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February 23, 2022

Understanding Unrealized Losses on AFS Investments

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11:00 am – 12:00 pm CST
Alec Hollis, CFA
Managing Director,
ALM Strategy Group
Brent Lytle, CFA
Director,
Advisory Services
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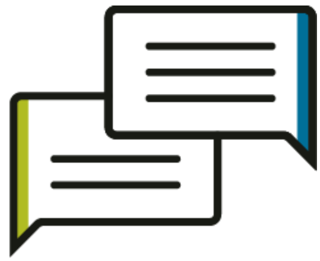

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Today’s Speakers

Robert Perry
Principal

Conrad Lofton
Associate

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Agenda

- Unrealized losses vs. investment performance
- Identifying the benefits of depository funding
- Recognizing the importance of reinvestment
- Opportunity cost of rising rate investor paralysis

Unrealized Losses vs. Portfolio Performance

Impact of Rising Rates

- Higher rates → higher unrealized losses for core AFS bond portfolios
- Higher rates → higher deposit franchise value
- Higher rates → higher net-interest margins
- These longer-term trends should be more important to stakeholders than short term accounting measures

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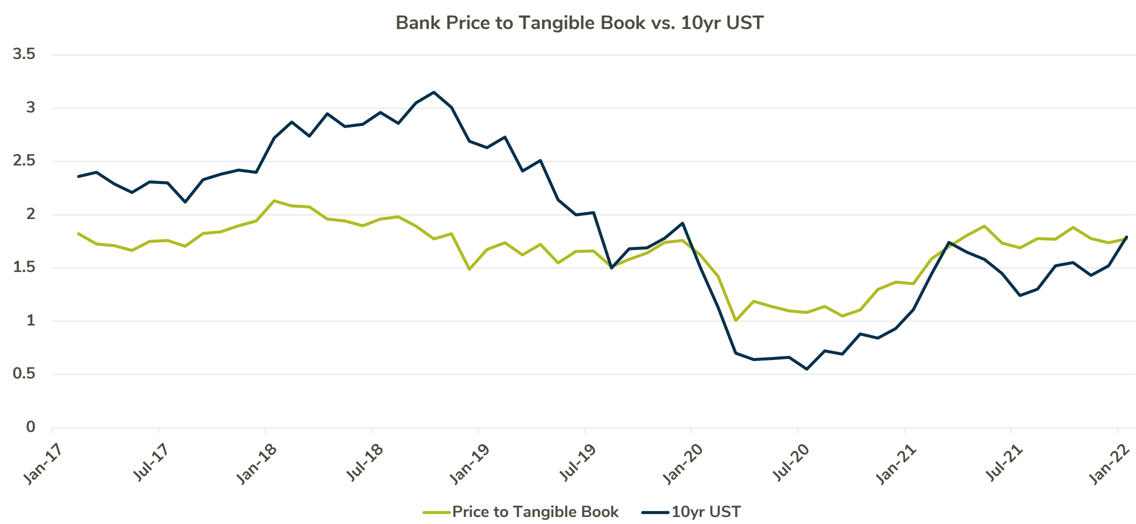
Bank Price to Tangible Book vs. 10yr UST



Source: Bloomberg

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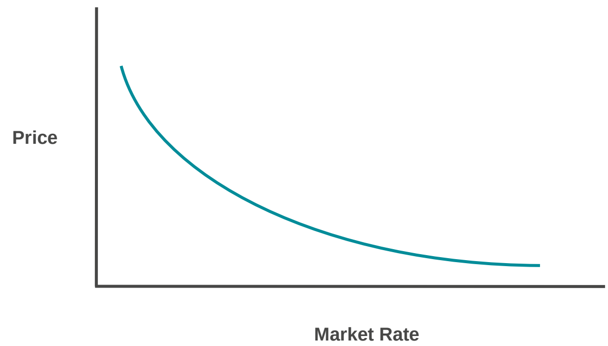
Price Yield Profile

- There is an inverse relationship between prices & market rates
  - When market rates rise, prices fall
  - When market rates fall, prices rise



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What are Unrealized Losses?

