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# Debt Restructuring of Valuation of Going Concern Companies in Distress: Impact of Agentic AI

## Overview

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Distressed companies that remain going concerns present unique challenges for valuation. Traditional methods like standard DCF (discounted cash flow) must be adapted to account for extreme uncertainty, potential restructuring, and the risk of business failure truncating the cash flows. Academic research and industry practice converge on the need for scenario-based analysis and careful risk adjustment when valuing such firms. Below we review how IT systems and agentic AI can support a DCF analysis for distressed companies under two information scenarios: full information with forward looking business plans vs. limited information based on historical data. We discuss how to determine a company's debt capacity using key performance indicators (KPIs), and outline an algorithm for structuring a refinancing plan that maximises debt recovery while ensuring the company can afford future debt service. Our focus is general across sectors with an emphasis on European contexts illustrating the potential use of AI at each step of the restructuring process.

## Foundations of Distressed Debt Valuation in a European Context

The valuation of debt issued by a financially distressed company presents a unique and complex challenge both in terms of methodology and information management. We explain how a modern IT infrastructure with multi-agent AI integration as well as traditional software tools like auction platforms, virtual datarooms, relational data warehouses, and cashflow projection and valuation tools can support the restructuring of distressed debt.

**Table 1** shows the different tasks critical when restructuring debt and our subjective impact assessment of the usefulness of AI agents. To identify potential distress early the lender must monitor many key performance indicators (KPI) derived from loan performance, covenant certificates or financial statements early on through a data-driven highly automated data and document processing pipeline complemented with a suitable analytics data warehouse and dashboards with early warning signals (EWS). AI agents can help with automating these data and document pipelines, but the data warehouse and early warning identification can also be set up deterministically (i.e. without agent involvement). The availability of AI agents with their capacity to analyse various data sources on-the-fly does not replace the need for suitably designed data warehouses. In our current business practice we find that banks always operate data warehouses for risk monitoring but the design of the warehouse may not be sufficiently granular to capture all relevant KPIs. For example, borrower business plans and cashflow projections are rarely captured in structured risk data. Debt funds, especially small and medium size operations, often lack a data warehouse for KPI monitoring and forecasting and capture most information in spreadsheets.

Distressed Debt Task	Analytics Platform	Direct AI Impact
Monitor borrower KPIs	Early warning system, distress preemption	Low
Solicit investor interest / binding offers	Digital marketplace	Low
Loan data tape & document share	Analytics / VDR	Low
Document completeness checks	AI document analysis of all available documents	High
Legal due diligence	AI document analysis of legal contracts	High
Financial due diligence	AI document analysis of financial statements	High
Key value extraction	AI document analysis of all available documents	High
Market comparables	DataHub / AI research agent / Market data API	High
Qualitative overlays / Scenario inputs	Analytics / AI research agent	High
Scenario probabilities	Analytics / AI research agent	High
Market rates, discount margins	DataHub / AI research agent / Market data API	High
Benchmark KPIs, PD, LGD, Cure	DataHub	Low
Valuation and cashflow projections	Deterministic analytic tools for DCF	Low
Data warehousing	Relational database for analytics with DQ checks	Low
Draft restructuring plan	AI research agent	High
Restructuring term sheet	AI research agent	High

Table 1: Tasks relevant during distressed debt restructuring and the use of IT tools and AI agents. Source: Accuria.

Valuation methodologies, such as the Discounted Cash Flow (DCF) analysis or relative valuation using market multiples, require a multitude of borrower and market data and are fundamentally built upon an assumption of a stable, ongoing business concern.<sup>1</sup> The core challenge of financial distress is a significant and quantifiable probability that the firm will *not* survive as a going concern which comes with greatly enhanced information needs.<sup>3</sup> This potential for failure can truncate the company's future cash

flows long before it reaches the stable growth phase assumed in standard models.<sup>1</sup> Consequently, any credible valuation framework must abandon the binary assumption of survival and instead embrace a probabilistic view. The valuation of a distressed firm is not a single-state problem but a multi-state one, where the two most critical outcomes are survival through restructuring and failure leading to liquidation. Hence, the intrinsic value of a distressed enterprise is most accurately represented as a probability-weighted average of its value in these distinct future states.<sup>3</sup>

The going concern status of the distressed company is not an assumption to be made, but a probability to be calculated and integrated directly into the valuation framework. The choice between a going-concern premise and a liquidation premise is a determination that is both fact-specific and often guided by the prevailing legal framework.<sup>5</sup> In many European jurisdictions, as well as in the US, the going-concern value is considered the controlling premise unless the company is demonstrably on its death bed.<sup>5</sup> However, the viability of any proposed restructuring plan is invariably benchmarked against the alternative—what creditors would receive in a liquidation.<sup>6</sup> Therefore, a comprehensive analysis must calculate both values. The going-concern value represents the potential upside if a turnaround is successful, while the liquidation value establishes the floor, or the recovery value in the worst-case scenario, informing a creditor's margin of safety.<sup>7</sup>

## The European Restructuring Landscape: Key Regimes and the EU Directive

The valuation and restructuring of distressed debt in Europe cannot be conducted in a legal vacuum. The strategic options available to a lender, the negotiation dynamics among stakeholders, court efficiency, and the ultimate recovery potential are all profoundly shaped by the specific national insolvency and restructuring regime in which the company operates. Historically, this landscape has been fragmented, but the implementation of the EU Directive on **Preventive Restructuring Frameworks** (2019/1023) has initiated a significant harmonisation process, fundamentally altering the tools available to creditors and debtors across the Union.<sup>8</sup>

The primary objective of the Directive is to ensure that viable companies experiencing financial difficulties have access to effective frameworks that allow them to **restructure at an early stage**, thereby preventing insolvency and preserving value.<sup>10</sup> For lenders holding distressed debt, this directive is a game-changer, introducing powerful mechanisms that can facilitate a consensual or semi-consensual workout and reduce the probability of a value-destructive liquidation.

