Subordinated HY credit: misunderstood and mispriced

Credit Analysis

24 May 2019 Corrected

Subordinated bonds – misunderstood and mispriced

We think subordinated bonds are misunderstood. Do the greater returns on offer justify the inherently greater risk? The subordinated new issue premium to senior (secured) bonds often does not reflect issuer idiosyncrasies – and thus creates mispriced opportunity. We present our views on subordination fundamentals and technicals, propose a framework for pricing subordinated risk, and identify current subordinated bonds with the potential for significant spread moves. We find the additional returns typically do not compensate for the additional risks in subordinated bonds. We think secondary pricing is particularly poor at reflecting subordination risk relative to senior bonds in the same capital structure.

Introducing our subordinated risk pricing framework

We present our view on effective pricing of subordinated risk, based on market-implied probability of default, and assumptions of time to default and expected loss given default. The highest gamma variable is expected senior recovery – the lower the assumed senior recovery, the less spread differential required for the sub bond, in our view. Applying the framework across a number of issues under our coverage, we find the market overall does not sufficiently focus on the implied senior bond probability of default.

One size does not fit all – we take a different approach

In our experience, the European High Yield market tends to take a somewhat formulaic approach to subordinated credit – often we hear of a specific 'discount for subordination' that is seemingly applied generically across the market. We analyse how senior-sub differentials have changed through the current credit cycle, and how they compare to pricing in the US market.

Framework tends to support our sub bond views

Sector-by-sector, our framework identifies several issuers with subordinated bonds which we think trade far from our perception of fair value. Our subordinated risk pricing framework analysis supports several of our fundamental recommendations. We think ALTICE, ATCNA and TDCDC subs are rich, and have UW recommendations on the associated issues. DOUGR and MTNLN bonds screen cheap on our analysis, and we have an OW recommendation on MTNLN subs (MW DOUGR subs).

Credit
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Table of Contents

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Refer to important disclosures on page 34 to 36. Analyst Certification on page 30. Valuation & Risk on page 24.

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Key recommendations

In this report, we highlight the following recommendations, which our framework suggests have the greatest potential for significant spread moves, and which far from our perception of "fair value"?

Table 1: Key recommendations alongside gap to fair value implied by the model

				Δ to Sub FV	
Issuer	**Ticker**	**Analyst**	**Focus recommendation(s)**	**Bond points**	**Z-spread bps**
TDC	TDCDC	Nick Macdonald	UW HoldCo €23s	-8.3	441
Douglas	DOUGR	Tom Gibney	MW Sub €23s	5.7	-168
Matalan	MTNLN	Tom Gibney	OW 2nd Lien £24s	10.9	-300

Source: BofA Merrill Lynch Global Research

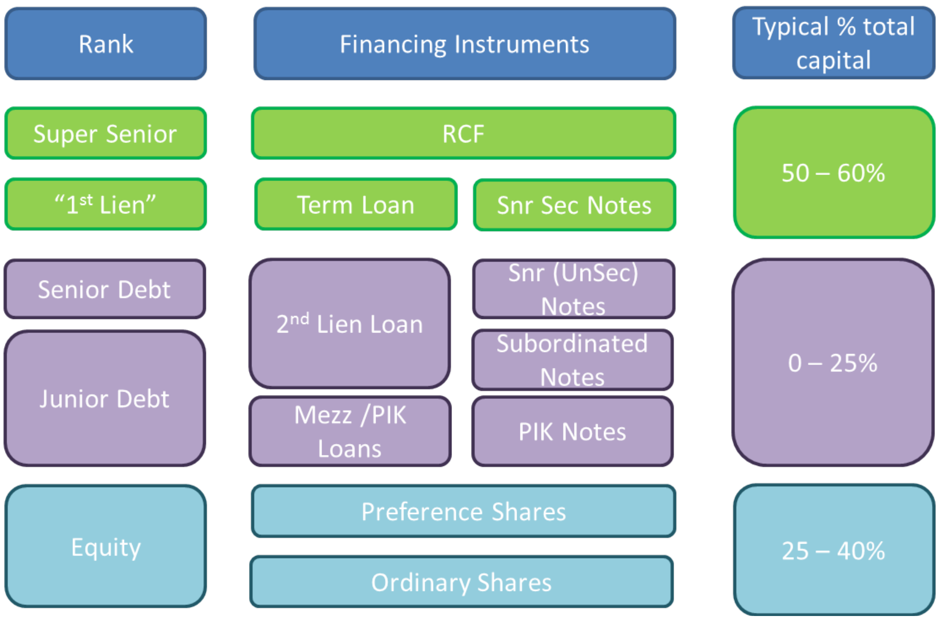
Recent related research

- Altice S.A.: The debate 09 January 2019
- Altice Europe: Problems – some solved, some remain 23 May 2019
- TDC A/S: Underweight op. co., downgrade subs to Underweight 26 February 2019
- Douglas: Nearing fair value, move to Marketweight 07 March 2019
- Matalan: Decent 2Q19. Plenty of scope for further retracement 08 October 2018

The genesis of HY subordination

Subordinated credit in the European High Yield market is typically prevalent in privately owned, usually leveraged buyout capital structures. Senior bonds tend to be issued in structures with a single layer of capital markets debt (e.g. Boparan, Jaguar Land Rover). Senior secured bonds are usually comparable to the leveraged loan market, which has typically limited net leverage to around 5.0x EBITDA, in our view. Below this level in the capital structure, the loan market tends to use mezzanine finance to further capitalize issuers, while the bond market uses subordinated debt (usually either unsecured senior bonds, senior subordinated bonds, or PIK bonds). Thus, subordinated debt can sometimes be characterised as a substitute for equity within a high yield capital structure.

Exhibit 1: Typical facets of leveraged capital structures



Source: BofA Merrill Lynch Global Research

Long-run equity returns

It follows that return rates for equity-like debt instruments should be relatively higher than for more senior debt. With long-run returns on major stock indices running at around 7%, it is logical to us that subordinated debt returns should be higher – since a major stock market has yet to "default" and crystallise a loss, while **annual** speculative grade defaults run at c.2.8% over the long term, per Moody's. While there are exceptions, the potential for permanent capital loss in a single instrument seems to command a greater return requirement to us than a diversified index with a likely perpetual lifespan. This approach also acknowledges the inherent differences between the asset classes, where a long equity position can broadly be considered a "call" option, and a long credit position a "put" option.

Subordination by proxy

We have seen an increasing trend of senior bonds – issued in a single tranche – suffering, or risking suffering, subordination by non-bond debt, and even by non-debt claims. Among our coverage, we would highlight the following names as facing such issues at present: Upfield (loans ahead of the senior bonds), Boparan (risk of pension taking priority claim to bonds), CMA (loans securing assets ahead of bonds), Jaguar Land Rover (potential for secured issuance, trade finance), and Atalian (Receivables sold out of restricted group). These examples show that subordination is not a static state – a bond's position in the capital structure can change over time, particularly if it is on a path to default. Bonds can also be temporally subordinated to short-term debt.

Why does subordination matter?

Simply put, subordination matters because in the event of default, capital loss in subordinated tranches is highly likely to be substantial, if not entire.

In addition, since subordinated debt – when it replaces non-cash interest-bearing capital such as equity – imposes a further burden on the overall cashflow profile of the group. We think cash interest cover (broadly, EBITDA / cash interest) is a critical metric to assess credit quality. Because cash interest is a 'fixed' cash drain on the business, capital-constrained companies tend to cut capital expenditure to ensure interest obligations are met (especially when operating cash flow falls below expectations, i.e. lower earnings). Such decisions have the effect of further impairing the credit quality of the broader group, as assets become underinvested, and growth opportunities are passed up.

Of course, each issuer is unique – not only in its operational and cashflow profiles, but also in the covenant package attached to each bond. Additional considerations in capital structures include:

- Revolving Credit Facilities – in the European HY market, RCFs are often super senior to senior secured bonds. This potential additional layer of capital can further subordinate junior tranches of the capital structure, which may in turn reduce recovery values.

- Covenant package – bond indentures are not homogenous, and the nature of protections afforded to bondholders directly affects bond recovery in the event of default. A subordinated bond with a strong covenant package could offer higher recovery than a secured bond in another structure where an issuer is able to layer significant indebtedness ahead of it.

- Nature of security – real assets vs share pledges/service companies; in our view, those companies with relatively higher amounts of tangible assets on their balance sheet tend to exhibit higher levels of recovery in default.

- Equity cushion – leverage matters relative to total capitalisation – the less equity capital contributed to the entity by shareholders, and/or the lower the ratio of equity to total capital, the greater the potential loss in the event of default.

As each of these factors can directly impact recovery in the event of default, they should be considered carefully with respect to each credit. With such high idiosyncrasy in European High Yield bonds, there is high dispersion of creditor recovery in default.

Our analysis considers that most European HY bonds are priced with fairly generic recovery assumptions – and subordinated debt regularly trades with overstated expectations of recovery in the event of default.

Technical considerations in subordinated credit

Subordinated bonds often trade differently to senior bonds, for a variety of reasons:

- Exhibits significantly more volatility relative to its senior pair

- Tend to exhibit less liquidity: smaller issue size, lower ratings attract fewer investors / rule out certain mandates

- May attract investors pursuing a 'basis' strategy (pairing a bond position with a matched CDS positon) – reducing liquidity, and driving different desired outcomes among the investor base in that instrument.

In our view, these technical factors require additional spread to compensate an investor – above the theoretical spread derived from probability of default and recovery expectations.

Distressed technicals

When an issuer of subordinated bonds becomes distressed, we think there are further technical effects to consider:

- 'Forced' sellers – some bondholders may not be able (under mandate) / willing (under manager policy) to hold a bond below a certain rating, or if the probability of default is substantial.

- Reduced liquidity – the prospect of substantial capital loss may deter market makers from offering liquidity, relative to high yield bonds not in distress. This factor becomes somewhat circular, often driving large 'gaps' in security prices between trades.

