Previously published in the U.S. Credit Alpha
11 August 2017

Macro Credit Framework: Let's Be Reasonable

Ryan Preclaw, CFA
+1 212 412 2249
ryan.preclaw@barclays.com
BCI, US

Edward Brucker
+1 212 526 4435
edward.brucker@barclays.com
BCI, US

With credit valuations near post-recession tights, we believe this is a good time to update our macroeconomic framework for credit returns. The core of our framework is that:

- For the purposes of forecasting credit performance, we can reduce the business cycle into two regimes: a steady state in which the economy is growing consistently and a transitional state that includes recessions plus the 12 months before and after. Macroeconomic indicators can signal which state the economy is in.
- Spreads evolve differently in the transitional state than in the steady state.
- Valuations are the key driver of returns for both steady and transitional states, but the distributions shape of those returns varies across regimes.
  - In the steady state, returns are more normal for a given valuation, and treating returns as normal should be adequate for rough estimates of returns and loss probabilities.
  - Transitional state distributions are more skewed, making the distribution of expected returns rely more heavily on starting valuations.

Applying the framework to the current environment suggests a 70% chance of positive excess returns for BBB credits, with an expected return near carry (Figure 1).

FIGURE 1

The Macro Framework Suggests That We Should Expect 60-70bp of Six-Month Excess Returns for Corporate BBBs

Source: Barclays Research

Defining Business Cycle Regimes

For the purposes of making return forecasts, we believe that only two regimes really matter:

- Steady state is the default, covering periods of consistently positive economic growth that are the "expansion phase" of traditional business cycles. These phases have periods of both slower and faster growth, but without the sustained deterioration that marks a recession.

- Transitional states have been less frequent (especially in the past 30 years) and consist of recessions plus the 12 months preceding and following them.

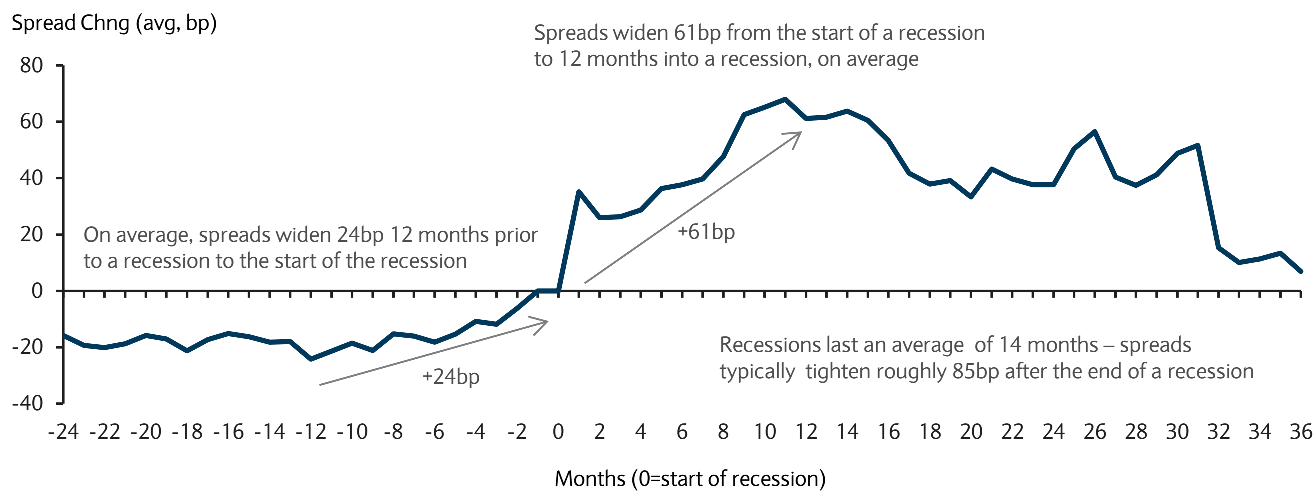
There are a number of reasons to condense the macro environment to only two regimes:

- There are clear differences in how credit returns behave in the two regimes, with credit more likely to widen, and more likely to linger at wider spreads, during transitional states (Figure 2). But further subdivisions do not seem to add much information – for example, for a given valuation, there is not much difference in returns from "early" in a recession to "late" - so it is sensible to use fewer states.

- It makes it easier to define the conditions of being in each state, which makes it more likely that we will make the correct call. In general, we think it is relatively straightforward to understand when we are in a recession or its aftermath. That means the only difficult call is whether we have moved from a steady to a transitional state.

