Global Rational Capital

Global Rational Capital Fund
Apex Fund Services (Cayman) Ltd.,
3rd Floor, Zephyr House, 122 Mary Street,
George Town, Grand Cayman,
KY1-1001, Cayman Islands
www.globalrationalcapital.com

GRC RESEARCH | 2025-06-14 | ASML HOLDING NV

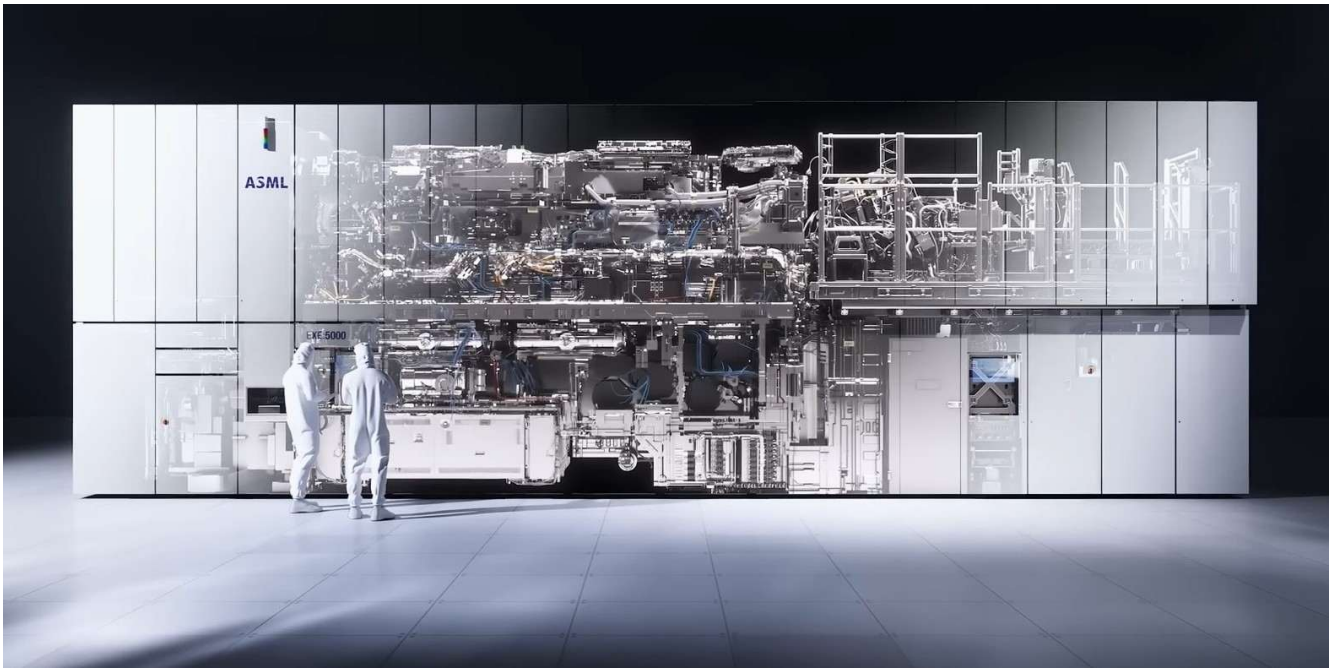
Dear Shareholders,

I present this valuation report to you as an example of how I research companies. ASML Holding NV is a fascinating company and we are proud to own some of its shares. Indeed, it is one of the Fund's largest holdings. This report is long so please take your time reading it. I trust you will enjoy it and feel free to leave feedback.

ASML Holding NV (ASML)

ASML, a Dutch multinational corporation, stands as the undisputed leader in the semiconductor lithography industry, a sector critical to the production of advanced microchips. The company's unique strategic position, particularly its monopoly in Extreme Ultraviolet (EUV) lithography systems, makes it a compelling subject for investment analysis.

This report provides a detailed summary of ASML's business profile, market dynamics, competitive landscape, strategic analysis, financial performance, valuation and overall investment outlook.



Executive Overview

The company benefits from strong secular growth drivers in the semiconductor market, including artificial intelligence (AI), high-performance computing (HPC), and the Internet of Things (IoT).

These factors, combined with high barriers to entry and substantial recurring service revenue, provide resilience amidst industry cycles.

Key opportunities include sustained leadership in next-generation lithography, such as High-NA EUV systems, while risks involve geopolitical tensions, cyclical downturns, and high customer concentration.

Company Profile

Founded in 1984 as a joint venture between Philips and ASM International, ASML has evolved into the world's leading provider of lithography systems. Lithography, a crucial step in chip fabrication, involves projecting light through a mask to etch patterns onto silicon wafers.

ASML's photolithography systems are crucial as they are the sole technology capable of producing the world's most advanced microchips. These machines enable the creation of smaller, faster, and more powerful semiconductors, driving innovation in all modern electronics, from smartphones and computers to advanced medical equipment and AI systems.

ASML's business model includes designing, manufacturing, and servicing these advanced systems. Approximately 20% of its revenue comes from Installed Base Management (IBM), which includes service contracts and system upgrades. The longevity of these systems, with 95% of all lithography machines ever shipped by ASML reportedly still in service, creates a substantial, annuity-like recurring revenue stream.

ASML's product portfolio is centred on enabling chipmakers to produce increasingly precise patterns on silicon, driving the semiconductor industry's progression.

EUV Systems

ASML holds a monopoly in Extreme Ultraviolet lithography, a technology essential for manufacturing advanced semiconductor nodes (7nm, 5nm, 3nm, and beyond). A smaller nanometre (nm) designation generally indicates that more transistors can be packed into the same area, leading to more powerful and efficient chips.

EUV systems use a short wavelength of light (13.5nm) generated through a complex process involving high-energy lasers and molten tin. These systems are complex and costly, with each machine weighing approximately 180 tons and costing upwards of $200 million.

The development of EUV lithography represents a significant technological achievement, creating an almost insurmountable barrier to entry.

High-NA EUV Systems

ASML is advancing lithography with its next-generation High-NA EUV systems. These systems feature an increased numerical aperture, enabling finer resolution and supporting chip manufacturing at the 2nm

node and beyond. These systems are even more complex and expensive, with a price tag of around $370 million per unit, underscoring ASML's strategy to extend its technological dominance.

DUV Systems

While EUV is crucial for advanced chips, ASML also leads in the Deep Ultraviolet lithography market. DUV systems use longer wavelengths and remain essential for various layers in semiconductor manufacturing. ASML's DUV portfolio includes dry and immersion lithography systems, catering to both advanced and mature process nodes.

Inspection Systems

ASML provides metrology and inspection systems to support its lithography strategy, ensuring process control and defect detection. These tools help chipmakers optimize their processes and improve yields.

Global Operations

ASML’s operations are global, with core Research and Development (R&D) and manufacturing in the Netherlands and service locations worldwide. Its complex supply chain involves approximately 5,100 tier-1 suppliers. Key customers, including TSMC, Samsung, and Intel, account for around 85% of ASML’s revenue, reflecting the consolidated nature of leading-edge chip manufacturing.

