Switching boxes

Rating Change - Credit

Bank of America Merrill Lynch

14 August 2019

High Yield Credit Luxembourg Cable

Nick Macdonald, CFA

Research Analyst BofASE (France) +33 1 8770 0327 nick.macdonald@baml.com

Chart 1: ATCNA/SFR bond performance



Source: ICE Data Indices, LLC, ICE BofAML HE00 index, Bloomberg, BofA Merrill Lynch Global Research.

Upgrading Altice Lux, downgrading Altice France

Since our previous assessment we think several factors support a change of view on Altice Lux. bonds. In particular the significant rally in global rates, better revenue and EBITDA trends in France, the associated guidance upgrade and initial signs of improved cash flow in France (a previously long-held concern). While ATCNA has performed strongly YTD we see further room for outperformance and view ϵ /\$'27s (Underweight to Overweight) as offering attractive spread vs. Altice France. For Altice France (Overweight to Marketweight) we think valuations are more balanced given the YTD rally, the scope for additional debt push-down and contributions to Pay-TV/Altice Lux. (see page 2 for more details including our upgrade of the ATCNA ϵ /\$'22s and ϵ /\$'25s).

France 2Q cash flow shows some improvement

We have held long-run concerns about Altice's free cash flow conversion. While still too nascent to call a trend we note Altice France's performance improved in 2Q with a €205mn/€127mn y/y increase in OCF and FCF. The difference between 1H EBITDA and cash flow derived OCF was the lowest it has been over the last two years. We await the release of the rest of the financial statements to assess group performance.

Disposals less likely but still potential positive catalysts

On the 2Q19 conference call management indicated that the Portugal fibre co. process remained on-going and any offers for TEADS would be assessed. Nevertheless it was acknowledged that given better momentum in the business there was less pressure to pursue disposals. Even if the likelihood has diminished, we think such disposals remain potential positive catalysts for creditors, particularly given a strengthened position from which to hold-out for higher valuations.

Global rates rally...

The strong rally in global rates is particularly meaningful for the Altice structure given our view that one of its previous fundamental problems has been one of over-leverage and re-financing risks. The cost to roll-over front-end debt across the structure now appears broadly cheaper than existing coupons, in sharp contrast to 9 months previously. For example the ATCNA \$'25 yield has halved from highs of 14% to nearly 7%. We think this meaningfully changes the picture for the sustainability of the structure and buys much needed time to de-leverage.

... Altice Int and ACF likely next in line

A re-financing of front-end of the Altice International debt is likely next on the agenda. In particular the unsecured 9.0% $\[\epsilon' \]$ 23s and 8.125% $\[\epsilon' \]$ 24s but also the secured $\[\epsilon' \]$ 5'23s. Previously we thought that such a re-financing would be reliant on tangible progress with respect to asset sales processes. However given better momentum across the group and the broader interest rate back-drop this is likely no longer necessary. We flag the Altice Corporate Financing facility as likely high on the agenda as well. Altice US stock has been on a prodigious rally this year (>60%) and Altice's 3.74% stake (c. $\[\epsilon' \]$ 660mn) could facilitate a transaction.

BofA Merrill Lynch 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 11 to 15. Analyst Certification on page 10. Valuation & Risk on page 9.

Timestamp: 14 August 2019 12:00AM EDT

Recommendations and relative value

Upgrading Altice Lux. bonds

We upgrade the ATCNA €/\$'22s and €/\$'25s to Marketweight from Underweight and upgrade the ATCNA €/\$'27s to Overweight from Underweight. This reflects several factors including: i) supportive credit market back-drop, ii) significant rally in global rates (see chart 13), iii) improved revenue and EBITDA trends in France, iv) initial signs of improved cash flow in France (see next section) and v) still attractive relative value vs. peers and Altice France bonds. Given tighter levels we think upside in the '22s/25s is more limited than the '27s.

Downgrading Altice France bonds/5y CDS to MW/Neutral

Altice France operating performance has been a key factor underpinning our upgrade of Altice Lux. However we take a more cautious view on the Altice France bonds given i) strong YTD performance (SFRFP €′27s are up 11pts YTD) and ii) the risk of releveraging the Altice France entity either via debt push-downs or cash leakage to fund Altice Lux., the Pay-TV unit or support other re-financing measures across the group. As such, we downgrade the Altice France bonds under coverage from Overweight to Marketweight and the 5y CDS from Sell Protection to Neutral.