Recovery expectations

Recovery expectations are a key model input. We note that Moody's observes an average recovery rate of 55% on 1st Lien bonds globally between 1983 and 2018. Ultimate recoveries for senior secured bonds were observed at 62% between 1987 and 2018. Moody's also highlights ultimate recoveries of 28% for subordinated bonds over the same period. We believe recoveries for subordinated bonds in the European High Yield market will prove to be lower than this over the next few years, driven by a number of factors:

- Weakening covenant standards

- Weakening credit quality (proportion of total market at B- or lower at 18.3% as of FY18, vs 13.8% FY15)

- Asymmetry of jurisdictions and bankruptcy regimes (US bankruptcy process clearly defined and relatively efficient, compared with various regimes with different levels of creditor protection across Europe)

Of course, recovery expectations are moot, if defaults do not occur. We expect a limited increase in default rates in European High Yield, a view shared by the major rating agencies. For 2019:

- Moody's expects the default rate in Europe to rise from the March 2019 level of 0.9% to 1.5% by year-end, increasing again to 1.8% by March 2020.

- S&P anticipates speculative-grade defaults in Europe to rise to 2.9% in 2019 from 1.9% in 2018.

Pricing HY subordination

When considering the fair value for subordinated bonds, we seek to determine the 'expected value' (ExV) of a sub bond, and its senior secured pair. We believe that, as a rule, when faced with a choice of two bonds, a rational investor will choose the investment opportunity with the highest ExV. On this basis, we believe that many European High Yield subordinated bonds under our coverage are significantly overvalued.

Our method is as follows:

1. Determine the approximate probability of default implied by the spread of the senior secured bond in the structure; we use the standard equation[1]

$$P = 1 - e\frac{-S * t}{1 - R}$$

   Where

   P is the probability of default;

   S is the bond spread;

   t is the time to default;

   R is the expected recovery rate.

2. Use analyst assumption for *t*, the time to default of a given senior-sub issuer (usually the first major maturity in the structure).
3. Use analyst assumption of recovery rates on the senior and subordinated bonds.
4. Discount the cashflows in two scenarios: the issuer defaults, or bonds are repaid at maturity.
5. Weight the discounted cashflows according to the probability of default, to derive an ExV for the instrument.

We illustrate this process, and its output, for a generic 7-year, 5% senior secured bond and an 8% sub in the same structure:

Table 2: Market-implied probability of default

	Snr Sec
Spread	5.00%
Years to Default	7.0
Snr Sec recov ery rate	50%
Implied continuous probability of default	**50%**
Unsec recovery rate	5%
Maturity	14-May-26
Current date	14-May-19
Risk-free rate	0.0

Source: BofA Merrill Lynch Global Research

[1] Used, for example, in IMF working paper 06/104: *Market-Based Estimation of Default Probabilities and Its Application to Financial Market Surveillance,* authored by Jorge Chan-Lau

Using this continuous probability of default derived from the senior secured bond spread, we build two scenarios: i) in which we assume: both bonds default simultaneously (usually at the first major maturity), and provide recoveries net of our expected losses; and ii) the bonds recover par at the end of our assumed timeframe.

Table 3: Cash flows of Secured & Unsecured bonds in default & no default scenarios

	Secured 5% '26		Sub 8% '27	
	Default	No Default	Default	No Default
14-Nov-19	2.50	2.50	4.00	4.00
14-May-20	2.50	2.50	4.00	4.00
14-Nov-20	2.50	2.50	4.00	4.00
14-May-21	2.50	2.50	4.00	4.00
14-Nov-21	2.50	2.50	4.00	4.00
14-May-22	2.50	2.50	4.00	4.00
14-Nov-22	2.50	2.50	4.00	4.00
14-May-23	2.50	2.50	4.00	4.00
14-Nov-23	2.50	2.50	4.00	4.00
14-May-24	2.50	2.50	4.00	4.00
14-Nov-24	2.50	2.50	4.00	4.00
14-May-25	2.50	2.50	4.00	4.00
14-Nov-25	2.50	2.50	4.00	4.00
14-May-26	51.25	102.50	5.20	104.00
Present Value	**83.75**	**135.00**	**57.20**	**156.00**

Source: BofA Merrill Lynch Global Research

From there, we weight the discounted cash flows accordingly based on the market-implied probability of default, to derive an ExV for each bond:

Table 4: Implied ExV for senior & bonds in a capital structure

							Weighted Present Values (PV)		
Bond	**Yrs to default**	**Coupon**	**Price**	**No default**	**Default**	**Prob default**	**No default**	**Default**	**ExV**
Snr Sec	7.0	5.00	100.00	135.00	83.75	50%	67.00	42.18	9.19
Snr Unsec	7.0	8.00	100.00	156.00	57.20	50%	77.42	28.81	6.24

Source: BofA Merrill Lynch Global Research

Finally, we back-solve for the Subordinated bond price at which the Sub bond ExV equals that of its senior pair. That is, we find the price at which the ExV of the sub bond matches that of the senior bond in the same structure:

Table 5: Price at which Sub bond fairly prices default probability and recovery assumption

Current Sub Price	100.00
Sub Price = Ex V	97.05
Difference	**-2.95**

Source: BofA Merrill Lynch Global Research

The above model suggests a "best case" for a broad 300bps differential between senior secured and subordinated bonds; and indeed, even using these assumptions the sub bonds are almost 3 points too rich.

Changing recovery assumptions drives a very large differential in sub bond fair value:

At 75% Snr Sec recovery:

Table 6: Price at which Sub bond ExV equals Senior bond ExV (75% Snr Sec recovery)

Current Sub Price	**100.00**
Sub Price = Ex V	65.85
Difference	**-34.15**

Source: BofA Merrill Lynch Global Research

At 30% Snr Sec recovery:

Table 7: Price at which Sub bond ExV equals Senior bond ExV (30% Snr Sec recovery)

Current Sub Price	**100.00**
Sub Price = Ex V	110.35
Difference	**10.35**

Source: BofA Merrill Lynch Global Research

Thus, in general, the lower the likely recovery rate for the secured bonds, the smaller the spread differential required between the secured and unsecured bonds. This variation, we believe, accounts particularly for the apparent cheapness of two sub bonds in retail issuers under our coverage (DOUGR and MTNLN) – because low-margin clothing retailers tend to experience significant value destruction on the path to default, progress along which can be rapidly advanced by working capital outflows.

Different spreads can also drive a differential in implied fair value of sub bonds. Running the model with a generic 1,000bp senior secured spread drives higher implied probability of default, which requires additional subordinated bond compensation:

Table 8: Market-implied probability of default

	Snr Sec
Spread	10.00%
Time to Default	7.0
Snr Sec recov ery rate	50%
Mkt-implied prob default	**75%**
Unsec recovery rate	5%
Maturity	14-May-26
Today	14-May-19
Risk-free rate	0.0

Source: BofA Merrill Lynch Global Research

Table 9: ExV for senior & bonds in a capital structure

							Weighted PVs		
Bond	**Yrs to default**	**Coupon**	**Price**	**No default**	**Default**	**Snr Sec implied Prob default**	**No default**	**Default**	**ExV**
Snr Sec	7.0	10.00	100.00	170.00	117.50	75%	41.88	88.56	30.43
Snr Unsec	7.0	13.00	100.00	191.00	89.83	75%	47.05	67.70	14.75

Source: BofA Merrill Lynch Global Research

Table 10: Price at which Sub bond matches Senior bond ExV

Current Sub Price	**100.00**
Sub Price = Ex V	84.32
Difference	**-15.68**

Source: BofA Merrill Lynch Global Research

Variance & limitations

Changes in assumptions can drive significant differences in outcomes. We believe in many cases the market does not sufficiently consider recovery rates in 'on the run' bonds, even though they form a critical component of the calculation of bond spread and probability of default. Similarly, we think the market often could further consider the probability of default implied by bond spreads – for example, at current trading levels, our assumption of 80% senior secured bond recovery in GFKLDE senior secured bonds implies an 83% probability of default in the instrument. While this is a credit which is relatively highly polarising, we expect many investors would be surprised at such a high implied probability of default. Of course, there is an inter-relationship between probability of default and recovery rate assumptions.

We recognise certain limitations in our model, including: senior secured bonds trading to call do not (necessarily) help extrapolate an implied default rate to also apply to the subordinated bond; variation in recovery assumption can drive large differentials in implied default probability (and therefore Sub bond ExV), high senior secured recovery expectations can drive very high implied probabilities of default, accounting for early restructuring would imply different ExV, as recovery would then happen before maturity and recovery rates can be far different from those in a default-at-maturity scenario. A dramatic change in interest rates could also change ExV expectations, and therefore implied prices at which sub bond ExV equals senior secured bond ExV in a given structure.

Subordination – our recommendations

Altice International / ALTICE

Analyst: Nick Macdonald

Recommendation: UW Snr Secured €'23s, UW Unsecured €'28s

We have an Underweight recommendation on most Altice International bonds. This reflects still challenging operating trends and a lack of visibility as to whether fibre assets will be monetised.

With the ALTICE 5.25% €'23 trading 0% YTC, we analyse ALTICE USD bonds within our model specifically the 7.5% $'26s and the sub 7.625% $'25s. We assume default at maturity of the Sub bond. Intuitively we think the implied default probability output by the model is too high given significant liquidity and disposal options still available to Altice. Thus we think the implied downside to fair value in the subordinated bond is exaggerated by the model in this instance. As per the other examples the model is sensitive to events such as pricing to call and our recovery assumptions. For instance we note that just reducing recovery to the average of 62% reduces default probability to 56% and the downside to 21pts vs. the 44pts quoted.

