Fallen Angels: a Roadmap to Capital Preservation

Bank of America Merrill Lynch

21 June 2019

High Yield Strategy
United States

Oleg Melentyev, CFA
Credit Strategist
BofAS
+1 646 855 6379
oleg.melentyev@baml.com

Eric Yu
Credit Strategist
BofAS
+1 646 855 8663
eric.x.yu@baml.com

The bar is set high with near-certainty in multiple Fed cuts

Dovish turns by the Fed and the ECB have added fuel to the ongoing rally in risk assets, pushing HY spreads 6bps tighter during the period, to close at 416bps. The 10yr Trsy yield has dropped another 12bps and traded right around 2.00% on Thrs. The German 10yr yield has collapsed to -30bps, a new all-time low record. CCCs continued to underperform BBs, lagging 30bps behind higher quality in total returns for the week.

So what do we think here? In the immediate near term we think it is likely we are going to see a wave of dollars flooding our market, overwhelming its thin liquidity and causing spreads to compress further. When this price-insensitive bid subsides in a few weeks, we will likely see the HY index in the 300s again, possibly retesting April lows of 360bps.

Will those levels be sustainable? The outcome depends on a number of highly uncertain developments. One of them is the actual delivery of priced-in rate cuts. Recall that the consensus was near-certain in seeing higher rates going into Q4, and so the near-certainty of expectations for 3-4 cuts from here should also be viewed with an element of skepticism.

In four out of five times the Fed has engaged in a new round of rate cuts following earlier tightening in policy, the backdrop of risk performance was materially different. June 1989, Sept 1998, Jan 2001, and Aug 2007 – the turning points in Fed policy towards lower rates in the past 30 years – were all preempted by meaningful risk repricing lower, with HY spreads widening 150-300bps from earlier tights within the previous 12 months to an average level of 600bps, and S&P500 dropping by 8-17% from recent highs. Currently we are 56bps away from recent tights in HY and at the peak level in equities. The 10yr has rallied in every episode, by 60-95bps going into such first rate cuts for the cycle; today it has rallied by 135bps and from much lower levels to begin with.

The only exception to this track record is the rate cut in Jul 1995, when the Fed cut rates from 6.00% to 5.75% in a sign of confidence that it has finally got inflation under control: that month the core PCE index touched on 2.0% for the first time in 30 years. Even back then, HY spreads widened 100bps into the rate cut and the 10yr yield was down by 100bps, although S&P500 was only 2% off of its recent peak.

With this evidence in mind, we believe that the market is overestimating the certainty – and particularly the extent – of rate cuts with the risk asset performance where it is. Rates have rallied too much and risk assets have given back too little so far in this episode relative to how things played out in previous cycles. We think it would have to be a near-perfect scenario for the pricing in both rates and risk assets to be sustainable at these levels.

We do not count ourselves as proponents of investing under assumptions of near-perfect scenarios playing out. As such, while we acknowledge a clear near-term risk for spreads to continue to compress we think prudent risk management and discipline become even more important than usual at times like this. At this point in time our longer-term spread targets remain unchanged, at 500bps mid-point and +/-75bps range in 90% of the time.

Fallen Angels: a Roadmap to Capital Preservation

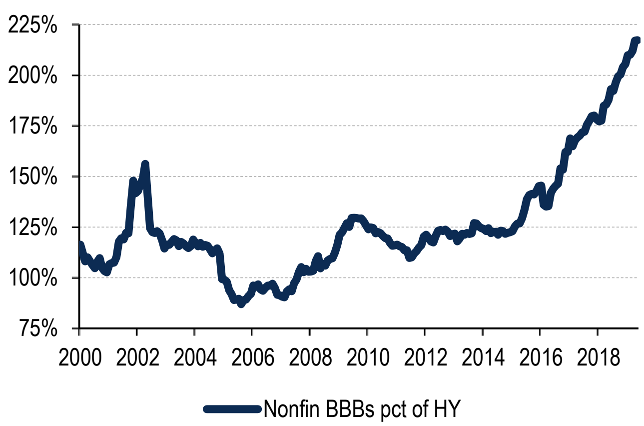
The topic of fallen angel risk continues to dominate many of our client conversations, and here we summarize our thoughts on this topic. BBBs have grown to record size in absolute sense ($2.3trln on non-financial DM USD BBB bonds), as a percent of IG (60%), or as a percent of HY (220%, Figure 1). Given the cyclicality of fallen angel downgrades, our belief that we are in the late stages of this credit cycle, and the size of the cohort, we find this topic to be both timely and relevant. And while it happens to be well publicized in a general sense, we found a strong appetite for research on how to navigate this risk factor more efficiently. Our goal here is to provide a roadmap of historical patterns of behavior in fallen angels as they make their way into the HY space.

Potential volumes of fallen angel downgrades

Our sample data goes back 20 years and includes every DM USD fallen angel during this period, for a grand total of 168 issuers with $460bn of face value. The initial sample of all issuers who ever held a BBB rating during this period of time is 1,500 names with a peak cumulative face value of $5.1trln[1]. Essentially, the fallen angel downgrade rate over this whole period was 11.3% on the issuer scale (168/1,500) and 9.0% on the par scale ($460bn/5.1trln). This implies smaller issuers facing modestly higher chances of downgrade, which seems logical.

