Elmos Semiconductor SE

Germany | Technology | MCap EUR 1,350.8m

29 August 2024

INITIATION

Outmaneuvering Giants: BUY

What's it all about?

Elmos Semiconductor SE specializes in designing and manufacturing analog mixed-signal semiconductors mainly for the automotive industry. Despite fierce competition from industry giants like STM, NXP, and Infineon, Elmos has strengthened its position by leveraging 40 years of expertise in analog mixed-signal ICs and excelling in niche automotive markets such as ultrasonic ranging. With a strong international presence and inherent flexibility and agility, Elmos is further enhancing these strengths through a strategic shift to a fabless company starting in 2025, allowing it to better respond to market shifts. The company is well-positioned to capitalize on key megatrends like autonomous driving and electromobility, supporting the growing demand for intelligent, safer, and connected vehicles in a market that is expected to grow at a 9.2% CAGR from 2023 to 2032. Based on our DCF and key multiples, Elmos is undervalued, offering a compelling entry opportunity. Thus, we initiate our coverage with a BUY recommendation and a PT of EUR 105.00, representing an upside potential of 33%.

BUY (Initiation)

Target price	**EUR 105.00** (na)
Current price	EUR 78.90
Up/downside	33.1%

ResearchHub

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Outmaneuvering Giants: BUY

Elmos in a nutshell. Germany-based Elmos designs and manufactures analog mixed-signal semiconductors mainly for the automotive industry, merging analog and digital functions to bridge real-world signals with digital systems. With over 1,300 employees, including 450 developers and engineers, Elmos operates globally across 15 locations, including 6 R&D centers. Starting in 2025, Elmos will operate as a fabless company, focusing primarily on design and testing activities.

Thriving through specialization. In a fiercely competitive arena where giants like, NXP, Infineon, STM, Texas Instruments, and Renesas dominate over 50% of the market, Elmos has not only held its ground but has also strengthened its position over the past five years. By leveraging 40 years of expertise in analog mixed-signal IC solutions, Elmos excels in niche automotive markets like ultrasonic ranging, LED lighting, motor control, smart sensing, and passive safety systems. Unlike its larger rivals, Elmos' compact size is a key edge, offering unmatched agility and flexibility to pivot swiftly with market shifts and tackle short-term orders head-on. Now, with the strategic shift to a fabless model, Elmos is further enhancing its flexibility by sourcing production primarily from TSMC and Samsung, freeing itself from the constraints of in-house technology nodes. These strengths, combined with Elmos' global presence, position Elmos to compete effectively and stand strong against the industry's titans.

Capitalizing on megatrends & conclusion. Elmos is strategically positioned in the booming automotive semiconductor market, which is projected to grow at a CAGR of 9.2% (2023-2032). The company is poised to capitalize on key megatrends such as the rise of driver assistance systems, autonomous driving, and electromobility, alongside the structural evolution of modern vehicles that increasingly depend on intelligent electronics, digitalization, and enhanced safety and comfort features. With its versatile analog mixed-signal IC portfolio, Elmos is well-equipped to support these trends and thrive regardless of the pace of the shift to electric vehicles. We expect Elmos to achieve high single-digit CAGR growth with EBIT margins exceeding 25% in the short to long term. Based on our DCF and key multiples, Elmos is undervalued, presenting a compelling entry opportunity. We initiate coverage with a BUY recommendation and a PT of EUR 105.00, representing 33% upside.

Elmos	2021	2022	2023	2024E	2025E	2026E
Sales	322.1	447.2	575.0	596.9	650.6	709.1
Growth yoy	38.5%	38.9%	28.6%	3.8%	9.0%	9.0%
EBITDA	91.3	153.6	193.0	191.5	212.9	230.5
EBIT	60.0	110.1	150.7	148.0	164.6	179.4
Net profit	39.8	71.4	99.1	97.7	110.4	124.0
Net debt (net cash)	52.9	42.1	33.1	-55.9	-115.5	-188.3
Net debt/EBITDA	0.6x	0.3x	0.2x	-0.3x	-0.5x	-0.8x
EPS reported	2.24	4.17	5.79	5.70	6.45	7.25
DPS	0.65	0.75	0.85	1.03	1.06	1.16
Dividend yield	0.8%	1.0%	1.1%	1.3%	1.3%	1.5%
Gross profit margin	44.9%	46.4%	47.2%	46.0%	46.5%	46.5%
EBITDA margin	28.4%	34.3%	33.6%	32.1%	32.7%	32.5%
EBIT margin	18.6%	24.6%	26.2%	24.8%	25.3%	25.3%
ROCE	15.6%	24.5%	26.1%	21.3%	20.9%	20.0%
EV/EBITDA	15.4x	9.1x	7.2x	6.8x	5.8x	5.0x
EV/EBIT	23.4x	12.6x	9.2x	8.7x	7.5x	6.5x
PER	35.3x	18.9x	13.6x	13.8x	12.2x	10.9x
FCF yield	5.7%	7.3%	7.6%	5.2%	7.7%	9.0%

Source: Company data, mwb research

Source: Company data, mwb research

High/low 52 weeks	92.90 / 59.00
Price/Book Ratio	3.0x

Ticker / Symbols

ISIN	DE0005677108
WKN	567710
Bloomberg	ELG:GR

Changes in estimates

		Sales	EBIT	EPS
2024E	old	596.9	148.0	5.70
	Δ	0.0%	0.0%	0.0%
2025E	old	650.6	164.6	6.45
	Δ	0.0%	0.0%	0.0%
2026E	old	709.1	179.4	7.25
	Δ	0.0%	0.0%	0.0%

Key share data

Number of shares: (in m pcs)	17.12
Book value per share: (in EUR)	26.14
Ø trading vol.: (12 months)	21,799

Major shareholders

Weyer Klaus & others	22.9%
Jumakos investment company	17.0%
ZOE-VVG GmbH & others	16.3%
Free Float	40.6%

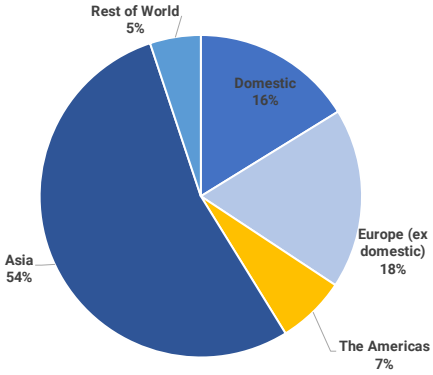
Company description

Elmos Semiconductor SE designs analog mixed-signal integrated circuits primarily for the automotive industry. With 40 years of expertise and more than 1,300 employees, this German company holds leading global positions in various automotive applications, including ultrasonic ranging, ambient and rear lighting, and more.

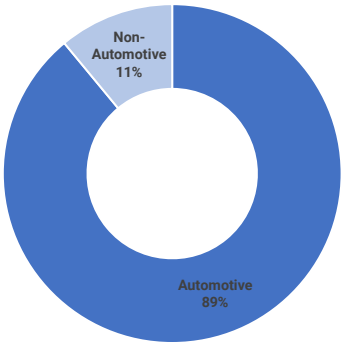
Investment case in six charts

Elmos mixed-signal ICs powering Automotive Applications

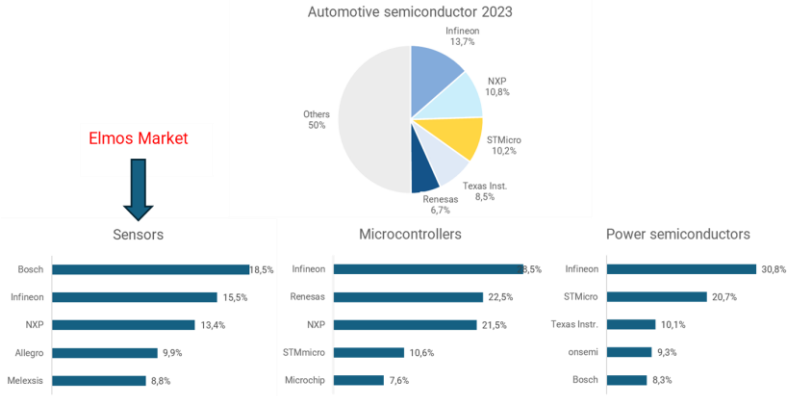
Regional sales split in %



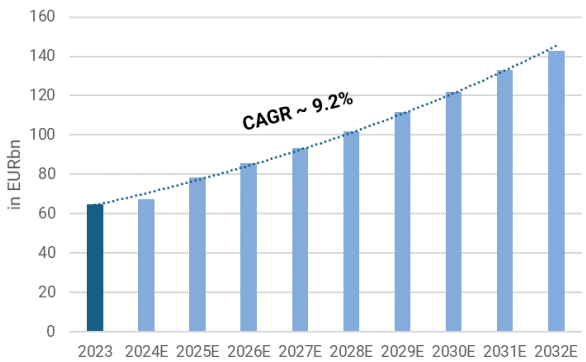
Segmental breakdown in %



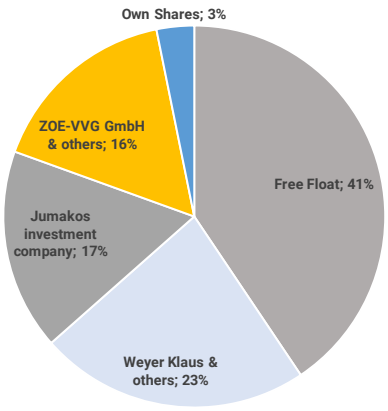
Competitors Landscape



Automotive Semiconductor - Size



Major Shareholders



Source: Company data; mwb research

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Company background

Elmos Semiconductor SE, founded in 1984 in Dortmund, Germany, designs and manufactures mixed-signal semiconductors primarily for the automotive industry, as well as for the consumer goods and industrial sectors. Mixed-signal semiconductors combine analog and digital functions on a single chip, enabling seamless interaction between real-world signals and digital systems. With 40 years of expertise in analog mixed-signal IC solutions, Elmos has established itself as a key global player in the automotive semiconductor industry and holds leading positions in niche automotive applications such as ultrasonic distance measurement, ambient and rear lighting, and intuitive human machine interface (HMI), contributing significantly to the safety, comfort and efficiency of future mobility.

The company employs more than 1,300 people, including 450 product developers and engineers, demonstrating its strong focus on innovation and development. Elmos operates 15 main sites worldwide, including 6 R&D centers, with a strong presence in Asia-Pacific and Europe, and a smaller presence in the Americas and other regions.

