ASML Holding N.V. (NASDAQ:ASML)

Market Data as of 27-Mar-2025

Bay Shen

Investment Summary

ASML has a dominant market share position in semiconductor lithography chip manufacturing

Business Overview

- ASML is a Dutch-based producer of lithography equipment used in semiconductor manufacturing, combining one-time system sales (~77%) with recurring service revenue (~23%)

Investment Thesis

Why is this a Good Business?

- ASML is the sole supplier of EUV lithography and has ~85% market share in DUV with strong pricing power
- ASML has over 16,000 patents, a high R&D investment budget, and exclusive supplier relationships making it difficult for competitors to enter the market

Underappreciated End Markets

- ASML invests $4.1B annually in R&D, whereas lithography makes up a much smaller share of competitors' revenue, making it a lower priority for them and requiring a significant increase in focus to compete
- There are no other suppliers of EUV lithography, essential for sub-5nm chip production, while competitors remain limited to DUV technology or alternatives with higher defect risks

We recommend that YUSIF **buy** ASML with an implied upside of **19.9%** and PT of $831.6

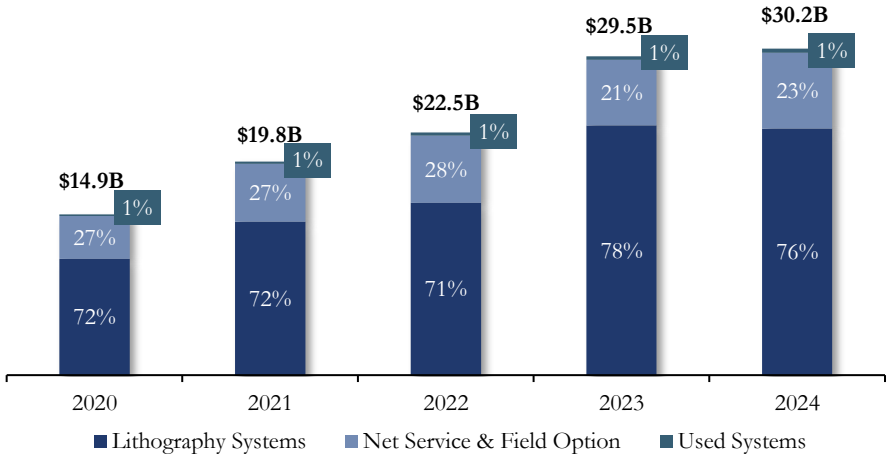
Business Overview

ASML is the leading global provider of semiconductor lithography and chip manufacturing solutions

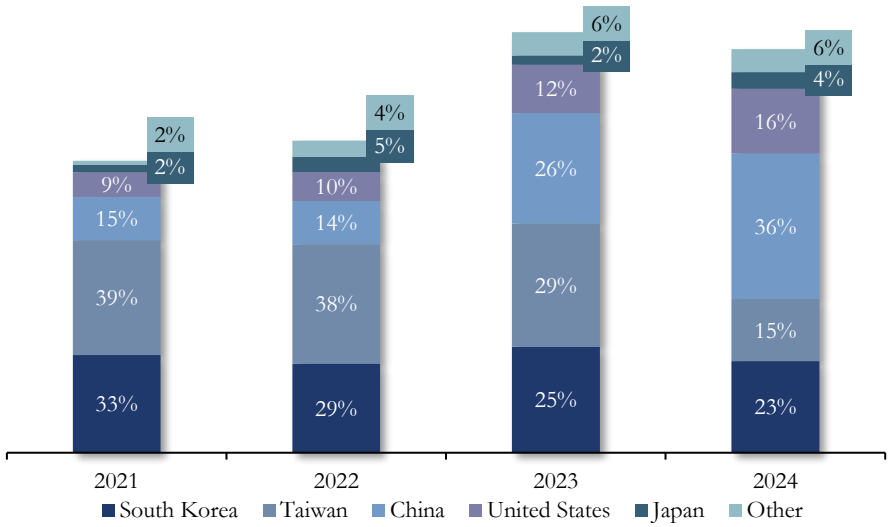
What Does ASML Do?

- ASML is a global leader in semiconductor manufacturing technology, providing chipmakers with hardware, software, and services to produce advanced microchips that power AI, computing, and emerging technologies
- Operates in three segments: Lithography Systems (76%), Net Service & Field Options (23%), and Used Systems (1%)
- Holds ~85% global market share in semiconductor lithography with products like Extreme Ultraviolet (EUV) and Deep Ultraviolet (DUV) systems
- ASML generates revenue by combining one-time lithography system sales with recurring service revenue

Revenue Segments (USD)



Net System Revenue Breakdown by Geography (USD)



ASML Sales and Growth

- The TAM for lithography equipment is currently ~$27B and is projected to exceed ~$50B by 2035 representing a ~9% CAGR
- Global semiconductor sales are projected to exceed $1T by 2030, with a CAGR of ~9.1% from 2025 to 2030
- Geopolitical tensions and export restrictions drive surges (and volatility) in equipment purchases
  - In 2024, China accounted for ~36% of ASML's revenue, primarily due to increased demand ahead of U.S. export restrictions on chipmaking equipment
- ~50% gross margin, driven by EUV systems and limited competition

Sources: S&P Capital IQ, Company Filings, Bloomberg

ASML

Business Overview

Understanding ASML's offerings, key contributors, and historical evolution

Primary Customers & Suppliers

- ASML has 13 major customers, with Taiwan Semiconductor Manufacturing Company (TSMC) and Samsung Electronics accounting for ~50% of total revenue
  - Top 5 customers make up ~66% of revenue
  - ASML performs quarterly preventative maintenance services
- ASML has 40 key suppliers, providing components for lithography systems
  - Top 5 suppliers account for ~34% of ASML's total capital expenditures (~7%) and cost of goods sold (~27%)
  - Carl Zeiss accounts for ~24% of ASML's costs of goods sold, providing optics for EUV systems
- Some suppliers are highly specialized and have no viable alternatives

Core Offerings

- Lithography is the process of using light to print patterns onto silicon wafers, forming circuits of a chip
- EUV uses 13.5 nm wavelengths for finer resolution patterning
  - EUV supports chips for AI, high performance computing, smartphones, and data centers; EUV Systems account for ~37% of lithography system revenue
- DUV systems use longer wavelengths for conventional nodes
  - DUV supports chips used in automotive, IoT, and memory
  - ArFi systems account for ~46% of lithography system revenue
- Key differences: EUV offers higher precision but is more complex, while DUV is less complex and cheaper (suitable for mature nodes)

Historical Timeline of ASML

Early Years 1980s	Expansion 1990s	Transformations 2000s	EUV Breakthrough 2010s	Innovation Era 2020s
Founded in 1984	IPO on NASDAQ & Amsterdam	Acquired Silicon Valley Group	Developed EUV Lithography	High-NA EUV EXE:5000
First PAS 2000 Lithography Tool	PAS 5500 Stepper Introduced	Launched TwinScan Lithography	First EUV Machine NXE:3400B	NXE:3800E System
Philips and ASM Joint Venture	193nm DUV Lithography	First Immersion Lithography Tool	$10B in Annual Revenue	$20B in Annual Revenue

Sources: S&P Capital IQ, Company Filings, Bloomberg

ASML

Business Overview

ASML's product portfolio spans across lithography and metrology/inspection machines

Extreme Ultraviolet Systems ($8.3B)

TWINSCAN EXE:5000

TWINSCAN NXE:3800E

TWINSCAN NXE:36000D

TWINSCAN NXE:3400C

Deep Ultraviolet Systems ($12.8B)

TWINSCAN NXT:2150i

TWINSCAN XT:1460K

TWINSCAN XT:1060K

TWINSCAN NXT:870B

Metrology/ Inspection ($0.7B)

YieldStar 1385

YieldStar 500

HMI eScan 1100

HMI eScan 1000

Sources: Company Website, Investor Presentation

ASML

5-Year Share Price Performance

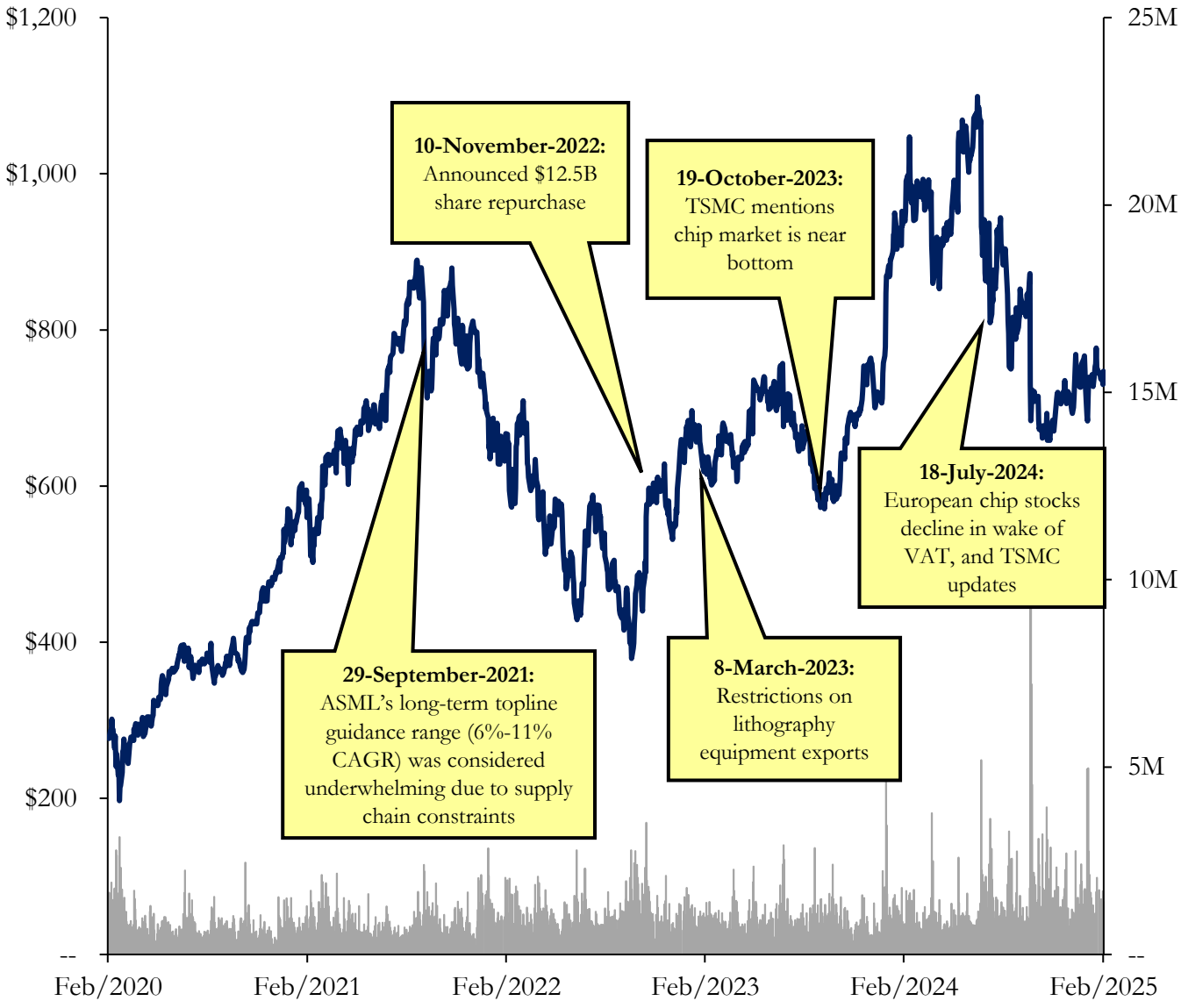
Powering semiconductor innovation & AI-driven growth

