ASML Holding N.V. (NASDAQ: ASML)

Recommendation: Sell

Target Price: 907.6

Current Price: 1099.47 (implied downside: 17.6%)

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Executive Summary

ASML remains the dominant player in the lithography market, holding a near-monopoly in advanced EUV systems and an essential role in the semiconductor manufacturing ecosystem. However, despite its strong market position, we believe ASML's growth profile over the next several years will lag the momentum seen in other semiconductor equipment categories, and be offset by China's softening outlook.

1. **Lithography is structurally underperforming etching and deposition:**

   Although AI spending has lifted overall tool demand, lithography's contribution remains limited. The key reason is that High NA EUV, ASML's next major driver, will not reach meaningful scale until 2028 based on TSMC guidance. This delays the expected uplift from advanced systems and leaves ASML positioned to lag the broader equipment industry from 2025 to 2030.

2. **Softening China Outlook:**

China revenue will be weaker next year as tighter United States and China policy limits access to advanced tools. Recent results were also inflated by significant pull-forward orders ahead of new regulations, and these one-off shipments will not repeat. With this temporary demand fading, China will contribute less to ASML's top line in the coming year.

Company Introduction

ASML Holding N.V. (ASML) is the backbone of modern chip manufacturing, designing and producing lithography systems that transfer circuit patterns onto silicon wafers. The company sells both deep-ultraviolet (DUV) scanners, which handle most layers across logic, DRAM and NAND, and extreme-ultraviolet (EUV) systems, which are indispensable for cutting-edge nodes used in advanced CPUs, GPUs and high-bandwidth memory. ASML is currently the only supplier of EUV tools in high-volume production and is rolling out a new generation of High-NA EUV systems that will support 2nm-class and smaller geometries while simplifying process steps for leading foundries and IDMs. Alongside its tools of business, ASML has built a large, high-margin installed-base franchise that provides maintenance, performance upgrades and software-driven yield improvements over the lifetime of each system. This combination of unique technology, deep integration into customer roadmaps and a growing stream of recurring service revenue positions ASML to compound earnings over multiple process cycles as the semiconductor industry invests to support AI workloads, data-center expansion and structurally higher compute and memory demand.