Table 11: Market-implied probability of default

	Snr Sec
Spread	5.09%
Time to Default	5.77
Snr Sec recov ery rate	80%
Prob default	77%
Unsec recovery rate	5%
Maturity	15-May-26
Today	12-May-19
Risk-free rate	0.02

Source: BofA Merrill Lynch Global Research

Table 12: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	**Yrs to default**	**Coupon**	**Price**	**No default**	**Default**	**Prob default**	**No default**	**Default**	**ExV**
Snr Sec	5.77	7.50	100.27	131.13	113.38	77%	30.19	87.28	17.19
Snr Unsec	5.77	7.63	93.22	131.85	47.49	77%	30.35	36.55	-26.32

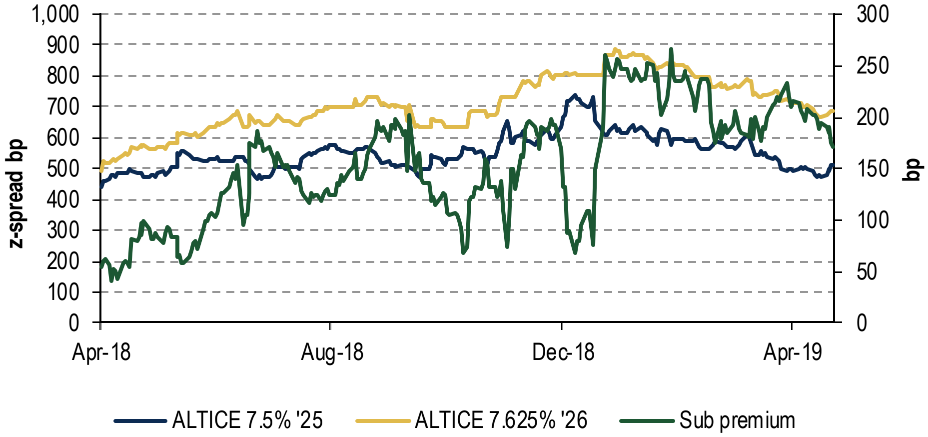
Source: BofA Merrill Lynch Global Research

Table 13: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	93.22	Current Sub spread	682
Sub Price = Ex V	49.72	Implied Sub spread	2,196
Difference	**-43.50**	**Difference**	**-1,514**

Source: BofA Merrill Lynch Global Research

Chart 1: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Douglas / DOUGR

Analyst: Tom Gibney

Recommendations: MW Snr Secured €22s, MW Snr Unsecured €23s

Douglas unsecured €23s screen cheap to the secured €22s on our model; in part this is a a function of an assumed low 55% secured recovery rate, driving a low implied probability of default of 43%. We are Marketweight the secured €22s as we believe spreads, which are relatively wide vs. the rest of European HY, fairly reflect our expectation that management will be able to sustain EBITDA at around the current level, but ongoing risks from continued intense competition in Germany/France, and execution risks in its newly acquired Spanish and Italian businesses. Although the unsecured €23s do screen cheap vs. the secured €22s, we are reluctant to take a more positive view in light of these ongoing risks and our low confidence in the likelihood of catalysts for upwards re-pricing in the €23s such as a significant positive earnings surprise.

Table 14: Market-implied probability of default

	Snr Sec
Spread	7.91%
Time to Default	3.18
Snr Sec recov ery rate	55%
Prob default	43%
Unsec recovery rate	5%
Maturity	15-Jul-22
Today	10-May-19
Risk-free rate	0.00

Source: BofA Merrill Lynch Global Research

Table 15: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	**Yrs to default**	**Coupon**	**Price**	**No default**	**Default**	**Prob default**	**No default**	**Default**	**ExV**
Snr Sec	3.18	6.25	95.24	121.88	75.47	43%	69.65	32.34	6.75
Snr Unsec	3.18	8.75	75.65	130.63	31.47	43%	74.65	13.49	12.49

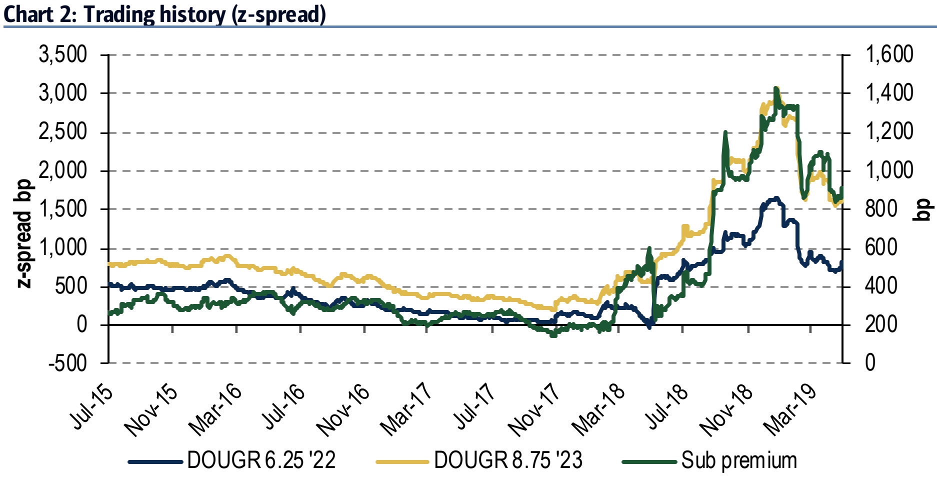
Source: BofA Merrill Lynch Global Research

Table 16: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	75.65	Current Sub spread	1,665
Sub Price = Ex V	81.38	Implied Sub spread	1,497
Difference	**5.74**	**Difference**	**168**

Source: BofA Merrill Lynch Global Research

Chart 2: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Lowell / GFKLDE

Analyst: Tom Gibney

Recommendation: OW Snr Secured £22s, OW Snr Unsecured £23s

We are OW Lowell secured £22s on our view that the market is materially mispricing its credit risk. In our view, recovery in default would be high since (barring material regulatory changes that impair NPL values), Lowell's strong operating platform and diversified financial receivables would likely attract significant interest from trade and private equity buyers. Given very high spreads on the secured bonds, an assumed recovery rate of 75% suggests a very high market-implied probability of default of 75%. With a greater emphasis on deleveraging going forward and a reasonable runway to the next bond maturity (2022), we believe this is far too high. Although the unsecured £23s screen rich based on the secured spread-implied probability of default, since we the risk of default is much lower, we maintain an Overweight recommendation on the £23s too.

Table 17: Market-implied probability of default

	Snr Sec
Spread	9.91%
Time to Default	3.47
Snr Sec recov ery rate	75%
Prob default	75%
Unsec recovery rate	5%
Maturity	01-Nov-22
Today	14-May-19
Risk-free rate	0.01

Source: BofA Merrill Lynch Global Research

Table 18: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	**Yrs to default**	**Coupon**	**Price**	**No default**	**Default**	**Prob default**	**No default**	**Default**	**ExV**
Snr Sec	3.47	8.50	92.14	125.91	100.72	75%	31.79	75.29	14.94
Snr Unsec	3.47	11.00	86.59	134.52	37.64	75%	33.96	28.14	-24.50

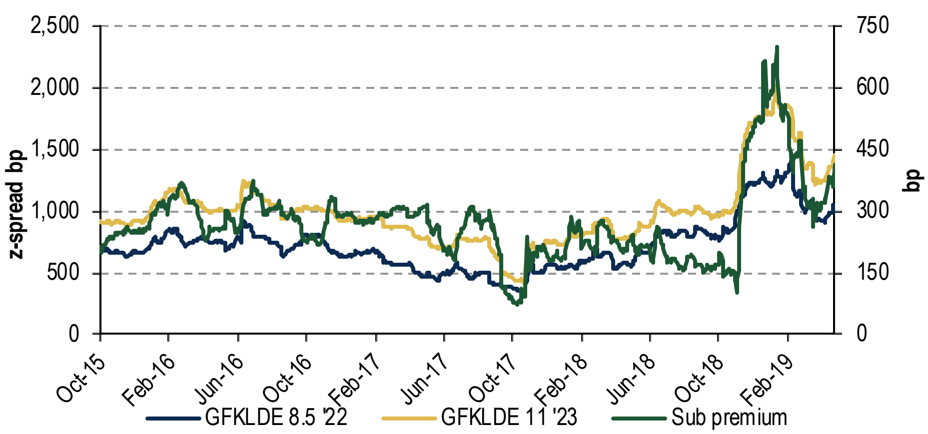
Source: BofA Merrill Lynch Global Research

Table 19: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	86.59	Current Sub spread	1,411
Sub Price = Ex V	47.16	Implied Sub spread	3,427
Difference	**-39.43**	**Difference**	**-2,016**

Source: BofA Merrill Lynch Global Research

Chart 3: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Salt Telecom / MATTER

Analyst: Nick Macdonald

Recommendations: MW 4% Snr Sec '27, UW 4.875% Subs '23

Our UW recommendation on the MATTER Subs reflect the challenging operational environment for the group, the group's aggressive financial policies, and weak covenant protection. However, we acknowledge that receipt of tower proceeds will likely result in a redemption of the note and thus the following analysis is just for illustrative purposes.

With the MATTER 3.875% '22 trading 0% YTC, we analyse the MATTER 4% '27 Secured bonds within our model. We assume default at maturity of the Sub bond.

Table 20: Market-implied probability of default

	Snr Sec
Spread	3.89%
Time to Default	3.97
Snr Sec recovery rate	80%
Prob default	54%
Unsec recovery rate	5%
Maturity	01-May-23
Today	12-May-19
Risk-free rate	0.00

Source: BofA Merrill Lynch Global Research

Table 21: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	Yrs to default	Coupon	Price	No default	Default	Prob default	No default	Default	ExV
Snr Sec	3.97	4.00	98.21	115.98	95.59	54%	53.57	51.44	6.80
Snr Unsec	3.97	4.88	100.27	119.48	22.18	54%	55.18	11.94	-33.15

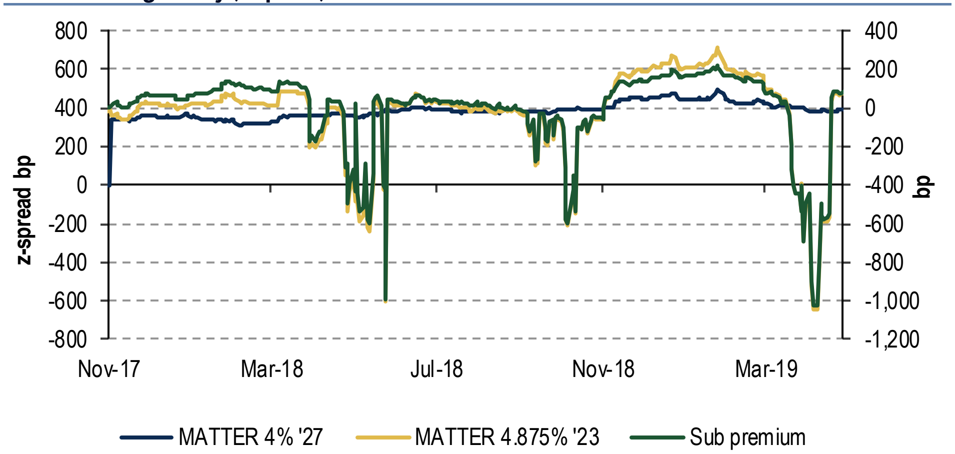
Source: BofA Merrill Lynch Global Research

Table 22: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	100.27	Current Sub spread	433
Sub Price = ExV	60.32	Implied Sub spread	1,987
Difference	**-39.95**	**Difference**	**1,554**

Source: BofA Merrill Lynch Global Research

Chart 4: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Matalan / MTNLN

Analyst: Tom Gibney

Recommendation: OW Snr Secured £23s, OW Second Lien £24s

We are Overweight Matalan's 1st lien and 2nd lien bonds based on our expectation of further bond price appreciation as results continue to reflect its success in growing market share via better online execution, category expansion and store refits. Matalan £24s screen as cheap because, in the event of default, the recovery rate for the 1st lien £23s would likely be very low, as low margin clothing retailers tend to experience significant value destruction on the path to default, progress along which can be rapidly advance by working capital outflows. The apparent cheapness of the £24s, according to our model, clearly illustrates our view that the lower the expected senior secured recovery, the smaller the senior/sub spread differential required.

