

HAPPY NEW YEAR AND SWAPS Q&A

This Day in History: Today is National Fruitcake Toss Day. On January 3, 1977, Steve Jobs and Steve Wozniak incorporated Apple Computer, Inc. In 1943, Max and Doug Bentley assisted on an NHL goal by Reg Bentley, the only time in NHL history three family members assisted and scored on a goal.

The holiday shortened week saw rates slowly rise across a flattening curve.

<u>Term</u>	<u>SOFR Swap Rates</u>			<u>Change</u>	
	<u>12/31/2021</u>	<u>12/24/2021</u>	<u>11/30/2021</u>	<u>WoW</u>	<u>MoM</u>
2y	0.74	0.72	0.58	0.02	0.16
3y	0.95	0.94	0.83	0.02	0.13
5y	1.12	1.11	1.03	0.02	0.09
7y	1.22	1.20	1.15	0.02	0.07
10y	1.32	1.31	1.26	0.02	0.07
20y	1.48	1.49	1.40	0.00	0.09
2s/10s slope	0.58	0.59	0.67	-0.01	-0.09

Desk activity was slow as most bankers focused on year-end closing. The primary activity during the week, and the entire month, was portfolio hedgers using swaps to transform long term municipal bonds into floating rate assets.

The start of a new year is often associated with creating new year's resolutions. Admittedly, there are many ideas about the value and long-lasting benefit of resolutions, but the start of the year is a time to reflect on the past and consider new opportunities. At the risk of sounding self-serving, we recommend all banks explore adding derivatives to the product toolbelt to control risk and meet customer demand. Below we address some questions we are often asked about developing a hedging program.

If swaps are easy to use, why don't all community banks use them?

That is a great question. Interest rate swaps are the most efficient way for banks to provide products relevant to their customers while controlling the inherent risk in their balance sheet. Yet only 25% to 30% of community banks use them. Some of the typical reservations we encounter include:

Apprehension: Many bankers are apprehensive of using derivatives because they have heard they are complex and difficult to understand. Our goal in these commentaries and other education forums is to reduce the mystery behind swaps and help people understand how to safely implement a hedging program.

Lack of knowledge: There are many myths and urban legends, as well as real examples of swap misuse, in banking circles. Identifying a business need and gaining a fundamental knowledge should precede the use of swaps (or any other products or financial instruments).

Inability to explain: Our initial discussion with a banker or team of bankers generally includes concerns that they don't understand the details enough to explain the business case and risk and rewards to others who are involved in making the decision. We spend a large amount of our time educating, providing written explanations, writing these commentaries, holding ongoing training and education, and sharing our experience to overcome these concerns.

Comfort: Basic human nature is to be comfortable just doing things the way we always have. Our goal is to motivate bankers to consider new and better ways of doing things with the goal of improving results.

Borrower understanding: This concern relates to commercial loan hedging. The beauty of our proprietary SMART loan is the borrower has a fixed rate loan with fully documented prepayment language but is not involved in the swap; we provide personalized detailed disclosures (in the bank's name and logo) of the estimated dollar impact on the borrower of prepayment at different points in time under multiple interest rate environments. Virtually any commercial borrower can understand a long-term fixed rate loan without having to deal with multiple payments and reviewing and signing an IDSA and other long legal documents.

What does it take to establish a hedging program?

We believe you must work with a trusted advisor who can explain the risks and rewards so the bank is comfortable with a hedging program. Once a business case is established, you will invest some time to review and sign documents, create policies (we provide templates), and obtain ALCO and Board approval. We provide training to all areas of the bank who need it. With VSIRP, there are never any upfront or ongoing costs, no retainers, or minimum transaction requirements.

Swaps are an efficient way to offer your customers the products they want while protecting earnings and value against known risks. We hope the last few weeks of questions and answers have been helpful to those considering moving forward with a hedging program. Feel free to contact us at any time to discuss how we can help.

Happy New Year. Stay safe and have a great week!