The most potent tool introduced by the Directive is the **cross-class cram-down mechanism**, detailed in Article 11.<sup>8</sup> This provision allows a court to confirm and impose a restructuring plan on all creditors and shareholders, even if one or more voting classes dissent.<sup>11</sup> This power is not absolute and is subject to critical safeguards. Typically, the plan must be approved by at least one class of impaired creditors (i.e., creditors whose rights are being modified and who are not "out of the money"). Furthermore, the plan must satisfy the "best interest of creditors" test, which ensures that no dissenting creditor is left worse off under the plan than they would be in the "relevant alternative," which is most often a liquidation.<sup>12</sup> The plan

must also generally comply with the "absolute priority rule," meaning junior stakeholders cannot receive or retain value unless senior dissenting classes are paid in full.<sup>9</sup>

The strategic implication of the cross-class cram-down is high. It fundamentally weakens the negotiating leverage of hold-out creditors—often junior or out-of-the-money stakeholders—who might otherwise block a value-maximizing restructuring in an attempt to extract a disproportionate recovery for themselves.<sup>13</sup> For a senior lender, this increases the likelihood that a well-structured and economically sensible plan can be implemented, thereby maximizing the going-concern value of the enterprise and, by extension, the lender's recovery.

While the Directive provides a common framework, its implementation varies across member states. Understanding the nuances of the key European restructuring hubs is critical for any investor. To value distressed company debt, investors and valuation platforms like Accuria use **country and sometimes region specific assumptions** the details of which would exceed the scope of this note.

## The Scenario-Based Probabilistic DCF Approach

For valuing a distressed company, the standard single-forecast DCF is inadequate and must be replaced by a probabilistic framework. The Scenario-Based Discounted Cash Flow (SDCF) model is the industry-standard approach for this purpose.<sup>6</sup> This methodology explicitly acknowledges the profound uncertainty surrounding a distressed firm's future by modeling several distinct outcomes, each with an assigned probability. The SDCF process begins with the development of a set of mutually exclusive scenarios that capture the range of potential futures for the company. Complex situations may warrant more granular scenarios and the most sophisticated models not only weigh a few alternative scenarios but also model the dynamic transition between different outcomes. Here, we focus on a minimal framework which must include at least three core outcomes<sup>4</sup>:

1. **Turnaround Scenario (Best Case):** This scenario models the successful implementation of the company's Restructuring Plan. It assumes that management's strategic, operational, and financial initiatives are largely effective, leading to a recovery in performance and a return to sustainable profitability. The cash flow projections for this scenario are often anchored to the business plan provided by the company's management, but must be subjected to rigorous independent scrutiny.<sup>6</sup>
2. **Base Case Scenario (Most Likely):** This represents a more conservative and often more realistic future. It assumes that the restructuring plan is only partially successful. The company survives and continues as a going concern, but it may face persistent operational headwinds, achieve lower-than-planned margin improvements, or experience slower revenue growth. This scenario tempers the optimism of the management plan with a dose of market reality.
3. **Liquidation/Distress Sale Scenario (Worst Case):** This scenario models the failure of the turnaround effort. The company is unable to stabilize its operations or secure the necessary financing to continue as a going concern. As a result, its cash flows are truncated at a specific point in the forecast period.<sup>1</sup> The final cash flow in this scenario is not a perpetual terminal value, but the estimated net proceeds

from a distressed sale or piecemeal liquidation of the company's assets.<sup>3</sup> This value represents the "floor" value of the firm.

	Non-performing	Performing			
Scenarios		Scenario 1 Baseline	Scenario 2 Optimal	Scenario 3 Adverse	Scenario 4 Sev. Adverse
Discount rate NPL/Expected IRR		0.12	0.12	0.15	0.15
<b>Judicial/Foreclosure</b> ⓘ					
Foreclosure Probability		0.55	0.45	0.65	0.75
<b>Unsecured Recovery Curves</b> ⓘ					
<input checked="" type="checkbox"/> Unsecured recoveries (high level curves)					
<input checked="" type="checkbox"/> WAL (years, high level curves)					
Category					
Secured Corporate		4.3	3.8	4.8	5.3
Secured Individual		4	3.5	4.5	5
Unsecured Corporate		3.7	3.2	4.2	4.7
Unsecured Individual		3.4	2.9	3.9	4.4

Figure 1: Illustrative failure rate assumptions in an online valuation tool for reperforming loans. Source: Accuria.

The most challenging and subjective step in the SDCF methodology is the assignment of probabilities to each of these scenarios.<sup>6</sup> This is not a purely quantitative exercise but a synthesis of quantitative data and qualitative judgment. The lack of relevant historical data often prevents a fully data-driven calibration of the probabilities. **AI credit research agents have shown remarkable usefulness in designing, discussing and quantifying scenario probabilities.** While the agent can help identify suitable input parameters, the actual DCF implementation should use a deterministic cash flow projection tool and not be left to the unpredictability of an agent. A common starting point for determining the probability of failure is to use historical data on default and recovery rates for companies with similar credit ratings. For instance, the cumulative default probability for a CCC-rated corporate bond over a five-year horizon can serve as an initial proxy for the probability of the liquidation scenario.<sup>1</sup> However, this must be refined through a thorough analysis of company-specific factors, including the quality and credibility of the management team, the company's competitive position within its industry, the structural advantages or disadvantages of its business model, and the supportiveness of its key stakeholders.<sup>24</sup>

This risk-adjusted expected cash flow stream forms the primary input for the final discounted cash flow calculation. This approach ensures that the risk of failure is not relegated to a subjective adjustment in the discount rate but is mathematically integrated into the cash flows themselves, leading to a more defensible and transparent valuation.

## Cash Flow Projections with Full Information (Business Plan Available)

When a lender or investor has access to the distressed company's management team and their detailed financial projections, the valuation process moves to rigorous due diligence. In this high-information scenario, the company's Restructuring Plan serves as the foundational document, providing a detailed roadmap of the intended turnaround, including revenue targets, cost-saving programs, operational improvements, and working capital initiatives.<sup>6</sup> **AI agents play an increasing role in legal and financial due diligence** by helping with document classification and key value extraction from covenant certificates or financial statements (Table 1). In due diligence, the analyst's role is not to passively accept the available projections but to critically evaluate, challenge, and stress-test them.<sup>24</sup> This active due diligence process is essential for transforming management's (often optimistic) plan into a credible forecast for valuation purposes. Key steps in this process include:

- **Assumption Scrutiny:** Every key assumption underpinning the RP must be questioned. Are the market growth forecasts consistent with independent industry data? Are the projected margin improvements achievable given the competitive landscape? Are the estimated cost savings realistic and well-documented?
- **Operational Viability Assessment:** The analysis must go beyond the spreadsheets to assess the underlying operational health of the business. This involves analyzing the quality and concentration of the customer base, the stability of the future order backlog, and the profitability of key products and customer relationships.<sup>24</sup> A company with strong competitive advantages, such as proprietary technology or entrenched customer relationships, has a much higher probability of a successful turnaround than a commodity business with a flawed model.<sup>24</sup>
- **Management Assessment:** The credibility of the management team is a paramount consideration. A track record of successful execution inspires confidence, while a history of missed targets warrants deep skepticism.