Table 23: Market-implied probability of default

	Snr Sec
Spread	5.94%
Time to Default	3.73
Snr Sec recov ery rate	25%
Prob default	26%
Unsec recovery rate	5%
Maturity	31-Jan-23
Today	10-May-19
Risk-free rate	0.01

Source: BofA Merrill Lynch Global Research

Table 24: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	Yrs to default	Coupon	Price	No default	Default	Prob default	No default	Default	ExV
Snr Sec	3.73	6.75	98.55	122.59	48.07	26%	91.22	12.30	4.97
Snr Unsec	3.73	9.50	93.02	133.38	37.73	26%	99.24	9.66	15.87

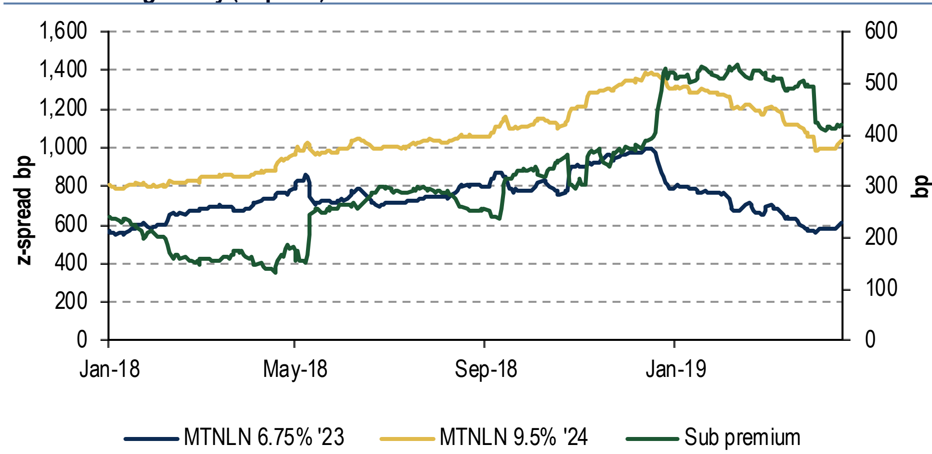
Source: BofA Merrill Lynch Global Research

Table 25: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	93.02	Current Sub spread	1,015
Sub Price = Ex V	103.93	Implied Sub spread	715
Difference	**10.91**	**Difference**	**300**

Source: BofA Merrill Lynch Global Research

Chart 5: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Pizza Express / PIZEXP

Analyst: Tom Gibney

Recommendation: MW Snr Secured £21s, MW Unsecured £22s

Pizza Express unsecured £22s screen slightly rich, relative to the secured £21s, according to our methodology. We are cautious on the name and we see a relatively high probability that it will be unable to refinance its capital structure before the next bond maturity in 2021. However, a fairly high probability of default is already priced into the bonds so with limited near term negative catalysts on the horizon we see a relatively limited chance of material underperformance in the near term. As such, we have Marketweight recommendations on each of the secured £21s and unsecured £22s.

Table 26: Market-implied probability of default

	Snr Sec
Spread	12.72%
Time to Default	2.23
Snr Sec recovery rate	75%
Prob default	68%
Unsec recovery rate	5%
Maturity	01-Aug-21
Today	10-May-19
Risk-free rate	0.01

Source: BofA Merrill Lynch Global Research

Table 27: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	Yrs to default	Coupon	Price	No default	Default	Prob default	No default	Default	ExV
Snr Sec	2.23	6.63	86.13	119.46	94.49	68%	38.40	64.12	16.39
Snr Unsec	2.23	8.63	50.38	126.34	30.55	68%	40.61	20.73	10.96

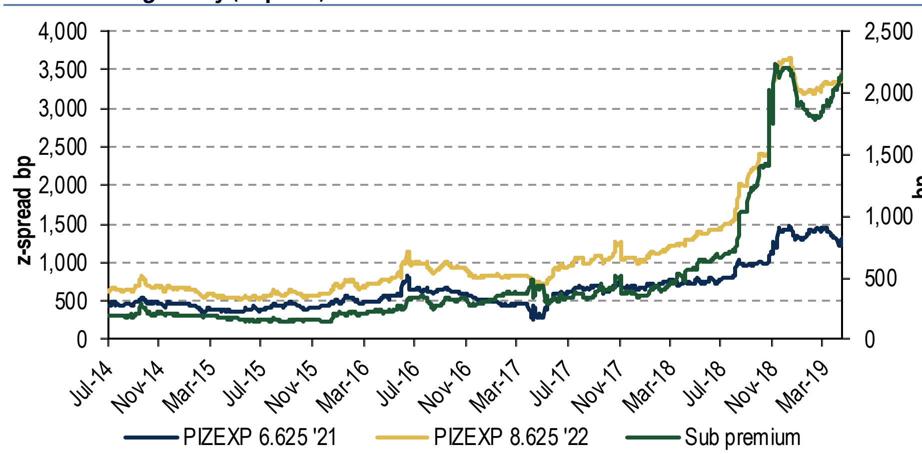
Source: BofA Merrill Lynch Global Research

Table 28: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	50.38	Current Sub spread	3,374
Sub Price = ExV	44.96	Implied Sub spread	3,973
Difference	**-5.42**	**Difference**	**-600**

Source: BofA Merrill Lynch Global Research

Chart 6: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Altice France & Altice Lux./SFRFP & ATCNA

Analyst: Nick Macdonald

Recommendation: OW Snr Secured SFRFP €'27s, UW ATCNA €'25s

Altice France bonds remains the most defensive position in the Altice structure in our view. The Altice Lux. bonds are more sensitive to broader issues across the structure including liabilities outside the restricted group, weak Altice International performance and negative group FCF. We assume default occurs at maturity of the ATCNA '25s.

Similarly to our view on the Altice International notes, we think the model implied probability of default screens too high relative to our perceived risk given the liquidity across the group and likely asset sale/consolidation options. Thus we think the implied downside to fair value in the subordinated bond is exaggerated by the model in this instance. As per the other examples the model is sensitive to events such as pricing to call and our recovery assumptions. For instance we note that just reducing recovery to the market average of 62% reduces default probability to 56% and the downside to 19pts vs. the 44pts quoted below.

Table 29: Market-implied probability of default

	Snr Sec
Spread	4.68%
Time to Default	5.77
Snr Sec recovery rate	80%
Prob default	74%
Unsec recovery rate	5%
Maturity	15-Feb-25
Today	13-May-19
Risk-free rate	0.00

Source: BofA Merrill Lynch Global Research

Table 30: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	Yrs to default	Coupon	Price	No default	Default	Prob default	No default	Default	ExV
Snr Sec	5.77	5.88	105.12	135.27	114.68	74%	35.04	84.97	14.90
Snr Unsec	5.77	6.25	96.67	137.53	39.53	74%	35.63	29.29	-31.75

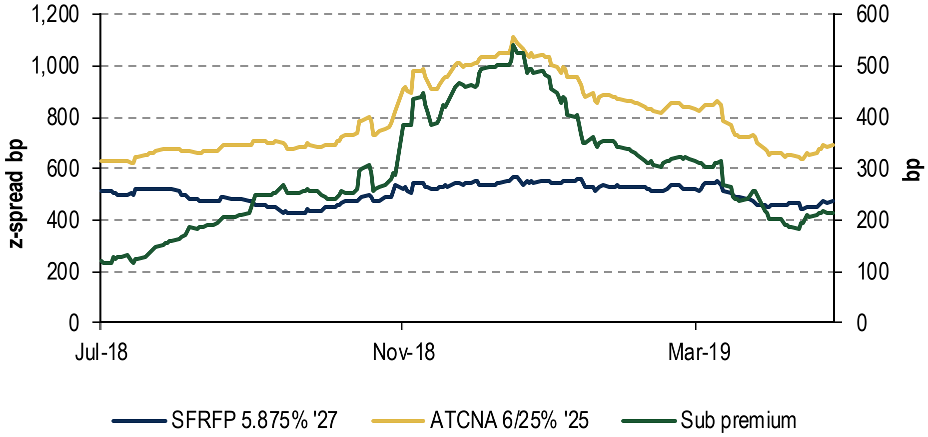
Source: BofA Merrill Lynch Global Research

Table 31: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	96.67	Current Sub spread	683
Sub Price = ExV	50.02	Implied Sub spread	2,193
Difference	**-46.65**	**Difference**	**1,510**

Source: BofA Merrill Lynch Global Research

Chart 7: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

TDC / TDCDC

Analyst: Nick Macdonald

Recommendations: UW 5% Opco '22s; UW 7% HoldCo '23s

Our UW recommendations on TDC bonds reflect its negative FCF profile in FY19, as it embarks on significant investments in its fibre network. We see increased risks given TDC's re-leveraging ambition and we are cautious around the company's reluctance to provide leverage guidance.