FIGURE 2

Changes in Corporate Bonds Spreads around a Recession

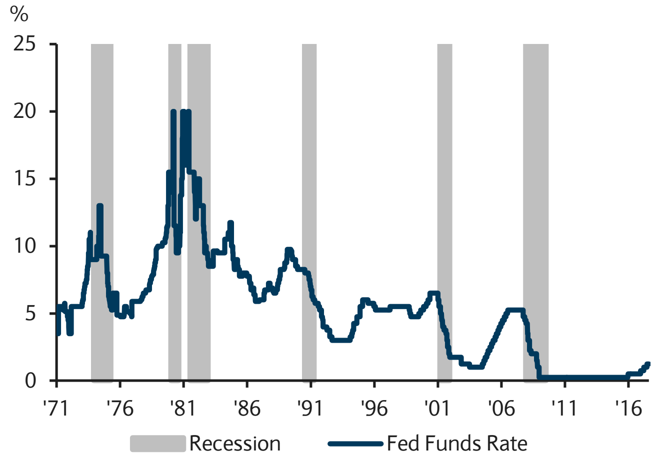


Source: Moody's, Barclays Research

Economic Indicators – Clues for Transitional Periods

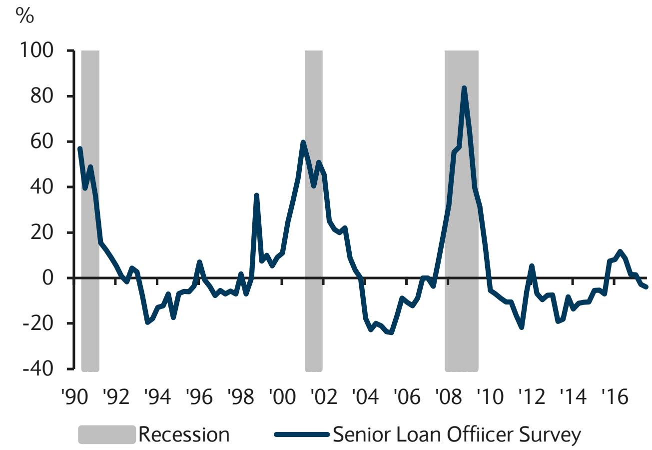
The most challenging part of our framework is determining whether we have entered the transitional state, but we think there are useful indicators for when that happens. There are a number of layers to the process. First, the preconditions need to be in place. Then the timely indicators give us information about whether we are within 12 months of a recession. Finally, a qualitative evaluation informs us whether our preferred signals are likely to have their usual reliability.

FIGURE 3
The Fed Is Currently in a Hiking Cycle



Source: Bloomberg, Barclays Research

FIGURE 4
Senior Loan Officer Survey



Note: The senior loan officer survey reports net percentage of banks tightening lending standards on loans to business customers. Source: Bloomberg, Barclays

Preconditions for a Recession

Fed hiking cycles and tighter bank lending standards have historically been preconditions for recessions. The past six recessions have been preceded by Fed hiking cycles, and leading up to the past two recessions, bank lending standards have tightened (Figures 3 and 4). Intuitively, this makes sense – the economic benefits of looser Fed policy and accelerating lending conditions lean against the possibility of a recession.

While these indicators are necessary for a recession, they do not by themselves signal that a recession is imminent – both can be in place for multiple years before a recession begins. While these preconditions are currently being met, we must look at more timely measures that signal the economy is entering a transitional state.

Near-Term Indicators

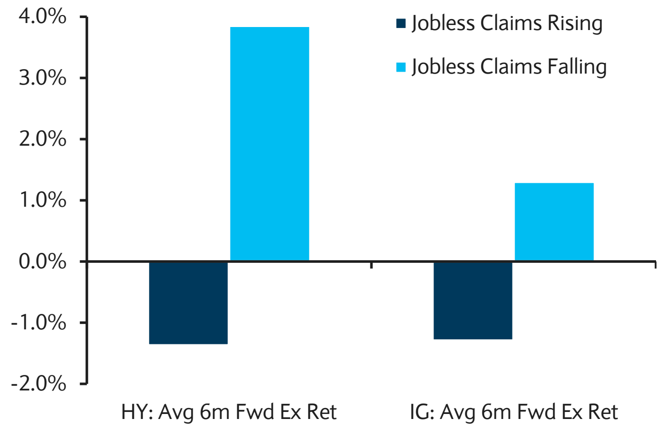
Jobless Claims

We believe that jobless claims are one of the best indicators of a regime shift, because they generally start to rise about a year before the economy enters a recession. This makes them particularly well timed for the move to a transitional state. Their usefulness as an indicator for credit is supported by the tendency of rising jobless claims to predict negative future returns for credit (Figure 5), consistent with our analysis that spreads generally widen from tights during the transitional state.

The decline in jobless claims has been impressive since 2009, and the measure is at all-time lows after adjusting for total jobs in the economy. With less slack in the series, the decline in claims has lost momentum, suggesting that further improvements could be limited (Figure 6). However, claims have remained low or flat for multiple years in the past, so flattening alone is not sufficient to indicate a rise in claims. Consequently, we do not believe that jobless claims are currently signaling that we are entering a transitional period (although that assessment could change quickly).