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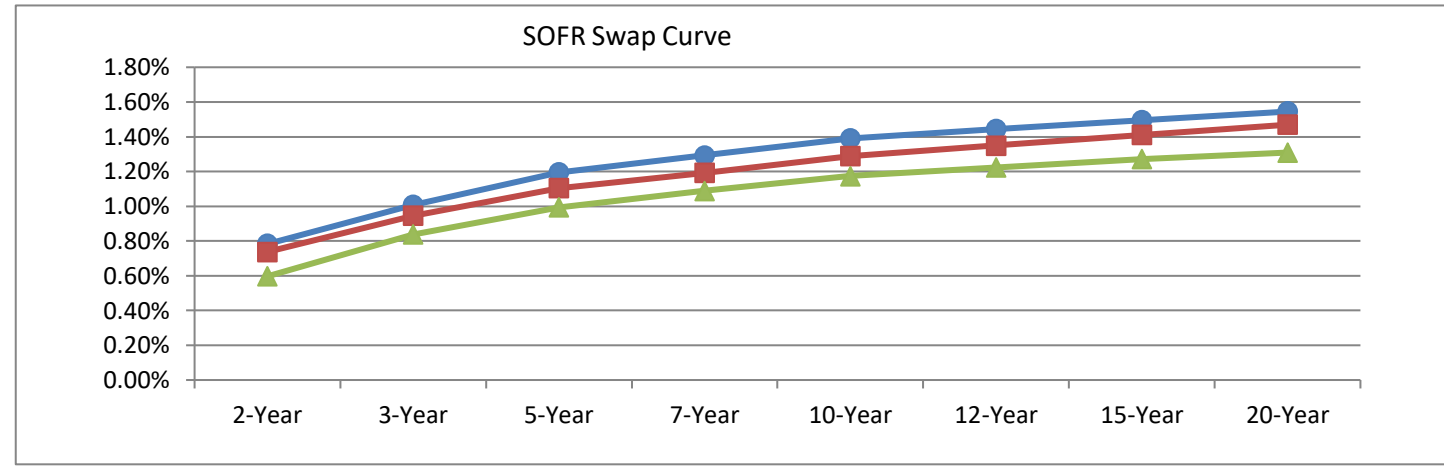
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Interest Rate Swap Curves

	SOFR Swap Curve		
	Current	Last Week	Last Month
2-Year	0.783%	0.738%	0.597%
3-Year	1.007%	0.947%	0.837%
5-Year	1.195%	1.105%	0.994%
7-Year	1.293%	1.193%	1.088%
10-Year	1.391%	1.289%	1.174%
12-Year	1.445%	1.349%	1.223%
15-Year	1.496%	1.410%	1.271%
20-Year	1.545%	1.469%	1.309%

*Bloomberg mid-market quotations



Money Market Rates		SOFR Forward Rates	
1M LIBOR	0.10125%	Dec-21	0.06000%
3M LIBOR	0.20913%	Mar-22	0.24500%
SOFR	0.05000%	Jun-22	0.49000%
1M Term SOFR	0.05573%	Sep-22	0.68500%
1M BSBY	0.07482%	Dec-22	0.87000%
1M Ameribor	0.1347%		
Prime	3.2500%		
FFTR	0.2500%		
Eff FF	0.0700%		

Spot Start Loan Hedging

Rate Term (Years)	Floating Rate	Amortization Term (Years)							
		3-Year	5-Year	7-Year	10-Year	15-Year	20-Year	25-Year	Bullet
2-Year	SOFR	0.77%	0.83%	0.85%	0.86%	0.87%	0.87%	0.87%	0.88%
3-Year	SOFR	0.85%	0.99%	1.03%	1.06%	1.07%	1.08%	1.08%	1.09%
4-Year	SOFR		1.06%	1.11%	1.16%	1.20%	1.21%	1.22%	1.24%
5-Year	SOFR		1.08%	1.18%	1.25%	1.27%	1.27%	1.27%	1.27%
6-Year	SOFR			1.22%	1.28%	1.29%	1.31%	1.32%	1.34%
7-Year	SOFR			1.24%	1.29%	1.34%	1.36%	1.36%	1.38%
8-Year	SOFR				1.31%	1.37%	1.39%	1.40%	1.42%
9-Year	SOFR				1.33%	1.40%	1.42%	1.43%	1.45%
10-Year	SOFR				1.34%	1.42%	1.45%	1.46%	1.51%
12-Year	SOFR	Customer Pays Fixed, Monthly, Act/360				1.46%	1.50%	1.53%	1.56%
15-Year	SOFR	Customer Receives SOFR				1.47%	1.55%	1.57%	1.61%