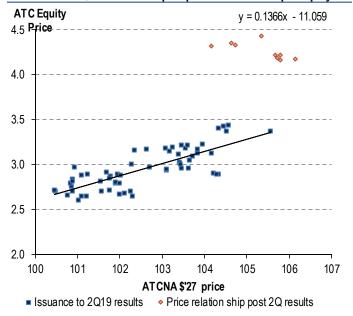
Relative value in ATCNA 27s - still attractive

In spite of strong absolute return since issuance (+5pts) we still think there is scope for both absolute and relative tightening vs. peers. This reflects our expectation of aforementioned fundamental factors (France operating trends, potential disposals) and i) supportive back-drop as per our <u>credit strategy team</u>, ii) still wide levels vs. equity, vs. peers and vs. Altice France.

Equity has performed strongly vs. the ATCNA 27s

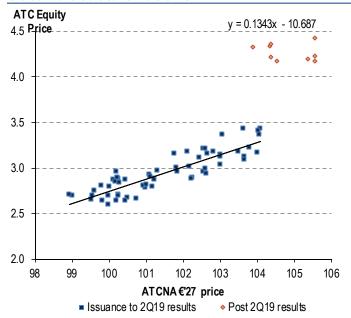
The charts below demonstrate the much stronger performance of equity vs. the structurally subordinated hold co. ATNCA '27s. We think the ATCNA bonds have equity-like characteristics given their level of subordination in the structure, very high leverage and relatively long duration. Equity has strongly outperformed credit since the 2Q19 results. If the previous relationship held, the current equity price would imply bonds prices 5-6pts higher for the €/\$'27s. While we acknowledge this is too simplistic a model, we nevertheless believe it is illustrative of further upside potential.

Chart 2: ATCNA \$'27s trade cheap vs. previous relationship to equity...



Source: Bloomberg, BofA Merrill Lynch Global Research.

Chart 3: ... this is the same in the €'27s

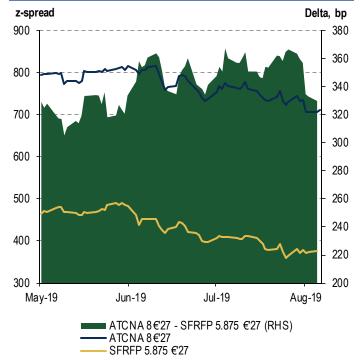


Source: Bloomberg, BofA Merrill Lynch Global Research.

Bond continue to offer attractive pick-up vs. SFR

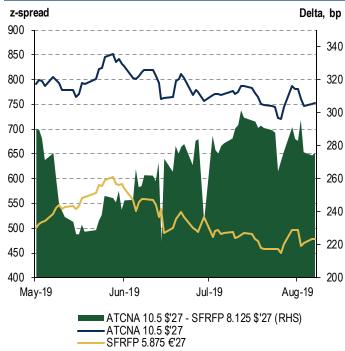
In spite of broader strong performance in rates/credit the ATCNA '27s still offer an attractive pick-up vs. their op. co equivalents in Altice France (SFR). As the charts below illustrate the z-spread pick-up is roughly the same as when the bonds were issued.

Chart 4: ATCNA €'27s still offer attractive pick-up vs. SFR



Source: Bloomberg, BofA Merrill Lynch Global Research.

Chart 5: ATCNA \$'27s still offer attractive pick-up vs. SFR



Source: Bloomberg, BofA Merrill Lynch Global Research.

Shrinking HY TMT universe a supportive technical?

Beyond the broader "reach for yield" technicals in the European credit market, we think there could also be a more localised technical benefit from shrinking euro HY TMT bond

universe. In recent weeks a make-whole was announced for €5.6bn Wind Tre bonds and Vodafone finally completed its acquisition of Unitymedia (€3.6bn bonds to IG). In addition UPC (€1.7bn) and Refinitiv (€1.2bn) are currently the subject of take-overs which could lead to IG ratings/re-financings. Finally Equinix (€2.75bn) received a second upgrade to IG in July. Thus in total €14.25bn of HY TMT bonds could be disappearing (including FRNs). By comparison the ICE BofAML Euro High Yield Technology, Telecommunications & Media Index (HEMT) has total face value of €63bn.

