



Source: Refinitiv

NA	ar	vot.	data
	ап	V = L	uata

EPIC/TKR	VTA.NA, VTA.LN VTAS LN
Price (€)	5.15/5.04/430p
12m high (€)	5.32/5.30/468p
12m low (€)	4.92/4.78/404p
Shares (m)	36.6
Mkt cap (€m)	188
2024E div. yield	10.2%
Latest NAV (Mar'24	4, €) 6.98
Discount to NAV	-26%
Country of listing	NL/UK
Currency of listing	€/€/GBP
Market	AEX, LSE

Description

Volta is a closed-ended, limited liability investment company that aims to provide a steady stream of quarterly dividends, pursuing exposure, predominantly, to Collateralised Loan Obligations (CLOs) and similar asset classes.

Company information

Ind. Chair	Dagmar Kent Kershaw
Ind. NEDs	Stephen Le Page,
	Yedau Ogundele,
	Joanne Peacegood
Fund Manager	AXA IM
Co. sec./	BNP Paribas
Administrator	Securities Services
	SCA, Guernsey
BNP:	+44 (0)1481 750853
Website:	www.voltafinance.com

5.50%

Key shareholders	
AXA SA Bank	21.75%
BNP Paribas	15.28%
AXA Framlington IM	8.23%

Diary	
Mid-May	Anril estimated NAV

Analyst

Mark Thomas

BNP Wealth Mgt.

THIS DOCUMENT IS NOT AVAILABLE TO 'U.S. PERSONS', NOR TO PARTIES WHO ARE NOT CONSIDERED 'RELEVANT PERSONS' IN THE UNITED KINGDOM, NOR SHOULD IT BE TAKEN, TRANSMITTED OR DISTRIBUTED, DIRECTLY OR INDIRECTLY, TO EITHER OF THESE CATEGORIES. SEE P2 FOR FURTHER DETAILS.

VOLTA FINANCE LIMITED

Putting the discount into perspective

Volta's share price discount to NAV (26%) is now back to the levels seen in the early stages of the pandemic. This appears anomalous with 6.3% total shareholder return in 1Q'24, the annualised cashflows in excess of 20%, the consensus outlook, as well as the structured debt finance and all investment company averages (11% and 6%, respectively). In our view, any discount reflects investor concerns that either the current NAV is unrealistic or that it cannot be achieved in the future. In this note, we examine what may drive such concerns, concluding they are more sentiment- than reality-driven; as such, they may be less likely to be sustained.

- Why the current NAV is realistic: Volta adopts a mark-to-market approach. The NAV should be real unless the pricing sources are inaccurate, which appears unlikely. The MTM approach captures sentiment risk in the asset valuation. In our view, the risk of yet-to-be-identified losses affecting the current NAV materially are low. There are multiple checks and reviews to ensure the process is robust.
- Resilience: In previous notes, we have outlined why CLO structures have incremental risk controls and that the expected losses from such vehicles are well below corporate credit markets as a whole. We further outlined that AXA IM has consistently picked CLO managers with below-average losses.
- **Valuation:** Volta trades at a double discount: its share price is at a 26% discount to NAV, and we believe its MTM NAV still includes a further sentiment-driven discount to the present value of expected cashflows. Volta targets an 8% of NAV dividend (10.2% 2024E yield on current share price).
- Risks: Credit risk is a key sensitivity. In this note, we examine the valuation of assets, highlighting the multiple controls to ensure its validity. The NAV is exposed to sentiment towards its own and underlying markets. Volta's long \$ position is only partially hedged.
- Investment summary: Volta is an investment for sophisticated investors, as both the NAV and the discount to NAV may be volatile over time. Fundamental long-term returns have been robust: 8.0% p.a. (dividend reinvested basis) since inception. Volta's performance relative to that of its peers has been strong, and returns for investments made after the financial crisis were double those in prior years.