Forward Starting Swap Quotes

Rate Term (Years)	Floating Rate	20-Year Amortization		
		3-Month	6-Month	12-Month
2-Year	SOFR	1.01%	1.14%	1.36%
3-Year	SOFR	1.18%	1.27%	1.41%
4-Year	SOFR	1.29%	1.37%	1.48%
5-Year	SOFR	1.34%	1.40%	1.49%
6-Year	SOFR	1.37%	1.42%	1.51%
7-Year	SOFR	1.41%	1.46%	1.54%
8-Year	SOFR	1.44%	1.48%	1.55%
9-Year	SOFR	1.47%	1.51%	1.58%
10-Year	SOFR	1.50%	1.54%	1.60%
12-Year	SOFR	1.54%	1.58%	1.63%
15-Year	SOFR	1.59%	1.62%	1.66%

Profitability Analysis

Rate Term (Years)	Profit Per Basis Point of Mark-up, Per \$1,000,000 of Notional							
	3-Year	5-Year	7-Year	10-Year	15-Year	20-Year	25-Year	Bullet
2-Year	\$140	\$167	\$178	\$186	\$193	\$196	\$198	\$202
3-Year	\$159	\$220	\$246	\$266	\$281	\$288	\$292	\$301
4-Year		\$253	\$300	\$335	\$362	\$375	\$382	\$399
5-Year		\$265	\$339	\$394	\$437	\$457	\$469	\$495
6-Year			\$363	\$443	\$505	\$535	\$552	\$590
7-Year			\$371	\$482	\$567	\$608	\$631	\$684
8-Year				\$510	\$622	\$676	\$707	\$777
9-Year				\$527	\$670	\$739	\$779	\$867
10-Year				\$533	\$710	\$796	\$846	\$956
12-Year	Fee Income Generation Only Possible With				\$771	\$897	\$969	\$1,131
15-Year	Back-to-Back Swaps and SMART Loan Products				\$806	\$1,007	\$1,123	\$1,382

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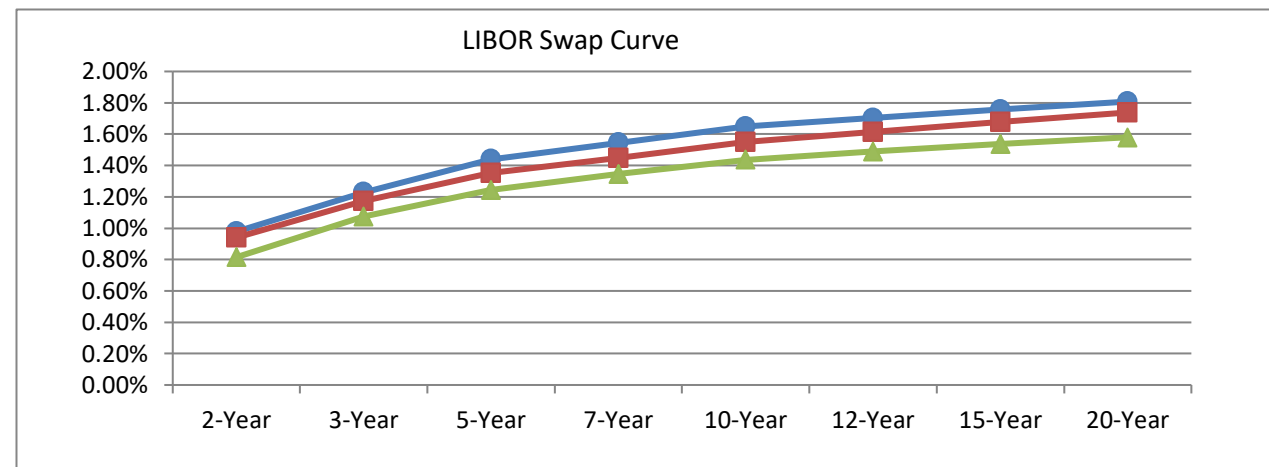
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Interest Rate Swap Curves

	LIBOR Swap Curve		
	Current	Last Week	Last Month
2-Year	0.978%	0.940%	0.815%
3-Year	1.230%	1.175%	1.076%
5-Year	1.440%	1.353%	1.245%
7-Year	1.545%	1.448%	1.347%
10-Year	1.649%	1.551%	1.437%
12-Year	1.704%	1.614%	1.489%
15-Year	1.757%	1.677%	1.539%
20-Year	1.808%	1.738%	1.580%



