

# Valuation Analysis & Modelling Process: Hensoldt AG

*A Demonstration of an Analytical Approach to Financial Thought*

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**Project Link:** <https://github.com/Learner-CFA>

## Abstract

**Project Objective:** This report serves as a companion to a comprehensive, from-scratch Discounted Cash Flow (DCF) model built for Hensoldt AG (HAG). The objective is not to provide a formal investment recommendation, but to demonstrate the analytical process, key industry insights, and core assumptions required to build a defensible valuation. The full, auditable Excel model is available within this Git-Hub Repository.

**Core Thesis & Approach:** My analysis of HAG is built on a central thesis:

Hensoldt AG is ideally positioned to gain from rapid defence expansion in multiple combat domains including Air, Land, Sea, Cyber and Space. The products HAG offers increasingly are not one time purchases but longer term commitment contract, that include maintenance/updates far out in the future. Since HAG also collects Data from all its Systems that are embedded, increasing operational uptime and enhancing existing items offers additional benefits as it creates a lock in effect.

The HAG share ownership also allows it to make long term, strategic investments. 25,1% of the shares are owned by the Federal Republic of Germany and another 22% are owned by a Leonardo, a major Italian defence contractor. This isolates HAG from activist investors pressure that might want to invest less and be more aggressive in share buybacks and the announced dividend policy. State ownership of strategic industries is usually seen as a drawback for valuation and corporate governance. However, in this instance Germany has elected to be a non-active shareholder, not pursuing industrial policy through HAG and therefore functioning as a solid anchor investor.

HAG has identified four key geopolitical hotspots, which are likely to become crisis areas or already are. They include the European perma-crisis with the Russia-Ukraine war and Russian hybrid war against Europa. The Middle East with the conflicts in Lebanon, Syria, Gaza, Yemen, Sudan and Ethiopia. The Arctic. And the Asia Pacific region especially in the south china Sea and the straight of Taiwan. For all these scenarios, there are Nato- and Nato-aligned Partners involved (EU, US, Canada, Japan, South Korea) that already rely on HAG technology or plan to expand their capabilities in which HAG has to offer cutting edge technology.

Spending on defence in Germany looks likely to increase sharply from current spending levels of 80 billion per year to about 160 billion in 2029. According to policy pledges and EU incentives, Germany looks to spend more than 2/3 on European kit. Subtracting personnel cost of about 30 billion and assuming most funding will actually go into new hardware and software, this increase alone will mean about 50 billion dollars more per year to be spent on Equipment and Services.

**Key Valuation & Model Drivers:** This valuation is most sensitive to three core assumptions, which this report will explore in detail:

1. Revenue Growth Rate
2. Operating Expense Decrease
3. Assumed WACC / Cost of Capital

The model, based on these drivers, yields an intrinsic value of **53,31 Euros per share**. The following pages deconstruct *how* and *why* these assumptions were chosen.

## Page 2: Industry Deep-Dive & Competitive Landscape

### Market Overview

Hensoldt AG operates in the Defence market, a sector characterized by long procurement contracts, lock-in effects once a purchasing agreement has been made and slow decision processes. The total addressable market (TAM), here the Global Defense Electronics market is estimated at \$ 175-205 Billion, and is growing at 5-6%. However, HAG own view is a CAGR of 7-10% and a target of 5 billion Euros of Revenue in 2023

My analysis of the industry's structure, using a Porter's Five Forces framework, indicates:

- **Rivalry (High):** High, due to a few large, well-capitalized players competing on capability and system integration. Prime contractors as well as specialised suppliers vie for the same market. Bidding processes can and usually are litigated, since government military procurement is truly lucrative with the current cost-plus arrangement.
- **Threat of New Entrants (Low):** Defence tech is an industry with high degrees of specialisation, proprietary, highly protected IP and complex procurement cycles. It also requires a security clearance and government certification, making new entrances even more unlikely. Additionally, the relationship with the respective national governments as the sole or major buyer of products and services means trust and long term commitments are required to win large contracts. This is changing currently to a degree, but the entrenchment is still very much in place.
- **Threat of Substitutes (Low):** Sensory and Optronics technology is not easily substitutable, even for products offering similar services. This means that hardware components are sticky, because they also require specialises knowledge to maintain and interpret. However, entire platforms can be replaced by cheaper technology (drones for fighter jets), requiring constant R&D expenditure.
- **Buyer/Supplier Power (Very High):** Governments create regulation for the industry as well as to act as principal customers. They limit the size of the export market through approval processes as well as the domestic market, which is directly tied to the national defence budget. Buyers dictate price, performance and transfer-of-technology clauses