FIGURE 5

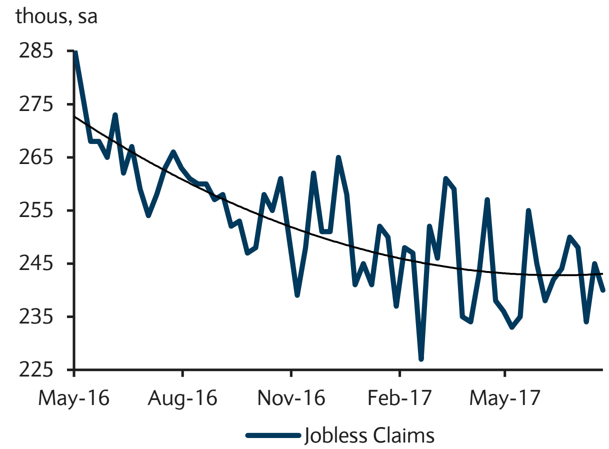
Lower Credit Returns for Rising Jobless Claims



Source: Bloomberg Barclays Indices, Barclays Research

FIGURE 6

Decline in Jobless Claims Is Losing Momentum



Source: Bloomberg, Barclays Research

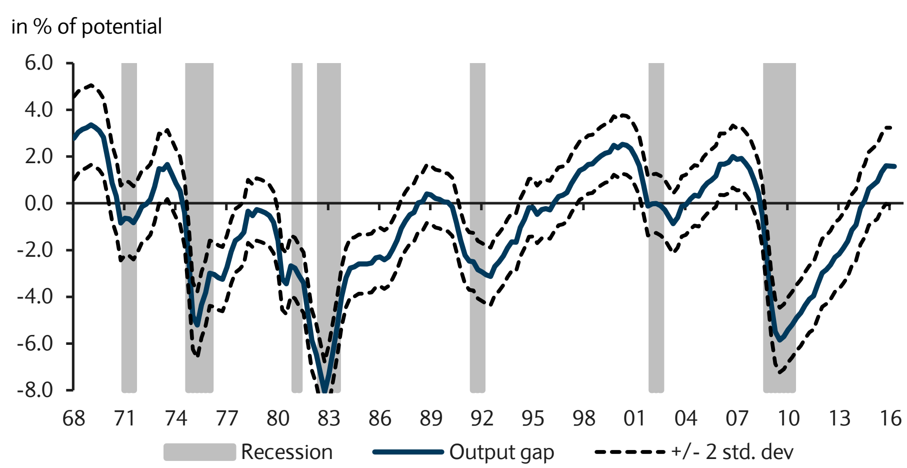
Output Gap

The second timely indicator that we use for our macro credit framework is the output gap – a measure that Barclays Economics uses as a framework for the US business cycle (Figure 7). The output gap uses a multivariable approach – with inputs such as working hours, output, employment, unemployment, and the labor force – to measure the actual output of the US economy versus the potential output.

We find that the output gap tends to follow the business cycle closely. The indicator typically peaks about three quarters prior to a recession, on average, and starts to roll over during the transitional state (Figure 8). Coincidentally, spreads also tend to widen when the output gap is declining (Figure 9). Currently, the output gap has closed and is near the 2005-06 peak, meaning that the current business cycle is mature. However, the indicator does not seem to be rolling over at this point and is not indicating that we are entering a transitional state yet.

FIGURE 7

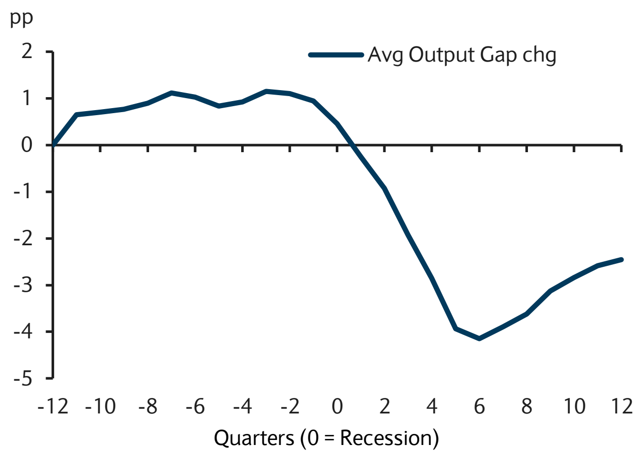
The Output Gap Is Near 2005-06 Peak



Note: Barclays estimates based on method described in "When absolute zero isn't low enough," *Equity Gilt Study 2016*. Estimates of potential output and the output gap are based on a multivariate approach in which inputs on working hours, output, employment, unemployment, and the labor force are used to decompose potential growth into its components. Source: Barclays Research

FIGURE 8

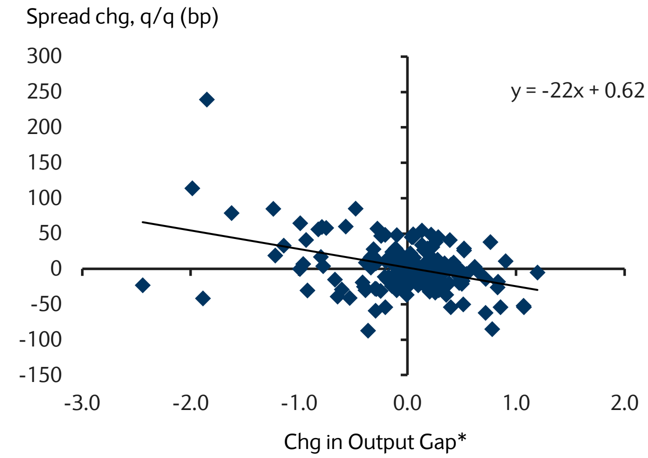
The Output Gap Tends to Roll Over Two to Three Quarters Prior to a Recession