- An accounting/"paper" loss resulting from the decrease in price of an asset

HTM Portfolio
- Securities are carried at cost
- Losses are "hidden"
- Impact earnings over time

AFS Portfolio
- Securities are marked to market via an adjustment to other comprehensive income (OCI)
- Losses are "seen"
- Impact earnings over time

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Unrealized Losses vs. Portfolio Performance

- Unrealized losses do not correlate to poor performance in the bond portfolio
  - Unrealized losses, especially in a rising rate environment, are generally attributed to movements in interest rates
- Unrealized losses are a result of the portfolio earning a yield from a time when interest rates were lower
  - If the portfolio is reasonably funded with a mix of deposits, then its margin to funding should be in good shape

Yields – "Stuck in Time"

Same Securities	Investor 1	Investor 2	Investor 3
Purchase Date	9/30/2005	9/30/2010	9/30/2015
Maturity	15yr	10yr	5yr
Yield	4.63	3.06	1.96

- By owning the same exact portfolios, these three investors will experience the same relative economic performance going forward
- Their reported yields are different for no other reason than they started at different points in time
- Total return calculations put portfolios on a level playing field, eliminating the randomness of when assets were purchased

The illustration represents a hypothetical situation and it not intended to be representative of any particular client or situation.

Total Return Simplified

- Measurement of performance capturing both price change and cash flows received

$$\textit{Total Return} = \frac{(\textit{Ending Value} - \textit{Beginning Value}) + \textit{Net Distributions} + \textit{Coupon}}{\textit{Beginning Value}}$$

- Example:

Beginning Market Value	$100
Ending Market Value	$98
Net distributions	$0
Coupon payment (2.5%)	$2.50

$$\textit{Total Return} = \frac{(98 - 100) + 0 + 2.5}{100} = 0.50\%$$

Benchmarking Performance

- Many market participants measure their portfolios relative to a benchmark
  - Performance measurement
  - Risk measurement
- Benchmarking is also very helpful in liability driven strategies
  - Some financial institutions benchmark against LIBOR Swap rates as they are a reasonable proxy for funding costs
- The #1 goal is usually considered “risk control”
  - i.e. Maintain portfolio’s duration within +/-0.50% of the benchmark
- Ex-post returns should come from factors other than duration if the duration constraint is maintained

Keyword 1: TOTAL RETURN

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Identifying the Benefits of Depository Funding

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Are Unrealized Losses Bad?

- The answer depends on how a portfolio is funded!
- Consider two funding scenarios:
  - A portfolio funded by core deposits
  - A portfolio funded through short-term borrowings

Funding Beta

Core Deposits

- 15% Beta, indexed to Fed Funds
- Can be thought of as a combination of fixed- and floating-rate funding
  - 85% fixed rate @ 0%
  - 15% floating rate, indexed to Fed Funds
- As rates rise, only 15% of funding cost will adjust to market

Short-Term Borrowing

- 100% Beta, indexed to Fed Funds
- As rates rise, 100% of funding cost will adjust to market

Market Value Sensitivity

Core Deposits

	Base	+ 100	+ 200
Asset	**100.00**	**95.35**	**90.96**
Fixed	*100.00*	*95.14*	*90.56*
Float	*100.00*	*99.01*	*98.04*
Liability	**100.00**	**95.72**	**91.69**
Change in Net	0	(0.37)	(0.72)
MV Sensitivity	**0**	**-0.37%**	**-0.72%**

Short-Term Borrowing

	Base	+ 100	+ 200
Asset	**100.00**	**95.35**	**90.96**
Liability	**100.00**	**99.91**	**98.04**
Change in Net	0	(4.56)	(7.08)
MV Sensitivity	**0**	**-4.56%**	**-7.08%**

