

Credit Strategy - Europe

Downgrades – the going gets tough

Credit Analysis

Net downgrade volumes now stand at €294bn this year

In this note, we provide an update of recent credit rating changes across both IG and HY. Rating agencies continue to respond to the unprecedented economic shock with €294bn of rating downgrades, across IG and HY, since the start of the year, including €261bn since the start of the COVID-19 crisis in March (based on ICE index data). We find this to be the fastest start to a downgrade cycle in the € IG and HY space on record, surpassing both that of the GFC ('08/'09) and Eurozone crisis ('11/'12).

High-yield feeling the pinch

Rating agencies seem to be particularly focused on high-yield ratings at present. Net HY downgrade volumes over the last three months (€63bn) have now surpassed the peak observed in Jun '09. The picture is less extreme, on the other hand, for high-grade: 3m net downgrade volumes (€214bn), albeit high, are still well below the '09 peak (Chart 3).

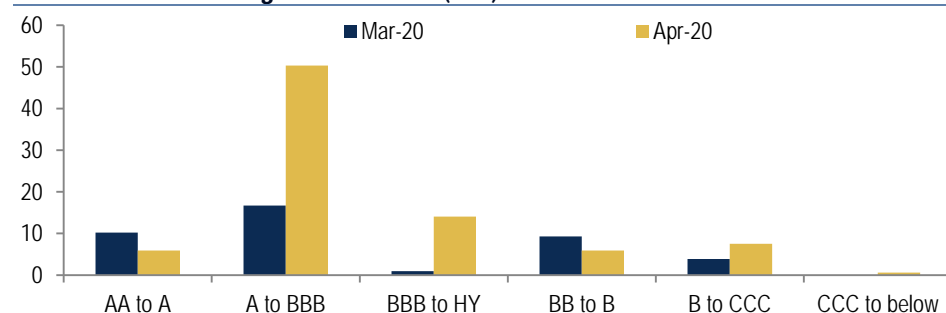
April showers

Last month, high-grade issuers suffered €108bn of net downgrades, a slight acceleration from the €100bn of downgrades witnessed in March. In high-yield, net downgrades were still a high €21bn in April, albeit down from €36bn in March. By sectors, April high-grade downgrades were led by banks (€35bn), autos (€30bn) and real estate (€12.7bn), accounting for 70% of downgrades. Across high-yield, while the pace of downgrades dropped for banks and autos, it accelerated for services (Chart 7). By country, French and German firms suffered the most downgrades in April. Conversely, only €500mn of Italian debt was downgraded (Charts 8 and 9). Finally, outside of PEMEX, there were no other Fallen Angels in April, which may explain the ECB's reticence to add them to QE.

Short-term outlook points to further downgrades ahead

The volume of euro corporate bonds on negative watch by at least one agency currently stands at €300bn in IG and €52bn in HY. This suggests to us a busy few months ahead of downgrades by the agencies and a [return of Fallen Angels](#). The good news? Companies are proving that there is no liquidity crisis: the volume of IG issuance last month was a record-setting at €109bn. And as companies begin to repay recently-drawn revolvers, expect large – and cheap – bond issuance for a number of months still.

Chart 1: Par amount rating transition matrix (€ bn)



Source: BofA Global Research, ICE Data Indices, LLC, Bloomberg. Gross downgrades.

04 May 2020

Credit Strategy
Europe

Elyas Galou
Credit Strategist
BofASE (France)
+33 1 8770 0087
elyas.galou@bofa.com

Barnaby Martin
Credit Strategist
MLI (UK)
+44 20 7995 0458
barnaby.martin@bofa.com

Ioannis Angelakis
Credit Derivatives Strategist
MLI (UK)
+44 20 7996 0059
ioannis.angelakis@bofa.com

BofA Securities does and seeks to do business with issuers covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Refer to important disclosures on page 7 to 9.