Global presence

Source: Company data; mwb research

In June 2023, the company sold its wafer fab to Littelfuse for EUR 93m, with EUR 37m paid in 2023 and the remaining purchase price EUR 56m expected to be transferred by the end of December 2024. All other activities, including testing, will continue to be be managed by Elmos. In addition, Elmos and Littelfuse have agreed to a long-term supply contract until 2029, under which Elmos will purchase a specified number of wafers produced in the fab to ensure sufficient capacity to meet future customer demand.

Following the completion of the transition, Elmos will become a **fabless** company in the front-end. This eventually means less capital expenditure investments and thus higher cash flows. According to management, this transition is not expected to significantly impact profitability or margins. This strategic shift enables Elmos to leverage external foundries, such as **TSMC** and **Samsung**, for wafer processing, allowing the company to focus its resources on design, development, and other value-added activities. This change enhances Elmos' ability to innovate and deliver high-quality solutions to its customers in the automotive industry and beyond. Additionally, it increases the company's flexibility and agility when taking new orders, as it will no longer be limited by its own fab technology (350nm). Currently, Elmos products are based on 200mm wafer size and 350nm and 180nm node

technology produced by TSMC, with the latest 130nm node technology being produced by Samsung. Elmos is considering in the future utilizing 90nm, 65nm, and 40nm node technology for new product generations.

Meanwhile, the company operates its own back-end fab in Dortmund for testing activities and outsources excess test volume to external test partners in Asia. In the future, the company plans to further expand its back-end activities at its OSAT partners.

Products & services

Elmos' product portfolio is diversified and includes various high-demand product categories such as ICs for ultrasonic ranging, motor control, sensors, thermal and power management, and others. The share of sales of the ten best-selling product groups was around 41% in the reporting year. Elmos operates in one business segment: semiconductors. This segment is divided into two main divisions: Automotive and Non-Automotive.

Automotive (89% of sales in FY23): Elmos provides mixed-signal semiconductor solutions to all major automotive suppliers. On average, 8 Elmos ICs are used in every new car produced, underlining the company's integral role in modern automotive design. Key applications driving this growth include Advanced Driver Assistance Systems (ADAS) & Safety, Body & Convenience, Infotainment, Interior & Exterior Lighting, and electrification.

Key products	Function
Ultrasonic Sensor ICs	enable precise, reliable obstacle detection for ADAS and autonomous driving, enhancing safety and supporting automated functions like parking
Interior light Controllers	enable customizable, energy-efficient ambient lighting in car interiors, enhancing comfort and safety
Rear Light Controllers	enhance vehicle safety with bright, energy-efficient lighting, while offering extensive design flexibility for striking rear designs
Airbag ICs	offer rapid, precise deployment in various collision scenarios, including specialized pedestrian airbags, enhancing safety while enabling lighter vehicle designs
Motor Control ICs (Stepper, Brushless DC, and DC motors)	excel in powering various vehicle systems with high performance, low power consumption, long life, and precise, quiet operation
Thermal Management ICs	optimize efficiency in hybrid and electric vehicles by precisely regulating cooling and heating systems, enhancing battery performance, reducing energy consumption
Sensor ICs	monitor and regulate pressure, temperature, and battery management in vehicles, enhancing safety, performance, and battery longevity
Elmos optical ICs, including **gesture control**	enable intuitive, contactless cockpit operation, enhancing road safety and driving comfort by reducing distractions
Elmos Power Management ICs, including **eFuses**	provide fast, reliable protection in modern vehicles, enhancing sustainability by eliminating the need for fuse replacement and enabling lighter, more flexible vehicle architectures (decentralized and software-defined vehicles)

Source: Company data; mwb research

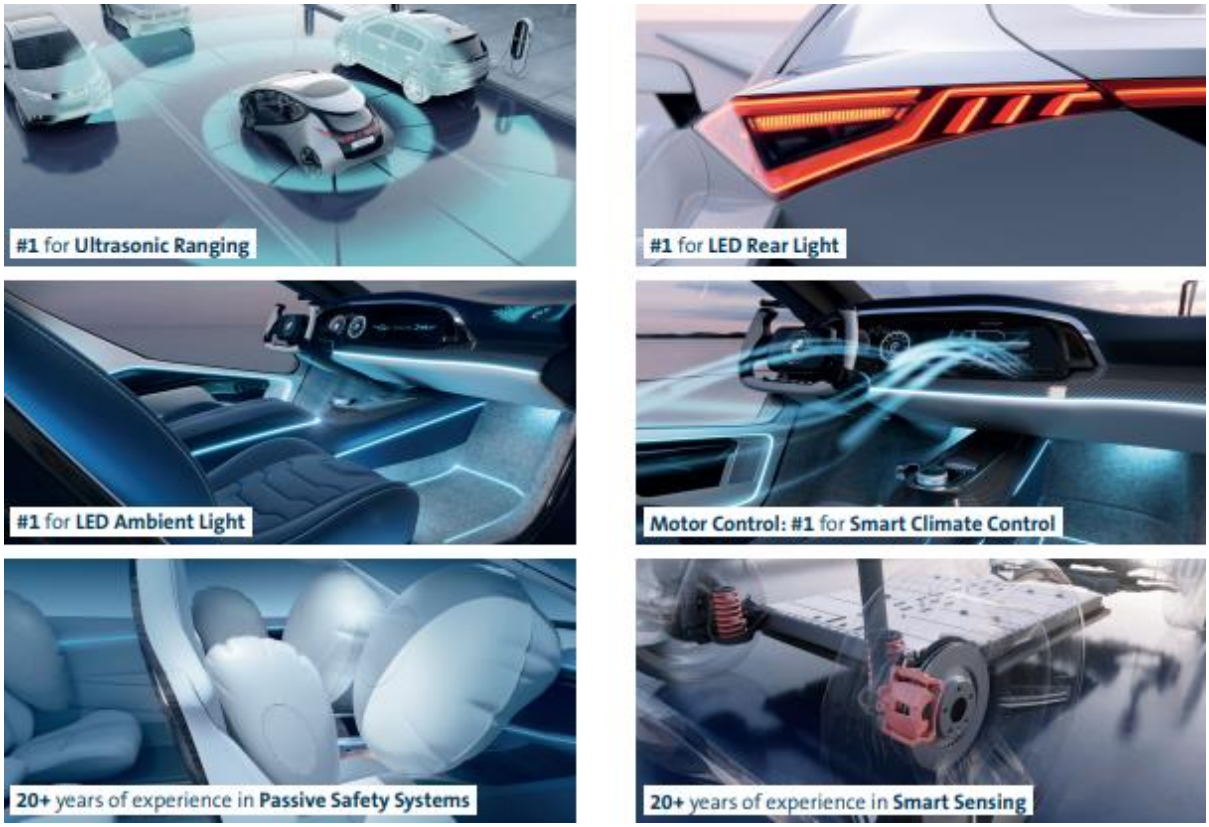
Non-Automotive (11% of sales in FY23): In the industrial and consumer goods sector, Elmos offers products for smart installation and facility technology, household appliances, and machine control systems. Key applications are industrial automation and smart home solutions.

Products can be further categorized into two different types:

- Application Specific Integrated Circuits (**ASICs**) are customized solutions based on the customer specifications (29% of revenues in FY23).

- Application Specific Standard Products (**ASSPs**) are designed by Elmos to meet market requirements. They represent the majority of the design wins in FY23. It is important to note that revenues from design wins usually take about 2 to 5 years to materialize (71% of revenues in FY23).

Elmos mixed-signal ICs powering automotive applications



Source: Company data; mwb research

Management

CEO: Dr. Arne Schneider joined Elmos in 2011. He served as CFO from 2014 until 2020 before being appointed CEO in January 2021. He graduated from the University of St. Gallen and the London School of Economics with a degree in economics and earned his doctorate in Management Accounting from the University of Mainz. Prior to his tenure at Elmos, Dr. Schneider was a junior partner at McKinsey & Company, where he focused on the automotive and high technology sectors.

COO: Guido Meyer has been with Elmos for about 30 years. Guido joined Elmos in 1995, initially developing test machines for semiconductors. He was leading the test area for seven years and subsequently was responsible for wafer production for four years. In 2017, he took over the production division on the Management Board. Guido graduated from the University of Applied Sciences in Dortmund with a degree in electrical engineering. Before joining Elmos, he gained practical experience as a hardware engineer.

CSO: Dr. Dienstuhl holds a degree and doctorate in electrical engineering from the University of Dortmund. He joined the company in January 2012 as Product Line Manager and assumed responsibility for the Sensors Business Line in October 2012. Since January 2019, he is a member of the Management Board responsible for Development and Sales. He began his career at Infineon Technologies AG in Munich, where he held a number of specialist and management positions before becoming Assistant to the Divisional Director of Infineon's Automotive Division.

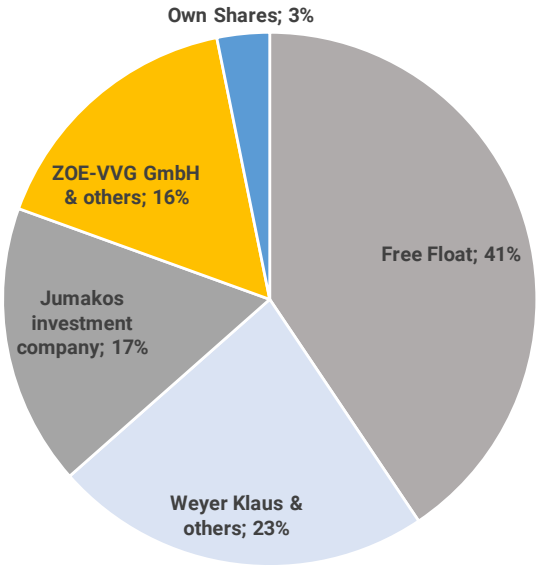
		
Dr. Arne Schneider CEO since 2021 CFO from 2014 until 2020 Formerly McKinsey&Company	Guido Meyer COO since 2017	Dr. Jan Dienstuhl CSO since 2019 Formerly Infineon Technologies AG

Source: Company data; mwb research

Shareholders

The shareholder structure of Elmos Semiconductor SE is composed of several key shareholders, mainly co-founders of Elmos. Weyer Beteiligungsgesellschaft mbH and related parties (co-founder) hold the largest share at 22.9%. Jumakos Beteiligungsgesellschaft mbH (co-founder) owns approximately 17%, while ZOE-VVG GmbH and related parties (co-founder) possess 16.3%. The company itself holds around 3.2% of treasury shares. The remaining 40.6% is classified as free float, available for public trading.

Major Shareholders



Source: Company data; mwb research

Quality

Customers

Elmos serves leading Tier1 suppliers as well as OEMs, primarily major automotive manufacturers. In addition, Elmos serves customers in the industrial and consumer goods sectors. In fiscal year 2023, the company's ten largest customers accounted for approximately 54% of total sales, down slightly from 55% in fiscal year 2022. Although 89% of sales are generated with automotive customers, the customer base within the automotive segment is quite fragmented, consisting of several hundred customers.