ASML 2024 Revenue Breakdown

Source: ASML Annual Report 2024

Competitive Analysis

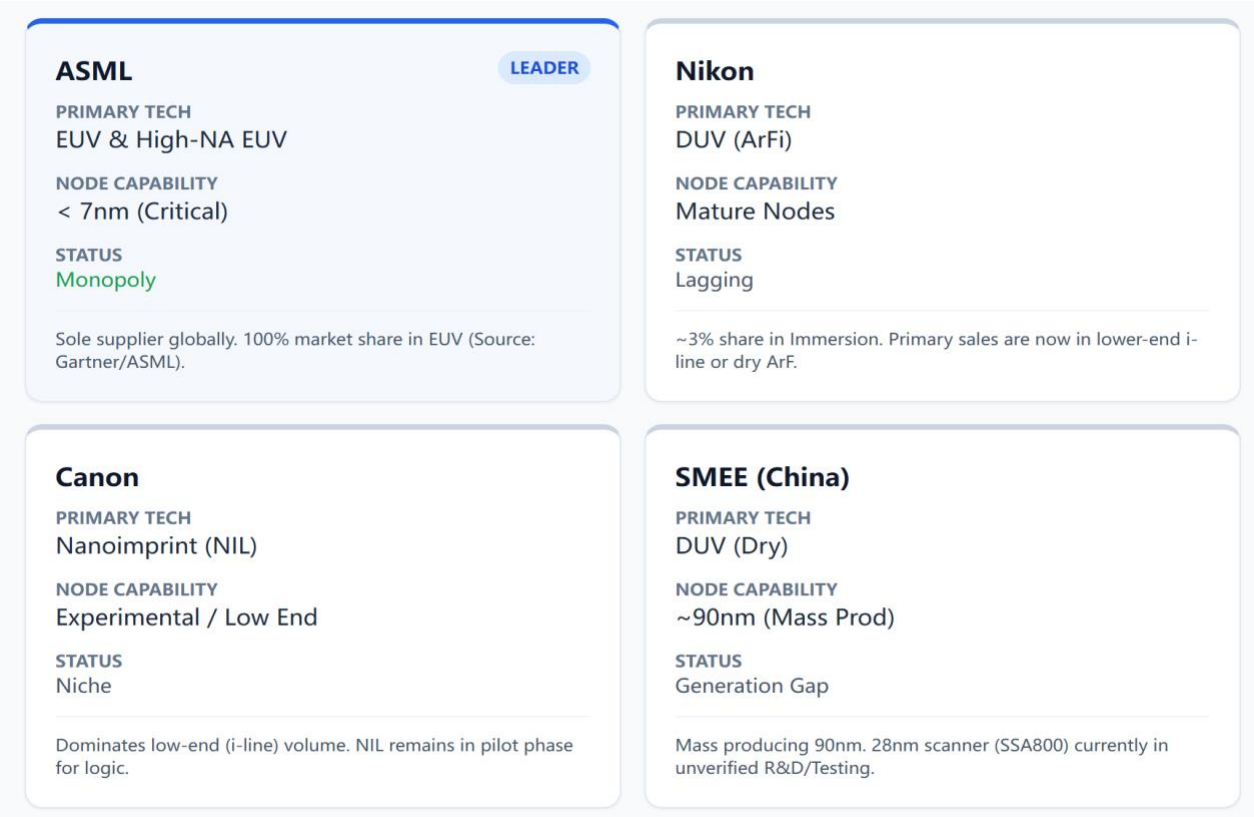
Market Position & Competitors ASML operates with a functional monopoly in the most critical segments of the lithography market, creating a competitive environment defined by the absence of viable substitutes at the leading edge.

- **EUV Dominance (Sole Supplier):** ASML has no direct competition in Extreme Ultraviolet (EUV) lithography. It remains the world's only supplier of EUV systems, which are essential for manufacturing chips at 7nm nodes and below.
- **DUV Leadership (ArFi):** While Nikon and Canon historically competed in Deep Ultraviolet (DUV) immersion lithography, ASML has effectively cornered the market, claiming approximately 90% of the ArFi segment. Competitors like Nikon have been relegated to low-volume niches, shipping negligible units in recent fiscal periods.
- **Limited Threat from Substitutes:** Alternative patterning technologies remain experimental or niche. Canon's Nanoimprint Lithography (NIL) is currently in R&D/prototyping phases (e.g., Texas Institute for Electronics) and has not proven viable for high-volume leading-edge manufacturing. Similarly, domestic Chinese challengers like SMEE remain generations behind, capable only of producing lagging-edge tools (~90nm), highlighting the steep technological gap.

Structural Moat & Barriers to Substitution ASML's competitive advantage is secured by insurmountable engineering barriers and deep ecosystem integration, making vendor substitution economically and technically impractical for fabs.

- **Extreme Complexity & Scale:** The transition to High-NA EUV reinforces barriers to entry. With individual tools costing >$300M and requiring complex logistics (shipping in ~250 crates), the barrier is not just engineering a machine but replicating an entire industrial infrastructure.
- **Vertical Integration & Ecosystem Lock-in:** ASML has secured control over critical subsystems, creating a proprietary supply chain. This includes a 24.9% stake in ZEISS (optics) and the acquisition of Cymer (light sources). This deep integration creates a closed loop of innovation that new entrants cannot easily duplicate.
- **"Holistic Lithography" & Switching Costs:** ASML does not sell standalone tools; it sells a coordinated "holistic" platform integrating design, metrology, and lithography. Once a fab's yield and process flows are optimized around ASML's software and hardware stack, switching vendors would incur prohibitive qualification risks and yield losses, effectively locking in customers for the lifecycle of the technology node.

