

# FHLBC Solutions



## Rolling Up The Advance Curve

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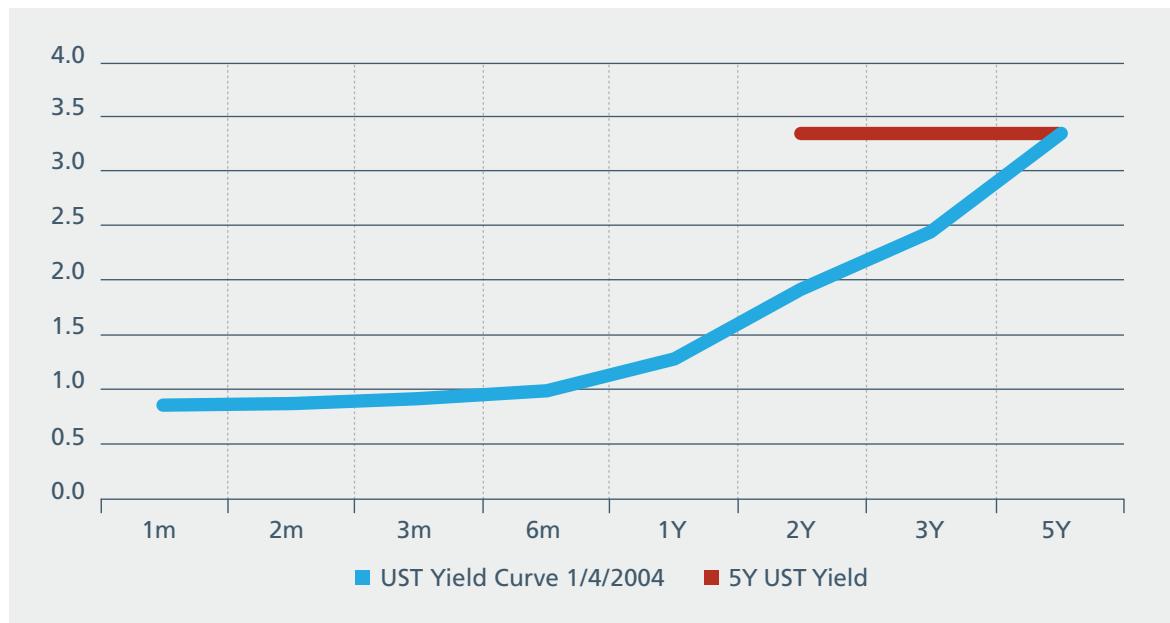
Q3 2019

### Overview

Traditional economic principals suggests that money today is more valuable than money tomorrow. However, the current United States Treasury curve contradicts this principal. This phenomenon is known as an inverted yield curve. Looking at it from an investor's perspective, it's hard to justify locking cash up for longer while earning less. However, from the borrower's perspective, this would work in their favor.

"Rolling the Curve" is a phrase used to describe an asset strategy employed in an upward-sloping yield environment. It points to the benefit of purchasing longer-term assets as time passes. Take a look at the example in Figure 1, which shows a normal yield curve in January 2004:

**Figure 1: UST Yield Curve – January 2, 2004**



On January 2, 2004 the 5-year UST was yielding 3.36%, while the 2-year UST was yielding 1.94%. As time passed, the 5-year bond would eventually become a 2-year bond. Assuming the curve remained stable over the next 3 years, an investor would be pleased with the extra 1.42% yield over the current market rate. This would be reflected in a premium price if the bond was purchased at par. The investors could sell it at a gain, or keep it and receive higher-than-market cash flows for the remaining life of the investment. Table 1 compares a 2-year versus a 5-year Treasury at equivalent yields, but different coupons:

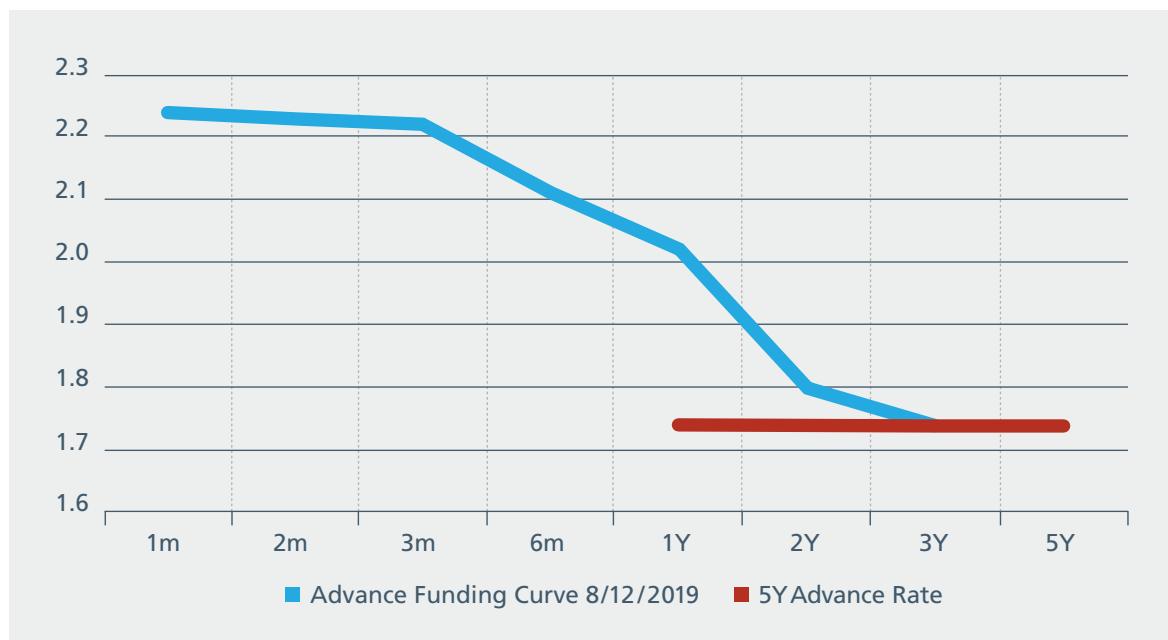
**Table 1: 2004 Yield Comparison**

	2Y UST	5Y UST
Yield	1.94	1.94
Coupon	1.94	3.36
Price	\$100.00	\$107.10

The 5-year UST would be priced \$7.10 over par, assuming its yield was equivalent to that of a 2-year UST. This price is calculated by multiplying the difference between rate and yield by the remaining 5 years of the original 5-year UST:  $(3.36 - 1.94 = 1.42 * 5)$

**Figure 2: Funding Curve – August 12, 2019**

Just as rolling down the curve helps us as investors, it hurts us as borrowers. In a normal sloping yield curve, borrowing is more expensive as time passes, in comparison with shorter term advances. Luckily, the current environment allows us to “roll-up” the curve in terms of funding. Let’s take a look at the current funding yield curve below.



On August 12, 2019, the 5-year borrowing cost was 1.74% compared to a cost of 2.02% to borrow for 1 year. As time passes, the 5-year borrowing’s duration will eventually change to a year. Assuming the curve remains stable, a borrower would be happy to have market funding that is 28 basis points cheaper than the current market rate. Table 2 shows this value reflected in a discounted dollar price, assuming the yield is the same as the current 1-year advance.

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**Table 2: 2019 Yield Comparison**

	<b>1Y Advance</b>	<b>5Y Advance</b>
Yield	2.02	2.02
Coupon	2.02	1.74
Price	\$100.00	\$98.60

The 5-year advance would be priced \$1.40 under par using the equivalent yield of a 1-year advance. This price is calculated by multiplying the difference between rate and yield by 5 years:  $(1.74 - 2.02 = -0.28 * 5)$

Borrowers who “roll-up” the funding curve would receive a discounted rate (compared with the market) as time passes. Therefore, it makes fundamental sense to lock in longer, but lower, fixed rates today. Yield curves do change over time, which can offset this advantage. However, it's extremely difficult to predict the future of interest rates. Prudent investors and borrowers should take advantage of the opportunities presented by the current market if it makes sense within the bounds of their current portfolios.

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## To Learn More

If your institution would like more specific information about this strategy, please contact the Member Strategy and Solutions team or your Sales Director at [membership@fhlbc.com](mailto:membership@fhlbc.com).

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