Commentary

- Long-term guidance communicated during ASML's 2021 investor day was initially considered weak; subsequent updates indicated stronger growth
- Dutch government announced plans to impose restrictions on semiconductor technology exports to protect national security
- TSMC's CEO mentions early signs of demand stabilization in the PC and smartphone markets
- Markets worry over geopolitical risks; VAT Group dropped 6.6% after outlooks; TSMC failed to lift sentiment after raising projections

Market Cap	$272.7B
Share Price	$693.54
Beta	1.08
PE Ratio (LTM)	34.8x
Div. Yield	0.90%
ROIC	26.9%
52-week Range	$645.45 - $1110.09

Share Price Performance



Sources: S&P Capital IQ, Company Filings, Bloomberg

ASML

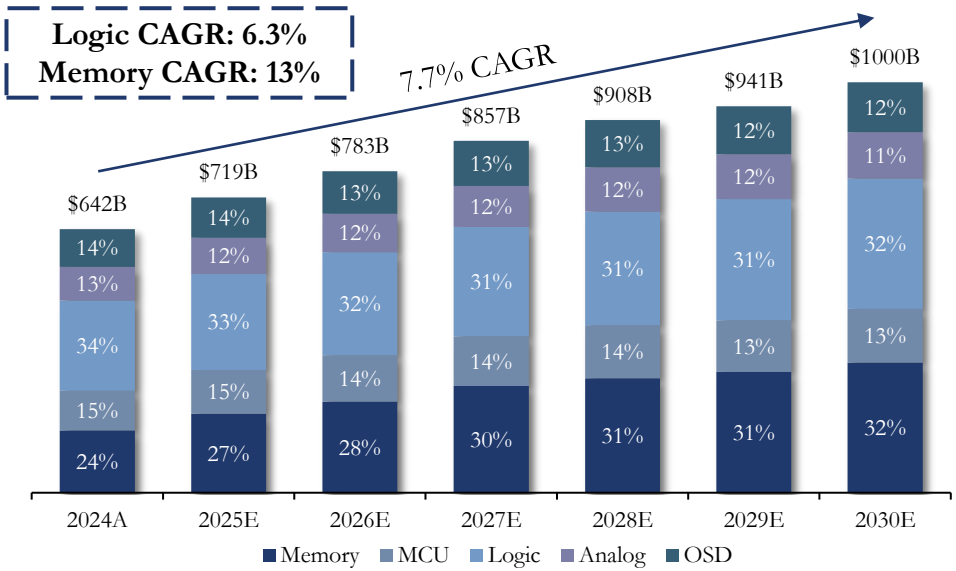
Industry Overview

Technological advancements and rising end-market demand are driving growth for ASML

The Race Toward "1nm" Processes

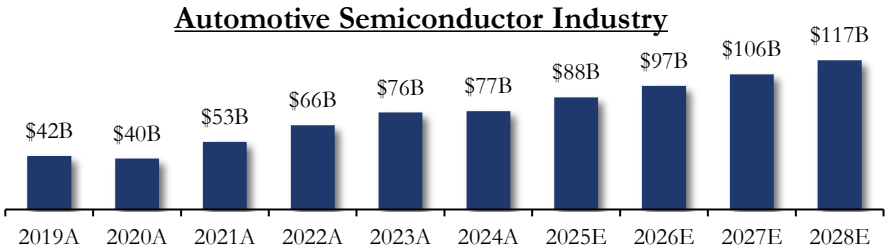
- There is a constant arms race between chipmakers to produce faster chips, and decrease the distance between transistors
- A chip's baseline computing power can be measured in **nanometers (nm)** between each transistor in the silicon wafer
  - The shorter the distance, the faster the chip can run
  - "nm" can only be compared to previous generations of the same company's chips, as it is not standardized
- The push toward smaller transistors is a key tailwind for companies like ASML, where more precise lithography machines must be used
  - "1nm" represents the physical limit to how small a gate can be on a transistor, performance gains beyond that are unclear

Semiconductor Industry Set to Reach $1T by 2030E



Growth in All End Markets

- Strong growth across key end markets; smartphones (7% CAGR), consumer electronics (8.8% CAGR), industrial electronics (10.5% CAGR), and automotive (12.1% CAGR) which drives demand for semiconductors and for ASML's lithography products
- Wafer starts/month have grown to 2.1M in NAND (~6% CAGR), 1.8M in DRAM (5% CAGR), and 1.7M in Logic (10% CAGR) because of this rising end-market demand



Key Steps in the Semiconductor Manufacturing Process

Deposition: Silicon wafers are sliced and coated with thin films to enable precise patterning for microchip fabrication (AMAT)

Resist Coating: Wafer is covered with positive/negative resist (JSR)

Lithography: Etches the silicon wafer with a layered chip design using extremely precise rays of light (ASML)

Ion Implantation: Bombarding the wafer with charged ions to enable transistors to control electrical flow (Axcelis Technologies)

Packaging: Slicing wafers into individual chips and mounting them onto a substrate to connect signals (SPTS Technologies)

Sources: Company Filings, S&P Capital IQ, PwC

ASML

Industry Overview

ASML drives advanced lithography innovation while maintaining market leadership

EUV High NA Market Transition

- Industry demand for smaller chips drives the need for advanced lithography machines. ASML's High NA EUV tool will enable >5nm logic and memory node production
- High NA EUV has three adoption phases
  - **R&D Phase:** Completed for FY2024
  - **Insertion Phase**: High NA begins limited-volume production
  - **Node Phase:** Full volume production
- ASML is shipping its first batch of High NA EUV orders this year (5200 High NA), and phase two is projected to start in FY2026
- The tool's throughput is 220 wafers/hour, supporting both memory and logic chip customers, whereas Low NA EUV makes 200/hour

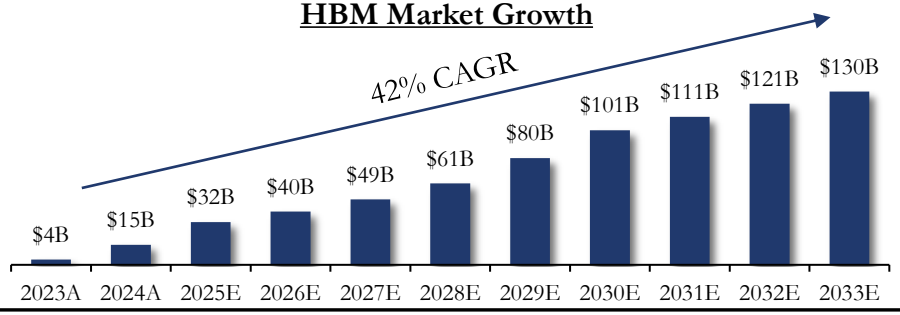
ASML Dominates the Lithography Industry

- ASML is the sole provider of EUV and the market leader of DUV, but faces competition in the DUV segment from Nikon and Canon
  - Lithography makes up 7.5% of sales for Canon (FY2023) and ~30% for Nikon (FY2024). These segments will always take a back seat to their consumer camera businesses
- EUV is ASML's most competitive offering - Nikon/Canon are both unwilling and unable to develop viable EUV products
  - Nikon only competes in DUV with its ArF Immersion scanner and has historically been unable to capture share in the rest of the DUV market
  - Canon's nano print lithography technology, while cheaper than EUV, comes with the risk of increased defects, template durability, and etch accuracy

Memory + High Bandwidth Memory (HBM) Market

- Memory market (DRAM & NAND), is enabled by ASML's EUV machines to supply more efficient nodes for HPC's
- Performance for AI chips requires more memory running at higher speed. As such, the market is set to expand at a 42% CAGR, making it more than 50% of the overall DRAM market in 2033 and comprising of ~10% of the industry's bit shipments

HBM Market Growth



Total CapEx Spend of ASML's Top Customers (USD)

Company	2024A	CapEx to ASML	2025E	2026E
TSMC	~$29.7B	~13.3% (2025)	~$39.6B	~$41.5B
Samsung	~$37.7B	~15.9% (2025)	~$37.3B	~$38.7B
Intel	~$23.9B	~14.1% (2025)	~$20B	~$19.5B
Micron	~$8.3B	~20.1% (2025)	~$13.7B	~$14.7B
Sk Hynix	~$15.9B	~27.4% (2025)	~$13.8B	~$14.2B
Global Foundries	~$625M	~20.13% (2025)	~$703M	~$920M

ASML top customers are expected to spend $129.5B in 2026E CapEx

Sources: Company Filings, Evercore, J.p. Morgan Chase, S&P Capital IQ, Bloomberg

ASML

Investment Thesis I: Why Is This a Good Business?