Financial summary and valuation (Hardman & Co adjusted basis)							
Year-end Jul (€m)	2020	2021	2022	2023	2024E	2025E	
Coupons & dividends	39.4	41.8	42.9	47.0	39.7	46.3	
Operating income	31.5	44.5	41.6	44.1	55.2	51.9	
Total inv. manager fees (stat.)	(3.9)	(14.2)	(3.9)	(5.6)	(10.1)	(9.4)	
Other expenses	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	
Total comp. inc.	25.8	35.2	33.4	35.2	44.0	41.5	
Statutory PTP	(63.0)	76.8	(17.8)	27.0	45.3	42.8	
Underlying EPS (€)	0.7	1.0	0.9	1.0	1.2	1.1	
NAV per share (€)	5.69	7.28	6.22	6.45	7.16	7.77	
S/P prem./disc. (-) to NAV*	-23%	-17%	-16%	-21%	-28%	-34%	
Gearing	0%	0%	0%	0%	0%	0%	
Dividend (€)	0.52	0.52	0.61	0.51	0.53	0.57	
Dividend yield	10.3%	9.9%	11.1%	9.9%	10.2%	11.0%	

*2020-23 actual NAV and s/p, 2024-25E NAV to current s/p; Source: Hardman & Co Research



IMPORTANT INFORMATION

Due to legal restrictions, the information in this document is not available to any person who is a "U.S. person" (as defined below) or to any person who is physically present in the United States, and it is available only to persons who are "relevant persons" (as defined below) for U.K. regulatory purposes.

A "U.S. person" is:

- any natural person resident in the United States;
- any partnership or corporation organised or incorporated under the laws of the United States;
- any estate of which any executor or administrator is a "U.S. person";
- any trust of which any trustee is a "U.S. person";
- any agency or branch of a foreign entity located in the United States;
- any non-discretionary account or similar account (other than an estate or trust) held by a dealer or other fiduciary for the benefit or account of a "U.S. person";
- any discretionary account or similar account (other than an estate or trust) held by a dealer or other fiduciary organised, incorporated, or (if an individual) resident in the United States; and
- > any partnership or corporation if:
 - organised or incorporated under the laws of any foreign jurisdiction;
 and
 - formed by a "U.S. person" principally for the purpose of investing in securities not registered under the U.S. Securities Act, unless it is organised or incorporated, and owned, by accredited investors (as defined in the rules of the U.S. Securities and Exchange Commission) who are not natural persons, estates or trusts.

"Relevant persons" are (i) persons who are outside the United Kingdom or (ii) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order") or (iii) high net worth companies, and other persons to whom it may lawfully be communicated, falling within Article 49(2) (a) to (d) of the Order. The securities of the Company are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such securities will be engaged in only with relevant persons. Any person who is not a relevant person should not access, or seek to act or rely on, this report or any of its contents.

This document should not be taken, transmitted or distributed, directly or indirectly, to "U.S. persons" as defined above nor to parties that are not "relevant persons" as defined above. In reading this document the readers also acknowledge that they have read and understood the notices set forth above and the disclaimers contained in the document.

If you are not a "relevant person" or you are a "U.S. person", you should not have received or accessed this document and accordingly should return this document as soon as possible and take no further action. Any investment or investment activity to which this document relates is only available to "relevant persons". By accepting receipt of this document, each recipient is deemed to confirm, represent and warrant to Hardman & Co that it is a "relevant person" and that it is not a "US person", and accordingly a person to whom this document can be lawfully communicated.



The discount in absolute and relative perspectives

Absolute

The 26% discount to NAV implies that investors believe that the trust is destroying, or is likely to destroy, value. This appears anomalous with the track record since inception, recent performance and the manager's stress scenario testing.

To put this into a context, as at March 2024:

- ▶ the annualised share price total return since inception was positive 8.0%;
- > no month in the past year has seen a negative total return; and
- ▶ the annualised past six months' cash received was 21% of the March 2024 NAV.

Even in extreme stress scenario, manager still expecting 9% IRR (base case 17%).