Table 32: Market-implied probability of default

	Snr Sec
Spread	0.87%
Time to Default	2.81
Snr Sec recov ery rate	90%
Prob default	22%
Unsec recovery rate	10%
Maturity	02-Mar-22
Today	12-May-19
Risk-free rate	0.00

Source: BofA Merrill Lynch Global Research

Table 33: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	Yrs to default	Coupon	Price	No default	Default	Prob default	No default	Default	ExV
Snr Sec	2.81	5.00	111.53	115.00	104.50	22%	89.97	22.75	1.18
Snr Unsec	2.81	7.00	107.83	120.99	27.85	22%	94.65	6.06	-7.12

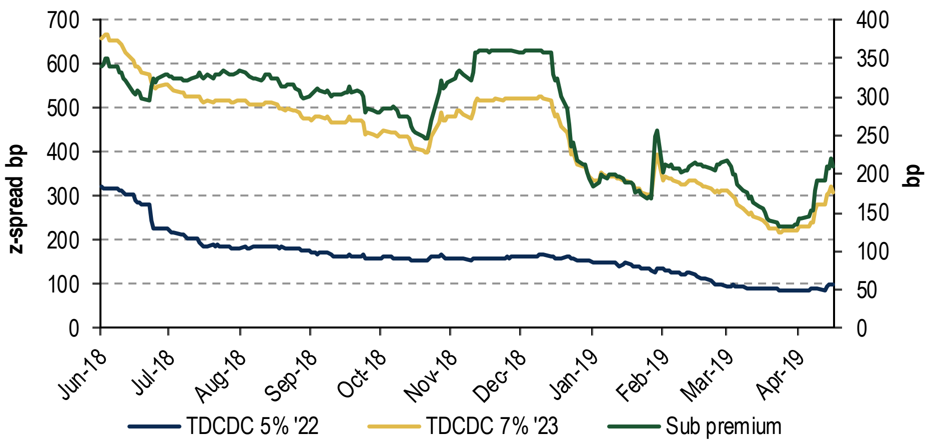
Source: BofA Merrill Lynch Global Research

Table 34: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	107.83	Current Sub spread	280
Sub Price = Ex V	99.54	Implied Sub spread	721
Difference	**-8.29**	**Difference**	**441**

Source: BofA Merrill Lynch Global Research

Chart 8: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Unitymedia / UNITY

Analyst: Nick Macdonald

Recommendations: OW 3.5% Snr Sec '27s, OW Unsub 3.75% '27s

We note the high probability of default implied by the snr sec spread, and believe in this case the market has not fairly assessed the likely senior secured recovery rate at UNITY. Using a more typical 60% recovery rate, the probability of default falls to 22%. We believe this is a more realistic cumulative default probability for Unitymedia; however while using this recovery rate and implied default probability, the sub bond still screens as having a lower ExV than the Secured bond.

Table 35: Market-implied probability of default

	Snr Sec
Spread	1.31%
Time to Default	7.68
Snr Sec recovery rate	90%
Prob default	64%
Unsec recovery rate	30%
Maturity	15-Jan-27
Today	12-May-19
Risk-free rate	0.00

Source: BofA Merrill Lynch Global Research

Table 36: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	**Yrs to default**	**Coupon**	**Price**	**No default**	**Default**	**Prob default**	**No default**	**Default**	**ExV**
Snr Sec	7.68	3.50	105.39	128.01	117.84	64%	46.61	74.93	16.15
Snr Unsec	7.68	3.75	105.69	130.02	58.69	64%	47.34	37.32	-21.03

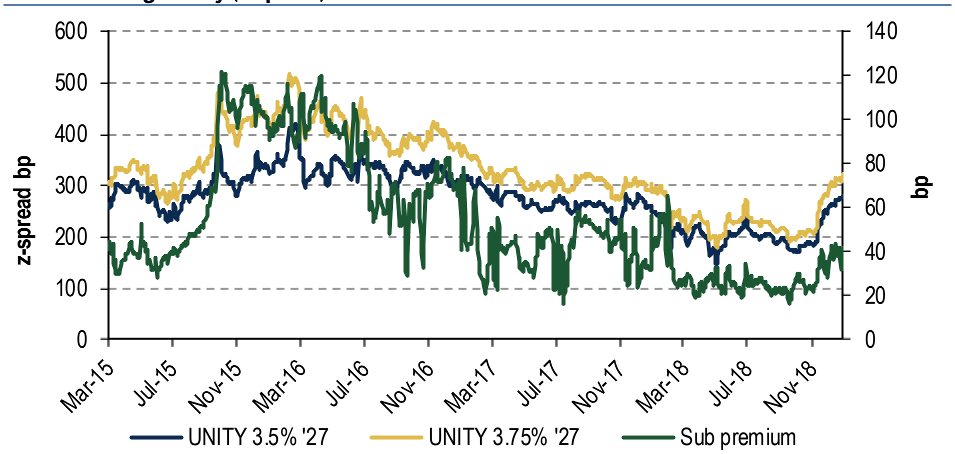
Source: BofA Merrill Lynch Global Research

Table 37: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	105.69	Current Sub spread	145
Sub Price = ExV	68.51	Implied Sub spread	943
Difference	**-37.18**	**Difference**	**798**

Source: BofA Merrill Lynch Global Research

Chart 9: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

UPC / UPCB

Analyst: Nick Macdonald

Recommendations: OW 3.65% Snr Sec '29, MW 3.875% Sub '29

As per our previous note, we see upside/downside as less favourable in the UPC unsecured notes.

Like UNITY, our expectation of high recovery on UPCB Snr Sec notes drives a high implied probability of default. Using a more normal 60% senior secured default expectation, implied cumulative default probability falls to a more realistic (in our view) 48%. As with UNITY, in this case the sub still appears overvalued relative to the senior secured notes, as in our base case of 90% senior secured recovery.

Table 38: Market-implied probability of default

	Snr Sec
Spread	2.62%
Time to Default	10.10
Snr Sec recovery rate	90%
Prob default	93%
Unsec recovery rate	30%
Maturity	15-Jun-29
Today	12-May-19
Risk-free rate	0.00

Source: BofA Merrill Lynch Global Research

Table 39: ExV for senior & sub bonds

				Unweighted PVs			Weighted PVs		
Bond	Yrs to default	Coupon	Price	No default	Default	Prob default	No default	Default	ExV
Snr Sec	10.10	3.63	104.75	138.06	127.88	93%	9.74	118.85	23.85
Snr Unsec	10.10	3.88	102.60	140.68	69.33	93%	9.93	64.44	-28.23

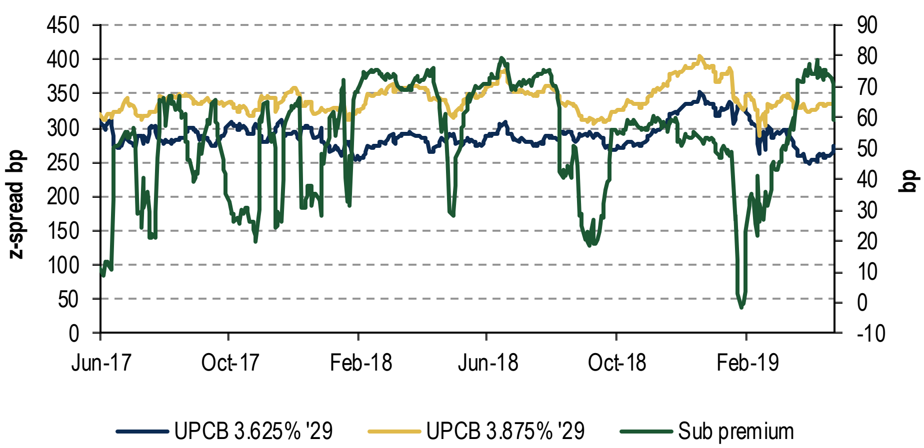
Source: BofA Merrill Lynch Global Research

Table 40: Price & spread at which Sub bond matches Senior bond ExV

	Price		bps
Current Sub Price	102.60	Current Sub spread	339
Sub Price = ExV	50.52	Implied Sub spread	1,231
Difference	**-52.08**	**Difference**	**892**

Source: BofA Merrill Lynch Global Research

Chart 10: Trading history (z-spread)



Source: BofA Merrill Lynch Global Research

Charting the market – A brief history of Euro HY Subordination

We identified 25 Senior-Sub bond 'pairs' in our analysis of the European HY market:

Table 41: Identified bond 'pairs' within the European HY market

Ticker / Bond	Coupon	Maturity	Composite Rating	Sector	Face Value (m)	OAS Spread (bp)
ALTICE						
Senior	5.25	Feb-23	B2	Cable & Satellite TV	509	405
Sub	9	Jun-23	CCC1	Cable & Satellite TV	254	275
ARGID						
Senior	2.75	Mar-24	BB3	Packaging	763	226
Sub	6.75	May-24	B3	Packaging	763	366
COOPWH						
Senior	7.5	Jul-26	BB2	Food & Drug Retailers	356	441
Sub	11	Dec-25	BB3	Food & Drug Retailers	111	585
DGGLN						
Senior	6.375	Nov-20	B	Property/Casualty Ins	200	582
Sub	7.875	Nov-21	CCC+	Property/Casualty Ins	125	817
DOUGR						
Senior	6.25	Jul-22	B2	Specialty Retail	305	779
Sub	8.75	Jul-23	CCC1	Specialty Retail	341	1645
EIGLN						
Senior	6	Oct-23	BB3	Restaurants	254	366
Sub	7.5	Mar-24	B2	Restaurants	153	540
EUROCA						
Senior	2.375	Nov-22	B1	Support-Services	509	187
Sub	5.75	Jun-22	B3	Support-Services	610	161
GALAPG						
Senior	5.375	Jun-21	CCC	Machinery-Therml Process	127	1,215
Sub	7	Jun-22	CC-	Machinery-Therml Process	250	8,152
GFKLDE						
Senior	8.5	Nov-22	B	Finance-Other Services	565	1,108
Sub	11	Nov-23	CCC+	Finance-Other Services	230	1,518
INEGRP						
Senior	4	May-23	BB1	Chemicals	783	0
Sub	5.375	Aug-24	BB3	Chemicals	661	465
LOXAM						
Senior	4.25	Apr-24	BB3	Support-Services	305	191
Sub	6	Apr-25	B2	Support-Services	254	355
MATTER						
Senior	3.875	May-22	B2	Telecom - Wireless	1,017	370
Sub	4.875	May-23	CCC1	Telecom - Wireless	304	471
MTNLN						
Senior	6.75	Jan-23	B3	Specialty Retail	356	626
Sub	9.5	Jan-24	CCC2	Specialty Retail	132	1054
NEWLOK						
Senior	6.5	Jul-22	DDD	Retail-Apparel/Shoe	700	5,561
Sub	8	Jul-23	DDD	Retail-Apparel/Shoe	177	41,801
PIZEXP						
Senior	6.625	Aug-21	CCC+	Retail-Restaurants	465	1,339
Sub	8.625	Aug-22	CCC-	Retail-Restaurants	200	3,534
SAZGR						
Senior	3.5	Sep-24	B1	Health Services	748	330
Sub	7.25	Sep-25	CCC1	Health Services	254	622
SFRFP / ATCNA						
Senior	5.875	Feb-27	B	Cellular Telecom	1,000	472
Sub	8	May-27	CCC+	Cable/Satellite TV	1,400	797
SGMS						
Senior	3.375	Feb-26	B1	Gaming	331	391
Sub	5.5	Feb-26	CCC1	Gaming	254	640
SWPORT						
Senior	6.75	Dec-21	B3	Transport Infrastructure/Services	407	497
Sub	9.75	Dec-22	CCC2	Transport Infrastructure/Services	285	727

