

TECHNICAL GUIDE FOR VALUATION OF PRIVATE DEBT INVESTMENTS

February 2022

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I. Private Debt Market Overview

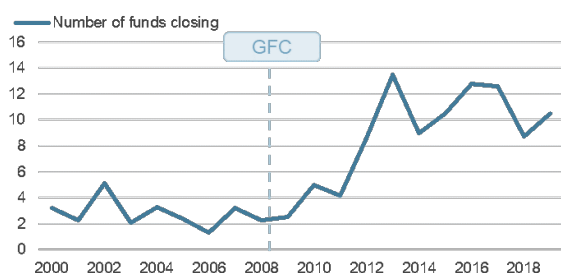
Since the 2008/09 global financial crisis, the private debt market has experienced robust growth. Driven by tightening regulatory oversight of the traditional banking sector, including the implementation of the Basel III accord and the associated stringent capital reserve requirements, the private direct lending space has been the primary beneficiary of newly emerging unserved lending requirements for mid-market and SME corporate borrowers.

The European private direct lending market has seen a significant surge in assets under management (“AUM”) over the past decade, growing from \$9bn in 2012 to \$138bn in 2020. The growth of direct lending is commensurate with the growth of the alternative investments sector at large. Private Equity and Alternative Investments with higher risk/return profiles have seen record levels of fundraising activity, with global dry powder allocated to the sector exceeding \$1.9tn in Q2 2021.¹

European direct lending funds stand to benefit from tighter lending criteria at Eurozone banks. Over the past decade, direct lending has emerged as the dominant strategy of Europe-focused private debt. Growth in AUM at direct lending funds outpaced that of distressed debt funds and special situation funds in the same period. During 2020, European direct lending funds struggled to deploy meaningful amounts of capital, with the amount of available dry powder increasing 30%, from \$44bn in 2019 to \$63bn at the end of 2020.² The liquidity channelled into the system due to the spread of COVID-19 and extensive use of fiscal and monetary policy has made Eurozone bank lending less competitive. There are signs that the flow of opportunities will increase in the coming years as banks tighten their regulatory requirements further. The January 2021 bank lending survey from the European Central Bank reported more stringent credit standards, particularly for SME loans, and a rise in non-performing loans (“NPLs”), with an increasing proportion of banks expecting further tightening. A joint study published in the 2021 edition of *The Review of Financial Studies*, led by policy makers and academics at the Federal Reserve Bank of Chicago and the University of Illinois, found that during times of financial distress, regulated banks have been more likely to offload SME debt,³ which commands higher capital reserve requirements in favour of more senior loans, which creates a natural opportunity for the private direct lending space.

The aforementioned factors create a robust opportunity set for private direct lenders in the current economic environment. With interest rates at record lows and real rates on cash and bonds in negative territory, searching for yield in the current environment has proven difficult for credit investors. The private debt market offers a unique opportunity to deploy capital.

Figure 1: Number of UK Focused Private Debt Funds Closed per Year



¹ Preqin Special Report: The Private Debt Top 100 (2021).

² Preqin Private Debt Report (2020).

³ Iyer, Meisenzahl, and Peydro. “The Rise of Shadow Banking: Evidence from Capital Regulation” (2020).

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In North America, the private debt market is estimated to have more than \$300bn in capital with \$18bn raised in Q1 2021.

Figure 2: Global Quarterly Private Debt Fundraising

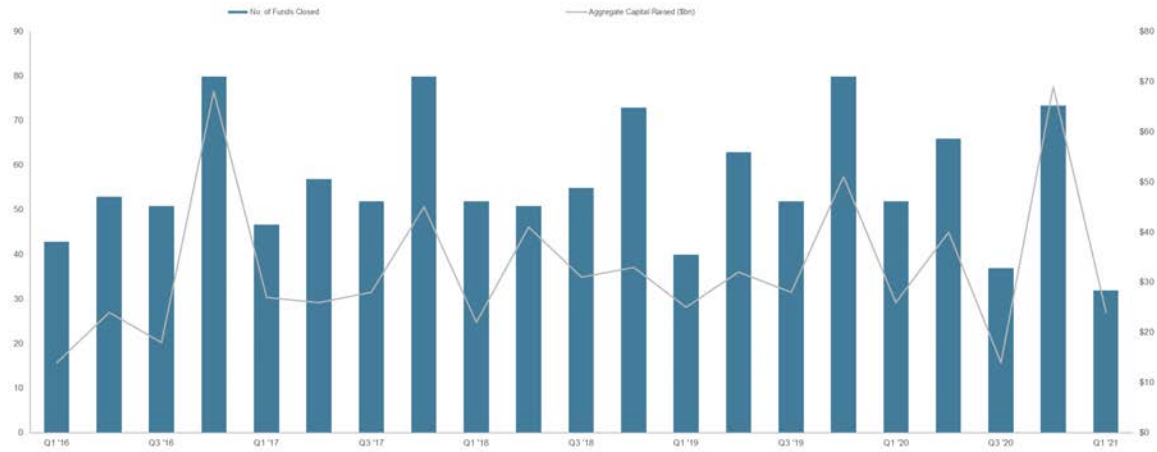
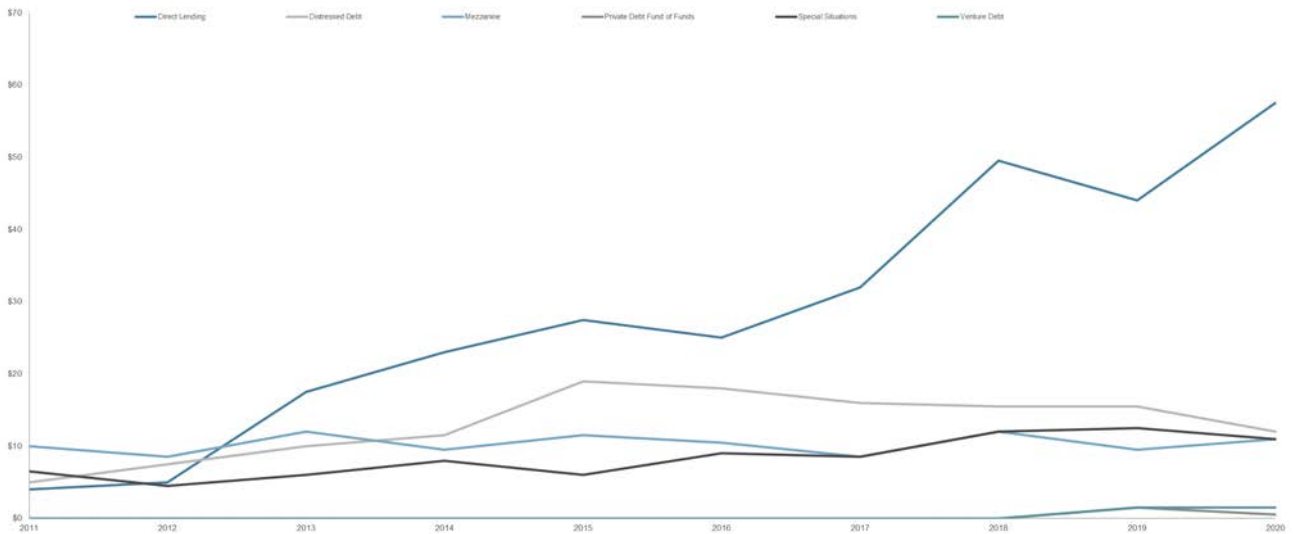


Figure 3: Private Debt Dry Powder in Europe (\$bn)



The number of UK-focused private debt funds closed per year has increased at a c. 18.9% CAGR over the 12 years since 2008 for an 8.0x growth from 2008 to 2020. This is commensurate with the historically low interest rate environment and aggressive quantitative easing stance taken on by global central banks accompanied with strong economic growth in the longest standing 11-year historical bull market in Western Europe and North America.

Globally, the Financial Sector in North America and Western Europe has begun to play a smaller role in direct lending funding size relative to multiple competing and newly emerging sectors, including shadow banking (private credit), fintech, and hedge funds. According to Jamie Dimon, CEO of J.P. Morgan, during the 20-year period covering 2000 to 2020, total private direct credit rose from \$7.6tn to \$18.4tn, and the size of the overall shadow banking system (including ETFs, Hedge Funds, and Private Equity) grew from \$16.9tn to \$61.5tn (for 3.64x growth).⁴

⁴ J.P. Morgan CEO Letter to Shareholders (2020).