Huge discount appears anomalous with

long-term track record, recent

performance and the outlook

The manager provided the results of its portfolio stress tests in the <u>January 2024 Interim Report and Accounts</u>, which indicate a 17%+ projected yield in the base case and a 9% CLO IRR, even in the worst of its two stress tests. The latter reflects an instantaneous 6% increase in CCC bucket (all CLOs will then exceed the classic 7.5% authorised CCC bucket) and defaults to materialise in relation with such CCC bucket and current WARF. Looking through the technicalities, it implies this would cause an average 6.2% default rate every year for the next two years, roughly double the current consensus expectation and, in aggregate, greater than the GFC. We note i) in all scenarios, a positive yield is expected, ii) the sensitivity of the equity positions is, as expected, materially higher than the debt, iii) the latest numbers cannot be compared with ones provided in previous reports due to changes in assumptions (current assumptions are more conservative than previous ones), and iv) bearing in mind the discount to the share price, the yield to shareholders is roughly a quarter higher than the NAV.

Projected yield (from NAV value)							
	Base case	Stress	Extreme stress				
USD equity	21.6%	7.2%	2.6%				
Euro equity	21.2%	13.1%	9.6%				
USD debt	14.6%	14.5%	12.6%				
Euro debt	11.3%	11.4%	11.2%				
Average for CLOs	17.3%	11.5%	9.0%				

Source: Volta January 2024 Interim Report and Accounts, Hardman & Co Research

Relative

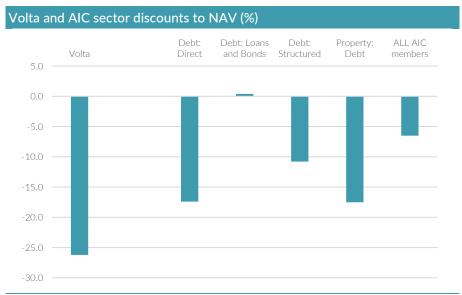
We consider a number of relative comparisons below:

- ▶ The current discount is close to the March 2020 level of 27%. Investors should consider whether the current outlook is as bad as at the peak of the sentiment crisis of COVID-19. Despite the -32.4% NAV return performance in March 2020, the full-year NAV return was just -5.7%, followed by +17.9% in 2021.
- ► The chart below shows Volta's discount relative to a range of debt investment company sectors.

Discount back to peak of COVID-19 levels, despite outlook being much better



Discount above AIC debt sectors, despite the credit enhancement in CLO structures and AXA IM's record of investing in below-average loss CLO managers o As we outlined on our pages 4-8 of our note, <u>An easy guide to the benefits of CLOs</u>, CLO structures have multiple incremental risk mitigation practices and reported significantly lower historical losses 2001-20 than the equivalent corporate rated instruments. Our note highlights that projected losses are also well below corporate debt; it is anomalous, therefore, to have Volta on a higher discount than all these debt investment trust averages.



Source: AIC accessed 16 May 2024, Hardman & Co Research,

▶ We detail the discount relative to others in the Debt Structured subsector in the chart below. Company-specific issues mean comparisons need to be treated with caution (e.g. BGLF in wind down); however, as our note, *The benefits of having AXA IM as the manager* published 7 December 2023, highlighted, AXA IM has a proven track record of choosing CLO managers with below-average loss experiences.



Source: Hardman & Co Research, Monthly reports for Volta (VTA), TwentyFour Income Fund (TFIF),
Fair Oaks Income Fund (FAIR), Blackstone/GCO Loan Financing Ltd (BGLF) and
Marble Point Loan Financing (MPLF); priced at 16 May 2024



Why the current NAV is realistic

Summary

One factor that could drive any investment trust to trade at a discount to NAV is if investors do not believe the current NAV is a realistic reflection of what the assets may be sold for, should the trust wish to sell today.

In considering this risk for Volta, we note:

- ▶ The approach is mark to market, with nearly 90% of prices sourced from the reputable JP Morgan PricingDirect. Across its platform, AXA IM's experience is that the vast majority of its trades are consistent with the pricing indicated by this source.
- AXA IM and Volta have conservative cultures.
- ▶ Valuations are checked and reviewed at the CLO structure level, by AXA IM teams and by Volta itself, bringing a depth and breadth of review that is unusually high for an investment trust.
- ▶ While there may be "unknown unknowns" creating losses in the current book, which have yet to be identified, Volta's track record would suggest that they are unlikely to be material, and certainly well below anything implied by the discount.