Elmos is likely to face some price sensitivity, especially as the automotive industry is cost-competitive. Car manufacturers are constantly looking for ways to reduce production costs. However, price may not be the only deciding factor. Elmos' focus on high-quality, reliable and leading products for safety-critical applications (e.g. ADAS) means that customers may prioritize functionality and performance over minor price differences.

Switching suppliers for automotive components can be complex and expensive, particularly due to the technical integration of semiconductor products into automotive systems. The changeover process involves re-qualification and testing of new parts, redesign of components and possibly retooling of production lines. Additionally, the established trust and reliability with a proven supplier like Elmos is a valuable asset, particularly when a design-win has been secured. A design-win signifies that a specific component or technology has been chosen for integration into a customer's product, creating a long-term relationship (7 years on average) that further complicates switching suppliers. However, switching costs may be lower for non-critical components. But even then, it's unlikely that a company will switch suppliers during volume production because it doesn't make economic sense. Moreover, the presence of strong competitors such as Infineon Technologies, NXP Semiconductors and Melexis can put pressure on pricing and force Elmos to be competitive on both price and features. Customers can use the competition to negotiate better prices or conditions with Elmos.

It's highly unlikely that major automakers would design and manufacture their own complex semiconductors on a large scale. Semiconductor design and manufacturing requires significant expertise, investment in expensive manufacturing facilities (fabs), and ongoing research and development. Automobile manufacturers are likely to find it more efficient and cost-effective to focus on their core competencies (vehicle design and assembly) and rely on specialized semiconductor companies such as Elmos. Considering the above factors, Elmos' customers are likely to have moderate bargaining power. Their large order volumes and the presence of strong competitors give them leverage in negotiations. However, Elmos' focus on quality and niche markets, where the company excels over its competitors, mitigates some of the price sensitivity.

Regional sales split (EURm)	2021	2022	2023	2024E	2025E	2026E
Domestic	58.2	59.3	93.2	96.7	105.4	114.9
Europe (ex domestic)	74.0	84.0	104.0	107.9	117.6	128.2
The Americas	4.0	31.4	39.7	41.2	44.9	48.9
Asia	155.8	255.5	308.8	320.5	349.4	380.8
Rest of World	30.1	16.8	29.3	30.4	33.2	36.2
Sales	**322.1**	**447.2**	**575.0**	**596.9**	**650.6**	**709.1**

Source: Company data; mwb research

Competition

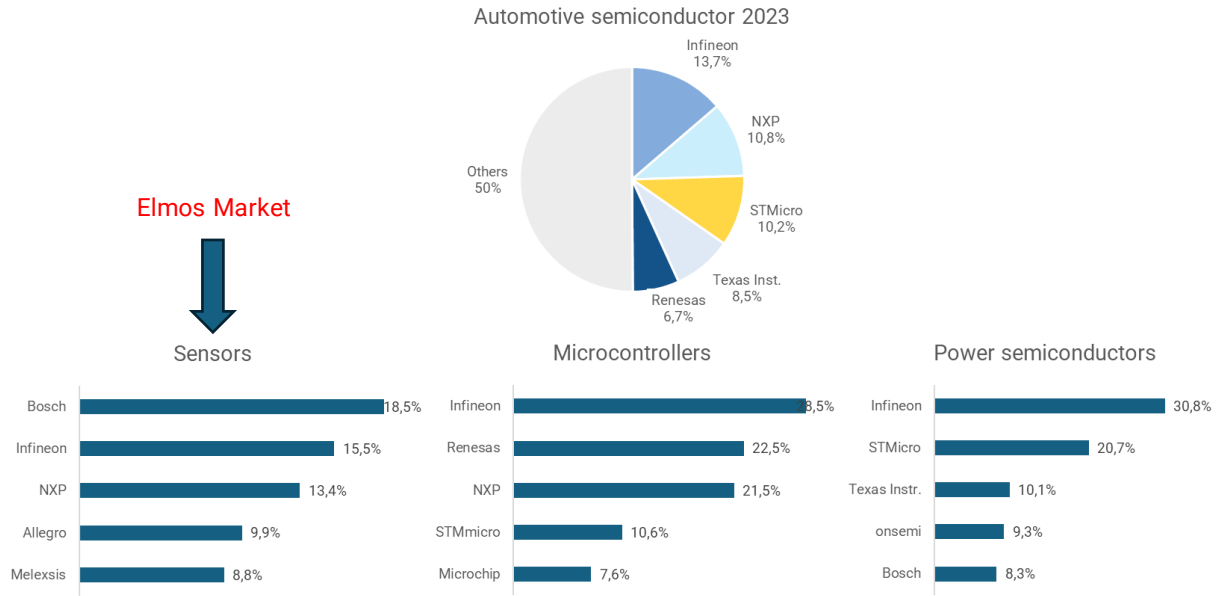
Barriers to Entry

Barriers to entry in the automotive semiconductor market are becoming increasingly challenging for new entrants. The complexity of chip manufacturing, which is constantly evolving with new technologies, requires significant technological expertise and large R&D investments to stay current. The process is highly capital intensive, making it difficult for smaller players to enter the market. In addition, building strong relationships with customers, suppliers, and distribution channels takes time, trust, and proven reliability. Compliance with stringent government regulations and industry standards further complicates entry, making it a daunting task for new entrants.

Competitors

Elmos Semiconductor faces competition from various players in the semiconductor market, especially those focused on automotive applications. These include large international manufacturers as well as local mixed-signal manufacturers in China. In 2023, 50% of the automotive semiconductor market was dominated by five major players: Infineon, NXP, STMicroelectronics, Texas Instruments, and Renesas. The rest of the market is moderately fragmented among other players, including Melexis, Micron Technology, Robert Bosch GmbH, ROHM Co., onsemi, Microchip, Allegro, and others. Due to similarities, we consider **Melexis** and **NXP** as the most direct competitors of Elmos.

Comeptitors landscape



Source: Company data; TechInsights: Automotive semiconductor Vendor Market Shares. March 2023. Sensors: S&P Global: Automotive Semiconductor Market Share Database. April 2024; mwb research

Market position and strength of Elmos

- Elmos has successfully maintained and even slightly increased its market share over the past five years, despite facing intense competition. This achievement is rooted in the company's **40 years of expertise** in analog mixed-signal IC solutions, which has become the core of its competitive edge.

- Elmos distinguishes itself by focusing on niche markets within the automotive industry, where it **leads globally** with high-quality, innovative

products. This is exemplified by its #1 positions in critical automotive applications such as ultrasonic ranging, LED rear and ambient lighting solutions, and motor control for smart climate control systems. With more than 20 years of experience in areas like passive safety systems and smart sensing, Elmos has built a reputation for deep expertise and reliability.

- The relatively small size of the company allows it to be highly **agile and flexible**, enabling quick responses to short-term opportunities. These features are particularly advantageous during uncertain or normalization phases when customer inventory levels are high, giving Elmos a significant edge over larger competitors who are less able to accommodate short-term demand shifts. The transition to a fabless model will further enhance Elmos' agility and flexibility, as the company will no longer be tied to a specific technology node and can source production for example through TSMC and Samsung as needed.

By leveraging its extensive know-how and focusing on specialized markets, Elmos continues to stay competitive and thrive against its larger peers.

Suppliers

Elmos currently operates its wafer fab in Dortmund until the end of December 2024, sourcing various essential materials and components for semiconductor production, such as raw wafers, special gases, machines, spare parts, and energy. Elmos' supplier base is both concentrated and diversified; while multiple sources exist for some materials, there is dependence on specific suppliers, particularly in the Far East, a common trend in the industry. Notably, there is an oligopoly among test machine suppliers and a high concentration in the wafer industry, with the top five manufacturers supplying up to 90% of global wafer demand. Prices for these critical components are subject to global market volatility, geopolitical risks, and supply chain bottlenecks due to semiconductor allocation.

Elmos has existing supply contracts for 200mm raw wafers and other front-end materials, which will be utilized in the production of Elmos products at Littelfuse's fab. Once these contracts expire, Elmos will no longer supply raw wafers or any materials related to wafer processing, as it transitions into a fabless model for the front-end. However, the company will continue to operate back-end fabs for testing and will primarily purchase test machines from a leading test machine supplier. Despite the limited number of machine suppliers in the market, Elmos can switch test machine suppliers, if necessary, as these machines are node technology independent and can therefore support 350nm, 180nm and 130nm technologies. Therefore, we conclude that Elmos is not highly exposed to supply dependencies and risks, and the bargaining power of suppliers remains relatively low.

Workforce

Elmos, similar to its peers, faces a scarcity of qualified employees, particularly in engineering and technical roles. The company highlights a persistent shortage of skilled workers and engineers, which is a common issue in the semiconductor industry. If these shortages remain unresolved, they could have a serious impact on the long-term innovative power and growth of the company.