12135931

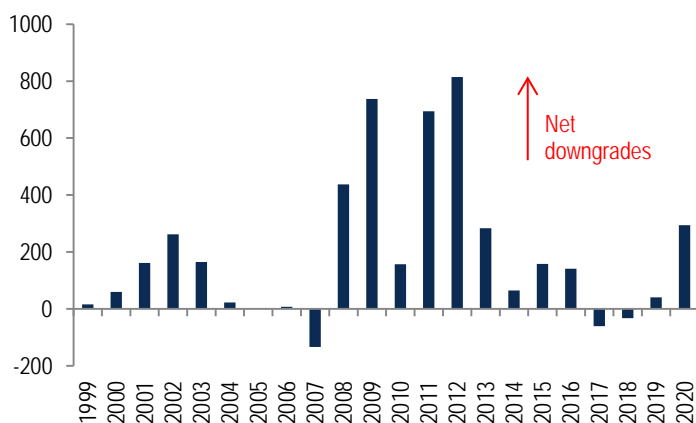
Timestamp: 04 May 2020 12:45AM EDT

Rating migrations – the key numbers

In this note, we focus on corporate rating migrations in the Euro credit markets. The unprecedented COVID-19 shock, and subsequent lock-down response, has pushed rating agencies to downgrade corporate credit ratings at the fastest pace on record in HY. We highlight here the key numbers for 2020, and update our framework with April data.

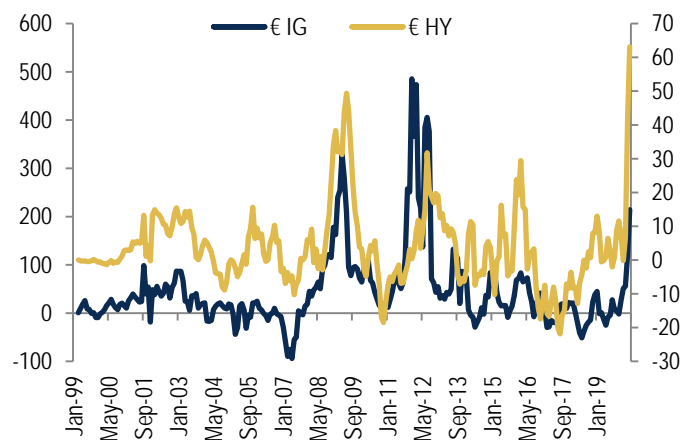
- YTD net downgrades reached €294bn in April, for IG and HY companies in total (Chart 1).
- While the 3m cumulative pace of (gross) IG downgrades currently remains well below that seen during the GFC ('08/'09) or the Eurozone debt crisis ('11/'12), cumulative HY downgrade volumes over the last three months have surpassed the peak observed in Jun '09 (Chart 3).
- € IG companies suffered €108bn of net downgrades in Apr '20, a slight acceleration from the €100bn volumes registered in March. In HY, net downgrades roughly halved to €21bn in April, down from €36bn in March (Chart 4).
- YTD net downgrade volumes in IG rose to €231bn in April, the highest yearly total since 2012 (Chart 4). YTD net downgrade volumes in HY increased to €63bn, the highest annual pace ever registered after four months (Chart 5).
- In IG, similarly to March (chart 6), banks (€35bn), autos (€30bn) and real estate (€12.7bn) were the three sectors that recorded the highest downgrade volumes last month, accounting for 70% of all the April IG downgrades (€110.3bn).
- In HY, only five sectors (healthcare, insurance, real estate, telecoms and utilities) avoided any downgrades last month. While the pace of downgrades slowed for banks and autos, it accelerated materially for services and consumer goods (Chart 7).
- Charts 8 and 9 show that French and German firms suffered the most downgrades in April. Conversely, only €500mn of Italian debt was downgraded in April.

