CoBANK

OUTLOOK

ECONOMIC DATA AND COMMENTARY

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What Bonds Tell Us About the U.S. Economy

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For investments that are sometimes seen as the boring, predictable cousins to the more volatile and exciting stock market, bonds have captured an outsized share of attention in the past few months. First came news of inverted yield curves, long regarded as a harbinger of recession. Then, in early September, Alan Greenspan, former chair of the Federal Reserve, made headlines by predicting it's "only a matter of time" before the United States sees negative interest rates, with some investors essentially paying for the safety of holding bonds rather than receiving interest income. Negative interest rates, from Europe to Japan, have signaled efforts by central banks to stimulate flagging economies.

Yet some economists, citing high consumer confidence and low unemployment in the United States, say the economic outlook remains bright and that traditional markers such as inverted yield curves no longer hold the importance they once did. For a deeper look at the relationship between bonds and the economy, OUTLOOK spoke with Greg McBride, chief financial analyst for Bankrate.com. McBride shared his thoughts on what bonds can and can't tell us about where the economy is headed, how bond prices affect the housing market and other industries, and why historical markers such as yield curves still matter.

OUTLOOK: What are inverted yield curves, and are they reliable indicators that a recession is coming?

Greg McBride: Normally, long-term bonds yield more than short-term bonds – investors get a premium for the risk that comes with a longer holding period. A normal yield curve, plotted on a graph, shows that relationship. With an inverted yield curve, things are reversed, with the yields of short-term bonds exceeding those of long-term bonds. That can happen when investors are concerned about what's ahead for the economy. They may sell short-term bonds and buy long-term bonds to lock in the longer-term rates before they fall. That tends to push up prices for long-term bonds, and their yields may fall below those of short-term bonds.

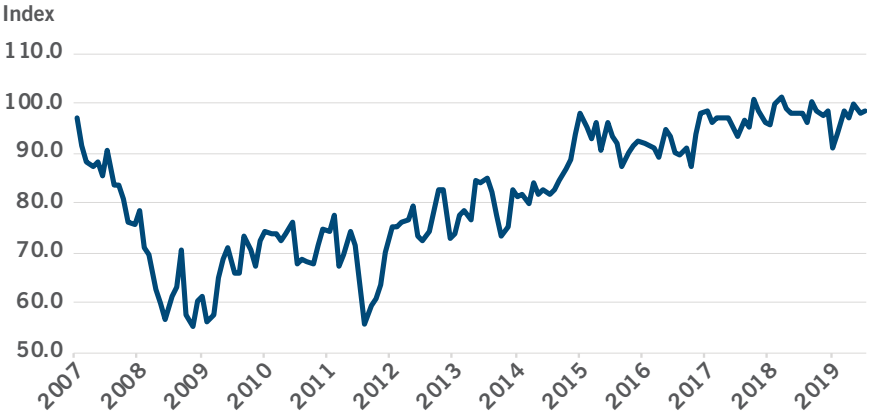
The most dangerous words in the economy are, "It's different this time." I've heard that prior to each of the past two recessions, when people doubted that an inverted yield curve would be followed by a downturn. But guess what? It didn't turn out to be different after all. So the yield curve is a signal to be heeded, but it doesn't mean a recession is imminent. Often an inverted yield curve leads a recession by 18 to 24 months. I think that's likely to be the case this time.

This Month's Expert

As senior vice president and chief financial analyst for Bankrate.com, Greg McBride has appeared on hundreds of national cable and network broadcasts, is a frequent guest on CNBC and Fox Business Network, and is often quoted by major newspapers such as *The New York Times, The Wall Street Journal* and *USA Today*. A regular radio guest on financial talk shows throughout the United States, McBride has spoken before audiences at the Federal Reserve Board, Federal Trade Commission, American Association of Individual Investors, National Foundation for Credit Counseling, and at the China Times Golden Cicada Awards in Beijing.

McBride currently serves on the board of Money Management International of Sugar Land, Texas, the nation's largest nonprofit credit counseling agency accredited by the National Foundation for Credit Counseling. He also serves on the funding board of the Consumer Financial Education Fund through the Rose Foundation of Oakland, California. McBride is a graduate of the University of Florida and has earned the Chartered Financial Analyst designation.