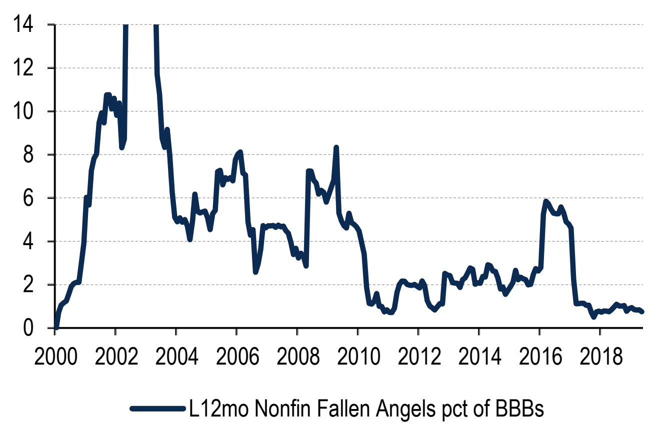
These average downgrade rates are demonstrating variability and cyclicality over time, with Figure 2 showing how the trailing 12-month par-weighted rate oscillated anywhere from 1% on the downside to over 10%-plus at the peak. Given this historical backdrop, we think it would be reasonable to conservatively assume 6-8% peak downgrade rates per year materializing in the next credit cycle.

Figure 1: Nonfinancial BBBs as a pct of the HY market size



Source: BofA Merrill Lynch Global Research

Figure 2: Nonfinancial BBBs downgrade rate to HY



Source: BofA Merrill Lynch Global Research

At 6-8% downgrade rate, the current cohort of 500 non-financial BBB issuers with $2.3trln of bonds outstanding is expected to produce 30-40 fallen angels at the peak of the next credit cycle, amounting to $140-180bn in face value of downgrades, all figures per annum. For some perspective on these estimates, the HY new issue volume was $162bn last year.

Today's BBB cohort composition is not only large in terms of overall size but also top-heavy: 20 current BBB issuers have more bonds outstanding than the largest existing HY issuer (Sprint, at $21.2bn in index-eligible paper).

[1] Sum of maximum face values by ticker at any point while in BBB index, i.e. not necessarily on the same date.

Looking at the top quartile of past fallen angels by size, we determine that they exceeded 0.28% of BBB index size at the time of respective downgrades. Applying this threshold to today's index implies issuers above $6.5bn in index-eligible debt could represent the top quartile of fallen angels in the next downgrade cycle.

There are 100 non-financial BBB issuers of this size today with an average size of $15-20bn. Applying a similar 6-8% downgrade rate to this cohort translates into 6-8 issuers and $100-140bn of large-scale fallen angels per annum. In other words, fallen angels in the top quartile by size are expected to contribute roughly three quarters of total downgrade volume in dollars at the peak of the next cycle.

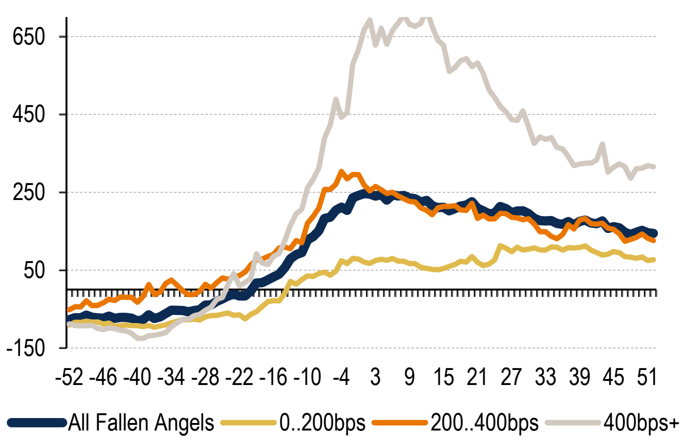
Historical performance around index transitions

In this section we discuss historical performance of fallen angels around index transitions. Figure 3 shows the evolution of spreads in such periods, with the x-axis representing weeks before and after formal index switchover date from IG to HY, covering one year prior and one year after such an event. The y-axis is spread of each fallen angel relative to the BB index, weighted average by bond market value.

The dark blue line represents our overall sample – 168 names with $460bn of par over the past 20 years. This line shows an average fallen angel coming into HY at 250bps over BBs and proceeding to gradually tighten from there.

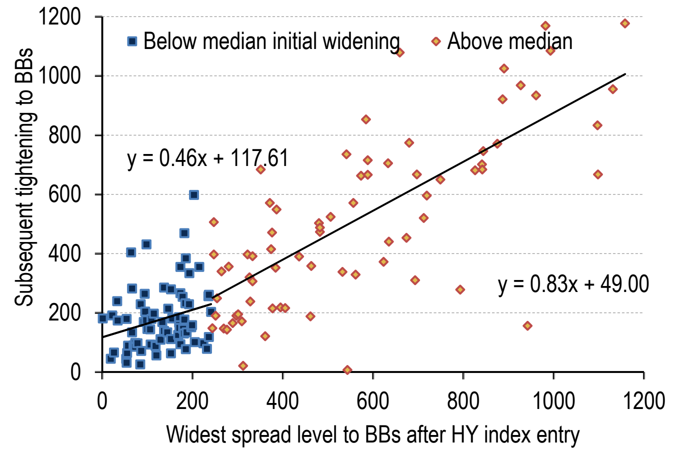
We break the dark blue line into three components – the issuers in the 0-200bps spread to BBs range on the date of index transition (yellow line, 55% of total issuer count), 200-400bps spread range (orange, 22% of total), and those above 400bps[2] (grey, 23%)[3].