Source: Barclays Research

FIGURE 9

Change in Spreads versus Change in Output Gap (q/q)



Note: * Q/q percentage point change. From 1967 to 2017 (BBB corporate spreads). Source: Moody's, Barclays Research

Qualitative Factors

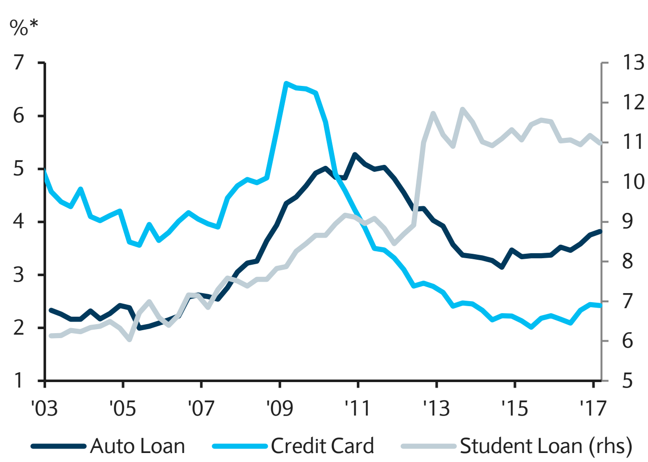
In relation to position within the business cycle and whether the economy is entering a transitional period, it also makes sense to monitor qualitative factors that could pose risks to the current steady state of the economy.

Consumer Credit

Trends in consumer credit have become a cause for concern. Consumer debt outstanding has risen for credit cards, auto loans, and student loans, giving consumers less room to use debt to support spending. Delinquency rates have also begun to rise in all three cohorts (Figure 10), with the auto loan sector particularly worrisome. Along with significant growth in auto credit outstanding, auto loan quality has worsened, and auto sales have lost momentum. While these trends are somewhat troublesome, the size of the auto loan market pales in comparison with the mortgage market, a major issue in the last recession. And despite some deterioration in the quality of the ABS market, losses so far have been

FIGURE 10

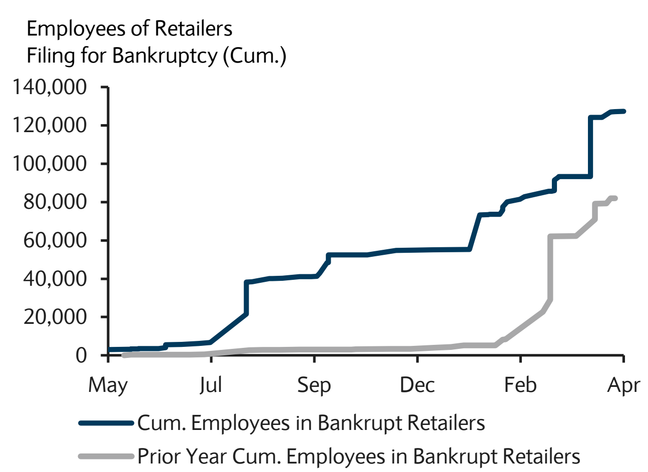
Delinquency Rates Have Started to Rise



Note: * Federal Reserve percent balance 90+ days delinquent loans.
Source: Federal Reserve

FIGURE 11

More Retail Employees Are Losing Jobs, but Not Enough to Affect the Wider Economy



Source: Bloomberg, Barclays Research

modest. Therefore, we do not believe that concerns in the auto sector will push the economy into a transitional state at the moment, but any further developments should be closely monitored.

Retail Sector

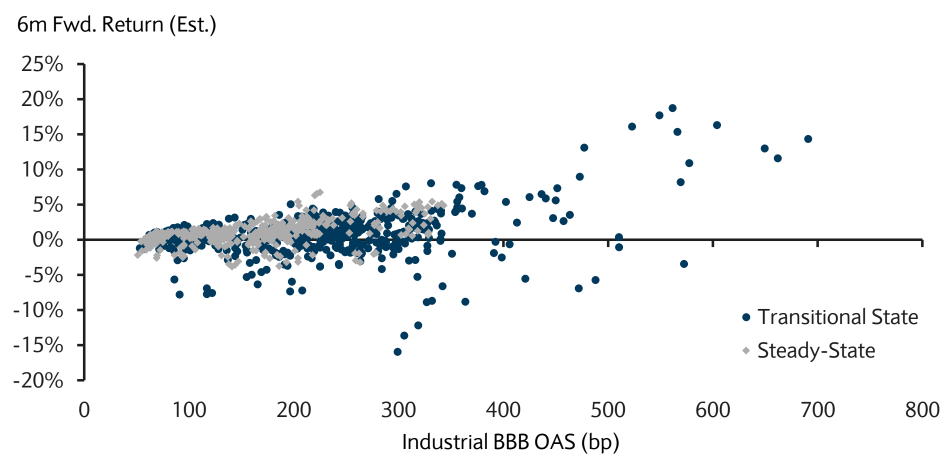
Weakness in retail has been a theme in 2017, with the sector facing revenue losses to e-commerce competitors and lower returns on assets because of overcapacity. Because the retail sector is such a large employer – up to 10% of American workers are in the sector in some capacity – there is a reasonable question about whether a sector restructuring could spill into the broader economy. We examined this question in greater depth in *US Economics and Credit Strategy: Technology-based change leaves retail looking overextended*, and our conclusion is that so far jobs are not being lost at a fast enough pace to create exogenous recession risk. For example, the number of retail workers affected by bankruptcies has increased quickly, rising above 200k over the past 18 months (Figure 11), but given that the US sees about 250k new jobless filings a week (a record low), that is not yet enough to cause broader problems.