### Competitive Positioning

Company	EV/Sales			EV/EBITDA			EV/EBIT			P/E		
	2024e	2025e	2026e	2024e	2025e	2026e	2024e	2025e	2026e	2024e	2025e	2026e
BAE Systems plc	1.7	1.5	1.4	12.8	11.6	10.7	15.7	14.1	12.9	20.0	17.6	16.0
Chemring Group PLC	2.0	1.9	1.7	12.2	11.2	9.8	14.2	13.9	12.0	18.0	17.7	15.3
Ebit Systems Ltd	2.2	1.9	1.7	21.2	17.6	15.1	27.0	22.3	18.7	38.3	30.8	25.1
General Dynamics Corporation	1.6	1.5	1.4	13.1	12.1	11.1	15.5	14.2	12.9	17.8	16.2	14.4
HENSOLDT AG	2.6	2.2	2.0	14.9	12.5	10.6	21.1	17.0	14.0	31.2	24.7	20.4
Indra Sistemas, S.A. Class A	0.7	0.6	0.5	6.0	5.1	4.3	7.3	6.2	5.2	11.1	10.1	9.2
Kongsberg Gruppen ASA	4.3	3.7	3.1	26.0	22.0	18.4	31.9	26.5	21.6	42.2	34.1	28.2
Leonardo SpA	1.3	1.2	1.1	11.5	10.1	8.9	17.4	14.6	12.4	21.6	20.0	16.8
Lockheed Martin Corporation	1.7	1.6	1.6	14.2	11.5	11.1	17.4	13.5	12.9	19.0	15.5	14.2
MTU Aero Engines AG	2.7	2.3	2.1	14.9	13.2	11.9	19.2	16.6	14.8	24.7	21.4	19.2
Rheinmetall AG	4.2	3.4	2.6	23.7	17.4	12.8	29.6	21.2	15.1	43.6	31.0	22.2
Thales SA	2.1	1.9	1.7	13.3	11.7	10.6	17.6	15.2	13.4	21.6	19.1	17.0
Defence (Mkt cap weighted mean)	2.9	2.5	2.2	19.2	16.2	14.0	23.8	19.7	16.6	30.7	25.1	21.1
Defence (Median)	2.0	1.9	1.7	13.8	11.9	10.9	17.5	14.9	13.2	21.6	19.5	16.9
DEUTZ AG	0.5	0.4	0.4	5.9	4.4	3.3	12.6	7.6	5.5	13.2	7.9	5.8
Durr AG	0.5	0.5	0.4	5.7	5.1	4.6	8.5	7.3	6.1	11.5	9.3	7.9
ErlingKlinger AG	0.5	0.5	0.4	4.9	3.9	3.3	11.7	8.9	6.7	156.8	5.9	4.1
GEA Group Aktiengesellschaft	1.8	1.8	1.6	12.0	11.1	10.2	15.9	14.7	13.2	19.8	18.2	16.5
Heidelberger Druckmaschinen AG	0.6	0.6	0.5	8.6	7.2	5.5	16.2	11.4	8.4	13.1	5.4	4.2
Jungheinrich AG Pref	0.3	0.3	0.2	1.8	1.5	1.3	3.5	3.1	2.5	9.5	9.3	8.4
KION GROUP AG	0.6	0.7	0.6	3.9	4.4	3.5	8.3	9.4	7.2	12.2	15.2	9.8
Knorr-Bremse AG	1.8	1.7	1.6	11.0	9.8	8.7	15.4	13.4	11.7	23.2	18.7	16.6
Koenig & Bauer AG	0.4	0.4	0.4	33.0	6.2	5.2	-19.4	13.1	8.7	-8.2	15.4	6.9
Krone AG	0.8	0.7	0.6	7.7	6.6	5.7	11.2	9.2	7.8	15.4	13.0	11.5
KSB SE & Co. KGaA	0.8	0.7	0.7	6.9	6.3	5.7	9.5	8.7	7.8	8.7	8.0	7.4
NORMA Group SE	0.7	0.7	0.6	5.8	5.2	4.6	12.3	10.3	8.3	15.9	12.5	9.7
Rational Aktiengesellschaft	7.9	7.3	6.7	27.3	25.4	23.1	30.3	28.2	25.7	40.5	37.7	34.6
Vossloh AG	1.0	0.9	0.8	7.0	6.4	5.8	10.9	9.9	8.6	15.4	13.7	11.8
Wacker Neuson SE	0.7	0.7	0.7	6.8	6.0	4.7	12.3	10.4	7.3	14.6	12.3	8.5
WashTec AG	1.2	1.2	1.1	9.6	8.8	8.1	12.9	11.5	10.1	16.9	15.0	20.5
German Engineering Midcaps (Mkt cap weighted mean)	2.6	2.4	2.2	12.6	11.5	10.3	16.2	14.9	13.0	23.0	20.1	17.7
German Engineering Midcaps (Median)	0.7	0.7	0.6	7.0	6.3	5.4	12.0	10.1	8.0	15.0	12.8	9.1