II. Reporting Standards on Financial Instruments

The initial step involved in valuing a private debt instrument involves determining the appropriate basis of valuation. The basis of valuation is typically dictated by the relevant accounting standards applicable to the fund vehicle holding the private debt instrument, as well as the holding fund's stated valuation policy.

IFRS 9 Financial Instruments, part of the International Financial Reporting Standards ("IFRS") accounting framework, sets out the criteria that determine whether financial instruments are to be measured at amortised cost less impairment or fair value. The standards explicate that the determination of the measurement of the instrument is contingent on the business model of the enterprise. Two business models are possible:

1. Holding to maturity ("HTM") and collecting contractual cash flows and recorded at amortised cost less impairment.
2. Held for Sale ("HFS") assets held to collect contractual cash flows, but with the intention to sell the financial assets prior to maturity.

HFS assets are typically recorded at fair value, while HTM instruments are recorded using the amortised cost model (i.e. at amortised cost less impairment). Hence, the measure of value for such securities is linked to an impairment test.

A. Impairment Analysis

An impairment occurs when an entity's asset value is deemed to be lower than its book value on the company's financial statement. Under IFRS and US GAAP, a similar treatment is applied to impairment, namely:

"An impairment test is carried out at the end of each reporting period when there is objective evidence of impairment of any financial assets that are measured at cost or amortised cost. If there is objective evidence of impairment, the entity shall recognise an impairment loss in profit or loss immediately."

Objective evidence that a financial asset is impaired includes observable data that comes to the attention of the holder of the asset about the following loss events:

- Significant financial difficulty of the issuer or obligor.
- A breach of contract, such as a default or delinquency in interest or principal payments.
- The creditor, for economic or legal reasons relating to the debtor's financial difficulty, granting to the debtor a concession that the creditor would not otherwise consider.
- It has become probable that the debtor will enter bankruptcy or another financial reorganisation.
- Observable data indicating that there has been a measurable decrease in the estimated future cash flows from a financial asset.

Outlined in Appendix C is a list of typical queries that should be addressed during an impairment review.

B. Fair Value Hierarchy and Assessment

Investors in private funds typically require a fair value measurement for reporting purposes. Specifically, private funds typically require the calculation of a net asset value ("NAV") to be reported on a fair value basis, consistent with the definition of Fair Value as set out in IFRS 13 and US GAAP ASC Topic 820.

IFRS 13: Fair Value Measurement defines fair value as:

"The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction in the principal (or most advantageous) market at the measurement date under current market conditions (i.e. an exit price) regardless of whether that price is directly observable or estimated using another valuation technique."

To increase consistency and comparability in fair value measurements and related disclosures, the IFRS 13 standard established a fair value hierarchy that categorises into three levels the inputs to valuation techniques used to measure fair value. The fair value hierarchy gives highest priority to quoted prices (unadjusted) in active markets for identical assets or liabilities (Level 1 inputs) and the lowest priority to unobservable inputs (Level 3 inputs).

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Fair Value Instrument Classification⁵:**Level 1 inputs** can be defined as follows:

- Quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at the measurement date.
- Quoted market price in an active market provides the most reliable evidence of fair value and is used without adjustment to measure fair value whenever available, with limited exceptions.
- If an entity holds a position in a single asset or liability and the asset or liability is traded in an active market, the fair value of the asset or liability is measured within Level 1 as the product of the quoted price for the individual asset or liability and the quantity held by the entity, even if the market's normal daily trading volume is not sufficient to absorb the quantity held and placing orders to sell the position in a single transaction might affect the quoted price.

Level 2 inputs can be defined as follows:

- Level 2 inputs are inputs other than quoted market prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 2 inputs include:
 - Quoted prices for similar assets or liabilities in active markets.
 - Quoted prices for identical or similar assets or liabilities in markets that are not active.
 - Inputs other than quoted prices that are observable for the asset or liability. For example:
 - Interest rates and yield curves observable at commonly quoted intervals
 - Implied volatilities
 - Credit spreads
 - Inputs that are derived principally from or corroborated by observable market data by correlation or other means ("market-corroborated inputs").

Level 3 inputs can be defined as follows:

- Unobservable inputs for the asset or liability.
- Unobservable inputs are used to measure fair value to the extent that relevant observable inputs are not available, thereby allowing for situations in which there is little (if any) market activity for the asset or liability at the measurement date. An entity develops unobservable inputs using the best information available in the circumstances, which might include the entity's own data, considering all information about market participant assumptions that is reasonably available.

The use of Level 3 inputs in the valuation process requires the application of fundamental valuation techniques for assessing fair value of the subject security.

⁵ <https://www2.deloitte.com/ru/en/pages/audit/articles/2016/ifrs-9-financial-instruments.html>.

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III. Enterprise Value and Coverage Assessment

In order to select an appropriate approach to value the private credit position, an Enterprise/Collateral Value coverage test must be performed to assess whether the credit is performing or non-performing. The result of this test will inform the valuation methodology applicable for determining fair value. A firm with enough Enterprise/Collateral Value coverage over its debt obligations will justify the use of a performing debt valuation methodology when determining debt valuation, whereas a position only partially covered may necessitate the use of a liquidation or recovery approach.

Case Discussion: For the purposes of enriching the technical discussion outlined in the subsequent pages, we will be utilizing a hypothetical company, ABC Co., to demonstrate the concepts of private debt valuations in a practicable lens. A full description of ABC Co. and the associated case can be found in Appendix A.

A. Determination of Enterprise Value

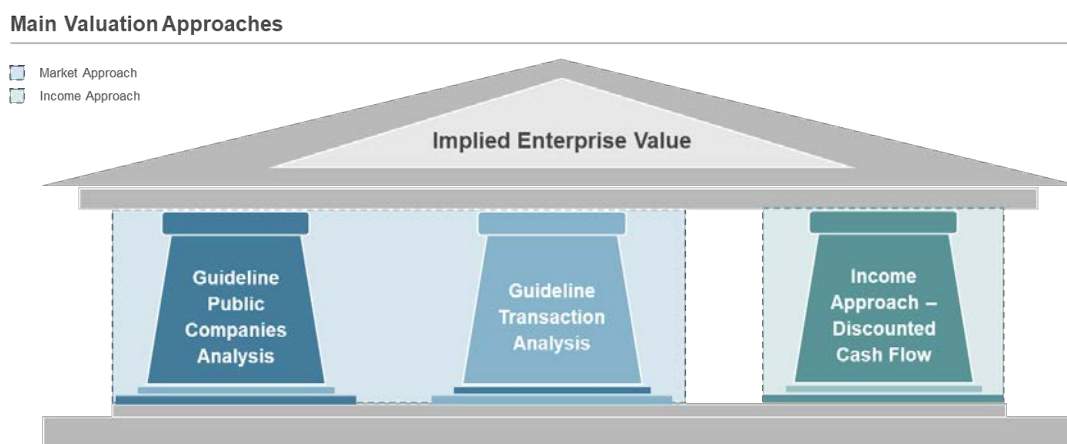
Enterprise Value is a capital structure neutral measurement of a company's core operations. Generally, it is derived as the market value of equity plus total long-term debt less excess cash. There are two main ways to calculate Enterprise Value:

Market Approach: Obtained by viewing market observed measures of Enterprise Value (e.g. through observing comparable companies or precedent transactions).

Income Approach: An intrinsic approach to valuation based on the underlying cash flows of the business discounted by an appropriate discount rate.

Figure 4 shows a summary of the different valuation approaches to determine Enterprise Value.

Figure 4: Valuation Techniques



B. Approaches to measuring Enterprise Value

1. Guideline Public Company Analysis

Guideline Public Company Analysis is rooted in the theory of arbitrage pricing. Specifically, it stems from the logic that markets will value companies with similar industry, operational, business, management, economic, and geographic risk exposures at similar earnings-based valuation multiples. If two firms are identical in risk and cash flow payout structures, then they should trade at similar market returns and, consequently, earnings multiples.⁶

In order for this analysis to produce accurate conclusions, it is critical to select the appropriate comparable companies. Specifically, companies that share similar risk characteristics, typically sub-segmented into two broad categories: 1) Operational and 2) Financial.