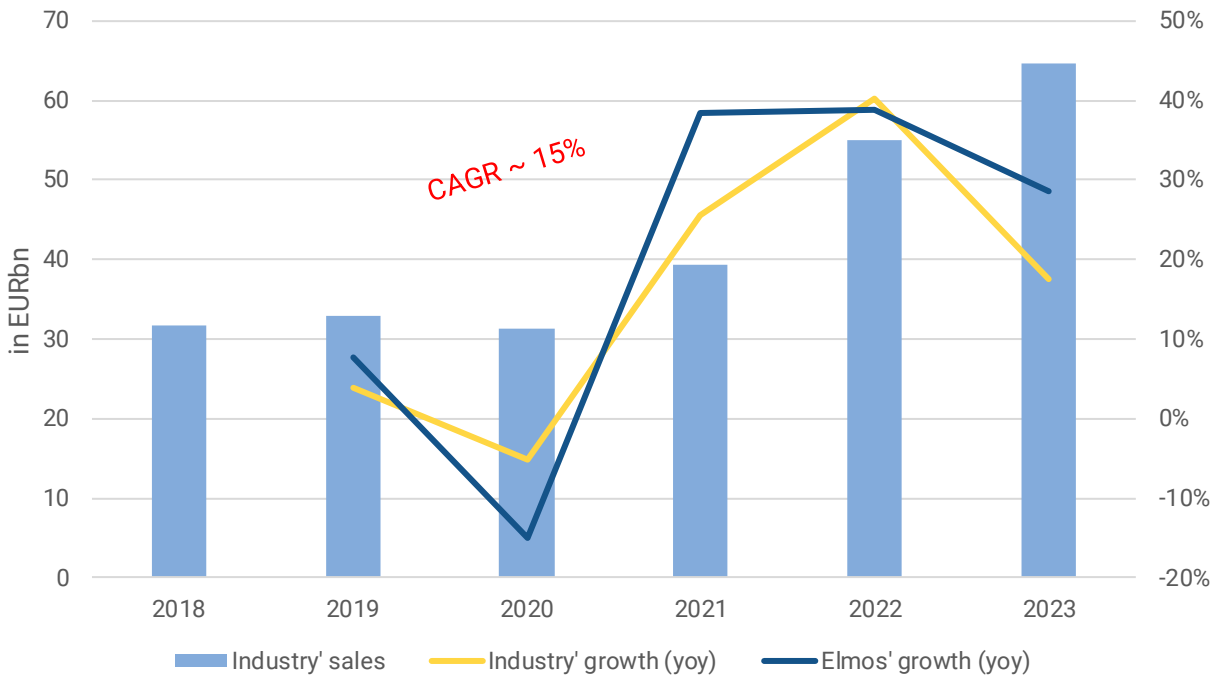
Growth

Current market environment

Over the past few years, the automotive semiconductor industry has navigated a challenging market environment driven by several factors, including Covid19-induced semiconductor shortages, regulatory export controls, and significant global investment plans. Despite these challenges, the industry has shown resilience and reached record highs in 2023, with revenues reaching approximately EUR 64.7bn. This growth will be driven by the increasing adoption of electric vehicles and connectivity features, advances in autonomous driving technologies, modern vehicle architecture, and rising demand for ADAS. In addition, the integration of sophisticated infotainment systems and the push for more energy-efficient automotive solutions have significantly contributed to this surge in demand. Panic buying after the chip shortage also contributed to the significant growth in the last three years, leading to a build-up of inventory and eventually an inventory correction, which has already impacted growth in 2023. We still expect the inventory correction to continue through 2024, but without causing a severe downturn.

Riding the wave of these trends in the automotive industry, Elmos has slightly outperformed the market with a CAGR of about 17% (industry: ~15%) over the last five years. This indicates that Elmos has maintained and slightly increased its market share. This growth was driven by the high quality and innovative products as well as the strong market position in several automotive applications (e.g. ultrasonic ranging, LED lighting, passive safety systems, comfort features and others). In addition, sales growth was driven by both price and volume increases.

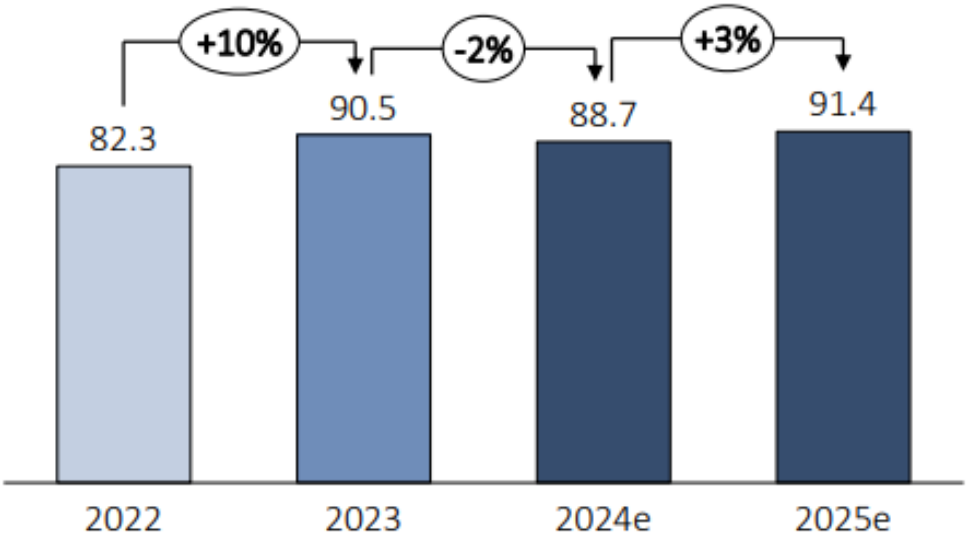
Elmos vs. Industry: historical growth



Source: Company data; mwb research

It is important to note that the automotive semiconductor market can grow even if the growth rate of light vehicle production is flat. This growth is driven by the shift to electric vehicles (EVs) and structural changes in modern cars, which require significantly more chips due to the increasing number of intelligent electronics, digitalization, and enhanced safety and comfort features. For example, while light vehicle production increased by 10% in 2023, the market for automotive semiconductors grew by approximately 17.5%

Light vehicle production in million units



S&P Global Mobility Light Vehicle Production Forecast (July 2024)

Source: Company data; mwb research

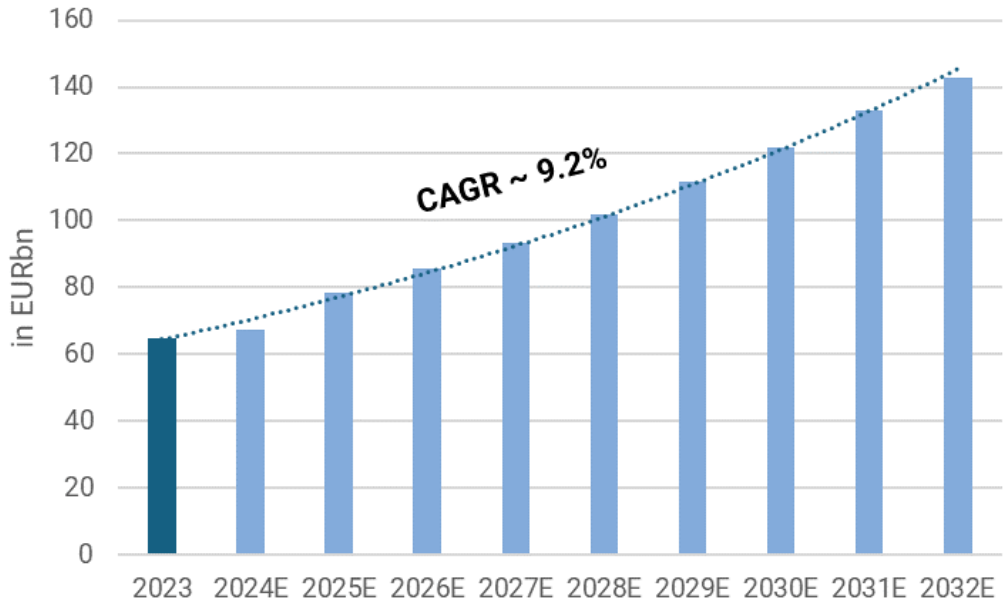
Correction phase in 2024

This year has been marked by ongoing inventory correction and a slower-than-expected adoption of battery electric vehicles (BEVs). BEVs require more chips than traditional internal combustion vehicles (ICVs) due to the increased number of components in their electronic systems. Additionally, we have observed aggressive price cuts in certain semiconductor categories, such as analog chips, as suppliers with excess capacity reduce prices to increase market share and utilize production capacity. Despite this trend, the prices of Elmos products remained stable throughout 2024, highlighting the company's unique and strong market position. However, in the coming years, Elmos management expects price cuts for its products in the low single digits, which are not anticipated to significantly impact margins. Recently, new entrants from mainland China have been entering the market, posing challenges to both domestic and global competitors. Therefore, S&P Global Mobility expects the global automotive semiconductor market to grow by approximately 4% to 5% through 2024, Despite flat to slightly negative growth in light vehicle production.

Looking ahead – 2025 and beyond

The long-term outlook for automotive semiconductors is bright and positive. S&P Global Mobility expects the industry to grow by approximately 16% in 2025, driven by increased demand from OEMs and Tier 1 suppliers following an inventory reset in 2024. Longer term, S&P Global Mobility forecasts a CAGR of approximately 8.4% from 2023 to 2029, while Allied Market Research forecasts a higher CAGR of approximately 10% from 2023 to 2032. On average, the expected CAGR is **9.2%.**

Automotive semiconductor expected sales



Source: Company data; mwb research

Future growth drivers for the automotive semiconductor industry:

1- **Electrification of Vehicles:** The shift towards electric and hybrid vehicles is significantly increasing demand for semiconductors, particularly power semiconductors and battery management systems. For the first time, 51% of new passenger cars sold in the largest EV market (China) in July 2024 were EVs or hybrids.

2- **Increasing Digitalization and Demand for Safety Features:** After investing heavily in the shift to electric vehicles, OEMs are now expected to pour substantial resources into advancing ADAS and safety technologies. These systems heavily rely on semiconductors for critical functions such as sensors, radar, and image processing, which are integral to ensuring vehicle safety and enhancing driver assistance capabilities. As OEMs prioritize these technologies to meet consumer demands for safer, more connected vehicles, the role of semiconductors in the automotive sector will continue to grow, driving further innovation and investment in this area.

3- **Autonomous Driving:** Advancements in autonomous driving technologies require sophisticated sensors, processors, and control units.

4- **Connectivity:** The increasing integration of connectivity features in vehicles, such as infotainment systems and telematics, is boosting the need for microcontrollers and communication chips.

5- **Transition to Software-Defined Vehicles:** OEMs are moving towards software-defined vehicles, prompting the adoption of domain controllers, central computer architectures, and zonal controllers. Thus, modern vehicles are increasingly equipped with advanced hardware, such as sensor suites, computing, and communication components.

6- **E/E architiecture:** The current vehicle architecture, known as the domain based, relies on over 100 decentralized ECUs to manage various functions, leading to increased complexity and weight. To handle the growing demands of autonomous driving and massive data processing, future vehicles will shift to a centralized E/E architecture. This new system will

consolidate control functions into fewer, more powerful processors, reducing cabling and energy consumption while enabling more software-driven functionalities through cloud integration. This trend is also expected to drive demand for Elmos ICs, as more sensors will be required.

7- **SiC-Based Semiconductors:** SiC-based semiconductors are favored for their energy efficiency. Adoption is increasing as SiC technologies evolve and manufacturing processes improve, leading to price reductions and increased wafer sizes from 6" to 8". **(Not relevant for Elmos).**

Elmos growth drivers

The company actively expands its test capacities, innovates, invests in R&D and secures long-term supply agreements to secure its competitive position. Elmos is strategically positioned to leverage the growth in the automotive semiconductor market, driven by key trends like ADAS, autonomous driving, E/E architecture, connectivity features, digitalization and the broader shift towards electromobility. As vehicles increasingly adopt digital and electric systems, Elmos' innovative ICs play a crucial role in supporting these advancements. Importantly, Elmos' product portfolio is versatile and not dependent on any single powertrain technology, meaning it can support both traditional and electric vehicles. This flexibility allows Elmos to thrive **regardless** of how quickly the market shifts toward electric vehicles, as their products are essential across all types of vehicles. The growing demand for safer, more connected, and comfortable vehicles, along with the move towards advanced vehicle architectures, further boosts the need for Elmos products.