Money Market Rates		3M LIBOR Forward Rates	
1M LIBOR	0.10125%	Mar-22	0.35000%
3M LIBOR	0.20913%	Jun-22	0.61000%
6M LIBOR	0.33875%	Sep-22	0.83500%
12M LIBOR	0.58313%	Dec-22	1.09500%
Prime	3.25000%	Mar-23	1.28000%
FFTR	0.2500%		
Eff FF	0.0700%		
SOFR	0.0500%		

*Bloomberg mid-market quotations

Spot Start Loan Hedging

Rate Term (Years)	Floating Rate	Amortization Term (Years)							
		3-Year	5-Year	7-Year	10-Year	15-Year	20-Year	25-Year	Bullet
2-Year	Prime	3.95%	4.00%	4.02%	4.03%	4.04%	4.04%	4.05%	4.05%
3-Year	Prime	4.03%	4.16%	4.20%	4.22%	4.24%	4.24%	4.25%	4.26%
4-Year	Prime		4.24%	4.30%	4.34%	4.37%	4.38%	4.39%	4.40%
5-Year	Prime		4.26%	4.36%	4.41%	4.45%	4.47%	4.48%	4.50%
6-Year	Prime			4.39%	4.47%	4.51%	4.51%	4.51%	4.52%
7-Year	Prime			4.40%	4.51%	4.53%	4.54%	4.55%	4.57%
8-Year	Prime				4.52%	4.55%	4.58%	4.59%	4.60%
9-Year	Prime				4.53%	4.58%	4.60%	4.61%	4.63%
10-Year	Prime				4.53%	4.60%	4.62%	4.64%	4.66%
12-Year	Prime	Customer Pays Fixed, Monthly, Act/360				4.63%	4.67%	4.69%	4.71%
15-Year	Prime	Customer Receives Prime				4.65%	4.71%	4.73%	4.76%

Forward Starting Swap Quotes

Rate Term (Years)	Floating Rate	20-Year Amortization		
		3-Month	6-Month	12-Month
2-Year	Prime	4.19%	4.33%	4.52%
3-Year	Prime	4.35%	4.45%	4.59%
4-Year	Prime	4.46%	4.53%	4.64%
5-Year	Prime	4.54%	4.60%	4.68%
6-Year	Prime	4.57%	4.63%	4.70%
7-Year	Prime	4.59%	4.64%	4.71%
8-Year	Prime	4.63%	4.67%	4.74%
9-Year	Prime	4.65%	4.69%	4.75%
10-Year	Prime	4.67%	4.71%	4.76%
12-Year	Prime	4.71%	4.74%	4.80%
15-Year	Prime	4.74%	4.77%	4.82%

Profitability Analysis

Rate Term (Years)	Profit Per Basis Point of Mark-up, Per \$1,000,000 of Notional							
	3-Year	5-Year	7-Year	10-Year	15-Year	20-Year	25-Year	Bullet
2-Year	\$140	\$167	\$178	\$186	\$193	\$196	\$198	\$202
3-Year	\$159	\$220	\$246	\$266	\$281	\$288	\$292	\$301
4-Year		\$253	\$300	\$335	\$362	\$375	\$382	\$399
5-Year		\$265	\$339	\$394	\$437	\$457	\$469	\$495
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8-Year				\$510	\$622	\$676	\$707	\$777
9-Year				\$527	\$670	\$739	\$779	\$867
10-Year				\$533	\$711	\$797	\$846	\$957
12-Year	Fee Income Generation Only Possible With				\$771	\$897	\$969	\$1,131
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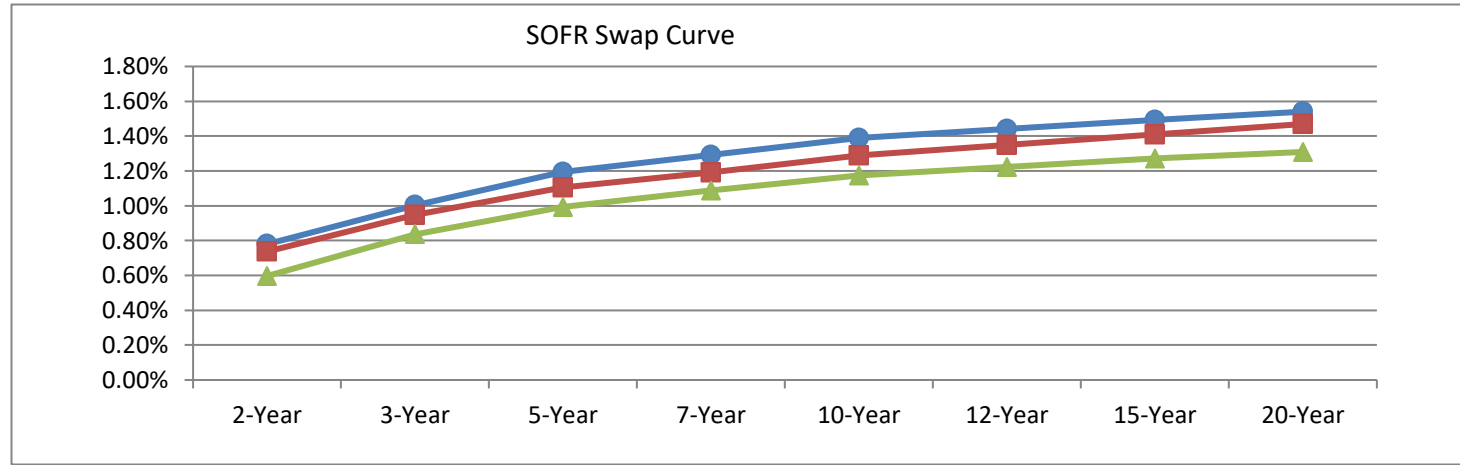
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Interest Rate Swap Curves