Valuation approach

We believe there has been increased focus on the valuation methodologies of investment trusts investing in what may be perceived as illiquid, complex assets. Volta's approach is detailed on pages 49-51 of the 2023 Report and Accounts. We note i) 82% of the fair value is taken directly from JP Morgan PricingDirect or other market participants, and ii) a range of the residual assets also uses market-price-driven methodologies, including CLO_CMV (5% fair value, which is valued under a sum-of-the-parts method with all CLO equity investments valued based on JP Morgan PricingDirect) and the CLO Warehouse (3% fair value, which is valued at the lower of: (a) the principal amount invested plus accrued income net of financing costs; and (b) the mark-to-market value of the relevant proportion of the underlying portfolio).

We further note:

- ► The data provider is credible.
- ▶ The prices obtained from JP Morgan PricingDirect are derived from observed traded prices, where these are available, but may be based upon non-binding quoted prices received by JP Morgan PricingDirect from arranging banks or other market participants or a combination thereof, where observed traded prices are unavailable. AXA IM's experience, across its platform, has been that trades are consistent with this pricing.

Discount justified if investors do not believe the current NAV is realistic

Volta's portfolio primarily marked to market with data from credible source, there is a conservative culture, and three layers of checks and reviews

Vast majority of assets valued off market prices



AXA IM's scale means, even in volatile markets, it can access liquidity and finer pricing

Illogical to apply a further discount of Volta's share prices to NAV when the asset valuation already captures adverse sentiment

Valuations reviewed at CLO, AXA IM and Volta levels

- In illiquid markets, even in normal conditions, the bid-offer spread can be wide. In general, Volta takes the mid-price for valuation purposes. As we noted in our report, *The benefits of having AXA IM as the manager*, published 7 December 2023: "AXA IM leverages on its scale to minimise bid offer spread and achieve best execution. It has a team of two product-dedicated traders while three portfolio managers also have an extensive trading background. As a result, AXA IM's execution tends towards mid-market levels, not bid-side."
- In uncertain markets, the bid offer spread widens, sometimes materially. We believe the macroeconomic and geopolitical environment means that current conditions present such uncertain conditions. AXA IM notes that it has executed all the deals it wants to at acceptable prices and, again, as our December 2023 report noted, "due to the long-standing partnerships established with brokers over the years, AXA IM accesses liquidity, even in volatile markets".
- By marking to market, Volta captures investor sentiment to its assets. In uncertain times, prices fall and so the asset valuations and the NAV fall too. There is an illogicality to applying a further discount of Volta's share prices to NAV when the asset valuation already captures adverse sentiment.

Conservative culture

We have previously highlighted the importance of culture and that, in our view, financial reports are an art not a science. They reflect the company's interpretation and choice of assumptions within the overall guidelines provided by the accounting rules. In our view, AXA IM is a conservative organisation as a whole and the independent board of Volta is also conservative by nature. We believe this is not only reflected in the choice of assets (we outline in the section, below, Volta's below-average loss experience) but also in the way it interprets the accounting rules.

Checks and reviews

Volta's valuations are subject to an unusually high degree of checks and reviews.

- ▶ At the CLO structure level, there are audit and internal management reviews, ensuring the realism of the valuation for each asset within the CLO structure.
- AXA IM then overviews and, being a large player,
 - o is in a position to sense check prices for the CLO valuations for realism;
 - o can see if different CLO mangers are valuing the same assets differently. This allows it not only to assess the value of specific assets but also goes into the consideration of which CLO managers to invest in.
- At the Volta level, there are
 - o audit checks by external auditors (KPMG Channel Islands Limited see pages 36-41 of the 2023 Report and Accounts).
 - o the dedicated Board Audit committee (see page 31-32 of the 2023 Report and Accounts)
 - The whole board signing off on published financial statement.



