Executive Summary

- The current flattening yield curve gives finance executives an opportunity to enter into a constant maturity swap (CMS) transaction today that takes advantage of pricing only available in the flat yield curve environment.
- When the curve steepens at some point in the future, returning to a more normal shape, the cash flows and/or overall mark-to-market value of the swap will be positive.
- Constant maturity swaps tend to be less volatile than typical long-duration fixed-pay swaps on a mark-to-market basis. Additionally, they enable diversification of an organization’s portfolio of products.
- The most significant risk with constant maturity swaps today is that the yield curve may not regain its historically positive slope in a timely manner. The nation’s economic history suggests that the yield curve will steepen, but how long might that take—a year or two? How steep might the curve be?
- Financial executives should not use constant maturity swaps as “speculative plays,” but rather, as a risk-mitigation tool. Like with all financial products, thoughtful education is required to understand the risks and rewards of constant maturity swaps for a specific organization.

The Context

“It’s déjà vu all over again.” — Yogi Berra

The question is, “Is it?” Headlines in the financial press focus on the nation’s flattening yield curve, which historically has been a precursor to a recession. With uncertainty created by global market volatility, many finance executives in healthcare and other sectors are concerned that the nation’s prolonged economic expansion is about to slump. Their questions include:

- If there is another recession, how extended and severe will it be?
- What impact might a recession have on hospital and health system operations, investments, overall balance sheets, and competitive financial positions?
- Might there be a way to mitigate negative effects and risks of a recession?

To address the last question, healthcare system executives are taking a close look at their investment and debt portfolios to minimize or mitigate certain risk exposure. Swaps, which are common tools of debt and treasury management, are of interest in this regard, as they can provide a way to hedge against future rate changes, obtain a cash-flow benefit, and shift risk exposure without issuing new debt.
One type of swap—*a constant maturity swap*—is applicable now due to its ability to help lower costs and assist balance sheets should the economy slow or enter into a recession. Constant maturity swaps were previously popular when the yield curve was similarly flat in 2005-2007. Market participants recognized that a flat yield curve was a temporary “aberration” and that a constant maturity swap could be employed resourcefully for capital structure enhancement.

Like many financing products, constant maturity swaps are not for *all* healthcare organizations. Finance executives must thoroughly understand their risks and rewards, and actively manage the swaps for the right debt balance given other enterprise risks.

Addressing new and tenured finance/treasury executives who may be interested in constant maturity swaps, this article describes how the product works, and specifically, the impact on constant maturity swaps of yield curve shape and actions taken by the Federal Reserve System. Additionally, it explains how today’s market environment differs from that existing in 2005-2007, the yield curve opportunity available in the current market, and the current risks and rewards of constant maturity swaps.1

**Basics of Constant Maturity Swaps**

A *constant maturity swap* is a floating-to-floating swap—also called a “basis” swap. The healthcare organization or “issuer” pays a floating rate based on a short-term index—e.g., 1-month or 3-month London Interbank Offered Rate (LIBOR)—in exchange for receiving from a “swap provider” a floating rate based on a longer-term index—e.g., 5-year or 10-year LIBOR swap rate (see “Constant Maturity” sidebar).

For example, Figure 1 illustrates a constant maturity swap (CMS) where the hospital issuer pays 67 percent of 1-month LIBOR in exchange for receiving from the swap provider 67 percent of a 10-year LIBOR CMS minus a fixed spread. Issuers also can elect to receive the CMS leg based on a flat (lower) ratio without the fixed spread component. The percentage of 1-month LIBOR the issuer pays typically reflects the rates of an underlying fixed-pay swap and original bonds the organization is trying to hedge with the original fixed-pay swap.

**FIGURE 1. SWAP MECHANICS**

*Source: Kaufman, Hall & Associates, LLC.*

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1. Kaufman Hall is an independent advisory firm that offers healthcare executives conflict-free, objective, capital structure advice and decision support. The firm does not market or own financing products, hence is able to provide unbiased perspective on specific products, and why each may or may not be appropriate for an organization’s financing portfolio.
Impact of the Yield Curve and Federal Reserve Actions

The shape of the yield curve and the Federal Reserve’s efforts to cool down or heat up the economy by changing the Federal Funds rate both impact the economics of constant maturity swaps.