Operational risk considerations include:

- Industry
- Business model
- Product and diversity
- Size

⁶ Stephen Ross and Richard Roll: An Empirical Investigation of the Arbitrage Pricing Theory. The Journal of Finance Volume 35 (1980).

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- Geographic diversity
- Competitive positioning
- Suppliers and customers
- Distribution channels
- Cyclicity

Financial risk considerations include:

- Capital Structure
- Profitability (current and historical trends; should not be distressed)
- Growth prospects
- Liquidity of stock (actively traded, analyst coverage, news coverage)
- Recent or pending corporate actions

A sample version of the Guideline Public Company Analysis for ABC Co. can be found in Appendix B.

2. Guideline Transaction Analysis

Guideline Transaction Analysis provides a valuation statistic based on observed transactions that have closed. Guideline Transaction Analysis is an extension of arbitrage pricing theory and is similar to Guideline Public Companies analysis. However, this approach requires a backwards-looking approach to assessing valuation multiples. Specifically, this method focuses on using historical deals as an estimate for current valuations of similar transactions. There are several exogenous factors that may bias such an analysis, including the characteristics of the buyer, the dynamics of the deal, the dynamics of the bidding process, the prevailing economic environment at the time of the deal, the capital structure of the deal, the regulatory environment in the sector, the timeline of the deal, the growth prospects of the sector, etc. These issues are further exacerbated by a lack of publicly disclosed information, which makes it challenging to locate the necessary variables. Nevertheless, data points from directly comparable transactions often form an important precedent that the valuer would consider in the valuation analysis where feasible. A sample version of the Guideline Transaction Analysis for ABC Co. can be found in Appendix B.

3. Income Approach / Discounted Cash Flow Analysis (“DCF”)

The Income Approach is an intrinsic valuation methodology that is based on the cash flows generated by an asset discounted at a rate of return that is commensurate with the level of risk associated in the cash flows. It stems from the economic theory that valuation is based on earnings of the asset itself.⁷

The DCF method, a commonly used application of the Income Approach, consists of three steps:

1. Project cash flows over a discrete period.
2. Estimate a terminal value representing the prospective value of the subject company at the final year of the projection period.
3. Estimating the cost of capital.

Step 1: Project cash flows over a discrete period

Free cash flow is generally interpreted as the annual cash flow available to be distributed to the capital providers of a company, regardless of its particular capital structure, also called unlevered free cash flow (“ULFCF”). ULFCF is obtained through reconciliation to accrual-based EBITDA. Specifically, EBITDA can be reconciled to ULFCF through the following adjustments:

- EBITDA Depreciation and Amortisation – Taxes = Net Operating Profit After Tax (NOPAT)
- NOPAT + Depreciation and Amortisation +/- Non-Cash Expenses (Gains) – Changes in Net Working Capital – Capital Expenditure = ULFCF

Estimates of EBITDA are measured on a pro-forma basis indicating the future performance of the asset. Growth rate of revenues and EBITDA margin projections are two critical assumptions for the DCF as they drive the cash flow generation capabilities of the business. Figure 5 shows a sample ULFCF projection for ABC Co.

⁷ John Burr Williams. *The Theory of Investment Value*. Harvard University Press and Oxford University Press (1938).

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Figure 5: Sample ABC Co. ULFCF Projections

Current Discounted Cash Flow Model	Projection Period					
	2020	2021	2022	2023	2024	2025
Revenue	£118.42	£129.07	£139.40	£149.16	£158.11	£166.01
COGS	94.73	103.26	111.52	119.32	126.48	132.81
Gross Margin	£23.68	£25.81	£27.88	£29.83	£31.62	£33.20
SG&A	1.18	1.29	1.39	1.49	1.58	1.66
EBITDA	£22.50	£24.52	£26.49	£28.34	£30.04	£31.54
Less: Depreciation and Amortisation	1.18	1.29	1.39	1.49	1.58	1.66
EBIT	£21.31	£23.23	£25.09	£26.85	£28.46	£29.88
Less: Taxes	5.33	5.81	6.27	6.71	7.11	7.47
Net Operating Profit After Tax	£15.99	£17.42	£18.82	£20.14	£21.34	£22.41
Add: Depreciation and Amortisation	1.18	1.29	1.39	1.49	1.58	1.66
Add/(Less): Decrease (Increase) in Net Working Capital	0.00	0.00	0.00	0.00	0.00	0.00
Less: Capital Expenditure	1.18	1.29	1.39	1.49	1.58	1.66
Unlevered Free Cash Flow	£15.99	£17.42	£18.82	£20.14	£21.34	£22.41

Step 2: Terminal Value in DCFs

Upon reaching a steady state level of growth, the value of the asset into perpetuity is typically estimated using a terminal value multiple referred to as an “exit multiple.” The exit multiple methodology is built on the arbitrage pricing tenants of Guideline Public Companies analysis.

Terminal multiples often constitute the majority of the value in the analysis; hence, added scrutiny must be applied when evaluating this metric. Other factors that may influence the exit multiple include evolving business models, changing economic environment, and views on the long-term growth. Exit multiples are most often applied when the underlying asset achieves steady state growth. Once an appropriate market multiple has been selected, it must be applied to the corresponding financial statistic in the final year of the projection period. The indicated terminal value range is then discounted back to the Valuation Date using the Cost of Capital (“CoC”) rate. Terminal values can also be estimated using alternative methodologies such as the Gordon Growth model, which applies a perpetual growth rate assumption beyond the terminal year.

Figure 6: Terminal Multiple Calculation

Terminal Value	
DEF Co.	5.64
GHI Co.	5.57
XYZ Co.	5.31
Maximum	5.64
Minimum	5.31
Mean	5.51
Terminal Year EBITDA	£31.54
Average Industry EV Multiple	5.51
Implied Terminal Value	£173.64

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Step 3: Estimating the Cost of Capital

WACC Approach: The discount rate referred to as the weighted average cost of capital (“WACC”) when used in the DCF method is intended to reflect all relevant risks associated with realising the stream of projected cash flows and the associated capital structure. It can be interpreted as the rate of return that would be required by providers of capital to a company to compensate them for the risk-adjusted time value of their money. The discount rate is measured as a weighted average of the required rate of return on all capital sources. This includes the after-tax cost of debt, return on equity, and any other financing sourcing (e.g. return on preferred equity). In general, the WACC can be thought of as a market-based weighted average measure of the cost of financing the capital structure of an asset (on a post-tax basis).

$$WACC = R_e W_e + R_p W_p + R_{d(PT)} [1-t] W_d$$

Where:

WACC	=	Weighted average cost of capital (after-tax)
R_e	=	Cost of common equity capital
W_e	=	Percentage of common equity capital in the capital structure, at market value
R_p	=	Cost of preferred equity capital
W_p	=	Percentage of preferred equity capital in the capital structure, at market value
$R_{d(PT)}$	=	Cost of debt capital (pre-tax)
t	=	Income tax rate
W_d	=	Percentage of debt capital in the capital structure, at market value

The WACC methodology assumes constant capital structure (or the assumption that leverage levels will remain constant and debt will be refinanced). This assumption is not appropriate for unique situations such as high-growth startups and financial institution firms, for which long-term debt structures are not crystallised, nor are traditional capital structure analyses appropriate. Furthermore, within the WACC, the Cost of Equity is typically estimated using the Capital Asset Pricing Model (“CAPM”).

Figure 7: ABC Co. WACC Calculation

WACC	
Cost of Equity	10.94%
Cost of Debt	4.60%
Target Debt-to-Equity Ratio	80.00%
Tax Rate	25.00%
Cost of Preferred Shares	0.00%
Weight of Equity	0.56
Weight of Debt	0.44
WACC	7.61%

Capital Asset Pricing Model: The CAPM is an economic argument that any company’s returns can be explained through its exposure to systematic risk, which assumes that a well-diversified investor will only be compensated for an asset, relative to the asset’s exposure to market risk. The relationship of the stock returns to market returns is captured through an ordinary least squares (OLS) regression estimated parameter called Beta. While the CAPM is a widely used approach to estimate cost of equity related to systematic risk (as captured via the Beta), it is not always sufficient for valuation purposes. Investors often apply adjustments to the CAPM to reflect the idiosyncratic risk of the particular company⁸:

⁸ Shannon P. Pratt and Roger J. Grabowski. Cost of Capital: Applications and Examples, 5th ed. (John Wiley & Sons, 2014), p. 197.