There may be losses in current portfolio yet to be identified, but scale is unlikely to be material

"Unknown unknowns"

To quote Donald Rumsfeld, there are "unknown unknowns", which may result in losses in the existing portfolio and which have yet to be identified in each monthly factsheet. In periods of macro-uncertainty, they present a greater risk than in normal trading conditions. By way of example, Altice France is owned by ca.95% of the European CLO market and, in March 2024, it unexpectedly announced that it was looking for lenders to take some of the pain of its re-financing. It is logical to factor in some "unknown unknowns" discount, especially in uncertain times, but this needs to be put into perspective.

- One of the core attractions of CLO structures is that they diversify risk. Even a large player like Altice France only represented 1.6% of the average European CLO portfolio (it was owned by ca.95% of the European CLO market). It is also held by ca.77% of US CLOs, with an 0.5% average holding. As we outlined in our note, The benefits of having AXA IM as the manager, AXA has a track record of investing in below-average risk investments. For Volta, Altice France only represented 0.8% of its average underlying portfolio (with 46.9% of the portfolio in European CLO assets and 39.4% in US assets, on a market-average holding, it would have been ca.1.1%). Even a material haircut would have a minimal impact on the NAV and Volta commented it "is not expected to suffer any diversion of cashflow as a result of Altice's downgrade".
- Arguably, of course, the unknown unknowns should be factored in the market prices of its assets and thereby into Volta's NAV calculation. Again, applying a double discount appears, to us, illogical.

¹ Source: Volta March Factsheet



NAV resilience

Could also justify a discount if there will

be a decline in value in the future

valuation was real but, by the time the assets could be sold, they did not achieve the current price. A discount would also be justified if investors believed the manager would sell existing assets and replace them with ones that would fall in value. For Volta, we believe this "sustainability" of the NAV is more likely to be the key driver for the level of discount rather than concerns over whether the current NAV is real.

Any investment company's discount to NAV would also be justified if the current

We have written multiple times on the resilience of the portfolio

Portfolio resilience has been the subject of multiple reports we have written on Volta, with the overall conclusion that the cashflows of the business should prove robust. We list below a selection of our reports, which cover the portfolio's resilience.

- Our initiation report (5 September 2018).
- 9%+ yield in uncertain times (7 October 2019).
- Follow the money (3 February 2020).
- Value added by active portfolio management (15 September 2020).
- Cash is king and the king is rocking and rolling (16 September 2022).
- R&A shining light on 20%+ IRR base-case scenarios (11 January 2023).
- An easy guide to the benefits of CLOs (18 April 2023).
- The benefits of having AXA IM as the manager (7 December 2023).
- Insights from the Report and Accounts (24 January 2024).

In summary, the key points are:

CLO market has multiple risk enhancement features and AXA IM has track record of investing with belowaverage risk CLO managers

As noted above, CLO structures have multiple risk enhancement features – see An easy guide to the benefits of CLOs. AXA IM's scale, expertise and market presence mean that it has a proven track record of investing with CLO managers who have below-average risk (see <u>The benefits of having AXA IM as the manager</u>) as well as actively managing the portfolio to the risk outlook (see the benefits report and Value added by active portfolio management).

Sensitivity to rising rates managed

We believe sensitivity to rising rate environment is a key issue for all investors in debt investment companies. As noted above, Volta, to date, has performed exceptionally well through a combination of asset class allocation, variable rate debt positions, and CLO equity positions, benefitting from CLO debt refinancing - see our notes, Re-Set, Re-Fi, Re-Light my Fire (published 5 May 2021) and R&A shining light on 20%+ IRR base-case scenarios (published 11 January 2023) - and the low default rates.

Manager's view is for base case IRR of 17% and 9% in extreme stress scenario As noted above, the manager provided the results of its portfolio stress tests in the Interim Report and Accounts, with 9% expected IRR, even in an extreme stress scenario. As our recent notes highlight, we, and Volta, expect defaults to rise from their unusually low post-COVID-19 stimulus levels but for the increase to be well within manageable levels. CLO managers have been preparing for credit deterioration and, as the manager noted in the March 2024 factsheet, no cash diversion is expected from the Altice France situation.