Figure 3: Fallen angel average spread premium over BBs



Source: BofA Merrill Lynch Global Research

Figure 4: Fallen angel max spread level vs subsequent spread tightening



Source: BofA Merrill Lynch Global Research

This breakdown provides better understanding of the underlying pricing dynamic of fallen angels. The tightest cohort (0-200bps) generally fails to tighten throughout the observation period of 12 months following the initial index transition, as it averages 80bps over BBs on both ends of this timeframe, and peaks at around 100bps somewhere in the 6-9mo interval.

The middle cohort – names downgraded at 200-400bps vs BBs – peaks right around the point of index transition at about 300bps and proceeds to tighten from there throughout the next 12 months. This category provides the best risk-adjusted performance, in our opinion.

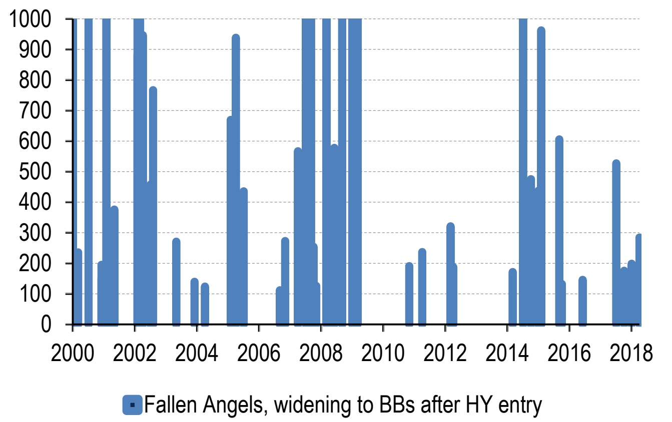
[2] We excluded names transitioning from IG at distressed levels, north of 1,000bps.
[3] The face-value weights are 46%, 30%, and 24% respectively for the three cohorts.

The widest cohort (400bps+) takes about 2-3months to find the bottom in valuations with spread wides peaking at 700bps over BBs, from which point on *it appears to begin* tightening meaningfully.

We say appears, because part of this optical tightening is a result of defaults among fallen angels. We identified 32 issuers in our sample, where at least one ISIN was involved in some form of debt restructuring, be it a distressed exchange or bankruptcy. Most of these issuers were naturally concentrated in the 400bps+ category, and their exits from the sample contributed to what appears as a more significant tightening there.

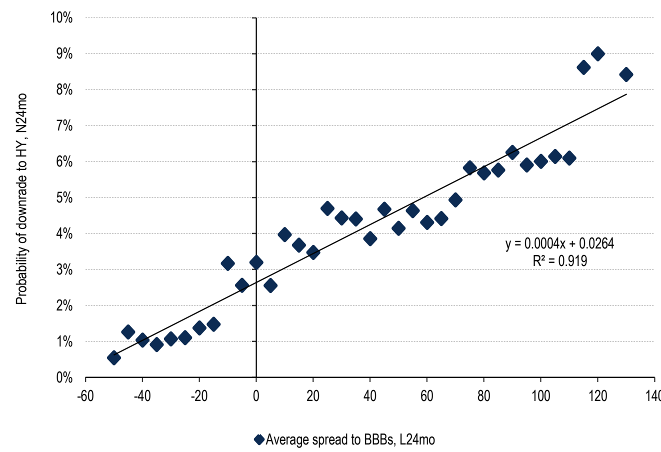
With 32 defaulters in our overall sample of 168 fallen angels, the cumulative default rate there comes in at 19% over 19.5 years[4] or at 97bps per annum. This compares to an average annual default rate of 0.15% in BBBs, 0.37% in BBs, and 1.5% in single-Bs over the same time horizon, according to Moody's. In other words, fallen angels have shown a propensity to default at 6.5x that of BBBs and 2.6x of BBs and 0.7x of single-Bs.

Figure 5: Episodes of significant widening in fallen angels after HY entry



Source: BofA Merrill Lynch Global Research

Figure 6: Probability of fallen angel downgrade by avg spread to BBB



Source: BofA Merrill Lynch Global Research

Figure 4 provides another angle on performance of fallen angels while in HY. Each dot here represents an individual fallen angel, x-axis measuring maximum spread to BBs (between the date of index transition and two months in HY), and y-axis measuring subsequent spread tightening to BBs (between the date of max spread print and the one year anniversary in HY). We calculate two separate regression lines – one for the below-median max spread to BBs (inside of 245bps, blue dots) and another one above it (orange dots). The number of datapoints is exactly the same in both blue and orange segments. We note that betas on both segments are less than 1x, which implies that investors generally don't fully recover the initial spread widening to BBs in fallen angels, at least not in the first twelve months.

Additional context for fallen angel performance is provided in Figure 5 where we plot 61 instances where fallen angels experienced meaningful (100bps+) spread widening to BBs after their index transition. We note that such blowups tend to happen around peak cyclical default rates: the five years between 2000-2002 and 2008-2009 have seen 25 such instances, translating to 25/5 = 5/year. The other 36 instances took place during the stronger parts of credit cycles, averaging 36/19.5 = 1.8/year. In other words, chances of facing a meltdown of fallen angel valuations go up 2.7x in years when defaults accelerate.