We acknowledge the majority of benchmarked HY investors will be judging performance compared to the broader index (HE00 or other capped variants) and thus there will not be an automatic recycling of money into HEMT. Nevertheless for investors seeking TMT exposure, which, while highly leveraged, offers a safe haven vs. cyclical trade war exposed credits, there will be a smaller universe and thus theoretically more supportive technicals for existing bonds.

Cash flow analysis

Altice France - SFR business

Altice France registered a large WC outflow of €390mn in 1Q19 but this moderated in 2Q, if not reversed, to -€94mn. Management has previously guided this will reverse as the year progresses. Adj. EBITDA as per Altice France's stand alone accounts, increased +13% y/y and in contrast to 1Q, OCF followed suit increasing 37% or more than €200mn. FCF also improved y/y and was positive in 2Q in a seasonally lower quarter for cash interest.

The y/y comparison was flattered by working capital, just as it was hindered in 1Q. Working capital provided a \leq 221mn boost y/y. Excluding the move in working capital FFO declined slightly (2% y/y), reflecting the reversal of a large outflow in 2Q18.

The Adj. EBITDA derived FCF was €72mn higher than that from the cash flow statement. While still a relevant number we highlight that it is much less than the average of previous quarters.

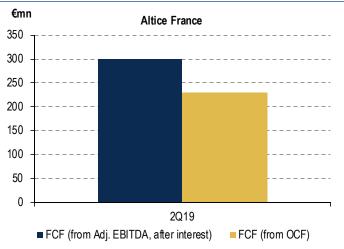
We note that after the end of the quarter the RCF was drawn for €125mn to upstream cash to Altice Lux., we assume for cash interest payments.

Table 1: Altice France summary 2Q19 cash flow

€mn	2Q19	2Q18	Delta
Adj. EBITDA	1,072	946	+126
Change y/y, %	13.3%		
Cash flow statement			
Operating cash flow (reported)	1,072	621	+451
Lease pay ments	-221	-25	-
OCF postlease	851	596	+255
Change y/y, %	43%		
Cash interest	-94	-44	-50
OCF post cash interest	757	552	+205
Change y/y, %	37%		
Net capex (inc. WC)	-529	-451	-78
FCF	228	101	+127
Change y/y, %	125%		
Change in Working Capital	-57	-278	+221
Funds from operations	814	830	-16
Change v/v. %	-2%		

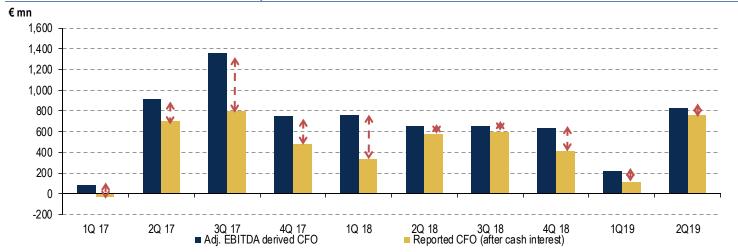
Source: Company accounts, BofA Merrill Lynch Global Research.

Chart 6: Altice Int. cash flow statement vs. EBITDA based FCF



Source: Company accounts, BofA Merrill Lynch Global Research.

Chart 7: Altice France historic differences between Adj. EBITDA and cash flow statement based FCF



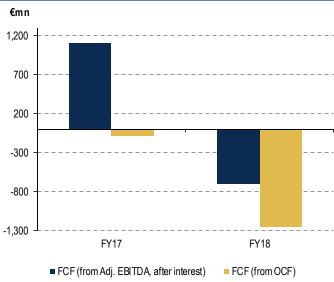
Source: Company accounts, BofA Merrill Lynch Global Research.

Historic cash flow conversion

As we highlighted in our credit note in January 2019, sustainable delivery of FCF remains key for Altice. In our view, the old adage "cash is king" should be at the forefront of investors' minds in the case of Altice for 2019.

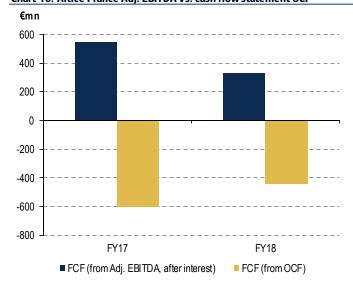
FCF conversion, even during impressive EBITDA growth, has been elusive in the past. In France and Altice International, FCF below the EBITDA line has been impacted by substantial restructuring costs, one-off items, capitalised content costs, spectrum payments and working capital outflows (partly driven by content costs again). Furthermore, the entire picture has been muddled by continual changes in the perimeter.