Figure 1: Peer company valuation comparison (Warburg Research, 2025)

In order to evaluate the competitive position of Hensoldt, one can draw on a variety of peers although comparability varies. Some, like BAE Systems or Lockheed Martin are prime contractors, who do entire weapons systems as well as software and integration, while others like Rheinmetall specialise in certain weapons categories like tanks. As shown below in the table my Warburg Research, Hensoldt is about average in terms of peer valuation (at the time of creation in February). The Data is derived from FactSet.



Source: FactSet, mwb research

Figure 2: Peer company valuation comparison (mWb Research, 2025)

This analysis shows that HAG's primary "right to win" stems from its exceptional margin, almost unprecedented in the defence industrial sector. Margin expansion, after the integration of ESG is complete and efficiency gains can actually be derived from combining it with the existing sensor segment. The company itself predicts 15% CAGR from 2024-2030 for organic growth and 2% for M&A derived growth, since it sits on a strong cash position.

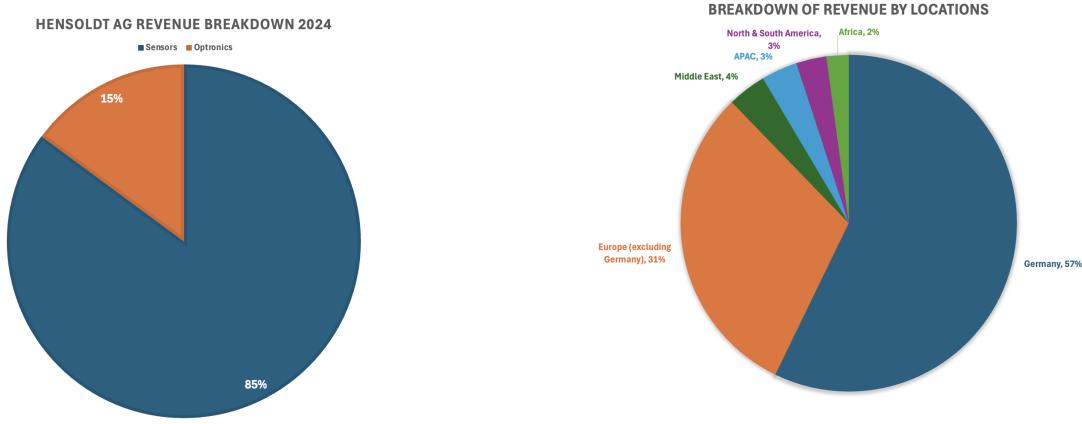
Its main vulnerability is that it can not expand fast enough to meet demand. The fiscal situation is exceptionally strong with only about 1 billion € in long term debt and ready access to financing, even after the recent acquisition. Labour markets are tight and specialist skills are hard to come by. Hensoldt also plans to outsource some of its production, which will increase reliance on external partners that could slow momentum.

## Page 3: Hensoldt AG - The Business & The "Moat"

### Business Model & Revenue Drivers

HAG makes money in two primary ways:

1. **Sensors (85% of Rev):** Production of sensory hardware, software to interpret signals and related services
2. **Optronics (15% of Rev):** Production of Optronics/optical high precision instruments and related services



(a) Revenue by operating segment.

(b) Revenue by geographic origin.

Figure 3: Graphics show the distribution of current sales by (a) Operating Segment and (b) source country of revenue

HAG's technological offerings include: Radars, IFF (identification of Friend or Foe) and secure data connections between different platforms. It also includes electronic systems to evaluate the output of the former as well as mission control and flight computers. In addition to these, the Optronics segment includes various offerings for visual identification such as thermal imaging or submarine periscopes. HAG offers services for maintenance/installation and integration across various platforms.

### The Competitive Advantage (The "Moat")

HAG's current valuation is underpinned by its competitive advantage. I believe its moat stems from:

- **Licenses/contractual reliance:** Defence licenses, trust and the embeddedness of HAG technology in existing platforms means, that any procurement office is inclined to renew the contract, facing high switching costs with limited gains.
- **Seamless Integration:** HAG offers, for its own products but also for third-party development integration solutions that others are unable or unwilling to provide. Due to the fact that HAG kit works with and across various, third party platforms, a high degree of automation can be achieved that is critical to mission success.