Chart 2: € credit annual net migration volumes (€ bn, IG + HY)



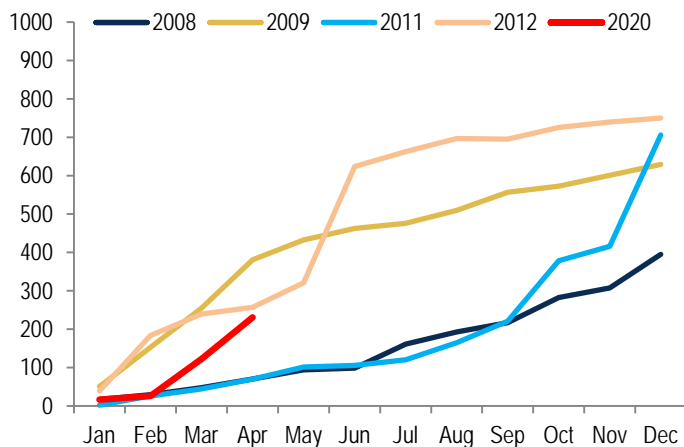
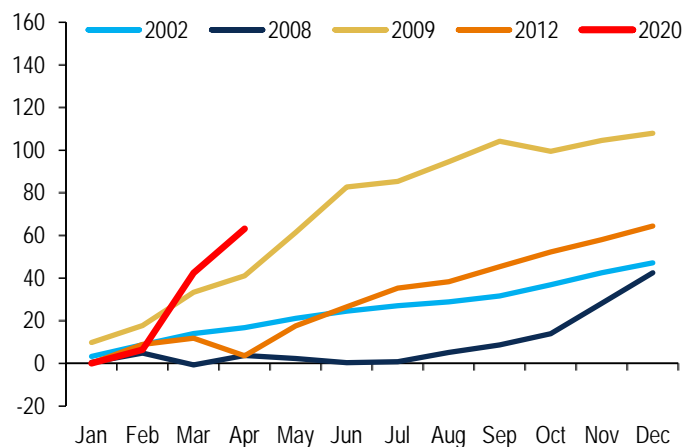
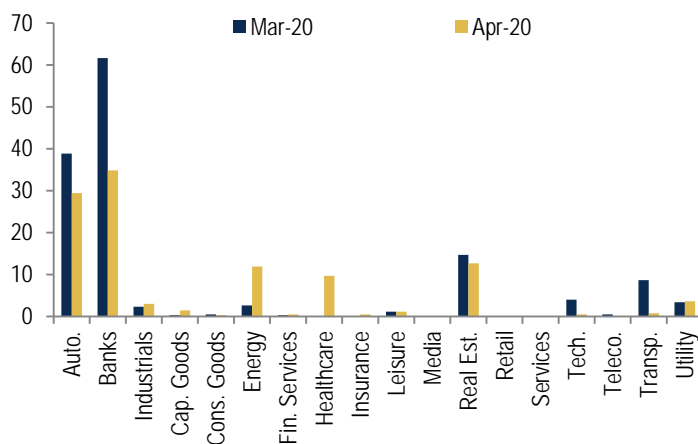
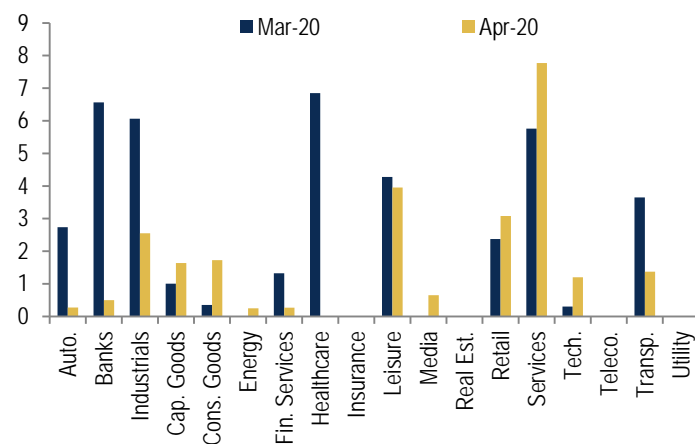
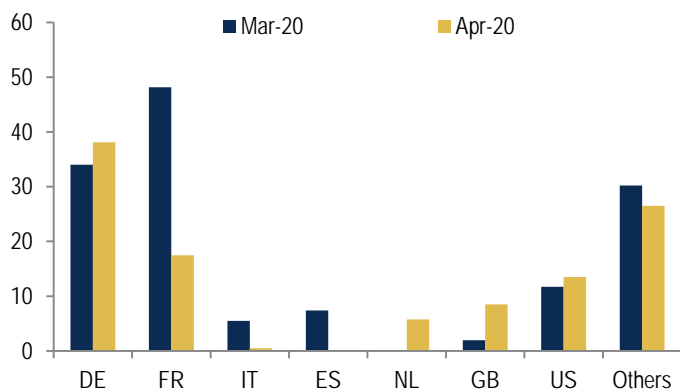
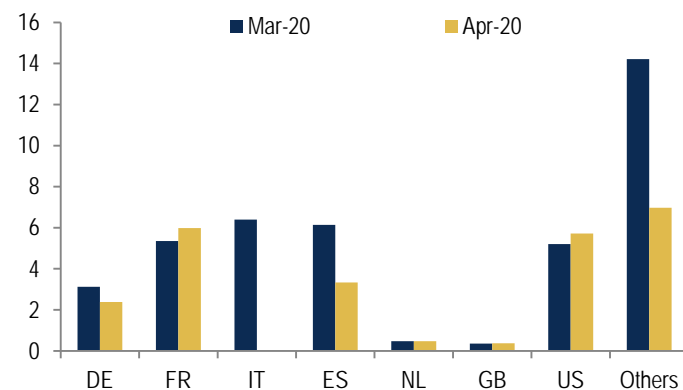
Source: BofA Global Research, ICE Data Indices, LLC, Bloomberg. Positive migration volume = positive net downgrade volumes. Data for 2020 include the following period: Jan-Apr. IG + HY volumes.