Industry Dynamics

The demand for ASML's lithography systems is propelled by powerful, long-term secular trends within the semiconductor industry, despite its inherent cyclical nature.

A primary driver is pervasive digitalization, with megatrends like Artificial Intelligence (AI), 5G, the Internet of Things (IoT), and cloud computing fuelling a relentless need for more powerful chips. The current AI boom is a significant catalyst, demanding advanced processors that rely on ASML's cutting-edge technology.

Furthermore, as chip designs grow in complexity with smaller transistors and 3D architectures, the "lithography intensity" increases, meaning more lithography steps are required per wafer. This allows demand for ASML's systems to potentially outpace the broader semiconductor market's growth.

ASML's innovations are crucial for continuing the economic trajectory of Moore's Law, which dictates the doubling of transistor density approximately every two years.

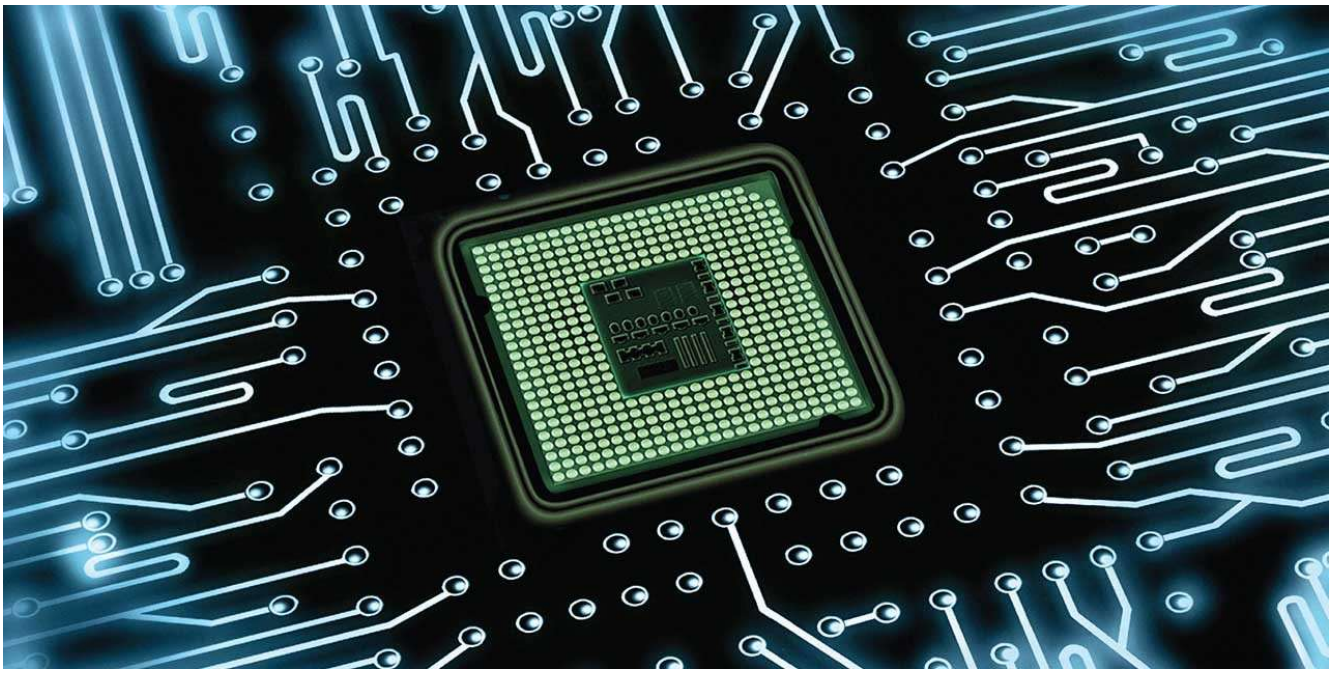
A recent and impactful long-term driver of the industry and global economy is the international push for semiconductor supply chain sovereignty. Government initiatives are stimulating massive investments in new fabrication plants, directly boosting demand for lithography equipment worldwide.

Key initiatives include the US CHIPS and Science Act, the European Chips Act, similar policies in Japan and South Korea, and China’s sweeping "Made in China 2025" plan backed by massive state investment through vehicles like the National Integrated Circuit Industry Investment Fund, or the "Big Fund."

Despite the strong secular tailwinds, the semiconductor industry is historically prone to cyclical fluctuations. These cycles are driven by mismatches between supply and demand, inventory corrections in end markets, and the lumpy nature of capital expenditure by chip manufacturers.

ASML, as a key capital equipment supplier, is directly exposed to this cyclicality, which can affect order intake, revenue recognition, and profitability in the short to medium term. The company's management often refers to "transition years" when the industry works through the bottom of a cycle.

The current AI-driven demand, focused on leading-edge nodes where ASML has a monopoly, may offer some insulation or a stronger underlying growth current through these cycles compared to the broader Wafer Fabrication Equipment (WFE) market.



Market Outlook

The global semiconductor market achieved revenues of approximately $574 billion in 2022, and despite a downturn in 2023, long-term forecasts are robust.

Industry analysts and ASML itself project the market to potentially exceed $1 trillion by 2030, implying a compound annual growth rate (CAGR) in the high single digits (e.g., 9% from 2025-2030 cited by Applied Materials).

ASML's own financial ambitions reflect this positive outlook and the increasing importance of lithography.

ASML projects sales of €30 billion to €35 billion and a gross margin of 51% to 53% for the full year of 2025, as reiterated in the company's first-quarter financial results.

ASML has set an ambitious target for 2030, forecasting annual revenue between €44 billion and €60 billion. This projection, presented during the Investor Day in late 2024, is supported by an expected gross margin of 56% to 60%.

The midpoint of management’s projections indicate a robust gross profit growth of around 17% in 2025, reflecting both strong revenue growth and margin expansion.

The gross profit CAGR is projected to be around 12% through 2030, driven by favourable industry dynamics and ASML’s monopoly in EUV technology, along with stable long-term global economic conditions.

The growth is expected to be driven by the adoption of EUV and High-NA EUV for advanced logic and memory, continued demand for DUV systems for various applications, and the expansion of the installed base business.

The increasing complexity of chips, requiring more lithography steps per wafer, means that the lithography segment's value is anticipated to grow faster than the overall semiconductor market.

Threat of New Entrants: Low

The threat of new entrants is low due to exceptionally high barriers, particularly for EUV systems. Developing this technology requires massive capital investment. The systems are extraordinarily complex, demanding decades of accumulated knowledge in physics and engineering, which is protected by extensive intellectual property and thousands of patents.

ASML has significant economies of scale and a unique, deeply integrated supply chain that would be nearly impossible for a newcomer to replicate. Furthermore, strong, long-term strategic partnerships with the world's leading chipmakers create high switching costs and immense customer loyalty.

While barriers are lower in the DUV market compared to EUV, they remain substantial, and the prospect of a new company successfully entering the EUV lithography space is virtually non-existent in the foreseeable future.

Bargaining Power of Buyers: Low

Despite a concentrated customer base, the bargaining power of ASML's buyers is low. This is because ASML is the sole supplier of essential EUV lithography systems, which are critical for advanced chip manufacturing and have no alternatives.