UNIVERSITY OF MICHIGAN CONSUMER SENTIMENT INDEX



Source: St. Louis Federal Reserve (fred.stlouisfed.org)

OUTLOOK: What are some of the reasons for that lag time?

McBride: Two-thirds of economic output is tied to consumer spending, and right now, U.S. consumers have the wind at their backs. We have the best labor market we've had in about 50 years, with unemployment near a 50-year low. The number of weekly unemployment claim filings is near a 50-year low. The last time it was this low, the labor force was half the size it is today. And we have well over a million more open jobs now than we have unemployed people.

As long as the consumer is strong, the economy can withstand a lot, but the problem with an inverted yield curve is that it often produces a credit crunch. When the yield curve is inverted, it becomes more profitable for lenders to put money into short-term investments than to lend it out. That's a problem, because credit is the oxygen that fuels the economic fire. Without it, business expansion, home purchases, and consumer borrowing will suffer. But it takes a while for that credit crunch to cycle through the economy. That's why it might take 18 to 24 months for all of those dominoes to fall.

OUTLOOK: If the economy is doing so well now, why is the yield curve inverted?

McBride: It's a byproduct of a couple things. One is a global economy that isn't doing nearly as well as the U.S. economy. The other is that bond investors look at what could go wrong while equity investors tend to look at what could go right.

The argument about why it's different this time – that today's inverted curve won't necessarily be followed by a recession – is that the yield curve is being distorted because of capital flowing into the U.S., where yields are so much

TREASURY YIELD SPREAD: 10-YEAR MINUS 3-MONTH

Source: Bloomberg

higher than elsewhere around the world. With $16 trillion in negative-yielding debt outside the U.S., a 1.5% yield on 10-year Treasury bond looks really, really attractive by comparison.

But all of that negative yielding debt didn't pop up overnight. Back in 2015, there was $9 trillion of it, and the yield curve wasn't inverted then – even though U.S. yields were already a lot higher than those overseas. So I don't buy that argument. There's definitely a disconnect between the level of interest rates – long-term rates in particular – and the current strength of the economy, but financial markets, by nature, are forward looking.

OUTLOOK: What are negative interest rates, and what would they mean for the bond market and the U.S. economy?

McBride: Negative interest rates can refer to two different things. One is when central banks, instead of paying interest to financial institutions for storing excess cash with them, require the financial institutions to pay interest to do so. The other is when government bonds have negative yields – investors, instead of receiving interest, are actually paying for the safety of owning those bonds. We've seen both types of negative rates in Europe and Japan, and it's not something to wish for here. The economic backdrop that would bring them about is a recession. Negative interest rates are nothing more than an experiment borne out of desperation and it is yet to be proven whether they are effective at stimulating economies.

OUTLOOK: For several years now, we've heard that the 30-plus-year bull market in bonds is ending. Why have bond prices stayed strong for so long, and why would that change now?

McBride: We've been in that bond bull market since the early 1980s. For the first 20 years after that, bonds did well because inflation had been tamed and then became relatively stable. It went from double-digit levels down to the low single digits and stayed there, and stable inflation is good for bonds. The past dozen years of the bull market in bonds has been because of a prolonged global flight to quality, as central banks have tried to jump start slow-growth economies that have aging populations and mountains of debt. That means interest rates have stayed at very low levels for longer than expected.

> "I see a lot of risk in the bond market because it's priced as if nothing will go right with the economy from here on out."

The risk to bond investors now is that the economy could skirt recession, with yields rebounding quickly, or, worse, that inflation could rear its ugly head. Interest rates could snap back and expose bond investors to losses. So I don't see this bond bull market being at an end, but the easy money has been made. I see a lot of risk in the bond market because it's priced as if nothing will go right with the economy from here on out. That seems like a faulty – and risky – assumption.

OUTLOOK: What is your outlook for the U.S. bond market over the next six months to a year?

McBride: As long as there are fears of recession and the Federal Reserve is active in reducing interest rates, yields will stay low and the yield curve will be inverted. But that doesn't mean this is a permanent state, and that's the risk to investors who get into bonds now because they're perceived to be a safe haven. When those yields rebound, it exposes those investors to losses.