A dominant position in EUV/DUV should continue to drive margin expansion (gross margin)

EUV Dominance: Unmatched Leadership in Lithography

- As the sole global supplier for EUV lithography, ASML plays a critical role in enabling chipmakers to produce smaller nodes
  - Strong EUV demand with Q4 orders totalling ~$7.4B (+114% QoQ), which exceeded consensus of ~$3.8B
- Between FY2025–FY2030, ASML is expecting a margin uplift of 4%, with gross margin between 56-60%, which is mainly driven from price expansion and more favourable upselling opportunities of High NA EUV
- EU Chip Act was established to increase EU's market share of chip manufacturing to 20% by 2030, with total subsidy spending of $45B
  - EU market share declined from 24% in 2000, to 8% as of today

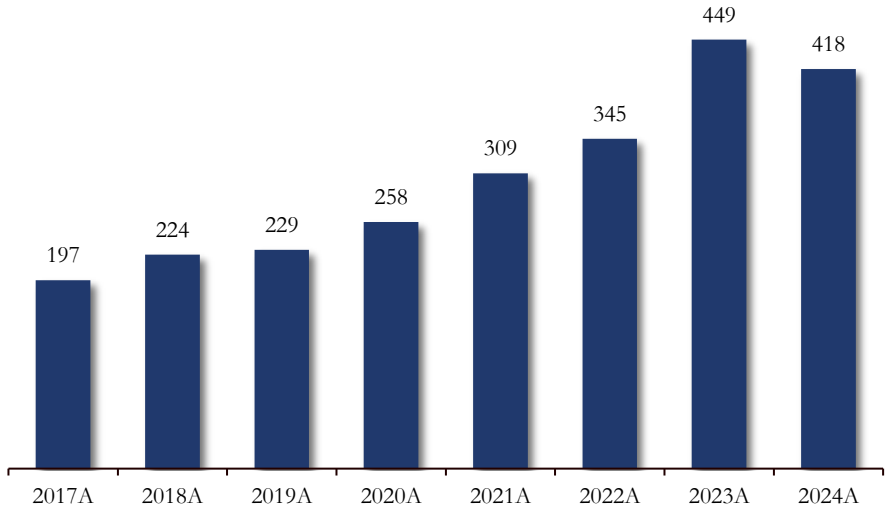
DUV's Historic Dominance: Enduring Superiority

- ASML's main DUV products are ArF (Argon Fluoride) lithography machines, which remains the most economical and widely used solution for automotive and IoT chipmaking
  - We expect ArF to continue to dominate in trailing-edge and mid-range nodes going forward given its entrenched market position in DUV, and the fact that Nikon is losing market share in ArF
- Technologically, ASML's DUV machines perform better than those of Nikon and Canon, offering higher throughput, greater reliability, and more advanced alignment mark capabilities
  - ASML's main ArF machine produces 295 wafers/hour, whereas Nikon's produces 280/hour

High NA EUV - Large Growth Opportunity

- Higher NA (natural aperture) lets systems print ICs 17 times smaller than before, achieving transistor density 2.8 times higher
  - Printing in higher resolution is crucial for the pursuit of performance gains by chipmakers, making this innovation a mandatory investment over the next few years
- ASML is currently the only company able to produce these systems
  - In FY2025, Intel successfully tested two high NA machines, with its CEO stating they are "twice as reliable." High volume production is expected in 2026
  - Competitors such as Nikon and Canon are not attempting to enter this segment, but rather stay within DUV/NIL

Total Lithography Units Shipped



Sources: Company Filings, S&P Capital IQ, Evercore, J.P. Morgan Chase, Wells Fargo, HSBC

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Investment Thesis II: Why Is This a Good Business?

ASML's high switching costs and technological leadership create a strong moat

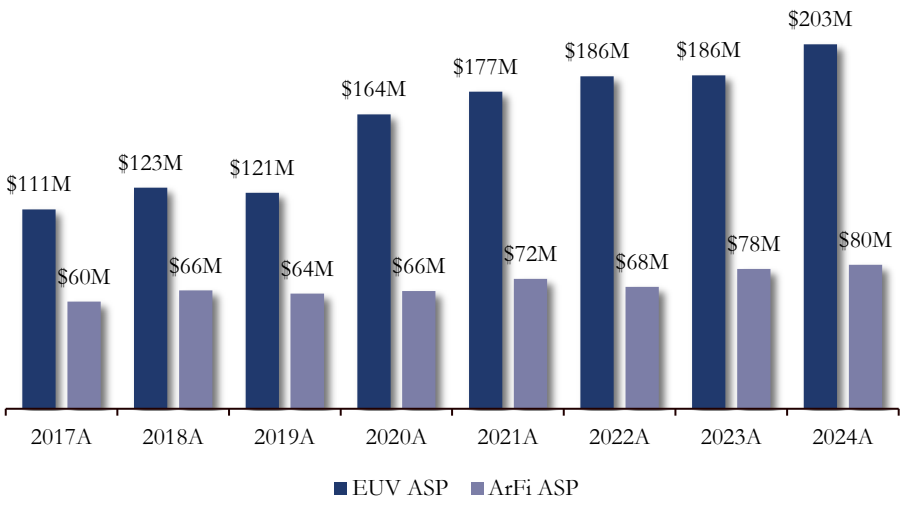
High Switching Costs

- Lithography machines are incredibly expensive, with CAPEX at ASML's top customers expected to substantially increase to 2026
  - Considerable switching costs due to large downtime costs for customers and ASML's top-of-the-line product
- Infrastructure, maintenance, and operating processes are all tailored to ASML machines
  - Given the high cost of R&D, other companies who tried to develop lithography technology either failed or were acquired by ASML
- ASML continues to maintain strong customer relationships with every major chip manufacturer

Technological Leadership

- ASML has a long history of developing lithography machines, with the first product being launched in 1984
- ASML currently holds over 16,000 patents for the technology used in its machines which are enforceable internationally
  - In Q2'24, ASML successfully filed ~47 patents in China
- Additionally, ASML's key supplier relationships for critical lithography components such as Carl Zeiss in optics are difficult for competitors to match
  - Zeiss and ASML have been partnered since 1997

Average Sale Price Per EUV and DUV System



ASML's Pricing Power & Avg Selling Price (ASP) Growth

- As the sole supplier of EUV, combined with their dominant position in DUV, ASML has consistently been able to increase prices over time while maintaining an upward trend in volume
- ASML has realized ~8% CAGR in EUV ASP's since 2017, and ~4% CAGR in ArF Immersion ASP's (DUV product) since 2017
  - These price increases will continue to lead to gross margin expansion
  - Gross margins are ~50%, with guidance of 56-60% for 2030E
- AMSL expects to further benefit from pricing with the launch of High-NA EUV machines, which have an initial ASP of ~$378M, and is forecasted to increase to ~$532M by 2030E
  - This is priced ~1.9x more than Low NA EUV machines

Sources: Company Filings, HSBC, Bloomberg, S&P Capital IQ

ASML

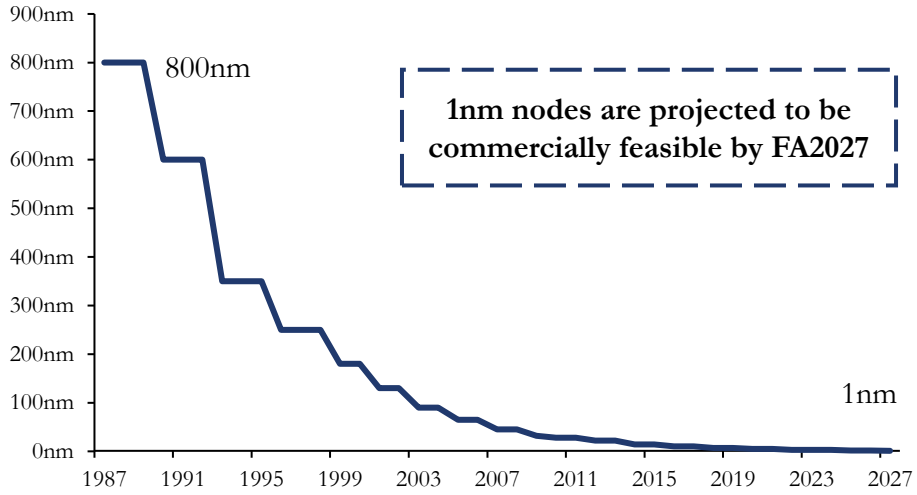
The Bear Case I (What Could Go Wrong?)

ASML benefits from long-term scaling trends, but miniaturization faces fundamental limits

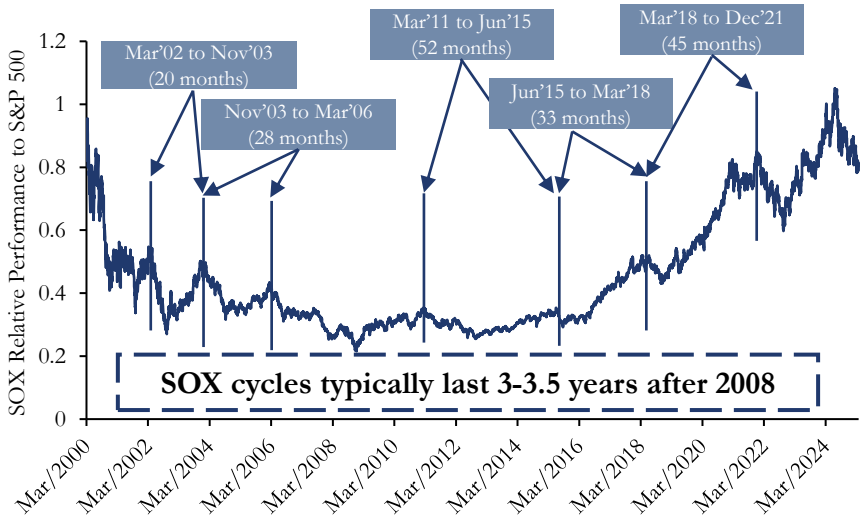
Limits of Silicon Miniaturization

- While a 7nm node is achievable with silicon, there is a fundamental limit believed to be ~1nm
- At this scale, transistors become so closely packed that electrons begin to experience quantum tunneling. So, instead of staying within their designated logic gates, electrons continuously leak to adjacent gates, preventing the transistor from fully switching off
  - This renders lithography ineffective beyond this threshold, making further miniaturization with silicon unfeasible
- That said, there will always be a demand for larger nodes to serve end markets that do not require small-scale transistors
- Additionally, ASML has consistently demonstrated its ability to innovate and may develop a solution to this challenge

Shrinkage of Possible Process Size



Semiconductor Industry Cyclicality



Cyclical Swings with Long-Term Gains

- Chipmakers invest in new fab equipment when demand for chips is strong and additional production is needed. Once supply catches up, spending declines to cut costs and maintain profitability
  - As a result, ASML's orders depend on Wafer Fab Equipment (WFE) spending, which is cyclical
- If the semiconductor market enters a downturn, fabs delay orders for ASML products, hurting new bookings. However, when the cycle inevitably recovers, ASML gets huge demand spikes
- Also, ASML trades mostly on forward information, which means that the stock reacts to future guidance and backlogs
- Despite short-term cyclicality, ASML benefits from long-term structural demand growth for chips, which drives a general upward trend in volumes for ASML products

Sources: Company Filings, Bloomberg, Evercore

ASML

The Bear Case II (What Could Go Wrong?)