In the simplest terms, a yield curve is a line that plots the interest rates of securities that have equal credit quality but differing maturity dates. The X-axis is maturity date; the Y-axis is yield. As mentioned in a recent article, curve shape is important because it influences matters ranging from an organization’s capital structure composition to its transaction opportunities.

An upward-sloping yield curve, which is typical in the securities/bond market and generally occurring in periods of economic expansion, reflects the fact that investors expect to be compensated more for holding bonds over a longer period. The yields on long-term bonds thus are greater than the yields on short-term bonds in an upward-sloping yield curve environment.

A flattening yield curve occurs when rates for short-term bonds move closer to the rates for longer-term bonds, such as 10-year or 30-year bonds. The flattening occurs due to declining yields on longer-maturity bonds and/or rising yields on shorter-term bonds. The shape of this curve typically reflects an economy that is transitioning from expansion to slower growth and even recession.

An inverted yield curve reflects an interest rate environment in which long-term debt instruments have a lower yield than short-term debt instruments. This shape has historically indicated a current or forthcoming recession.

Figure 2 on page 4 compares the LIBOR swap yield curves across three different dates:

- The blue line indicates the flat yield curve of the current (1/31/2019) environment, where the one-year rate is 2.69 percent and the 30-year rate a modestly higher 2.80 percent.
- The gray line indicates the steep yield curve environment, post-credit crisis in February 2010, where the one-year (0.52 percent) to 30-year (4.59 percent) spread was the largest differential over the prior 15 years.
- The red line indicates the flat yield curve in November 2006, when the smallest one-year (5.26 percent) to 30-year (5.14 percent) spread differential over the prior 15 years created a slightly inverted yield curve.

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2. The Federal Funds rate is the short-term interest rate at which commercial banks lend to each other on loans received from lending facilities of regional Federal Reserve Banks.
With its dual mandate of maximum employment and stable prices, the Federal Reserve System has the biggest impact on borrowers by affecting overall market liquidity as well as key benchmark interest rates.

The Fed has two tools to use in fulfilling its mandate. Its primary tool is increasing or decreasing the Federal Funds rate, thereby affecting the supply of money in circulation. Lowering the Fed Funds rate generally increases the supply of money and encourages banks to take these new dollars and inject them into the economy in the form of new loans to consumers and companies. This “easy” or “accommodative” monetary policy creates liquidity and reduces the cost of credit in a manner that typically stimulates economic activity and drives growth. Fed Funds rate reductions also typically create an upward-sloping yield curve.

Raising the Federal Funds rate decreases the supply of money because the higher Fed Funds borrowing rate slows bank lending to consumers and companies, thereby reducing overall liquidity and cooling economic activity. This action typically creates a flattening yield curve.

Quantitative easing (QE) or quantitative tightening (QT) is the Federal Reserve's second tool. It works on the longer-end of the yield curve and involves the Fed’s purchase (QE) or sale (QT) of longer-dated bonds, either injecting or reducing liquidity in the market respectively.

After the Lehman Brother's bankruptcy filing in September 2008, the Federal Reserve intervened in the markets in a massive way. It aggressively purchased enormous quantities of bonds and lowered the Federal Funds rate, moving it from 5.25 percent in October 2007 to a historically low 0-0.25 percent by the end of 2008 (Figure 3). The economy responded to this support on the short end by starting a long growth/expansion period. The Federal Reserve kept the rate near zero until late 2016.
Meanwhile, continued long-term bond purchase by the Fed for more than a decade pushed longer-term borrowing rates, such as those for 30-year fixed-rate mortgages, down to their lowest levels in generations.\textsuperscript{5}

Starting in 2016, to bring interest rates from an extremely accommodative stance to a neutral position, the Fed started raising the Fed Funds rate in small steps, and reducing (selling) its bond stockpile. By January 2019, the Fed Funds rate was 2.5 percent (upper bound target); the supply of bonds was shrinking at a rapid clip of $50 billion per month. Then, at the end of January 2019, the Fed signaled that the case for raising rates had weakened somewhat due to economic volatility and diminished growth prospects, so it potentially could slow bond sales and leave the Fed Fund rate steady at 2.5 percent for the time being.\textsuperscript{7}