[4] We limit the period from Jan 2001 to present for default rate calculation to allow at least at least a full year at the beginning for the sample of fallen angels to populate and to show its propensity to default.

Chances of becoming a fallen angel

We plot historical probabilities of fallen angel downgrades as a function of spreads while in IG in Figure 6. Here, we measure the average trailing-24-months OAS of BBB issuers to overall BBB index, group them together in 5bps increments from -50bps to 100bps on the x-axis and plot them against chances of incurring a downgrade to HY on the y-axis. The historical probabilities are derived by calculating the number of fallen angel downgrade from each cohort of names on each monthly-rebalancing date in the past. Each dot represents a standalone cohort, for example names averaging between 50-55bps to BBBs on a trailing two-year and their chances of being downgraded to HY over the subsequent two years.

The chart shows a 0.0004x beta of downgrade probability vs basis points of recent spread premiums over BBB index, which shows 4bps of downgrade probability for each 1 basis point of excess spread premiums. In addition there is a 2.6% residual (alpha) coefficient, meaning any given BBB name faces this chance of being downgraded to HY absent of any earlier spread premium.

Essentially, a name that has averaged 50bps of OAS over BBBs over the previous two years has a 50*4 + 260 = 4.6% chance of becoming a fallen angel in the next two years. A name that has averaged 100bps faces a 100*4 + 260 = 6.6% chance, and so on.

Figure 7 shows the list of current IG issuers who have averaged spreads over the BBB index in excess of +25bps over the past two years, limited to a min $4bn in face value.

Figure 7: List of current BBB issuers with average spread vs BBB index >25bps over last 2 years

				Ticker OAS vs BBBs	
Ticker	**Issuer Name**	**Industry**	**Face**	**Current**	**L24mo Avg**
ETP	ENERGY TRAN PTNR	Energy	31,044	44	54
KMI	KINDER MORGAN	Energy	28,501	15	28
CHTR	CHARTER COMM OPT	Cable	25,822	35	55
TRPCN	ANR PIPELINE	Energy	17,900	26	93
DELL	DELL INTL	Technology	16,250	70	54
ENELIM	ENEL SPA	Utilities	15,750	28	35
TWC	TIME WARNER CABL	Cable	11,900	101	73
APC	ANADARKO	Energy	8,377	43	42
PAA	PLAINS ALL AMER	Energy	7,750	28	35
APA	APACHE CORP	Energy	7,748	66	37
VIA	VIACOM INC	Media	6,623	20	45
CVECN	CENOVUS ENERGY	Energy	6,333	94	79
AVOL	AVOLON HOLDINGS FNDG LTD	Transportation	6,050	33	39
ECACN	NEWFIELD EXPLORATION	Energy	5,917	37	47
NBL	NOBLE ENERGY INC	Energy	5,700	44	28
HES	HESS CORP	Energy	5,528	125	106
GLPI	GAMING AND LEISURE PPTY	Gaming	4,975	38	33
ABXCN	BARRICK AUSTRALIA FINANC	Materials	4,771	42	26
SYNNVX	SYNGENTA FINANCE	Chemicals	4,750	51	56
WES	WESTERN GAS	Energy	4,620	107	44
EDF	ELEC DE FRANCE	Utilities	4,500	89	125
STX	SEAGATE HDD CAYM	Technology	4,363	100	115
BRITEL	BRITISH TELECOM PLC	Telecoms	4,045	39	37

Source: BofA Merrill Lynch Global Research

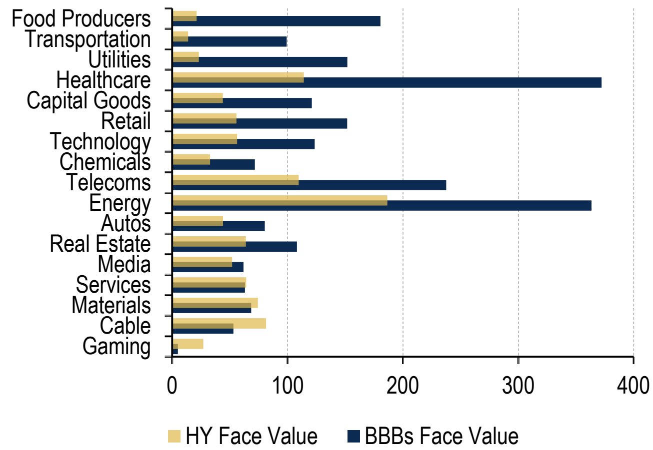
Sector impact from fallen angel risk

In this section, we show the sector distribution of BBB overhang, starting with Figure 8, where the blue bars represent face value of DM USD BBBs by sector, next to yellow bars corresponding to the size of respective HY segment. Figure 9 goes on to show the ratio of outstanding BBBs to BBs in each sector. Both charts are ranked based on this ratio.

There are two important takeaways from this picture. One is to understand the absolute size of the issue, where dollars-at-risk are concentrated in healthcare and energy (both at $300bn+ of BBBs), followed by telecoms ($240bn), food producers, utilities, retail, and technology (all at $100bn+). These seven sectors carry $1.6trln of all BBB debt outstanding.

