Unexpected Implications of a Rising Rate Environment

Presented by

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Summary

Perfect Storm:

1. Reduced strength of loan portfolio
2. Rising rate environment compressing NIM
3. Pressures from QE reversal to reduce availability and increase cost of funding

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Banks must explore all their strategic options. M&A offers the potential to dramatically change your assets and liabilities, if you find the right target.

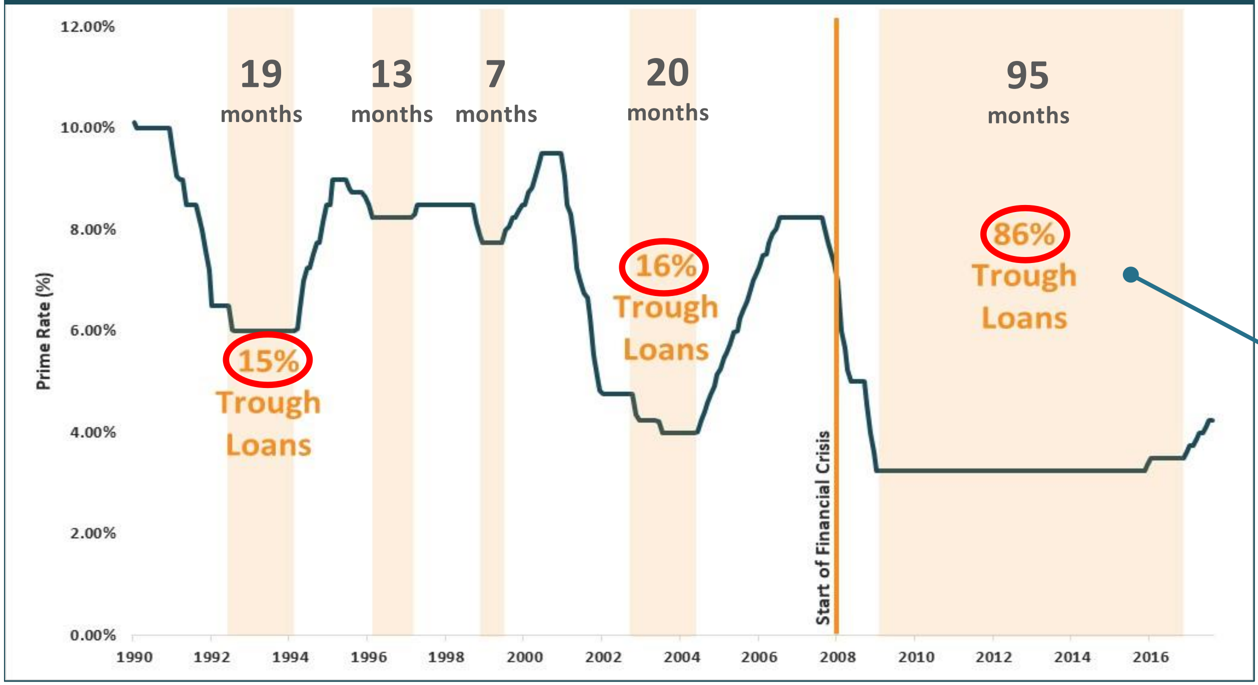
M&A, if possible, is the only option that can meaningfully move the needle. That is why it must be fully explored, even while incorporating other relatively less powerful operating and strategic moves.

Banks that succeed in M&A will separate themselves from the pack – and emerge with a significant competitive edge.

Duration of Interest Rate Troughs

A HISTORY OF PRIME

BANK PRIME LOAN RATE, PERCENT MONTHLY, NOT SEASONALLY ADJUSTED



The Fed's zero interest rate policy following the crisis was unprecedented historically in terms of degree and duration.
A bank growing at 5% annually would have 86% of its portfolio made up of low rate loans by 2016 versus only 15-16% in prior low-rate cycles.

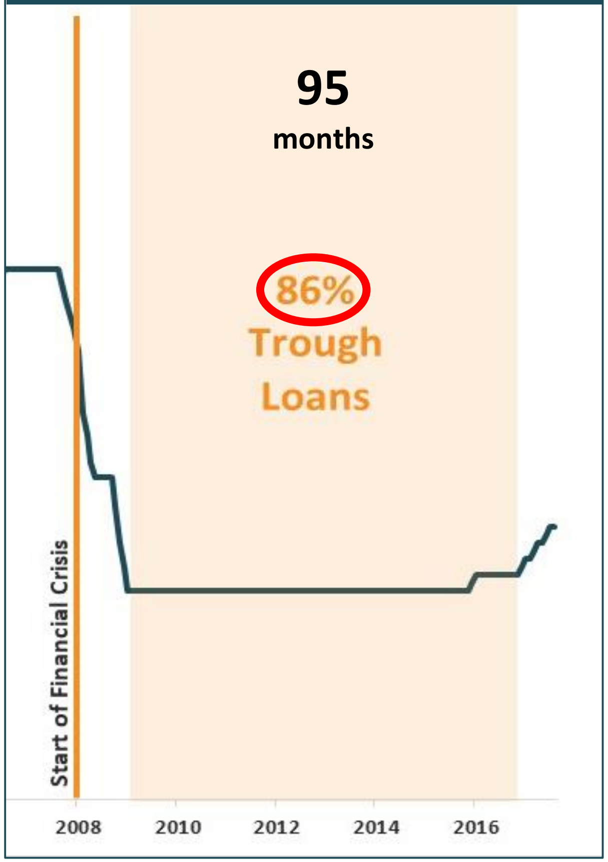
The impact on yields is evident today. The impact of the unwinding of QE will be more dramatic but has not yet fully materialized.

**Trough loans = Low interest rate loans as a percentage of total loans assuming 5% annual growth through the low rate periods (or "troughs")