Chart 8: Altice NV Adj. EBITDA vs. cash flow statement OCF



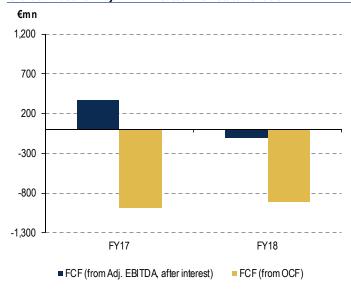
Source: Company accounts, BofA Merrill Lynch Global Research.

Chart 10: Altice France Adj. EBITDA vs. cash flow statement OCF



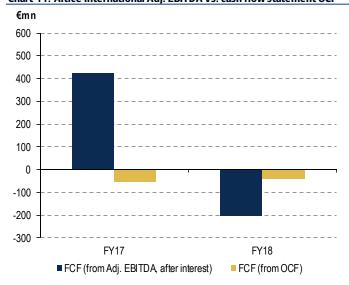
Source: Company accounts, BofA Merrill Lynch Global Research.

Chart 9: Altice Lux Adj. EBITDA vs. cash flow statement OCF



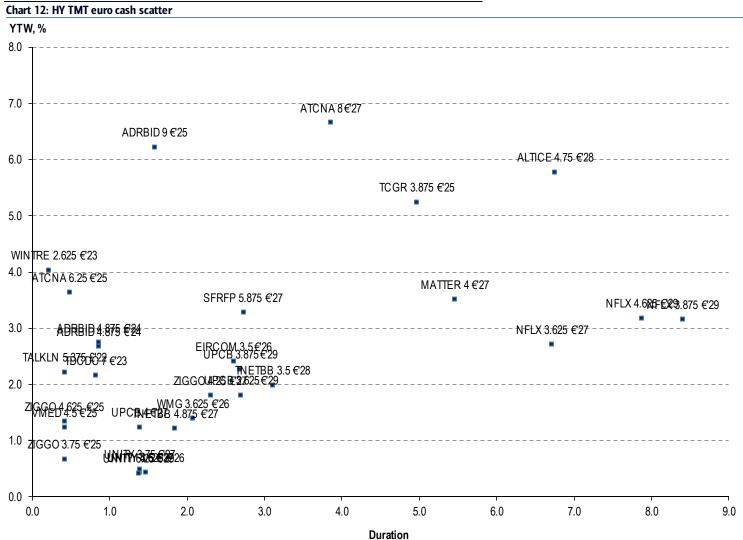
Source: Company accounts, BofA Merrill Lynch Global Research.

Chart 11: Altice International Adj. EBITDA vs. cash flow statement OCF



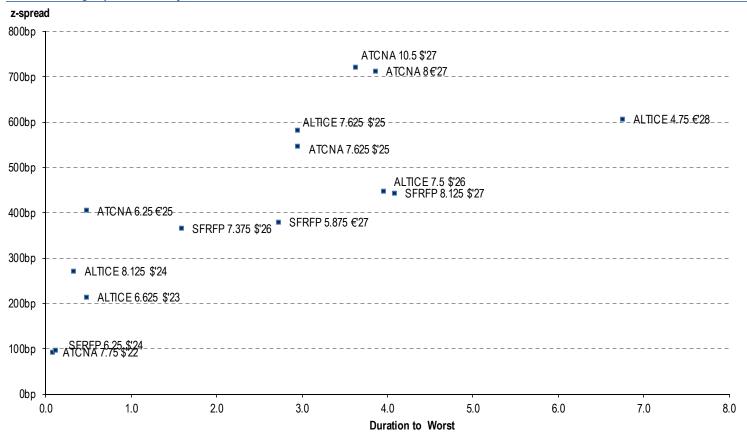
Source: Company accounts, BofA Merrill Lynch Global Research.