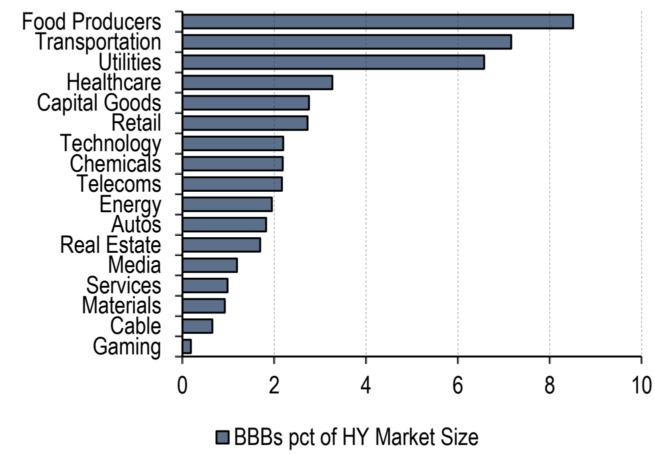
When the credit cycle turns, some of these sectors are likely to play a key role in defining the extent of the fallen angel risk based on their size alone. Regular readers of our research will also recognize a strong overlap between this shortlist and those we identified as being more exposed from the capital over-allocation standpoint: healthcare, utilities, food producers, and technology are at the top of that list too. This is not a random coincidence; over-allocation of capital and excess leverage are related developments.

Figure 8: BBB and HY sector sizes by face value



Source: BofA Merrill Lynch Global Research

Figure 9: Ratio of BBB and HY sector sizes by face value



Source: BofA Merrill Lynch Global Research

Figure 8 is also helpful in making a relative risk argument, where sectors with high ratio of BBB to BB debt could get more easily overwhelmed even with moderate downgrades, as HY investors have less familiarity with industry dynamics. The risk along this scale is distributed in line with the ranking of sectors in Figure 8.

Sectors that we like fundamentally – cable, chemicals, real estate, and gaming – happen to have materially lower exposures to fallen angel risk, compared to others. Probably not a random coincidence either.

Market recap

DM USD HY index delivered 0.51% in total return and 0.05% in excess return over the past week, mostly as a product of lower Tsy yields. In ratings, BBs outperformed CCCs by 30bps.

Most of the sectors tightened for the week, led by telecoms (S, INTEL, TMUS), cable (SFRFP, ALTICE, ATCNA), and financials (AMGFIN, NAVI, QUICKN). Energy (NBR, GPOR, AR) and retail (REYNOL, PETM) on the other hand widened.

In technicals this week, we have seen an above average $3.9bn coupons this week, with very little scheduled for next week; coupons of $1.3bn is coming our way the week of July 1st. Calls/maturities came in at $5.9bn this week, and we are expecting this pace to slow down next week ($300mn) then accelerate the week after ($7.9bn). On the new issuance side, a strong $6.1bn was priced.

We saw one distressed exchange within the past week. Denbury Resources, a US petroleum producer with $2.1bn outstanding debts in the HY index, exchanged a portion of its senior subordinated notes for a combination of new senior secured notes, cash, and new senior convertible notes.

Figure 10: Figure 1: Rating agency HY actions in the past week

Company Name	Agency		New	Old	Country	Industry	Total Debt
Oasis Petroleum Inc	Moody's	▲	B1	B2	US	Energy	2,829
Denbury Resources Inc	S&P	▼	SD	CC	US	Energy	2,567
Viking Cruises Ltd	S&P	▲	B+	B	US	Services	1,345
Kennedy-Wilson Inc	Moody's	▲	B1	B2	US	Real Estate	1,288
Comstock Resources Inc	Fitch	▲	B- *+	B-	US	Energy	1,271
Sotheby's	Moody's	▼	Ba2 *-	Ba2	US	Retail	1,157
Hecla Mining Co	S&P	▼	B-	B+	US	Materials	570
LPL Holdings Inc	Moody's	▲	Ba2	Ba3	US	Financials	
NVA Holdings Inc/United States	Moody's	▲	B3 *+	B3	US	Healthcare	

Source: BofA Merrill Lynch Global Research, Fitch, Moody's, S&P

The latest BofAML Global Fund Manager Survey (FMS) turned out to be the most bearish in terms of investor confidence since Global Financial Crisis on the back of trade war, recession, as well as monetary policy impotence. The survey also showed the lowest relative allocation of equities over bonds since May 2009.

Disclosures

Important Disclosures

Due to the nature of strategic analysis, the issuers or securities recommended or discussed in this report are not continuously followed. Accordingly, investors must regard this report as providing stand-alone analysis and should not expect continuing analysis or additional reports relating to such issuers and/or securities.
BofA Merrill Lynch Research Personnel (including the analyst(s) responsible for this report) receive compensation based upon, among other factors, the overall profitability of Bank of America Corporation, including profits derived from investment banking. The analyst(s) responsible for this report may also receive compensation based upon, among other factors, the overall profitability of the Bank's sales and trading businesses relating to the class of securities or financial instruments for which such analyst is responsible.
BofA Merrill Lynch fixed income analysts regularly interact with sales and trading desk personnel in connection with their research, including to ascertain pricing and liquidity in the fixed income markets.

Other Important Disclosures

Prices are indicative and for information purposes only. Except as otherwise stated in the report, for the purpose of any recommendation in relation to: (i) an equity security, the price referenced is the publicly traded price of the security as of close of business on the day prior to the date of the report or, if the report is published during intraday trading, the price referenced is indicative of the traded price as of the date and time of the report; or (ii) a debt security (including equity preferred and CDS), prices are indicative as of the date and time of the report and are from various sources including Bank of America Merrill Lynch trading desks.
The date and time of completion of the production of any recommendation in this report shall be the date and time of dissemination of this report as recorded in the report timestamp.