ASML navigates geopolitical risks, customer reliance, and backlog cycles with resilience

Geopolitical Tensions

- ASML faces further potential export restrictions to China from the Trump administration
- ASML is primarily exposed to these risks through its American suppliers and faces little export restrictions for its own products
- Fears of rising tensions between Taiwan and China are also a concern, but ASML can simply refuse to service captured machines
- China revenues in Q4'24 declined 31% QoQ and represented 27% of system revenues (versus 47% from the prior quarter)
  - Management expects total revenue from China to decline 20-25% in FY2025 (vs. a 41% decline in FY2024)
  - Korea, Japan and US were the fastest growing regions in Q4'24

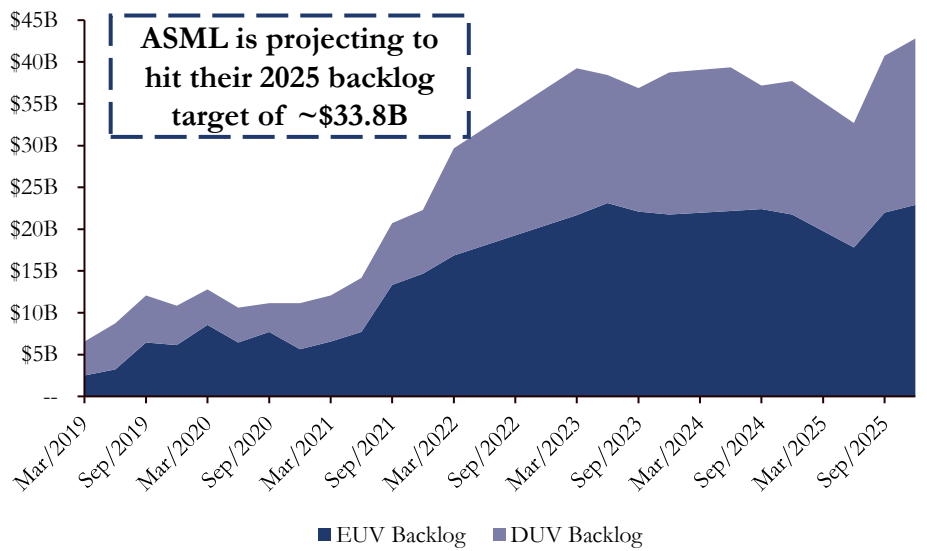
High Level of Customer Concentration

- The loss of a major customer will have adverse effects on ASML
  - In 2023, 3 customers accounted for 60% of net sales; TSMC (28.2%), Samsung (22.2%), and Intel (9.6%)
- It is unlikely major customers will switch from ASML due to its high integration with rest of manufacturing process
- ASML's ~$37.4B backlog, $28.7B in 2023 sales, and ~50% gross margin provide a strong financial buffer for ASML to absorb the loss of a major customer
  - AI chip demand is growing at a 28.9% CAGR, requiring ASML's advanced EUV tools. Other customers would likely step in to offset any lost demand

EUV & DUV Backlogs

- ASML exited Q4'24 with ~$37.4B of overall backlog ($21.8B of EUV), with ~$3.1B of backlogs received in the Q4'24
- Backlogs are a concern for ASML as they rely on investment cycles of chipmakers, which historically have been cyclical
  - Memory and logic orders are up 200% and 128% respectively QoQ, but overall orders since 2010 have been cyclical, with an upward trend
- ASML is on track to achieve the mid-point of its 2025 target ($31.2B–$36.4B), highlighting its resilience despite backlog fluctuations and cyclical headwinds

ASML Historical EUV & DUV Backlogs (USD)



Sources: Company Filings, Bloomberg, Evercore, Wells Fargo, HSBC, J.P. Morgan Chase, Grand View Research

ASML

ASML's ESG Leadership

Driving sustainable innovation and responsible growth

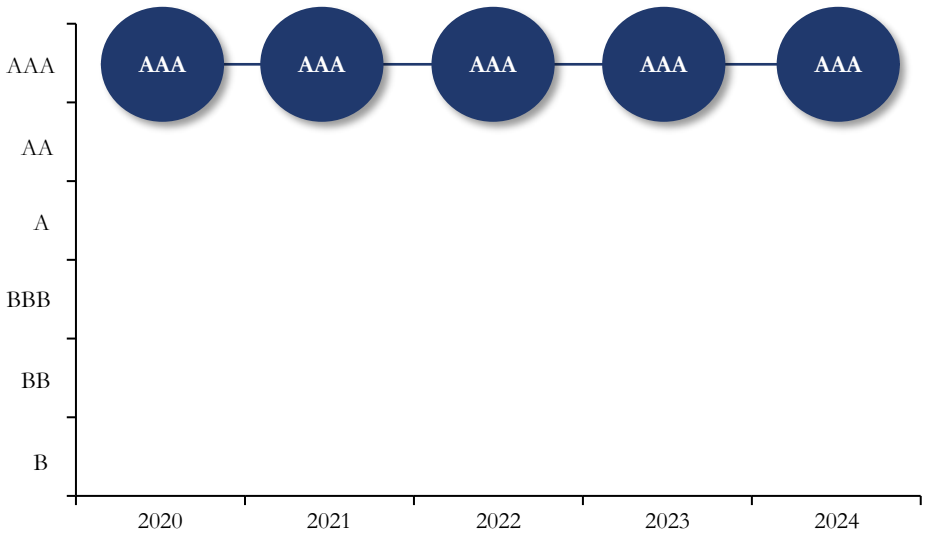
Environmental and Social Initiatives

- **Net-Zero Emissions Goal:** Targeting net-zero emissions by 2040 across ASML's entire value chain
  - ASML is aiming to be greenhouse gas neutral by 2025 across its own buildings and manufacturing facilities
- **Social Initiatives & Sustainable Manufacturing:** ASML sources 91% of its electricity from renewable sources and ensures 95% of all lithography machines sold remain operational, thus reducing waste. Additionally, the company improved waste efficiency to 300kg per ~$1.04M revenue
  - ASML repurchases and refurbishes legacy machines for resale
- **Workforce Diversity & Inclusion:** ASML aims to achieve a 24% female hiring & leadership promotions target by 2025

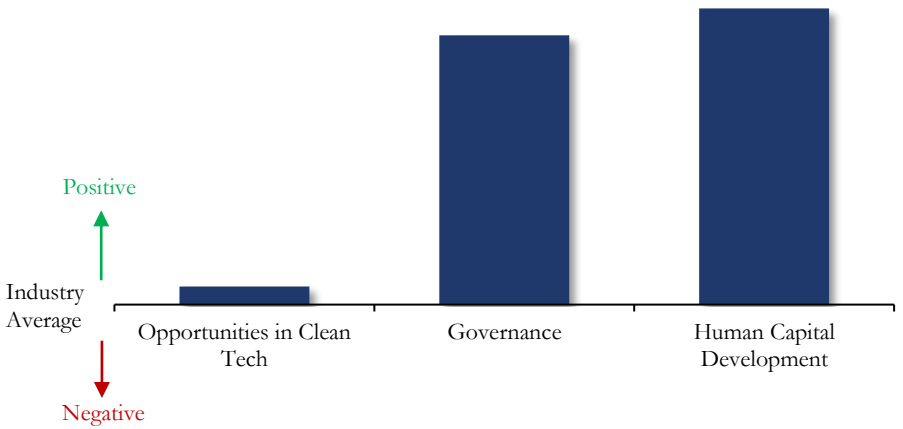
Two-Tier Board

- ASML follows a two-tier board system, separating executive management from independent oversight (common in the Dutch market)
  - All supervisory board members are independent with an average tenure of ~4.6 years
  - This governance structure enhances transparency, prevents conflicts of interest and ensures effective long-term decision making
- **Board of Management (Executive Board):** Handles daily operations across ASML's global businesses, including the U.S.
- **Supervisory Board (Non-Executive Oversight):** Provides independent oversight and ensures accountability. It is composed entirely of non-executives

MSCI Rating



ESG Performance Breakdown



Sources: Company Filings, S&P Capital IQ

ASML

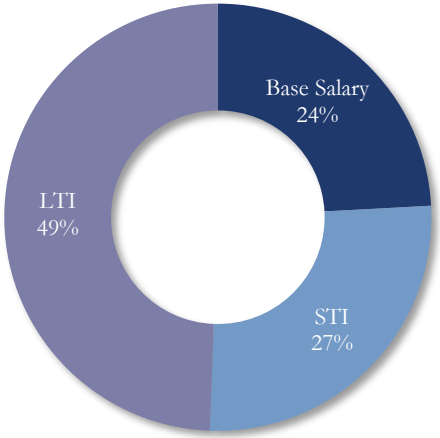
ASML Leadership & Governance Overview

Driving strategic growth with accountability and expertise

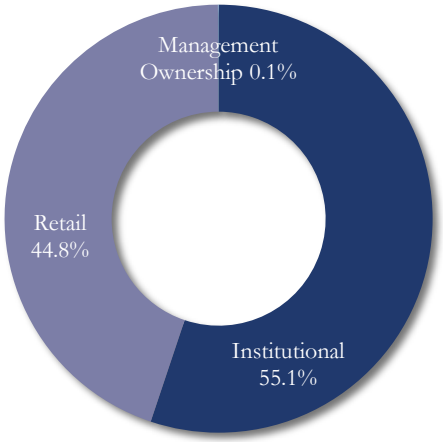
Executive Compensation Breakdown

- **Short Term Incentive (STI)** is determined by 60% financial performance and 40% non-financial performance
  - Financial performance is measured by ASML's EBIT margin
  - Non-financial performance includes adoption of Multi Beam, DUV cost and competitiveness, EUV Low NA maturity, EUV High NA performance, and the ASML customer survey
- **Long-Term Incentive (LTI)** is calculated based on 30% TSR, 30% three-year average cash conversion rate, 20% technology leadership, and 20% ESG metrics
  - ESG is based on net-zero emissions (scope 1+2), employee engagement, and percentage of women in new hires

NEO Compensation



Ownership Structure



The two largest shareholders are Capital Research and Management Company (10.3%) and BlackRock (7.9%)

Members of ASML's current Board of Management (6 people) own 0.1%

NASDAQ Listing trades as depository receipts which poses some liquidity and FX concerns

Key Executives

Christophe Fouquet

President & CEO

Started his role in 2024, but joined ASML in 2008

Background in product management & consulting

Roger Dassen

CFO

Started his role in 2018 (term expires in 2026)

