

# Economic Outlook

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## Calibrating Risk Exposures and Risk Premiums in Europe

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Between October 2011 and January 2012, the yield on European speculative grade debt (rated below BBB) widened substantially relative to comparable United States securities. Part of the widening reflects the divergence in economic fortunes, but some of it is likely due to ongoing concern about the “tail risk” presented by the European sovereign debt crisis. When considering that “safe” assets are also likely to be negatively impacted by a low-probability, high-impact event, investors may decide that rather than hide from this risk it would be better to get paid for it.

During the financial crisis of 2007-2009, investors discovered that assets exposed to the same macroeconomic risk do not always provide the same premium for bearing it. Some assets are more volatile than others because their market prices are more apt to fluctuate in response to news, not because their underlying cash flows are necessarily more sensitive to macroeconomic outcomes. This experience suggests that the best place to gain exposure to Europe may be through investments traditionally thought to have the greatest volatility, like high-yield debt, precisely because their prices adjust more swiftly to market-relevant information.

The true risk of an asset is not captured by its market price volatility. The prices of certain assets can adjust more or less to macroeconomic news than would be justified by their sensitivity to economic fundamentals.

### Credit Curves and Required Returns

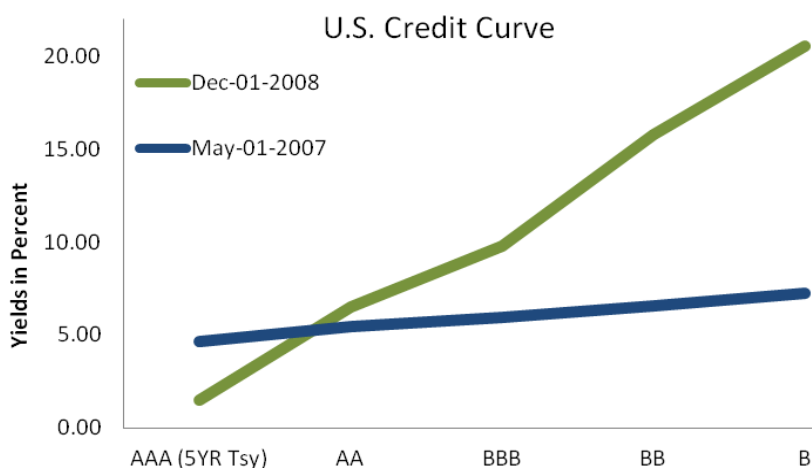
Credit spreads measure the yield to maturity on a loan or bond relative to the “risk-free” rate. Although analysts routinely use credit spreads to calculate implied default rates, credit losses have accounted for less than half of the average credit spread between 1866 and 2008.<sup>1</sup> Default rates implied by credit spreads are substantially higher than realized default rates because the spread must provide an additional premium to induce investors to hold the assets. If credit spreads were unbiased predictors of future losses, no one would invest since the expected return would be the same as the risk-free rate but with the potential for worse outcomes.

The size of the risk premium differs across assets and through time based on expectations for the economy, global liquidity conditions, and investors’ risk aversion. At each point in time, the marginal compensation investors demand for incremental default risk could be depicted graphically as a “credit curve.” Periods of optimism about growth and investor “reaching for yield” are generally associated with flat credit curves, where the marginal return on riskier debt is relatively low. By contrast, periods of macroeconomic stress and investor risk aversion are often characterized by a “flight to quality,” where the marginal compensation investors demand to bear

<sup>1</sup> Giesecke, Longstaff, Schaefer, and Strebulaev, “Corporate bond default risk: A 150-year perspective,” *Journal of Financial Economics*, 2011.

incremental default risk increases and the credit curve steepens. Over the past 10 years, the “flattest” credit curve was observed in May 2007, when B-rated credits yielded just 260 basis points more, on average, than the AAA-rated 5-year Treasury note. The steepest curve was recorded in December 2008 when the yield on B credits was 20.56%, or 1,904 basis points more than similar duration AAA Treasury notes (see Figure 1).