Company Guidance 2024:

As of Q2 2024, Elmos confirmed its initial guidance of sales for the year at EUR 605m, with a variance of +/- EUR 25m. This translates to a yoy growth range of approximately +0.9% at the low end, up to +9.6% at the high end, with a midpoint growth estimate of around +5.2%. Additionally, the company projects a midpoint EBIT margin of 25%, with a possible fluctuation of +/- 2 percentage points. Capex less capitalized development expenses is expected to be around 12% of sales +/- 2%. The company is also expecting positive operating adjusted free cashflow compared to the EUR -24.3m last year.

Guidance FY24	Midpoint	Range
Sales	EUR 605m	EUR 580-630m
EBIT margin	25%	23-27%
Capex	12%	10-14%
Operating adjusted FCF	Positive	-

Source: Company data; mwb research

mwb research estimates

In view of the challenging market environment in the automotive industry and the ongoing destocking, we believe that Elmos will achieve its sales guidance, albeit slightly below the midpoint, with an EBIT margin of around 25%. In the long term, we expect sales to grow at a high single-digit CAGR with an EBIT margin of around 25%.

What to watch

China is a crucial market for automotive semiconductors, driven by its large automotive industry and growing demand for electric and smart vehicles. The country is pushing for self-sufficiency in chip production, with OEMs like BYD developing their own semiconductors, thus circumventing traditional suppliers like Infineon. This move aims to reduce dependency on foreign sources, lower costs, and speed up innovation tailored to local needs. Consequently, competition within China is intensifying, posing a significant threat to global semiconductor suppliers as Chinese companies, bolstered by government support, advance rapidly in technology and production capabilities.

For Elmos, the rise of China's self-sufficient semiconductor industry signifies the need to adapt strategically to protect its market position. This might involve increasing innovation in its niche markets, exploring new markets, and expanding its local presence and value chain in China. While the situation presents challenges, it also encourages Elmos to leverage its strengths and explore new opportunities to sustain growth in a rapidly evolving global market.

FCF: In the coming years, Elmos plans to increase its free cash flow by focusing on the following initiatives:

1. Improving working capital management
2. Enhancing the efficiency of its testing activities, such as reducing testing time, which will lead to lower capex and higher free cash flow
3. Reducing and optimizing taxes

Growth table (EURm)	2021	2022	2023	2024E	2025E	2026E
Sales	322.1	447.2	575.0	596.9	650.6	709.1
Sales growth	38.5%	38.9%	28.6%	3.8%	9.0%	9.0%
EBITDA	91.3	153.6	193.0	191.5	212.9	230.5
EBITDA margin	28.4%	34.3%	33.6%	32.1%	32.7%	32.5%
EBIT	60.0	110.1	150.7	148.0	164.6	179.4
EBIT margin	18.6%	24.6%	26.2%	24.8%	25.3%	25.3%
Net profit	39.8	71.4	99.1	97.7	110.4	124.0

Source: Company data; mwb research

The following table displays the quarterly performance of **Elmos Semiconductor SE.**

P&L data	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023	Q4 2023	Q1 2024	Q2 2024
Sales	119.6	125.5	130.9	136.0	151.5	156.6	136.8	142.0
yoy growth in %	48.0%	47.1%	35.9%	28.6%	26.7%	24.7%	4.5%	4.4%
Gross profit	54.0	63.2	59.3	66.6	69.9	75.6	62.6	64.2
Gross margin in %	45.1%	50.4%	45.3%	48.9%	46.1%	48.3%	45.8%	45.2%
EBITDA	42.0	49.4	38.6	45.1	49.3	58.2	41.0	45.8
EBITDA margin in %	35.1%	39.3%	29.5%	33.2%	32.5%	37.2%	30.0%	32.3%
EBIT	32.7	35.0	30.7	34.1	41.6	43.2	33.8	35.9
EBIT margin in %	27.4%	27.9%	23.4%	25.1%	27.5%	27.6%	24.7%	25.3%
EBT	29.8	34.5	30.9	34.1	41.1	42.9	33.4	35.3
taxes paid	9.8	12.4	10.4	11.2	13.2	15.2	8.8	11.0
tax rate in %	33.1%	36.1%	33.7%	32.8%	32.0%	35.6%	26.2%	31.2%
net profit	19.9	22.0	20.5	23.0	28.0	27.7	24.6	24.3
yoy growth in %	124.5%	55.0%	51.8%	43.9%	40.5%	25.9%	19.6%	5.9%
EPS	**1.16**	**1.28**	**1.20**	**1.34**	**1.63**	**1.62**	**1.44**	**1.42**

Source: Company data; mwb research

SWOT analysis

Strengths

- Niche mastery in some of the automotive applications like ultrasonic ranging
- Innovative and comprehensive, high-quality product portfolio
- Flexible and agile thanks to its size and fabless model
- 40 years of expertise in analog mixed-signal ICs

Weaknesses

- Dependence on the automotive industry
- Scarcity of highly skilled employees, particularly engineers
- Weak cash flow

Opportunities

- More investments in the Asian automotive semiconductor market
- Megatrends: ADAS, autonomous, driving, and electromobility
- Continuous investment in R&D and expansion of software capabilities
- Improving cash flow through working capital and tax optimization, and enhancing testing efficiency

Threats

- Geopolitical risk and trade restrictions
- Intense competition from China and big players

Valuation

DCF Model

The DCF model results in a **fair value of EUR 104.97 per share**:

Top-line growth: We expect Elmos Semiconductor SE to grow revenues at a CAGR of 8.0% between 2024E and 2031E. The long-term growth rate is set at 2.0%.

ROCE. Returns on capital are developing from 21.3% in 2024E to 16.2% in 2031E.

WACC. Starting point is a historical equity beta of 1.35. Unleverering and correcting for mean reversion yields an asset beta of 1.19. Combined with a risk-free rate of 2.0% and an equity risk premium of 6.0% this yields cost of equity of 10.1%. With pre-tax cost of borrowing at 5.0%, a tax rate of 33.0% and target debt/equity of 0.2 this results in a long-term WACC of 9.0%.

DCF (EURm) (except per share data and beta)	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	Terminal value
NOPAT	99.3	112.1	125.7	137.1	149.4	159.6	170.5	162.8	
Depreciation & amortization	43.5	48.3	51.1	54.7	58.9	63.7	69.1	75.0	
Change in working capital	-28.2	-7.5	-3.5	-14.2	-15.5	-18.6	-20.4	-9.3	
Chg. in long-term provisions	0.4	0.9	1.0	1.1	1.2	1.3	1.4	0.3	
Capex	-65.7	-74.8	-81.6	-88.9	-96.9	-105.6	-115.1	-81.7	
Cash flow	49.3	79.0	92.8	89.7	97.1	100.4	105.4	147.1	2,147.3
Present value	47.9	70.3	75.7	67.1	66.5	63.0	60.6	77.3	1,141.6
WACC	9.1%	9.1%	9.1%	9.1%	9.1%	9.1%	9.1%	9.2%	9.0%

DCF per share derived from	
Total present value	1,670.0
Mid-year adj. total present value	1,744.4
Net debt / cash at start of year	-22.9
Financial assets	29.8
Provisions and off b/s debt	na
Equity value	1,797.1
No. of shares outstanding	17.1
Discounted cash flow / share	**104.97**
upside/(downside)	**33.0%**
Share price	**78.90**

DCF avg. growth and earnings assumptions	
Planning horizon avg. revenue growth (2024E-2031E)	8.0%
Terminal value growth (2031E - infinity)	2.0%
Terminal year ROCE	16.2%
Terminal year WACC	9.0%

Terminal WACC derived from	
Cost of borrowing (before taxes)	5.0%
Long-term tax rate	33.0%
Equity beta	1.35
Unlevered beta (industry or company)	1.19
Target debt / equity	0.2
Relevered beta	1.35
Risk-free rate	2.0%
Equity risk premium	6.0%
Cost of equity	10.1%

Sensitivity analysis DCF

Change in WACC (%-points)	Long term growth 1.0%	1.5%	2.0%	2.5%	3.0%
2.0%	76.0	78.5	81.2	84.3	87.7
1.0%	84.7	87.9	91.6	95.7	100.4
0.0%	95.6	100.0	105.0	110.7	117.4
-1.0%	109.8	115.9	122.9	131.3	141.3
-2.0%	128.8	137.6	148.2	161.2	177.4

Share of present value	
2024E-2027E	15.6%
2028E-2031E	16.0%
terminal value	68.4%

Source: mwb research

FCF Yield Model

Due to the fact that companies rarely bear sufficient resemblance to peers in terms of geographical exposure, size or competitive strength and in order to adjust for the

pitfalls of weak long-term visibility, an Adjusted Free Cash Flow analysis (Adjusted FCF) has been conducted.

The adjusted Free Cash Flow Yield results in a fair value between EUR 89.39 per share based on 2024E and EUR 151.65 per share on 2028E estimates.

The main driver of this model is the level of return available to a controlling investor, influenced by the cost of that investors' capital (opportunity costs) and the purchase price – in this case the enterprise value of the company. Here, the adjusted FCF yield is used as a proxy for the required return and is defined as EBITDA less minority interest, taxes and investments required to maintain existing assets (maintenance capex).