While long-term projections are important for the overall valuation, for a company teetering on the edge of insolvency, short-term liquidity is the most immediate concern. In this context, the **13-Week Cash Flow** (TWCF) forecast is the single most critical financial tool.<sup>26</sup> The TWCF is a highly granular, weekly forecast of all cash inflows and outflows, designed to provide management and stakeholders with a precise map of the company's near-term liquidity position.<sup>28</sup>

The purpose of the TWCF is threefold:

1. **Identify Liquidity Pinch Points:** It highlights specific weeks where the company is projected to face a cash shortfall, allowing management to take pre-emptive action.<sup>27</sup>

2. **Inform Immediate Decisions:** It provides the data necessary to make critical short-term decisions, such as prioritizing vendor payments, managing payroll, delaying non-essential spending, or drawing on credit lines.<sup>28</sup>
3. **Support Financing Negotiations:** A credible TWCF is a non-negotiable prerequisite for negotiating any form of interim or emergency financing, such as a Debtor-in-Possession (DIP) loan. It demonstrates to lenders that management has a firm grip on the company's cash flow and provides a basis for sizing the required financing facility.<sup>28</sup>

The TWCF is built using the direct method of cash flow accounting, which translates accrual-based financials into actual cash movements.<sup>26</sup> It is constructed from the bottom up, using detailed roll-forward schedules for key working capital accounts. For example, cash receipts are not simply projected as a percentage of sales; they are forecasted based on an analysis of the accounts receivable aging report and historical customer payment patterns.<sup>29</sup> Similarly, cash disbursements to suppliers are projected based on the accounts payable aging report and negotiated payment terms.<sup>29</sup> This level of detail makes the TWCF an indispensable tool for navigating the acute phase of a corporate restructuring.

## Cash Flow Projections with Limited Information (Lagged Public Data Only)

Valuing a distressed company when the only available information is public financial data with a significant time lag of 12 to 18 months presents a formidable challenge. The company's last filed accounts may bear little resemblance to its current financial reality. In this low-information environment, a sophisticated investor must employ a more advanced, multi-stage forecasting process to bridge this information gap.

Instead of trying to directly forecast future cash flows from outdated data, the primary goal becomes forecasting the company's *current*, unobserved state of financial health. This involves constructing a proprietary view on the company's probability of distress, which then informs the scenario-based cash flow projections.

### **Stage 1: Predict the Current Probability of Distress**

The first step is to use the available lagged data to estimate the likelihood that the company is currently in financial distress. This requires the use of statistical and machine learning models trained on broader datasets of European companies with a particular focus on behavioural data like loan arrears, working capital line usage and other payment behaviour e.g. on trade receivables.

- **Initial Screening with Statistical Models:** The Altman Z-score provides a quick, formulaic first-pass assessment of financial health. The model uses five financial ratios (KPIs) derived from historical statements to produce a score that places the company in a safe, grey, or distress zone.<sup>32</sup> Typical KPIs includes measures for leverage, profitability, liquidity and operational efficiency (Table 2)

Category	Ratio Name	Formula	Indication of Distress
Leverage	Total Debt / EBITDA	Total Debt / Earnings Before Interest, Taxes, Deprec. & Amort.	A high ratio indicates excessive debt relative to cash flow, increasing default risk.
	Senior Debt / EBITDA	Senior Debt / EBITDA	A high ratio is a key concern for senior lenders as it measures debt with priority claims.
	Debt to Assets	Total Liabilities / Total Assets	A high ratio signifies that a large portion of assets is financed through debt.
Coverage	Debt Service Coverage Ratio (DSCR)	Net Operating Income / (Principal + Interest Payments)	A ratio below 1.0x means the company is not generating enough cash to cover its debt payments.
	Fixed-Charge Coverage Ratio (FCCR)	(EBITDA - CapEx - Taxes) / (Cash Interest + Mand. Principal)	A low ratio is a strong negative signal, as it shows cash flow is insufficient to cover financing costs.
	Interest Coverage Ratio (ICR)	EBITDA / Cash Interest Expense	A low ratio indicates a smaller buffer to absorb a decline in earnings before interest is at risk.
Liquidity	Current Ratio	Current Assets / Current Liabilities	A low ratio (typically < 1.0) suggests the company may struggle to meet its short-term obligations.
	Quick Ratio (Acid-Test)	(Current Assets - Inventory) / Current Liabilities	A low ratio provides a more stringent test of liquidity by excluding less liquid inventory.
	Cash Conversion Cycle (CCC)	DSO + DIO - DPO	A long or increasing cycle means cash is tied up in operations for longer, straining liquidity.
Profitability	Return on Assets (ROA)	Net Income / Total Assets	A low or negative ratio indicates poor efficiency in using assets to generate profit.
	Operating Margin	Operating Income / Revenue	A declining margin signals deteriorating operational profitability before interest and taxes.
	Net Profit Margin	Net Income / Revenue	A low or negative margin shows the company is unprofitable after all expenses.
Operational	Days Sales Outstanding (DSO)	(Average Accounts Receivable / Revenue) * 365	A high or increasing DSO means the company is taking longer to collect cash from its customers.
Efficiency	Days Inventory Outstanding (DIO)	(Average Inventory / Cost of Goods Sold) * 365	A high or increasing DIO indicates that inventory is sitting unsold for longer, tying up cash.
	Asset Turnover	Revenue / Total Assets	A low ratio suggests the company is not using its asset base efficiently to generate sales.