Impact of Extended Low Rates

IMPLEMENTATION OF QE

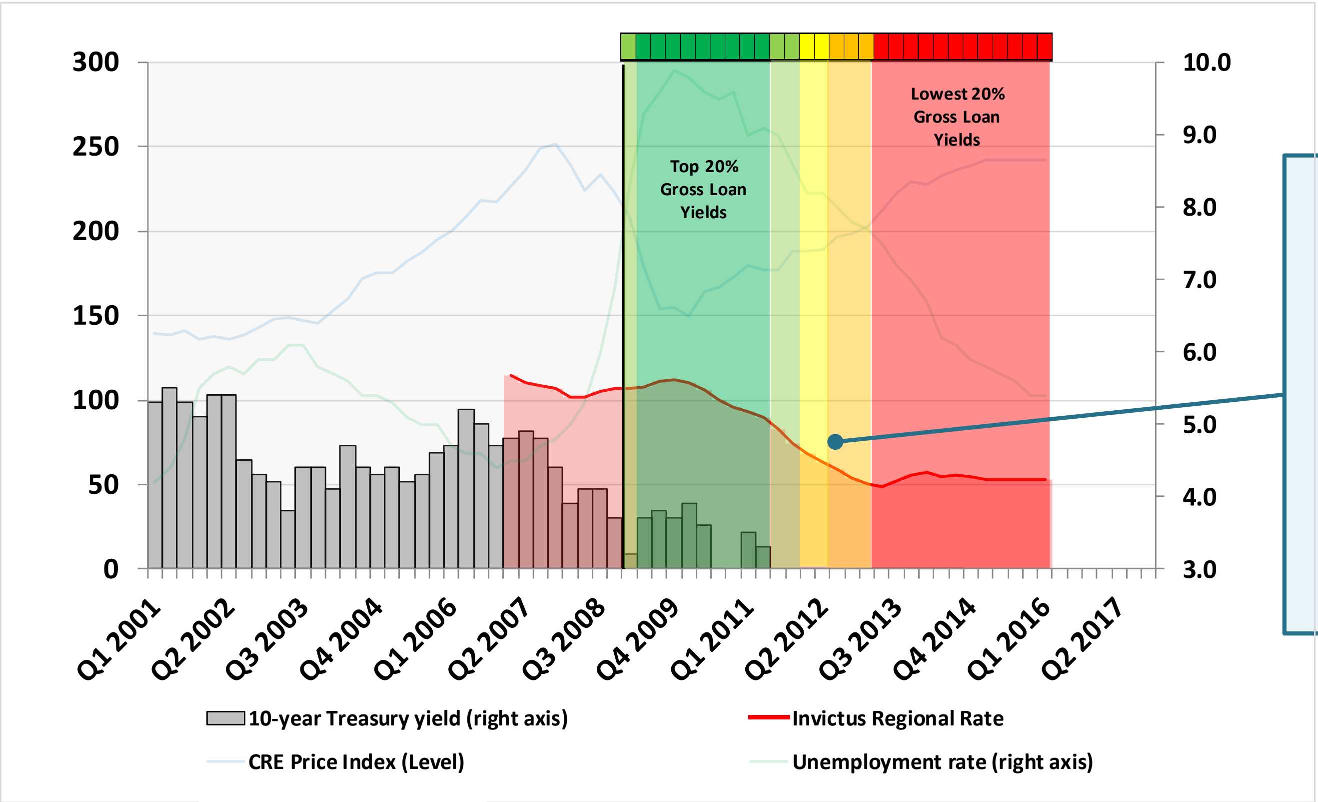
Bank Prime Loan Rate



1. **Established a historical pattern that is misleading and dangerous.** This is particularly so when history is viewed through traditional financial statements.
2. **Oversaw a decline in asset yields effectively masked by artificially low funding costs.** The decline in average asset yields will take considerable time to unwind while average funding costs will move up rapidly.
3. **Established a flat yield curve that shifted footprint deposits unnaturally toward lower cost options.**
4. **Created a new "normal" in bank operations that is far from normal.** It did this by creating an illusion of acceptable P&L revenues and cost structures that will be destroyed by market normalization.
5. **Totally distorted the value and accuracy of legacy analytics that continue to be used during this period.**
6. **Left community banks with limited options to make strategic operating corrections.**

Legend

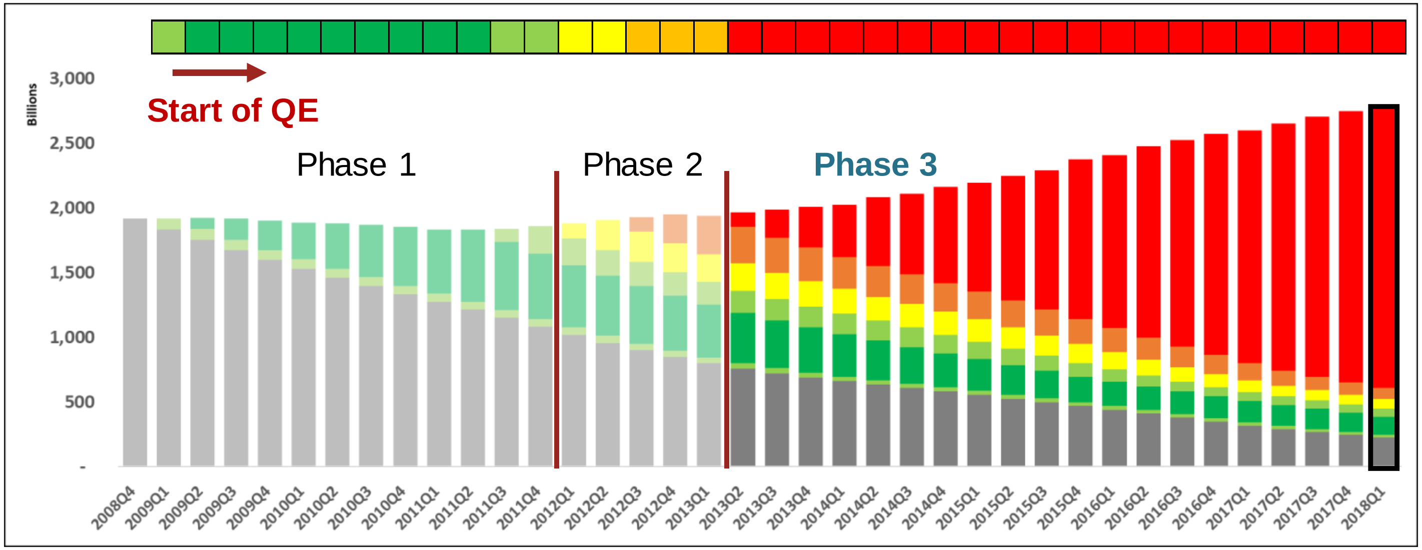
COMMUNITY BANK MARGINAL RATES

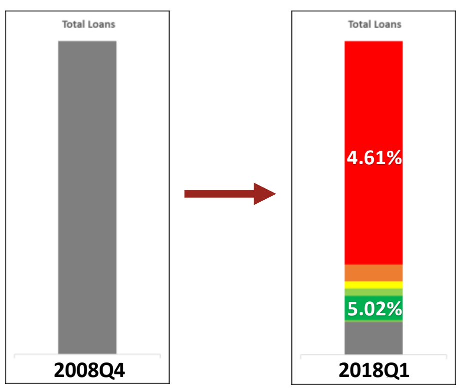


Yields on new loans in the community banking industry started falling in 2011. The balance of the presentation will use the color scheme on the left to delineate yields within a bank's loan portfolio.

Total Loans

(ALL BANKS IN THE US <$20B)





Gross Yield: **6.72%**

Gross Yield: **4.89%**

QE depleted the earning power of loan portfolios for all banks in the country. This will limit banks' strength to combat rising funding costs due to QE reversal.

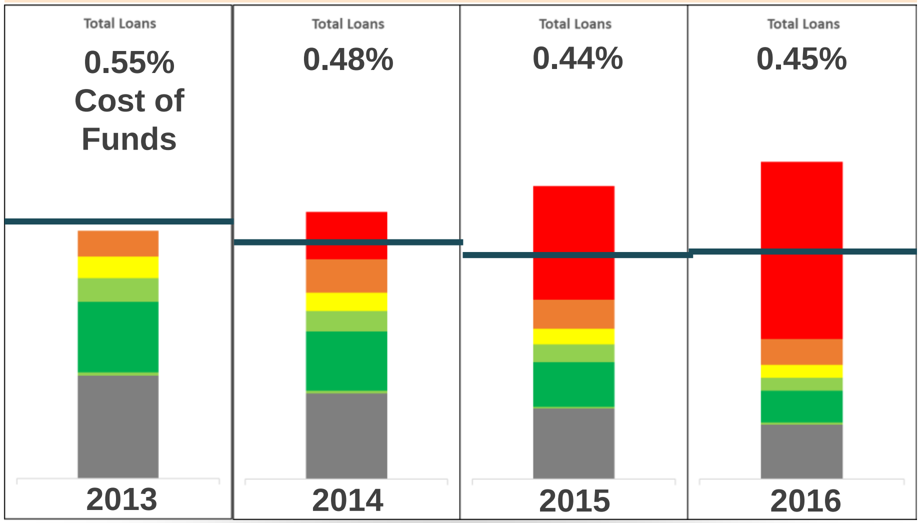
2016 BankGenome™ Insights

ALL BANKS IN THE US (<$20B)

2016 ACTUAL

GROSS YIELD

5.24%	5.06%	4.87%	4.84%



NIM

3.7%	3.7%	3.7%	3.7%

LOANS/DEPOSITS

79% → 85%

In 2016, cost of funds had plateaued and started to increase slightly. Banks continued to increase their loan/deposit ratios to combat declining yields and to maintain NIMs.