**Moat Durability:** The critical question is how long this moat will last. My forecast assumes that the moat will erode somewhat if HAG relies as much on organic growth as it wants to and shies away from larger acquisitions to broaden the portfolio. Since the market itself is growing and software has lower barriers to entry, especially the seamless integration might become less unique in the future.

## Page 4: My modelling Philosophy & Key Assumptions

This is the "heart" of the model. My approach was to build a 3-statement projection, driven by the operational KPIs, to ensure all line items are internally consistent. All the numbers displayed here are for the realistic scenario. Three different scenarios can be displayed as well: pessimistic, optimistic and the companies own projection.

### The "Big 3" Assumptions: Justification

**1. Revenue Growth (11% CAGR 2025 - 2029):** This is the single most important assumption, since many other inputs are derived as a share of revenue. I did *not* just apply a simple percentage. My revenue forecast is built from the bottom-up:

- My forecast is based upon an increasing book to bill ratio and backlog conversion rates that differ in the varying scenarios. It is also based upon annual revenue growth scenarios that are derived from industry reports, the companies own projections as well as defence spending pathways nationally and in the core HAG markets.
- Backlog Conversion is either forecast as a continuing historical percentage (around 26%) or increase with operational efficiency. Since HAG is currently undergoing an internal restructuring and integrating it's most recent acquisition of ESG, it is reasonable to assume that the capacity to turn more of the backlog into actual revenue will increase. The Amount of CAPEX, that is derived as a share of revenue will also have an impact, since it is directly tied to the ability to produce the contracted items on a larger scale. A recent example for this is the completion of a new logistics hub in southern Germany.

**2. Profitability (operating margin expanding from 22% to 28%):** My model projects a 600 bps margin expansion over the forecast period. This is not arbitrary; it is a direct output of my COGS and OpEx forecasts:

- **COGS:** Assumed to decrease over time to a new steady state of 72% of revenue from previously 76% due to increased automation/large Capex and R&D spending that will increase operational efficiency.
- **SG&A:** Assumed to stay constant as a share of revenue, since it will scale proportionally with the amount of deals executed and new acquisitions of contracts.
- **R&D:** Assumed to remain elevated at ~3,5% of revenue to defend the company's tech leadership, serve client research contracts and enhance the product offering on an ever-changing battlefield, exemplified by the cooperation with the Ukrainian army on the battlefield.

### 3. Cost of Capital & Terminal Value:

- **WACC (6,18%):** The WACC was built from the ground up using the Capital Asset Pricing Model (CAPM). Key inputs include a 1,07 beta derived from market data, a 7,03% equity market risk premium, and a 4,12% cost of debt. These inputs were derived either from actual interest costs, comparable peers or benchmark rates in the case of equity risk premiums.
- **Terminal Growth Rate (1%):** I used a 1% terminal growth rate, which is in line with long term growth in Germany but crucially is also what the company uses in its very own, internal DCF. It implies a reasonable 23 x exit multiple using enterprise value and unlevered free cash-flow, validating the assumption as reasonable.

## Page 5: Valuation Summary & Sensitivity

### DCF Summary

The assumptions from Page 4, when flowed through the 3-statement model, produce the following Free Cash Flow to the Firm (FCFF) stream.