Table 2: Key performance indicators used to predict financial distress. Source: Accuria.

- **Advanced Prediction with Machine Learning:** To generate a more robust probability, more sophisticated models are required. Techniques like logistic regression, support vector machines, and random forests can be trained on large datasets of historical European corporate failures.<sup>33</sup> These models can identify complex, non-linear relationships between a wide array of input variables and the likelihood of default.<sup>35</sup>

## Stage 2: Build State-Contingent Forecasts

Once a proprietary probability of distress has been established in Stage 1, it is used to weight the scenarios developed for the SDCF analysis. Since no management business plan is available, these scenarios must be constructed from the ground up.

- **Turnaround and Base Case Scenarios:** These forecasts for survival must be built using the last known financial statements as a starting point. Projections for revenue, margins, and costs must be derived from external sources. This involves a deep analysis of industry trends, the performance of healthy peer companies, and the macroeconomic outlook.<sup>4</sup> For example, if the distress prediction model suggests a high probability of survival, the forecast might assume that the company's operating margins will gradually revert to the industry average over the forecast period. Conversely, if the model indicates severe distress, the forecast might project continued revenue decline and margin compression.
- **Liquidation Scenario:** The value in this scenario is based on the tangible and intangible assets reported on the last available balance sheet. This book value must be adjusted downwards using conservative, industry-specific recovery rate assumptions to arrive at a realistic distress sale value.<sup>3</sup> For example, inventory might be valued at 50% of book value, while property, plant, and equipment might be valued at 70% of book value, depending on the asset type and industry.

This two-stage process allows an investor to build a disciplined, data-driven valuation even in the face of significant information asymmetry. The ability to model the present more accurately than the market by using advanced predictive techniques on lagged data is a core competency of successful distressed debt investing.

## Calibrating the Discount Rate and Terminal Value

The final components of the DCF valuation—the discount rate and terminal value—require significant adjustments in a distressed context to avoid critical errors.

### Dynamic Weighted Average Cost of Capital (WACC)

A single WACC applied across the entire forecast period is fundamentally inappropriate for a distressed company. The firm's risk profile and capital structure are expected to change dramatically as it proceeds through a restructuring.<sup>40</sup> Therefore, the WACC must be calculated dynamically, with a unique value for each year of the explicit forecast period.

- **Cost of Equity (Ke):** The standard Capital Asset Pricing Model (CAPM) is the starting point, but its inputs must be carefully chosen.
  - Beta ( $\beta$ ): The company's historical beta is likely distorted by its financial distress. A more reliable approach is to use a bottom-up beta. This involves taking the average unlevered beta from a set of healthy, publicly traded peer companies, and then re-levering it for each forecast year using the distressed company's projected debt-to-equity ratio and effective tax rate for that specific year.<sup>4</sup> As the company de-levers through the restructuring, its re-levered beta and cost of equity will decline.
  - Distress Premium: Many practitioners add an explicit distress premium to the cost of equity to capture risks not fully reflected in the beta. A common method for estimating this premium is to

calculate the spread between the company's current pre-tax cost of debt and the average pre-tax cost of debt for its healthy industry peers. For example, if the distressed firm's debt yields 16% and the industry average is 8%, an 8% distress premium could be justified.<sup>4</sup>

- **Cost of Debt (Kd):** The cost of debt must reflect the company's *current* high probability of default, not the historical interest rate on its existing loans. If the company has publicly traded bonds, their yield-to-maturity provides a direct market-based estimate.<sup>1</sup> If not, the cost of debt can be estimated by determining the company's implied credit rating (e.g., CCC) and adding the corresponding default spread for that rating to the risk-free rate.

### **The Terminal Value Problem and Solution**

The terminal value calculation is often the most significant and most speculative part of a DCF valuation, frequently accounting for a large percentage of the total enterprise value.<sup>2</sup> For a distressed firm, the standard perpetual growth model is particularly problematic because it assumes an infinite life that may never be reached.

A more defensible and logically consistent approach is to link the terminal value directly to the scenario analysis:

1. Terminal Value is Scenario-Contingent: A terminal value is calculated *only* for the survival scenarios (i.e., the Turnaround and Base Case scenarios). In these futures, the company is assumed to have successfully restructured and reached a state of stable, long-term health. The Liquidation scenario has no terminal value; its value is capped at the distress sale proceeds received in the final year of the explicit forecast.
2. Conservative Assumptions: The inputs for the terminal value calculation in the survival scenarios should be conservative. The stable growth rate (g) should not exceed the long-term rate of economic growth or inflation (e.g., 2-3%). The WACC used to discount the terminal value should be a normalized, "healthy company" WACC, reflecting the lower risk profile of the successfully restructured firm.
3. Probability Weighting: The present value of the terminal value is calculated for the Turnaround and Base Case scenarios. However, its contribution to the final enterprise value is weighted by the probabilities of those scenarios occurring. For example, if the present value of the terminal value in the Turnaround scenario is €500 million and the probability of that scenario is 30%, its contribution to the total firm value is €150 million.

This methodology ensures that the terminal value, while still a critical component of the valuation, is properly risk-adjusted for the probability that the company may never reach that stable future state. It explicitly links the long-term value to the successful execution of the restructuring plan.

### **Determining Sustainable Debt Capacity and Repayment Ability**

Following the valuation of the enterprise, the next critical phase is to determine its sustainable debt capacity. This analysis bridges the gap between valuation and the practical design of a restructuring plan.

Debt capacity is defined as the maximum amount of debt a company can service without jeopardizing its financial stability and operational viability.<sup>41</sup> For a company emerging from distress, this calculation cannot be based on its flawed historical performance. Instead, it must be a forward-looking analysis based on the projected cash flow generation of the *restructured* entity, as modeled in the Turnaround and Base Case scenarios. Some of the KPIs defined in Table 2 are commonly used to assess a sustainable debt capacity.