Appendix



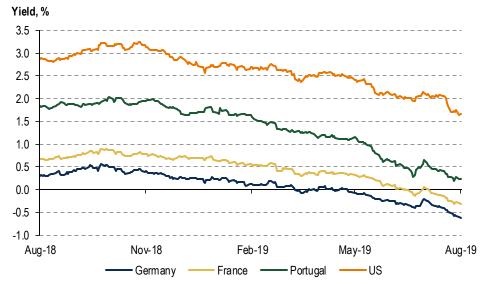
Source: Bloomberg, BofA Merrill Lynch Global Research.

Chart 13: Altice group cross-currency cash scatter



Source: Bloomberg, BofA Merrill Lynch Global Research. Note: Spreads swapped into euros.





Source: Bloomberg, BofA Merrill Lynch Global Research.

Valuation & risk

Altice Europe (ATCNA)

Altice bonds are heavily structurally subordinated and highly levered. We have a MW on the 22s and 25s and an Overweight on the 27s. From a relative value perspective we view the 22s/25s as fairly valued vs. peers. We see further upside in the 27s upon the execution of de-leveraging measures such as improved French trends and disposals.

Risks to the upside: i) Outperformance of earnings on the back of greater than expected cost savings, ii) further asset sale execution, iii) asset sale proceeds applied to Altice Lux debt, iv) top-line improvement in France/Portugal, v) early refinancing of the bonds and vi) consolidation in France.

Risks to the downside: i) Failure to execute on turnaround strategy leading to further earnings pressure, ii) unfavourable FX moves, iii) EM/periphery volatility, iv) continued top-line pressure in France and Portugal, v) the removal of consolidation as a backstop to valuations, vi) weakening HY market conditions and vii) a failure to deliver sustainable FCF.

Altice Finco (ALTICE)

Altice International faces a challenging operating environment in all three of its key markets. Asset sales could help minimize downside risks, but execution remains uncertain for now. From a valuation standpoint we see scope for further widening if operating trends continue to worsen. Accordingly we have a cautious view on the majority of the Altice International curve. We view the 9% 23s and 8.125% \$'24s as more fairly valued in view of tighter covenant protection.

Risks to the downside: i) unfavourable FX movements which could impact translated earnings from the Dominican Republic and Israel, ii) the failure to deliver on projected turn-around strategy iii) a further and marked deterioration in the performance in Portugal, iii) a failure to monetise fixed assets in Israel/DR/Portugal, and iv) greater competitive intensity in the DR and Israel.

Risks to the upside: i) favourable FX movements, ii) execution of non-core asset sales e.g. fibre sale, iii) greater than expected margin improvement, and iv) a change in financial policy by the parent resulting in material and sustainable deleveraging.

Altice Financing (ALTICE)

Altice International faces a challenging operating environment in all three of its key markets. Asset sales could help minimize downside risks, but execution remains uncertain for now. From a valuation standpoint we see scope for further widening if operating trends continue to worsen. The bonds trade wide to most HY peers but we see this as justified given aforementioned issues. We see scope for the Altice 28s to trade materially lower if results and disposals disappoint.

Risks to the downside: i) unfavourable FX movements which could impact translated earnings from the Dominican Republic and Israel, ii) the failure to deliver on projected turn-around strategy iii) a further and marked deterioration in the performance in Portugal, iii) a failure to monetise fixed assets in Israel/DR/Portugal, and iv) greater competitive intensity in the DR and Israel.

Risks to the upside: i) favourable FX movements, ii) execution of non-core asset sales e.g. fibre sale, iii) greater than expected margin improvement, and iv) a change in financial policy by the parent resulting in material and sustainable deleveraging.

Altice France (SFRFP)

We expect performance to improve following a stabilization of operating trends. However following strong performance YTD we view the bonds under our coverage as trading near fair value vs. peers.

Risks to the upside: i) further cost saving measures, ii) a recovery in the top-line trends supported by market pricing recovery, iii) a change to a more conservative financial policy resulting in lower cash up-streams than we anticipate.

Risks to the downside: i) a material increase in competition in French mobile/broadband markets, ii) a more aggressive approach to op. co. leverage including the use of subordinated leverage headroom, iii) further dividend payments, iv) a push-down of ATCNA debt and vi) the removal of consolidation as a potential catalyst in the French market.