Previous CEO of Deloitte Netherlands

Frédéric Schneider-Maunoury

COO

Started his role in 2009

Background in public government and transportation

Sources: Company Filings, S&P Capital IQ

ASML

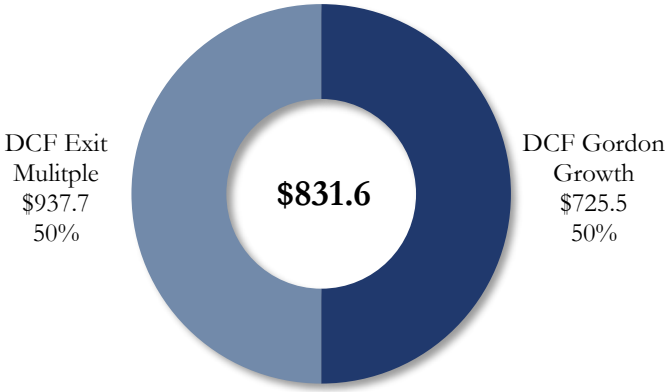
Valuation Summary

We value ASML at a 19.9% upside to its current price

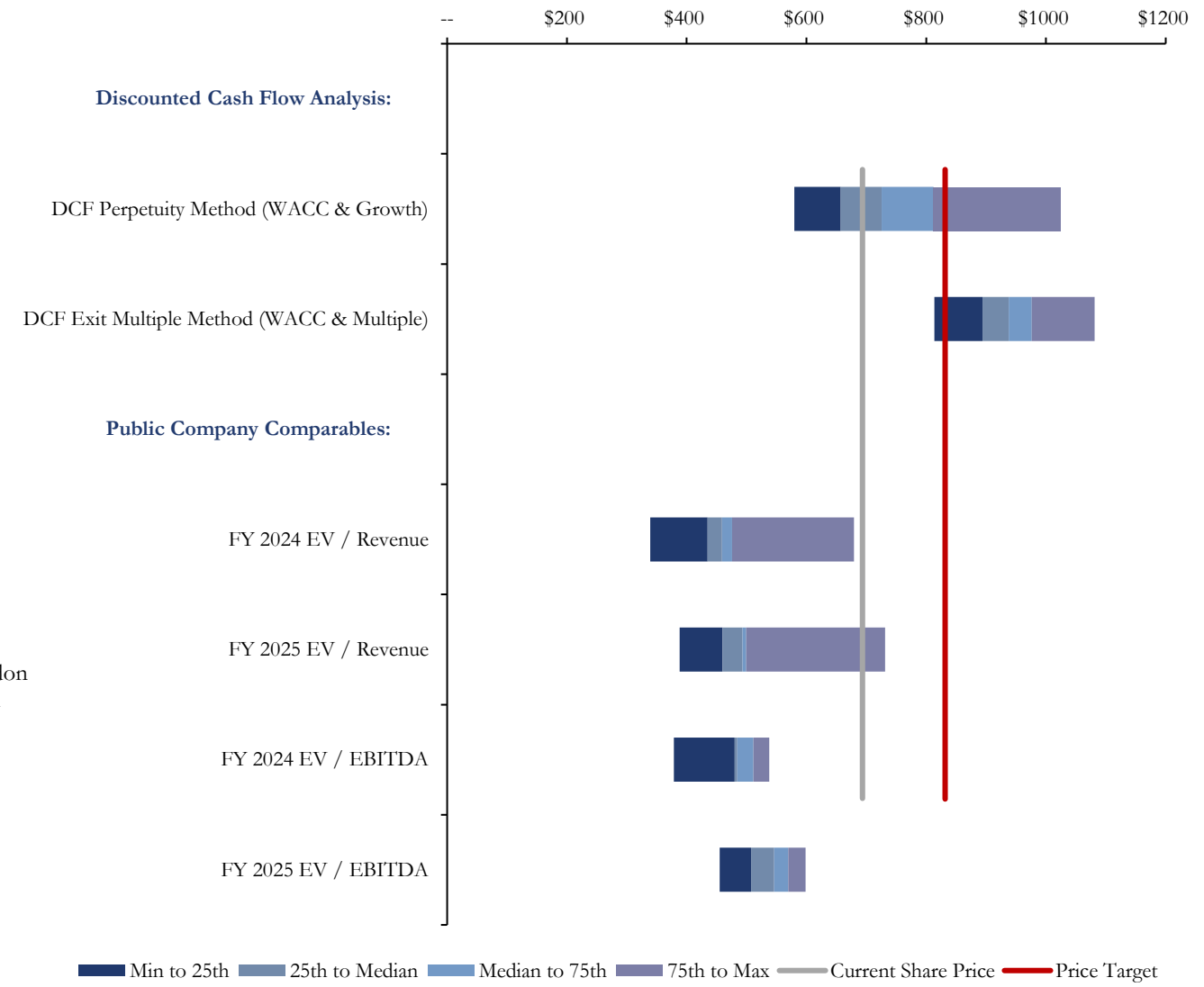
We recommend a **buy** on **ASML** with an implied upside of **19.9%**

Results and Weighting

- **Current Price:** $693.5
- **Target Price:** $831.6
- **Implied Upside:** 19.9%



Football Field Summary



ASML

Discounted Cash Flow Analysis

UFCF Model

Discounted Cash Flow															
(In Millions - EUR)	**2020A**	**2021A**	**2022A**	**2023A**	**2024A**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**	**2031E**	**2032E**	**2033E**	**2034E**
Revenue:															
Total Lithography Systems:	**9,966**	**13,139**	**14,770**	**21,402**	**21,123**	**24,947**	**28,779**	**32,703**	**35,211**	**37,870**	**40,690**	**43,620**	**46,578**	**48,880**	**51,007**
% Growth	*14.3%*	*31.8%*	*12.4%*	*44.9%*	*(1.3%)*	*18.1%*	*15.4%*	*13.6%*	*7.7%*	*7.6%*	*7.4%*	*7.2%*	*6.8%*	*4.9%*	*4.4%*
Net Service & Field Option	**3,661**	**4,958**	**5,743**	**5,619**	**6,493**	**7,538**	**8,526**	**9,532**	**10,218**	**10,882**	**11,546**	**12,170**	**12,717**	**13,124**	**13,413**
% Growth	*29.7%*	*35.4%*	*15.8%*	*(2.2%)*	*15.6%*	*16.1%*	*13.1%*	*11.8%*	*7.2%*	*6.5%*	*6.1%*	*5.4%*	*4.5%*	*3.2%*	*2.2%*
Used Systems	**156**	**207**	**278**	**316**	**358**	**394**	**431**	**468**	**504**	**535**	**561**	**584**	**605**	**622**	**635**
% Growth	*(17.5%)*	*32.7%*	*34.3%*	*13.7%*	*13.3%*	*10.0%*	*9.5%*	*8.5%*	*7.7%*	*6.1%*	*4.9%*	*4.1%*	*3.6%*	*2.8%*	*2.2%*
Total Revenue	**13,783**	**18,304**	**20,791**	**27,337**	**27,974**	**32,879**	**37,736**	**42,703**	**45,933**	**49,287**	**52,797**	**56,373**	**59,900**	**62,626**	**65,056**
% Growth	*17.5%*	*32.8%*	*13.6%*	*31.5%*	*2.3%*	*17.5%*	*14.8%*	*13.2%*	*7.6%*	*7.3%*	*7.1%*	*6.8%*	*6.3%*	*4.6%*	*3.9%*
Total Cost of Revenue	**7,181**	**8,802**	**10,473**	**13,784**	**13,979**	**15,946**	**17,925**	**19,857**	**20,899**	**21,933**	**22,967**	**24,240**	**25,458**	**26,303**	**26,998**
% Revenue	*52.1%*	*48.1%*	*50.4%*	*50.4%*	*50.0%*	*48.5%*	*47.5%*	*46.5%*	*45.5%*	*44.5%*	*43.5%*	*43.0%*	*42.5%*	*42.0%*	*41.5%*
Gross Profit	**6,602**	**9,502**	**10,318**	**13,553**	**13,995**	**16,933**	**19,811**	**22,846**	**25,033**	**27,354**	**29,830**	**32,133**	**34,443**	**36,323**	**38,058**
% Margin	*47.9%*	*51.9%*	*49.6%*	*49.6%*	*50.0%*	*51.5%*	*52.5%*	*53.5%*	*54.5%*	*55.5%*	*56.5%*	*57.0%*	*57.5%*	*58.0%*	*58.5%*
Operating Expenses:															
R&D	2,200	2,547	3,253	3,113	3,181	4,767	5,245	5,936	6,293	6,752	7,233	7,723	8,087	8,454	8,783
% Revenue	*16.0%*	*13.9%*	*15.6%*	*11.4%*	*11.4%*	*14.5%*	*13.9%*	*13.9%*	*13.7%*	*13.7%*	*13.7%*	*13.7%*	*13.5%*	*13.5%*	*13.5%*
SG&A	544	725	945	1,149	1,165	1,308	1,434	1,589	1,651	1,733	1,814	1,867	1,960	2,025	2,025
% Revenue	*7.6%*	*8.2%*	*9.0%*	*8.3%*	*8.3%*	*8.2%*	*8.0%*	*8.0%*	*7.9%*	*7.9%*	*7.9%*	*7.7%*	*7.7%*	*7.7%*	*7.5%*
Total Operating Expenses	**2,744**	**3,272**	**4,198**	**4,262**	**4,346**	**6,075**	**6,679**	**7,524**	**7,944**	**8,485**	**9,048**	**9,590**	**10,047**	**10,480**	**10,807**
(+) D&A	490	471	583	1,048	1,200	1,019	1,170	1,324	1,424	1,528	1,637	1,748	1,857	1,941	2,017
% of Revenue	*3.6%*	*2.6%*	*2.8%*	*3.8%*	*4.3%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*	*3.1%*
EBITDA	**4,348**	**6,701**	**6,703**	**10,339**	**10,849**	**11,877**	**14,302**	**16,646**	**18,513**	**20,397**	**22,419**	**24,291**	**26,253**	**27,785**	**29,267**
% Margin	*31.5%*	*36.6%*	*32.2%*	*37.8%*	*38.8%*	*36.1%*	*37.9%*	*39.0%*	*40.3%*	*41.4%*	*42.5%*	*43.1%*	*43.8%*	*44.4%*	*45.0%*
(-) D&A	(490)	(471)	(583)	(1,048)	(1,200)	(1,019)	(1,170)	(1,324)	(1,424)	(1,528)	(1,637)	(1,748)	(1,857)	(1,941)	(2,017)
Operating Income	**3,858**	**6,230**	**6,120**	**9,291**	**9,649**	**10,858**	**13,132**	**15,322**	**17,090**	**18,869**	**20,783**	**22,543**	**24,396**	**25,843**	**27,250**
NOPAT	**3,329**	**5,283**	**5,202**	**7,823**	**7,854**	**9,012**	**10,900**	**12,717**	**14,184**	**15,661**	**17,250**	**18,711**	**20,248**	**21,450**	**22,618**
(+) D&A	490	471	583	739	918	1,019	1,170	1,324	1,424	1,528	1,637	1,748	1,857	1,941	2,017
(-) CapEx	(962)	(900)	(1,281)	(2,155)	(2,067)	(1,973)	(2,189)	(2,391)	(2,434)	(2,514)	(2,534)	(2,537)	(2,516)	(2,442)	(2,309)
% of Revenue	*7.0%*	*4.9%*	*6.2%*	*7.9%*	*7.4%*	*6.0%*	*5.8%*	*5.6%*	*5.3%*	*5.1%*	*4.8%*	*4.5%*	*4.2%*	*3.9%*	*3.6%*
Net Working Capital	(252)	(2,856)	(3,590)	(2,167)	(2,680)	(1,768)	(487)	(824)	(1,408)	(1,095)	(735)	(309)	226	759	1,409
(+/-) Change in NWC	1,492	2,604	734	(1,423)	513	(912)	(1,281)	338	583	(312)	(360)	(426)	(535)	(533)	(650)
Unlevered Free Cash Flow	**4,349**	**7,458**	**5,238**	**4,984**	**7,218**	**7,147**	**8,599**	**11,987**	**13,757**	**14,363**	**15,992**	**17,495**	**19,055**	**20,415**	**21,675**
% Growth	*70.3%*	*71.5%*	*(29.8%)*	*(4.8%)*	*44.8%*	*(1.0%)*	*20.3%*	*39.4%*	*14.8%*	*4.4%*	*11.3%*	*9.4%*	*8.9%*	*7.1%*	*6.2%*