What happens to the bond market really depends on what happens to the economy. Do we end up in a recession in another year or two or do we see the economy just continue to soldier along?

OUTLOOK: What are some of the fundamental factors that determine whether bond prices rise or fall?

McBride: Economic sentiment and inflation lead the way. Nervousness in financial markets about geopolitical factors can produce sharp moves on a short-term basis. When there's a crisis, you tend to see a flight to quality, which for U.S. Treasurys means a lot of money coming in. That tends to push bond prices up and yields down.

In other parts of the globe that are seen as riskier or less stable, the money flows out during a crisis, so bond prices can fall sharply and interest rates can jump dramatically, which then becomes a major economic obstacle.

OUTLOOK: Does that flight to quality in the U.S. distort what yields may tell us about the economy?

McBride: I'd say that right now the answer is yes – it's certainly distorting what the bond market is saying. There's no way that the relatively healthy state of the current economy justifies a 1.5% yield on a 10-year Treasury. But on a relative basis, that 1.5% is way higher and more attractive than the negative 70 basis points you would get in Germany, the negative 25 basis points in Japan and the 44 basis points in the United Kingdom.

"Inflation is the bond investor's kryptonite."

OUTLOOK: What would happen if the rest of the world stopped seeing the United States as a safe haven during a global crisis?

McBride: That is a real risk – maybe not now or next year, but even if it happens a decade or two from now, if capital starts to flow away from the U.S., that will raise borrowing costs across the board for the federal government, corporations, municipalities and consumers. Particularly as budget deficits continue to pile up and we issue more and more debt, investors may at some point sour on the creditworthiness of U.S. Treasurys, and that's when the dominoes would start to fall. It could lead to a major economic downturn in a very short period of time.

OUTLOOK: What can corporate bonds tell us about the economy?

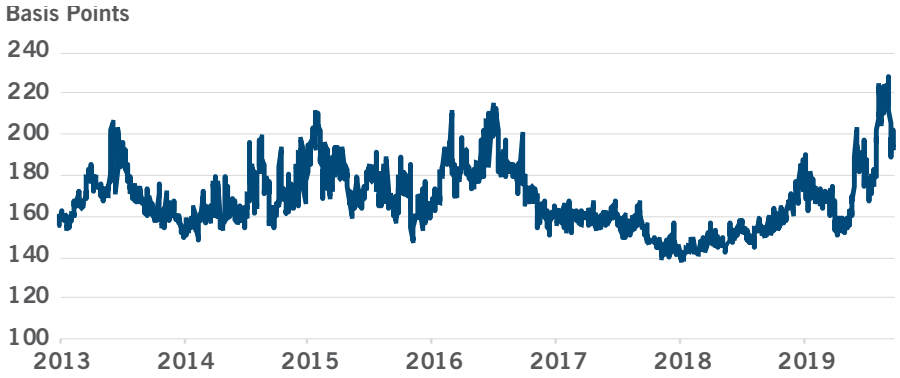
McBride: When markets are nervous about recession, yields on Treasurys and corporate bonds both will fall, but the spread between corporates and Treasurys will grow if the likelihood of corporate defaults increases. If that happens, investors will flee, pushing down prices of corporates and making it harder for companies to issue new bonds. That's particularly the case with high yield corporates, which tend to behave more like stocks than bonds over time. High yields do well when things are good. But when things go south, they get hammered.

For now, corporate bond defaults are still really low and spreads between corporates and Treasurys are still fairly tight. But that's where signs of trouble will pop up first. If there's deteriorating credit quality in the corporate sector, those yield spreads will expand, choking off capital to firms that need it – and that often can precipitate a broader downturn.

OUTLOOK: What is the relationship between bond prices and inflation?

McBride: Inflation is the bond investor's kryptonite. With a bond, you get a series of fixed coupon payments during the term of the bond and then you get the face value of that bond back at maturity. Inflation erodes the value of each of those payments and the value of that lump sum. That affects the price of a bond, and the effect is more pronounced on longer-term bonds than shorter-term bonds.