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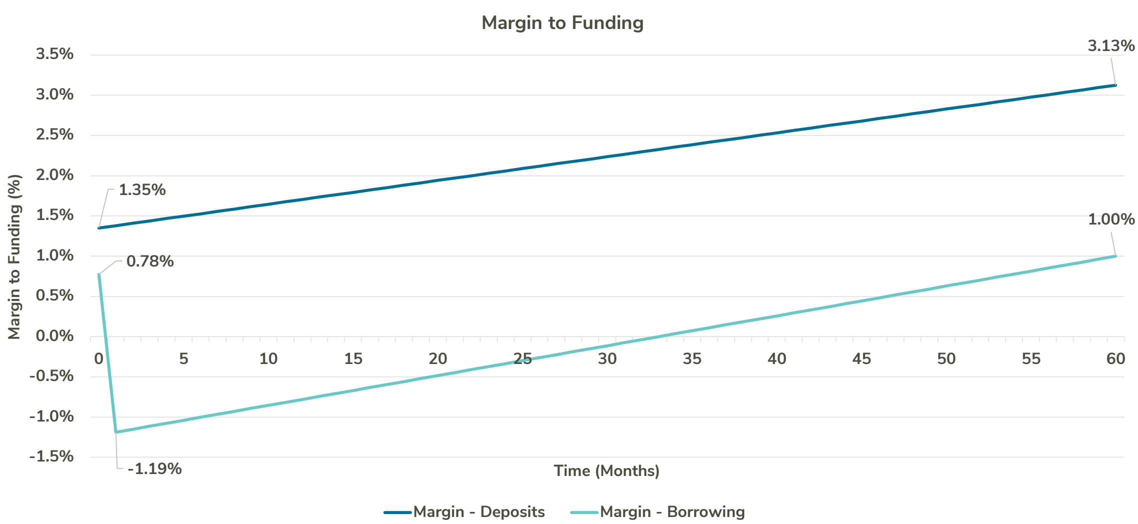
Margin to Funding Comparison – Rates Shock +2%



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Results

Core Deposits

- Unrealized loss is earned back over time
- Stickiness of funding cost allows margin to increase as asset cash flows are reinvested at higher rates

Short-Term Borrowing

- Portfolio is immediately underwater
- Funding is tied directly to market rates, so unrealized loss immediately impacts margin
- Margin takes significantly longer to recover to/rise above initial level

The Value of Your Deposit Franchise

- Depositories benefit from low-cost, sticky funding, which is why deposit franchise values rise when rates are rising, and performance general improves.

Retail	• Non-Maturity Deposits (NMD)
Term & Wholesale	• Term Deposits (CD) • Brokered Deposits • FHLB Advances
All Other	• Repurchase Agreements • Dollar Rolls (MBS) • Fed Funds Exchange • Asset Sales • Other Contingent Liquidity Sources