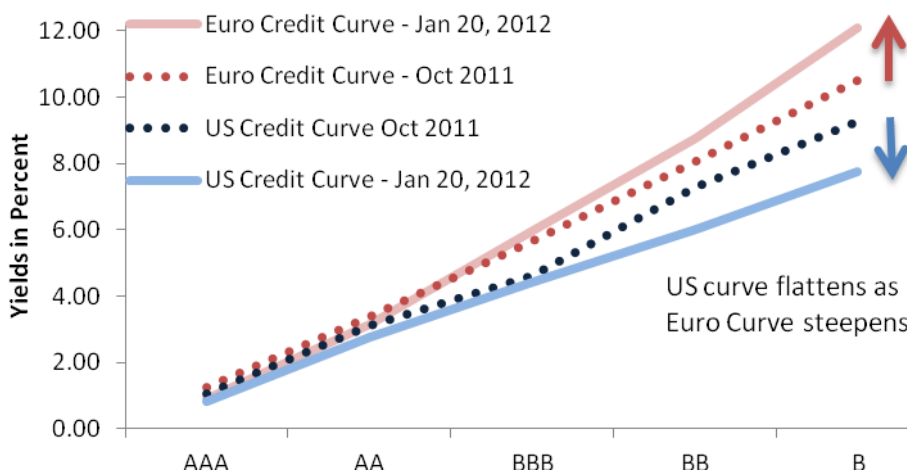
**Figure 1:**



Source: Capital IQ and Bank of America Merrill Lynch<sup>2</sup>

Between October 2011 and January 2012, the U.S. credit curve flattened at the same time as the European credit curve steepened (Figure 2). The result was a 311 basis point increase on the yield of B-rated European corporate credits relative to their U.S. counterparts. Given that the differential favoring Europe was already 123 basis points in October 2011, by January 20, 2012 the “excess” expected returns on European B-rated credits stood at 434 basis points. Widening in the “investment grade” portion of the curve was much more modest, with yield differentials for AA securities essentially unchanged (see Figure 3).

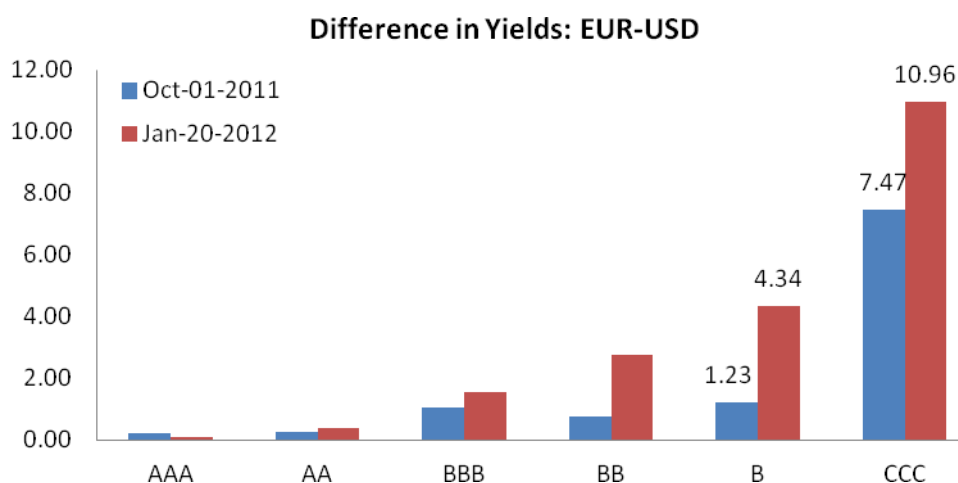
**Figure 2:**



Source: Capital IQ and Bank of America Merrill Lynch

<sup>2</sup> The AAA yields are on German (Europe) and U.S. sovereign debt from Capital IQ. The rest of the ratings categories are the yields on the corresponding EMU Corporate and Broad U.S. Corporate index from the Bank of America Merrill Lynch Global Index System. Macaulay duration is close to 4.5 across all assets.

Figure 3:



Source: Capital IQ and Bank of America Merrill Lynch

Empirical research has found that the risk premium and expected default losses are positively related. More specifically, the premium (defined as credit spreads in excess of default losses) for holding BB credits has been about 195 basis points per year greater than the premium on AA credits.<sup>3</sup> The more sensitive a credit is to a change in macroeconomic conditions, the more its market price has to adjust to find investors willing to hold it. This suggests that the prices of riskier assets incorporate more macroeconomic risk than is justified by their sensitivity to macroeconomic outcomes.