Returns Are More Volatile during Transitional States

The next component of our framework is to understand what the most reasonable distribution of returns is likely to be within each state. The first thing we observe is that returns are related to starting valuations in both regimes (Figure 12). We also note that for a given valuation, they are more volatile, and more likely to be negative, in the transitional state.

FIGURE 12

Returns Are Linked to Valuations in Both the Steady and Transitional States, but Transitional Volatility and Downside Are Higher for Any Starting Spread Level

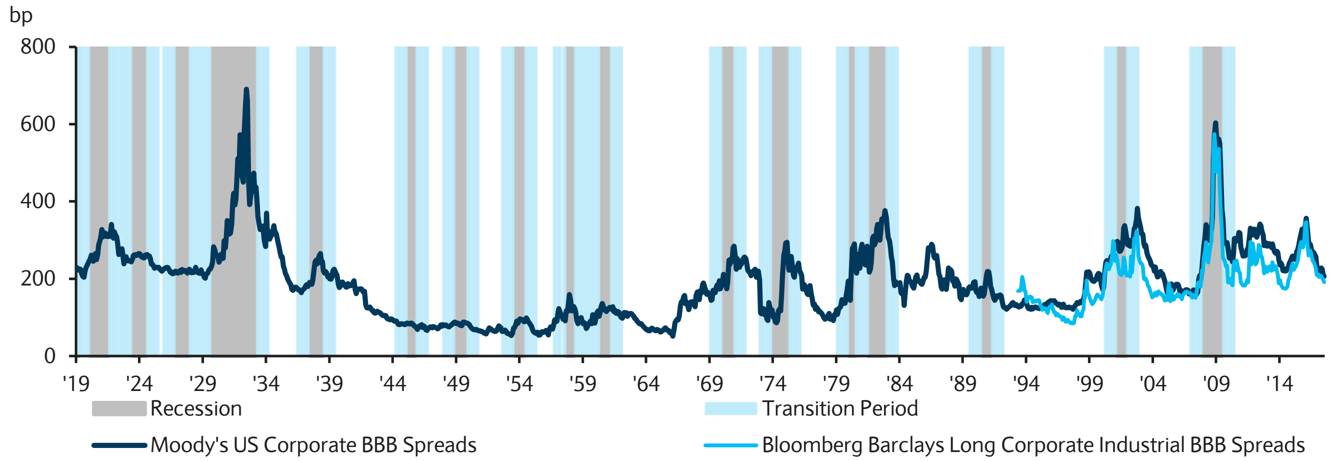


Note: Data ranges from 1919 to 2017 – returns are estimated by spreads multiplied by the closest in date-matched duration of the Bloomberg Barclays BBB Long Index; transition period is 12 months prior through 12 months following a recession. Source: Moody's, Barclays Research

We base this analysis on Moody's data on spreads for industrial BBB long bonds. The series starts in 1919, which allows us to calibrate spread performance around 17 recessions. This is a significant advantage over using the Bloomberg Barclays Indices, which cover only three recession cycles. The disadvantage is that the Moody's data do not provide carefully structured return calculations, so we need to estimate returns using carry, spread changes (assuming the same duration as the BBB long index), and historical default rates to account for losses.

FIGURE 13

Moody's Historical Spread Data Covers More Recessions Than the Bloomberg Barclays Indices History



Source: Moody's, Bloomberg Barclays Indices, Barclays Research

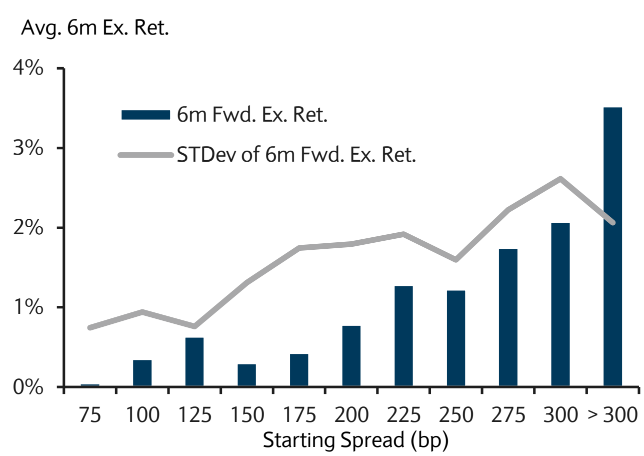
Digging a little deeper into the **steady state,** both returns and volatility rise consistently with starting spreads, in a very orderly relationship (Figure 14). We also note that they look fairly normally distributed, although with some extra downside tail risk (Figure 15).