17 May 2024 8



Financials

Our estimates are unchanged

To derive our adjusted profit and loss, we strip out the capital movements, including i) unrealised gains/losses, ii) FX movements, and iii) net gains of IR derivatives. We have left in realised gains, which, although volatile, have been converted into cash, and some capital gains may be expected to form part of the normal course of business. We have also backdated the current management fee structure, and adjusted it to the new level of profitability.

Hardman & Co adjusted profit and loss account									
Year-end Jul (€m)	2017	2018	2019	2020	2021	2022	2023	2024E	2025E
Coupons and dividends received	33.2	38.5	42.0	39.4	41.8	42.9	47.0	39.7	46.3
Net gains on sales	3.1	0.0	0.5	(7.0)	2.7	(1.3)	(3.4)	15.0	5.0
Net gain on fin. assets at FV through P/L	36.2	38.5	42.5	32.4	44.5	41.7	43.6	54.7	51.3
Interest expense on repo	(1.1)	(1.4)	(1.6)	(0.8)	-	-	-	-	-
Net bank interest & charges	(0.1)	(0.1)	0.1	0.0	(0.0)	(0.0)	0.5	0.5	0.5
Operating income	35.0	37.0	41.0	31.5	44.5	41.6	44.1	55.2	51.9
Inv. manager fees	(4.6)	(4.6)	(4.4)	(3.6)	(3.3)	(3.9)	(3.3)	(3.5)	(3.9)
Inv. manager performance fees	(1.2)	(1.3)	(2.1)	(0.6)	(4.6)	(3.0)	(4.3)	(6.3)	(5.1)
Directors' remuneration & expenses	(0.5)	(0.5)	(0.5)	(0.5)	(0.3)	(0.4)	(0.3)	(0.3)	(0.3)
Other expenses	(0.8)	(0.9)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)	(1.0)
Total expenses	(7.0)	(7.3)	(8.0)	(5.7)	(9.3)	(8.3)	(8.9)	(11.2)	(10.4)
Profit and total comp. income	28.0	29.7	32.9	25.8	35.2	33.4	35.2	44.0	41.5
Adjusted EPS (€)	0.77	0.81	0.90	0.71	0.96	0.91	0.96	1.20	1.13
Dividend cover (x)	1.24	1.31	1.45	1.36	1.85	1.49	1.89	2.28	2.00

Source: Volta, Hardman & Co Research



Glossary

When looking at Volta, investors are likely to come across a number of technical terms summarised below.