Analyst Certification

I, Nick Macdonald, CFA, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Security pricing

Altice Europe / ATCNA

	Amt		Ratings	Next	call			YTW*	STW
Security		Maturity date	Moody's/S&P/Fitch	Call date	Call price	Price	Price date	(%)	(Govt+bps)
7.75, Secured, USD, 2022:B	636	15-MAY-2022	Caa1/B-/NR	11-Sep-2019	101.94	102.00	12-Aug-2019	5.03	318
7.25, Secured, EUR, 2022:B	445	15-MAY-2022	Caa1/B-/NR	11-Sep-2019	101.81	102.23	12-Aug-2019	1.99	273
6.25, Senior Unsecured, EUR, 2025:B	750	15-FEB-2025	Caa1/B-/NR	15-Feb-2020	103.13	104.24	12-Aug-2019	3.87	462
7.625, Senior Unsecured, USD, 2025:B	1,480	15-FEB-2025	Caa1/B-/NR	15-Feb-2020	103.81	101.00	12-Aug-2019	7.30	580
8, Senior, EUR, 2027:B	1,400	15-MAY-2027	Caa1/B-/NR	15-May -2022	104.00	105.26	12-Aug-2019	6.69	756
10.5%, Senior, USD, 2027:B		15-MAY-2027	Caa1/B-/NR	15-May -2022	105.25	102.10	13-Aug-2019	9.91	746

For pricing information refer to "Other Important Disclosures" below.

B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Altice Financing / ALTICE									
	Amt		Ratings	Next	call			YTW*	STW
Security		Maturity date	Moody's/S&P/Fitch	Call date	Call price	Price	Price date	(%)	(Govt+bps)
6.625, Secured, USD, 2023:B	2,060	15-FEB-2023	B2/B+/NR	11-Sep-2019	103.31	102.50	12-Aug-2019	4.83	291
5.25, Secured, EUR, 2023:B	500	15-FEB-2023	B2/B+/NR	11-Sep-2019	102.63	102.83	12-Aug-2019	2.19	294
7.5, Secured, USD, 2026:B	2,750	15-MAY-2026	B2/B+/NR	15-May -2021	103.75	105.15	12-Aug-2019	6.23	472

For pricing information refer to "Other Important Disclosures" below.

B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

	Amt		Ratings	Next	call			YTW*	STW
Security		Maturity date	Moody's/S&P/Fitch	Call date	Call price	Price	Price date	(%)	(Govt+bps)
9, Senior, EUR, 2023:B	250	15-JUN-2023	Caa1/CCC+/NR	11-Sep-2019	103.00	103.63	12-Aug-2019	1.19	193
8.125, Secured, USD, 2024:B Senior Unsecured, EUR, Y5:CDS	400	15-JAN-2024	Caa1/CCC+/NR	11-Sep-2019	104.06	103.00	12-Aug-2019 13-Aug-2019	6.72	517 319
7.625, Senior Unsecured, USD, 2025:B	385	15-FEB-2025	Caa1/CCC+/NR	15-Feb-2020	103.81	99.50	12-Aug-2019	7.74	621
4.75, Senior Unsecured, EUR 2028	675	15-JAN-2028	Caa1/CCC+/NR	15-Oct-2022	102.38	92.80	12-Aug-2019	5.84	653

For pricing information refer to "Other Important Disclosures" below.

B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Altice France / SFRFP									
	Amt		Ratings	Next	call			YTW*	STW
Security		Maturity date	Moody's/S&P/Fitch	Call date	Call price	Price	Price date	(%)	(Govt+bps)
5.625, Secured, EUR, 2024:B	750	15-MAY-2024	B2/B/NR	11-Sep-2019	102.81	103.04	12-Aug-2019	2.75	349
6.25, Secured, USD, 2024:B	815	15-MAY-2024	B2/B/NR	23-Sep-2019	103.13	103.13	12-Aug-2019	4.74	288
7.375, Senior, USD, 2026:B	5,190	01-MAY-2026	B2/B/NR	01-May -2021	103.69	105.88	12-Aug-2019	5.81	418
5.875, Secured, EUR, 2027	1,000	01-FEB-2027	B2/B/NR	01-Feb-2022	104.41	109.63	12-Aug-2019	3.39	430
8.125%, Secured, EUR, 2027		01-FEB-2027	B2/B/NR	01-Feb-2022	106.09	102.13	13-Aug-2019	7.62	546
Senior Unsecured, EUR, Y5:CDS							13-Aug-2019		282

For pricing information refer to "Other Important Disclosures" below.