The deep technological interdependence and extremely high costs and complexities associated with switching to a different supplier further limit customers' ability to negotiate on price. This mutual reliance on innovation and the irreplaceability of ASML's technology solidify their strong position.

Bargaining Power of Suppliers: Moderate

ASML's supplier bargaining power is moderate, shaped by a mix of dependence and strategic control. The company relies on a network of highly specialized suppliers, with some, like Carl Zeiss SMT for EUV optics, holding significant leverage as single-source providers of critical technology. This dependency is a potential vulnerability.

However, ASML mitigates this through several strategies. It fosters deep, long-term strategic partnerships with key suppliers, creating a symbiotic relationship where success is mutually dependent. Reinforcing this collaboration, ASML owns 24.9% of Carl Zeiss SMT, further aligning their interests and reducing Zeiss's independent bargaining power.

For less critical components, ASML utilizes its large purchasing scale and dual-sourcing strategies where possible. This creates a managed dependency, balancing technological necessity with strategic supplier management to maintain its competitive edge in the semiconductor industry.

Threat of Substitutes: Low

The threat of substitutes for optical lithography in high-volume semiconductor manufacturing is low. Alternative technologies like nanoimprint lithography and directed self-assembly currently lack the combined resolution, throughput, cost-effectiveness, and maturity to compete, especially with leading-edge EUV lithography.

The global semiconductor industry has invested billions in an ecosystem built entirely around optical lithography. Transitioning to a new patterning technology would be a monumental and costly multi-decade undertaking requiring massive, coordinated investment across the industry.

Therefore, despite ongoing research into alternatives, optical lithography's position remains secure for the foreseeable future due to its established infrastructure and superior performance.

Intensity of Rivalry: Low (in EUV) to Moderate (in DUV)

ASML faces no direct competitors in EUV Lithography and holds a 100% market share. Its primary "competition" in this segment is against the laws of physics and the engineering challenges of continuously advancing the technology to meet future industry requirements.

In the DUV market, ASML competes with Nikon and Canon. However, ASML has maintained a dominant market share due to its superior technology, broader product portfolio, higher productivity tools, and strong customer relationships.

While rivalry exists, ASML's scale and R&D capabilities provide a significant competitive advantage. The overall intensity of rivalry directly impacting ASML's core strategic positioning and profitability is relatively low, especially in the highest-value EUV segment.

Market Positioning

ASML’s unique position, particularly its EUV monopoly, distinguishes it from other semiconductor capital equipment manufacturers like Applied Materials, Lam Research, and KLA Corporation. ASML holds approximately 90% of the global photolithography market share, with a 100% share in EUV systems.

Strengths

ASML's 100% global market share in EUV lithography systems and approximately 90% share in the overall photolithography equipment market provides unparalleled pricing power and a deeply entrenched market position.

A relentless focus on R&D, with investments reaching €4.3 billion in 2024 (approximately 15.2% of net sales), fuels continuous innovation. The development and rollout of High-NA EUV technology exemplify this strength.

A vast portfolio of over 8,500 active patents as of 2023 creates formidable barriers to entry and protects its technological advancements.

Long-standing, collaborative relationships with the world's leading semiconductor manufacturers (TSMC, Samsung, Intel) ensure alignment with customer roadmaps and foster co-investment in new technologies.

Demonstrated track record of strong revenue growth, consistently high gross margins (often exceeding 50%), and significant net income generation.

The service, maintenance, and upgrade business for ASML's large and growing installed base (approximately 7,000 systems worldwide) provides a stable, recurring, and high-margin revenue stream, accounting for roughly 20% of total sales.

Weaknesses

A substantial portion of revenue is derived from a small number of key customers. In 2023, TSMC, Samsung, and Intel collectively accounted for approximately 84.5% of revenue. This exposes ASML to significant risk if any of these customers alter their capital expenditure plans or face business challenges.

The business requires substantial and ongoing capital expenditures for R&D facilities, manufacturing capacity expansion, and the intricate production processes of its advanced systems. The average production cost of a single EUV system is around €180 million.

ASML relies on a global network of over 5,000 specialized suppliers for critical components. Disruptions within this complex chain, such as component shortages (which lasted 8-12 months in 2023 and led to estimated revenue losses of €450-600 million), can impact production schedules and financial results.

Revenue is overwhelmingly concentrated in the semiconductor lithography equipment market (99.8% of revenue), making the company highly sensitive to the specific dynamics and cyclicality of this segment.

Opportunities

The semiconductor industry is poised for significant growth, driven by several key opportunities. Surging demand for advanced chips, fuelled by AI, 5G, IoT, and high-performance computing, is a primary driver. The AI semiconductor market alone is expected to reach nearly $120 billion by 2025.

A major technological advancement is the rollout of High-NA EUV lithography, enabling the production of chips at 2nm nodes and below, which represents a substantial new market.

Furthermore, global government initiatives are promoting the geographic diversification of chip manufacturing, leading to the construction of new fabrication plants worldwide and creating broad demand for lithography equipment.

Concurrently, the increasing complexity of chip designs, such as 3D stacking, necessitates more lithography steps per wafer, boosting demand for advanced systems.

Finally, there is a growing emphasis on sustainable manufacturing, pushing for more energy-efficient processes and creating opportunities for innovative lithography solutions that reduce the environmental impact of chip production.

Threats

Restrictions on the export of advanced semiconductor technology, particularly to China, pose a significant threat to ASML's market access and revenue potential. US-China technology restrictions have been estimated to have a potential multi-billion euro revenue impact for the broader industry, and directly affect ASML's ability to ship its most advanced EUV systems.

The industry is prone to periodic downturns driven by inventory corrections, shifts in end-market demand, and fluctuations in customer capital expenditure. Such cycles can lead to order volatility and impact ASML's near-term financial performance.

ASML's global supply chain is vulnerable to disruptions from geopolitical events, natural disasters, or supplier issues, which can cause component shortages, higher costs, and production delays.

The semiconductor industry is characterized by rapid technological change. While ASML is currently at the forefront, the long-term emergence of disruptive alternative patterning technologies, though not imminent, remains a theoretical threat requiring continuous and substantial R&D investment to counter.

While ASML enjoys a monopoly in EUV, it faces competition in the DUV segment from companies like Nikon and Canon. Furthermore, other WFE companies (e.g., Applied Materials, Lam Research, Tokyo Electron) are constantly innovating in their respective areas, which could indirectly influence the overall semiconductor manufacturing landscape.

Management

Christophe Fouquet became ASML's CEO in 2024, leveraging over 15 years with the company and expertise from roles at KLA-Tencor and Applied Materials. His leadership ensures continuity and a strong grasp of ASML's technologies. CFO Roger Dassen, with a PhD in Business and Economics and prior experience as CEO of Deloitte Netherlands, complements Fouquet's technical knowledge with financial acumen.

Revenue Growth

Historical figures have been obtained directly from ASML's annual financial statements for the period from 2018 to 2024 (the "Historical Period"). Projected figures have been estimated based on management guidance and trend analysis over the period from 2025 to 2030 (the "Forecast Period").