By contrast, in the **transitional state,** returns are less clearly related to valuations (Figure 16). This seems to be related to more pronounced skew during these periods. But the degree and direction of skew also appear to be a function of valuation:

- When spreads have been in the bottom third of their range historically (under 215bp), we have seen widening that is, on average, enough to more than offset carry (the average estimated six-month return from these situations has been -25bp). There have also been more large losses and widening events than we would expect if returns were normal in these times.

FIGURE 14

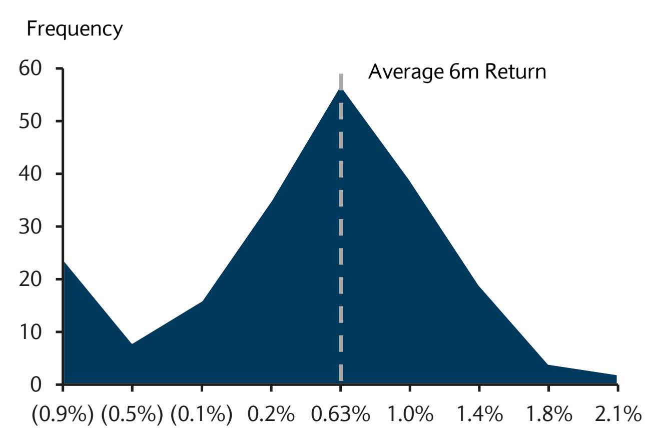
During Steady-State Periods, There Is a Clear Relationship between Spreads and Returns



Source: Moody's, Barclay's Research

FIGURE 15

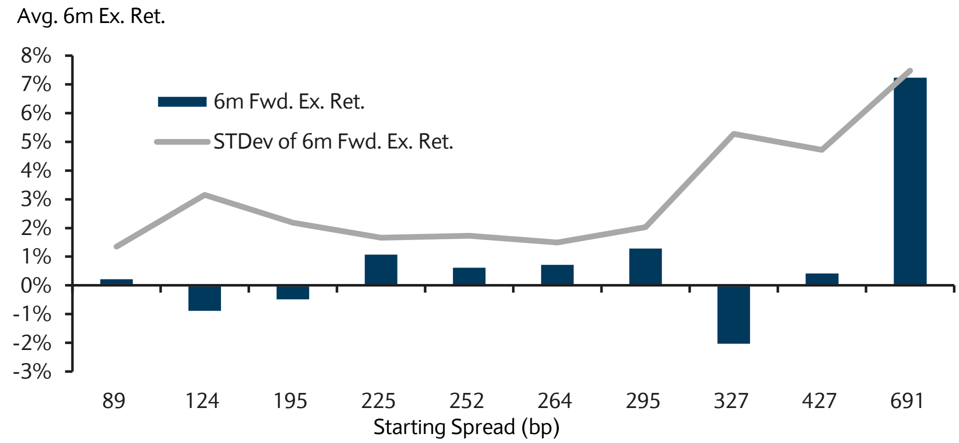
For a Given Starting Spread, Returns Look Mostly Normal (with a Small Negative Skew) during Steady-State Periods



Note: Distribution of estimated returns for starting spreads <100bp. Source: Moody's, Barclays Research

FIGURE 16

The Relationship between Spreads and Returns Is Much Less Orderly in Transitional States

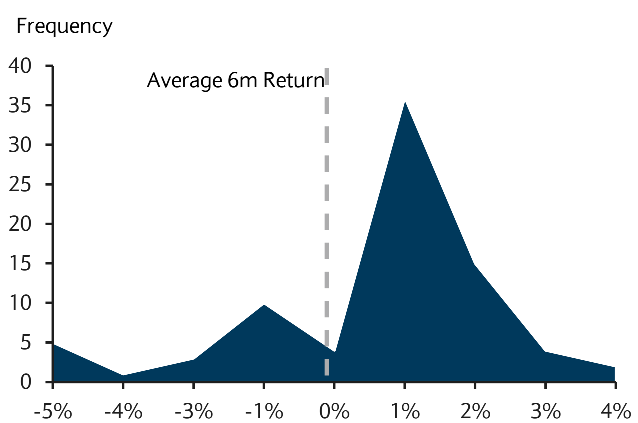


Source: Moody's, Barclays Research

- When spreads have been in middle third (between 215 and 285bp), they have widened on average, but usually not enough to offset all the returns from carry. As a result, the average estimated six-month return has been about 90bp. At the same time, the occurrences of large gains have been balanced fairly evenly against the number of large losses.
- When spreads have been in the widest third (wider than 285bp), they have usually tightened, generating an average estimated six-month return of more than 200bp. They have also had higher-than-normal probabilities of large gains or tightening events.

FIGURE 17

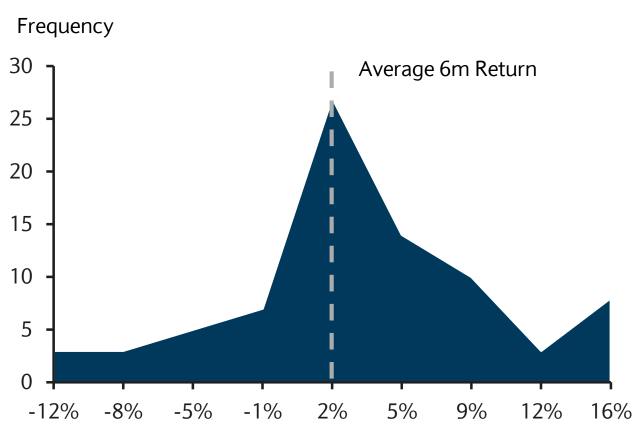
During Transitional States with Tight Spreads (<215bp), BBB Returns Have a Negative Skew . . .