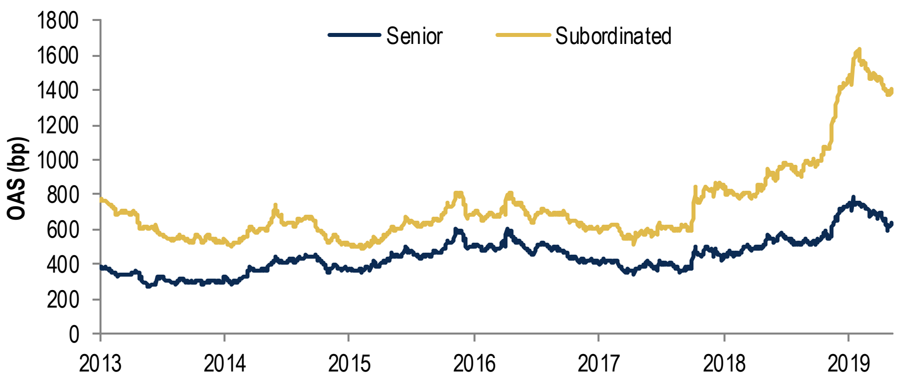
Table 41: Identified bond 'pairs' within the European HY market

Ticker / Bond	Coupon	Maturity	Composite Rating	Sector	Face Value (m)	OAS Spread (bp)
TDCDC						
Senior	6.875	Feb-23	BB3	Telecom - Wireline Integrated & Serv ices	432	228
Sub	7	Jun-23	B2	Telecom - Wireline Integrated & Serv ices	1,068	299
UNITY						
Senior	3.5	Jan-27	BB2	Cable & Satellite TV	509	96
Sub	3.75	Jan-27	B2	Cable & Satellite TV	712	195
UPCB						
Senior	3.625	Jun-29	BB2	Cable & Satellite TV	610	274
Sub	3.875	Jun-29	B2	Cable & Satellite TV	604	341
VERISR						
Senior	3.5	May -23	B2	Support-Serv ices	305	2
Sub	5.75	Dec-23	CCC1	Support-Serv ices	1,099	519
VMED						
Senior	5.5	Jan-25	BB-	Cable/Satellite TV	387	-1,072
Sub	5.5	Sep-24	B	Cable/Satellite TV	800	342
ZIGGO						
Senior	3.75	Jan-25	BB3	Cable & Satellite TV	814	266
Sub	4.625	Jan-25	B3	Cable & Satellite TV	407	341

Source: BofA Merrill Lynch Global Research, Bloomberg

Using these bonds as an indication, we charted the weighted and unweighted spread differentials between the issues over time.

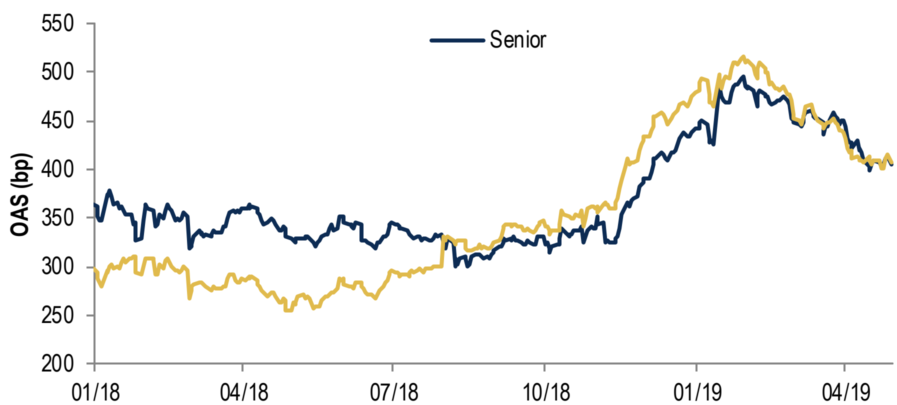
Chart 11: Senior Vs Subordinated OAS spreads (unweighted)



Source: BofA Merrill Lynch Global Research, Bloomberg, ICE Data Indices, LLC

Note that unweighted spreads are recently distorted by the significant deterioration in New Look sub spreads.

Chart 12: Senior Vs Subordinated OAS spreads (weighted)



Source: BofA Merrill Lynch Global Research, Bloomberg, ICE Data Indices, LLC

Note that on a weighted basis, senior-subordinated spreads are currently at a low differential, relative to the last 18 months.

Valuation & risk

Altice Europe (ATCNA)

Altice bonds are heavily structurally subordinated and highly levered. From a relative value perspective we view the bonds as expensive vs. peers given these characteristics. We believe there is potential upside in a consolidation scenario and/or if FCF can be sustainably delivered. However for now, we view levels as failing to reflect still challenging operating trends and high loan-to-value.

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 and vii) delivery

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. Spreads trade wide to other secured peers and we view levels as supported by consolidation downside protection over the long-term.

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.

DKT Finance ApS (TDCDC)
Our Underweight view is driven by the following considerations: i) our expectation that EBITDA will decline in 2019, ii) cash outflows related to the 5G auction may be material in 19, iii) top-line and TV revenues remain pressured, iv) leverage is expected increase in 19 and v) a lack of guidance with respect to leverage ambitions.

From a relative value perspective we view the hold-co bonds as less attractive following strong performance over the last 12 months. The bonds yield c. 3.3% and have negative option adjusted convexity given the cash price and extension risk.

Risks to the downside: i) a failure to stabilise the B2B business, ii) an acceleration of TV sub losses, iii) high leverage with no explicit intention to materially reduce debt levels and iv) uncertainty around a network spin-out which may not be to the benefit of bondholders.

Risks to the upside: i) a stabilization of the top-line, ii) a more conservative financial policy and iii) improved margin performance.

TDC A/S (TDCDC)
Our Underweight rating on the bonds is driven by fundamental concerns regarding the ability to stabilise the TV subscriber base, reduce broadband losses and improve trends in B2B. We view the planned separation of Net Co as an additional risk for bond holders.

In terms of valuations we spreads in cash and CDS as too tight. The differential between the op-co and hold-co bonds stands at about 300bp (z-spread mids), which is large vs. other comparable bonds in the space (e.g. Ziggo 80bp, albeit secured vs. unsecured differentials). Furthermore the bonds trade tight relative to similarly rated corporate bonds of the same duration. The bonds have net leverage of >3x, are unsecured and have very limited covenant protection (as illustrated by the €3.9bn term loan which primed them). Furthermore the call dates on the hold-co bonds pre-date the maturity on the unsecured bonds, an additional unfavourable technical in our view.
We view fair value as at least c.50bp wider, with compression to a differential of c.200-250bp vs. the hold-co notes.

Downside risks: i) a failure to stabilise the B2B business, ii) an acceleration of TV sub losses, iii) high leverage with no explicit intention to materially reduce debt levels and iv) a network spin-out which reduces asset coverage for bond holders.
Risks to the upside: i) a strong recovery in the B2B segment, ii) an improvement in TV trends, iii) a more conservative dividend policy, iv) a reduction in leverage from possible asset sales.

Douglas (DOUGR)
Competitive pressures remain intense in Germany and we continue to see execution risks in Italy and Spain. However, the next results are likely to be better and we expect broadly stable leverage from here. In the context of a stable yet high leverage base case but continuing risks, we think bonds are broadly fairly priced vs. other single B HY retail peers. The sub/senior spread ratio looks reasonable to us (a bit more than peers due to greater structural subordination) in the context of other sub/senior pairs in retail too. Upside risks are continued strength in German LFL sales growth, a return to growth of the French premium beauty market, greater-than-expected synergies from recent acquisitions, a significant fall in capex and restructuring cost requirements and faster-than-expected increases in sales densities in Italy and Spain. Downside risks are weakening consumer demand, increased competition, higher-than-expected capex and restructuring costs and failure to deliver turnarounds in Italy and Spain.

Douglas (DOUGR)
Competitive pressures remain intense in Germany and we continue to see execution risks in Italy and Spain. However, the next results are likely to be better and we expect broadly stable leverage from here. In the context of a stable yet high leverage base case but continuing risks, we think bonds are broadly fairly priced vs. other single B HY retail peers. The sub/senior spread ratio looks reasonable to us (a bit more than peers due to greater structural subordination) in the context of other sub/senior pairs in retail too. Upside risks are continued strength in German LFL sales growth, a return to growth of the French premium beauty market, greater-than-expected synergies from recent acquisitions, a significant fall in capex and restructuring cost requirements and faster-than-expected increases in sales densities in Italy and Spain. Downside risks are weakening consumer demand, increased competition, higher-than-expected capex and restructuring costs and failure to deliver turnarounds in Italy and Spain.

Garfunkelux Holdco 2 (GFKLDE)
Lowell bonds trade at a substantial discount to sector peers. While some discount is justified given its somewhat higher leverage, we believe it still has a substantial equity cushion and should not be considered over-levered. Its bonds trade in line with longer duration, poorer quality (in our view) credits such as Pizza Express and as such offer great value, in our view, given our expectation for a gradual improvement in leverage from here.

Downside risks are regulatory change (at both a UK and EU level), debt-funded M&A, a failure in collections estimates and a fall in returns due to rising non-performing loan asset prices.

Garfunkelux Holdco 3 (GFKLDE)
Lowell bonds trade at a very substantial discount to sector peers. While some discount is justified given its somewhat higher leverage, we believe it still has a substantial equity cushion and should not be considered over-levered. Its bonds trade in line with longer duration, poorer quality (in our view) credits such as Pizza Express and as such offer great value, in our view, given our expectation for a gradual improvement in leverage from here.