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$$E(R_i) = R_f + \beta(RP_m) + RP_s \pm RP_u$$

Where:

- RP_m = General equity risk premium for the market
 RP_s = Risk premium for small size
 RP_u = Risk premium attributable to the specific company
 (non-systematic risk premium)

Risk-Free Rate of Return: The risk-free rate of return compensates an investor for the time value of money invested, with no risk of default.

Beta: Beta is a mathematical measure of a security's volatility in relation to the volatility of the market as a whole. Beta is defined as the covariance of the returns on the particular security with the returns on the market portfolio, divided by the variance of the returns on the market portfolio. The Beta for the market portfolio is 1.0. The higher the perceived riskiness of a particular common stock (relative to the market portfolio), the higher the Beta will be.

Equity Risk Premium: The equity risk premium (ERP) reflects the additional expected return over risk-free securities required by investors to compensate them for the risks inherent in the equity market portfolio (e.g. the equity market as a whole).

Size Premium: The risk premium for small size—or size premium—incorporates, when appropriate; the additional risk associated with being a smaller company relative to the market from which the ERP has been measured.

Non-Systematic Risk Premium: An additional non-systematic (i.e. company-specific) risk premium is sometimes added to the cost of common equity to capture non-systematic risks.

Figure 8: ABC Co. Cost of Equity Calculation

Cost of Equity	
Beta	0.99
Market Risk Premium	4.50%
Risk-Free Rate	2.00%
Implied Cost of Equity	6.46%
Adjustments to CAPM	
Risk Premium for Small Size	3.21%
Non-Systematic Risk Premium	1.27%
Total Adjustments	4.48%
Total Cost of Equity	10.94%

Once these parameters have been estimated, a full discounted cash flow analysis can be conducted. A complete Discounted Cash Flow Analysis for ABC Co. can be found in Appendix B.

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C. Assessing Enterprise Value Coverage

Once an Enterprise Value has been established, it allows the valuer to select the type of valuation methodology applicable for our subject private credit instrument. Figure 9 illustrates ABC Co.'s existing capital structure.

Figure 9: Capital Structure ABC Co.

As of 12/31/2020	Interest Rate	Maturity Date	Outstanding Balance ¹	Gross Leverage ¹	Net Leverage ¹	Net Loan-to-Value ¹	Net Asset Coverage ¹
Revolving Loan	NA	NA	-	0.00x	-0.44x	NA	NA
First Lien Term Loan	L + 5.50%	12/31/2026	80.00	3.56x	3.11x	34.15%	2.93x
Second Lien Term Loan	L + 7.50%	12/31/2030	50.00	5.78x	5.33x	58.54%	1.71x
Total Debt			130.00	5.78x	5.33x	58.54%	1.71x
Less: Cash and Cash Equivalents			10.00				
Total Net Debt			120.00				

[1] Based on the following observed values as at FYE 2020:

For further detail, see Appendix B.

EBITDA	22.50
Cash	10.00
Enterprise Value	205.00

Specifically, the valuation methodology selected for the private debt instrument depends on an assessment of firm/security coverage based on an estimation of the firm's enterprise value and/or the collateralised assets. The Enterprise Value coverage analysis compares the Enterprise Value of the borrower to the individual debt tranches in the company's capital structure. The analysis projects the firm's ability to "cover" its debt positions. Depending on the results of such a coverage analysis, the debt position may be considered fully covered or inadequately covered. See both cases in Figure 10 on the next page.

If the private debt security being valued is deemed to be fully covered, then an income-based approach to credit valuation is utilised. This approach utilises a yield analysis to benchmark the credit risk of the subject security. If the private debt security being valued is deemed to be irrecoverable or partially recoverable, then a recovery approach or liquidation analysis would need to be undertaken.

Figure 10 shows an example of sample Enterprise Value Coverage Assessment for ABC Co. Specifically, in two cases: (i) Full Coverage case and (ii) Partial Coverage case. In the Full Coverage case (i.e. Case 1), the firm has an estimated Enterprise Value between £192M and £240M. Adding Cash and Non-Operating Assets, the firm has a Total Implied Enterprise Value range of £202M to £250M. The firm has two debt facilities (First Lien and Second Lien). In Case 1, we see that the coverage analysis shows that ABC Co. has sufficient Enterprise Value Coverage to support its debt obligations. In the Partial Coverage case (Case 2), where the estimated Total Enterprise Value is between £110M and £150M, we see that the second lien is only deemed to be partially covered at the low end of the Enterprise Value range.

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Figure 10: Coverage Assessment (2 Scenarios)

Case 1: Full Coverage				
		Low		High
Implied Enterprise Value Range		192.00	-	240.00
Non-Operating Assets/Liabilities				
Add: Cash and Cash Equivalents as of FYE 2020		10.00	-	10.00
Add/(Less): Total Non-Operating Assets/(Liabilities)		-	-	-
Implied Total Enterprise Value Range		202.00	-	250.00
Enterprise Value Coverage Available for Debt Repayment	Outstanding Balance			
First Lien	80.00	100%	-	100%
Second Lien	50.00	100%	-	100%
Recovery of:				
First Lien	80.00			
Second Lien	50.00			
Case 2: Partial Coverage				
		Low		High
Implied Enterprise Value Range		100.00	-	140.00
Non-Operating Assets/Liabilities				
Add: Cash and Cash Equivalents as of FYE 2020		10.00	-	10.00
Add/(Less): Total Non-Operating Assets/(Liabilities)		-	-	-
Implied Total Enterprise Value Range		110.00	-	150.00
Enterprise Value Coverage Available for Debt Repayment	Outstanding Balance			
First Lien	80.00	100%	-	100%
Second Lien	50.00	60%	-	100%
Recovery of:				
First Lien	80.00			
Second Lien	30.00			
Total Debt Recovery Value	<u>110.00</u>			

IV. Private Credit Valuation

A. Private Credit Valuation Principles

When valuing Private Credit exposures, there are four main valuation approaches:

1. Income Approach Using Yield Analysis
2. Net Recovery Approach
3. Liquidation Approach
4. Broker Quotes

The selection of methodology depends on the availability of broker quotes and on the results of the Enterprise Value Coverage test previously performed.

If the debt exposure is classified as a performing loan and there are no available broker quotes or observable trading activity on the subject securities, it is often appropriate to apply a single valuation approach in order to estimate fair value (i.e. the income approach based on a yield analysis). Furthermore, in cases where the subject performing loan is thinly traded and, as such, any available broker quotes are not deemed to be reliable, a yield analysis may be used to corroborate the value implied by the quotes.

If the debt exposure is classified as a non-performing loan, it may be appropriate to consider multiple valuation approaches in estimating fair value (i.e. net recovery approach, liquidation analysis, scenario analysis).

When assessing the fair valuation methodology, three questions are typically asked:

1. Can it be reasonably assumed that 100% of principal and interest will be received?
2. What are the expected cash flows?
3. What is the appropriate discount rate?

In some distressed cases, the above questions would require additional work to be answered. Other appropriate questions may include:

- What is the estimated value of the business relative to the total value of the company's securities that are senior to and pari passu with the security being valued?
- Is the company able to refinance its obligations?

As a rule of thumb, if the implied Yield to Maturity ("YTM") is greater than 20%, it is likely to imply that the market does not anticipate a full recovery. In practice, an implied YTM in excess of 20% is a strong indicator of a non-performing loan. In such distressed circumstances, it would not be appropriate to value the private debt security through an income approach such as a yield analysis.