FCF yield in EURm	2024E	2025E	2026E	2027E	2028E
EBITDA	**191.5**	**212.9**	**230.5**	**250.2**	**272.0**
- Maintenance capex	43.5	48.3	51.1	54.7	58.9
- Minorities	-0.1	-0.1	-0.2	-0.2	-0.2
- tax expenses	48.0	51.9	53.1	57.9	63.2
= Adjusted FCF	**100.1**	**112.8**	**126.5**	**137.8**	**150.1**
Actual Market Cap	**1,396.5**	**1,396.5**	**1,396.5**	**1,396.5**	**1,396.5**
+ Net debt (cash)	-55.9	-115.5	-188.3	-256.3	-329.8
+ Pension provisions	0.0	0.0	0.0	0.0	0.0
+ Off b/s financing	0.0	0.0	0.0	0.0	0.0
- Financial assets	29.8	29.8	29.8	29.8	29.8
- Acc. dividend payments	14.6	32.1	50.3	70.2	91.9
EV Reconciliations	-100.3	-177.5	-268.4	-356.3	-451.5
= Actual EV'	**1,296.3**	**1,219.1**	**1,128.1**	**1,040.2**	**945.0**
Adjusted FCF yield	**7.7%**	**9.3%**	**11.2%**	**13.2%**	**15.9%**
base hurdle rate	7.0%	7.0%	7.0%	7.0%	7.0%
ESG adjustment	0.0%	0.0%	0.0%	0.0%	0.0%
adjusted hurdle rate	7.0%	7.0%	7.0%	7.0%	7.0%
Fair EV	**1,430.0**	**1,612.1**	**1,806.8**	**1,968.5**	**2,144.7**
- EV Reconciliations	-100.3	-177.5	-268.4	-356.3	-451.5
Fair Market Cap	**1,530.3**	**1,789.6**	**2,075.2**	**2,324.8**	**2,596.2**
No. of shares (million)	17.1	17.1	17.1	17.1	17.1
Fair value per share in EUR	**89.39**	**104.53**	**121.22**	**135.79**	**151.65**
Premium (-) / discount (+)	**13.3%**	**32.5%**	**53.6%**	**72.1%**	**92.2%**

Sensitivity analysis fair value						
Adjusted hurdle rate	5.0%	122.8	142.2	163.4	181.8	201.8
	6.0%	103.3	120.2	138.8	155.0	172.5
	7.0%	**89.4**	**104.5**	**121.2**	**135.8**	**151.6**
	8.0%	78.9	92.8	108.0	121.4	136.0
	9.0%	70.8	83.6	97.8	110.2	123.8

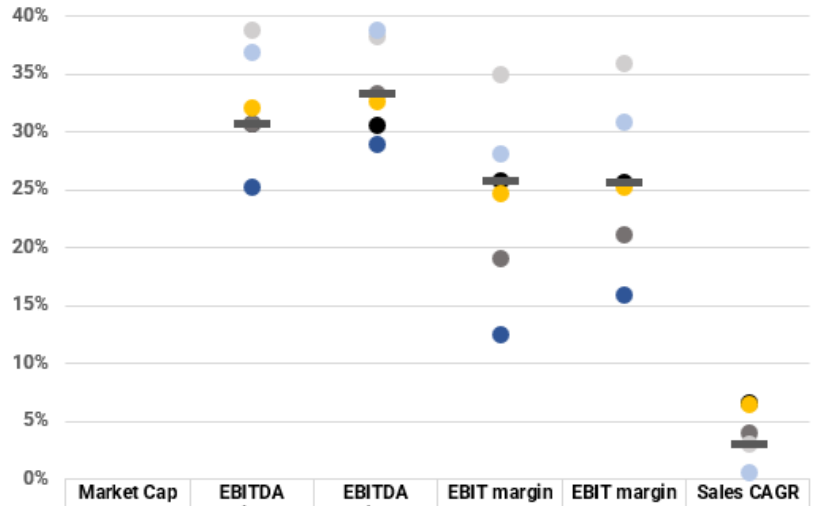
Source: Company data; mwb research

Simply put, the model assumes that investors require companies to generate a minimum return on the investor's purchase price. The required after-tax return equals the model's hurdle rate of 7.0%. Anything less suggests the stock is expensive; anything more suggests the stock is cheap. **ESG adjustments might be applicable. A high score indicates high awareness for environmental, social or governance issues and thus might lower the overall risk an investment in the company might carry. A low score on the contrary might increase the risk of an investment and might therefore trigger a higher required hurdle rate.**

Peer group analysis

A peer group or comparable company ("comps") analysis is a methodology that calculates a company's relative value — how much it should be worth based on how it compares to other similar companies. Given that **Elmos Semiconductor SE** differs quite significantly in terms of size, focus, financial health and growth trajectory, we regard our peer group analysis merely as a support for other valuation methods. The peer group of Elmos Semiconductor SE consists of the stocks displayed in the Table below. As of 29 August 2024 the median market cap of the peer group was EUR 28,722.6m, compared to EUR 1,350.8m for Elmos Semiconductor SE. In the period under review, the peer group was more profitable than Elmos Semiconductor SE. The expectations for sales growth are lower for the peer group than for Elmos Semiconductor SE.

Peer Group – Key data

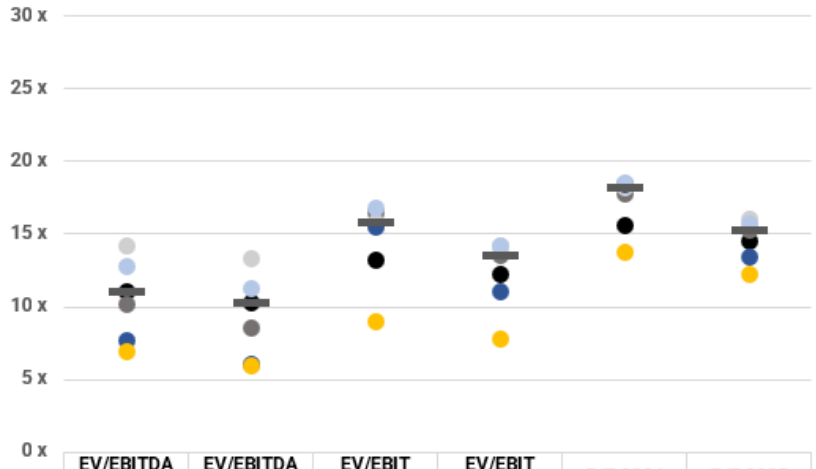


29-Aug-24	Market Cap (EURm)	EBITDA margin 2024	EBITDA margin 2025	EBIT margin 2024	EBIT margin 2025	Sales CAGR 2023-2026
Melexis NV	3.210	30,8%	30,7%	25,9%	25,7%	6,7%
Infineon Technologies AG	42.775	30,7%	33,4%	19,2%	21,2%	4,0%
NXP Semiconductors NV	56.510	38,8%	38,3%	35,0%	36,0%	3,1%
STMicroelectronics NV ADR RegS	25.314	25,2%	28,9%	12,5%	16,0%	-2,4%
ON Semiconductor Corporation	28.723	36,9%	38,9%	28,1%	30,9%	0,6%
Elmos Semiconductor SE	1.397	32,1%	32,7%	24,8%	25,3%	6,6%
Peer Group Median	28.723	30,8%	33,4%	25,9%	25,7%	3,1%

Source: FactSet, mwb research

Comparable company analysis operates under the assumption that similar companies will have similar valuation multiples. We use the following multiples: EV/EBITDA 2024, EV/EBITDA 2025, EV/EBIT 2024, EV/EBIT 2025, P/E 2024 and P/E 2025. Applying these to Elmos Semiconductor SE results in a range of fair values from EUR 99.08 to EUR 139.98.

Peer Group – Multiples and valuation



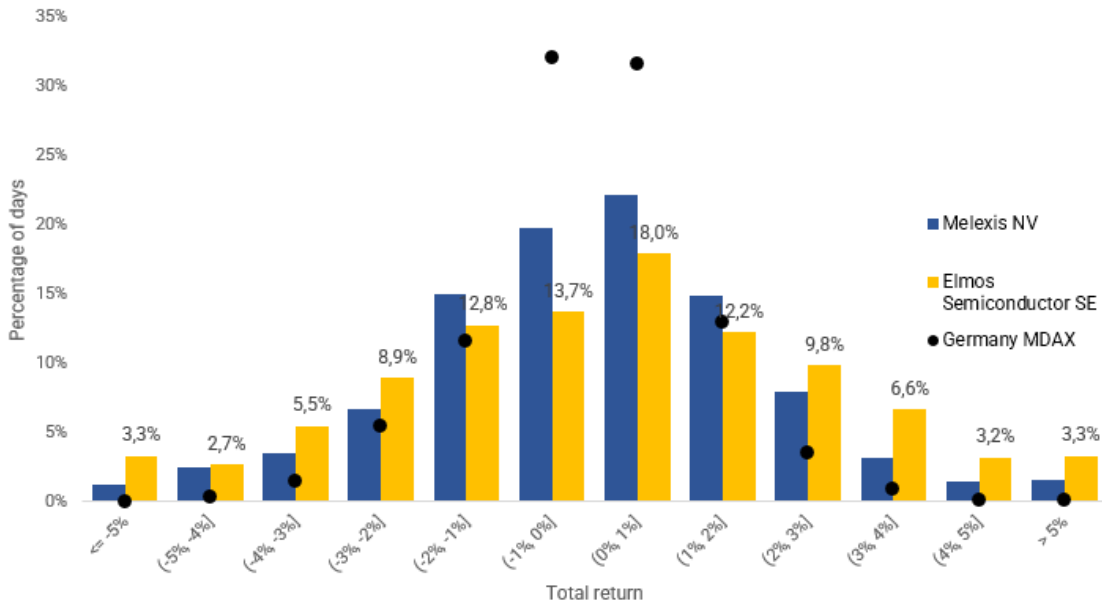
29-Aug-24	EV/EBITDA 2024	EV/EBITDA 2025	EV/EBIT 2024	EV/EBIT 2025	P/E 2024	P/E 2025
Melexis NV	11,1x	10,3x	13,2x	12,3x	15,7x	14,6x
Infineon Technologies AG	10,3x	8,6x	16,5x	13,6x	17,9x	15,4x
NXP Semiconductors NV	14,2x	13,4x	15,8x	14,2x	18,2x	16,1x
STMicroelectronics NV ADR RegS	7,7x	6,1x	15,6x	11,1x	18,5x	13,5x
ON Semiconductor Corporation	12,8x	11,3x	16,8x	14,2x	18,6x	15,8x
Elmos Semiconductor SE	7,0x	6,0x	9,1x	7,8x	13,8x	12,2x
Peer Group Median	11,1x	10,3x	15,8x	13,6x	18,2x	15,4x
Fair Value (EUR)	127,31	131,86	139,98	134,16	103,86	99,08

Source: FactSet, mwb research

Risk

The chart displays the distribution of daily returns of Elmos Semiconductor SE over the last 3 years, compared to the same distribution for Melexis NV. We have also included the distribution for the index Germany MDAX. The distribution gives a better understanding of risk than measures like volatility, which assume that log returns are normally distributed. In reality, they are skewed (down moves are larger) and have fat tails (large moves occur more often than predicted). Also, volatility treats up and down moves the same, while investors are more worried about down moves. For Elmos Semiconductor SE, the worst day during the past 3 years was 12/04/2023 with a share price decline of -8.7%. The best day was 15/12/2021 when the share price increased by 14.9%.