ASML's revenue grew from €11 billion in 2018 to €28 billion in 2024, with a 17% Compound Annual Growth Rate (CAGR) due to EUV adoption. System sales of 18% CAGR outpaced service sales of 16% over the historical period. Although 2024 revenue remained stable, growth is projected for 2025 and beyond.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave	2025	2026	2027	2028	2029	2030
Sales target high									35,000					60,000
Sales target low									30,000					44,000
Sales target ave					**22,333**	**25,408**	**27,600**		**32,500**					**52,000**
Sales hit / (miss)					-5%	8%	2%	2%	0%					0%
Sales systems	8,259	8,996	10,317	13,653	15,430	21,939	21,769							
Sales services	2,685	2,824	3,662	4,958	5,743	5,620	6,494							
Sales total	**10,944**	**11,820**	**13,979**	**18,611**	**21,173**	**27,559**	**28,263**		**32,500**	**35,703**	**39,222**	**43,088**	**47,335**	**52,000**
Sales systems		9%	15%	32%	13%	42%	-1%	18%						
Sales services		5%	30%	35%	16%	-2%	16%	16%						
Sales growth		**8%**	**18%**	**33%**	**14%**	**30%**	**3%**	**17%**	**15%**	**10%**	**10%**	**10%**	**10%**	**10%**

Management expect revenue of €30-€35 billion in 2025 and €44-€60 billion by 2030. This growth is driven by advancements in EUV, High-NA EUV, and DUV.

Given management's accurate past guidance, revenues are anticipated at the midpoints of projections, indicating a CAGR of 15% in 2025 and then 10% till 2030.

Gross Margin

Gross margin has consistently remained strong, generally above 45% and trending above 50% in recent years, benefiting from the higher-value EUV product mix and profitable service business.

Gross profit grew by a compound annual rate 19% from 2018 to 2024, higher than revenue growth of 17% over the same period, reflecting margin improvements.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave	2025	2026	2027	2028	2029	2030
GP target high									53.0%					60.0%
GP target low									51.0%					56.0%
GP target ave	**47.5%**	**42.0%**	**46.5%**	**50.5%**	**49.0%**	**49.5%**	**51.0%**		**52.0%**					**58.0%**
GP hit / (miss)	-3.3%	6.4%	4.6%	4.4%	3.1%	3.6%	0.5%	2.8%	0.0%					0.0%
GP systems	49.9%	48.0%	49.9%	52.5%	50.9%	53.7%	52.2%							
GP services	33.9%	34.0%	45.1%	53.2%	49.7%	41.8%	48.2%							
GP margin	**46.0%**	**44.7%**	**48.6%**	**52.7%**	**50.5%**	**51.3%**	**51.3%**		**52.0%**	**53.1%**	**54.3%**	**55.5%**	**56.7%**	**58.0%**
GP systems	4,118	4,320	5,147	7,170	7,848	11,788	11,362							
GP services	911	960	1,650	2,639	2,852	2,349	3,130							
GP total	**5,029**	**5,280**	**6,797**	**9,809**	**10,700**	**14,136**	**14,492**		**16,900**	**18,976**	**21,306**	**23,923**	**26,861**	**30,160**
GP growth		**5%**	**29%**	**44%**	**9%**	**32%**	**3%**	**19%**	**17%**	**12%**	**12%**	**12%**	**12%**	**12%**

ASML have set clear long-term gross margin targets of 51%-53% for 2025 and 56%-60% in 2030, signalling strong confidence in future growth.

Given management's accurate past guidance, gross margins are anticipated at the midpoints of projections, gradually rising from 52% in 2025 to 58% by 2030.

Gross profit is projected to grow by 17% in 2025 and then by 12% compounded annually till 2030, higher than revenue growth targets over the same period, due to the anticipated gross margin improvements.

Operating Margin

Research & Development (R&D) spending grew by 18% CAGR from 2018 to 2024, outpacing revenue CAGR of 17%, reflecting investment in EUV. R&D was 15.2% of sales in 2024 and averaged 15.0% of sales over the historical period. R&D is modelled at 15.0% of net sales in 2025, then gradually declining to 14.0% by 2030 as major High-NA development costs mature.

Selling, General, and Administrative expenses (SG&A) grew by 16% CAGR from 2017 to 2024, slightly slower than revenue CAGR of 17%. As a percentage of sales, SG&A remained relatively low and stable at around 4.2% indicating good cost control as revenues have scaled during the historical period. SG&A is projected to grow at the same rate as revenue, remaining stable at 4.0% of revenue throughout the forecast period.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave	2025	2026	2027	2028	2029	2030
R&D costs	-1,576	-1,969	-2,201	-2,547	-3,254	-3,981	-4,304		-4,875	-5,284	-5,726	-6,205	-6,722	-7,280
SG&A costs	-488	-521	-545	-726	-946	-1,113	-1,166		-1,300	-1,428	-1,569	-1,724	-1,893	-2,080
Operating income	**2,965**	**2,791**	**4,052**	**6,536**	**6,501**	**9,042**	**9,023**		**10,725**	**12,263**	**14,011**	**15,995**	**18,246**	**20,800**
R&D growth		25%	12%	16%	28%	22%	8%	18%	13%	8%	8%	8%	8%	8%
SG&A growth		7%	5%	33%	30%	18%	5%	16%	12%	10%	10%	10%	10%	10%
Operating growth		**-6%**	**45%**	**61%**	**-1%**	**39%**	**0%**	**20%**	**19%**	**14%**	**14%**	**14%**	**14%**	**14%**
R&D margin	-14.4%	-16.7%	-15.7%	-13.7%	-15.4%	-14.4%	-15.2%	-15.0%	-15.0%	-14.8%	-14.6%	-14.4%	-14.2%	-14.0%
SG&A margin	-4.5%	-4.4%	-3.9%	-3.9%	-4.5%	-4.0%	-4.1%	-4.2%	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%	-4.0%
Operating margin	**27.1%**	**23.6%**	**29.0%**	**35.1%**	**30.7%**	**32.8%**	**31.9%**	**30.9%**	**33.0%**	**34.3%**	**35.7%**	**37.1%**	**38.5%**	**40.0%**

Operating income excludes other income which is non-core and non-recuring such as profits from the sale of property, plant and equipment. Operating margin increased from 27.1% in 2018 to 31.9% in 2024, averaging 30.9% during the period, and is anticipated to reach 40.0% by 2030 based on projections noted above.

Net income

Net interest is low because ASML maintains a net cash balance, and is projected to remain near zero over the forecast period. The tax rate rose from 12.0% in 2018 to 18.6% in 2024. The tax rate is assumed at 17.0% throughout the forecast period, based on management guidance.