Downside risks are regulatory change (at both a UK and EU level), debt-funded M&A, a failure in collections estimates and a fall in returns due to rising non-performing loan asset prices.

Matalan (MTNLN)
Matalan's 2Q19 results further demonstrated its solid market share momentum and provides further confidence that it will be able to continue to mostly offset the negative impact of its GBPUSD hedges rolling off in 2H19e as well as potential market weakness in FY20e. We expect it to be able to keep leverage broadly stable, even under fairly

conservative market assumptions. Bonds still trade very wide versus other "performing" retail credits such as BUT and Cortefiel, as well as wide versus the index compared to where they trade just a couple of months ago. As such we see plenty of scope for further tightening. Downside risks are weather issues, a greater-than-expected weakening of UK consumer demand, and competition from online and fast fashion retailers.

Matterhorn Tel Hld (MATTER)
We believe the subordinated bonds and 5y CDS will be most vulnerable to the aforementioned fundamental drivers. We are Marketweight on the EUR'27s reflecting our view that the bonds are more fairly valued and covered in the secured part of the capital structure. The secured EUR'22s offer value in our view given levels vs. the EUR'27s, the shorter duration and valuation coverage.

Downside risks are: i) the potential for aggressive price cuts in the Swiss market, ii) increased competition from convergent peers, iii) weak covenant protection, iv) a more aggressive approach to financial policy, v) a material re-leveraging on the back of unexpectedly high auction payments.

Upside risks: i) rapid fixed line growth contributing materially to profitability, ii) using FCF to reduce gross debt, iii) a further stabilization in the mobile base and ARPU, iv) benefitting from Swiss market consolidation without re-leveraging.

Matterhorn Tel SA (MATTER)
We believe the subordinated bonds and 5y CDS will be most vulnerable to the aforementioned fundamental drivers. We are Marketweight on the EUR'27s reflecting our view that the bonds are more fairly valued and covered in the secured part of the capital structure. The secured EUR'22s offer value in our view given levels vs. the EUR'27s, the shorter duration and valuation coverage.

Downside risks are: i) the potential for aggressive price cuts in the Swiss market, ii) increased competition from convergent peers, iii) weak covenant protection, iv) a more aggressive approach to financial policy, v) a material re-leveraging on the back of unexpectedly high auction payments.

Upside risks: i) rapid fixed line growth contributing materially to profitability, ii) using FCF to reduce gross debt, iii) a further stabilization in the mobile base and ARPU, iv) benefitting from Swiss market consolidation without re-leveraging.

Pizza Exp. Fin 1 (PIZEXP)
We are unsure as to whether Pizza Express may need to consider restructuring given already high leverage, still declining EBITDA, short term debt maturities (RCF in August 2020, bonds in August 2021) and the risk of an eventual more pronounced UK consumer slowdown. However, absent significant negative catalysts, which we view as unlikely in the short-to-medium term, and with bonds trading at stressed levels, we think further underperformance is unlikely. Downside risks are a weakening of UK consumer demand, acquisitions of international restaurant groups to accelerate access to new markets, greater competition in the UK because of overcapacity, rising staff costs and potential subordination from attempts by the shareholder to address debt maturities. Upside risks are a faster-than-expected breakeven in China, a recovery of LFL sales performance in the UK, an improvement in consumer demand trends in the UK and new strategies that successfully boost UK LFL sales for minimal cost.

Pizza Exp. Fin 2 (PIZEXP)
We are unsure as to whether Pizza Express may need to consider restructuring given already high leverage, still declining EBITDA, short term debt maturities (RCF in August 2020, bonds in August 2021) and the risk of an eventual more pronounced UK consumer

slowdown. However, absent significant negative catalysts, which we view as unlikely in the short-to-medium term, and with bonds trading at stressed levels, we think further underperformance is unlikely. Downside risks are a weakening of UK consumer demand, acquisitions of international restaurant groups to accelerate access to new markets, greater competition in the UK because of overcapacity, rising staff costs and potential subordination from attempts by the shareholder to address debt maturities. Upside risks are a faster-than-expected breakeven in China, a recovery of LFL sales performance in the UK, an improvement in consumer demand trends in the UK and new strategies that successfully boost UK LFL sales for minimal cost.

Takko Fashion (TAKKO)
Takko has had a multi-quarter run of negative EBITDA growth and leverage has increased. We think this has mostly been driven by the weather though, and we expect a recovery in earnings and a concomitant reduction in leverage starting in a couple of quarters' time. Market data, however, suggests greater risks around upcoming 4Q19e results, and leverage is sufficiently high that poor earnings could lead to underperformance, despite still very wide bond spreads. With these risks in mind, we believe Takko's bonds trade fairly with respect to other weaker single B retailers such as Douglas and Pizza Express. Downside risks are competitive pressures, a downturn in German consumer spending, weather conditions and potential currency pressures if the US Dollar strengthens against the Euro.

Unitymedia (UNITY)
Unitymedia (Unity) has a strong fundamental credit profile, albeit constrained by high leverage. Unity has some of the highest EBITDA margins in the European cable space at >60%, it is domiciled in a resilient, mature German market and it benefits from a broadband speed advantage over its incumbent competitor DT. Growth prospects are driven by the potential for price increases, limited footprint expansion and greater bundling.

CDS offers limited value versus peers in our view. The bonds have room fro further tightening should the deal with Vodafone gain regulatory approval.

Upside risks: i) regulatory approval of the Vodafone deal, ii) increasing use of cash to invest in network upgrades/expansion vs. up-streaming to the parent, iii) stronger pricing power/net add momentum, iv) a change to a more conservative financial policy.

Downside risks: i) debt financed acquisition of Vodafone's German business (as has been speculated frequently in the press), ii) an increasingly competitive environment driven by FTTx, iii) a structural shift towards OTT providers, iv) a shift to a more aggressive financial policy.

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Downside risks: i) debt financed acquisition of Vodafone's German business (as has been speculated frequently in the press), ii) an increasingly competitive environment driven by FTTx, iii) a structural shift towards OTT providers, iv) a shift to a more aggressive financial policy.

UPC (UPCB)

UPC benefits from consistently high EBITDA margins (>50%), a large, a relatively large cable footprint and an advanced DOCSIS 3.0 enabled network. UPC's core operations in Switzerland have been under pressure recently. UPC has no meaningful maturities until 2025.

From a relative value perspective the bonds appear expensive based on operating fundamentals alone. However the proposed consolidation in Switzerland could be supportive for euro secured bond levels. We see limited upside potential for the dollar and subordinated bonds.

Upside risks: i) regulatory clearance of the deal with Vodafone, ii) increasing use of cash to invest in network upgrades/expansion vs. up-streaming to the parent, iii) stronger pricing power/net add momentum, iv) a change to a more conservative financial policy, v) further convergence across the footprint without an increase in leverage and/or supply.

Downside risks: i) debt financed acquisitions in Eastern Europe, ii) an increasingly competitive environment driven by FTTx, iii) a structural shift towards OTT providers, iv) a shift to a more aggressive financial policy.

UPC Fin IV (UPCB)

UPC benefits from consistently high EBITDA margins (>50%), a large, a relatively large cable footprint and an advanced DOCSIS 3.0 enabled network. UPC's core operations in Switzerland have been under pressure recently. UPC has no meaningful maturities until 2025.

From a relative value perspective the bonds appear expensive based on operating fundamentals alone. However the proposed consolidation in Switzerland could be supportive for euro secured bond levels. We see limited upside potential for the dollar and subordinated bonds.

Upside risks: i) regulatory clearance of the deal with Vodafone, ii) increasing use of cash to invest in network upgrades/expansion vs. up-streaming to the parent, iii) stronger pricing power/net add momentum, iv) a change to a more conservative financial policy, v) further convergence across the footprint without an increase in leverage and/or supply.

Downside risks: i) debt financed acquisitions in Eastern Europe, ii) an increasingly competitive environment driven by FTTx, iii) a structural shift towards OTT providers, iv) a shift to a more aggressive financial policy.

UPCB Finance VII Ltd (UPCB)

UPC benefits from consistently high EBITDA margins (>50%), a large, a relatively large cable footprint and an advanced DOCSIS 3.0 enabled network. UPC's core operations in Switzerland have been under pressure recently. UPC has no meaningful maturities until 2025.

From a relative value perspective the bonds appear expensive based on operating fundamentals alone. However the proposed consolidation in Switzerland could be supportive for euro secured bond levels. We see limited upside potential for the dollar and subordinated bonds.

Upside risks: i) regulatory clearance of the deal with Vodafone, ii) increasing use of cash to invest in network upgrades/expansion vs. up-streaming to the parent, iii) stronger pricing power/net add momentum, iv) a change to a more conservative financial policy, v) further convergence across the footprint without an increase in leverage and/or supply.

Downside risks: i) debt financed acquisitions in Eastern Europe, ii) an increasingly competitive environment driven by FTTx, iii) a structural shift towards OTT providers, iv) a shift to a more aggressive financial policy.

Analyst Certification

We, Phillip Bagguley, Nick Macdonald, CFA and Tom Gibney, CFA, hereby certify that the views each of us has expressed in this research report accurately reflect each of our respective personal views about the subject securities and issuers. We also certify that no part of our respective compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

Special Disclosures

BofA Merrill Lynch is currently acting as financial advisor to Liberty Global PLC in connection with its proposed sale of its DTH satellite TV operations currently serving four Eastern European markets to M7 Group, which was announced on 21 December 2018.