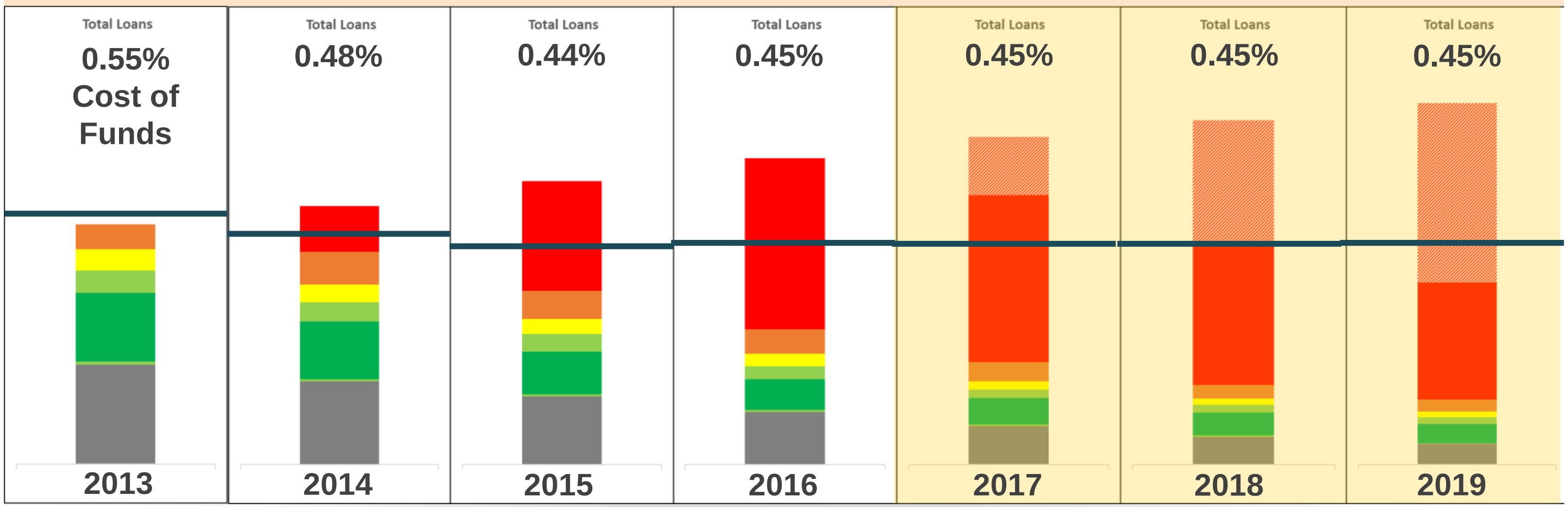
Invictus told its clients that, contrary to public opinion, a rising rate environment would compress NIMs and hurt bank P&Ls even more than a flat rate environment (as depicted in the following slides).

2016 BankGenome™ Insights

ALL BANKS IN THE US (<$20B)

FLAT RATE FORECAST

GROSS YIELD						
5.24%	5.06%	4.87%	4.84%	4.80%	4.76%	4.70%



NIM							
3.7%	3.7%	3.7%	3.7%	3.7%	3.6%	3.5%	<-With Flat Rates

LOANS/DEPOSITS				
79% →	85%	85%	85%	85%

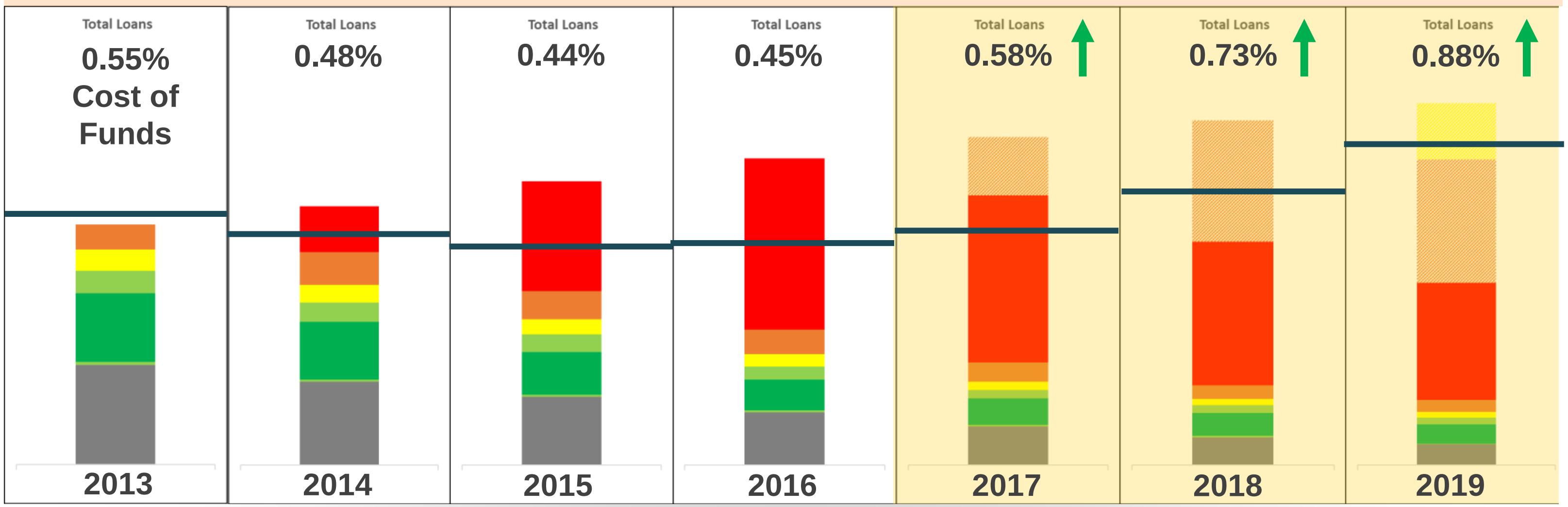
2016 BankGenome™ Insights

ALL BANKS IN THE US (<$20B)

RISING RATE FORECAST

GROSS YIELD

5.24%	5.06%	4.87%	4.84%	4.86%	4.96%	5.10%



NIM

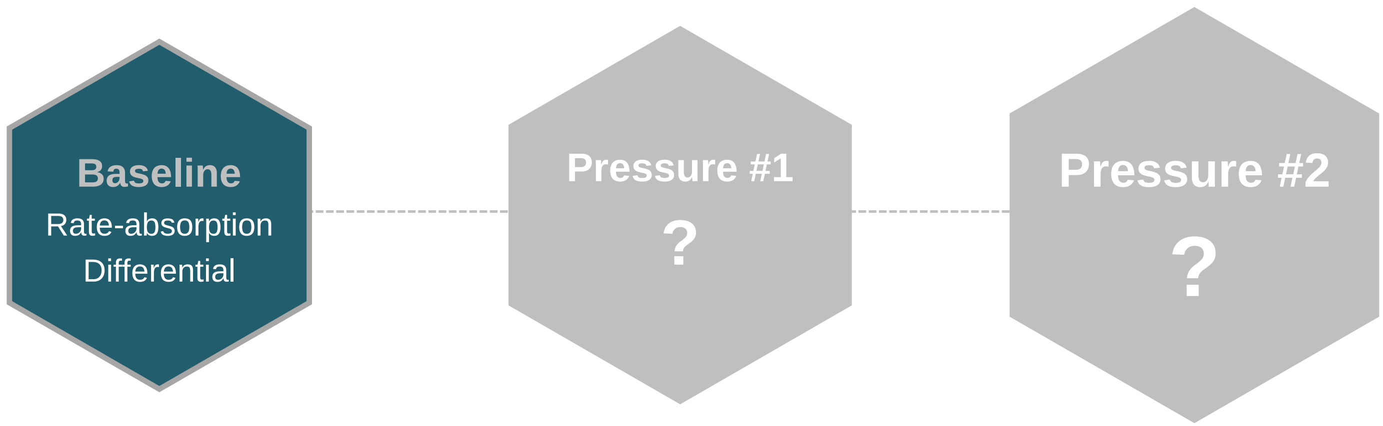
3.7%	3.7%	3.7%	3.7%	3.6%	3.6%	3.4%

<-With Rising Rates

LOANS/DEPOSITS

79% → 85%		85%	85%	85%

The Storm: Forecasting Liabilities



Proper quantification of the baseline scenario is critical for any evaluation of the impact of rising rates on a bank. It is important to recognize that:

- **Every bank has a unique mix of loans, fixed/floating rates, maturities and origination dates.**
- **Each bank has a unique distribution of footprint deposits and external deposits/liabilities.**
- **"Loan/Deposit level" analysis is the only way to effectively calculate the unique asset and liability absorption rates that are built into the bank's existing balance sheet.**

LEGACY ANALYTICS BASED ON ACCOUNTING STATEMENTS WILL NOT WORK

The Storm: Forecasting Liabilities

Baseline
Rate-absorption
Differential

Pressure #1
Pricing

Pressure #2
?