This report may refer to fixed income securities that may not be offered or sold in one or more states or jurisdictions. Readers of this report are advised that any discussion, recommendation or other mention of such securities is not a solicitation or offer to transact in such securities. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor for information relating to fixed income securities.
Rule 144A securities may be offered or sold only to persons in the U.S. who are Qualified Institutional Buyers within the meaning of Rule 144A under the Securities Act of 1933, as amended.
SECURITIES DISCUSSED HEREIN MAY BE RATED BELOW INVESTMENT GRADE AND SHOULD THEREFORE ONLY BE CONSIDERED FOR INCLUSION IN ACCOUNTS QUALIFIED FOR SPECULATIVE INVESTMENT.
Recipients who are not institutional investors or market professionals should seek the advice of their independent financial advisor before considering information in this report in connection with any investment decision, or for a necessary explanation of its contents.
The securities discussed in this report may be traded over-the-counter. Retail sales and/or distribution of this report may be made only in states where these securities are exempt from registration or have been qualified for sale.
Officers of BofAS or one or more of its affiliates (other than research analysts) may have a financial interest in securities of the issuer(s) or in related investments.
This report, and the securities discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors.
Information relating to Affiliates of BofAS, MLPF&S and Distribution of Affiliate Research Reports:
BofA Merrill Lynch Global Research policies relating to conflicts of interest are described at https://rsch.baml.com/coi
"BofA Merrill Lynch" includes BofA Securities, Inc. ("BofAS"), Merrill Lynch, Pierce, Fenner & Smith Incorporated ("MLPF&S") and its affiliates. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor if they have questions concerning this report or concerning the appropriateness of any investment idea described herein for such investor. "BofA Merrill Lynch" and "Merrill Lynch" are each global brands for BofA Merrill Lynch Global Research.
BofAS and/or MLPF&S or may in the future distribute, information of the following non-US affiliates in the US (short name: legal name, regulator): Merrill Lynch (South Africa): Merrill Lynch South Africa (Pty) Ltd., regulated by The Financial Service Board; MLI (UK): Merrill Lynch International, regulated by the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA); BofASE (France): BofA Securities Europe SA is authorized by the Autorité de Contrôle Prudentiel et de Résolution (ACPR) and regulated by the ACPR and the Autorité des Marchés Financiers (AMF); BAMLI DAC (Milan): Bank of America Merrill Lynch International DAC, Milan Branch, regulated by the Bank of Italy, the European Central Bank (ECB) and the Central Bank of Ireland (CBI); Merrill Lynch (Australia): Merrill Lynch Equities (Australia) Limited, regulated by the Australian Securities and Investments Commission; Merrill Lynch (Hong Kong): Merrill Lynch (Asia Pacific) Limited, regulated by the Hong Kong Securities and Futures Commission (HKSFC); Merrill Lynch (Singapore): Merrill Lynch (Singapore) Pte Ltd, regulated by the Monetary Authority of Singapore (MAS); Merrill Lynch (Canada): Merrill Lynch Canada Inc, regulated by the Investment Industry Regulatory Organization of Canada; Merrill Lynch (Mexico): Merrill Lynch Mexico, SA de CV, Casa de Bolsa, regulated by the Comisión Nacional Bancaria y de Valores; Merrill Lynch (Argentina): Merrill Lynch Argentina SA, regulated by Comisión Nacional de Valores; Merrill Lynch (Japan): Merrill Lynch Japan Securities Co., Ltd., regulated by the Financial Services Agency; Merrill Lynch (Seoul): Merrill Lynch International, LLC Seoul Branch, regulated by the Financial Supervisory Service; Merrill Lynch (Taiwan): Merrill Lynch Securities (Taiwan) Ltd., regulated by the Securities and Futures Bureau; DSP Merrill Lynch (India): DSP Merrill Lynch Limited, regulated by the Securities and Exchange Board of India; Merrill Lynch (Indonesia): PT Merrill Lynch Sekuritas Indonesia, regulated by Otoritas Jasa Keuangan (OJK); Merrill Lynch (Israel): Merrill Lynch Israel Limited, regulated by Israel Securities Authority; Merrill Lynch (Russia): OOO Merrill Lynch Securities, Moscow, regulated by the Central Bank of the Russian Federation; Merrill Lynch (DIFC): Merrill Lynch International (DIFC Branch), regulated by the Dubai Financial Services Authority (DFSA); Merrill Lynch (Spain): Merrill Lynch Capital Markets Espana, S.A.S.V., regulated by Comisión Nacional del Mercado De Valores; Merrill Lynch (Brazil): Bank of America Merrill Lynch Banco Multiplo S.A., regulated by Comissão de Valores Mobiliários; Merrill Lynch KSA Company: Merrill Lynch Kingdom of Saudi Arabia Company, regulated by the Capital Market Authority.
This information: has been approved for publication and is distributed in the United Kingdom (UK) to professional clients and eligible counterparties (as each is defined in the rules of the FCA and the PRA) by MLI (UK), which is authorized by the PRA and regulated by the FCA and the PRA - details about the extent of our regulation by the FCA and PRA are available from us on request; has been approved for publication and is distributed in the European Economic Area (EEA) by BofASE (France), which is authorized by the ACPR and regulated by the ACPR and the AMF; has been considered and distributed in Japan by Merrill Lynch (Japan), a registered securities dealer under the Financial Instruments and Exchange Act in Japan, or its permitted affiliates; is issued and distributed in Hong Kong by Merrill Lynch (Hong Kong) which is regulated by HKSFC; is issued and distributed in Taiwan by Merrill Lynch (Taiwan); is issued and distributed in India by DSP Merrill Lynch (India); and is issued and distributed in Singapore to institutional investors and/or accredited investors (each as defined under the Financial Advisers Regulations) by Merrill Lynch (Singapore) (Company Registration No 198602883D). Merrill Lynch (Singapore) is regulated by MAS. Bank of America N.A., Australian Branch (ARBN 064 874 531), AFS License 412901 (BANA Australia) and Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795), AFS License 235132 (MLEA) distribute this information in Australia only to 'Wholesale' clients as defined by s.761G of the Corporations Act 2001. With the exception of BANA Australia, neither MLEA nor any of its affiliates involved in preparing this information is an Authorised Deposit-Taking Institution under the Banking Act 1959 nor regulated by the Australian Prudential Regulation Authority. No approval is required for publication or distribution of this information in Brazil and its local distribution is by Merrill Lynch (Brazil) in accordance with applicable regulations. Merrill Lynch (DIFC) is authorized and regulated by the DFSA. Information prepared and issued by Merrill Lynch (DIFC) is done so in accordance with the requirements of the DFSA conduct of business rules. Bank of America Merrill Lynch International DAC, Frankfurt Branch (BAMLI DAC (Frankfurt)) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Merrill Lynch entities, including BAMLI DAC and BofASE (France), may outsource/delegate the marketing and/or provision of certain research services or aspects of research services to other branches or members of the BofA Merrill Lynch group. You may be contacted by a different BofA Merrill Lynch entity acting for and on behalf of your service provider where permitted by applicable law. This does not change your service provider. Please use this link http://www.bankofamerica.com/emaildisclaimer for further information.
This information has been prepared and issued by BofAS and/or one or more of its non-US affiliates. The author(s) of this information may not be licensed to carry on regulated activities in your jurisdiction and, if not licensed, do not hold themselves out as being able to do so. BofAS and/or MLPF&S is the distributor of this information in the US and accepts full responsibility for information distributed to BofAS and/or MLPF&S clients in the US by its non-US affiliates. Any US person receiving this information and wishing to effect any transaction in any security discussed herein should do so through BofAS and/or MLPF&S and not such foreign affiliates. Hong Kong recipients of this information should contact Merrill Lynch (Asia Pacific) Limited in