Chart 3: € credit net downgrade volumes (€ bn, RHS for HY)



Source: BofA Global Research, ICE Data Indices, LLC, Bloomberg. 3-month cumulative volumes.



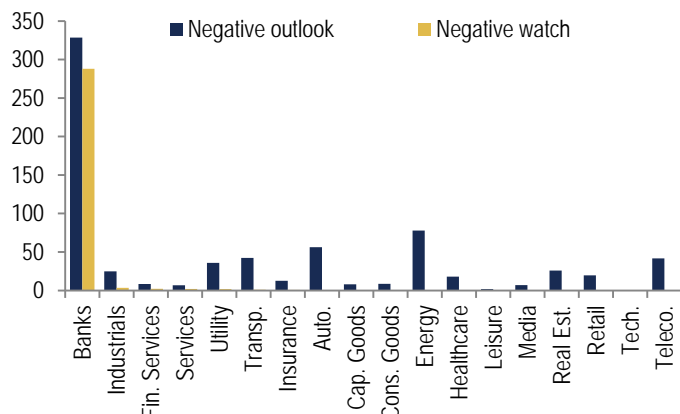
Chart 4: € IG cumulative net downgrade volumes, by vintage (€ bn)**Chart 5: € HY cumulative net downgrade volumes, by vintage (€ bn)****Chart 6: Par amount downgrades by sector, IG (€ bn)****Chart 7: Par amount downgrades by sector, HY (€ bn)****Chart 8: Par amount downgrades by country, IG (€ bn)****Chart 9: Par amount downgrades by country, HY (€ bn)**

Short-term outlook

Charts 10 to 15 highlight the outstanding amounts, and proportion, of IG, HY and BBB-rated debt across each sector, where bonds have either a negative watch or negative outlook by at least one rating agency.

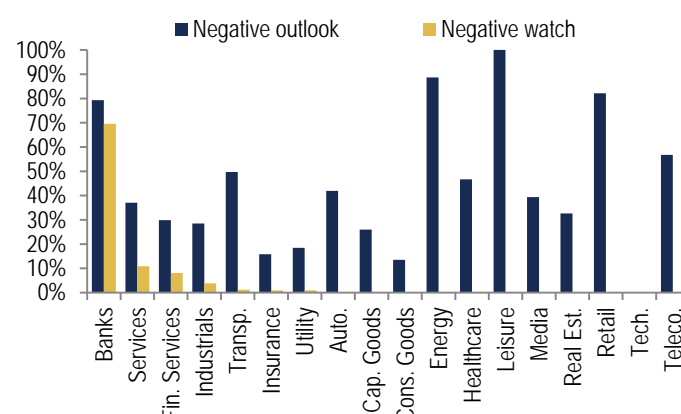
- In total, we find that there is €724bn of IG debt under negative outlook and €300bn of IG debt is under negative watch. In HY, €120bn of debt is under negative outlook whilst rating agencies have put €52bn of debt under negative watch.
- In total, we find that there is €212bn of BBB2/BBB3 rated debt under negative outlook and €46bn of BBB2/BB3 rated debt is under negative watch.
- €29bn of BBB3 rated debt is under negative watch.
- 100% of BBB2/BBB3 rated debt in leisure and retail is under a negative outlook by at least one rating agency. 42% of bank debt is under a negative watch.
- €18bn of BBB2/BBB3 debt is under both negative outlook and negative watch by at least one rating agency, of which 97% is bank debt.

