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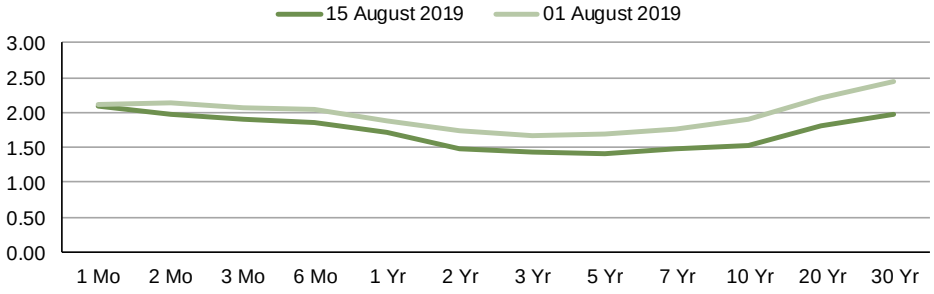
Why yield-curve inversion is bad news for credit

Yield-curve inversion reveals a deterioration in credit quality and the failure of company and project owners to meet the goals of their business plans. Credit conditions will determine how far in the future the recessionary part of the credit cycle lies. But one thing seems certain: it is not far off, and central banks have almost exhausted their capacity to disguise the problem and defer the required adjustments to valuations.

The inversion of two-year and 10-year US Treasury yields on 15 August 2019 followed a similarly short-lived period of three-month/10-year inversion earlier in the year. Yield-curve inversion is an anomaly that results from fundamental factors surrounding both lending and borrowing.

Understanding the factors that drive the formation of the yield curve and how to interpret them from a credit perspective can help identify where we are in the credit cycle and what to expect from near and mid-term credit performance.

Figure 1: The inverted US yield curve on 15 August 2019



Source: US Department of the Treasury

US yield curve inversion: 15 August 2019

The way the US yield curve inverted on 15 August followed a process whereby long-term yields fell below short-term yields, which were already high (Figure 1). The reduction in long-term rates can be explained by the search for yield in the context of low returns and a peaking stock market. Regardless of this unusual formation, interpreting the message conveyed by the yield curve from the point of view of credit risk is the same when it is driven by short-term debt dynamics.

The additional supply of long-term credit is concerning because it reflects how the liquidity degradation phase of the cycle is well under way and in fact coming to an end. Soon, little real liquidity will be left. We are witnessing the transition of this phase of the cycle to the next one: the recessionary phase.

The indications provided by US Treasury yields are a rough approximation of what is going on in the real economy; the Treasury curve represents the US government's borrowing costs, which are only indirectly related to borrowing costs in the real economy.

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Interpreting the yield curve becomes more difficult when the interest rate-environment is distorted – like the negative rate environment created by the European Central Bank. Negative short-term rates can effectively mask the short-term problems of the real economy.

Yield and its drivers

Yield results from supply-demand dynamics in credit markets, which are typically segmented by risk horizon (i.e. maturity or tenor) and risk level (i.e. credit quality). Yield is nothing but the price of third-party funds, from the perspective of the borrower. Yield is the compensation that the lender gets for his funds. Yield is formed in the market, reflecting the needs, expectations and capacity of the marginal borrower and the marginal lender.

Borrowers compensate lenders for time preference, credit risk and reduced liquidity

The borrower compensates the lender for three main unwanted conditions that result from lending: 1) changes to time preferences; 2) exposure to credit risk; and 3) worsened alternatives of action. Yields reflect all these three fundamental factors.

Changes to time preferences

Generally, borrowers must incentivise lenders if they want them to alter the preferred time for making personal use of their own funds (e.g. for consuming, donating or investing). This cost represents the time value of money. The cost originates because borrowers are asking lenders to change – not necessarily delay – their original plans. It is a mistake to link time value of money only to plan changes that represent a delay in the use of personal funds. For example, a sales discount is also compensation for changing the original plans of a client where the seller is asking the buyer to bring forward the use of personal funds rather than delay it.

Time preference always results in a positive cost when measured in real-value terms. The cost is higher the longer the term of the plan the lender has to alter. Short-term plans are generally more numerous than long-term plans because daily obligations require most of our attention. Long-term plans are generally more important than short-term plans because we only focus on long-term objectives when they are relevant or strategic.

Exposure to credit risk

Borrowers must also incentivise lenders if they want them to take on the risk that they might lose their funds because the borrower is unwilling or unable to return them to the lender. This is credit risk.

Credit risk is higher if the risk horizon is longer. The range and severity of circumstances that could arise and impair the borrower are more numerous and uncertain the longer the lender remains exposed to the borrower. Just like for time preference, credit risk always results in a positive cost when measured in real-value terms.

Worsened alternatives of action

Finally, borrowers must incentivise lenders if they want them to accept situations where the lender's alternatives of action will be either less numerous or of inferior quality. This is known as liquidity risk – and it is a broader concept that embeds the concept of liquidity as traditionally defined in business and finance. Lenders reduce or worsen their alternatives for action when they extend their own funds to the borrower. This puts lenders in situation where their capacity to react to unexpected circumstances will be reduced or totally impaired.