Security pricing

Altice Europe / ATCNA

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
7.75, Secured, USD, 2022:B	2,900	15-MAY-2022	Caa1/B-/NR	20-Jun-2019	101.94	101.50	22-May-2019	6.15	376
7.25, Secured, EUR, 2022:B	2,075	15-MAY-2022	Caa1/B-/NR	20-Jun-2019	101.81	101.86	22-May-2019	5.28	584
6.25, Senior Unsecured, EUR, 2025:B	750	15-FEB-2025	Caa1/B-/NR	15-Feb-2020	103.13	97.50	22-May-2019	6.78	721
7.625, Senior Unsecured, USD, 2025:B	1,480	15-FEB-2025	Caa1/B-/NR	15-Feb-2020	103.81	93.88	22-May-2019	9.02	672
8%, Senior, EUR, 2027:B		15-May-2027		15-May-2022	104.00	101.08	22-May-2019	7.82	766
10.5%, Senior, USD, 2027:B		15-May-2027		15-May-2022	105.25	102.10	22-May-2019	9.91	746

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Altice Financing / ALTICE

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
6.625, Secured, USD, 2023:B	2,060	15-FEB-2023	B2/B+/NR	20-Jun-2019	103.31	101.90	22-May-2019	5.70	345
5.25, Secured, EUR, 2023:B	500	15-FEB-2023	B2/B+/NR	20-Jun-2019	102.63	100.18	22-May-2019	3.49	405
7.5, Secured, USD, 2026:B	2,750	15-MAY-2026	B2/B+/NR	15-May-2021	103.75	100.00	22-May-2019	7.50	517

For pricing information refer to "Other Important Disclosures" below.
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Altice Finco S.A. / ALTICE

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
9, Senior, EUR, 2023:B	250	15-JUN-2023	Caa1/CCC+/NR	21-Jun-2019	103.00	103.50	22-May-2019	2.62	316
8.125, Secured, USD, 2024:B	400	15-JAN-2024	Caa1/CCC+/NR	21-Jun-2019	104.06	102.50	22-May-2019	7.04	486
Senior Unsecured, EUR, Y5:CDS							23-May-2019		426
7.625, Senior Unsecured, USD, 2025:B	385	15-FEB-2025	Caa1/CCC+/NR	15-Feb-2020	103.81	93.50	22-May-2019	9.11	685
4.75, Senior Unsecured, EUR 2028	675	15-JAN-2028	Caa1/CCC+/NR	15-Oct-2022	102.38	85.48	22-May-2019	7.02	720

For pricing information refer to "Other Important Disclosures" below.
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Altice France / SFRFP

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
5.625, Secured, EUR, 2024:B	1,250	15-MAY-2024	B2/B/NR	21-Jun-2019	102.81	103.00	22-May-2019	3.22	377
6.25, Secured, USD, 2024:B	1,375	15-MAY-2024	B2/B/NR	03-Jul-2019	103.13	102.38	22-May-2019	5.38	321
7.375, Senior, USD, 2026:B	5,190	01-MAY-2026	B2/B/NR	01-May-2021	103.69	99.75	22-May-2019	7.42	512
5.875, Secured, EUR, 2027	1,000	01-FEB-2027	B2/B/NR	01-Feb-2022	104.41	105.64	22-May-2019	4.64	512
8.125%, Secured, EUR, 2027		01-FEB-2027	B2/B/NR	01-Feb-2022	106.09	102.13	22-May-2019	7.62	546
Senior Unsecured, EUR, Y5:CDS							23-May-2019		330

For pricing information refer to "Other Important Disclosures" below.
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B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

TDC A/S / TDCDC

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
7, Secured, EUR, 2023:B	1,050	17-JUN-2023	B3/B-/B+	17-Jun-2020	103.50	107.85	22-May-2019	2.74	331
9.375, Secured, USD, 2023:B		17-JUN-2023	B3/B-/B+	17-Jun-2020	104.69	107.90	23-May-2019	5.99	385

For pricing information refer to "Other Important Disclosures" below.
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B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Douglas / DOUGR

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
6.25, Secured, EUR, 2022:B	300	15-JUL-2022	B1/B/NR	03-Jun-2019	103.13	90.48	22-May-2019	9.84	1,046

For pricing information refer to "Other Important Disclosures" below.
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Douglas / DOUGR

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
8.75, Senior, EUR, 2023:B	335	15-JUL-2023	Caa1/CCC+/NR	21-Jun-2019	104.38	67.50	22-May-2019	20.82	2,138

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Lowell / GFKLDE

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
11, Secured, GBP, 2023:B	230	01-NOV-2023	Caa2/B-/NR	03-Jun-2019	108.25	82.50	22-May-2019	16.73	1,602
5-year CDS							23-May-2019		1,026

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

Lowell / GFKLDE

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
7.5, Secured, EUR, 2022:B	365	01-AUG-2022	B3/B+/NR	03-Jun-2019	103.75	89.45	22-May-2019	11.54	1,215
8.5, Secured, GBP, 2022:B	565	01-NOV-2022	B3/B+/NR	03-Jun-2019	104.25	87.76	22-May-2019	13.02	1,231
3.5, Secured, EUR, 2023:B	415	01-SEP-2023	B3/B+/NR	21-Jun-2019	101.00	82.41	22-May-2019	8.15	879
4.5, Secured, EUR, 2023:B	530	01-SEP-2023	B3/B+/NR	03-Jun-2019	101.00	84.45	22-May-2019	8.64	929

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Matalan / MTNLN

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
6.75, Secured, GBP, 2023:B	350	31-JAN-2023	B2/B-/NR	31-Jan-2020	103.38	97.24	22-May-2019	7.62	690
9.5, Senior, GBP, 2024:B	130	31-JAN-2024	Caa2/CCC/NR	31-Jan-2021	104.75	91.79	22-May-2019	11.82	1,110
5-year CDS							23-May-2019		652

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Matterhorn Telecom / MATTER

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
4.875, Senior, EUR, 2023:B	299	01-MAY-2023	Caa1/B-/NR	03-Jun-2019	101.22	100.15	22-May-2019	4.70	527
Senior Unsecured, EUR, Y5, CDS:CDS							23-May-2019		206

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Matterhorn Telecom S.A. / MATTER

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
3.875, Secured, EUR, 2022:B	1,000	01-MAY-2022	B2/B+/NR	03-Jun-2019	100.97	100.80	22-May-2019	3.00	357
4, Secured, EUR, 2027:B	400	15-NOV-2027	NR/B+/NR	15-Nov-2022	102.00	98.02	22-May-2019	4.28	448

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Pizza Express Financing 1 Plc / PIZEXP

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
8.625, Secured, GBP, 2022:B	200	01-AUG-2022	Caa2/CCC-/NR	21-Jun-2019	104.31	49.20	22-May-2019	37.00	3,628
5-year CDS							23-May-2019		2,820

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Pizza Express Financing 2 Plc / PIZEXP

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
6.625, Secured, GBP, 2021:B	465	01-AUG-2021	B3/CCC+/NR	03-Jun-2019	101.66	85.80	22-May-2019	14.40	1,368

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Takko Fashion (TAKKO) / TAKKO

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
5.375, secured, 2023, EUR:B	285	15-NOV-2023	B2/B-/NR	15-Nov-2019	102.69	77.77	22-May-2019	11.88	1,241
5.375, secured FRN, 2023, EUR:B		15-NOV-2023	B2/B-/NR	03-Jun-2019	101.00	80.00	23-May-2019	11.10	

For pricing information refer to "Other Important Disclosures" below.
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B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

TDC A/S / TDCDC

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
Senior Unsecured,EUR,Y5,CDS:CDS							23-May-2019		168
5, Senior, EUR, 2022:B	500	02-MAR-2022	Ba3/BB-/BB-			110.46	22-May-2019	1.15	177
6.875, Senior, GBP, 2023:B	425	23-FEB-2023	Ba3/BB-/BB-			113.50	22-May-2019	3.01	228

For pricing information refer to "Other Important Disclosures" below.
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B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Unitymedia / UNITY

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
6.125, Secured, USD, 2025:B	900	15-JAN-2025	B3/B/B+	15-Jan-2020	103.06	103.13	22-May-2019	5.17	300
3.75, Secured, EUR, 2027:B	700	15-JAN-2027	B3/B/B+	15-Jan-2021	101.88	105.35	22-May-2019	1.57	218
Senior Unsecured, EUR, Y5:CDS							23-May-2019		54

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.
B=Bond; CS=Capital Security (Not including Equity Preferred); CDS=Credit Default Swap; EP=Equity Preferred

Unitymedia Hessen / UNITY

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
6.25, Secured, EUR, 2029:B	428	15-JAN-2029	Ba3/BB-/BB+	15-Jan-2021	103.13	111.25	22-May-2019	1.21	181
5, Secured, USD, 2025:B	550	15-JAN-2025	Ba3/BB-/BB+	15-Jan-2020	102.50	102.25	22-May-2019	4.32	215
4, Secured, EUR, 2025:B	1,000	15-JAN-2025	Ba3/BB-/BB+	15-Jan-2020	102.00	103.66	22-May-2019	1.37	191
3.5, Secured, EUR, 2027:B	500	15-JAN-2027	Ba3/BB-/BB+	15-Jan-2021	101.75	105.26	22-May-2019	1.23	182
4.625, Secured, EUR, 2026:B	378	15-FEB-2026	Ba3/BB-/BB+	15-Feb-2021	102.31	108.09	22-May-2019	1.21	182

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

UPC / UPCB

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
UPC 5y CDS:CDS							23-May-2019		71
3.875, Secured, EUR, 2029:B	594	15-JUN-2029	B2/B/B	15-Jun-2022	101.94	102.40	22-May-2019	3.43	384

For pricing information refer to "Other Important Disclosures" below.
* For loans, YTW reflects yield to maturity.

UPC / UPCB

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)

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

UPC Finance IV / UPCB

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
4, Secured, EUR, 2027:B	540	15-JAN-2027	Ba3/BB/BB+	15-Jan-2021	102.00	105.25	22-May-2019	1.94	255
5.375, Secured, USD, 2025:B	1,140	15-JAN-2025	Ba3/BB/BB+	15-Jan-2020	102.69	102.38	22-May-2019	4.66	248

For pricing information refer to "Other Important Disclosures" below.
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UPCB Finance VII Ltd / UPCB

Security	Amt	Maturity date	Ratings Moody's/S&P/Fitch	Next call Call date	Call price	Price	Price date	YTW* (%)	STW (Govt+bps)
3.625, Secured, EUR, 2029:B	600	15-JUN-2029	Ba3/BB/BB+	15-Jun-2022	101.81	104.80	22-May-2019	2.56	318

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

Important Disclosures

BofA 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.

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Overweight: Spreads and /or excess returns are likely to outperform the relevant and comparable market over the next three months.
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Corporate Credit Issuer Investment Rating Distribution: Global Group (as of 31 Mar 2019)

Coverage Universe	Count	Percent	Inv. Banking Relationships*	Count	Percent
Buy	137	32.39%	Buy	110	80.29%
Hold	212	50.12%	Hold	169	79.72%
Sell	74	17.49%	Sell	58	78.38%

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