Glossary	
Term	Meaning
ABS	Asset-backed securities.
ABS residual positions	Residual income positions, which are a sub-classification of ABS, being backed by any of the following: residential mortgage loans; commercial mortgage loans; automobile loans; student loans; credit card receivables; or leases.
Bank Balance Sheet Transactions (BBST)	Synthetic transactions that permit banks to transfer part of their exposures, such as exposures to corporate loans, mortgage loans, counterparty risks, trade finance loans, or any classic and recurrent risks that banks take in conducting their core business.
Cash Corporate Credit (CCC)	Deal-structured credit positions, exposed predominantly to corporate credit risks by direct investments in cash instruments (loans and/or bonds).
Cash diversion	In periods of stress (typically measured by a specific deterioration in the proportion of the portfolio with worse- quality ratings), cash is diverted from being distributed to equity holders, and is retained to provide additional protection for bond holders.
Cash waterfall	The clear priority in which income from the SPV is allocated to stakeholders.
CLOs or CLO	A collateralised loan obligation (CLO) is a single security backed by a pool of debt. CLOs are often corporate loans with low credit ratings, or loans taken out by PE firms to conduct leveraged buyouts.
CLO 1.0	The first vintage of modern CLOs (issued from mid- to late 1990s). It included some high-yield bonds, as well as loans, and was the standard CLO structure until the financial crisis struck in 2008. Now under 1% of CLOs in issue.
CLO 2.0	Issued 2010-14, in response to the financial crisis, by strengthening credit support and shortening the period in which loan interest and proceeds could be re-invested into additional loans.
CLO 3.0	Began in 2014, and aimed to further reduce risk by eliminating high-yield bonds and adhering to the post-GFC regulatory changes. Currently, few CLOs allow for investments into high-yield bonds, and those that do generally limit the exposure to 5%-10%. To compensate for the exposure to high-yield bonds, these CLOs have increased levels of subordination to better protect debt tranches.
Capitalised Manager Vehicle (CMV)	A CMV is a long-term, closed-ended structure, which is established to act as a CLO manager and to also provide capital in order to meet risk retention obligations when issuing a CLO, and also to provide warehousing capabilities.
CPR	Constant prepayment rate.
Refi	Consists in refinancing part, or all, of the debt tranches of a CLO, while operating very modest changes in the CLO documentation.
Reset	Consists in calling all the debt tranches of a CLO, re-marketing a full new debt package, with new CLO documentation, almost as if it were a new CLO.
Synthetic Corporate Credit (SCC)	Structured credit positions predominantly exposed to corporate credit risks by synthetic contracts.
Underlying assets	The assets in which the company may invest, either directly or indirectly, include, but are not limited to, corporate credits, sovereign and quasi-sovereign debt, residential mortgage loans, commercial mortgage loans, automobile loans, student loans, credit card receivables, leases, and debt and equity interests in infrastructure projects.
Warehouse	A warehouse is a short-term structure put in place before a CLO happens in order to accumulate assets, in order, in turn, to facilitate the issue of the CLO. A warehouse is leveraged, and can be marked to market.
Weighted average life of the loans (WAL)	The average length of time that each dollar of unpaid principal on a loan or an amortising bond remains outstanding.
Weighted average risk factor (WARF)	The WARF measure aggregates the credit ratings of the portfolio's holdings into a single rating. The credit rating letter rating corresponds to a numerical rating factor, which, in turn, corresponds to the 10-year probability of default. The WARF is determined by calculating the weighted average of these numerical factors.
Weighted average spreads (WAS)	A percentage equal to i) the Aggregate Funded Spread, divided by ii) the Aggregate Eligible Collateral Obligation Amount (excluding any interest that has been deferred and capitalised on any Deferrable Collateral Obligation).

Source: Hardman & Co Research



Disclaimer

Hardman & Co provides professional independent research services and all information used in the publication of this report has been compiled from publicly available sources that are believed to be reliable. However, no guarantee, warranty or representation, express or implied, can be given by Hardman & Co as to the accuracy, adequacy or completeness of the information contained in this research and they are not responsible for any errors or omissions or results obtained from use of such information. Neither Hardman & Co, nor any affiliates, officers, directors or employees accept any liability or responsibility in respect of the information which is subject to change without notice and may only be correct at the stated date of their issue, except in the case of gross negligence, fraud or wilful misconduct. In no event will Hardman & Co, its affiliates or any such parties be liable to you for any direct, special, indirect, consequential, incidental damages or any other damages of any kind even if Hardman & Co has been advised of the possibility thereof.

This research has been prepared purely for information purposes, and nothing in this report should be construed as an offer, or the solicitation of an offer, to buy or sell any security, product, service or investment. The research reflects the objective views of the analyst(s) named on the front page and does not constitute investment advice. However, the companies or legal entities covered in this research may pay us a fixed fee in order for this research to be made available. A full list of companies or legal entities that have paid us for coverage within the past 12 months can be viewed at http://www.hardmanandco.com/legals/research-disclosures. Hardman may provide other investment banking services to the companies or legal entities mentioned in this report.

Hardman & Co has a personal dealing policy which restricts staff and consultants' dealing in shares, bonds or other related instruments of companies or legal entities which pay Hardman & Co for any services, including research. No Hardman & Co staff, consultants or officers are employed or engaged by the companies or legal entities covered by this document in any capacity other than through Hardman & Co.