Chart 10: € IG debt under negative outlook or watch by at least one rating agency (€ bn)



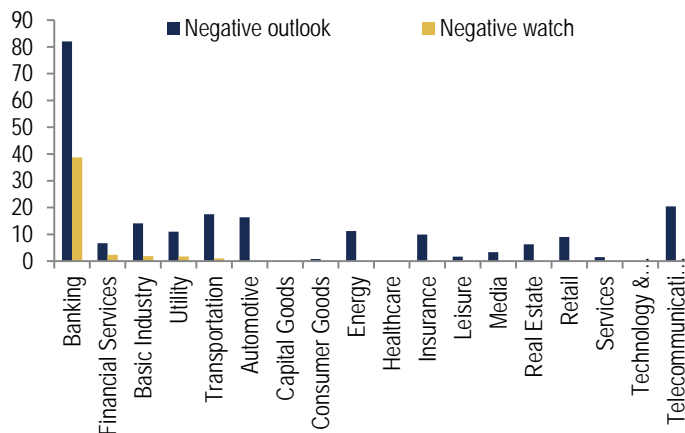
Source: BofA Global Research, ICE Data Indices LLC, Bloomberg. As of 30/04/2020, Outstanding debt rated AA, A and BBB.

Chart 11: Proportion of € IG debt under negative outlook or watch by at least one rating agency (%)

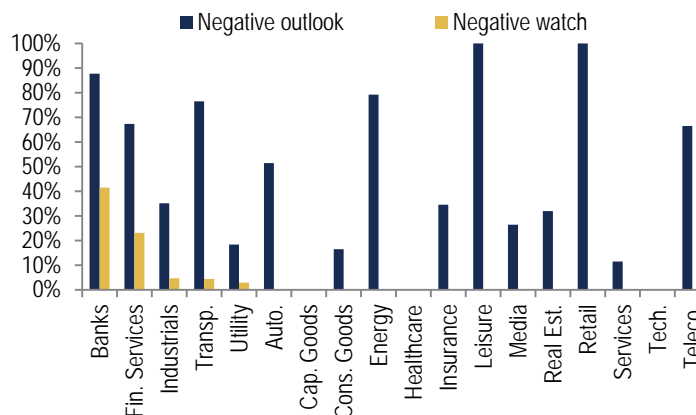


Source: BofA Global Research, Bloomberg. As of 30/04/2020, As % of outstanding IG debt in corresponding sector.

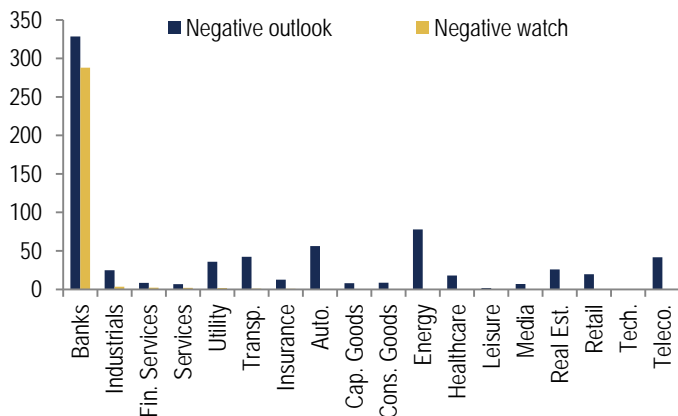


Chart 12: € debt rated BBB2/BBB3 under negative outlook or watch by at least one rating agency (€ bn)