Upward Pressure on BASELINE

Internal pricing pressure due to intra-disintermediation + external pressure due to competition from the CCAR banks.

Pressure #1 PRICING

Pressure #1
Pricing

Intra-Disintermediation

- Depositors will not only move funds out of banks, but funds within the bank will shift toward higher cost products

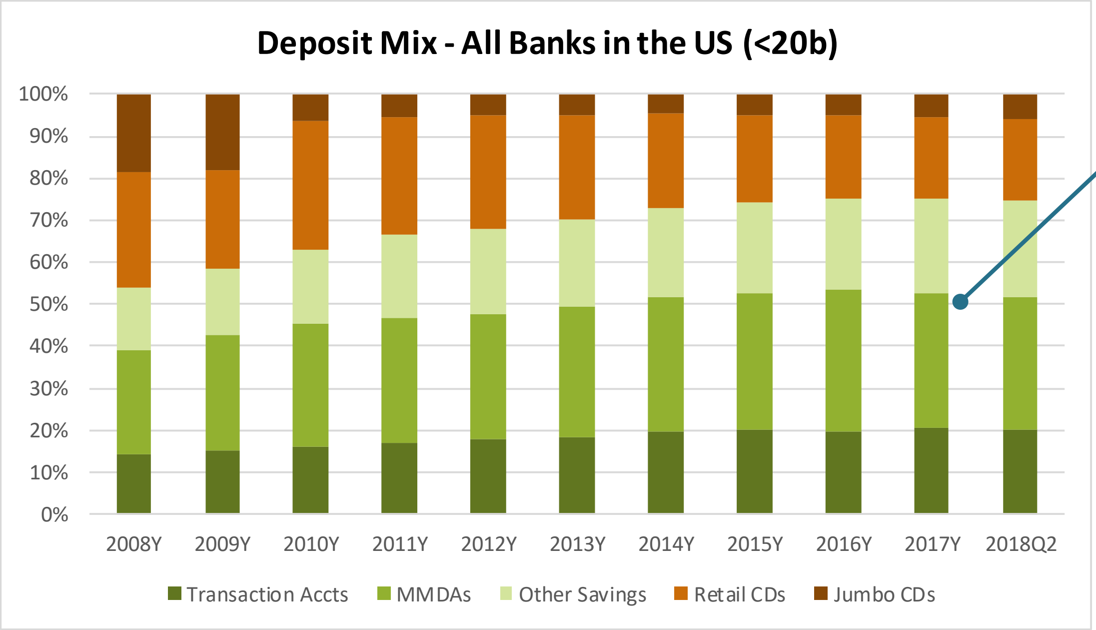
Unwinding of QE

- As the Fed raises rates by unwinding its balance sheet, there will be heavy downward pressure on deposit levels.
- Large national banks feeling that pressure are already competing aggressively on rates, a trend that will increase.

Ex: Goldman Sachs' digital bank Marcus offers a 1-year CD at 2.55%[1]

[1] **Peters, Andy. *American Banker*. "As digital banks proliferate, so do risks." (15 October, 2018).**

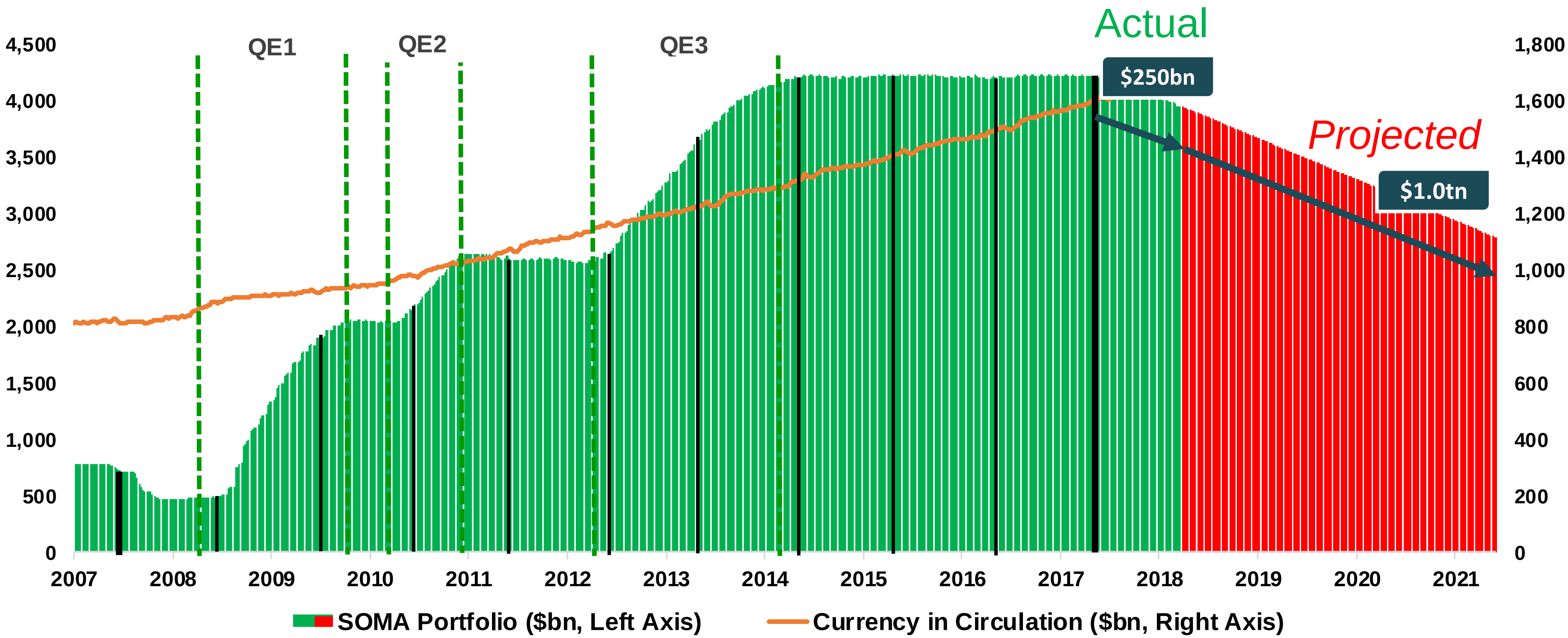
Quantitative Easing: Impact of Deposit Mix



The relative cost/benefit tradeoff of locking up funds in a CD becomes less attractive to depositors as the yield curve flattens and the benefit declines. As a result, deposit funds in low cost, non-time-deposit accounts increased relative to CDs.

This process will unwind itself as rates rise and the yield curve normalizes.

Quantitative Easing: Early Innings of Normalization



The Fed's securities portfolio is expected to decline to ~$2.9tn by the fourth quarter of 2021.

Approximately $1 trillion of deposits could be sucked out of the marketplace in the next three years.

The Storm: Forecasting Liabilities

Baseline
Rate-absorption Differential

Pressure #1
Pricing

Pressure #2
Marginal Cost of Funds

Upward Pressure on BASELINE

Limited availability of in-market deposits will force banks to fund loans with higher priced out-of-market liabilities.