SPREAD: 30-YEAR FIXED MORTGAGE RATE MINUS U.S. TREASURY 10-YEAR YIELD



Source: bankrate.com, US Federal Reserve

OUTLOOK: How do bond markets affect other aspects of the economy – for instance, housing?

McBride: Market rates for mortgages and other borrowing are dictated by what's happening in the bond market, because mortgages often are packaged together into bonds. While the spread between rates for mortgage bonds and Treasurys can narrow or expand, the direction of mortgage rates often takes its cue from the bond market.

For example, nine months ago, the Federal Reserve was actively hiking interest rates, Treasury yields were moving up and mortgage rates were at a seven-year high. The average interest rate on a 30-year fixed-rate mortgage was above 5% as recently as last November. But since then, the Fed has completely shifted its stance, first holding rates steady and now cutting them. The sentiment about the economy has shifted dramatically, and interest rates and Treasury yields have come down very sharply from where they were in late 2018. Mortgage rates have also dropped dramatically and are now well below 4%.

OUTLOOK: Do falling mortgage rates and a healthy U.S. consumer indicate a housing market that's likely to heat up?

McBride: Unfortunately, low mortgage rates can't do it all, and the real impediments for the housing market continue to be affordability and lack of available inventory. Home prices have gone up faster than incomes, particularly for first-time and middle-class homebuyers. While lower mortgage rates ease some of the affordability concerns, they don't erase the problem. On the inventory side, you can't buy a house if it's not for sale, and that's the situation that a lot of would-be homebuyers are confronted with. There aren't enough homes available in their price range and there are more buyers than sellers. That has kept a lot of would-be home buyers, including Millennials and other younger buyers, on the sideline.

But our research shows that while Millennials haven't yet bought homes at the same pace as earlier generations, they actually have the highest preference for real estate of any generation. That indicates that a lot of Millennials who won't or can't buy in their 20s will buy in their 30s. Having invested in education and career mobility and having achieved some financial stability before venturing into home ownership, they're going to be well positioned when they do buy a home. In many cases, they'll jump right over the starter home.

> "While we've seen an increased correlation between bond prices and stock prices in recent years, that could go out the window in an economic and market downturn."

OUTLOOK: How does the bond market affect other industries?

McBride: It affects the cost of borrowing across a wide spectrum of borrowers, and not just companies that are issuing bonds. A lot of loans are priced relative to the levels of bond yields. And if a lender's cost of borrowing is going up, that's going to be passed along to the borrower. The cost of a loan at a local bank could tie back to what we're seeing in the bond market.

OUTLOOK: With yields and interest rates dropping now, shouldn't that help most industries?

McBride: Again, rates are low, but they can't do it all. It's also important to consider why rates are low, and that's because business confidence has dropped. That has made borrowers more hesitant.

OUTLOOK: Are bonds still a reliable counterweight to stocks in a portfolio, or have stock and bond markets become more correlated than in the past?

McBride: While we've seen an increased correlation between bond prices and stock prices in recent years, that could go out the window in an economic and market downturn. High-quality bonds are still a counterweight to equities, particularly for offsetting short-term risk in the stock market. But in the long term, I'd say that equities become the counterweight to bonds, because bonds may not even keep pace with inflation, much less grow your wealth and buying power over multi-decade time horizons.

OUTLOOK: The U.S. still accounts for more than a third of the global bond market. Is that likely to change in the future?

McBride: The U.S. bond market will remain a vital source of capital for both public and private companies. Whether the U.S. share of the global market changes is hard to predict, because that depends, to a large extent, on what happens in international bond markets. For example, do bonds from developed economies retain their appeal when yields are low or negative? And to what extent do emerging markets look to bond investors for access to capital?

OUTLOOK: What's the outlook now for global bond markets?

McBride: It's been said that right now, the U.S. is the best house in a bad neighborhood, and I agree with that assessment. Much of western Europe and Japan have slow-growth economies with aging populations and mounting debt, all of which become real constraints on economic growth. That's why you see unprecedented levels of central bank stimulus in those areas. Emerging markets offer higher rates but more risk. That means that while capital may go there now, it will flee even more quickly if those economies slump, and that can really stunt growth and development in many emerging economies.