Longer liquidity risk exposure requires bigger compensation from the borrower, because the risk of unexpected circumstances for the lender increases with time, and yet the commitment to the borrower is a fixed contract obligation. Measured in real-value terms, liquidity risk always results in a positive cost.

Yield formation

Actual yields reflect the fundamental factors above and their influence on the actions of borrowers and lenders. Yield formation involves the cost contributions from all three factors, even when the process is not explicit or conscious.

Expectations and information asymmetry play a significant role in how the fundamental factors translate into cost components of the yield. Expectations and available information can suffer swift changes that will in turn result in swift changes to yields. This is particularly true in our information-driven society.

The dynamics of credit supply and demand, in particular the expectations and circumstances of the marginal borrower and the marginal lender, determine the value of yields observed in the market.

A yield curve is simply a plot of the different yields observed in the market, where the risk horizons are represented on the horizontal axis and the corresponding yields are represented on the vertical axis.

The normal yield curve must be a monotonically increasing function (i.e. a curve with positive slope for any risk horizon). This follows from the fundamental factors that drive yield, which all result in higher costs the longer the risk horizon.

The yield curve may represent the entire market or a particular credit quality segment (e.g. the yield curve for investment-grade corporates). Regardless, all yield curves reflect the same fundamental factors and consequently must be interpreted in the same way – with consideration of the circumstances specific to the borrowers and lenders that comprise the relevant credit market.

How yield-curve inversion forms

The yield curve inverts when short-term credit is more expensive than long-term credit. This obviously results from a credit supply-demand imbalance. But it is not obvious why short-term rates should pick up changes in the credit environment to the point where they are higher than long-term rates. This should not be the case, considering the factors that comprise yield formation.

Unbalanced demand for short-term credit signals significant errors in the plans of entrepreneurs

Unbalanced demand for short-term credit signals significant errors in the plans of entrepreneurs and results from failure to meet business plans. Entrepreneurs seek unexpected short-term financing when there are significant deviations from their original business plans (i.e. those used to size and plan for their long-term financing).

Erroneous expectations about future economic performance and inflated valuations driven by a distorted interest-rate environment are among the reasons why entrepreneurs may fail in their economic calculations.

Unusual demand for short-term credit, coupled with scepticism by lenders, inflates the cost of short-term debt. Entrepreneurs seek to buy time – in their sometimes desperate hope that the environment will improve – when they resort to short-term financing to patch up failed business plans.

The inverted yield curve reveals systematic errors by a very large number of entrepreneurs in their business plans that result in a systemic problem that consumes the little available liquidity remaining after long-term investments have been committed. This occurs at a rapid pace that forces short-term rates to go up. The spiral is accentuated by the weakness of business plans, which make lenders adjust their demands to accommodate for the updated time preference, views of credit risk and constrained liquidity – all resulting in higher cost of debt.

The chase for short-term liquidity is the last stage before the recessionary phase of the cycle

This process is the last stage before the recessionary phase of the credit cycle, when remaining available liquidity is consumed.

The process continues until there is no more liquidity available and certain corporates and projects fail to bridge their financing needs. This is when the deflationary phase of the cycle starts, as corporate and project defaults force liquidations, restructuring, and corrections to asset valuations.

Of course, demand for short-term credit may also follow ordinary business needs. For example, the financing of working capital – which is dynamic in nature – would naturally be accomplished with short-term debt (typically in the form of flexible revolving credit instruments like credit lines). Short-term credit is also the conventional way of funding the transitions between one capital structure and a new one, to accommodate for changes in the long-term plans of a business.

The way yields are formed in the market when the demand for credit follows ordinary business needs results in a normal yield curve. This is because the formation of that price conforms to the rules explained by the fundamental factors driving yield.

An alternative explanation of yield-curve inversion relates to expectations of lower future policy rates alongside multiple factors that impact the “term premium” component of government bond rates. This includes expectations of quantitative easing and unconventional policies that can depress long-run rates (such as current market expectations of more QE in the euro area). Yields on long-maturity government bonds are conventionally modelled with two components: 1) the returns expected from shorter-dated bonds of similar credit

quality over the same time period; and 2) an additional component, the term premium. This term premium is normally thought of as the extra return (a risk premium) that investors demand to compensate them for the risk associated with a long-term bond.

Conclusion

With yield-curve inversion, the US has signalled to the world a generic negative credit outlook

This analytical perspective results in a generic credit outlook for the US that is negative – which means the outlook is also negative for the world economy. The signal from the US market is clear: valuations require a correction. The yield curve in the euro area is masked by the negative rates set by the central bank, which is actively creating nominal liquidity to be released in the economy.

It is not possible to assess the extent of the problem or how long it will take to reach the deflationary phase of the cycle, primarily because of the distorted environment created by aggressive credit expansion since the financial crisis.

The growth of central bank balance sheets evidences the magnitude of the problem, and negative yields suggest the scale of the corrections to valuations that the deflationary phase of the market could bring.

The uncertainties around international trade and the trade war between the US and China; Brexit; the political climate in Italy and Spain; or the perspective of a German economic slowdown can create the conditions for the move into the recessionary phase of the credit cycle after a crisis, to which yield-curve inversion would be a negative leading indicator

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