Discounted Cash Flow Analysis

Exit Assumptions and Sensitivity Analysis

Model Assumptions

- Given the advantages of the memory and HBM markets, we hold a hold a slightly more bullish outlook on these segments
  - We project a 56.5% gross margin by 2030, in line with long-term guidance
  - The majority of the margin expansion comes from High NA EUV
- We forecasted R&D and SG&A to decrease as a percentage of sales overtime to reflect operating leverage from higher growth and business mix (higher volume of High NA EUV units)
- An 18.5x exit multiple reflects a discount to ASML's 10-year historical multiple of 23.8x, highlighting moderating growth in the future outlook

Perpetuity Growth Method	
Cumulative PV of UFCF	94,226
% of Enterprise Value	*35.6%*
Terminal Value	
Final Year UFCF	21,675
Perpetuity Growth Rate	2.0%
WACC	8.0%
Terminal Value	368,480
PV of Terminal Value	170,677
% of Enterprise Value	*64.4%*
Total Enterprise Value	**264,904**
Plus: Cash	12,741
Less: Debt	(3,677)
Total Equity Value	**273,968**
Diluted Shares Outstanding	393.3
Implied Share Price (USD)	**$725.53**
Spot Rate (EUR - USD)	1.0415
Implied Share Price (EUR)	**€696.62**
Current Share Price (USD)	$693.54
Implied Margin of Safety	**4.6%**

Exit Multiple Method	
Cumulative PV of UFCF	94,226
% of Enterprise Value	*27.3%*
Terminal Value	
Final Year EBITDA	29,267
Exit EBITDA Multiple	18.5x
WACC	8.0%
Terminal Value	541,440
PV of Terminal Value	250,791
% of Enterprise Value	*72.7%*
Total Enterprise Value	**345,018**
Plus: Cash	12,741
Less: Debt	(3,677)
Total Equity Value	**354,082**
Diluted Shares Outstanding	393.3
Implied Share Price (USD)	**$937.69**
Spot Rate (EUR - USD)	1.0415
Implied Share Price (EUR)	**€900.32**
Current Share Price (USD)	$693.54
Implied Margin of Safety	**35.2%**

Perpetuity Growth Method

WACC	1.0%	1.5%	2.0%	2.5%	3.0%
7.0%	$764.73	$812.03	$868.80	$938.18	$1,024.91
7.5%	$706.29	$744.67	$790.04	$844.47	$911.00
8.0%	$657.16	$688.71	**$725.53**	$769.03	$821.24
8.5%	$615.42	$641.66	$671.92	$707.24	$748.98
9.0%	$579.65	$601.67	$626.85	$655.89	$689.77

Exit EBITDA Multiple

WACC	16.5x	17.5x	18.5x	19.5x	20.5x
7.0%	$923.63	$963.03	$1,002.43	$1,041.83	$1,081.23
7.5%	$894.02	$931.63	$969.23	$1,006.84	$1,044.44
8.0%	$865.89	$901.79	**$937.69**	$973.59	$1,009.49
8.5%	$839.15	$873.43	$907.71	$941.99	$976.27
9.0%	$813.73	$846.47	$879.21	$911.95	$944.69

Perpetuity Growth Method

WACC	1.0%	1.5%	2.0%	2.5%	3.0%
7.0%	10.3%	17.1%	25.3%	35.3%	47.8%
7.5%	1.8%	7.4%	13.9%	21.8%	31.4%
8.0%	(5.2%)	(0.7%)	**4.6%**	10.9%	18.4%
8.5%	(11.3%)	(7.5%)	(3.1%)	2.0%	8.0%
9.0%	(16.4%)	(13.2%)	(9.6%)	(5.4%)	(0.5%)

Exit EBITDA Multiple

WACC	16.5x	17.5x	18.5x	19.5x	20.5x
7.0%	33.2%	38.9%	44.5%	50.2%	55.9%
7.5%	28.9%	34.3%	39.8%	45.2%	50.6%
8.0%	24.8%	30.0%	**35.2%**	40.4%	45.6%
8.5%	21.0%	25.9%	30.9%	35.8%	40.8%
9.0%	17.3%	22.0%	26.8%	31.5%	36.2%

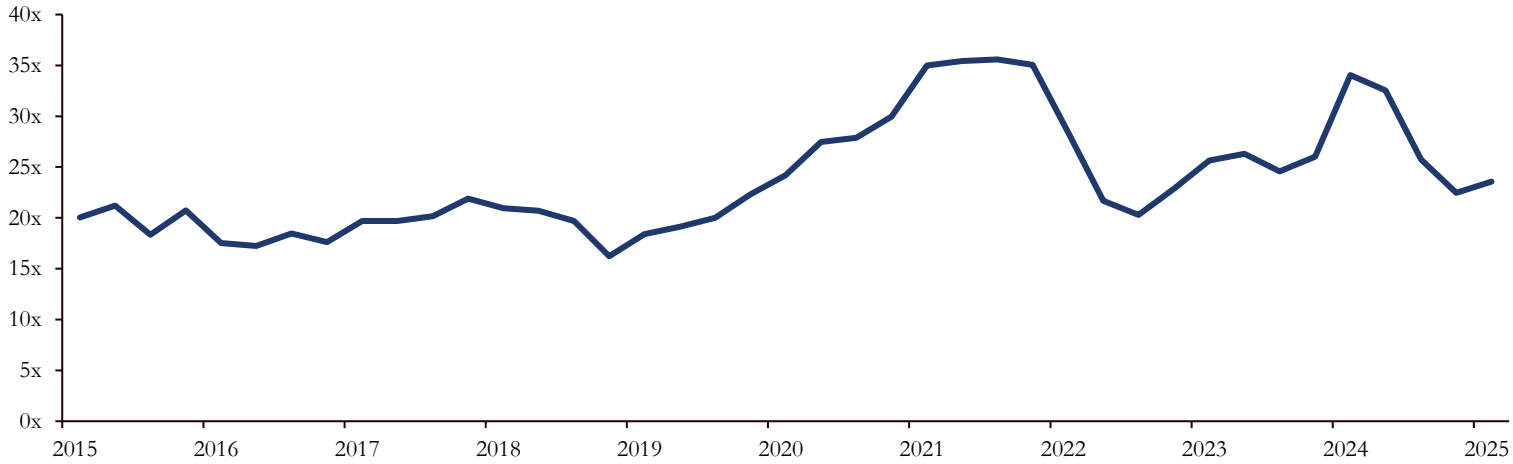
Source(s): Company Filings, S&P Capital IQ, HSBC