ASML Competitors Matrix

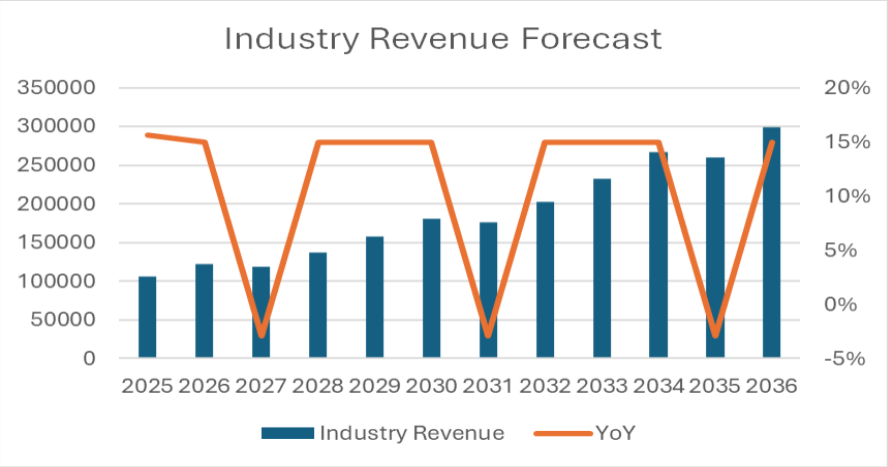


Revenue Forecasts

System Sales

Our previous industry report provides a baseline forecast for overall semiconductor equipment spending. This projection already incorporates:

- AI accelerators and data-center build-outs that pull forward demand for leading-edge logic and advanced wafers
- Scaling of DRAM (including HBM) and 3D NAND, which raises lithography intensity in critical memory layers
- Cyclical downturns and digestion periods following large node-transition capex waves
- Technology milestones such as 3nm/2nm nodes, gate-all-around (GAA) transistors and, eventually, the introduction of High-NA EUV, which shift more process complexity into advanced lithography tools



Since ASML only produces lithograpghy equipment, we break down the overall industry into two sectors, Lithography VS Etching&Deposition.

The mass production of High-NA EUV would be the most important thing to calculate the CAGR of the two sectors because it fundamentally changes patterning intensity. High-NA EUV enables finer resolution with fewer mask steps, reducing the need for multi-patterning layers that previously required heavy etch and deposition. As a result, etch/deposition grows faster before High-NA EUV is introduced, and more slowly afterward.

Therefore, we use ASML's expected High-NA EUV ramp (around 2030) as the dividing line. This allows us to separate the forecast horizon into two technological eras, each with different growth dynamics for ASML.

Period	Technology Context	Growth Leader	Historical Proxy Period	Relative CAGR (Etch/Dep vs. Litho)
2025–2030	Pre–High-NA EUV era	**Etch + Deposition-led**	2012–2018	**~2.0–2.3×** litho growth
2030–2035	High-NA EUV ramp	**Lithography-led**	2018–2023	**~0.5×** litho growth

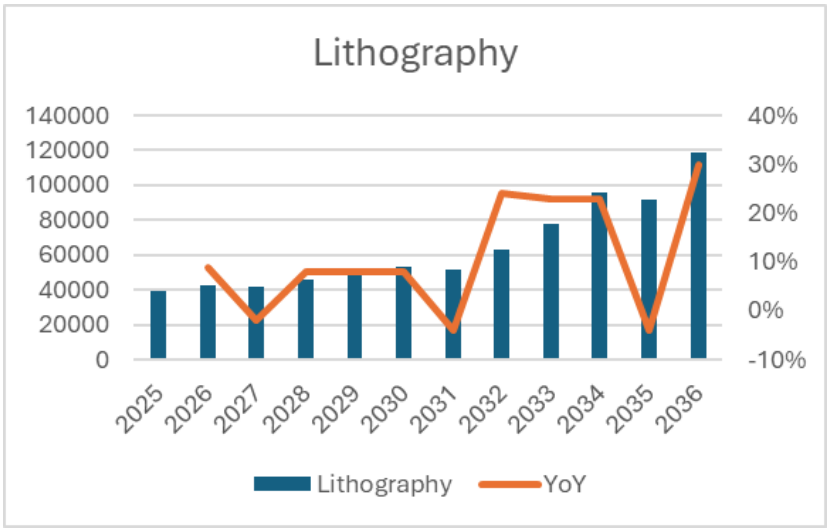
1. 2025–2030: Pre–High-NA EUV Era (Etch + Deposition–Driven)

Before High-NA EUV is widely used, foundries rely heavily on multi-patterning, complex etch steps, and advanced dielectric deposition. During similar technology periods (2012–2018), etch/deposition spending grew ~2.0–2.3× faster than lithography.