ASML recognizes income from its equity method investments, most notably its strategic 24.9% stake in Carl Zeiss SMT, the supplier of its critical optical components. This income has remained stable at around 0.6% of sales and is projected to remain at this level over the forecast period.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave	2025	2026	2027	2028	2029	2030
Net interest	-28	-25	-35	-45	-45	41	20		-	-	-	-	-	-
Inc bef tax	**2,937**	**2,766**	**4,017**	**6,492**	**6,456**	**9,084**	**9,042**		**10,725**	**12,263**	**14,011**	**15,995**	**18,246**	**20,800**
Income tax	-352	-192	-552	-1,021	-970	-1,436	-1,681		-1,823	-2,085	-2,382	-2,719	-3,102	-3,536
Tax rate	-12.0%	-6.9%	-13.7%	-15.7%	-15.0%	-15.8%	-18.6%		-17.0%	-17.0%	-17.0%	-17.0%	-17.0%	-17.0%
Profit investment	6	18	89	199	138	191	210		195	214	235	259	284	312
Margin	0.1%	0.2%	0.6%	1.1%	0.7%	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%	0.6%
Net income	**2,592**	**2,592**	**3,554**	**5,670**	**5,624**	**7,839**	**7,572**		**9,097**	**10,393**	**11,864**	**13,534**	**15,428**	**17,576**
Margin	23.7%	21.9%	25.4%	30.5%	26.6%	28.4%	26.8%	26.8%	28.0%	29.1%	30.2%	31.4%	32.6%	33.8%

Net income margin grew from 23.7% in 2018 to 26.8% in 2024 reflecting ASML's improvements in operating leverage. Net margin is projected to increase to 28.0% in 2025 and reach 33.8% by 2030, calculated using the midpoints of management's guidance and prudent trend analysis.

Diluted EPS

Net income grew by 19.6% CAGR from 2018 to 2024 reflecting growth in the industry and ASML's profitability. Based on trend analysis and management guidance, net income is projected to increase by 20.1% in 2025 and then by around 14% CAGR till 2030.

The diluted weighted average number of shares ("Diluted shares") outstanding declined by 1.3% CAGR from 2018 to 2024, reflecting ASML's share buyback policy and opportunistic repurchases at the bottom of each business cycle, magnifying the accretive effect on diluted earnings per share ("Diluted EPS").

Management has signalled a continuation of their share buyback policy, therefore diluted shares are projected to continue to decline by 1.3% CAGR over the forecast period. Diluted EPS, grew by 21.2% CAGR from 2018 to 2024, and is projected to grow by about 21.7% in 2025 and around 16% CAGR till 2030, faster than net income growth, reflecting the accretive effect of ASML's share buyback policy.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave	2025	2026	2027	2028	2029	2030
Net income	**2,592**	**2,592**	**3,554**	**5,670**	**5,624**	**7,839**	**7,572**		**9,097**	**10,393**	**11,864**	**13,534**	**15,428**	**17,576**
Diluted shares	426.4	421.6	419.1	410.4	398.0	394.1	393.6		388.5	383.4	378.4	373.5	368.7	363.9
Diluted EPS	**6.08**	**6.15**	**8.48**	**13.81**	**14.13**	**19.89**	**19.24**		**23.42**	**27.10**	**31.35**	**36.23**	**41.85**	**48.30**
Income growth		**0.0%**	**37.1%**	**59.5%**	**-0.8%**	**39.4%**	**-3.4%**	**19.6%**	**20.1%**	**14.2%**	**14.2%**	**14.1%**	**14.0%**	**13.9%**
Shares growth		-1.1%	-0.6%	-2.1%	-3.0%	-1.0%	-0.1%	-1.3%	-1.3%	-1.3%	-1.3%	-1.3%	-1.3%	-1.3%
EPS growth		**1.2%**	**37.9%**	**62.9%**	**2.3%**	**40.8%**	**-3.3%**	**21.2%**	**21.7%**	**15.7%**	**15.7%**	**15.6%**	**15.5%**	**15.4%**

Free cash flow

Free Cash Flow ("FCF") is the cash a company generates after paying for operations and investments in its assets ("Sources of FCF") and it can be used to pay dividends, to repurchase shares, to pay debt, or to be retained as cash ("Uses of FCF").

FCF from sources has been calculated as net income plus depreciation (adding back non-cash charges), less capital expenditure (capex), minus changes in net working capital.

Depreciation has averaged approximately 3.2% of sales from 2018 to 2024 and is expected to continue growing in line with the asset base, maintaining an average of 3.2% of net sales.

Capex as a percentage of sales grew from 5.6% in 2017 to 7.4% in 2024, consistent with EUV investment, averaging around 6.8% of sales during the period. Capex is projected at 7.0% of sales from 2025 to support capacity expansion for High-NA and general growth, then moderating to 6.0% of sales by 2030.

Working capital, the difference between current assets and current liabilities, is an important indicator of a company's short-term liquidity. While working capital changes usually result in cash outflows, ASML frequently generates cash inflows from working capital changes through increasing contract liabilities from advance payments received from customers.

Due to the critical and limited supply of ASML's lithography machines, customers often make substantial upfront payments to secure their orders. This provides ASML with a significant, interest-free source of financing and functions as a source of operational funding.

Contract liabilities are current liabilities and are treated as part of working capital, not debt. These liabilities are essentially deferred revenue, representing advance payments from customers for products and services yet to be delivered.

In a discounted cash flow valuation model, changes in these liabilities are correctly captured in the adjustments for changes in net working capital, ensuring an accurate reflection of the company's FCF.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave	2025	2026	2027	2028	2029	2030
Net income	**2,592**	**2,592**	**3,554**	**5,670**	**5,624**	**7,839**	**7,572**		**9,097**	**10,393**	**11,864**	**13,534**	**15,428**	**17,576**
Depreciation	**442**	**456**	**496**	**455**	**623**	**777**	**954**		**1,040**	**1,143**	**1,255**	**1,379**	**1,515**	**1,664**
Margin	4.0%	3.9%	3.6%	2.4%	2.9%	2.8%	3.4%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%	3.2%
Capex	**-610**	**-886**	**-1,001**	**-940**	**-1,319**	**-2,196**	**-2,083**		**-2,275**	**-2,428**	**-2,589**	**-2,758**	**-2,935**	**-3,120**
Margin	-5.6%	-7.5%	-7.2%	-5.1%	-6.2%	-8.0%	-7.4%	-6.8%	-7.0%	-6.8%	-6.6%	-6.4%	-6.2%	-6.0%
WC changes	**-48**	**112**	**532**	**4,892**	**2,441**	**-3,664**	**2,053**		**650**	**714**	**784**	**862**	**947**	**1,040**
Margin	-0.4%	0.9%	3.8%	26.3%	11.5%	-13.3%	7.3%	4.8%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
FCF (Sources)	**2,376**	**2,274**	**3,581**	**10,077**	**7,369**	**2,757**	**8,496**		**8,512**	**9,822**	**11,315**	**13,017**	**14,955**	**17,160**
FCF / Income	**92%**	**88%**	**101%**	**178%**	**131%**	**35%**	**112%**	**104%**	**94%**	**95%**	**95%**	**96%**	**97%**	**98%**
FCF growth		**-4%**	**57%**	**181%**	**-27%**	**-63%**	**208%**		**0%**	**15%**	**15%**	**15%**	**15%**	**15%**

Changes in net working capital as a percentage of sales have varied significantly, ranging from +26.3% in 2021 to -13.3% in 2023, with an average of +4.8% over the period from 2017 to 2024. Net working capital changes are anticipated to continue generating net cash inflows as sales and contract liabilities grow, and are projected to average around +2.0% of sales over the forecast period.