ASML

Appendix

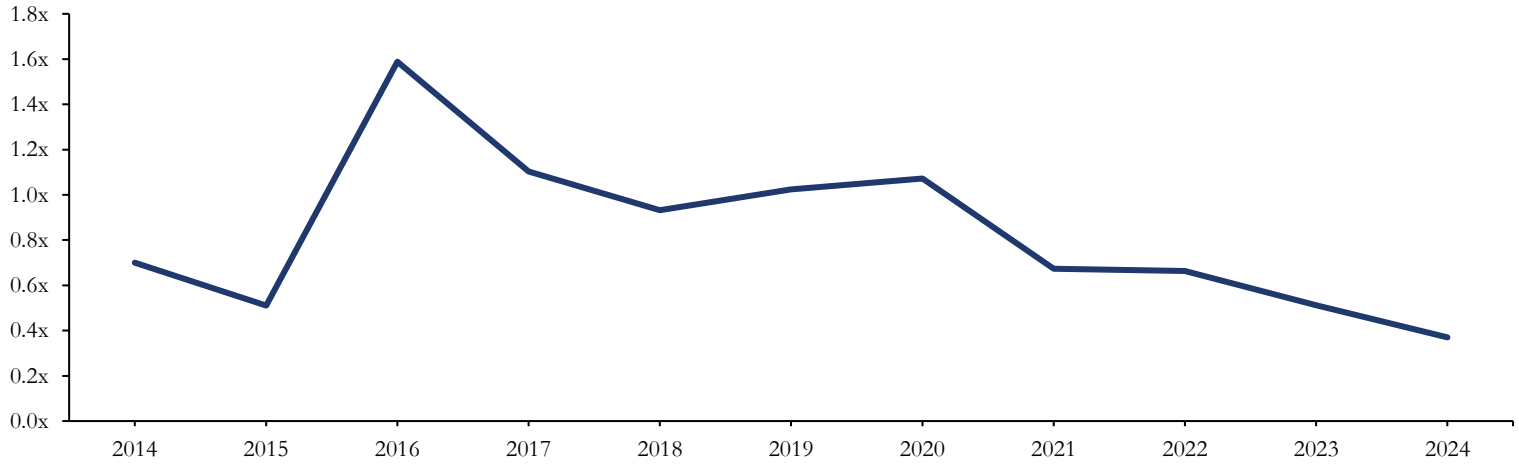
Historical Multiples/Ratios

10-Year Historical EV/NTM EBITDA



Average: 23.8x
Median: 21.9x

10-Year Historical Total Debt/EBTIDA



Average: 0.8x
Median: 0.7x

Sources: S&P Capital IQ

ASML

Comparable Company Analysis

ASML trades at a premium to peers with a ROIC of 26.9%

Company Name	Equity Value ($M)	Enterprise Value ($M)	EV / Revenue			EV / EBITDA			P / E			Leverage
			LTM	2024A	2025E	LTM	2024A	2025E	LTM	2024A	2025E	Debt/EBITDA
Onto Innovation Inc.	$6,327	$5,490	5.6x	5.6x	4.9x	22.0x	18.0x	14.8x	31.4x	24.3x	19.5x	0.1x
Camtek Ltd.	$2,887	$2,619	6.1x	6.1x	5.3x	22.1x	19.2x	16.7x	24.4x	20.9x	18.1x	1.7x
Applied Materials, Inc.	$119,981	$118,356	4.3x	4.3x	4.1x	14.0x	14.0x	13.2x	18.9x	16.4x	15.8x	0.8x
Lam Research Corporation	$96,060	$95,376	5.9x	5.9x	5.3x	18.4x	18.1x	16.0x	22.4x	22.1x	19.5x	0.9x
KLA Corporation	$93,021	$95,313	8.8x	8.9x	7.9x	21.0x	20.2x	17.6x	29.0x	25.6x	22.2x	1.3x
Maximum	$119,981	$118,356	8.8x	8.9x	7.9x	22.1x	20.2x	17.6x	31.4x	25.6x	22.2x	1.7x
75th Percentile	$96,060	$95,376	6.1x	6.1x	5.3x	22.0x	19.2x	16.7x	29.0x	24.3x	19.5x	1.3x
Median	$93,021	$95,313	5.9x	5.9x	5.3x	21.0x	18.1x	16.0x	24.4x	22.1x	19.5x	0.9x
Average	$63,655	$63,431	6.1x	6.2x	5.5x	19.5x	17.9x	15.6x	25.2x	21.9x	19.0x	1.0x
25th Percentile	$6,327	$5,490	5.6x	5.6x	4.9x	18.4x	18.0x	14.8x	22.4x	20.9x	18.1x	0.8x
Minimum	$2,887	$2,619	4.3x	4.3x	4.1x	14.0x	14.0x	13.2x	18.9x	16.4x	15.8x	0.1x
ASML Holding N.V.	$272,760	$264,463	9.0x	9.1x	7.5x	25.9x	26.4x	20.5x	34.8x	35.2x	27.1x	0.5x

Company Name	Revenue Growth		EBITDA Growth		Net Income Growth		EBITDA Margin			Return Metrics (LTM)		
	2024A	2025E	2024A	2025E	2024A	2025E	LTM	2024A	2025E	ROIC	ROA	ROE
Onto Innovation Inc.	20.6%	14.0%	66.7%	21.5%	114.6%	24.8%	25.3%	31.1%	33.1%	6.3%	5.8%	11.0%
Camtek Ltd.	35.4%	15.0%	91.7%	15.1%	75.5%	15.4%	27.7%	32.0%	32.0%	9.4%	8.0%	23.1%
Applied Materials, Inc.	4.3%	4.8%	4.1%	5.9%	2.1%	4.1%	30.7%	30.7%	31.0%	20.8%	15.6%	35.2%
Lam Research Corporation	12.8%	12.3%	19.8%	13.7%	25.9%	13.3%	32.0%	32.6%	32.9%	22.3%	15.6%	50.4%
KLA Corporation	10.8%	12.1%	19.4%	15.2%	34.3%	15.4%	41.9%	44.0%	45.2%	27.6%	17.7%	96.8%
Median	12.8%	12.3%	19.8%	15.1%	34.3%	15.4%	30.7%	32.0%	32.9%	20.8%	15.6%	35.2%
Average	16.8%	11.7%	40.4%	14.3%	50.5%	14.6%	31.5%	34.0%	34.8%	17.3%	12.5%	43.3%
ASML Holding N.V.	(4.7%)	21.0%	(6.7%)	28.8%	(10.5%)	29.7%	34.9%	34.5%	36.7%	26.9%	12.7%	47.4%

Commentary

- Peers were selected based on their role as manufacturers of machinery and equipment used in various stages of the semiconductor production process. Nikon and Canon are the only competitors producing DUV lithography systems (Canon offers KrF, i-line, and NIL, while Nikon provides ArF, i-line, and KrF). However, their primary business focus on cameras and lenses makes them an imperfect comparison from a business model perspective. As a result, their EV/EBITDA multiples trade significantly lower at around ~7.0x compared to ASML's ~20.0x+
- ASML trades at a premium valuation relative to its peer group, justified by its market dominant position in EUV and DUV, high margins, and the secular growth in AI, HPC and advanced semiconductor manufacturing
- We excluded CCA from our final valuation since the remaining peers manufacture machinery for different stages of the semiconductor process, so not a direct business model comparison
- ASML has a strong balance sheet relative to its peers, with Debt/EBITDA of only 0.4x

Source(s): S&P Capital IQ, Company Filings

ASML

Revenue Build I & Capital Allocation Commentary

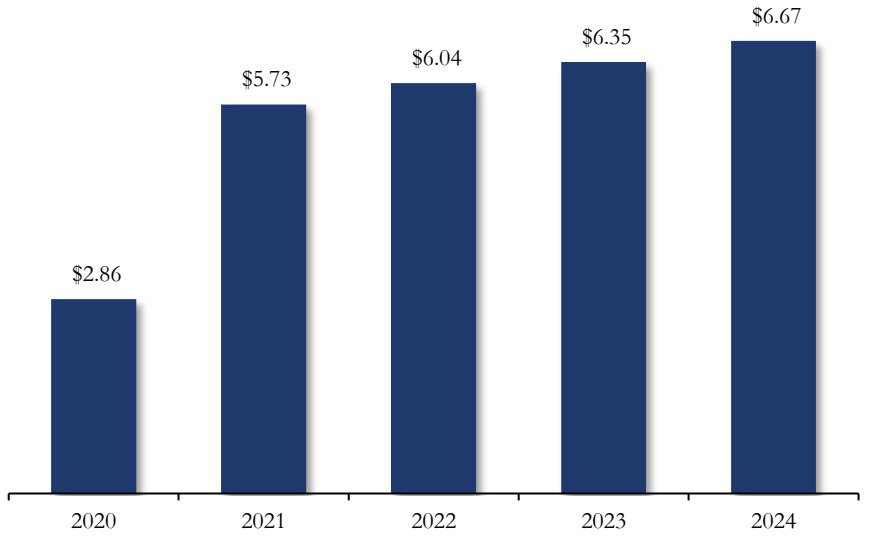
Lithography Systems: Revenue Build

Discounted Cash Flow (In Millions - EUR)	2017A	2018A	2019A	2020A	2021A	2022A	2023A	2024A	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E
Revenue:																		
Total Lithography Systems:	6,142	7,920	8,721	9,966	13,139	14,770	21,402	21,123	24,947	28,779	32,703	35,211	37,870	40,690	43,620	46,578	48,880	51,007
% Growth		*28.9%*	*10.1%*	*14.3%*	*31.8%*	*12.4%*	*44.9%*	*(1.3%)*	*18.1%*	*15.4%*	*13.6%*	*7.7%*	*7.6%*	*7.4%*	*7.2%*	*6.8%*	*4.9%*	*4.4%*
EUV High NA Revenue									1,750	3,000	4,345	6,076	7,888	9,860	11,951	14,159	15,797	17,348
% Growth										*71.4%*	*44.8%*	*39.8%*	*29.8%*	*25.0%*	*21.2%*	*18.5%*	*11.6%*	*9.8%*
EUV Low NA Revenue									10,368	12,825	15,510	15,680	15,939	16,182	16,462	16,662	16,794	16,856
% Growth										*23.7%*	*20.9%*	*1.1%*	*1.7%*	*1.5%*	*1.7%*	*1.2%*	*0.8%*	*0.4%*
ArF Immersion									8,547	8,535	8,258	8,544	8,824	9,113	9,408	9,701	10,004	10,306
% Growth										*(0.1%)*	*(3.2%)*	*3.5%*	*3.3%*	*3.3%*	*3.2%*	*3.1%*	*3.1%*	*3.0%*
ArF Dry									962	1,034	1,107	1,175	1,244	1,318	1,390	1,460	1,518	1,568
% Growth										*7.4%*	*7.1%*	*6.1%*	*5.9%*	*5.9%*	*5.5%*	*5.1%*	*3.9%*	*3.3%*
KrF									2,254	2,224	2,223	2,366	2,496	2,625	2,725	2,824	2,912	2,997
% Growth										*(1.3%)*	*(0.1%)*	*6.4%*	*5.5%*	*5.2%*	*3.8%*	*3.6%*	*3.1%*	*2.9%*
i-line									354	384	416	456	494	533	568	601	628	650
% Growth										*8.6%*	*8.2%*	*9.7%*	*8.3%*	*7.8%*	*6.6%*	*5.9%*	*4.5%*	*3.5%*
Metrology & Inspection									712	777	845	914	985	1,060	1,115	1,171	1,227	1,281
% Growth										*9.1%*	*8.7%*	*8.2%*	*7.8%*	*7.6%*	*5.2%*	*5.0%*	*4.8%*	*4.4%*

Capital Allocation Commentary

- ASML has demonstrated a consistent commitment to returning capital to shareholders with steady dividend growth since FY2022
  - Dividend/share has consistently increased over time
- ASML's dividend is expected to grow at a 16.42% CAGR to $2.13/share by February of 2028
- With ongoing demand for semiconductor manufacturing combined with ASML's leadership position in the market, the company is well-positioned to sustain its dividend growth trajectory
- ASML has also consistently returned cash to shareholders through share repurchases, which averaged 5.8M shares/year ($637.12/share) over the past 5-years