B. Income approach using yield analysis

If it has been concluded that the exposure is a performing credit, a yield analysis may be applied. There are three main steps in the yield analysis:

1. Cash Flow Projection
2. Discount Rate Estimation
3. Net Present Value Calculation

For the purposes of the case study illustration, we focus on ABC Co.'s £80M First Lien Debt exposure. Assume the following terms govern the debt instrument:

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Key Terms and Conditions

Facility	Term Loan First Lien
Principal Amount	£80M
Company Holding	ABC Co.
Interest Rate	L + 5.50%
Amortisation	Bullet
Closing Date	31-Dec-20
Maturity Date	31-Dec-26
Payment Date	Quarterly (March 31, June 30, September 30, and December 31)
Purchase Price at Issuance	100.00%
Original Issue Discount	0.00%
Call Protection	None
Financial Covenants	None
Day Count Convention	ACT/365
Valuation Date	12/31/2020 (Post Coupon)

Step 1 – Cash Flow Projections: In performing a yield analysis, the first step is to lay out the contractual cash flows through a cash flow schedule that a subject debt security is expected to generate over its remaining estimated holding period (which may not necessarily be the same as the full term of the loan). These projected cash flows are modelled from the terms and conditions laid out in the credit documentation, including terms around coupon payments, day count convention, and coupon payment frequency. A sample extract from the full form debt valuation conducted on ABC Co. can be found below. Note that ABC Co's coupon payments are based on an underlying reference rate (in this case, the L + 5.50% cash margin spread). The coupon payments are calculated based on a forward curve that projects the reference rate and accounts for the cash spread on top of the reference rate. The coupon payment also accounts for the ACT/365-day count convention and quarterly coupon payments. See detailed schedule in Figure 11 below:

Figure 11: Coupon Payment and Cash Flow Outlay

Date	3/31/2021	6/30/2021	9/30/2021	12/31/2022	3/31/2022	
Outstanding Principle Balance	£80.00	£80.00	£80.00	£80.00	£80.00	A
Underlying Reference Rate	0.05%	0.10%	0.15%	0.20%	0.25%	
Cash Margin	5.50%	5.50%	5.50%	5.50%	5.50%	
Total Cash Interest Rate	5.55%	5.60%	5.65%	5.70%	5.75%	B
Days Outstanding in the Period	92	92	90	91	92	C
Total Days in Year Assumed	365	365	365	365	365	D
Coupon Payment	£1.12	£1.13	£1.11	£1.14	£1.16	A*B*(C/D)

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Step 2 – Discount Rate Estimation: The projected cash flows are then converted to their present value equivalent utilising a rate of return commensurate with the risk of achieving those cash flows. In our example, the discount rate was estimated as $L + 6.71\%$ implied spread.

The selection of discount rate is a function of both company and economic factors that need to be considered. In addition to the base rate, investors will apply a spread, which can be estimated using a calibration methodology. If the original debt issuance is considered representative of a fair market transaction, the implied spread from the issuance price can be estimated. This implied spread can then be monitored and adjusted on an ongoing basis in order to estimate the appropriate spread to apply when valuing the subject instrument as of the date of valuation. Typical factors that are monitored when selecting such spread adjustments include:

1. Changes in observed market spreads and yields since the issuance of the instrument.
2. Changes in company-specific factors.

Sample list of factors to consider when determining appropriate credit spreads:

- The financial performance and key credit metrics of the issuer since the original investment date to the valuation date.
- The operations of the issuer compared to budget as well as comparisons to initial expectations at origination.
- Changes in observed spreads and yields of selected comparable debt indices (e.g. the Merrill Lynch High Yield bond index and S&P LCD Loan Index, etc.).
- Changes in observed spreads and yields of selected corporate loans and bonds that we deem comparable to the investments.

Figure 12: Reasons to Adjust Discount Rate by Less Than Market Spread Movement

Financial Performance	<ul style="list-style-type: none"> ▪ Company is performing above underwriting expectations. ▪ Company is ahead of budget for the year.
Leverage Ratio	<ul style="list-style-type: none"> ▪ Leverage ratio of investment is considered below market.
Asset Coverage	<ul style="list-style-type: none"> ▪ Enterprise value and/or value of hard assets has improved relative to the debt balance, resulting in loan-to-value metrics that are below observed market levels.
Current Loan Terms	<ul style="list-style-type: none"> ▪ Currently receiving what is considered at market returns given the credit profile of the investment, supported through a comparison of the risk and return profile relative to that of similar recent market issuance.
Key Events	<ul style="list-style-type: none"> ▪ Company recently issued a pari passu security with pricing consistent with subject security being valued. ▪ Company is in the process of being sold, resulting in full repayment of the loan at par plus call protection, if any.
Composition of Benchmark Indices	<ul style="list-style-type: none"> ▪ Benchmark indices may have sizeable exposure to certain volatile industries (i.e. underlying oil and gas, retail).

When examining market movements in spreads, two categories of benchmark securities are typically utilised, namely 1) Broad Market Indices and 2) Individual Issuers.

Broad Market Indices:

- Sample Sources: Bank of America Merrill Lynch High Yield Indices, Bloomberg, LCD
- Ratings-based indices
- Industry-based indices
- Geography-based indices
- General Bank of America Merrill Lynch High Yield Master index

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Individual Issuers:

- Sample Sources: S&P Capital IQ, Bloomberg, SMi, COMET
- Publicly traded bonds
- Publicly traded loans
- Smaller universe than traditional equity comps
- Generally, less strict screening criteria due to limited universe (i.e. same general industry vs. same exact products and services)
- Extremely limited data access to private comparable companies

Assessing Debt Valuations: Debt valuations can be impacted by a multitude of factors, including market rates, company performance, asset coverage, observed secondary market trades, etc. See table of factors impacting debt valuations below in Figure 13 below.

Figure 13: Debt Valuation Considerations

Valuation Considerations	Reasons for Increases in Loan Value	Reasons for Decrease in Loan Value
Market Rates	<ul style="list-style-type: none"> ▪ Clear consensus in tightening of spreads/yields. 	<ul style="list-style-type: none"> ▪ Clear consensus in widening of spreads/yields.
Company Performance	<ul style="list-style-type: none"> ▪ Outperformed year over year. ▪ Outperformed versus budget. ▪ Outperformed versus expectations at origination. ▪ Leverage ratio materially decreased since origination. ▪ Making additional voluntary principal payments. ▪ Increasing covenant-level cushions. 	<ul style="list-style-type: none"> ▪ Underperformed year over year. ▪ Underperformed versus budget. ▪ Underperformed versus expectations at origination. ▪ Leverage ratio materially increased since origination. ▪ Default on principal and/or interest payment. ▪ Has breached or is expected to breach financial covenants.
Asset Coverage	<ul style="list-style-type: none"> ▪ Loan-to-value metrics declining over time. 	<ul style="list-style-type: none"> ▪ Loan is impaired due to insufficient asset value. ▪ Loan is barely covered and is now “equity-like.”
Observed Secondary Market Trades	<ul style="list-style-type: none"> ▪ Non-distressed arm’s-length trade at higher mark. 	<ul style="list-style-type: none"> ▪ Non-distressed arm’s-length trade at lower mark.
Shareholder Characteristics	<ul style="list-style-type: none"> ▪ Debt position held by a reputable sponsor with strong and stable capital pool. ▪ Sponsor’s investment strategy is robust to withstand short-term volatility. 	<ul style="list-style-type: none"> ▪ Debt position held by a small sponsor with limited capital pool. ▪ Sponsor’s investment strategy is short-term and not robust enough to handle volatility.
Other Considerations	<ul style="list-style-type: none"> ▪ Has been paying down with prepayment premiums. ▪ In discussions with lenders regarding refinance. ▪ In discussions regarding sale (change of control). ▪ More junior tranche is traded at lower yield. 	<ul style="list-style-type: none"> ▪ Has elected PIK option due to liquidity constraints. ▪ In discussions with lenders regarding forbearance. ▪ In discussions with lenders regarding extension. ▪ More senior tranche is traded at higher yield.

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Refinancing risk in private credit: It is important to note that the maturity of the loan specified in the original agreement need not be the latest expected term of the loan. Private credit loans are frequently repaid or refinanced prior to maturity. This occurs due to a variety of reasons, including:

- Expensive interest rates on private credit loans.
- Sale of the business.
- Refinance to take advantage of lower interest rates.
- Restructuring due to financial distress.