YTD Average Liability Structure

ALL BANKS IN US (EXCLUDING CCAR)

Pressure #2
Marginal Cost of Funds

OUT-OF-FOOTPRINT

Funding

Deposits

	RATES	VOLATILITY
FHLB & Repos	1.98-2.83%	HIGH
Brokered CDs	2.50-3.35%	HIGH
CDs 1-5yr (ins and jumbo)	0.76-1.39%	MED
Money Market (ins and jumbo)	0.14-0.20%	MED
NOW Checking and Savings	0.05%	LOW
DDA Checking	0.00%	LOW

Deposits

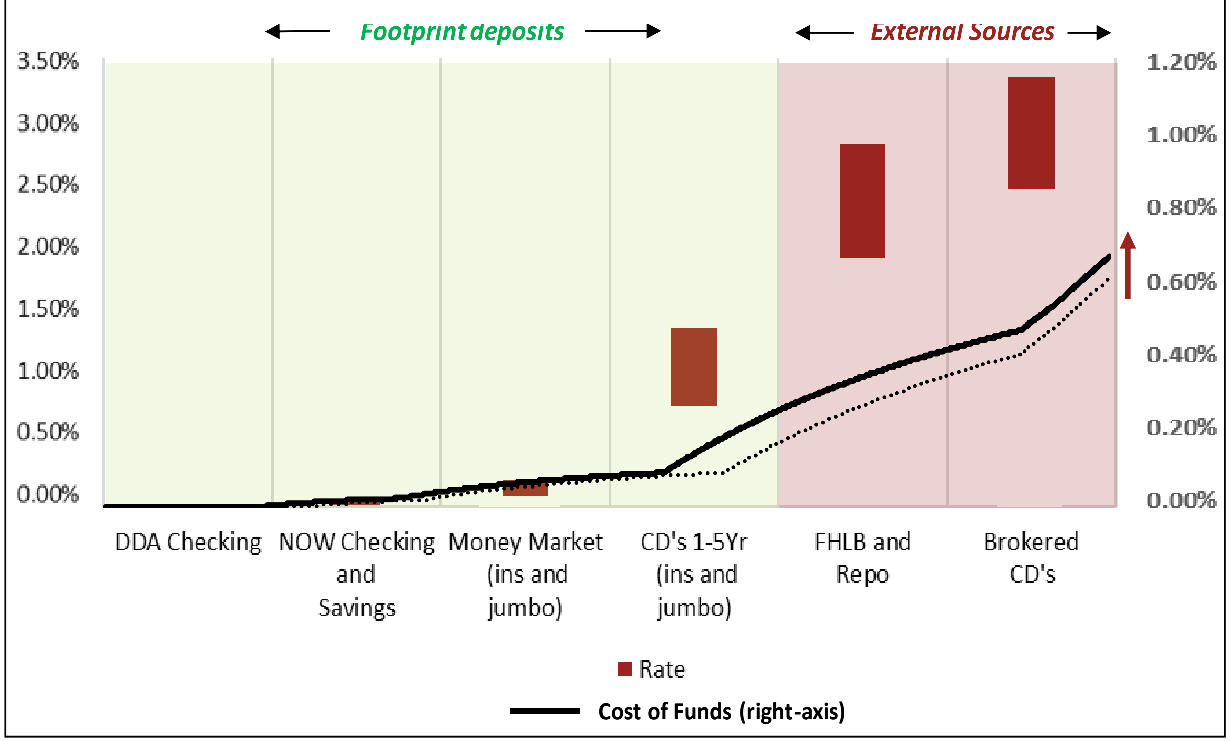
IN-FOOTPRINT

YTD Average Liability Structure

ALL BANKS IN US (EXCLUDING CCAR)

Pressure #2
Marginal Cost of Funds

DEPOSIT PRODUCTS – MOVING AVERAGE RATES



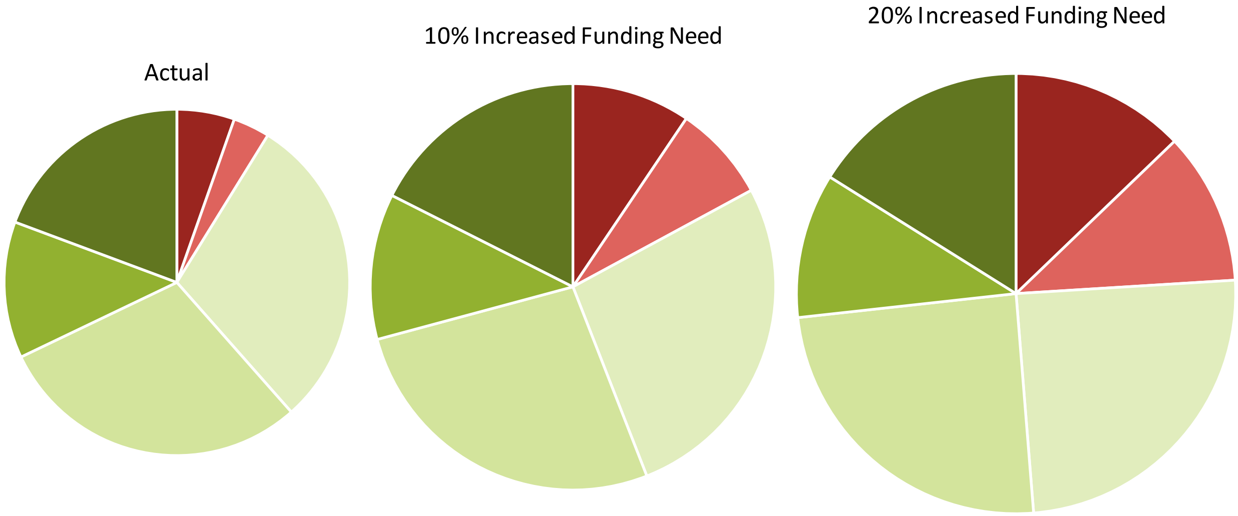
Intra-disintermediation within footprint deposits will place upward pressure on cost of funds.

Pressure #2
Marginal Cost of Funds

Impact of Increased Funding Needs

OUT-OF-MARKET DEPOSITS ONLY

(NO RATE CHANGE)



Actual	10% Increased Funding Need	20% Increased Funding Need
COST OF FUNDS:	**COST OF FUNDS:**	**COST OF FUNDS:**
0.61%	**0.79%**	**0.95%**
	+0.19%	***+0.34%***

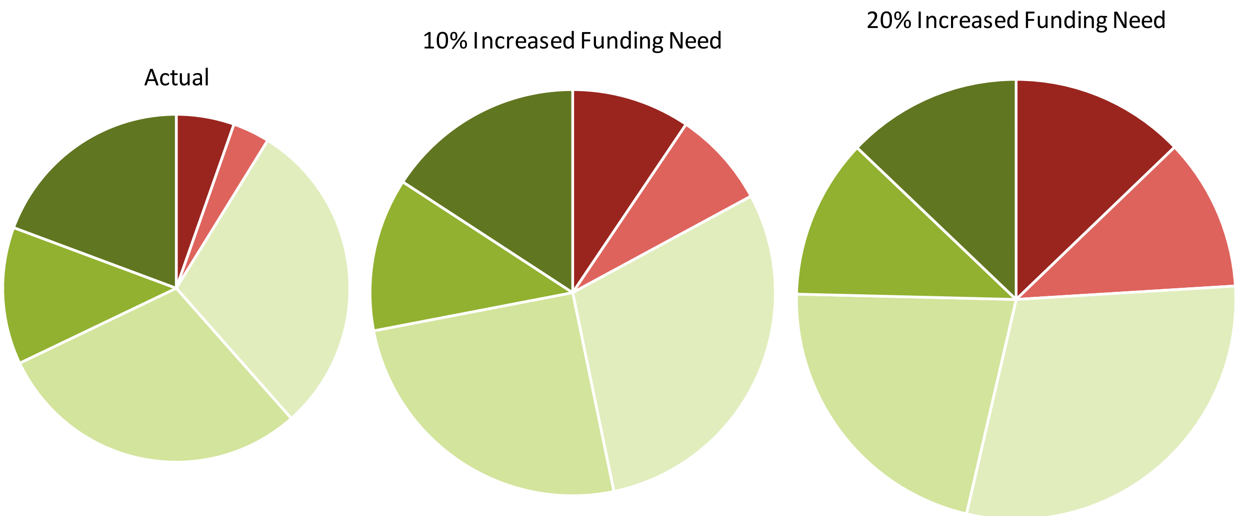
- FHLB and Repo
- Brokered CD's
- CD's 1-5Yr (ins and jumbo)
- Money Market (ins and jumbo)
- NOW Checking and Savings
- DDA Checking

When the availability of in-footprint deposits evaporates banks must fund all loan growth with external sources, which places upward pressure on the cost of funds.