Historical Annual Dividend/Share



Sources: Bloomberg

ASML

Revenue Build II

Discounted Cash Flow Assummptions (Millions - EUR)	2017A	2018A	2019A	2020A	2021A	2022A	2023A	2024A	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E
Lithography Systems:																		
Total Units Shipped	197	224	229	258	309	345	449	418	421	441	458	471	482	494	505	517	526	534
% Growth		*13.7%*	*2.2%*	*12.7%*	*19.8%*	*11.7%*	*30.1%*	*(6.9%)*	*0.7%*	*4.8%*	*3.9%*	*2.8%*	*2.5%*	*2.4%*	*2.3%*	*2.2%*	*1.8%*	*1.6%*
EUV High NA									5	8	11	14	17	20	23	26	28	30
% Growth										*60.0%*	*37.5%*	*27.3%*	*21.4%*	*17.6%*	*15.0%*	*13.0%*	*7.7%*	*7.1%*
Average Selling Price									€ 350	€ 375	€ 395	€ 434	€ 464	€ 493	€ 520	€ 545	€ 564	€ 578
% Growth										*7.1%*	*5.3%*	*9.9%*	*6.9%*	*6.3%*	*5.4%*	*4.8%*	*3.6%*	*2.5%*
EUV Low NA									48	57	66	64	63	62	61	60	59	58
% Growth										*18.8%*	*15.8%*	*(3.0%)*	*(1.6%)*	*(1.6%)*	*(2.3%)*	*(1.5%)*	*(1.0%)*	*(1.0%)*
Average Selling Price									€ 216	€ 225	€ 235	€ 245	€ 253	€ 261	€ 270	€ 278	€ 285	€ 291
% Growth										*4.2%*	*4.4%*	*4.3%*	*3.3%*	*3.2%*	*3.4%*	*2.9%*	*2.5%*	*2.1%*
ArF Immersion									111	109	104	106	108	110	112	114	116	118
% Growth										*(1.8%)*	*(4.6%)*	*1.9%*	*1.9%*	*1.9%*	*1.8%*	*2.3%*	*1.8%*	*1.7%*
Average Selling Price									€ 77	€ 78	€ 79	€ 81	€ 82	€ 83	€ 84	€ 85	€ 86	€ 87
% Growth										*1.7%*	*1.4%*	*1.5%*	*1.4%*	*1.4%*	*1.4%*	*1.3%*	*1.3%*	*1.3%*
ArF Dry									37	39	41	43	44	46	48	49	50	51
% Growth										*5.4%*	*5.1%*	*4.2%*	*4.0%*	*3.7%*	*3.4%*	*3.0%*	*1.9%*	*1.5%*
Average Selling Price									€ 26	€ 27	€ 27	€ 28	€ 28	€ 29	€ 29	€ 30	€ 30	€ 31
% Growth										*1.9%*	*1.9%*	*1.9%*	*1.8%*	*2.1%*	*2.0%*	*2.0%*	*2.0%*	*1.8%*
KrF									161	166	171	175	178	181	184	186	189	191
% Growth										*3.1%*	*3.0%*	*2.3%*	*1.7%*	*1.7%*	*1.5%*	*1.5%*	*1.3%*	*1.3%*
Average Selling Price									€ 14	€ 13	€ 13	€ 14	€ 14	€ 15	€ 15	€ 15	€ 15	€ 16
% Growth										*(4.3%)*	*(3.0%)*	*4.0%*	*3.7%*	*3.4%*	*2.3%*	*2.1%*	*1.8%*	*1.6%*
i-line									59	62	65	69	72	75	78	81	84	86
% Growth										*5.1%*	*4.8%*	*6.2%*	*4.3%*	*4.2%*	*4.0%*	*3.8%*	*3.5%*	*2.5%*
Average Selling Price									€ 6	€ 6	€ 6	€ 7	€ 7	€ 7	€ 7	€ 7	€ 7	€ 8
% Growth										*3.3%*	*3.2%*	*3.3%*	*3.8%*	*3.5%*	*2.5%*	*2.0%*	*1.0%*	*1.0%*
Metrology & Inspection	95	114	115	137	196	216	151		178	185	192	199	205	212	219	225	231	237
% Growth										*3.9%*	*3.8%*	*3.5%*	*3.3%*	*3.3%*	*3.1%*	*3.0%*	*2.8%*	*2.5%*
Average Selling Price	€ 3	€ 3	€ 2	€ 3	€ 3	€ 3	€ 4		€ 4	€ 4	€ 4	€ 5	€ 5	€ 5	€ 5	€ 5	€ 5	€ 5
% Growth										*5.0%*	*4.8%*	*4.0%*	*3.8%*	*3.5%*	*3.0%*	*2.5%*	*2.0%*	*2.0%*

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Working Capital Build & GGM 0.0% Sensitivity

Working Capital Build

	2017A	2018A	2019A	2020A	2021A	2022A	2023A	2024A	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E
Working Capital:																		
Accounts Recievables	1,740	1,498	1,786	1,310	3,028	5,323	4,334	4,477	5,315	5,893	7,605	8,018	8,430	8,844	9,245	9,612	9,829	9,981
Days of Sales Outstanding (DSO)	*72.4*	*50.9*	*55.6*	*34.7*	*60.4*	*93.4*	*57.9*	*58.4*	*59.0*	*57.0*	*65.0*	*63.7*	*62.4*	*61.1*	*59.9*	*58.6*	*57.3*	*56.0*
Prepaid Expenses	99	199	213	279	374	678	472	555	631	717	811	873	936	1,003	1,071	1,138	1,190	1,236
% of Revenue	*1.1%*	*1.9%*	*1.8%*	*2.0%*	*2.0%*	*3.3%*	*1.7%*	*2.0%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*	*1.9%*
Inventory	2,955	3,439	3,809	4,569	5,179	7,199	8,850	10,891	10,607	10,804	11,642	12,711	13,170	13,612	14,179	14,693	14,977	15,163
Days of Inventory Outstanding (DIO)		*197.3*	*202.3*	*212.9*	*202.1*	*215.7*	*212.5*	*257.7*	*242.8*	*220.0*	*214.0*	*222.0*	*219.2*	*216.3*	*213.5*	*210.7*	*207.8*	*205.0*
Total Current Operating Assets	**4,794**	**5,136**	**5,808**	**6,158**	**8,581**	**13,200**	**13,656**	**15,923**	**16,552**	**17,414**	**20,058**	**21,602**	**22,536**	**23,460**	**24,495**	**25,444**	**25,996**	**26,381**
Accounts Payables	837	964	1,062	1,377	2,116	2,563	2,346	3,499	3,623	3,658	3,594	5,047	5,035	4,998	4,986	4,932	4,782	4,586
Days of Payables Outstanding (DPO)	*61.8*	*59.5*	*59.3*	*70.0*	*87.7*	*89.3*	*62.1*	*91.4*	*82.9*	*74.5*	*66.1*	*88.1*	*83.8*	*79.4*	*75.1*	*70.7*	*66.4*	*62.0*
Unearned Revenue	1,530	1,728	2,526	3,954	7,935	12,481	11,441	12,571	12,067	11,321	14,092	14,640	15,153	15,637	16,061	16,390	16,430	16,334
% of Revenue	*17.4%*	*16.1%*	*21.5%*	*28.7%*	*43.4%*	*60.0%*	*41.9%*	*44.9%*	*36.7%*	*30.0%*	*33.0%*	*31.9%*	*30.7%*	*29.6%*	*28.5%*	*27.4%*	*26.2%*	*25.1%*
Accrued Expenses	558	850	980	1,079	1,386	1,746	2,036	2,533	2,631	2,922	3,197	3,323	3,443	3,560	3,757	3,895	4,024	4,051
% of Cost of Revenue	*11.3%*	*14.4%*	*15.0%*	*15.0%*	*15.7%*	*16.7%*	*14.8%*	*18.1%*	*16.5%*	*16.3%*	*16.1%*	*15.9%*	*15.7%*	*15.5%*	*15.5%*	*15.3%*	*15.3%*	*15.0%*
Total Current Operating Liabilities	**2,925**	**3,542**	**4,568**	**6,410**	**11,437**	**16,790**	**15,823**	**18,603**	**18,321**	**17,901**	**20,883**	**23,010**	**23,631**	**24,195**	**24,804**	**25,217**	**25,236**	**24,972**
Net Working Capital	1,869	1,594	1,240	(252)	(2,856)	(3,590)	(2,167)	(2,680)	(1,768)	(487)	(824)	(1,408)	(1,095)	(735)	(309)	226	759	1,409
(+/-) Change in NWC		275	354	1,492	2,604	734	(1,423)	513	(912)	(1,281)	338	583	(312)	(360)	(426)	(535)	(533)	(650)

Sensitivity Analysis with 0.0% GGM

Perpetuity Growth Method	
Cumulative PV of UFCF	94,226.3
% of Enterprise Value	*42.9%*
Terminal Value	
Final Year UFCF	21,675.3
Perpetuity Growth Rate	0.0%
WACC	8.0%
Terminal Value	270,941.6
PV of Terminal Value	125,498.4
% of Enterprise Value	*57.1%*
Total Enterprise Value	**219,724.7**
Plus: Cash	12,741.0
Less: Debt	(3,677.0)
Total Equity Value	**228,788.7**
Diluted Shares Outstanding	393.3
Implied Share Price (USD)	**$605.88**
Spot Rate (EUR - USD)	1.0415
Implied Share Price (EUR)	**€581.74**
Current Share Price (USD)	$693.54
Implied Margin of Safety	**(12.6%)**

Perpetuity Growth Method

WACC	(1.0%)	(0.5%)	0.0%	0.5%	1.0%
7.0%	$634.63	$660.65	$690.39	$724.70	$764.73
7.5%	$597.91	$619.93	$644.88	$673.39	$706.29
8.0%	$566.00	$584.77	**$605.88**	$629.81	$657.16
8.5%	$538.10	$554.21	$572.21	$592.47	$615.42
9.0%	$513.58	$527.49	$542.94	$560.22	$579.65

Perpetuity Growth Method

WACC	(1.0%)	(0.5%)	0.0%	0.5%	1.0%
7.0%	(8.5%)	(4.7%)	(0.5%)	4.5%	10.3%
7.5%	(13.8%)	(10.6%)	(7.0%)	(2.9%)	1.8%
8.0%	(18.4%)	(15.7%)	**(12.6%)**	(9.2%)	(5.2%)
8.5%	(22.4%)	(20.1%)	(17.5%)	(14.6%)	(11.3%)
9.0%	(25.9%)	(23.9%)	(21.7%)	(19.2%)	(16.4%)

When applying a 0.0% GGM instead of 2.0%, we see a 12.6% downside.

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