respect of any matters relating to dealing in securities or provision of specific advice on securities or any other matters arising from, or in connection with, this information. Singapore recipients of this information should contact Merrill Lynch (Singapore) Pte Ltd in respect of any matters arising from, or in connection with, this information.

General Investment Related Disclosures:

Taiwan Readers: Neither the information nor any opinion expressed herein constitutes an offer or a solicitation of an offer to transact in any securities or other financial instrument. No part of this report may be used or reproduced or quoted in any manner whatsoever in Taiwan by the press or any other person without the express written consent of BofA Merrill Lynch.

This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Merrill Lynch clients. Neither the information nor any opinion expressed constitutes an offer or an invitation to make an offer, to buy or sell any securities or other financial instrument or any derivative related to such securities or instruments (e.g., options, futures, warrants, and contracts for differences). This document is not intended to provide personal investment advice and it does not take into account the specific investment objectives, financial situation and the particular needs of, and is not directed to, any specific person(s). This document and its content do not constitute, and should not be considered to constitute, investment advice for purposes of ERISA, the US tax code, the Investment Advisers Act or otherwise. Investors should seek financial advice regarding the appropriateness of investing in financial instruments and implementing investment strategies discussed or recommended in this document and should understand that statements regarding future prospects may not be realized. Any decision to purchase or subscribe for securities in any offering must be based solely on existing public information on such security or the information in the prospectus or other offering document issued in connection with such offering, and not on this document.

Securities and other financial instruments referred to herein, or recommended, offered or sold by BofA Merrill Lynch, are not insured by the Federal Deposit Insurance Corporation and are not deposits or other obligations of any insured depository institution (including, Bank of America, N.A.). Investments in general and, derivatives, in particular, involve numerous risks, including, among others, market risk, counterparty default risk and liquidity risk. No security, financial instrument or derivative is suitable for all investors. In some cases, securities and other financial instruments may be difficult to value or sell and reliable information about the value or risks related to the security or financial instrument may be difficult to obtain. Investors should note that income from such securities and other financial instruments, if any, may fluctuate and that price or value of such securities and instruments may rise or fall and, in some cases, investors may lose their entire principal investment. Past performance is not necessarily a guide to future performance. Levels and basis for taxation may change.

BofA Merrill Lynch is aware that the implementation of the ideas expressed in this report may depend upon an investor's ability to "short" securities or other financial instruments and that such action may be limited by regulations prohibiting or restricting "shortselling" in many jurisdictions. Investors are urged to seek advice regarding the applicability of such regulations prior to executing any short idea contained in this report.