Interest Rates and Economic Indicators

The interest rate and economic data on this page were updated as of 8/30/19. They are intended to provide rate or cost indications only and are for notional amounts in excess of $5 million except for forward fixed rates.

KEY ECONOMIC INDICATORS

Gross Domestic Product (GDP) measures the change in total output of the U.S. economy. The Consumer Price Index (CPI) is a measure of consumer inflation. The federal funds rate is the rate charged by banks to one another on overnight funds. The target federal funds rate is set by the Federal Reserve as one of the tools of monetary policy. The interest rate on the 10-year U.S. Treasury Note is considered a reflection of the market's view of longer-term macroeconomic performance; the 2-year projection provides a view of more near-term economic performance.

ECONOMIC AND INTEREST RATE PROJECTIONS

Forecasts courtesy of Bloomberg and Blue Chip Economic Indicators

				U.S. Treasury Securities	
2019	**GDP**	**CPI**	**Funds**	**2-year**	**10-year**
Q3	2.00%	2.00%	2.03%	1.55%	1.65%
Q4	1.80%	2.00%	1.62%	1.66%	1.84%
2020	**GDP**	**CPI**	**Funds**	**2-year**	**10-year**
Q1	1.70%	2.10%	1.38%	1.67%	1.94%
Q2	1.70%	2.00%	1.22%	1.70%	2.03%
Q3	1.60%	2.10%	1.11%	1.74%	2.08%

PROJECTIONS OF FUTURE INTEREST RATES

The table below reflects current market expectations about interest rates at given points in the future. Implied forward rates are the most commonly used measure of the outlook for interest rates. The forward rates listed are derived from the current interest rate curve using a mathematical formula to project future interest rate levels.

IMPLIED FORWARD SWAP RATES

Years Forward	3-month LIBOR	1-year Swap	3-year Swap	5-year Swap	7-year Swap	10-year Swap
Today	2.16%	1.79%	1.40%	1.32%	1.33%	1.38%
0.25	1.88%	1.57%	1.29%	1.26%	1.28%	1.35%
0.50	1.59%	1.39%	1.29%	1.25%	1.26%	1.34%
0.75	1.45%	1.32%	1.22%	1.23%	1.28%	1.36%
1.00	1.29%	1.23%	1.18%	1.22%	1.26%	1.35%
1.50	1.23%	1.20%	1.18%	1.23%	1.29%	1.38%
2.00	1.24%	1.14%	1.17%	1.23%	1.30%	1.39%
2.50	1.19%	1.14%	1.20%	1.26%	1.33%	1.41%
3.00	1.14%	1.15%	1.23%	1.29%	1.36%	1.43%
4.00	1.19%	1.22%	1.29%	1.36%	1.43%	1.49%
5.00	1.27%	1.30%	1.36%	1.45%	1.48%	1.53%

HEDGING THE COST OF FUTURE LOANS

A forward fixed rate is a fixed loan rate on a specified balance that can be drawn on or before a predetermined future date. The table below lists the additional cost incurred today to fix a loan at a future date.

FORWARD FIXED RATES

Cost of Forward Funds

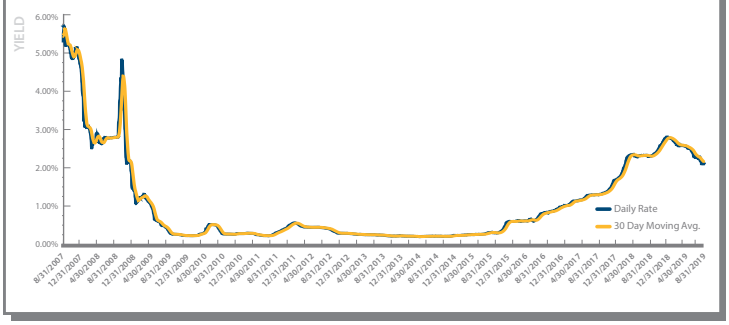
Forward Period (Days)	Average Life of Loan			
	2-yr	3-yr	5-yr	10-yr
30	5	5	5	5
90	5	5	5	5
180	5	5	5	5
365	5	5	5	6

Costs are stated in basis points per year.