An investor could conduct a benchmarking of the underlying firm's performance relative to the expectations of performance at the time of the loan origination. Companies that are performing better than expected might have a higher prepayment risk suggesting the forecasting of debt repayment prior to contractual maturity.

If the coupon on a loan is substantially above or below the current required yield for the loan, the impact on the value of the loan will be nominal if the loan is expected to be paid off in the near term; however, the impact could be significant if the loan is expected to be outstanding for a long period of time. If it is outstanding long enough, even a small differential between the stated coupon and the current required yield could result in a significant difference between the market value and the par value of the loan.

Further complexities that may be relevant when conducting a yield analysis on private debt exposures include:

- PIKs – An agreement to accrue further debt on the outstanding balance as opposed to paying interest via cash. Applicable for cash-strapped firms with high cash requirements.
- Cash sweeps – An agreement to “sweep” excess cash balances into repayment of the debt early.
- Amortisation structures – Unlike sweeps, which are discretionary, amortisation terms of loan values are mandatory debt repayments that are prespecified in the credit agreement. Amortisation may be of a fixed amount, or a fixed percentage of the principle.
- Exit fees – Fees charged by the creditor due at the time when the loan is fully paid off.
- Days conventions – When calculating the interest payments or discounting cash flows, the underlying day count convention allows for replicability and precision in valuation methodology. Assumptions around days help adjust for abnormalities in day count. Common conventions include:
 - Actual / 360: Calculates the daily interest using a 360-calendar year and then multiplies that by the actual days outstanding in the month.
 - 30 / 360: Calculates the daily interest using a 360-day year and then multiplies that by 30 (standardised month).
 - Actual / 365: Calculates the daily interest using a 365-calendar year and then the actual days outstanding in the month.
 - 30 / 365: Calculates the daily interest using a 365-day year and then multiplies that by 30 (standardised month).
 - Actual / Actual: Calculates the daily interest using the actual days in the year and then multiplies that by actual days outstanding.

Step 3 – Net Present Value Calculation: Once the above steps have been completed, the next step is to present value the cash flows and calculate the current value of the debt exposure. The full example of the valuation of ABC Co.'s £80M floating rate note can be found in Appendix D.

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C. Net recovery Approach

If our original Enterprise Value Coverage Assessment showed that a subject security is no longer performing or otherwise not expected to be fully recovered under its legal terms of repayment (but is otherwise secured by a going-concern entity), the net recovery approach can be used to estimate fair value.

The net recovery approach is applied by performing a waterfall on the enterprise value of the asset. Enterprise value or collateral value is determined by utilising the market approach (guideline public company comparables and guideline transaction comparables) and/or income approach (discounted cash flow). A waterfall is then applied to this estimated value, and the debt positions are valued based on the level of enterprise or collateral value coverage allocable to its tranche in the capital structure. Recall in our example, ABC Co. has two tranches of debt, a first and second lien, with £80M and £50M outstanding, respectively. If our valuation of the entity had determined that the enterprise value of ABC Co. is £100M, then ABC Co.'s second lien would not be fully covered, and would be expected to have recovery of 40% (see Figure 14 below).

Figure 14: Net Recovery Approach Example

Waterfall Approach			Outstanding Debt	
Value	Coverage (%)			
Enterprise Value	£100		First Lien	£80
Less:			Second Lien	£50
First Lien	80	100%		
Second Lien	50	40%		
Excess/(Deficit)	(£30)			
Implied Value of Second Lien		£20		

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D. Liquidation Approach

When an issuer has entered bankruptcy and/or is no longer considered to be a going concern, a liquidation analysis can be utilised to estimate the value of the subject security. In this case, the assets are appraised under distressed environment assumptions using estimates for haircuts on liquidation or the fire-sale of assets. Unlike the traditional assumptions of fair value that are calculated based on orderly market transactions, the liquidation approach estimates steep discounts on the assets commensurate with a forced sale. In other words, the fair value is discounted to reflect the time and costs of liquidation, as well as the uncertainty around the sale of the assets in a forced liquidation. See example in Figure 15 below.

Important: A liquidation approach may warrant a scenario analysis, in which potential upside and downside cases are considered.

Figure 15: Liquidation Approach ABC Co.

Balance Sheet			
As at December 31st 2020			
Core Operating Assets	Amount (£)	Recovery Rate (%)	Recoverable Amount (£)
Short-Term Investments	5.00	90.00%	4.50
Accounts Receivable	25.00	85.00%	21.25
Inventory	20.00	30.00%	6.00
PPE, Net	75.00	75.00%	56.25
Trademarks and Intangibles	30.00	40.00%	12.00
Goodwill	40.00	0.00%	-
Total Assets	<u>195.00</u>		<u>100.00</u>
Total Value	195.00		
Estimated Liquidation Value in an Expedited Process	100.00		
Discount	48.72%		
Outstanding Debt		Amount (£)	
First Lien	80.00		
Second Lien	50.00		
Total Debt Outstanding	130.00		
Line Item	Amount (£)	Coverage (%)	
Total Value After Haircut	100.00		
Less:			
First Lien	80.00	100.00%	
Second Lien	50.00	40.00%	
Surplus (Deficit)	<u>(30.00)</u>		
Implied Value of Second Lien	20.00		

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E. Broker Quotes

Where applicable, valuations of the credit exposure should consider broker quotes—specifically, when those broker quotes are timely and otherwise deemed to be reliable. Several factors should be considered to determine whether a trade or quote is reliable, including (but not limited to):

- Timing (i.e. proximity of quote to valuation date).
- Volume (i.e. for thinly traded securities, quotes may not be indicative of fair value).
- Validity of data sources (i.e. Reuters SMi, Bloomberg).
- Whether a known transaction occurred between related parties (e.g. co-investors).

If broker quotes are deemed unreliable or the security is not traded, one should consider whether the loan is performing or non-performing. A corroborating analysis (i.e. yield analysis) may be appropriate, particularly if it is not clear whether the quote or trade data is reliable.

In practice, one often comes across broker quotes that are deemed unreliable, rendering the data point implied from the quote less meaningful. In such cases, it becomes imperative to utilise one of the other fundamental valuation techniques to estimate fair value.



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APPENDICES

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Appendix A. ABC Co. Case Overview

ABC Co. is a fast-growing privately held grocery chain operating primarily in Western Europe and North America. The chain focuses on providing high-quality and nutritious food at a low cost to its customers. Given low margins in the grocery business, ABC Co. focuses on operational efficiencies and strong logistics management systems to help optimise its supply chain and reduce costs. ABC Co. has grown significantly in recent years, given increased demand for low-cost, high-quality food. In addition, management has allocated considerable cash to capital expenditures to help the firm develop strong warehouse management and delivery systems. Given the organic growth and increased capital expenditure, the firm has taken on considerable debt over the past few years with a 2.88x Debt-to-Equity Ratio as at FYE 2020 (as compared to the industry average of 1.67x). Management, Shareholders, and Lenders are concerned regarding potential financial distress costs associated with the aggressive debt issuance and want to assess the value of their debt positions.