Impact of Increased Funding Needs

Pressure #2
Marginal Cost of Funds

OUT-OF-MARKET DEPOSITS ONLY
(NO RATE CHANGE + ***Intra-Disintermediation***)



This process is exacerbated by intra-disintermediation within the footprint deposit mix.

COST OF FUNDS:	COST OF FUNDS:	COST OF FUNDS:
0.61%	0.82%	1.00%
	+0.21%	***+0.39%***

- FHLB and Repo
- Brokered CD's
- CD's 1-5Yr (ins and jumbo)
- Money Market (ins and jumbo)
- NOW Checking and Savings
- DDA Checking

The Storm: Forecasting Liabilities

Baseline
Rate-absorption Differential

Pressure #1
Pricing

Pressure #2
Marginal Cost of Funds

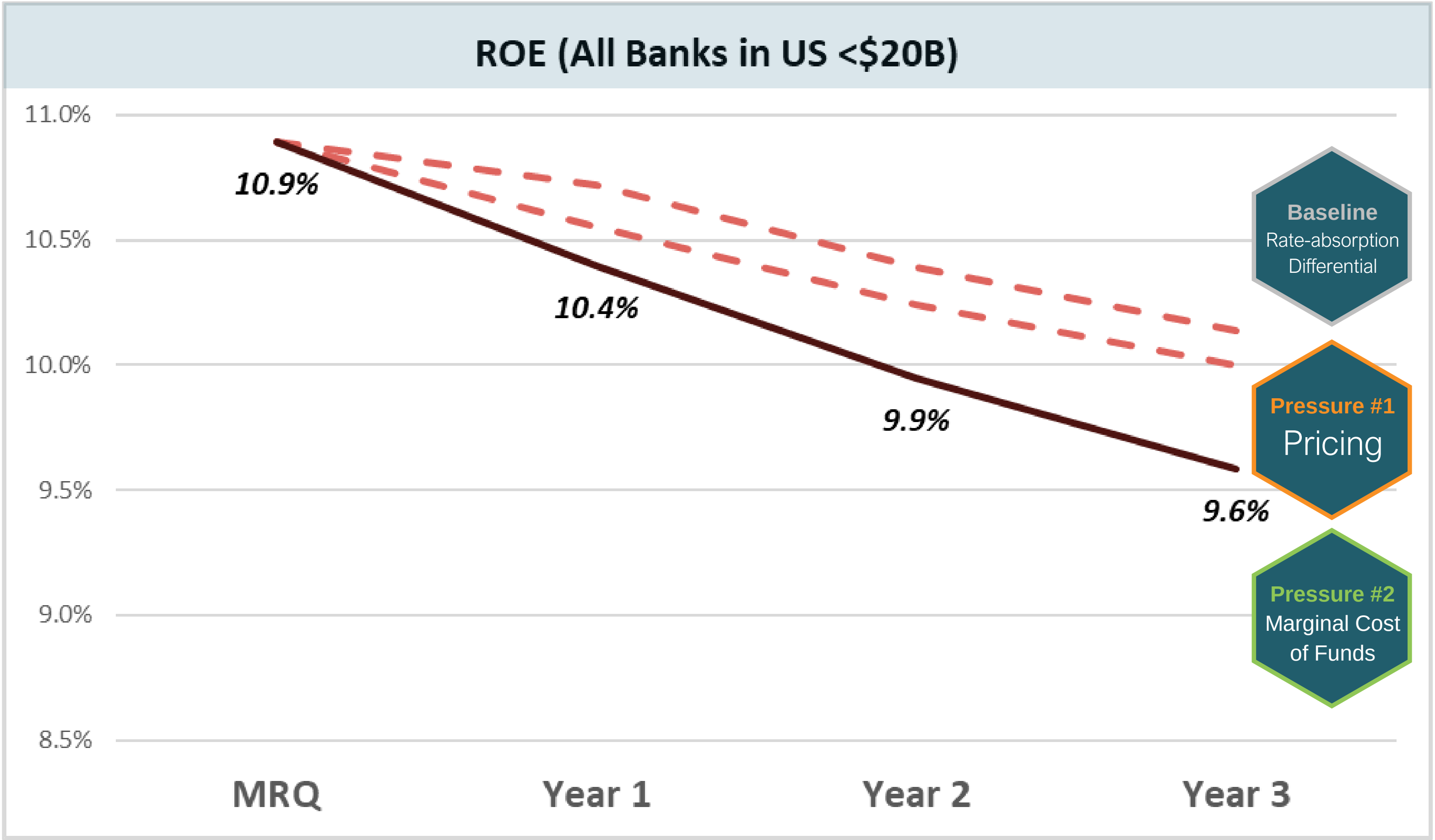
Due to slow asset turnover total funding costs will increase faster than total loan yields in a rising rate environment.

Internal pricing pressure due to intra-disintermediation + external pressure due to competition from the CCAR banks.

Limited availability of in-market deposits will force banks to fund loans with higher priced out-of-market liabilities.

The Perfect Storm

IMPACT ON ROE | ALL BANKS IN THE US (<$20B)



Baseline
Rate-absorption Differential

+

Pressure #1
Pricing

+

Pressure #2
Marginal Cost of Funds

=

These changes are not short-term but reflect a long- to intermediate-term trend.

1. **ALCO** (such as interest rate hedges) solutions are not designed to be strategic + are dangerous.
2. **Raising deposit rates** beyond those dictated by market risks cannibalizing a bank's existing customer deposits.

The only way to move the needle without drastically cutting back on asset growth is M&A…

Is an M&A transaction really possible/practical?

How do you quantify value of deposits?

The Traditional M&A Evaluation Process

One Bank at a Time

- Generate conservative/realistic pro forma financial statements for each target, using historical performance as a baseline.
- Pay particular attention to the last few quarters since they reflect the most current measure of year-to-date performance.
- Consolidate the target's pro forma with the buyer's to evaluate the impact on shareholder return, payback period, and other traditional measures.
- Adjust valuations to reflect transaction multiples associated with investment banker recommendations and historical transactions.

The Invictus M&A Methodology & Proactive Process

All Potential Targets

- Identify, analyze and compare **all potential targets** that fall within management directed footprints.
- **Drill deep into the buying bank's asset and liability structure**, focusing on loan categories, pricing characteristics, current maturity schedules and origination dates. **Perform similar in-depth analysis on the bank's deposit structure/distribution.**
- Use the power of BankGenome™ to perform similar in-depth pre-due diligence on all potential targets.
- **Ensure that pro formas reflect expected changes in the marketplace** and their impact on the bank's balance sheet and P&L. Analyze these changes and quantify the impact on the buyer and target.
- Use the information developed above to **calculate each target's intermediate and long-term impact on the acquirer's shareholder value**, which is then equated to a multiple-of-book.
- **Prioritize all the targets and their approach strategy** based on their value to the client and potential vulnerabilities.