This report may contain a trading idea or recommendation which highlights a specific identified near-term catalyst or event impacting a security, issuer, industry sector or the market generally that presents a transaction opportunity, but does not have any impact on the analyst's particular "Overweight" or "Underweight" rating (which is based on a three month trade horizon). Trading ideas and recommendations may differ directionally from the analyst's rating on a security or issuer because they reflect the impact of a near-term catalyst or event.

Foreign currency rates of exchange may adversely affect the value, price or income of any security or financial instrument mentioned in this report. Investors in such securities and instruments effectively assume currency risk.

UK Readers: The protections provided by the U.K. regulatory regime, including the Financial Services Scheme, do not apply in general to business coordinated by BofA Merrill Lynch entities located outside of the United Kingdom.

BofAS or one of its affiliates is a regular issuer of traded financial instruments linked to securities that may have been recommended in this report. BofAS or one of its affiliates may, at any time, hold a trading position (long or short) in the securities and financial instruments discussed in this report.

BofA Merrill Lynch, through business units other than BofA Merrill Lynch Global Research, may have issued and may in the future issue trading ideas or recommendations that are inconsistent with, and reach different conclusions from, the information presented herein. Such ideas or recommendations may reflect different time frames, assumptions, views and analytical methods of the persons who prepared them, and BofA Merrill Lynch is under no obligation to ensure that such other trading ideas or recommendations are brought to the attention of any recipient of this information.

In the event that the recipient received this information pursuant to a contract between the recipient and BofAS for the provision of research services for a separate fee, and in connection therewith BofAS may be deemed to be acting as an investment adviser, such status relates, if at all, solely to the person with whom BofAS has contracted directly and does not extend beyond the delivery of this report (unless otherwise agreed specifically in writing by BofAS If such recipient uses the services of BofAS in connection with the sale or purchase of a security referred to herein, BofAS may act as principal for its own account or as agent for another person. BofAS is and continues to act solely as a broker-dealer in connection with the execution of any transactions, including transactions in any securities referred to herein.

Copyright, User Agreement and other general information related to this report:

Materials prepared by BofA Merrill Lynch Global Research personnel are based on public information. Facts and views presented in this material have not been reviewed by, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch, including investment banking personnel. BofA Merrill Lynch has established information barriers between BofA Merrill Lynch Global Research and certain business groups. As a result, BofA Merrill Lynch does not disclose certain client relationships with, or compensation received from, such issuers. To the extent this material discusses any legal proceeding or issues, it has not been prepared as nor is it intended to express any legal conclusion, opinion or advice. Investors should consult their own legal advisers as to issues of law relating to the subject matter of this material. BofA Merrill Lynch Global Research personnel's knowledge of legal proceedings in which any BofA Merrill Lynch entity and/or its directors, officers and employees may be plaintiffs, defendants, co-defendants or co-plaintiffs with or involving issuers mentioned in this material is based on public information. Facts and views presented in this material that relate to any such proceedings have not been reviewed by, discussed with, and may not reflect information known to, professionals in other business areas of BofA Merrill Lynch in connection with the legal proceedings or matters relevant to such proceedings.

This information has been prepared independently of any issuer of securities mentioned herein and not in connection with any proposed offering of securities or as agent of any issuer of any securities. None of BofAS any of its affiliates or their research analysts has any authority whatsoever to make any representation or warranty on behalf of the issuer(s). BofA Merrill Lynch Global Research policy prohibits research personnel from disclosing a recommendation, investment rating, or investment thesis for review by an issuer prior to the publication of a research report containing such rating, recommendation or investment thesis.

Any information relating to the tax status of financial instruments discussed herein is not intended to provide tax advice or to be used by anyone to provide tax advice. Investors are urged to seek tax advice based on their particular circumstances from an independent tax professional.

The information herein (other than disclosure information relating to BofA Merrill Lynch and its affiliates) was obtained from various sources and we do not guarantee its accuracy. This information may contain links to third-party websites. BofA Merrill Lynch is not responsible for the content of any third-party website or any linked content contained in a third-party website. Content contained on such third-party websites is not part of this information and is not incorporated by reference. The inclusion of a link does not imply any endorsement by or any affiliation with BofA Merrill Lynch. Access to any third-party website is at your own risk, and you should always review the terms and privacy policies at third-party websites before submitting any personal information to them. BofA Merrill Lynch is not responsible for such terms and privacy policies and expressly disclaims any liability for them.

All opinions, projections and estimates constitute the judgment of the author as of the date of publication and are subject to change without notice. Prices also are subject to change without notice. BofA Merrill Lynch is under no obligation to update this information and BofA Merrill Lynch's ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Merrill Lynch will not update any fact, circumstance or opinion contained herein.

Certain outstanding reports or investment opinions relating to securities, financial instruments and/or issuers may no longer be current. Always refer to the most recent research report relating to an issuer prior to making an investment decision.

In some cases, an issuer may be classified as Restricted or may be Under Review or Extended Review. In each case, investors should consider any investment opinion relating to such issuer (or its security and/or financial instruments) to be suspended or withdrawn and should not rely on the analyses and investment opinion(s) pertaining to such issuer (or its securities and/or financial instruments) nor should the analyses or opinion(s) be considered a solicitation of any kind. Sales persons and financial advisors affiliated with BofAS or any of its affiliates may not solicit purchases of securities or financial instruments that are Restricted or Under Review and may only solicit securities under Extended Review in accordance with firm policies.

Neither BofA Merrill Lynch nor any officer or employee of BofA Merrill Lynch accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.