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2-Year	0.780%	0.738%	0.597%
3-Year	1.003%	0.947%	0.837%
5-Year	1.194%	1.105%	0.994%
7-Year	1.291%	1.193%	1.088%
10-Year	1.389%	1.289%	1.174%
12-Year	1.441%	1.349%	1.223%
15-Year	1.493%	1.410%	1.271%
20-Year	1.541%	1.469%	1.309%

*Bloomberg mid-market quotations



Money Market Rates		SOFR Forward Rates	
1M LIBOR	0.10125%	Dec-21	0.06000%
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6M LIBOR	0.33875%	Jun-22	0.49000%
12M LIBOR	0.58313%	Sep-22	0.69000%
Prime	3.25000%	Dec-22	0.87500%
FFTR	0.2500%		
Eff FF	0.0700%		
SOFR	0.0500%		

Spot Start Loan Hedging

Rate Term (Years)	Floating Rate	Amortization Term (Years)							
		3-Year	5-Year	7-Year	10-Year	15-Year	20-Year	25-Year	Bullet
2-Year	EFF	0.82%	0.88%	0.90%	0.91%	0.92%	0.92%	0.92%	0.93%
3-Year	EFF	0.90%	1.04%	1.08%	1.10%	1.12%	1.13%	1.13%	1.14%
4-Year	EFF		1.10%	1.16%	1.21%	1.24%	1.26%	1.27%	1.28%
5-Year	EFF		1.12%	1.22%	1.29%	1.30%	1.30%	1.30%	1.31%
6-Year	EFF			1.26%	1.31%	1.33%	1.34%	1.35%	1.37%
7-Year	EFF			1.27%	1.33%	1.37%	1.39%	1.40%	1.41%
8-Year	EFF				1.35%	1.40%	1.42%	1.43%	1.45%
9-Year	EFF				1.36%	1.43%	1.45%	1.46%	1.48%
10-Year	EFF				1.37%	1.45%	1.48%	1.49%	1.53%
12-Year	EFF	Customer Pays Fixed, Monthly, Act/360				1.49%	1.53%	1.56%	1.58%
15-Year	EFF	Customer Receives Prime				1.50%	1.58%	1.60%	1.63%

Forward Starting Swap Quotes

Rate Term (Years)	Floating Rate	20-Year Amortization		
		3-Month	6-Month	12-Month
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3-Year	EFF	1.23%	1.31%	1.45%
4-Year	EFF	1.34%	1.40%	1.50%
5-Year	EFF	1.37%	1.43%	1.52%
6-Year	EFF	1.40%	1.45%	1.54%
7-Year	EFF	1.44%	1.49%	1.56%
8-Year	EFF	1.47%	1.51%	1.58%
9-Year	EFF	1.50%	1.54%	1.60%
10-Year	EFF	1.52%	1.56%	1.62%
12-Year	EFF	1.57%	1.60%	1.66%
15-Year	EFF	1.61%	1.64%	1.69%

Profitability Analysis

Rate Term (Years)	Profit Per Basis Point of Mark-up, Per \$1,000,000 of Notional							
	3-Year	5-Year	7-Year	10-Year	15-Year	20-Year	25-Year	Bullet
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