

Concepts and facts

ChatGPT gets it mostly right on yield curve shapes

By Jim Reber

[Note: In this column, for the first time, your correspondent relied on ChatGPT, the generative artificial intelligence (AI) platform. For the record, I submitted this inquiry: "Write a 700-word essay on how the shape of the Treasury yield curve affects community banks." The following was generated in, I guess, three seconds, and most of it appears to be correct. I've taken the liberty of adding some commentary in red, and there really aren't many changes. In the future, I will use AI only if I fully disclose its assistance. And you'll be able to tell because there're no snark in AI-generated documents. JR]

The Impact of the Treasury Yield Curve on Community Banks

The Treasury yield curve is a critical financial indicator that depicts the relationship between interest rates and the maturity dates of U.S. government debt. Typically, the yield curve slopes upward, reflecting higher yields for long-term securities compared to short-term ones. This essay explores how the shape of the Treasury yield curve affects community banks, focusing on their lending practices, interest rate risk management, and overall financial health.

Understanding the Yield Curve

The yield curve can take on various shapes, primarily categorized as normal, inverted, or flat. A normal yield curve indicates that longer-term bonds have higher yields, suggesting economic growth; an inverted yield curve occurs when short-term yields exceed long-term yields, often seen as a predictor of recession; and a flat yield curve signifies uncertainty in the economy, where there is little difference between short-term and long-term rates. Each of these shapes presents unique challenges and opportunities for community banks.

Lending Practices

Community banks primarily generate revenue through lending, and the yield curve significantly influences their lending practices. In a normal yield curve environment, community banks can borrow at lower short-

term interest rates and lend at higher long-term rates, which supports their profitability. For example, if a bank can secure funding at a 1% interest rate for a one-year loan and lend it out at 4% for a 30-year mortgage, the spread—essentially the bank's profit—is 3%. This difference allows community banks to support local economies, providing loans for homes, businesses, and other community projects.

Conversely, when the yield curve flattens or inverts, the profitability of these lending activities diminishes. In an inverted yield curve scenario, community banks may find themselves in a position where they borrow at higher short-term rates than the rates at which they can lend long-term. This situation compresses margins, potentially leading to a reduction in loan origination and, consequently, a slowdown in economic activity within the communities they serve.

Interest Rate Risk Management

Community banks must also navigate interest rate risk, which is the risk of financial loss due to changes in interest rates. The shape of the yield curve plays a crucial role in how banks manage this risk. In a normal yield curve scenario, banks can match the duration of their assets (loans) with their liabilities (deposits) effectively. For instance, if a community bank has long-term fixed-rate mortgages, it can rely on stable, lower-cost funding from short-term deposits. **Wrong! This is the very recipe for exposure to rising rates.** This alignment helps mitigate the risk of rising interest rates.

However, during periods of an inverted or flat yield curve, community banks face increased interest rate risk. **Not necessarily.** The duration mismatch can lead to a situation where liabilities reprice before assets, exposing banks to potential losses. To manage this risk, community banks may engage in interest rate swaps or other hedging strategies, but these can be costly and complex, particularly for smaller institutions with limited resources.

Asset Quality and Loan Demand

The shape of the yield curve also affects asset quality and loan demand, which are critical for community banks' stability. In a normal yield curve environment, economic growth typically leads to increased demand for loans as businesses and consumers have greater confidence in their financial prospects. Community banks can capitalize on this demand, extending credit while maintaining healthy asset quality.

However, when the yield curve inverts, it often signals an impending economic slowdown. As businesses and consumers become more cautious, loan demand may decline, and existing borrowers may struggle

to meet their obligations, leading to increased default rates. This deterioration in asset quality can significantly impact community banks, which often have concentrated loan portfolios tied to local economies. **It's a bit of a non-sequitur to claim inverted curves cause a decline in credit quality. It's more like the curve is reacting to that expectation.** A rise in non-performing loans can strain capital reserves and lead to regulatory scrutiny.

Conclusion

The shape of the Treasury yield curve is a pivotal factor influencing the operations and financial health of community banks. A normal upward-sloping curve supports profitable lending practices and encourages economic growth, while an inverted or flat curve presents challenges related to interest rate risk, profitability, and asset quality. Community banks must remain vigilant and adaptable to changes in the yield curve, employing sound risk management strategies and maintaining strong relationships with their local communities. Understanding these dynamics is essential for community banks as they strive to navigate the complexities of the financial landscape and continue to support their local economies.

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