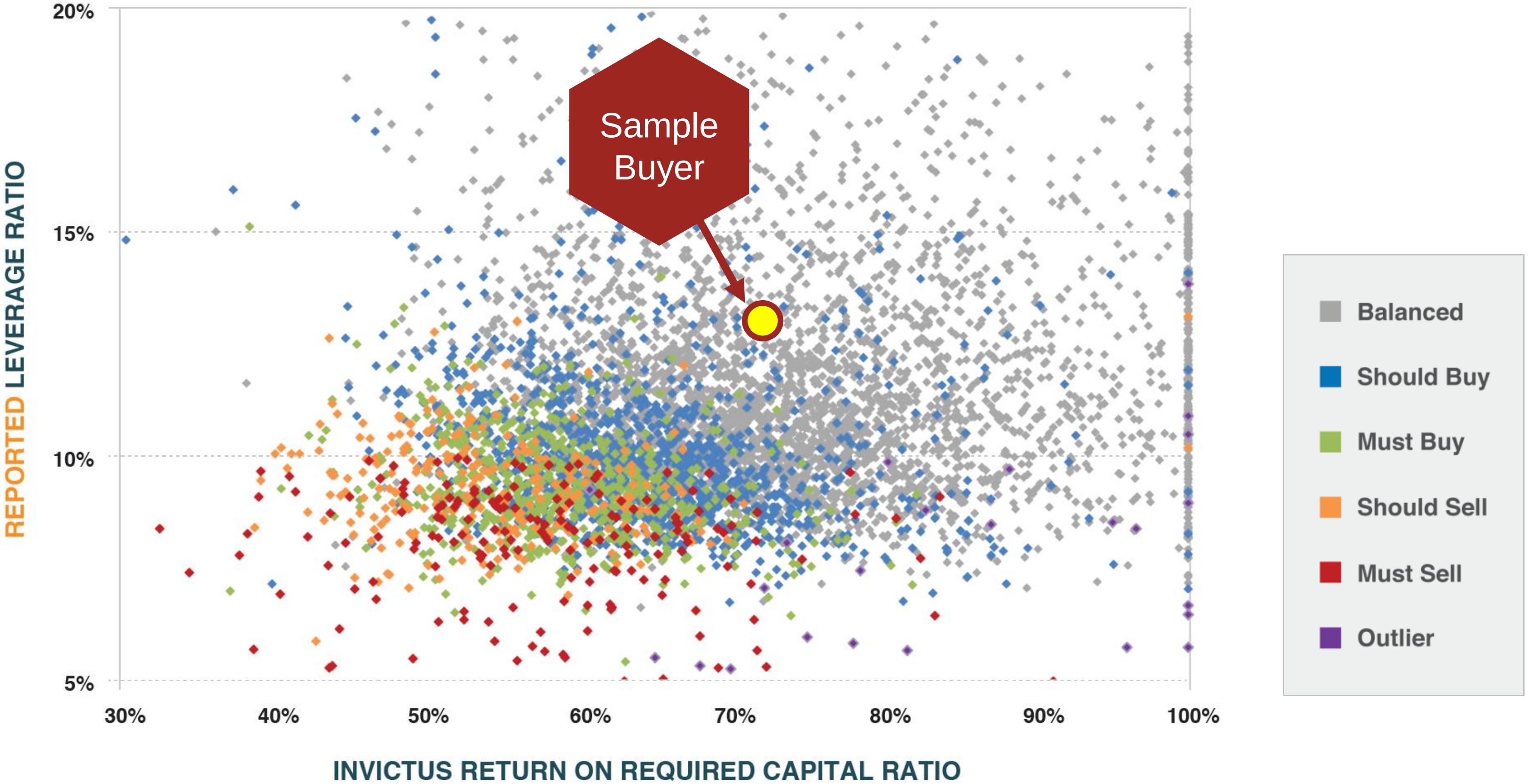
M&A as a Solution - Invictus Acquisition Gauge

ALL *BANKS* IN THE US

Leaders and Bleeders – Invictus Acquisition Gauge

Some data points have been artificially limited at the extremes to render a better graph

Invictus Return on Required Capital Ratio = Gross Asset Return / Regulatory Capital Required to Support the Assets



M&A as a Solution - Invictus Acquisition Gauge

ALL *BANKS* IN THE US

Leaders and Bleeders – Invictus Acquisition Gauge

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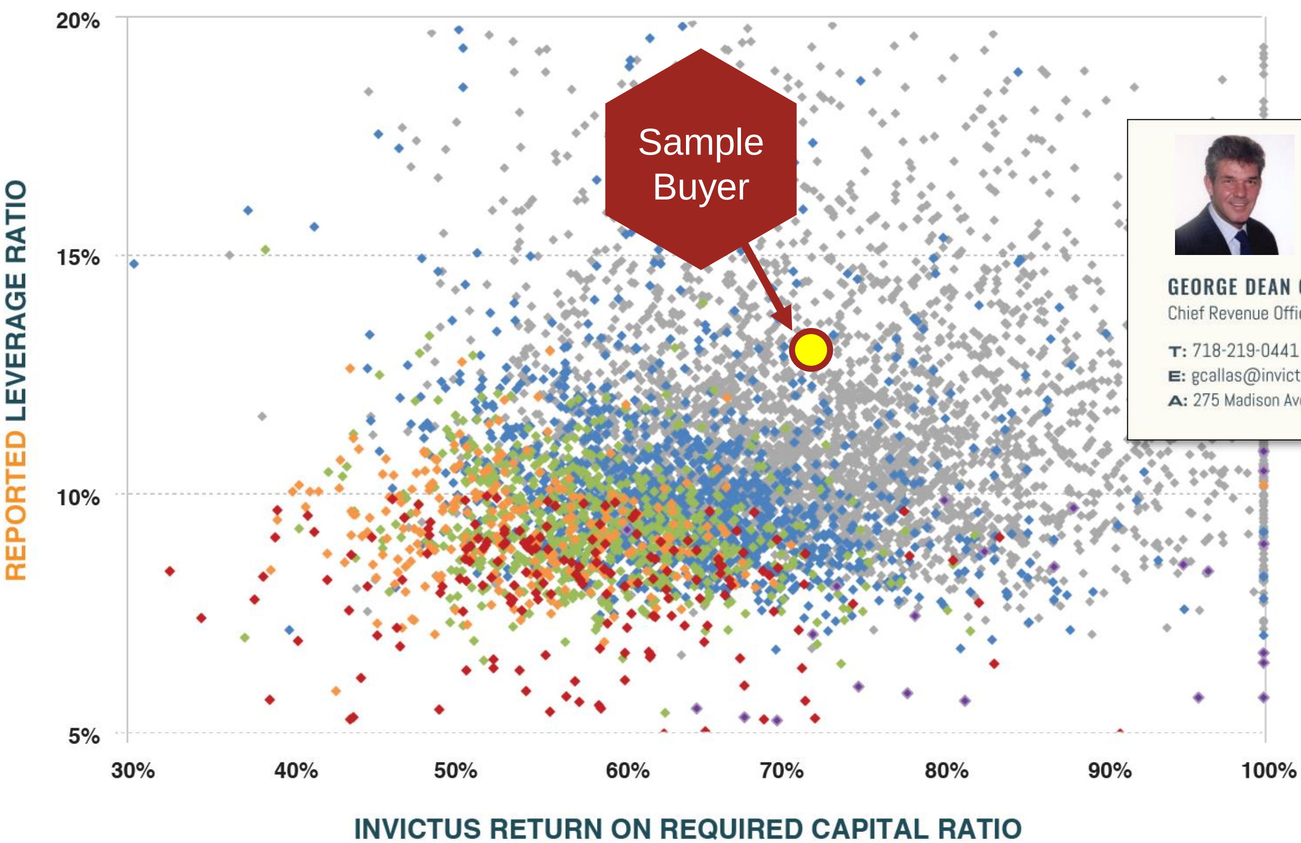
$$\text{Invictus Return on Required Capital Ratio} = \frac{\text{Gross Asset Return}}{\text{Regulatory Capital Required to Support the Assets}}$$