**FIGURE 3. FEDERAL FUNDS RATE (JANUARY 2000-JANUARY 2019)**

*Source: https://fred.stlouisfed.org/series/FEDFUNDS#0*

Figure 4 illustrates how the yield curve has responded to recent developments, reflecting two contrasting actions:

- The front, short-term part of the curve (1-month LIBOR, blue line) is moving higher, driven mainly by the Fed’s actions starting in 2016, as it raises the short-term borrowing rate to try to get back to more normal footing given the economy’s recovery and expansion.
- In the back, long-end part of the curve (5Y CMS, red line, and 10Y CMS, gray line), a similar rate of increase in rates has not occurred. This likely reflects market sentiment about economic conditions; investors are concerned that Brexit, increasing tariffs, and other geopolitical risks are dampening the prospects for continued economic growth.


The result is that the front end of the yield curve is going up faster than the back end of the curve, thereby flattening the curve. The interest rate for one-month LIBOR (2.50 percent) is close to the 5-year and 10-year rate for constant maturity swaps (2.67 percent and 2.78 percent respectively).

**FIGURE 4. YIELD CURVE FOR 1M LIBOR VERSUS 5Y/10Y CMS**
*Source: Bloomberg data, as of Jan. 25, 2019.*

Current Opportunity for Constant Maturity Swaps

The current flattening yield curve gives finance executives an opportunity to enter into a constant maturity swap transaction today that takes advantage of pricing only available in the flat yield curve environment. When the curve steepens at some point in the future, returning to a more normal shape, the cash flows and/or overall mark-to-market value of the swap—i.e., the measure of its fair value—will be positive.

Figure 5 shows the spread between 2-year and 10-year Treasury yields in the past three decades, indicating when yield curves were inverted (negative spreads), flat (near zero spreads) or steep (positive spreads).
During the flat yield curve environment in 2005-2007, many organizations put in place constant maturity swaps (as indicated by the red arrow), which they subsequently unwound at a positive value when the curve steepened in the years following the 2008 credit crisis (as indicated by the red bracket). The swaps effectively mitigated recession-related risk, providing organizational balance sheets with cash flow assistance during those difficult economic years.

The spread differential is nearing zero again, so constant maturity swaps may be appropriate for some healthcare organizations, particularly financially stable issuers with prior experience with interest rate swaps. Constant maturity swaps tend to be less volatile than typical long-duration fixed-pay swaps on a mark-to-market basis. Additionally, they enable diversification of a portfolio of products (see sidebar for “Frequently Asked Questions”).

**Frequently Asked Questions about Constant Maturity Swaps**

*Source: Kaufman, Hall & Associates, LLC.*

**Should we wait to execute the constant maturity swap?**

The risk is that the curve steepens and the differential-spread opportunity dissipates.

**Should we put the trade on the table with a forward start date, thereby avoiding potential negative cash flows during the flat/inverted period?**

It is difficult to determine when the curve will steepen again and/or the flat curve environment may persist longer than expected.
Figure 6 provides specific data for the significantly disparate average spreads during the last two decades, as presented in Figure 5. The average spread between 1-month LIBOR and 10-year swap was 1.86 percent since 1999; it is a low 0.28 percent now.

**FIGURE 6: CURRENT STATISTICS FOR 1-MONTH LIBOR, 5-YEAR/10-YEAR LIBOR CMS RATES**

*Source: Bloomberg data, as of Jan 25, 2019.*

<table>
<thead>
<tr>
<th></th>
<th>1M LIBOR</th>
<th>5Y CMS</th>
<th>10Y CMS</th>
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<tr>
<td>Current Rate</td>
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<td>2.78%</td>
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<tr>
<td>Current Spread</td>
<td>-</td>
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<td>Average Spread Since 1999</td>
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<tr>
<td>Average Spread 2018</td>
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<td>Average Spread 2007</td>
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<td>(0.23%)</td>
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Figure 7 shows sample cash flow for a 20-year term constant maturity swap, with representative 10-year constant maturity swap (CMS) spread performance based on the borrower paying 67 percent of 1-month LIBOR and receiving 67 percent of 10-year CMS minus 43 basis points. Green boxes reflect positive cash flow per annum to the hospital borrower; red boxes reflect negative cash flow per annum. The returns marked with a blue border show current LIBOR and CMS rates as of January 25, 2019, indicating a negative return for swaps of -0.24 percent. Cash flows would turn positive with a 10-year CMS rate of 3.5 percent, holding the 1-month LIBOR rate at 2.5 percent.