Appendix B. ABC Co. Enterprise Value Calculation – 3 Approaches

Approach 1: Discounted Cash Flow Analysis

Balance Sheet

As at December 31st 2020

Assets		Liabilities	
Cash	10	Accounts Payable	30
Short-Term Investments	5	First Lien	80
Accounts Receivable	25	Second Lien	50
Inventory	20		
PPE, Net	75	Total Shareholders' Equity	
Trademarks and Intangibles	30	Retained Earnings	35
Goodwill	40	Share Capital	10
Total Assets	<u>205</u>	Total Capitalisation	<u>205</u>

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Income Statement	Historical Period			Current
	2017	2018	2019	2020
Revenue	£94.01	£100.59	£108.64	£118.42
% Growth		7.0%	8.0%	9.0%
COGS	75.21	85.50	81.48	94.73
% Revenue	80.0%	85.0%	75.0%	80.0%
Gross Margin	£18.80	£15.09	£27.16	£23.68
% Revenue	20.0%	15.0%	25.0%	20.0%
SG&A	0.94	1.01	1.09	1.18
% Revenue	1.0%	1.0%	1.0%	1.0%
EBITDA	£17.86	£14.08	£26.07	£22.50
% Revenue	19.0%	14.0%	24.0%	19.0%
Depreciation and Amortisation	0.94	1.01	1.09	1.18
% Revenue	1.0%	1.0%	1.0%	1.0%
Earnings Before Interest and Taxes (EBIT)	£16.92	£13.08	£24.99	£21.31
% Revenue	18.0%	13.0%	23.0%	18.0%
Interest Expense	0.50	0.45	0.43	0.46
% Revenue	0.5%	0.4%	0.4%	0.4%
Earnings Before Taxes	£16.42	£12.63	£24.56	
Taxes	4.11	3.16	6.14	0.00
% Tax Rate	25.0%	25.0%	25.0%	25.0%
Net Income	£12.32	£9.47	£18.42	£0.00
% Revenue	13.10%	9.41%	16.95%	0.00%

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Discounted Cash Flow Model	Current	Projection Period				
	2020	2021	2022	2023	2024	2025
Revenue	£118.42	£129.07	£139.40	£149.16	£158.11	£166.01
COGS	94.73	103.26	111.52	119.32	126.48	132.81
Gross Margin	£23.68	£25.81	£27.88	£29.83	£31.62	£33.20
SG&A	1.18	1.29	1.39	1.49	1.58	1.66
EBITDA	£22.50	£24.52	£26.49	£28.34	£30.04	£31.54
Less: Depreciation and Amortisation	1.18	1.29	1.39	1.49	1.58	1.66
EBIT	£21.31	£23.23	£25.09	£26.85	£28.46	£29.88
Less: Taxes	5.33	5.81	6.27	6.71	7.11	7.47
Net Operating Profit After Tax	£15.99	£17.42	£18.82	£20.14	£21.34	£22.41
Add: Depreciation and Amortisation	1.18	1.29	1.39	1.49	1.58	1.66
Add/(Less): Decrease (Increase) in Net Working Capital ¹	0.00	0.00	0.00	0.00	0.00	0.00
Less: Capital Expenditure ²	1.18	1.29	1.39	1.49	1.58	1.66
Unlevered Free Cash Flow	£15.99	£17.42	£18.82	£20.14	£21.34	£22.41
	2020	2021	2022	2023	2024	2025
Unlevered Free Cash Flow		£17.42	£18.82	£20.14	£21.34	£22.41
Time Period ³		0.5	1.5	2.5	3.5	4.5
Present Value Factor		0.97	0.91	0.85	0.79	0.74
Discounted Cash Flows		£16.86	£17.06	£17.09	£16.97	£16.69
Terminal Value						173.64
Time Period ³						5.00
Present Value Factor						0.69
Present Value of Terminal Value						120.34
Present Value of Cash Flow		£16.86	£17.06	£17.09	£16.97	£137.02
Enterprise Value	£205.00					

*Sum of Present Value of Cash Flows Discounted at WACC

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Cost of Equity	
Beta ⁴	0.99
Market Risk Premium ⁵	4.50%
Risk-Free Rate ⁶	2.00%
Implied Cost of Equity	<u>6.46%</u>
Adjustments to CAPM	
Risk Premium for Small Size	3.21%
Non-Systematic Risk Premium	1.27%
Total Adjustments	<u>4.48%</u>
Total Cost of Equity	<u><u>10.94%</u></u>

Terminal Value	
DEF Co.	5.64x
GHI Co.	5.57x
XYZ Co.	5.31x
Maximum	5.64x
Minimum	5.31x
Mean	5.51x

Terminal Year EBITDA	£31.54
Average Industry EV Multiple	5.51x
Implied Terminal Value	<u><u>£173.64</u></u>

EV Contribution	Nominal	%
From Terminal Value	120.34	58.70%
From FCF	£84.66	41.30%
From FCF	<u>£84.66</u>	41.30%
Total EV	<u><u>205.00</u></u>	

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WACC

Cost of Equity	10.94%
Cost of Debt	4.60%
Target Debt to Equity Ratio ⁷	80.00%
Tax Rate	25.00%
Cost of Preferred Shares	0.00%
Weight of Equity	0.56
Weight of Debt	0.44
WACC	7.61%

Assumptions:

- [1] NWC assumed to stay flat. No changes to NWC year over year.
- [2] Capital Expenditure set to equal Depreciation and Amortisation.
- [3] Assume half-year convention. Cash Flows collected at uniform rate throughout the year.
- [4] Market observed Beta with respect to a Western European Market Risk index.
- [5] Market Risk Premium associated with the UK and Western Europe market in excess of the risk-free rate of return.
- [6] Observed 10-year UK treasury note return.
- [7] Market Observed Debt-to-Equity Ratio based on Western European Grocery Stores.
- [8] Tax Rate of 25% inferred from historical financial statements.

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Sensitivities		CASE 1				
		Terminal Value and Growth Rate of Revenue				
£205.00		4.51	5.01	5.51	6.01	6.51
4.00%		150.05	158.76	167.47	176.17	184.88
6.50%		163.22	172.75	182.29	191.82	201.35
9.00%		183.25	194.18	205.11	216.04	226.97
11.50%		206.01	218.56	231.11	243.66	256.21
14.00%		231.22	245.58	259.95	274.31	288.67

Sensitivities		CASE 2				
		Terminal Value and WACC				
£205.00		4.51	5.01	5.51	6.01	6.51
6.61%		187.96	199.41	210.86	222.31	233.77
7.11%		185.57	196.76	207.94	219.13	230.32
7.61%		183.25	194.18	205.11	216.04	226.96
8.11%		180.99	191.67	202.35	213.03	223.70
8.61%		178.79	189.23	199.66	210.10	220.53

Sensitivities		CASE 3				
		Growth Rate and WACC				
£205.00		8.00%	8.50%	9.0%	9.50%	10.00%
5.78%		205.53	210.60	215.77	221.06	226.46
6.28%		202.64	207.63	212.72	217.92	223.23
7.61%		195.34	200.12	205.00	209.98	215.07
7.28%		197.10	201.93	206.86	211.89	217.04
7.78%		194.45	199.20	204.05	209.01	214.07

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Approach 2: Guideline Comparable Company Analysis

Peer Comps	EV/EBITDA		Forward P/E			EV to Adjusted EBITDA		
Guideline Company	Share Price	Equity Market Value	Enterprise Value	LTM	NFY	NFY + 1	NFY + 2	
DEF Co.	22.08	22.43	69.96	7.07x	8.56x	6.43x	7.26x	
GHI Co.	12.51	13.54	12.94	6.47x	9.50x	6.27x	5.53x	
JKL Co.	12.86	13.61	95.80	4.20x	7.12x	9.40x	7.30x	
RST Co.	24.98	25.58	100.01	6.07x	9.53x	6.16x	9.32x	
UVW Co.	40.39	42.93	123.37	4.77x	5.50x	4.71x	9.16x	
XYZ Co.	48.02	51.29	71.34	8.77x	5.32x	8.32x	4.95x	
ABC Co.	31.20	32.39	205.00	9.11x	8.36x	7.74x	7.23x	

Low				4.20x	5.32x	4.71x	4.95x
High				9.11x	9.53x	9.40x	9.32x
Median				6.47x	8.36x	6.43x	7.26x
Mean				6.64x	7.70x	7.00x	7.25x

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Approach 2: Guideline Comparable Company Analysis (cont.) – Benchmarking

Quantitative Factors

Size (LTM Revenue, Millions)		Size [1] (Enterprise Value, Millions)		Historical Growth (2-Fiscal Year Revenue)		Historical Growth (1-Fiscal Year Revenue)		Projected Growth (1-Fiscal Year Revenue)	
Company A	\$3,553	Company A	\$2,758	Company B	75%	Company B	35%	Company A	23%
Company B	\$3,074	Company B	\$2,590	Company D	26%	Company D	26%	Company C	12%
Company C	\$2,130	Company C	\$1,183	Company C	17%	Company E	18%	Company B	12%
ABC Company	\$2,094	Company D	\$956	Company E	15%	Company A	16%	Company E	10%
Company D	\$1,809	Company E	\$860	Company A	14%	Company C	14%	ABC Company	4%
Company E	\$1,516			ABC Company	5%	ABC Company	3%	Company D	NA