Disclosures

Important Disclosures

^{*} For loans, YTW reflects yield to maturity.

B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Credit opinion history

Altice Europe / ATCNA							
Security	Date^	Action	Recommendation	Price			
7.75, Secured, USD, 2022:B	31-Jul-2018		Marketw eight				
	23-May -2019	Dow ngrade	Underw eight	101.50			
7.25, Secured, EUR, 2022:B	31-Jul-2018		Marketw eight				
	23-May -2019	Dow ngrade	Underw eight	101.86			
6.25, Senior Unsecured, EUR, 2025:B	31-Jul-2018		Marketw eight				
	23-May -2019	Dow ngrade	Underw eight	97.50			
7.625, Senior Unsecured, USD, 2025:B	31-Jul-2018		Marketw eight				
	23-May -2019	Dow ngrade	Underw eight	93.88			
8, Senior, EUR, 2027:B	23-May -2019	Initial	Underw eight	101.08			
10.5%, Senior, USD, 2027:B	23-May -2019	Initial	Underw eight	102.10			

Table reflects credit opinion history as of previous business day's close. 'First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security. Prior to November 9, 2015, the investment opinion system included Overweight-100%, Overweight-70%, Overweight-30%, Underweight-70% and Underweight-100%. As of November 9, 2015, the investment opinion system is contained at the end of the report under the heading 'BofA Merrill Lynch Credit Opinion Key.'

Pricing information in the table is provided for each action occurring after July 2, 2016, where available. In the case of bonds, capital securities and equity preferreds, the price shown reflects the nominal cash price for the security; and in the case of CDS, the price shown reflects the spread, on the date of the relevant action.

B=Bond; CS=Capital Security (Not including Equity Preferred); EP=Equity Preferred; CDS=Credit Default Swap

Altice Financing / ALTICE								
Security	Date^	Action	Recommendation	Price				
6.625, Secured, USD, 2023:B	31-Jul-2018		Underw eight					
5.25, Secured, EUR, 2023:B	31-Jul-2018		Underw eight					
7.5, Secured, USD, 2026:B	31-Jul-2018		Underw eight					

Table reflects credit opinion history as of previous business day's dose. 'First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security. Prior to November 9, 2015, the investment opinion system included Overweight-100%, Overweight-20%, Overweight-30%, Underweight-70% and Underweight-100%. As of November 9, 2015, the investment opinion system is contained at the end of the report under the heading "BofA Merrill Lynch Credit Opinion Key."

Pricing information in the table is provided for each action occurring after July 2, 2016, where available. In the case of bonds, capital securities and equity preferreds, the price shown reflects the nominal cash price for the security: and in the case of CDS, the price shown reflects the spread, on the date of the relevant action.

B=Bond; CS=Capital Security (Not including Equity Preferred); EP=Equity Preferred; CDS=Credit Default Swap

Altice Finco S.A. / ALTICE							
Security	Date^	Action	Recommendation	Price			
9, Senior, EUR, 2023:B	31-Jul-2018		Marketw eight				
8.125, Secured, USD, 2024:B	31-Jul-2018		Marketw eight				
Senior Unsecured, EUR, Y5:CDS	31-Jul-2018		Neutral				
7.625, Senior Unsecured, USD, 2025:B	31-Jul-2018		Underw eight				
4.75, Senior Unsecured, EUR 2028	31-Jul-2018		Underw eight				

Table reflects credit opinion history as of previous business day's close. 'First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security. Prior to November 9, 2015, the investment opinion system included Overweight-100%, Overweight-70%, Overweight-30%, Underweight-70% and Underweight-100%. As of November 9, 2015, the investment opinion system is contained at the end of the report under the heading 'BofA Merrill Lynch Credit Opinion Key.'

Pricing information in the table is provided for each action occurring after July 2, 2016, where available. In the case of bonds, capital securities and equity preferreds, the price shown reflects the nominal cash price for the security; and in the case of CDS, the price shown reflects the spread, on the date of the relevant action.