**FIGURE 7. CONSTANT MATURITY SWAP SAMPLE CASH FLOW**


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8. Estimated CMS pricing as of 1/25/2019, subject to future market conditions.
What Is Different this Time and What Are the Related Risks?

A key difference is that the yield curve today is starting from a very different place—overall rates are much lower than in 2006. In 2006, at the short end, 1-month LIBOR was approximately 5.10 percent; in January 2019, 1-month LIBOR was 2.25 percent. Therefore, it is unlikely that history will repeat itself.

The fact that the Fed has less room at the front of the curve to decrease short-term rates suggests that it may not be able to change the slope of the yield curve as dramatically as it did following the 2008 financial crisis. Moreover, long-term rates are not responding to the Fed’s actions and may continue to be depressed, increasing at a slower rate, given global uncertainty. The market appears to be anticipating that the Fed will need to start cutting rates again, based on concerns that the economy may be slowing. Moreover, if the Fed decides to hold off on selling its stockpile of long-term securities, this could keep long-term rates (i.e., CMS rates) low for a longer period than previously expected.

Additional uncertainty is emerging due to the forthcoming replacement of LIBOR by the Secured Overnight Funding Rate (SOFR) by the end of 2021. SOFR is different from LIBOR in several critical ways. LIBOR is a surveyed, unsecured rate. SOFR is a secured rate, which tracks the overnight borrowing market based on actual repurchase agreement transactions. How the market develops, using SOFR, will be watched closely.

The most significant risk with constant maturity swaps today is that the yield curve may not regain its historically positive slope in a timely manner. The nation’s economic history suggests that the yield curve will steepen, but how long might that take—a year or two? How steep might the curve be?

If the curve remains flat for an extended period, flattens further, or inverts, cash flow losses and a negative mark-to-market value could occur with constant maturity swaps, and the borrower could be subject to collateral posting. Similar to risk involved with fixed-pay swaps, if the borrower terminates the swap early and the yield curve is flatter than when the contract occurred, the borrower may be subject to termination payments due to negative mark-to-market value. Additionally, the borrower carries the risk of locking into a price today that is not as attractive as it would be if the curve were flatter or inverted.

Analyze Within an Integrated Big Picture of Operational Risk, Balance Sheet Position, and Investment Opportunities

Constant maturity swaps can play a helpful role in mitigating risk in a recessionary environment. Financial leaders must evaluate them as part of a larger discussion about:

- The organization’s overall portfolio of assets and liabilities
- How elements in that portfolio interact to pose, increase, or moderate risk in changing economic and market conditions

Financial executives should not use constant maturity swaps as “speculative plays,” but rather, as a risk-mitigation tool. Cash-flow performance, event performance risk (for example, a major regulatory change, or collapse of a portion of the capital markets), and capital structure flexibility are key considerations (Figure 8).
Like with all financial products, thoughtful education is required to understand the risks and rewards of constant maturity swaps for a specific organization. Every organization has a unique portfolio of assets and liabilities and a unique operating environment that warrant consideration. Identifying and managing financial risks across the enterprise requires an integrated approach to resource and risk allocation.

Healthcare leadership teams can use a framework that integrates treasury, strategy, and operations to drive decision making about how to best prioritize and deploy resources in a rapidly changing environment. The result is a balancing of resources and risks across operations, assets, and liabilities that is more responsive to the current complex business/operating environment.

*For more information on how Kaufman Hall can help your organization identify risk and use tools to mitigate risk, please contact Steve Sohn (ssohn@kaufmanhall.com) or Eric Jordahl (ejordahl@kaufmanhall.com) at 847.441.8780.*