Historical Growth (2-Fiscal Year EBITDA)		Historical Growth (1-Fiscal Year EBITDA)		Projected Growth (1-Fiscal Year EBITDA)		Projected Growth (5-Fiscal Year EPS)		Profitability (LTM EBIT to LTM Revenue)	
Company B	81%	Company A	30%	Company E	37%	Company A	31%	Company A	20%
Company A	29%	Company B	27%	Company A	25%	Company B	13%	Company B	18%
Company C	28%	Company C	12%	Company B	21%	Company E	13%	ABC Company	16%
ABC Company	4%	ABC Company	2%	Company C	16%	ABC Company	9%	Company C	14%
Company E	1%	Company D	-3%	ABC Company	3%	Company C	0%	Company E	13%
Company D	0%	Company E	-4%	Company D	3%	Company D	0%	Company D	10%

Profitability (LTM EBITDA to LTM Revenue)		Relative Depreciation (LTM Depreciation to LTM EBITDA)		Internal Investment (LTM Capital Expenditures to LTM Revenue)		Liquidity (Current Ratio)		Leverage [1] (Debt-to-Enterprise Value)	
Company A	25%	ABC Company	26%	Company D	4%	ABC Company	2.0	Company D	5%
Company B	24%	Company A	31%	Company C	6%	Company B	1.8	Company E	7%
ABC Company	22%	Company B	45%	Company E	6%	Company A	1.7	Company A	15%
Company C	21%	Company E	54%	ABC Company	6%	Company D	1.6	Company C	59%
Company E	18%	Company C	57%	Company A	6%	Company E	1.2	Company B	73%
Company D	15%	Company D	58%	Company B	7%	Company C	1.2		

Qualitative Factors

Barriers to Entry	Patents/Technology	Brand Name	Recent Events	Market Share/Dominance
Existing Infrastructure	Customer Risks	Supply Chain Risks	Pending Litigation	Industry Forces
Constraints on Expansion	Strength of Management	Capacity Utilisation of Plants and People		Firm Reputation

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Approach 3: Guideline Transactions Analysis

Announced	Effective	Target	Acquiror	Transaction Details		Transaction Value/ LTM		LTM EBITDA
				Value (£)	Revenue (£)	Revenue	EBITDA	Margin (£)
1/1/2010	1/3/2010	AA Co.	BB Co.	506.00	571.78	0.88x	4.92x	102.92
8/12/2021	8/14/2021	CC Co.	DD Co.	147.40	173.93	0.85x	4.71x	31.31
12/12/2012	12/14/2012	EE Co.	FF Co.	18.30	21.78	0.84x	4.67x	3.92
2/9/2014	2/11/2014	GG Co.	HH Co.	127.70	137.92	0.93x	5.14x	24.82
7/30/2018	8/1/2018	II Co.	JJ Co.	340.60	357.63	0.95x	5.29x	64.37
5/15/2020	5/17/2020	KK Co.	LL Co.	285.70	342.84	0.83x	4.63x	61.71
5/15/2011	5/17/2011	MM Co.	NN Co.	412.10	432.71	0.95x	5.29x	77.89
2/3/2013	2/5/2013	OO Co.	QQ Co.	427.40	457.32	0.93x	5.19x	82.32
4/2/2020	4/4/2020	RR Co.	SS Co.	191.40	227.77	0.84x	4.67x	41.00

Low	0.83x	4.63x
High	0.95x	5.29x
Median	0.88x	4.92x
Mean	0.89x	4.95x

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Appendix C. Impairment Review Questions

Below is a series of considerations that an investor should account for during the private debt impairment assessment process. Each consideration is based on certain guidance (column 2) and observations that outline examples of those considerations (column 3).

Consideration	Guidance	Review Observations
In the current period, has there been a default or delinquency in interest and principal payments?	Based on the review undertaken, matters have not come to our attention that would lead us to conclude that there has been a default or delinquency in the current period.	<ul style="list-style-type: none"> All facilities are bullet facilities. Interest payments are on schedule.
Based on the current performance, are there any significant credit losses expected due to anticipated defaults on interest and principal payments?	Based on the review undertaken, matters have not come to our attention that would lead us to conclude that there are any significant credit losses expected due to anticipated defaults on interest and principal payments based on the current performance.	<ul style="list-style-type: none"> As of November 2020, the company's performance was positive despite the COVID-19 pandemic and the adverse economic environment in the industry. Considering the positive performance, the company is expected to generate sufficient cash flow to service its debt.
Based on the current performance, is there a significant risk that the contractual obligations of the debt security will not be met?	Based on the review undertaken, matters have not come to our attention that would lead us to conclude that there is a significant risk that the contractual obligations of the debt security will not be met based on the current performance.	<ul style="list-style-type: none"> The company has shown good performance, with a revenue CAGR of 24% between FY 2015 and FY 2019. The company expects to continue its growth based on historical performance. Net leverage of 4.5x, based on pro forma EBITDA as of December 2020, is significantly reduced from 5.6x at closing due to improved EBITDA.
In the current reporting period, is the company likely to become insolvent?	Based on the review undertaken, matters have not come to our attention that would lead us to conclude that the company is likely to become insolvent in the current period.	<ul style="list-style-type: none"> Sponsor acquired the company at a 10.0x EBITDA multiple compared to the current net leverage ratio of 4.5x, suggesting that there is sufficient equity in the business. Based on current performance, the company is on track to meet its covenant tests with sufficient headroom. In 2020, Company ABC completed the acquisition of Company XYZ at an implied EV/EBITDA multiple of 12.0x, further confirming the high transacted multiples in the market compared to the current net leverage.

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Appendix D. Income Approach Through Yield Analysis ABC Co.**Input:**

Days in Year Convention	365
Day Count Convention	Actual
Payment Frequency	Quarterly
Cash Margin	5.50%
Reference Rate Floor	0.00%
Last Coupon Payment Date	12/31/2020
Internal Rate of Return (IRR)	7.50%

Breakdown of Credit Spread:

Spread Calibration at Reference Date	1.11%
Changes in Spread Since Reference Date	0.10%
Total Incremental Spread at Valuation Date	1.21%
Cash Interest Margin	5.50%
Implied Total Credit Spread Over Index Rate at Valuation Date	6.71%

Yield Analysis

Reference Rate	0.05%	0.10%	0.15%	0.20%	0.25%	0.30%	1.20%
Cash Margin	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%	5.50%
Total Cash Interest Rate	5.55%	5.60%	5.65%	5.70%	5.75%	5.80%	6.70%

Implied Total Credit Spread Over Index Rate at Valuation Date	6.71%	6.71%	6.71%	6.71%	6.71%	6.71%	6.71%
Reference Rate Forward Curve	0.05%	0.10%	0.15%	0.20%	0.25%	0.30%	1.20%
Discount Rate	6.76%	6.81%	6.86%	6.91%	6.96%	7.01%	7.91%

	12/31/2020	3/31/2021	6/30/2021	9/30/2021	12/31/2021	3/31/2022	6/30/2022	12/31/2026
Beginning Principal	80.000	80.000	80.000	80.000	80.000	80.000	80.000	80.000
Cash Interest Payment	0.000	1.095	1.117	1.139	1.149	1.134	1.157	1.351
Accrued Cash Interest	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Principal Payment	0.000	0.000	0.000	0.000	0.000	0.000	0.000	80.000
Ending Principal	80.000	80.000	80.000	80.000	80.000	80.000	80.000	0.000

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Cash Flow	1.095	1.117	1.139	1.149	1.134	1.157	81.351
Days	90	91	92	92	90	91	92
Cumulative Days	90	181	273	365	455	546	2,191
Years	0.25	0.50	0.75	1.00	1.25	1.50	6.00
Discount Factor @ 6.71% Implied Total Credit Spread	0.98	0.97	0.95	0.93	0.92	0.90	0.65
Present Value @ 6.71% Implied Total Credit Spread	1.077	1.080	1.083	1.074	1.042	1.044	52.574

Total Present Value @ 6.71% Implied Total Credit Spread (Dirty)	75.292
Less: Accrued Interest	0.000
Total Clean Value	75.292
Percentage of Par (Clean)	94.12%

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