### **Key Debt Capacity Metrics:**

1. **Leverage Ratios:** These ratios measure the quantum of debt relative to the company's cash flow generation, typically measured by EBITDA.
  - o Total Debt / EBITDA: This is the most common headline leverage metric, indicating how many years of current EBITDA would be required to repay all outstanding debt.<sup>42</sup>
  - o Senior Debt / EBITDA: This ratio is often more critical for senior lenders, as it focuses on the debt that has priority claim on assets and cash flow in a default scenario.<sup>42</sup>
2. **Coverage Ratios:** These ratios measure the company's ability to meet its debt payment obligations from its operating cash flow. They are a direct indicator of repayment risk.
  - o EBITDA / Cash Interest (Interest Coverage Ratio): This metric shows how many times the company's operating cash flow can cover its required cash interest payments.<sup>42</sup>
  - o Debt Service Coverage Ratio (DSCR): Calculated as Net Operating Income / Total Debt Service (Principal + Interest), the DSCR is a comprehensive measure of the ability to meet all debt obligations.<sup>45</sup> Lenders often include minimum DSCR covenants in loan agreements. A ratio below 1.0 indicates that the company is not generating enough cash to cover its debt payments.<sup>45</sup>
  - o Fixed-Charge Coverage Ratio (FCCR): This is arguably the most stringent coverage test, calculated as (EBITDA - CapEx - Cash Taxes) / (Cash Interest + Mandatory Principal Payments). It assesses whether cash flow after essential reinvestment in the business is sufficient to cover all fixed financing charges.<sup>42</sup>

## Benchmarking and Stress-Testing for Distressed Scenarios

Calculating these ratios for the projected restructured company is only the first step. The results must be benchmarked against industry peers to determine if they are reasonable.<sup>46</sup> However, a company with a history of distress will be held to a higher standard by lenders. They will demand more conservative metrics, i.e. lower leverage and higher coverage, to create a margin of safety against future underperformance.<sup>7</sup>

Credit Metric	Healthy Company Benchmark (Illustrative)	Rationale for Distressed Adjustment	Adjusted Distressed Benchmark Target
Total Debt / EBITDA	4.0x - 5.5x <sup>47</sup>	Higher operational and execution risk post-restructuring. Need for a larger equity cushion to absorb unexpected shocks. Lenders require a faster path to de-leveraging.	2.5x - 4.0x
Senior Debt / EBITDA	3.0x - 4.0x <sup>42</sup>	Senior lenders are the fulcrum of the new capital structure and will demand a conservative risk profile. Their debt must be clearly sustainable by the core business.	2.0x - 3.0x
Debt Service Coverage Ratio (DSCR)	> 1.25x <sup>45</sup>	Volatility in cash flow is higher for a turnaround company. A larger buffer is needed to ensure payments can be made even if performance dips below forecast.	> 1.40x - 1.50x
Fixed-Charge Coverage Ratio (FCCR)	> 1.10x	This is the tightest measure of cash flow. A distressed company must demonstrate it can comfortably cover all essential cash outflows (CapEx, interest, principal) to prove its viability.	> 1.20x
Interest Coverage Ratio (ICR)	> 2.5x <sup>44</sup>	To provide confidence to lenders and create capacity for reinvestment or to weather downturns, the ability to cover interest payments must be robust.	> 3.0x

Table 3: Debt Capacity Benchmarks and Adjustments for Distressed Scenarios

Furthermore, a static, base-case analysis is insufficient. The debt capacity analysis must incorporate rigorous stress-testing. This involves modeling downside scenarios, such as a 10-20% drop in projected EBITDA, and assessing whether the company can still maintain compliance with its financial covenants and service its debt.<sup>47</sup> This process reveals the true resilience of the proposed capital structure. The following table provides an illustrative framework for setting debt capacity targets in a distressed context.

## From Operational KPIs to Cash Flow Forecasts

A credible financial forecast, particularly one supporting a restructuring, cannot be built on abstract, top-down assumptions like "revenue will grow by 5%." It must be grounded in tangible, measurable improvements in the company's underlying operations. The crucial link between operational strategy and financial outcomes is forged through Key Performance Indicators (KPIs).<sup>49</sup> For a turnaround, identifying, tracking, and modeling the right KPIs is the essence of building a defensible restructuring plan.<sup>51</sup>

The focus of KPIs in a distressed situation shifts away from pure growth metrics towards indicators of efficiency, stability, and cash generation. The selection of KPIs must be tailored to the company's specific business model and the root causes of its distress, but a core set of turnaround KPIs is broadly applicable<sup>52</sup>.

- **Operational Efficiency KPIs:**

- Inventory Turnover or Days Inventory Outstanding (DIO): Measures how efficiently inventory is managed. Improving this KPI frees up cash tied up in unsold goods.
- Asset Turnover: Measures how effectively the company uses its asset base to generate revenue.
- Employee Productivity (e.g., Revenue per Employee): A key indicator of operational leverage and cost control.<sup>53</sup>

**Graphs**

Counterparty

[REDACTED] S.r.l.

Trigger

11-IT0005428385-Leverage Ratio

**Description**

il Leverage Ratio non dovrà essere maggiore di (i) 4,25x per l'anno 2019, per l'anno 2020, per l'anno 2021 e per l'anno 2022; e (ii) 4,0x a partire dall'anno 2023 e fino alla Data di Scadenza;