B=Bond; CS=Capital Security (Not including Equity Preferred); EP=Equity Preferred; CDS=Credit Default Swap

Security	Date^	Action	Recommendation	Price
5.625, Secured, EUR, 2024:B	31-Jul-2018		Overweight	
	11-Oct-2018	Dow ngrade	Marketw eight	104.48
	09-Jan-2019	Upgrade	Overweight	100.50
6.25, Secured, USD, 2024:B	31-Jul-2018	· •	Overweight	
7.375, Senior, USD, 2026:B	31-Jul-2018		Overweight	
5.875, Secured, EUR, 2027	31-Jul-2018		Overweight	
8.125%, Secured, EUR, 2027	31-Jul-2018		Overweight	
Senior Unsecured, EUR, Y5:CDS	31-Jul-2018		Sell Protection	

Table reflects credit opinion history as of previous business day's close. 'First date of recommendation within the last 36 months, if for an issuer or within the last 12 months, if for a security. Prior to November 9, 2015, the investment opinion system included Overweight-100%, Overweight-20%, Overweight-30%, Underweight-70% and Underweight-100%. As of November 9, 2015, the investment opinion system is contained at the end of the report under the heading 'BofA Merrill Lynch Credit Opinion Key.'

Pricing information in the table is provided for each action occurring after July 2, 2016, where available. In the case of bonds, capital securities and equity preferreds, the price shown reflects the nominal cash price for the security; and in the case of CDS, the price shown reflects the spread, on the date of the relevant action.

B=Bond; CS=Capital Security (Not including Equity Preferred); EP=Equity Preferred; CDS=Credit Default Swap

Bof A Merrill Lynch Credit Opinion Key

BofA Merrill Lynch Global Research provides recommendations on an issuer's bonds (including corporate and sovereign external debt securities), 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 Merrill Lynch 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. CDS and equity preferreds are rated separately and issuer recommendations do not apply to them.

BofA Merrill Lynch 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 Merrill Lynch 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

Corporate Credit Issuer Investment Rating Distribution: Global Group (as of 30 Jun 2019)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	147	34.27%	Buy	119	80.95%
Hold	205	47.79%	Hold	168	81.95%
Sell	77	17.95%	Sell	60	77.92%

^{*} Issuers that were investment banking dients of BofA Merrill Lynch or one of its affiliates within the past 12 months. For purposes of this Investment Rating Distribution, the coverage universe includes only corporate credit issuer recommendations. A corporate credit issuer rated Overweight is included as a Buy, a corporate credit issuer rated Marketweight is included as a Hold, and a corporate credit issuer rated Underweight is included as a Sell.

Credit Opinion History Tables for the securities referenced in this research report are available at https://pricecharts.baml.com, or call 1-800-MERRILL to have them mailed.

The issuer is or was, within the last 12 months, an investment banking client of BofAS and/or one or more of its affiliates: Altice Financing, Altice France.

BofAS or an affiliate has received compensation from the issuer for non-investment banking services or products within the past 12 months: Altice Financing, Altice France.

The issuer is or was, within the last 12 months, a non-securities business client of BofAS and/or one or more of its affiliates: Altice Financing, Altice France.

BofAS or an affiliate has received compensation for investment banking services from this issuer within the past 12 months: Altice Financing, Altice France.

BofAS or one of its affiliates has a significant financial interest in the fixed income instruments of the issuer. If this report was issued on or after the 15th day of the month, it reflects a significant financial interest on the last day of the previous month. Reports issued before the 15th day of the month reflect a significant financial interest at the end of the second month preceding the report: Altice France.

BofAS or one of its affiliates trades or may trade as principal in the debt securities (or in related derivatives) that are the subject of this research report: Altice Europe, Altice Financing, Altice Financing

The issuer is or was, within the last 12 months, a securities business client (non-investment banking) of BofAS and/or one or more of its affiliates: Altice Financing, Altice France. 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

From time to time research analysts conduct site visits of covered issuers. BofA Merrill Lynch 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 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 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 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:

Copyright 2019 Bank of America Corporation. All rights reserved. iQprofiles, iQmethod 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 Merrill Lynch 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 Merrill Lynch. BofA Merrill Lynch Global Research information is distributed simultaneously to internal and client websites and other portals by BofA Merrill Lynch 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 Merrill Lynch.

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.

Subject to the quiet period applicable under laws of the various jurisdictions in which we distribute research reports and other legal and BofA Merrill Lynch policy-related restrictions on the publication of research reports, fundamental equity reports are produced on a regular basis as necessary to keep the investment recommendation current.

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