Keyword 2:
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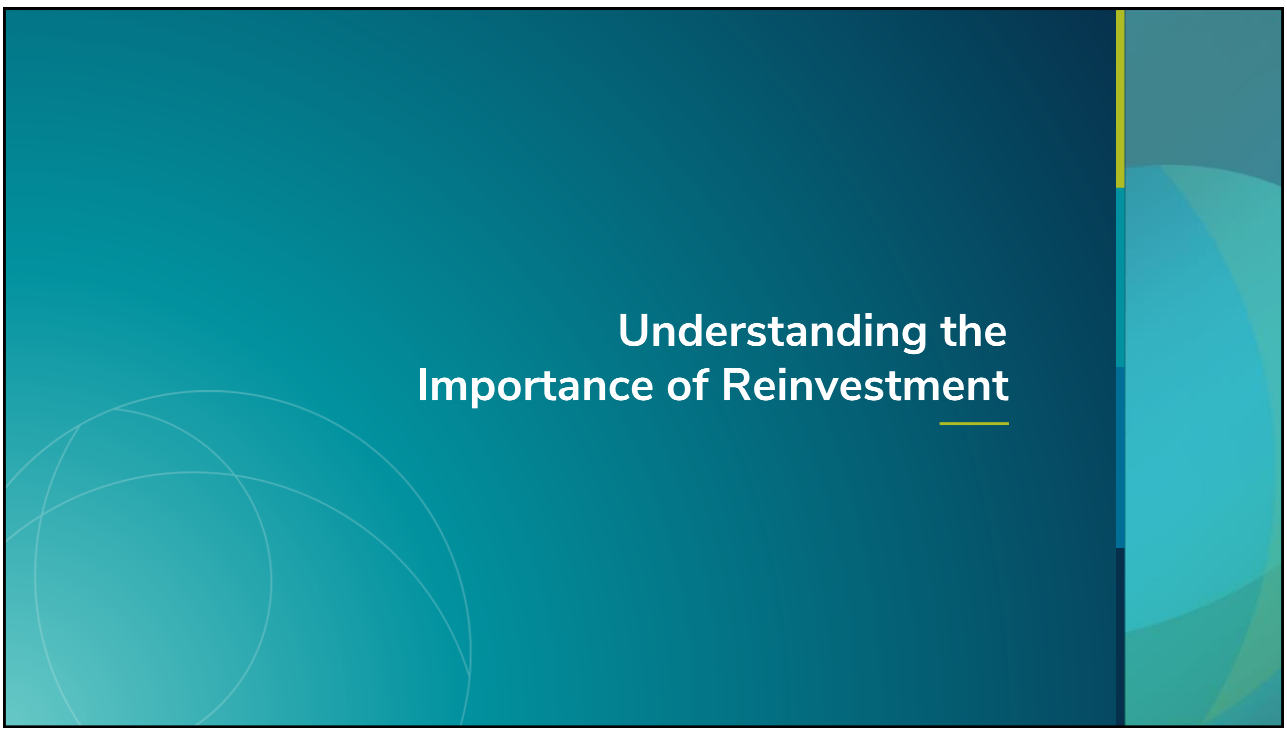
Understanding the
Importance of Reinvestment

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Unrealized Losses Go Away Over Time

- Investing principal paydowns at today's rates slowly minimized unrealized losses
  - The reinvestment at higher yields brings up the overall yield of the portfolio causing unrealized losses to decrease
- The rate at which this occurs is a function of the Weighted Average Life (WAL) of the portfolio and floater weight
  - This is why reinvestment is so critical for short and intermediate WAL portfolios

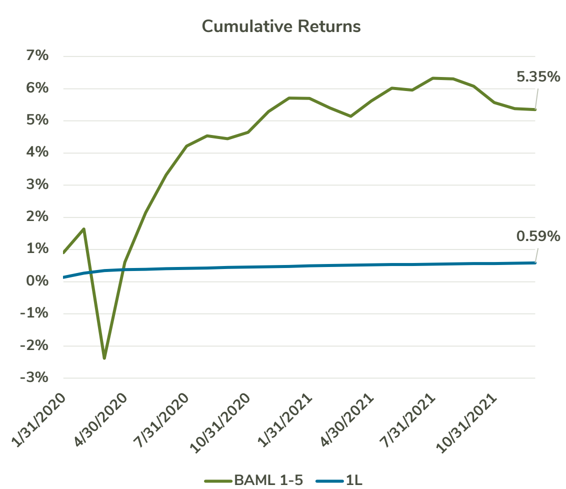
Controlling Unrealized Losses Through Diversification

- A well-diversified portfolio will almost always weather the storm better than a portfolio comprised of like assets
- A portfolio with a healthy mix of both fixed and floating rate products will benefit from the reset frequency of the floaters
- If you have a well thought out investment philosophy, strategy, and framework for making decisions in your securities portfolio, the portfolios performance becomes independent of interest rate levels

Keyword 3: REINVESTMENT

Opportunity Cost of Rising Rate Investor Paralysis

- Continually investing principal paydowns and marginal cash helps unrealized losses levels
- Sitting on the sidelines when interest rates are low and not actively managing your liquidity and securities portfolios is not an effective long-term strategy
- Over the long run, having a portfolio with a duration in the 2–3-year area is almost always better than sitting on cash



Source: Bloomberg

Conclusion

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Things to Consider

- All else equal, higher rates are good for depositories.
- There is a difference between unrealized losses and portfolio performance.
- As a depository institution, you benefit from having low cost, sticky funding.
- Unrealized losses go away with time.
- Having a sound investment process and managing reinvestment needs produces long-term success in the securities portfolio.

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