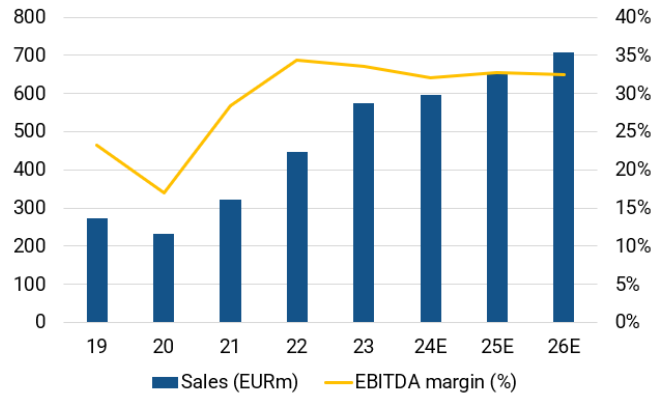
Risk – Daily Returns Distribution (trailing 3 years)



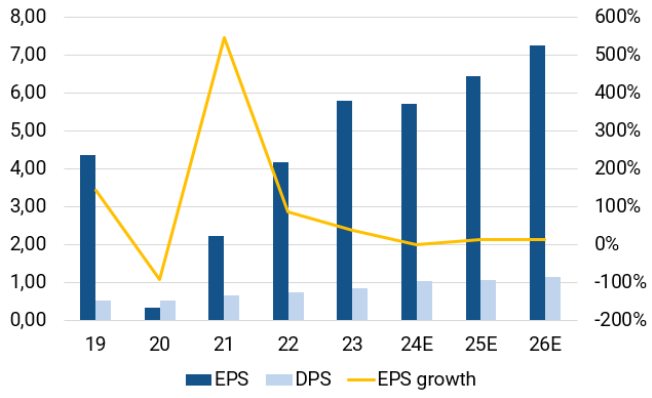
Source: FactSet, mwb research

Financials in six charts

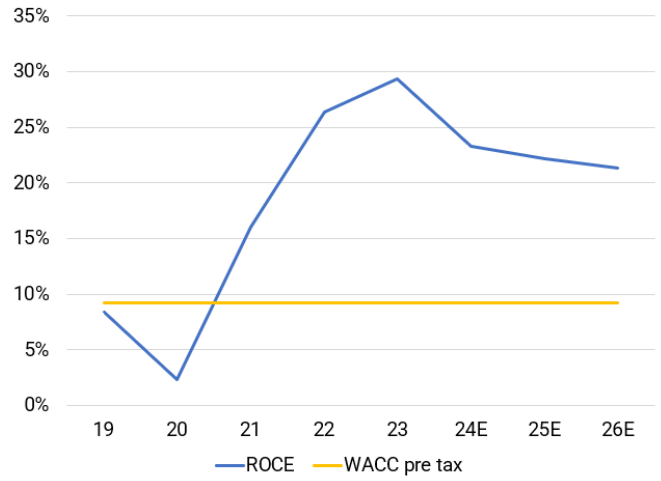
Sales vs. EBITDA margin development



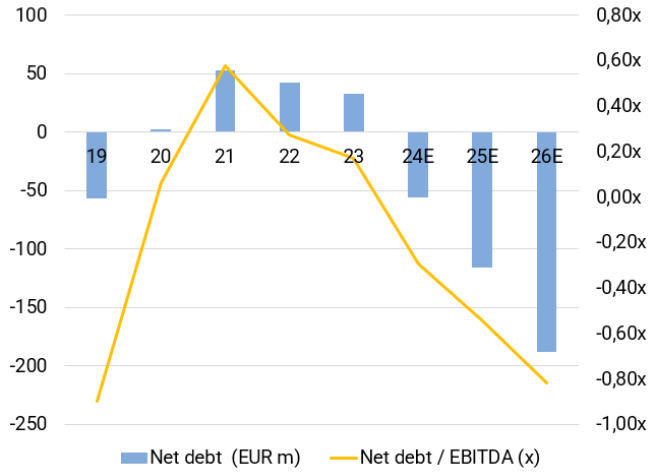
EPS, DPS in EUR & yoy EPS growth



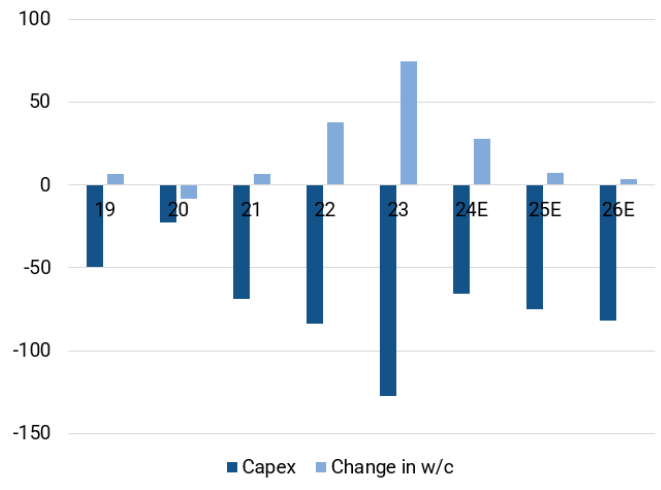
ROCE vs. WACC (pre tax)



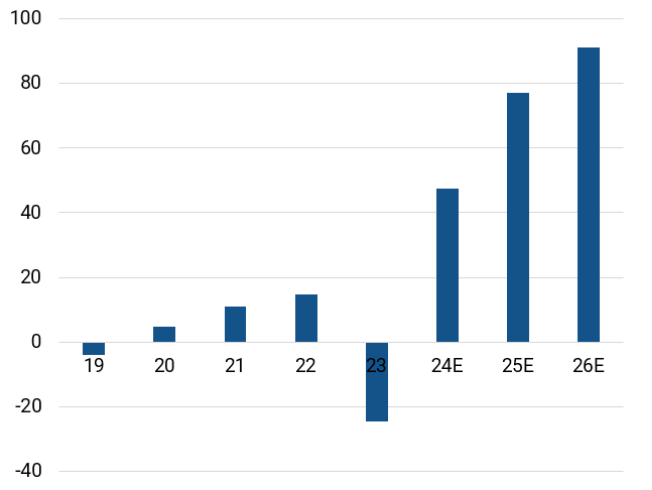
Net debt and net debt/EBITDA



Capex & chgn in w/c requirements in EURm



Free Cash Flow in EURm



Source: Company data; mwb research

Financials

Profit and loss (EURm)	2021	2022	2023	2024E	2025E	2026E
Sales	**322.1**	**447.2**	**575.0**	**596.9**	**650.6**	**709.1**
Sales growth	38.5%	38.9%	28.6%	3.8%	9.0%	9.0%
Cost of sales	177.4	239.7	303.7	322.3	348.1	379.4
Gross profit	**144.7**	**207.5**	**271.3**	**274.6**	**302.5**	**329.7**
SG&A expenses	36.1	42.0	54.5	56.7	61.8	67.4
Research and development	48.7	55.5	68.8	71.6	78.1	85.1
Other operating expenses (income)	-0.1	-0.1	-2.6	-1.8	-2.0	-2.1
EBITDA	**91.3**	**153.6**	**193.0**	**191.5**	**212.9**	**230.5**
Depreciation	25.5	30.4	27.8	29.2	34.8	37.8
EBITA	65.9	123.2	165.2	162.3	178.0	192.7
Amortisation of goodwill and intangible assets	5.9	13.1	14.5	14.3	13.5	13.3
EBIT	**60.0**	**110.1**	**150.7**	**148.0**	**164.6**	**179.4**
Financial result	-0.6	-1.6	-1.7	-2.4	-2.4	-2.4
Recurring pretax income from continuing operations	59.4	108.5	149.0	145.6	162.2	177.0
Extraordinary income/loss	0.0	0.0	0.0	0.0	0.0	0.0
Earnings before taxes	59.4	108.5	149.0	145.6	162.2	177.0
Taxes	19.5	37.3	50.0	48.0	51.9	53.1
Net income from continuing operations	39.9	71.3	99.0	97.5	110.3	123.9
Result from discontinued operations (net of tax)	0.0	0.0	0.0	0.0	0.0	0.0
Net income	**39.9**	**71.3**	**99.0**	**97.5**	**110.3**	**123.9**
Minority interest	-0.1	0.1	0.1	0.1	0.1	0.2
Net profit (reported)	39.8	71.4	99.1	97.7	110.4	124.0
Average number of shares	17.80	17.11	17.12	17.12	17.12	17.12
EPS reported	**2.24**	**4.17**	**5.79**	**5.70**	**6.45**	**7.25**

Profit and loss (common size)	2021	2022	2023	2024E	2025E	2026E
Sales	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Cost of sales	55%	54%	53%	54%	54%	54%
Gross profit	**45%**	**46%**	**47%**	**46%**	**47%**	**47%**
SG&A expenses	11%	9%	9%	10%	10%	10%
Research and development	15%	12%	12%	12%	12%	12%
Other operating expenses (income)	-0%	-0%	-0%	-0%	-0%	-0%
EBITDA	**28%**	**34%**	**34%**	**32%**	**33%**	**33%**
Depreciation	8%	7%	5%	5%	5%	5%
EBITA	20%	28%	29%	27%	27%	27%
Amortisation of goodwill and intangible assets	2%	3%	3%	2%	2%	2%
EBIT	**19%**	**25%**	**26%**	**25%**	**25%**	**25%**
Financial result	-0%	-0%	-0%	-0%	-0%	-0%
Recurring pretax income from continuing operations	18%	24%	26%	24%	25%	25%
Extraordinary income/loss	0%	0%	0%	0%	0%	0%
Earnings before taxes	18%	24%	26%	24%	25%	25%
Taxes	6%	8%	9%	8%	8%	7%
Net income from continuing operations	12%	16%	17%	16%	17%	17%
Result from discontinued operations (net of tax)	0%	0%	0%	0%	0%	0%
Net income	**12%**	**16%**	**17%**	**16%**	**17%**	**17%**
Minority interest	-0%	0%	0%	0%	0%	0%
Net profit (reported)	**12%**	**16%**	**17%**	**16%**	**17%**	**17%**