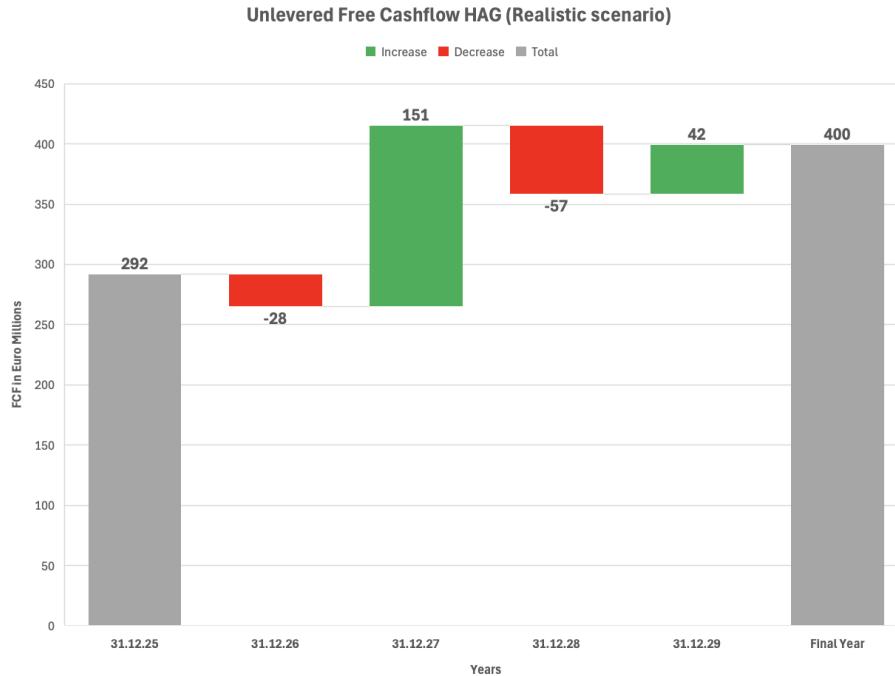


Figure 4: Development of Unlevered Free Cashflow (FCFF)

Discounting these cash flows at the 6,18% WACC yields the following in Millions, given 115 million shares outstanding:

- **Terminal Value:** Euro 5064,44
- **Enterprise Value:** Euro 5947,24
- **Implied Equity Value:** Euro 2868,24
- **Intrinsic Value Per Share:** Euro 35,82

### Scenario & Sensitivity Analysis (The "Stress Test")

Table 1: Scenario Analysis Summary

Scenario	Key Assumptions	Implied Value
<b>Bull Case</b>	Aggressive growth, improved conversion and 400margin expansion	<b>50,49 Euro (39,59 Euro)</b>
<b>Base Case</b>	Outlined in this report	<b>35,82 Euro (27,31 Euro)</b>
<b>Bear Case</b>	Efficiency remains flat, limited margin expansion	<b>26,32 Euro (19,32 Euro)</b>
<b>HAG's own Case</b>	Based on investor presentations and earnings call transcripts	<b>24,83 Euro (17,27 Euro)</b>

A single-point estimate is always wrong. The *real* value of the model is its ability to test different versions of the future. I ran four scenarios changing the most critical assumptions. The first value is derived from using the terminal value approach, the second, in brackets by using an exit multiple derived from peer data. While they are coherent scenarios in total, it is useful to modularize the model, having each input individually alternate to understand, how it changes the ultimate value. Therefore viewing these scenarios as the only possible outcomes misses the point of this model. The analysis table shows each scenario, given all assumptions linked to that version.

## Page 6: Risks & Concluding Thoughts

### Key Risks to the Thesis

My valuation is optimistic if the following risks materialize, which are not fully captured in the Bear Case:

1. **Technological Disruption:** New requirements on the frontline as well as the need to integrate very different systems could render current HAG tech obsolete, leading to an increased need on R&D Spending. Increasingly, Chinese competition also tries to steal trade secrets/will have a detailed access to blueprints, if the export control regime for rare earths materialises, that was threatened. And since one conflict scenario is mainly based on China, this would make HAG tech less useful.
2. **Political retrenchment:** Renationalisation of purchasing decisions in Europe and the desire of every country to make its own military kit could seriously shrink the potential export market, hampering plans for further expansion.
3. **Governance Problems:** Although it is taken as an advantage to have the government as a large anchor investor, Leonardo, which also owns 22% of HAG sells some products in a similar domain and might therefore try to limit the success of HAG in the future when competing for similar contracts.

### Personal Conclusion & Learnings

This project was an exercise in teaching myself to build a financial model from scratch, understand, how the different items interact with each other and how one Euro flows throughout the three statements. It has shown me, how difficult it can be to make valuation decisions and how small policy changes, such as using a different formula for calculating depreciation or changes in commercial law can have a large impact on the underlying company. Working on this project has also taught me to think in terms of relative value, making comparisons to peers and underlying earning quality rather than just looking at P/E-like KPI's.

The most valuable takeaway from this process was the actual craft of modelling. This has become clear when working on the final valuation and its inputs.

- The critical importance of the terminal value calculation. Small, indefensible changes in the WACC or 'g' rate can swing the valuation by 20-30%, which reinforces the need to spend the most time justifying those long-term assumptions.
- I also learned that the revenue forecast is the engine of the entire model. I needed to deconstruct revenue into its operational drivers (backlog, conversion rate, book-to-bill ratio) rather than using a simple 'growth %', which forced me to truly understand the *products and services* behind the numbers.

Thank you for reviewing my work. I am happy to walk through the live model and discuss my analysis at your convenience, if you are a recruiter and actually took the time to read through this.