allocation		712,042	1,381,065	2,180,336	577,524	4,369,017	481,698	497,583	299,555	2,504,078	371,101	485,416	457,187	20,167,566
Ann'l Provision		36,552	37,951	170,608	16,975	281,619	9,288	26,362	6,687	42,518	9,766	41,561	8,994	789,634
Overhead Charge		107,776	209,042	336,366	89,096	695,177	76,646	83,504	50,271	434,739	64,428	84,030	79,144	3,052,431
Marg Int Expense		212,751	403,534	812,446	189,557	1,887,801	183,810	227,596	124,107	909,734	139,460	236,024	180,328	6,657,919
Ann'l Net Income		106,826	404,091	183,543	144,289	10,630	138,762	79,329	67,460	546,923	108,788	52,674	143,605	2,280,606
ROA		1.20%	2.34%	0.67%	2.00%	0.02%	2.30%	1.28%	1.80%	1.75%	2.35%	0.87%	2.51%	0.90%
ROE		15.00%	29.26%	8.42%	24.98%	0.24%	28.81%	15.94%	22.52%	21.84%	29.32%	10.85%	31.41%	11.31%
Loan Spread		2.74%	3.73%	2.41%	3.42%	1.70%	3.70%	2.96%	3.29%	3.24%	3.90%	2.80%	4.02%	2.37%
Mkt Credit Spread		1.17%	1.51%	0.85%	1.41%	1.30%	2.03%	1.15%	1.69%	1.66%	1.44%	0.81%	1.43%	0.81%
Remain Sprxd (Profit)		0.36%	1.01%	0.33%	0.78%	-0.87%	0.40%	0.46%	0.26%	0.19%	1.08%	0.61%	1.21%	0.35%

Sean Doherty
Asset Management Group, Inc.
800 226-1923
sdoherty@countryclubbank.com