Source: Barclays Research

FIGURE 18

. . . But There Is a Positive Skew during Transitional States with Wide Spreads (>285bp)



Source: Barclays Research

Putting It All Together

Our macro framework uses the following steps:

1. Form a view about the macro state using the macro indicators, modified for any qualitative considerations about whether they should remain relevant.

2. Use that view, plus valuations, to select the most appropriate distribution of returns.

3. Get the central estimate for returns, and use the distribution shape to calibrate the chances of a loss.

Using this framework, we believe that both preconditions for a transitional state – Fed and bank lending standard tightening – are being met; however, jobless claims, the output gap, and the qualitative conditions do not seem to be sufficient to signal the end of the steady state, despite the aging cycle. This suggests a normal distribution of returns, and with BBB valuations currently at 137bp, expected return is near carry (or approximately 72bp), with a 72% probability of positive excess returns.

Conceptually, we can extend the idea of returns near carry from BBBs to the rest of the index. Given that the index is trading at 109bp, the equivalent six-month excess return for the Bloomberg Barclays US Corporate Index would be 57bp.

Analyst Certification

We, Edward Brucker and Ryan Preclaw, CFA, hereby certify (1) that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

Important Disclosures:

Barclays Research is a part of the Investment Bank of Barclays Bank PLC and its affiliates (collectively and each individually, "Barclays")
All authors contributing to this research report are Research Analysts unless otherwise indicated. The publication date at the top of the report reflects the local time where the report was produced and may differ from the release date provided in GMT.

Availability of Disclosures:

For current important disclosures regarding any issuers which are the subject of this research report please refer to https://publicresearch.barclays.com or alternatively send a written request to: Barclays Research Compliance, 745 Seventh Avenue, 13th Floor, New York, NY 10019 or call +1-212-526-1072.

Barclays Capital Inc. and/or one of its affiliates does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that Barclays may have a conflict of interest that could affect the objectivity of this report. Barclays Capital Inc. and/or one of its affiliates regularly trades, generally deals as principal and generally provides liquidity (as market maker or otherwise) in the debt securities that are the subject of this research report (and related derivatives thereof). Barclays trading desks may have either a long and / or short position in such securities, other financial instruments and / or derivatives, which may pose a conflict with the interests of investing customers. Where permitted and subject to appropriate information barrier restrictions, Barclays fixed income research analysts regularly interact with its trading desk personnel regarding current market conditions and prices. Barclays fixed income research analysts receive compensation based on various factors including, but not limited to, the quality of their work, the overall performance of the firm (including the profitability of the Investment Banking Department), the profitability and revenues of the Markets business and the potential interest of the firm's investing clients in research with respect to the asset class covered by the analyst. To the extent that any historical pricing information was obtained from Barclays trading desks, the firm makes no representation that it is accurate or complete. All levels, prices and spreads are historical and do not represent current market levels, prices or spreads, some or all of which may have changed since the publication of this document. The Investment Bank's Research Department produces various types of research including, but not limited to, fundamental analysis, equity-linked analysis, quantitative analysis, and trade ideas. Recommendations contained in one type of research may differ from recommendations contained in other types of research, whether as a result of differing time horizons, methodologies, or otherwise. In order to access Barclays Statement regarding Research Dissemination Policies and Procedures, please refer to *https://publicresearch.barcap.com/static/S_ResearchDissemination.html*. In order to access Barclays Research Conflict Management Policy Statement, please refer to: *https://publicresearch.barcap.com/static/S_ConflictManagement.html*.

All pricing information is indicative only. Prices are sourced from Thomson Reuters as of the last available closing price at the time of production of the research report, unless another time and source is indicated.

Explanation of other types of investment recommendations produced by Barclays FICC Research:

Trade ideas contained herein that have been produced by the Credit teams within Barclays Research are valid at current market conditions and may not be otherwise relied upon.
Trade ideas contained herein that have been produced by other research teams within Barclays FICC Research shall remain open until they are subsequently amended or closed in a future research report.

Disclosure of previous investment recommendations produced by Barclays FICC Research:

Barclays FICC Research may have published other investment recommendations in respect of the same securities/instruments recommended in this research report during the preceding 12 months. To view previous investment recommendations published by Barclays FICC Research in the preceding 12 months please refer to *https://live.barcap.com/go/research/ResearchInvestmentRecommendations*.