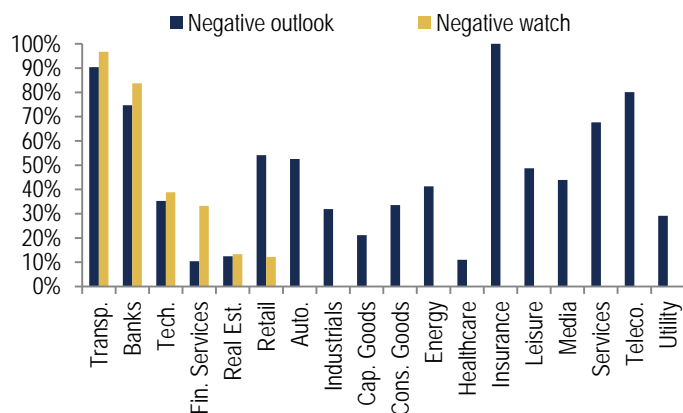
Source: BofA Global Research, ICE Data Indices LLC, Bloomberg. As of 30/04/2020, Outstanding debt rated BBB2 or BBB3.

Chart 13: Proportion of € debt rated BBB2/BBB3 under negative outlook or watch by at least one rating agency (%)

Source: BofA Global Research, Bloomberg. As of 30/04/2020, As % of outstanding debt rated BBB2 or BBB3 in corresponding sector.

Chart 14: € HY debt under negative outlook or watch by at least one rating agency (€ bn)

Source: BofA Global Research, ICE Data Indices LLC, Bloomberg. As of 30/04/2020, Outstanding debt rated BB, B and CCC.

Chart 15: Proportion of € HY debt under negative outlook or watch by at least one rating agency (%)

Source: BofA Global Research, Bloomberg. As of 30/04/2020, As % of outstanding HY debt in corresponding sector

Table 1: Largest 15 € Investment Grade downgrades in April '20

ISIN	Ticker	Coupon	Maturity	Country	Sector Level 3	Face Value	Mar '20 rating	Apr '20 rating
XS1069772082	RABOBK	2.5	5/26/2021	NL	Banking	2000	A3	BBB1
XS1568875444	PEMEX	2.5	8/21/2021	MX	Energy	1750	BBB3	BB1
DE000A2R9ZT1	DAIGR	0.25	11/6/2023	DE	Automotive	1750	A3	BBB1
XS2050406094	DHR	0.75	9/18/2031	US	Healthcare	1750	A3	BBB1
XS1678970291	BACR	2	2/7/2023	GB	Banking	1500	BBB2	BBB3
DE000A194DC1	DAIGR	0.25	8/9/2021	DE	Automotive	1500	A3	BBB1
DE000A2RYD83	DAIGR	0.625	2/27/2023	DE	Automotive	1500	A3	BBB1
DE000A2GSCW3	DAIGR	1.5	7/3/2029	DE	Automotive	1500	A3	BBB1
DE000A2GSCX1	DAIGR	2.125	7/3/2037	DE	Automotive	1300	A3	BBB1
FR0011911247	ENGIFP	2.375	5/19/2026	FR	Utility	1300	A3	BBB1
XS1172951508	PEMEX	2.75	4/21/2027	MX	Energy	1250	BBB3	BB1
XS1568874983	PEMEX	3.75	2/21/2024	MX	Energy	1250	BBB3	BB1
XS1824424706	PEMEX	4.75	2/26/2029	MX	Energy	1250	BBB3	BB1
XS1568888777	PEMEX	4.875	2/21/2028	MX	Energy	1250	BBB3	BB1
DE000A2R9ZU9	DAIGR	0.625	5/6/2027	DE	Automotive	1250	A3	BBB1

Source: BofA Global Research, ICE Data Indices LLC, Bloomberg. Largest 15 downgrades in ICE's EROD index by face value.