Hardman & Co does not buy or sell shares, either for their own account or for other parties and neither do they undertake investment business. We may provide investment banking services to corporate clients. Hardman & Co does not make recommendations. Accordingly, they do not publish records of their past recommendations. Where a Fair Value price is given in a research note, such as a DCF or peer comparison, this is the theoretical result of a study of a range of possible outcomes, and not a forecast of a likely share price. Hardman & Co may publish further notes on these securities, companies and legal entities but has no scheduled commitment and may cease to follow these securities, companies and legal entities without notice.

The information provided in this document is not intended for distribution to, or use by, any person or entity in any jurisdiction or country where such distribution or use would be contrary to law or regulation or which would subject Hardman & Co or its affiliates to any registration requirement within such jurisdiction or country.

Some or all alternative investments may not be suitable for certain investors. Investments in small and mid-cap corporations and foreign entities are speculative and involve a high degree of risk. An investor could lose all or a substantial amount of his or her investment. Investments may be leveraged and performance may be volatile; they may have high fees and expenses that reduce returns. Securities or legal entities mentioned in this document may not be suitable or appropriate for all investors. Where this document refers to a particular tax treatment, the tax treatment will depend on each investor's particular circumstances and may be subject to future change. Each investor's particular needs, investment objectives and financial situation were not taken into account in the preparation of this document and the material contained herein. Each investor must make his or her own independent decisions and obtain their own independent advice regarding any information, projects, securities, tax treatment or financial instruments mentioned herein. The fact that Hardman & Co has made available through this document various information constitutes neither a recommendation to enter into a particular transaction nor a representation that any financial instrument is suitable or appropriate for you. Each investor should consider whether an investment strategy of the purchase or sale of any product or security is appropriate for them in the light of their investment needs, objectives and financial circumstances.

This document constitutes a 'financial promotion' for the purposes of section 21 Financial Services and Markets Act 2000 (United Kingdom) ('FSMA') and accordingly has been approved by Capital Markets Strategy Ltd which is authorised and regulated by the Financial Conduct Authority (FCA).

No part of this document may be reproduced, stored in a retrieval system or transmitted in any form or by any means, mechanical, photocopying, recording or otherwise, without prior permission from Hardman & Co. By accepting this document, the recipient agrees to be bound by the limitations set out in this notice. This notice shall be governed and construed in accordance with English law. Hardman Research Ltd, trading as Hardman & Co, is an appointed representative of Capital Markets Strategy Ltd and is authorised and regulated by the FCA under registration number 600843. Hardman Research Ltd is registered at Companies House with number 8256259.

(Disclaimer Version 8 – Effective from August 2018)

Status of Hardman & Co's research under MiFID II

Some professional investors, who are subject to the new MiFID II rules from 3rd January 2018, may be unclear about the status of Hardman & Co research and, specifically, whether it can be accepted without a commercial arrangement. Hardman & Co's research is paid for by the companies, legal entities and issuers about which we write and, as such, falls within the scope of 'minor non-monetary benefits', as defined in the Markets in Financial Instruments Directive II.

In particular, Article 12(3) of the Directive states: 'The following benefits shall qualify as acceptable minor non-monetary benefits only if they are: (b) 'written material from a third party that is commissioned and paid for by a corporate issuer or potential issuer to promote a new issuance by the company, or where the third party firm is contractually engaged and paid by the issuer to produce such material on an ongoing basis, provided that the relationship is clearly disclosed in the material and that the material is made available at the same time to any investment firms wishing to receive it or to the general public...'

The fact that Hardman & Co is commissioned to write the research is disclosed in the disclaimer, and the research is widely available.

The full detail is on page 26 of the full directive, which can be accessed here: $\frac{https://ec.europa.eu/transparency/regdoc/rep/3/2016/EN/3-2016-2031-EN-F1-1.PDF$

In addition, it should be noted that MiFID II's main aim is to ensure transparency in the relationship between fund managers and brokers/suppliers, and eliminate what is termed 'inducement', whereby free research is provided to fund managers to encourage them to deal with the broker. Hardman & Co is not inducing the reader of our research to trade through us, since we do not deal in any security or legal entity.