Due to the fluctuating nature of changes in working capital, FCF as a percentage of net income has also varied significantly, ranging from 178% in 2021 to 35% in 2023, with an average of 104% from 2018 to 2024, reflecting excellent cash conversion. FCF as a percentage of net income is projected to range between 94% to 98% over the forecast period which is prudent relative to the historical average.

Capital Allocation

ASML returns significant cash to shareholders through growing dividends and share repurchase programs, while also investing heavily in R&D and capital expenditures.

The purpose of the cash flow analysis below is to reconcile the Sources of FCF (earnings + depreciation – capex - working capital changes) with the Uses of FCF (dividends paid + net share buybacks + net cash changes) to confirm the reasonableness of the FCF calculations.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave
Net income	2,592	2,592	3,554	5,670	5,624	7,839	7,572	
Depreciation	442	456	496	455	623	777	954	
Capex	-610	-886	-1,001	-940	-1,319	-2,196	-2,083	
WC changes	-48	112	532	4,892	2,441	-3,664	2,053	
FCF (Sources)	**2,376**	**2,274**	**3,581**	**10,077**	**7,369**	**2,757**	**8,496**	
FCF / Income	**92%**	**88%**	**101%**	**178%**	**131%**	**35%**	**112%**	**104%**
Net share buybacks	1,078	308	1,116	8,394	4,489	766	203	
Dividends paid	597	1,326	1,066	1,368	2,560	2,348	2,453	
Net cash change	745	602	1,064	333	109	-737	5,675	
FCF (Uses)	**2,420**	**2,236**	**3,246**	**10,095**	**7,158**	**2,377**	**8,332**	
FCF / Income	**93%**	**86%**	**91%**	**178%**	**127%**	**30%**	**110%**	**101%**

The Uses of FCF as a percentage of net income has varied significantly, ranging from 178% in 2021 to 30% in 2023, with an average of 101% from 2018 to 2024. As expected, the sum of the Uses of FCF produces very similar results to the sum of the Sources of FCF, confirming the validity of the FCF calculations.

DCF Introduction

The Discounted Free Cash Flow (DCF) method values a company based on the present value of its projected future cash flows, using a discount rate to account for risk and the time value of money.

The DCF method's strength lies in its independence from market volatility, making it most suitable for stable, predictable businesses such as ASML. However, its weakness is its high sensitivity to assumptions. Small changes in forecasted FCF growth or the discount rate can dramatically alter the valuation.

Despite this, the method is highly valued for the rigorous analysis it demands. It forces investors to scrutinize a company's fundamental drivers (growth, profitability, and risk) making it a useful tool for determining intrinsic worth.

The following sections expand on the FCF analysis to estimate ASML's intrinsic value per share using the DCF method.

WACC

To value ASML, it is necessary to ascertain the minimum return expected by its investors, referred to as the Weighted Average Cost of Capital (WACC). Due to ASML holding more cash than debt, this rate equates to the return required by shareholders, or the Cost of Equity.

This is calculated using three factors:

1. Baseline Safe Return (Risk-Free Rate): The 2.75% interest rate on 10-year Dutch government bonds is utilized.
2. Extra Return for Market Risk (Equity Risk Premium): A 5.0% premium is added, representing the typical additional return expected by investors for choosing stocks over safe bonds.
3. ASML's Specific Volatility (Beta): The Equity Risk Premium is adjusted by a factor of 1.25, reflecting ASML's stock being slightly more volatile than the overall market due to the cyclical nature of the industry partly moderated by ASML's financial stability.

These inputs collectively provide a total required return, or Cost of Equity, of 9.0%, which aligns closely with historical average stock market returns.

ASML Discount Rate			
Risk-Free Rate	Rf	2.75%	European 10-year government bond yields
Equity Risk Premium	ERP	5.00%	Implied ERP adding slight global premium
Beta	β	1.25	Market sensitivity, dominant position & cyclicality
Cost of Equity	Ke	9.00%	Ke = Rf + β × ERP
Weighted Ave Cost of Capital	**WACC**	**9.00%**	**Assumes weight of debt = 0% net cash position**

Growth

ASML's free cash flows have been projected in two distinct growth phases:

1. 15% CAGR from 2026 to 2030 based on management guidance and trend analysis.
2. Growth is projected to gradually slow, reaching a long-term sustainable rate of 3.5% by 2035.

The long-term growth forecast is calculated by starting with the baseline 2.75% growth projected for the global economy and adding three premiums:

1. +0.25% for the semiconductor industry's tendency to exceed global economic growth;
2. +0.25% due to the AI revolution representing significant long-term demand; and
3. +0.25% due to ASML's monopoly in advanced lithography.

The result, 3.5%, reflects the anticipated long-term (terminal) growth driven by ASML's technology, market position, and barriers to entry.

ASML Growth Rate	
Baseline global GDP	2.75%
Semiconductor industry	0.25%
AI revolution demand	0.25%
Lithography monopoly	0.25%
Terminal growth rate (g)	**3.5%**

DCF Calculation

ASML's free cash flows are expected to grow by around 15% CAGR from 2026 to 2030, then moderate to a 3.5% terminal growth rate by 2035. A terminal value for 2035 is calculated using the perpetuity growth method to represent future cash flows beyond the forecast period.

The forecasted cash flows and terminal value are discounted back to their present value with a 9% WACC. This sum gives the Enterprise Value (EV). Adding ASML's net cash to the EV provides the Equity Value. The

2025 yearend intrinsic value per share is obtained by dividing the Equity Value by the projected diluted shares outstanding at 2025 yearend. These calculations yield an intrinsic value per share of €776.

ASML EUR Mil	%	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Free Cash Flow (FCF)			**9,822**	**11,315**	**13,017**	**14,955**	**17,160**	**19,058**	**20,639**	**21,923**	**22,946**	**23,749**
Growth rate (g)			15.4%	15.2%	15.0%	14.9%	14.7%	11.1%	8.3%	6.2%	4.7%	3.5%
Discount factor			1.090	1.188	1.295	1.412	1.539	1.677	1.828	1.993	2.172	2.367
Discount years			1	2	3	4	5	6	7	8	9	10
WACC			9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%	9.00%
Present Value of Explicit FCF	**35%**	**104,586**	**9,011**	**9,524**	**10,052**	**10,594**	**11,153**	**11,364**	**11,290**	**11,002**	**10,565**	**10,032**
Terminal Value (TV)			**FCF for 2035 x (1 + g) / (WACC - g)**									**446,907**
Discount factor												2.367
PV of Terminal Value	**63%**	**188,779**										**188,779**
Enterprise Value (EV)	**97%**	**293,364**	**PV of Explicit FCFF + PV of TV**									
Net Cash		8,054										
Equity Value	**100%**	**301,418**	**EV + Net Cash**									
Diluted Shares Outstanding		388	Projected for valuation date, i.e., end of 2025									
Intrinsic Value per Share		**776**	**Equity Value / Shares Outstanding**									

Price-to-Earnings

The Price-to-Earnings (P/E) ratio values a company by its earnings, while the Price-to-Earnings-to-Growth (PEG) ratio incorporates earnings growth for a more complete picture. Comparing these ratios against the company's own history and its peers helps determine if its valuation is cheap or expensive relative to its past performance and the industry, providing crucial context beyond the numbers alone.