Table 2: Largest 15 € High Yield downgrades in April '20

ISIN	Ticker	Coupon	Maturity	Country	Sector Level 3	Face Value	Mar '20 rating	Apr '20 rating
XS1756356371	SELNSW	5.875	2/1/2024	CH	Services	1015	B3	CCC1
XS1490159495	SHAEFF	3.75	9/15/2026	DE	Automotive	750	BB2	BB1
XS1574148877	ARGID	2.75	3/15/2024	IE	Capital Goods	741	BB3	BB2
XS1405765907	OI	3.125	11/15/2024	US	Capital Goods	725	BB3	B1
XS2066213625	OCINV	3.125	11/1/2024	NL	Basic Industry	700	BB3	BB2
XS1849558900	LHMCFI	6.25	12/20/2023	ES	Leisure	663	B2	B3
XS1731106347	CEMEX	2.75	12/5/2024	MX	Basic Industry	650	BB2	BB3
XS1814546013	TCGR	3.875	5/2/2025	DE	Media	650	B2	B3
XS1405769990	INEGRP	5.375	8/1/2024	CH	Basic Industry	650	BB3	B1
XS1605600532	ATALIA	4	5/15/2024	FR	Services	625	B3	CCC1
XS1706202592	EUROCA	4.125	11/15/2024	FR	Services	600	B3	CCC2
XS2056730323	IFXGR	2.875	4/1/2025	DE	Technology & Electronics	600	BB1	BB2
XS2056730679	IFXGR	3.625	4/1/2028	DE	Technology & Electronics	600	BB1	BB2
XS1801786275	COTY	4	4/15/2023	US	Consumer Goods	550	B3	CCC1
XS1513765922	CDRSM	6.75	11/1/2021	ES	Leisure	500	CCC1	CCC2

Source: BofA Global Research, ICE Data Indices LLC, Bloomberg. Largest 15 downgrades in ICE's HE00 index by face value.



Disclosures

Important Disclosures

BofA Global Research Credit Opinion Key

BofA Global Research provides recommendations on an issuer's bonds (including corporate and sovereign external debt securities), loans, capital securities, equity preferreds and CDS as described below. Convertible securities are not rated. An issuer level recommendation may also be provided for an issuer as explained below. BofA Global Research credit recommendations are assigned using a three-month time horizon.

Issuer Recommendations: If an issuer credit recommendation is provided, it is applicable to bonds and capital securities of the issuer except bonds and capital securities specifically referenced in the report with a different credit recommendation. Where there is no issuer credit recommendation, only individual bonds and capital securities with specific recommendations are covered.

Loans, CDS and equity preferreds are rated separately and issuer recommendations do not apply to them.

BofA Global Research credit recommendations are assigned using a three-month time horizon:

Overweight: Spreads and/or excess returns are likely to outperform the relevant and comparable market over the next three months.

Marketweight: Spreads and/or excess returns are likely to perform in-line with the relevant and comparable market over the next three months.

Underweight: Spreads and/or excess returns are likely to underperform the relevant and comparable market over the next three months.

BofA Global Research uses the following rating system with respect to **Credit Default Swaps (CDS)**:

Buy Protection: Buy CDS, therefore going short credit risk.

Neutral: No purchase or sale of CDS is recommended.

Sell Protection: Sell CDS, therefore going long credit risk.

FUNDAMENTAL EQUITY OPINION KEY: Opinions include a **Volatility Risk Rating**, an **Investment Rating** and an **Income Rating**. **VOLATILITY RISK RATINGS**, indicators of potential price fluctuation, are: **A - Low**, **B - Medium** and **C - High**. **INVESTMENT RATINGS** reflect the analyst's assessment of a stock's: (i) absolute total return potential and (ii) attractiveness for investment relative to other stocks within its **Coverage Cluster** (defined below). There are three investment ratings: **1 - Buy** stocks are expected to have a total return of at least 10% and are the most attractive stocks in the coverage cluster; **2 - Neutral** stocks are expected to remain flat or increase in value and are less attractive than Buy rated stocks and **3 - Underperform** stocks are the least attractive stocks in a coverage cluster. Analysts assign investment ratings considering, among other things, the 0-12 month total return expectation for a stock and the firm's guidelines for ratings dispersions (shown in the table below). The current price objective for a stock should be referenced to better understand the total return expectation at any given time. The price objective reflects the analyst's view of the potential price appreciation (depreciation).

Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster*
Buy	≥ 10%	≤ 70%
Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

* Ratings dispersions may vary from time to time where BofA Global Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

INCOME RATINGS, indicators of potential cash dividends, are: **7 - same/higher (dividend considered to be secure)**, **8 - same/lower (dividend not considered to be secure)** and **9 - pays no cash dividend**. **Coverage Cluster** is comprised of stocks covered by a single analyst or two or more analysts sharing a common industry, sector, region or other classification(s). A stock's coverage cluster is included in the most recent BofA Global Research report referencing the stock.

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 Global 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 Securities 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

From time to time research analysts conduct site visits of covered issuers. BofA Global Research policies prohibit research analysts from accepting payment or reimbursement for travel expenses from the issuer for such visits.

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 BofA Securities 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 or other financial instruments that may not be offered or sold in one or more states or jurisdictions, or to certain categories of investors, including retail investors. Readers of this report are advised that any discussion, recommendation or other mention of such instruments is not a solicitation or offer to transact in such instruments. Investors should contact their BofA Merrill Lynch representative or Merrill Lynch Global Wealth Management financial advisor for information relating to such instruments. 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 OR OTHER FINANCIAL INSTRUMENTS 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 or other financial instruments 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 instruments 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 or other financial instruments discussed herein, may not be eligible for distribution or sale in all countries or to certain categories of investors, including retail investors.

Information relating to Affiliates of BofAS, MLPF&S and Distribution of Affiliate Research Reports:

BofA Global Research policies relating to conflicts of interest are described at <https://rsch.baml.com/coi>

"BofA Securities" includes BofA Securities, Inc. ("BofAS") and its affiliates. Investors should contact their BofA Securities representative or Merrill 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 Securities" is a global brand for BofA Global Research.

BofAS and/or Merrill Lynch, Pierce, Fenner & Smith ("MLPF&S") 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); BAMLI DAC (Frankfurt): Bank of America Merrill Lynch International DAC, Frankfurt Branch regulated by BaFin, the ECB and the 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 (HKSF); 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): Merrill Lynch S.A. Corretora de Títulos e Valores Mobiliários, 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 HKSF; 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. 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. BAMLI DAC (Frankfurt) distributes this information in Germany and is regulated by BaFin, the ECB and the CBI. BofA Securities 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 Securities group. You may be contacted by a different BofA Securities 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 Securities.

This document provides general information only, and has been prepared for, and is intended for general distribution to, BofA Securities 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 Securities, 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 Securities 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 Securities 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 Securities, through business units other than BofA 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 Securities 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 and General Information:

Copyright 2020 Bank of America Corporation. All rights reserved. iQprofileSM, iQmethodSM are service marks of Bank of America Corporation. iQdatabase[®] is a registered service mark of Bank of America Corporation. This information is prepared for the use of BofA Securities clients and may not be redistributed, retransmitted or disclosed, in whole or in part, or in any form or manner, without the express written consent of BofA Securities. BofA Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Securities and is not publicly-available material. Any unauthorized use or disclosure is prohibited. Receipt and review of this information constitutes your agreement not to redistribute, retransmit, or disclose to others the contents, opinions, conclusion, or information contained herein (including any investment recommendations, estimates or price targets) without first obtaining express permission from an authorized officer of BofA Securities.

Materials prepared by BofA 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 Securities, including investment banking personnel. BofA Securities has established information barriers between BofA Global Research and certain business groups. As a result, BofA Securities 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 Global Research personnel's knowledge of legal proceedings in which any BofA Securities 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 Securities 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 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 Securities 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 Securities 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 Securities. 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 Securities 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 Securities is under no obligation to update this information and BofA Securities ability to publish information on the subject issuer(s) in the future is subject to applicable quiet periods. You should therefore assume that BofA Securities 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 Securities nor any officer or employee of BofA Securities accepts any liability whatsoever for any direct, indirect or consequential damages or losses arising from any use of this information.