Source: Company data; mwb research

Balance sheet (EURm)	2021	2022	2023	2024E	2025E	2026E
Intangible assets (exl. Goodwill)	**31.1**	**34.3**	**40.8**	**38.4**	**38.0**	**38.9**
Goodwill	6.6	1.9	0.0	0.0	0.0	0.0
Property, plant and equipment	170.9	219.3	292.1	316.6	343.6	373.2
Financial assets	51.2	42.4	29.8	29.8	29.8	29.8
FIXED ASSETS	**259.8**	**297.9**	**362.7**	**384.9**	**411.4**	**441.9**
Inventories	80.1	116.6	191.5	194.3	198.3	205.8
Accounts receivable	39.7	67.8	91.0	94.8	110.5	120.5
Other current assets	15.0	20.9	80.9	80.9	80.9	80.9
Liquid assets	23.2	38.9	85.6	153.9	213.5	286.3
Deferred taxes	0.1	0.3	0.7	0.7	0.7	0.7
Deferred charges and prepaid expenses	0.0	0.0	0.0	0.0	0.0	0.0
CURRENT ASSETS	**158.2**	**244.5**	**449.7**	**524.6**	**604.0**	**694.1**
TOTAL ASSETS	**418.0**	**542.4**	**812.4**	**909.5**	**1,015.4**	**1,136.0**
SHAREHOLDERS EQUITY	**299.4**	**359.8**	**447.4**	**586.4**	**679.1**	**784.8**
MINORITY INTEREST	0.7	0.6	0.5	0.5	0.5	0.5
Long-term debt	61.5	76.4	99.9	98.0	98.0	98.0
Provisions for pensions and similar obligations	0.0	0.0	0.0	0.0	0.0	0.0
Other provisions	9.4	8.5	9.8	10.2	11.1	12.1
Non-current liabilities	**70.9**	**85.0**	**109.7**	**108.2**	**109.1**	**110.1**
short-term liabilities to banks	14.6	4.5	18.8	0.0	0.0	0.0
Accounts payable	12.1	44.2	97.6	53.0	57.2	62.4
Advance payments received on orders	0.0	0.0	0.0	0.0	0.0	0.0
Other liabilities (incl. from lease and rental contracts)	20.1	26.9	66.5	89.5	97.6	106.4
Deferred taxes	0.2	21.4	71.8	71.8	71.8	71.8
Deferred income	0.0	0.0	0.0	0.0	0.0	0.0
Current liabilities	**47.0**	**97.0**	**254.8**	**214.4**	**226.6**	**240.6**
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**418.0**	**542.4**	**812.4**	**909.5**	**1,015.4**	**1,136.0**

Balance sheet (common size)	2021	2022	2023	2024E	2025E	2026E
Intangible assets (excl. Goodwill)	**7%**	**6%**	**5%**	**4%**	**4%**	**3%**
Goodwill	2%	0%	0%	0%	0%	0%
Property, plant and equipment	41%	40%	36%	35%	34%	33%
Financial assets	12%	8%	4%	3%	3%	3%
FIXED ASSETS	**62%**	**55%**	**45%**	**42%**	**41%**	**39%**
Inventories	19%	22%	24%	21%	20%	18%
Accounts receivable	10%	13%	11%	10%	11%	11%
Other current assets	4%	4%	10%	9%	8%	7%
Liquid assets	6%	7%	11%	17%	21%	25%
Deferred taxes	0%	0%	0%	0%	0%	0%
Deferred charges and prepaid expenses	0%	0%	0%	0%	0%	0%
CURRENT ASSETS	**38%**	**45%**	**55%**	**58%**	**59%**	**61%**
TOTAL ASSETS	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
SHAREHOLDERS EQUITY	**72%**	**66%**	**55%**	**64%**	**67%**	**69%**
MINORITY INTEREST	0%	0%	0%	0%	0%	0%
Long-term debt	15%	14%	12%	11%	10%	9%
Provisions for pensions and similar obligations	0%	0%	0%	0%	0%	0%
Other provisions	2%	2%	1%	1%	1%	1%
Non-current liabilities	**17%**	**16%**	**14%**	**12%**	**11%**	**10%**
short-term liabilities to banks	3%	1%	2%	0%	0%	0%
Accounts payable	3%	8%	12%	6%	6%	5%
Advance payments received on orders	0%	0%	0%	0%	0%	0%
Other liabilities (incl. from lease and rental contracts)	5%	5%	8%	10%	10%	9%
Deferred taxes	0%	4%	9%	8%	7%	6%
Deferred income	0%	0%	0%	0%	0%	0%
Current liabilities	**11%**	**18%**	**31%**	**24%**	**22%**	**21%**
TOTAL LIABILITIES AND SHAREHOLDERS EQUITY	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Company data; mwb research

Cash flow statement (EURm)	2021	2022	2023	2024E	2025E	2026E
Net profit/loss	39.9	71.3	99.0	97.5	110.3	123.9
Depreciation of fixed assets (incl. leases)	25.5	30.4	27.8	29.2	34.8	37.8
Amortisation of goodwill	0.0	0.0	0.0	0.0	0.0	0.0
Amortisation of intangible assets	5.9	13.1	14.5	14.3	13.5	13.3
Others	15.0	21.9	36.0	0.4	0.9	1.0
Cash flow from operations before changes in w/c	86.3	136.7	177.4	141.4	159.5	176.0
Increase/decrease in inventory	4.6	-36.5	-92.0	-2.7	-4.1	-7.5
Increase/decrease in accounts receivable	-2.1	-28.1	-23.3	-3.8	-15.7	-9.9
Increase/decrease in accounts payable	3.0	26.4	45.7	-44.6	4.2	5.1
Increase/decrease in other w/c positions	-12.1	0.1	-5.1	23.0	8.1	8.8
Increase/decrease in working capital	-6.7	-38.0	-74.7	-28.2	-7.5	-3.5
Cash flow from operating activities	**79.6**	**98.6**	**102.7**	**113.2**	**152.0**	**172.5**
CAPEX	-68.7	-83.9	-127.2	-65.7	-74.8	-81.6
Payments for acquisitions	0.0	0.0	0.0	0.0	0.0	0.0
Financial investments	-5.0	11.3	16.2	0.0	0.0	0.0
Income from asset disposals	0.1	0.0	37.2	56.0	0.0	0.0
Cash flow from investing activities	**-73.6**	**-72.6**	**-73.8**	**-9.7**	**-74.8**	**-81.6**
Cash flow before financing	6.0	26.0	29.0	103.6	77.2	91.0
Increase/decrease in debt position	25.0	5.9	37.9	-20.7	0.0	0.0
Purchase of own shares	-40.9	0.0	0.0	0.0	0.0	0.0
Capital measures	0.1	0.0	0.0	0.0	0.0	0.0
Dividends paid	-9.4	-11.1	-12.8	-14.6	-17.6	-18.2
Others	-3.5	-2.3	-2.2	0.0	0.0	0.0
Effects of exchange rate changes on cash	0.2	0.3	-0.3	0.0	0.0	0.0
Cash flow from financing activities	**-28.6**	**-7.1**	**22.6**	**-35.2**	**-17.6**	**-18.2**
Increase/decrease in liquid assets	-22.6	18.9	51.6	68.3	59.6	72.7
Liquid assets at end of period	**17.8**	**36.6**	**85.6**	**154.0**	**213.6**	**286.3**

Source: Company data; mwb research

Regional sales split (EURm)	2021	2022	2023	2024E	2025E	2026E
Domestic	58.2	59.3	93.2	96.7	105.4	114.9
Europe (ex domestic)	74.0	84.0	104.0	107.9	117.6	128.2
The Americas	4.0	31.4	39.7	41.2	44.9	48.9
Asia	155.8	255.5	308.8	320.5	349.4	380.8
Rest of World	30.1	16.8	29.3	30.4	33.2	36.2
Total sales	**322.1**	**447.2**	**575.0**	**596.9**	**650.6**	**709.1**

Regional sales split (common size)	2021	2022	2023	2024E	2025E	2026E
Domestic	18.1%	13.3%	16.2%	16.2%	16.2%	16.2%
Europe (ex domestic)	23.0%	18.8%	18.1%	18.1%	18.1%	18.1%
The Americas	1.2%	7.0%	6.9%	6.9%	6.9%	6.9%
Asia	48.4%	57.1%	53.7%	53.7%	53.7%	53.7%
Rest of World	9.3%	3.8%	5.1%	5.1%	5.1%	5.1%
Total sales	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: Company data; mwb research

Ratios	2021	2022	2023	2024E	2025E	2026E
Per share data						
Earnings per share reported	2.24	4.17	5.79	5.70	6.45	7.25
Cash flow per share	4.47	5.76	6.00	4.07	6.06	7.09
Book value per share	16.82	21.02	26.14	34.25	39.67	45.84
Dividend per share	0.65	0.75	0.85	1.03	1.06	1.16
Valuation						
P/E	35.3x	18.9x	13.6x	13.8x	12.2x	10.9x
P/CF	17.6x	13.7x	13.1x	19.4x	13.0x	11.1x
P/BV	4.7x	3.8x	3.0x	2.3x	2.0x	1.7x
Dividend yield (%)	0.8%	1.0%	1.1%	1.3%	1.3%	1.5%
FCF yield (%)	5.7%	7.3%	7.6%	5.2%	7.7%	9.0%
EV/Sales	4.4x	3.1x	2.4x	2.2x	1.9x	1.6x
EV/EBITDA	15.4x	9.1x	7.2x	6.8x	5.8x	5.0x
EV/EBIT	23.4x	12.6x	9.2x	8.7x	7.5x	6.5x
Income statement (EURm)						
Sales	322.1	447.2	575.0	596.9	650.6	709.1
yoy chg in %	38.5%	38.9%	28.6%	3.8%	9.0%	9.0%
Gross profit	144.7	207.5	271.3	274.6	302.5	329.7
Gross margin in %	44.9%	46.4%	47.2%	46.0%	46.5%	46.5%
EBITDA	91.3	153.6	193.0	191.5	212.9	230.5
EBITDA margin in %	28.4%	34.3%	33.6%	32.1%	32.7%	32.5%
EBIT	60.0	110.1	150.7	148.0	164.6	179.4
EBIT margin in %	18.6%	24.6%	26.2%	24.8%	25.3%	25.3%
Net profit	39.8	71.4	99.1	97.7	110.4	124.0
Cash flow statement (EURm)						
CF from operations	79.6	98.6	102.7	113.2	152.0	172.5
Capex	-68.7	-83.9	-127.2	-65.7	-74.8	-81.6
Maintenance Capex	0.0	0.0	0.0	43.5	48.3	51.1
Free cash flow	10.9	14.8	-24.5	47.6	77.2	91.0
Balance sheet (EURm)						
Intangible assets	37.7	36.3	40.8	38.4	38.0	38.9
Tangible assets	170.9	219.3	292.1	316.6	343.6	373.2
Shareholders' equity	299.4	359.8	447.4	586.4	679.1	784.8
Pension provisions	0.0	0.0	0.0	0.0	0.0	0.0
Liabilities and provisions	85.5	89.5	128.5	108.2	109.1	110.1
Net financial debt	52.9	42.1	33.1	-55.9	-115.5	-188.3
w/c requirements	107.8	140.2	184.9	236.1	251.6	263.9
Ratios						
ROE	13.3%	19.8%	22.1%	16.6%	16.2%	15.8%
ROCE	15.6%	24.5%	26.1%	21.3%	20.9%	20.0%
Net gearing	17.7%	11.7%	7.4%	-9.5%	-17.0%	-24.0%
Net debt / EBITDA	0.6x	0.3x	0.2x	-0.3x	-0.5x	-0.8x

Source: Company data; mwb research

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