SHORT-TERM INTEREST RATES

This graph depicts the recent history of the cost to fund floating rate loans. Three-month LIBOR is the most commonly used index for short-term financing.

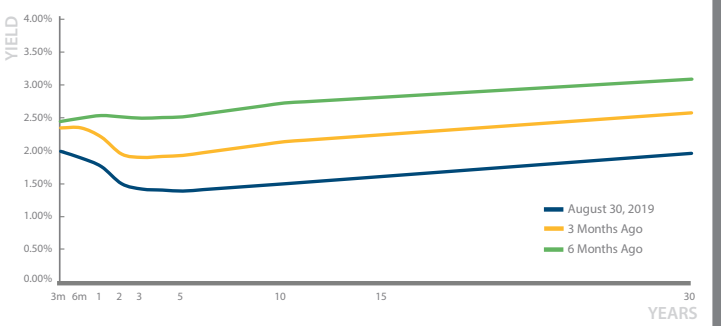
3-MONTH LIBOR



RELATION OF INTEREST RATE TO MATURITY

The yield curve depicts the relation between the cost of borrowing and the time to maturity of debt for a given borrower in a given currency. Typically, interest rates on long-term securities are higher than rates on short-term securities. Long-term securities generally require a risk premium for inflation uncertainty, for liquidity and for potential default risk.

TREASURY YIELD CURVE



COBANK UPDATE

Andrew Jacob Appointed to Succeed Ann Trakimas as CoBank's Chief Operating Officer

Trakimas Retiring from CoBank at End of 2019

Andrew Jacob

Ann Trakimas

Thomas Halverson

CoBank recently announced that Andrew Jacob will succeed Ann Trakimas as the bank's Chief Operating Officer when she retires at the end of 2019.

Prior to joining CoBank in 2011, Trakimas served as an outside director on the board of the Federal Farm Credit Banks Funding Corporation, the entity which issues debt securities that CoBank and other Farm Credit institutions use to fund their operations. She has more than 35 years of experience within the financial services industry, where she worked for Chemical Bank and Morgan Stanley. More recently, Trakimas was an executive with Goldman Sachs, where she held numerous positions including head of the firm's Financial Institutions Credit Risk Management and Advisory group.

"Ann has been instrumental in building our capabilities across a number of critical disciplines, including our technology, data, process, change management, operations and project execution functions," said Thomas Halverson, CoBank's president and chief executive officer. "I am deeply grateful to Ann for her dedication to the Farm Credit System and to CoBank, for her counsel and support, and for her many contributions to our success over the past eight years."

About CoBank

CoBank is a $138 billion cooperative bank serving vital industries across rural America. The bank provides loans, leases, export financing and other financial services to agribusinesses and rural power, water and communications providers in all 50 states. The bank also provides wholesale loans and other financial services to affiliated Farm Credit associations serving more than 70,000 farmers, ranchers and other rural borrowers in 23 states around the country.

CoBank is a member of the Farm Credit System, a nationwide network of banks and retail lending associations chartered to support the borrowing needs of U.S. agriculture, rural infrastructure and rural communities. Headquartered outside Denver, Colorado, CoBank serves customers from regional banking centers across the U.S. and also maintains an international representative office in Singapore.

For more information about CoBank, visit www.cobank.com.

Jacob previously served as the bank's Chief Regulatory, Legislative and Compliance Officer with responsibility for regulatory matters, government relations, compliance, industry research, corporate communications and enterprise security. Before joining CoBank in 2011, he spent almost 25 years with the Farm Credit Administration, the independent regulator for the Farm Credit System, where he served in a variety of leadership roles within the agency's Office of Examination, Office of Policy and Analysis, and Office of Secondary Market Oversight.

"The COO function at CoBank is essential to our ability to serve customers with excellence, drive operating efficiency and fulfill our mission of service to rural America," Halverson said. "I'm delighted that Andrew has accepted this appointment and that we will continue to benefit from his leadership in this new role."

Both Trakimas and Jacob serve on the bank's Management Executive Committee.