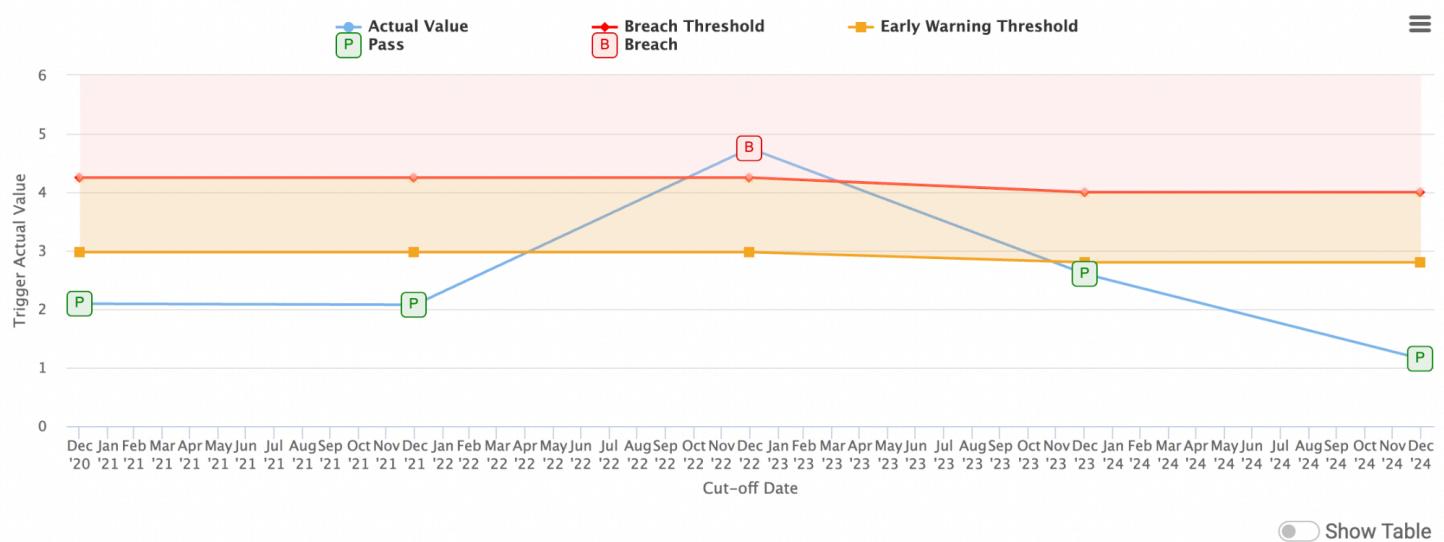


Figure 2: KPI monitoring with early warning signals to observe financial deterioration before an actual covenant breach occurs. Source: Accuria

- **Financial Stability & Working Capital KPIs:**

- Days Sales Outstanding (DSO): Measures the average time to collect cash from customers. Reducing DSO is one of the fastest ways to generate cash.
- Days Payables Outstanding (DPO): Measures the average time the company takes to pay its suppliers. Extending DPO (within reasonable limits) can preserve cash.
- Cash Conversion Cycle (CCC): Calculated as DSO + DIO - DPO, this is a master indicator of working capital efficiency. It represents the time it takes to convert investments in inventory and other resources into cash from sales.<sup>55</sup> A shorter CCC means a more efficient and cash-generative business model.
- Profit Margins (Gross, Operating): While profitability is an outcome, tracking margin trends is essential to confirm that operational improvements are flowing to the bottom line.

The power of this approach lies in creating direct, formulaic linkages within the financial model that connect a change in a KPI to a change in the financial statements.<sup>49</sup> This transforms the model from a static projection into a dynamic simulation tool.

Turnaround KPI	Definition/Formula	Impacted Financial Statement Line Item(s)	Excel Model Linkage (Illustrative Formula)
Days Sales Outstanding (DSO)	(Average Accounts Receivable / Revenue) * 365	Accounts Receivable (Balance Sheet); Operating Cash Flow (Cash Flow Statement)	Ending_AR = (DSO_Assumption / 365) * Revenue_Forecast
Days Payables Outstanding (DPO)	(Average Accounts Payable / COGS) * 365	Accounts Payable (Balance Sheet); Operating Cash Flow (Cash Flow Statement)	Ending_AP = (DPO_Assumption / 365) * COGS_Forecast
Days Inventory Outstanding (DIO)	(Average Inventory / COGS) * 365	Inventory (Balance Sheet); Operating Cash Flow (Cash Flow Statement)	Ending_Inventory = (DIO_Assumption / 365) * COGS_Forecast
Cash Conversion Cycle (CCC)	DSO + DIO - DPO	Net Working Capital (Balance Sheet); Operating & Free Cash Flow (Cash Flow Statement)	CCC = DSO_Assumption + DIO_Assumption - DPO_Assumption (This is an output KPI, driven by the others)
Inventory Turnover	COGS / Average Inventory	Inventory (Balance Sheet); COGS (Income Statement); Operating Cash Flow (Cash Flow Statement)	Ending_Inventory = COGS_Forecast / Inventory_Turnover_Assumption
Employee Productivity	Revenue / Number of Employees	SG&A (Salaries) (Income Statement); Operating Cash Flow (Cash Flow Statement)	Salaries_Expense = (Revenue_Forecast / Rev_per_Employee_Assumption) * Avg_Salary_per_Employee
Customer Churn Rate	(Customers Lost / Total Customers) * 100	Revenue (Income Statement)	Revenue_t = (Subscribers_t-1 * (1 - Churn_Rate)) * Avg_Revenue_per_User

Table 4: Linking Operational KPIs to Cash Flow Forecast Drivers

### Quantitative Integration into the Financial Model:

- DSO and Accounts Receivable: The ending Accounts Receivable (AR) balance on the balance sheet should not be a simple plug. It should be driven by a DSO assumption. The formula  $\text{Ending AR} = (\text{DSO} / 365) * \text{Annual Revenue}$  directly links the operational goal of faster collections to the balance sheet and, subsequently, to the cash flow statement. A management initiative to reduce DSO from 60 to 55 days can be modeled to show a direct, quantifiable increase in operating cash flow.
- Inventory Turns and Inventory: Similarly, the ending inventory balance should be driven by an inventory turnover or DIO assumption. The formula  $\text{Ending Inventory} = (\text{Annual COGS} / \text{Inventory Turns})$  shows that an operational improvement (increasing turns) for a given level of Cost of Goods Sold (COGS) will result in a lower required inventory balance. This reduces the investment in working capital and boosts free cash flow.
- Employee Productivity and Operating Expenses: An operational goal to increase Revenue per Employee can be used to forecast the required headcount for a given revenue target. This, in turn, drives the salaries and wages expense within SG&A, directly linking operational efficiency to profitability and cash flow.

The following table provides a practical blueprint for building such a driver-based financial model, illustrating how operational improvements translate into financial results.

## An Algorithmic Framework for Designing Optimal Refinancing Plans

The design of a debt restructuring plan is not a simple accounting exercise; it is a complex optimization problem set within a strategic, multi-player environment. The ultimate goal is to craft a new loan

agreement that is not only acceptable to the debtor but is also the most profitable and sustainable option for the lender. This requires balancing a set of dual, and sometimes competing, objectives.<sup>57</sup>

1. Lender's Objective: **Maximize Risk-Adjusted Net Present Value (NPV)**. The primary goal for the creditor is to maximize the present value of all future cash flows (interest and principal) to be received from the restructured loan, discounted at a rate that reflects the post-restructuring risk of the credit.
2. Borrower's Constraint: **Maximize Probability of Survival**. The plan must be viable for the borrower. A plan that is too aggressive, with high interest payments or a rapid amortization schedule, may increase the lender's theoretical NPV but will also increase the probability that the company will re-default on its obligations. The lender must therefore operate within the constraint of ensuring the borrower's long-term survival, which is proxied by keeping the probability of a future default below an acceptable threshold.