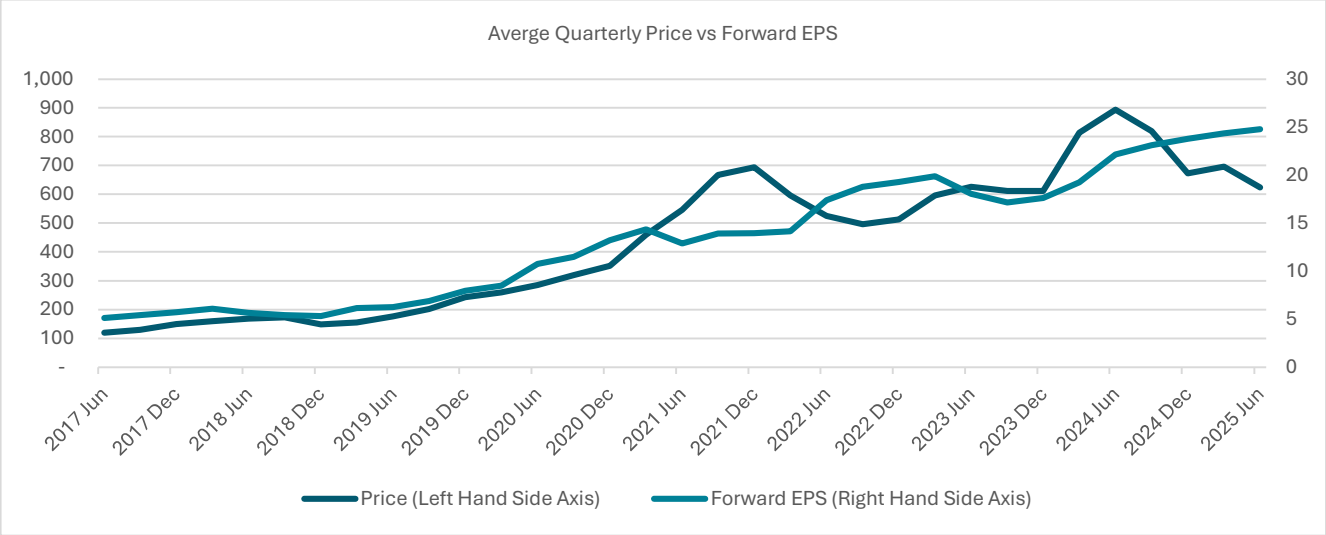
The average share price for each year has been divided by the diluted earnings per share for the year to arrive at the average price to earnings (PE) multiple over each year of the historical period.

ASML EUR Mil	2018	2019	2020	2021	2022	2023	2024	Ave	2025
Average price	163	195	304	593	532	611	800		664
Diluted EPS	6.08	6.15	8.48	13.81	14.13	19.89	19.24		23.76
Price / Earnings	**26.8**	**31.7**	**35.9**	**43.0**	**37.6**	**30.7**	**41.6**	**35.3**	**27.9**

The average PE ratio ranged from a low of 26.8 in 2018 to a high of 43.0 in 2021. Over the historical period, the ratio averaged 35.3, while year to date it is around 27.9, based on 2025 projected earnings.

Forward Earnings

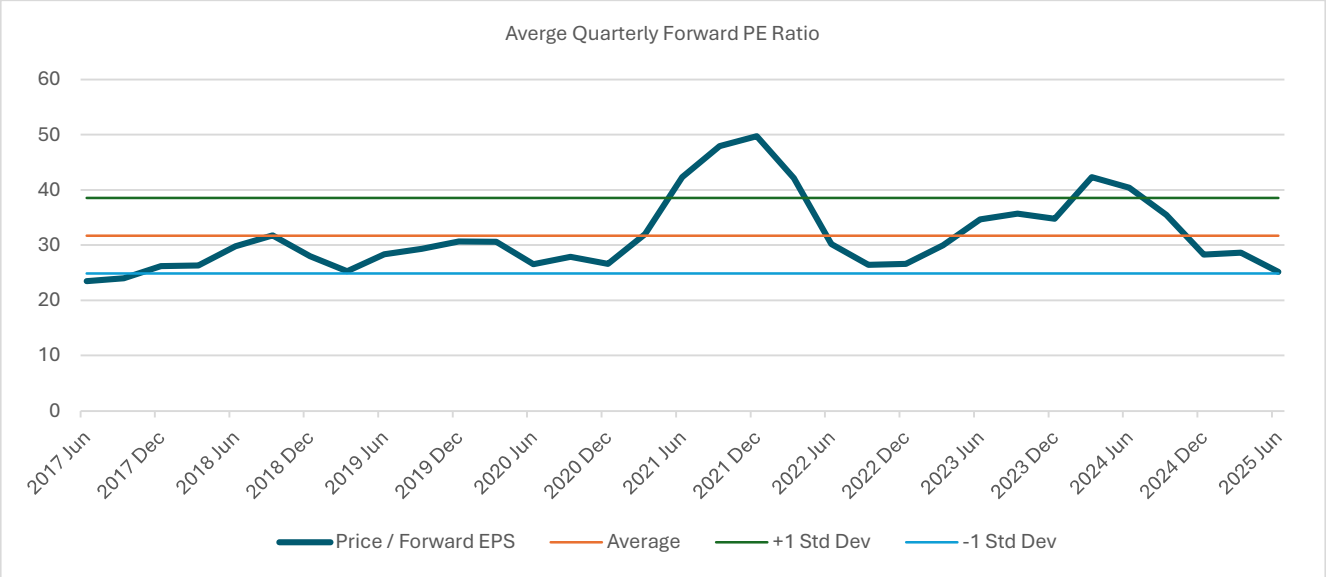
To study more data points, the average share price for each quarter has been compared with diluted earnings per share for the forthcoming 12 months to arrive at the average forward PE multiple for each quarter from June 2017 to June 2025 (the "Eight Year Period").



The Average Quarterly Price vs Forward EPS chart shows how the share price is correlated with earnings. Over the eight year period, the share price increased with a CAGR of 23% while EPS grew with a CAGR of 22%, exemplifying the correlation between price and earnings.

Forward PE

The Average Quarterly Forward PE Ratio chart corroborates the correlation between price and earnings.



The Average Quarterly Forward PE Ratio has been stable at around 32 for most of the period barring late 2021 when it reached a high of 50, well over one standard deviation from the mean, while currently it is close to one standard deviation below the mean, suggesting a good buying opportunity.

Normalised PEG

Over the eight year period, the average forward PE ratio was 32, while EPS grew with a CAGR of 22%, implying an average historical forward PEG ratio of 1.5. Since ASML's future looks just as bright as its past, the historical PEG ratio may be a useful base for estimating a normalised PE ratio in the valuation.

Normalised PEG	Historical
PE Average	32
EPS Growth	22%
PEG Historical	**1.5**

Peer Multiples

Peers like Applied Materials (AMAT), Lam Research (LRCX), KLA Corporation (KLAC), and Tokyo Electron (TEL) operate in the broader semiconductor equipment industry.