Barclays legal entities involved in publishing research:

Barclays Bank PLC (Barclays, UK)
Barclays Capital Inc. (BCI, US)
Barclays Securities Japan Limited (BSJL, Japan)
Barclays Bank PLC, Hong Kong branch (Barclays Bank, Hong Kong)
Barclays Capital Canada Inc. (BCCI, Canada)
Absa Bank Limited (Absa, South Africa)
Barclays Bank Mexico, S.A. (BBMX, Mexico)
Barclays Securities (India) Private Limited (BSIPL, India)
Barclays Bank PLC, India branch (Barclays Bank, India)
Barclays Bank PLC, Singapore branch (Barclays Bank, Singapore)

Disclaimer

This publication has been produced by the Investment Bank of Barclays Bank PLC and/or one or more of its affiliates (collectively and each individually, "Barclays"). It has been distributed by one or more Barclays legal entities that are a part of the Investment Bank as provided below. It is provided to our clients for information purposes only, and Barclays makes no express or implied warranties, and expressly disclaims all warranties of merchantability or fitness for a particular purpose or use with respect to any data included in this publication. To the extent that this publication states on the front page that it is intended for institutional investors and is not subject to all of the independence and disclosure standards applicable to debt research reports prepared for retail investors under U.S. FINRA Rule 2242, it is an “institutional debt research report” and distribution to retail investors is strictly prohibited. Barclays also distributes such institutional debt research reports to various issuers, regulatory and academic organisations for informational purposes and not for the purpose of making investment decisions regarding any debt securities. Any such recipients that do not want to continue receiving Barclays institutional debt

This material is distributed in Mexico by Barclays Bank Mexico, S.A.

Nothing herein should be considered investment advice as defined in the Israeli Regulation of Investment Advisory, Investment Marketing and Portfolio Management Law, 1995 (“Advisory Law”). This document is being made to eligible clients (as defined under the Advisory Law) only. Barclays Israeli branch previously held an investment marketing license with the Israel Securities Authority but it cancelled such license on 30/11/2014 as it solely provides its services to eligible clients pursuant to available exemptions under the Advisory Law, therefore a license with the Israel Securities Authority is not required. Accordingly, Barclays does not maintain an insurance coverage pursuant to the Advisory Law.

Barclays Bank PLC in the Dubai International Financial Centre (Registered No. 0060) is regulated by the Dubai Financial Services Authority (DFSA). Principal place of business in the Dubai International Financial Centre: The Gate Village, Building 4, Level 4, PO Box 506504, Dubai, United Arab Emirates. Barclays Bank PLC-DIFC Branch, may only undertake the financial services activities that fall within the scope of its existing DFSA licence. Related financial products or services are only available to Professional Clients, as defined by the Dubai Financial Services Authority.

Barclays Bank PLC in the UAE is regulated by the Central Bank of the UAE and is licensed to conduct business activities as a branch of a commercial bank incorporated outside the UAE in Dubai (Licence No.: 13/1844/2008, Registered Office: Building No. 6, Burj Dubai Business Hub, Sheikh Zayed Road, Dubai City) and Abu Dhabi (Licence No.: 13/952/2008, Registered Office: Al Jazira Towers, Hamdan Street, PO Box 2734, Abu Dhabi).

Barclays Bank PLC in the Qatar Financial Centre (Registered No. 00018) is authorised by the Qatar Financial Centre Regulatory Authority (QFCRA). Barclays Bank PLC-QFC Branch may only undertake the regulated activities that fall within the scope of its existing QFCRA licence. Principal place of business in Qatar: Qatar Financial Centre, Office 1002, 10th Floor, QFC Tower, Diplomatic Area, West Bay, PO Box 15891, Doha, Qatar. Related financial products or services are only available to Business Customers as defined by the Qatar Financial Centre Regulatory Authority.

This material is distributed in the UAE (including the Dubai International Financial Centre) and Qatar by Barclays Bank PLC.

This material is not intended for investors who are not Qualified Investors according to the laws of the Russian Federation as it might contain information about or description of the features of financial instruments not admitted for public offering and/or circulation in the Russian Federation and thus not eligible for non-Qualified Investors. If you are not a Qualified Investor according to the laws of the Russian Federation, please dispose of any copy of this material in your possession.

This material is distributed in Singapore by the Singapore branch of Barclays Bank PLC, a bank licensed in Singapore by the Monetary Authority of Singapore. For matters in connection with this report, recipients in Singapore may contact the Singapore branch of Barclays Bank PLC, whose registered address is 10 Marina Boulevard, #23-01 Marina Bay Financial Centre Tower 2, Singapore 018983.

This material is distributed to persons in Australia by either Barclays Bank plc , Barclays Capital Inc., Barclays Capital Securities Limited or Barclays Capital Asia Limited. None of Barclays Bank plc, nor any of the other referenced Barclays group entities, hold an Australian financial services licence and instead they each rely on an exemption from the requirement to hold such a licence. This material is intended to only be distributed to “wholesale clients” as defined by the Australian Corporations Act 2001.

IRS Circular 230 Prepared Materials Disclaimer: Barclays does not provide tax advice and nothing contained herein should be construed to be tax advice. Please be advised that any discussion of U.S. tax matters contained herein (including any attachments) (i) is not intended or written to be used, and cannot be used, by you for the purpose of avoiding U.S. tax-related penalties; and (ii) was written to support the promotion or marketing of the transactions or other matters addressed herein. Accordingly, you should seek advice based on your particular circumstances from an independent tax advisor.

BRCF2242