This balancing act is where sophisticated lenders employ optimization analytics.<sup>57</sup> These models can process a vast number of inputs—including the company's detailed financial forecasts under various scenarios, macroeconomic data, and internal policy constraints—to identify the specific set of restructuring terms (e.g., interest rate, maturity, amortization) that yields the highest lender NPV while satisfying the borrower's viability constraints.<sup>57</sup>

This optimization does not occur in a vacuum. A debt restructuring is a classic application of game theory, involving multiple stakeholders (the debtor, various classes of creditors, equity holders) with differing interests.<sup>13</sup> The proposed plan must be strategically sound. It must be perceived as fair and equitable enough to gain the necessary support from different creditor classes to be approved under the relevant legal framework (e.g., a UK Restructuring Plan or German StaRUG). An optimal plan from a purely financial perspective may fail if it antagonizes a key creditor group, leading to costly litigation or a failed vote. The design must therefore anticipate and neutralize potential "hold-out" strategies by ensuring that all parties are better off under the plan than in the likely alternative, which is typically a value-destructive liquidation.<sup>13</sup>

## **The Repayment Plan Algorithm: A Step-by-Step Guide**

While a full-scale mathematical optimization may require specialized software, the core logic can be replicated through a structured, iterative process within a dynamic financial model. This algorithm provides a practical framework for designing a new loan agreement that maximizes recovery while ensuring the viability of the restructured company.

### **Step 1: Define Inputs & Constraints**

- Inputs: The primary inputs are the financial forecasts from the Scenario-Based DCF developed in Part II. This includes the projected income statement, balance sheet, and cash flow statement for the Turnaround, Base, and Liquidation scenarios, along with their assigned probabilities. The sustainable debt quantum determined in Part III sets the initial principal amount of the new loan.
- Constraints: Establish the key financial covenants that the restructured company must adhere to throughout the forecast period. These are the "rules of the game" that define financial health.

- Liquidity Covenant: A minimum cash balance that the company must maintain at all times (e.g., €5 million).
- Leverage Covenant: A maximum Total Debt / EBITDA ratio (e.g., not to exceed 3.5x).
- Coverage Covenant: A minimum DSCR or FCCR (e.g., must remain above 1.3x).

## Step 2: Structure the Repayment Waterfall

- In the financial model, design a "cash flow waterfall" that dictates how the company's Free Cash Flow to the Firm (FCFF) is allocated each period after covering operational needs and taxes.<sup>59</sup> A logical priority structure is essential for disciplined capital allocation<sup>59</sup>:
  1. Mandatory Debt Service: Payment of all required cash interest and scheduled principal amortization on senior debt.
  2. Optional Prepayments (Cash Sweep): A predefined percentage (e.g., 50-75%) of any remaining cash flow is used to make additional principal payments ("sweep") on outstanding debt. To maximize value, this sweep should be directed towards the most expensive tranche of debt first (e.g., junior debt before senior debt).<sup>61</sup>
  3. Restricted Payments: Any cash remaining after the sweep can be retained on the balance sheet or, if covenants permit, distributed to equity holders.

## Step 3: Model and Iterate on Restructuring Terms

- Build the financial model to be fully dynamic, allowing the user to toggle different restructuring terms and immediately see the impact on the company's financials and the lender's returns. The key levers to model include<sup>62</sup>:
  - Interest Rate: Model different combinations of cash-pay interest and Payment-in-Kind (PIK) interest. PIK interest is not paid in cash but is instead added to the principal balance of the loan, providing cash flow relief in the early years of a turnaround.<sup>65</sup>
  - Amortization Schedule: Model the impact of an initial interest-only (IO) period (e.g., for the first 12-24 months) which allows the company to focus all its cash flow on stabilizing operations before principal repayments begin.<sup>64</sup>
  - Maturity Extension: Model the effect of extending the final maturity date of the loan, which reduces the annual principal repayment burden.
  - Debt-for-Equity Swap: Model the conversion of a portion of the existing debt into new equity in the reorganized company. This reduces the absolute debt level and aligns the incentives of the (now) former creditor with the equity holders.<sup>63</sup>

## Step 4: Evaluate and Optimise

- For each combination of restructuring terms from Step 3, the model must be run through all three scenarios (Turnaround, Base, Liquidation) to assess the outcomes.
- Calculate Lender NPV: For each scenario, calculate the NPV of the stream of cash flows (interest, principal, and any recovery in liquidation) received by the lender. The final, risk-adjusted Lender NPV is the probability-weighted average of the NPVs from each of the three scenarios.
- Calculate Borrower Viability (Re-default Probability): For the Turnaround and Base Case scenarios, the

model must track compliance with the covenants defined in Step 1. A "breach" occurs in any year where the company violates its minimum cash balance, maximum leverage ratio, or minimum coverage ratio. The re-default probability is the sum of the probabilities of the scenarios in which a breach occurs.

### Step 5: Select the Optimal Plan

- The final step is to compare the results from all the iterations. The optimal restructuring plan is the combination of terms that generates the highest risk-adjusted Lender NPV while keeping the re-default probability below a predefined, acceptable threshold (e.g., a lender might tolerate a re-default probability of no more than 20%). This disciplined, data-driven process ensures that the proposed refinancing is not only profitable for the lender but also provides the borrower with a capital structure that gives it the highest possible chance of long-term success.