### Risk Exposure and Risk Compensation are Not the Same Thing

Following the Lehman Brothers' bankruptcy filing in September 2008, the prices of speculative grade credits collapsed (and correspondingly the yields soared) in response to news that the economy was likely to contract sharply, increasing default rates. From November 2008 through April 2009, the average effective yield on B-rated credits in the U.S. was 22.6%, a spread of nearly 20% relative to the U.S. Treasury curve. This price decline was out of proportion with these securities' actual sensitivity to the macroeconomy: if we assume average recovery rates of 40% on defaulted bonds, spreads of this magnitude would imply annualized default rates of 33%, or nearly seven times the annual average. As it happened, the economy entered into the deepest recession since the contraction of 1929-1933, shedding more than 5.1% in GDP, and yet speculative grade debt investing was incredibly profitable. Trailing twelve month returns averaged more than 50% during this period, or twice as high as returns on higher rated debt.<sup>4</sup>

Researchers have demonstrated that the super senior tranche of many categories of collateralized debt obligations (CDOs) offered a similar payoff profile to an insurance policy against a rare financial disaster. Losses were highly improbable and could only be expected to occur in the context of a particularly severe recession. Yet, because the super senior CDO note was a AAA-rated fixed income security, its investor received far less compensation for bearing essentially the same risk as an derivatives trader writing deep out-of-the-money put options on the S&P 500.<sup>5</sup> The lesson from both super senior CDOs and speculative grade credits is that the true risk of an asset is not captured by its market price volatility. As a result of informational and financing frictions, the prices of certain assets can adjust more or less to macroeconomic news than would be justified by their

<sup>3</sup> While the average credit spread on AA bonds is 72 basis points greater than annual average default losses on these credits, the credit spread on the typical BB credit is 267 basis points greater than BB default losses. John Hull, Mirela Predescu, and Alan White, "Bond Prices, Default Probabilities and Risk Premiums," *Journal of Credit Risk*, 2005.

<sup>4</sup> Average total return on the Bank of America Master II High Yield Index for the twelve months ending in October 2009 through April 2010. This is measured relative to returns on the A-BBB Index.

<sup>5</sup> Coval, Jurek, and Stafford. "Economic Catastrophe Bonds." *American Economic Review*, 2009.

sensitivity to economic fundamentals.<sup>6</sup> The result can be a mispricing where large increases in risk assets' expected losses are actually increases in (relative) expected returns.

## Implications for Europe

Carlyle Economic Indicators and external data point to a euro area contraction of 0.25% during the fourth quarter of 2011 and an expected 0.5% of GDP contraction in all of 2012.<sup>7</sup> As in 2008, most of the price adjustment has occurred further out on the credit curve, as B credits are currently priced to default at a 20% annualized rate (assuming 40% average recoveries). Speculative grade borrowers generally need to refinance obligations prior to maturity, which leaves them exposed to any banking system dysfunction that could jeopardize their ability to roll-over maturing loans. Yet, this liquidity risk has been attenuated in Europe through the December 21, 2011 European Central Bank (ECB) long-term refinancing operation (LTRO), which provided €489 billion in three year liquidity to 523 participating euro area banks. The ECB also continues to target the growth rate of credit to the nonfinancial private sector, suggesting that euro area policymakers are not likely to tolerate defaults driven by financial, rather than economic, factors.

While a 20% default rate could certainly occur in the context of a large-scale sovereign default, widespread banking failure, or currency disunion, these Lehman-like events would also impact assets much more senior in the capital structure. The risk of downgrades and large price declines from a systemic event would require a parallel upward shift in the euro-denominated credit curve rather than the curve steepening witnessed to date. Rather than try fruitlessly to hide from this risk through investment grade exposures, investors might be better off making sure they are compensated for it.

## Conclusion

Although the euro area economy appears to be contracting at a modest rate, European speculative grade credits seem to be priced with something worse in mind. A Lehman-like event is likely to impact "safe" assets whose prices have not adjusted to reflect this risk. When assessing exposure to Europe, investors may discover that price volatility is actually welcome because the price adjustments in speculative grade debt result in a large premium for bearing risks that are likely to prove difficult to avoid.

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<sup>6</sup> Brunnermeier and Pedersen, "Market Liquidity and Funding Liquidity," *Review of Financial Studies*, 2008.

<sup>7</sup> International Monetary Fund, World Economic Outlook: January 2012 Update.