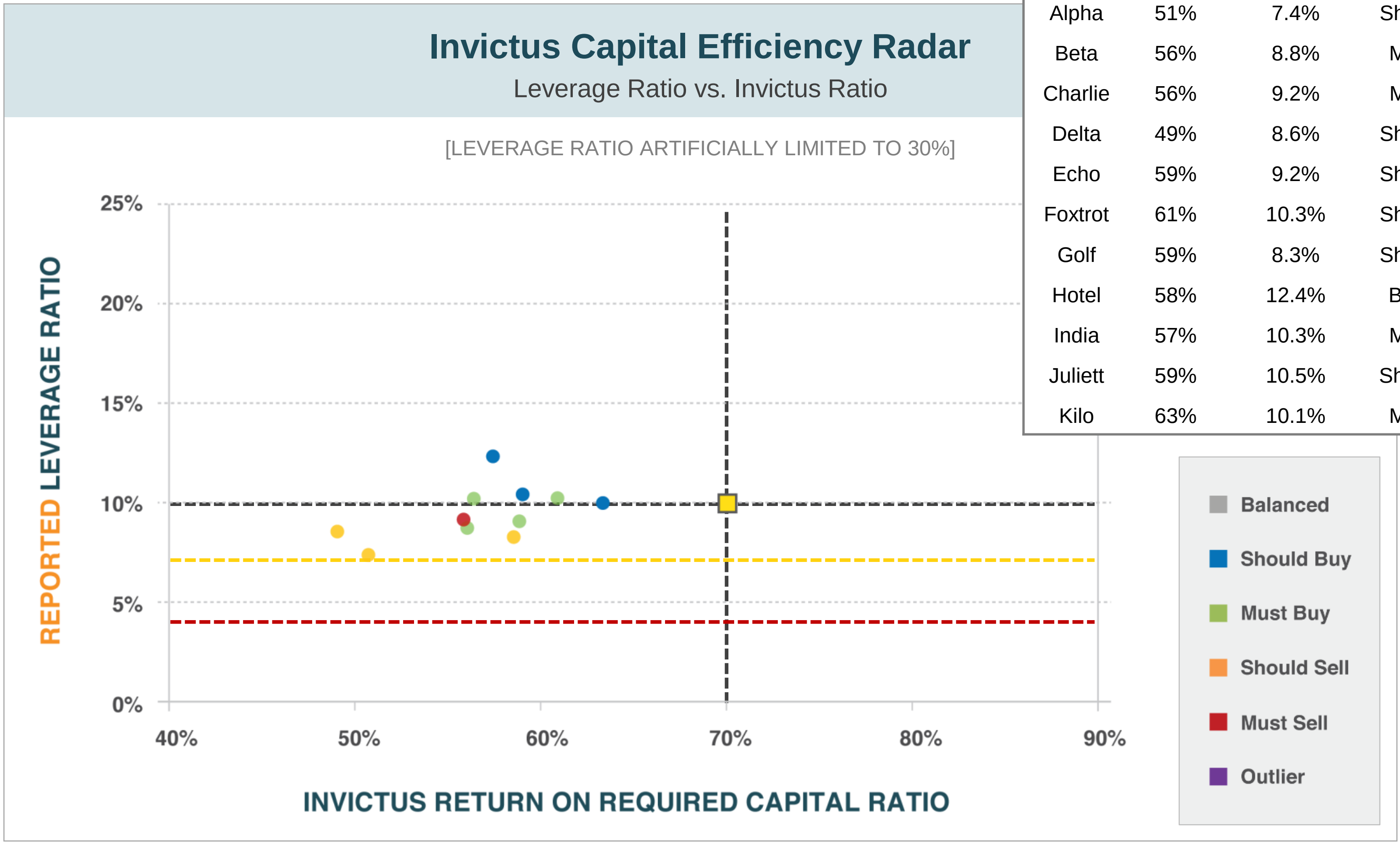


Who to contact if you're interested in the location of your bank on this chart.

Invictus Acquisition Gauge

ALL *TARGETS* WITHIN 100 MILES

SAMPLE BANK



Initial Target Shortlist

Bank	Invictus Ratio	Leverage Ratio	Invictus Acquisition Gauge
Alpha	51%	7.4%	Should Sell
Beta	56%	8.8%	Must Buy
Charlie	56%	9.2%	Must Sell
Delta	49%	8.6%	Should Sell
Echo	59%	9.2%	Should Sell
Foxtrot	61%	10.3%	Should Sell
Golf	59%	8.3%	Should Sell
Hotel	58%	12.4%	Balanced
India	57%	10.3%	Must Buy
Juliett	59%	10.5%	Should Buy
Kilo	63%	10.1%	Must Buy

Invictus Target Pre-Evaluation:

CUMULATIVE COMPONENT VALUATION (PRICE CEILING)

SAMPLE BANK

CUSTOMIZED CEILING PRICES

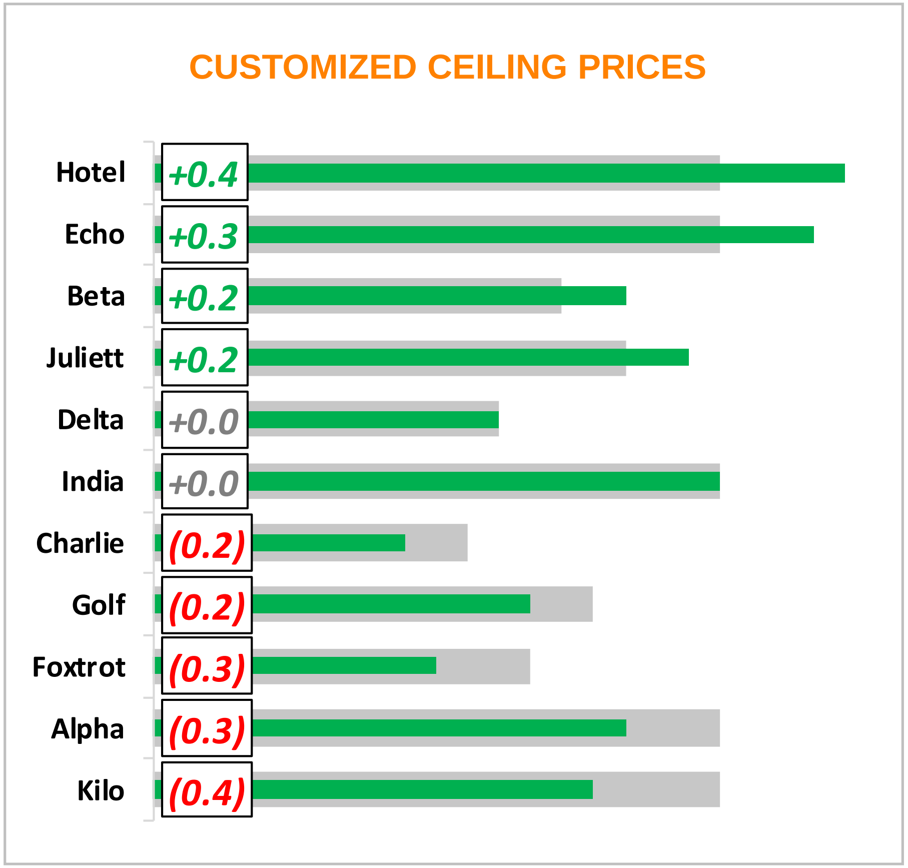
- Alpha
- Beta
- Charlie
- Delta
- Echo
- Foxtrot
- Golf
- Hotel
- India
- Juliett 1.7x
- Kilo

	Potential Value to Bank X	Direct P&L Contribution to Multiple	Latent P&L Contribution to Multiple	Contribution within Strategic Plan
Loans	Alternative to organic growth	+0.52x	–	+0.52x
Deposits	Change in constraint	–	+0.07x	+0.05x
	Marginal Cost of Funding	–	+0.17x	+0.14x
Regulatory Concentrations	Changes in constraint/deal structuring	–	-0.25x	-0.20x
FreeCapital™	Engine for growth	–	✓	✓
NIM/Operating Synergies	Cost savings, etc.	+0.12x	–	+0.12x
Distance Factor	Adjusting value for out of market targets	–	–	-0.05x
Strategic Value	Market, culture, scale, etc.	–	–	+0.12x
Customized Price Ceiling				**1.70x**

Invictus Target Pre-Evaluation:

RANKED BY SPREAD

SAMPLE BANK



The targets are ranked by the spread between the price ceiling and seller expectations. This is the bid/ask spread.

Customized Ceiling Price

Estimated Market Price

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