## Finalizing the Deal: Key Term Sheet Provisions

The output of the financial modeling and optimization algorithm is a set of economic terms that must be translated into a legally robust and enforceable document. This is typically accomplished through a Debt Restructuring Agreement or, in the initial stages, a non-binding Term Sheet.<sup>67</sup> This document serves as the blueprint for the entire restructuring. While each deal is unique, a comprehensive term sheet for a distressed loan refinancing must clearly articulate the following provisions<sup>69</sup>:

- **Parties and Existing Debt:** The agreement must precisely identify all parties involved (the debtor company, guarantors, the lending syndicate) and the specific debt instruments being restructured, including their outstanding principal and accrued interest amounts.<sup>68</sup>
- **The Restructuring Transaction:** A clear, step-by-step description of the mechanics of the restructuring. This includes the cancellation of old debt instruments and the issuance of new securities (e.g., "New Notes," "New Common Stock").<sup>71</sup> If the restructuring is part of a broader transaction like a pre-packaged Chapter 11 plan or a sale process, these details must be included.<sup>70</sup>
- **Economic Terms of New Debt:** This section codifies the core financial terms determined by the model:
  - Principal Amount: The total face value of the new loan.
  - Interest Rate: The precise rate, specifying what portion is cash-pay and what portion is PIK. The terms for any PIK option (e.g., when it can be exercised by the company) must be detailed.<sup>65</sup>
  - Amortization Schedule: The schedule of mandatory principal repayments, including the length of any initial interest-only period.<sup>64</sup>
  - Maturity Date: The final date on which all remaining principal is due.
  - Call Protection: Provisions that penalize the borrower for repaying the debt early, often structured as a premium to par value that declines over time. This protects the lender's expected yield.<sup>72</sup>
- **Collateral Package:** A detailed description of the assets securing the new loan. For senior lenders, this typically involves a first-priority lien on all tangible and intangible assets of the company and its subsidiaries.<sup>64</sup>

- **Covenants:** This section lists the specific financial and operational covenants the company must comply with. These are the rules derived from the debt capacity analysis in Part III.<sup>66</sup> Examples include maintaining a maximum leverage ratio, a minimum DSCR, and restrictions on asset sales, capital expenditures, and payments to junior stakeholders.
- **Equity Provisions:** If the restructuring involves a debt-for-equity swap or the issuance of warrants as a "kicker" to enhance lender returns, the terms must be explicit.<sup>63</sup> This includes the percentage of the reorganized company's equity being issued, the strike price of any warrants, and their vesting and expiration terms.
- **Conditions Precedent:** These are the critical milestones that must be achieved before the restructuring becomes legally effective.<sup>69</sup> Common conditions include obtaining necessary shareholder and creditor votes, securing court approval of the restructuring plan (if applicable), raising any required new financing, and the absence of any "Material Adverse Change" in the borrower's business.<sup>64</sup>
- **Governance and Reporting:** In exchange for providing new capital, lenders often demand enhanced oversight. This can include the right to appoint one or more directors to the company's board and covenants requiring more frequent and detailed financial reporting, such as the weekly delivery of the 13-Week Cash Flow forecast.

By meticulously documenting these provisions, the term sheet transforms the analytical conclusions of the valuation and modeling process into a clear, actionable, and legally binding framework for the successful restructuring of the distressed company.

## Conclusion

The valuation and restructuring of loans to distressed European companies is a discipline that demands a synthesis of advanced financial modeling, rigorous credit analysis, operational insight, and deep legal expertise. This report has outlined a comprehensive framework designed to navigate this complex environment, moving from theoretical foundations to an actionable, algorithmic approach for maximizing lender recovery while preserving the viability of the underlying enterprise.

The analysis demonstrates that traditional valuation techniques are insufficient. A probabilistic approach, centered on a Scenario-Based DCF (SDCF), is essential to properly account for the binary risk of survival versus liquidation. This requires the analyst to model distinct futures—Turnaround, Base Case, and Liquidation—and weight them by carefully assessed probabilities to arrive at a risk-adjusted expected value. The methodology for projecting cash flows must adapt to the information environment. With full access to management, the focus is on due diligence and the critical 13-Week Cash Flow (TWCF) forecast for near-term liquidity management. With only lagged public data, the challenge becomes a two-stage process: first, using statistical and machine learning models to predict the company's current state of distress, and second, using that prediction to build state-contingent forecasts from the ground up. This information asymmetry, while a risk, is also a primary source of alpha for sophisticated investors capable

of developing a superior, non-consensus view.

Determining the sustainable debt capacity of the restructured entity is the crucial bridge between valuation and deal design. This is not a single number but a dynamic assessment based on a suite of forward-looking leverage and coverage ratios, stress-tested against downside scenarios and benchmarked against conservative, industry-appropriate targets. The credibility of these projections hinges on linking them directly to tangible operational KPIs. A robust financial model must be driven by measurable improvements in efficiency and working capital management, translating operational strategy into quantifiable financial outcomes.

Finally, the report proposes an algorithmic framework for designing an optimal refinancing plan. This process, grounded in optimization and game theory principles, seeks to balance the dual objectives of maximizing the lender's risk-adjusted NPV and ensuring the borrower's long-term viability. By iteratively modeling different restructuring terms—such as interest structure, amortization schedules, and debt-for-equity swaps—and evaluating the outcomes against predefined covenants and constraints, a plan can be engineered that is both profitable and sustainable. This analytical output is then codified in a detailed Term Sheet, which serves as the legal blueprint for the transaction.

The European restructuring landscape, reshaped by the EU Preventive Restructuring Directive and its powerful cross-class cram-down mechanism, provides a more favorable environment than ever for implementing such value-maximizing plans. By adopting the integrated, data-driven, and legally aware framework presented in this report, lenders and investors can more effectively navigate the inherent risks of distressed situations, protect their capital, and play a constructive role in the successful turnaround of viable European businesses.

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## About Accuria

Accuria is a cutting-edge credit portfolio management platform that helps clients trade and monitor loan portfolios using a series of domain expert AI agents to automate the processing of data, documents and transactions. Accuria offers automated due diligence, data migration, valuation and reporting services for performing and non performing assets across 28 jurisdictions.

With the help of its proprietary data mapping and transformation tool Accuria helps financial institutions to map their data to a variety of data formats such as those defined by EBA for NPL transactions, EBA for the valuation in resolution, and by ESMA for securitisation disclosures. Once standardised and validated, the loan-level data can be uploaded to the Accuria valuation tool to conduct a detailed discounted cash flow analysis using pre-populated pricing parameters in different macroeconomic scenarios across all major asset classes.

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