Semiconductor Peers	PE Range
Applied Materials (AMAT)	10x-25x
Lam Research (LRCX)	10x-25x
KLA Corporation (KLAC)	15x-30x
Tokyo Electron (TEL)	20x-35x
Peer Group Average	**15x-30x**

The peer group average P/E (excluding extreme outliers) tends to be in the 15x-30x range. ASML consistently trades at a premium to its WFE peers due to its monopolistic position in EUV, higher growth profile, and strong profitability.

Normalised PE

ASML has a superior market position and growth outlook to its peers. However, there is increasing geopolitical risks and potential for moderation in growth rates as the company scales. Therefore, ASML's normalised PE should probably be below its historical average PE of 32.

ASML's average EPS growth rate is projected to be around 16% from 2016 till 2030, while its normalised PEG ratio is around 1.5, implying a PEG based PE ratio of 24. ASML's Normalised PE is estimated to be 28, being the midpoint between the historical average PE of 32 and the PEG based PE of 24.

Normalised PE	
EPS Growth	16%
PEG Normalised	1.50
PE Based on PEG	**24.0**
PE Historical	32.0
PE Normalised	**28.0**

The normalized P/E ratio offers a truer valuation by smoothing distortions from the business cycles while considering risks and future earnings growth.

PE Valuation

Utilizing the normalized forward PE ratio of 28.0x applied to projected FY2026 earnings per share (EPS) of 27.1, results in a valuation of €759 per share.

PE Valuation	
PE Normalised	28.0
EPS FY2026	27.1
PE Valuation	**759**

Price Target

The DCF analysis, predicated on projected free cash flows to the firm through 2035 and a terminal value, yields an intrinsic value of €776 per share.

The PE analysis, utilizing a normalized forward PE of 28.0x applied to projected FY2026 earnings per share (EPS), yields an intrinsic value of €759 per share.

Target Price	
DCF Valuation	776
PE Valuation	759
Target Price	**767**

The 12-month price target, based on an equal-weighted approach between the DCF and PE valuation methods, is established at €767 per share.

Sensitivity Analysis

A sensitivity analysis suggests a valuation range of €737 to €804, reflecting variations in key assumptions such as discount rates and long-term growth rates.

Sensitivity Analysis	WACC @ 8.75%	WACC @ 9.00%	WACC @ 9.25%
Growth @ 3.25%	771	753	737
Growth @ 3.50%	787	767	750
Growth @ 3.75%	804	783	764

Potential Upside

The target price of €767 suggests a potential 15% upside from the last closing price of €664.60 (13 June 2025).

Potential Upside	
Target Price (by 13 June 2026)	764
Last Price (close 13 June 2025)	665
Potential Upside	**15%**

Upside Probability

The probability of the closing share price of ASML Holding NV (AMS:ASML) rising by 15% or more during the 12-month period from June 13, 2025, to June 13, 2026, is estimated to be 85%.

This high probability is fundamentally anchored in ASML's unassailable technological monopoly in Extreme Ultraviolet (EUV) lithography, the enabling technology for the world's most advanced semiconductors.

This unique position allows ASML to be the primary beneficiary of the powerful, structural demand supercycle driven by Artificial Intelligence (AI), which requires a consistent and expanding supply of leading-edge logic and memory chips.

The company's robust financial performance, strong forward-looking guidance for 2025 and 2026, and a near-unanimous "Strong Buy" consensus from Wall Street analysts provide substantial support for continued share price appreciation.

Primary Constraints

A deteriorating global economic outlook, highlighted by a recent and sharp downgrade in 2025 growth forecasts from the World Bank, poses a material risk to capital expenditure cycles across the semiconductor industry.

Escalating trade tensions, particularly the threat of broad-based tariffs, introduce significant uncertainty that could disrupt ASML's highly globalized supply chain and compress profit margins, a risk explicitly acknowledged by company management.

Tightening of restrictions on technology exports to China could materially impact ASML's revenue and growth prospects. China has been a significant market for ASML, and limitations here cap growth.

A cautious adoption timeline for next-generation High-NA EUV systems by industry leader TSMC introduces uncertainty into the revenue growth trajectory for 2026 and beyond, even as competitor Intel aggressively adopts the technology.

Upside Catalysts

If the demand for AI-related semiconductors and the associated leading-edge manufacturing capacity exceeds current expectations, ASML could see significantly higher order intake and revenue growth for its EUV and High-NA systems.

Faster-than-anticipated customer adoption and ramp-up of High-NA EUV technology could pull forward revenue and enhance average selling prices and margins sooner than projected.

A de-escalation of trade tensions and a more stable global geopolitical environment could improve market access and reduce operational uncertainties.

Scenario Analysis

The 85% probability that ASML's share price will achieve a 15% return target within the next 12 months is derived from a scenario analysis that weighs the positive and negative factors.

A Base Case (55% probability) assumes ASML successfully navigates the headwinds, with the structural AI tailwind overpowering moderate economic weakness, leading the stock to surpass the target.

A Bull Case (30% probability) envisions an acceleration of the AI cycle and a more benign economic backdrop, driving the stock significantly higher.

A Bear Case (15% probability), while less likely, remains a material risk and would be triggered by a severe global recession or a major geopolitical disruption to trade, which would likely cause the stock to miss the 15% appreciation target.

Investment Thesis

ASML Holding NV represents a unique investment opportunity, characterized by its monopolistic dominance in the critical EUV lithography segment, which is indispensable for the advancement of the global semiconductor industry.

The company's technological supremacy, protected by substantial entry barriers including immense R&D costs, extensive IP, and deep ecosystem integration, affords it significant pricing power and robust profitability.

Secular growth trends, particularly the proliferation of Artificial Intelligence, high-performance computing, and broader digitalization, are expected to fuel sustained demand for advanced semiconductors, directly benefiting ASML.

Furthermore, its significant and growing recurring revenue from services provides a degree of stability against the inherent cyclicality of the equipment market.

While the company faces risks from geopolitical tensions, high customer concentration, and the cyclical nature of the industry, its strategic importance, strong financial performance, and clear technological roadmap for next-generation tools like High-NA EUV position it favourably for continued long-term growth.

The target return of 15% within 12 months appears justifiable when considering ASML's unique market position and superior growth prospects relative to the broader semiconductor equipment sector and global economy.

In conclusion, the long term and short term investment outlooks for ASML are highly favourable, but not without considerable volatility risk stemming from external factors.

The company's monopolistic position in a secular growth industry creates a powerful foundation for value creation that is likely, but not guaranteed, to overcome the challenging global environment.

Closing Remarks

ASML represents a compelling subject for gaining insights into the semiconductor industry. I intend to meet with ASML investor relations in the near future, which will provide an opportunity to compare actual results with the projections detailed in this report. It is my hope that you found this report informative and engaging.

We greatly appreciate your continued trust and partnership. Should you have any inquiries or wish to discuss ASML or the Fund further, please feel free to contact us.

Warm regards,

Robert Tate
Investment Coordinator
Louise Tate
Operations Officer
Global Rational Capital Fund