2. 2030–2035: High-NA EUV Ramp (Lithography-Driven)

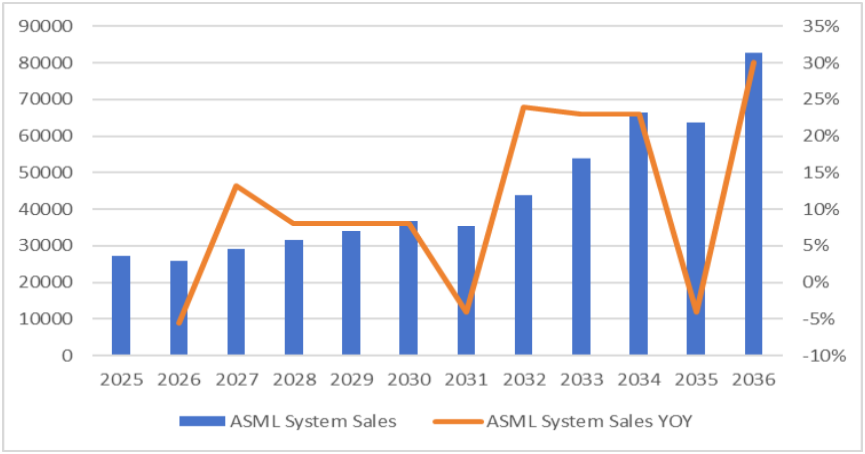
Once High-NA EUV arrives, logic scaling shifts more complexity into the lithography stage, reducing the number of patterning layers and lowering etch/deposition intensity. Historically (2018–2023), etch/deposition grew ~0.5× the rate of lithography during similar transitions.

We then get the lithography sector's projection, it grows from **$39.4B in 2025** to **$53.6B in 2030** with slower growth rate, and **$118.9B by 2036 with higher growth rate**.



Based on this framework, we expected ASML's system sales revenue to be consistent with the lithography sector's CAGR in the next 10 years, given its monopoly status.

ASML System Sales & YoY Growth



Installed Base Management (IBM)

ASML's Installed Base Management (IBM) segment includes service contracts, spare parts, field upgrades, refurbishments and productivity enhancements tied to the global fleet of

DUV, EUV and HighNA scanners. Because these revenues are generated after tools have been shipped and entered production, IBM is structurally more stable than system sales and moves primarily with the size and utilization of ASML's installed base rather than with a single year capex.

To capture this dynamic, we construct a *weighted* installed-base metric using the last seven years of system sales. For a given year *t*, the installed base is defined as: system sales from *t–6*× (1-1/7) + *t–5* × (2/7) + … + *t–1* × (1-6/7). In other words, IBM in 2025 is linked to system sales from 2019–2025, with older cohorts receiving higher weights and more recent shipments receiving lower weights. This formulation approximates the population of economically active tools while reflecting the ramp-up and gradual decay of service revenue per tool. Using historical data for the last three years, IBM revenue has on average represented ~15.8% of this weighted installed-base metric. We hold this IBM / installed-base ratio constant over the forecast period and apply it to each year's projected installed base to derive our core IBM outlook.

China Effect

During ASML's Q3 2025 earnings call, management reiterated that China's business over the last 2–3 years has been "very high and in no way normal," characterizing this period as a high cycle rather than a sustainable run-rate. They noted that 2025 China sales have again come in stronger than they themselves expected, but emphasized that their underlying view of the market has not changed: ASML's China exposure is heavily concentrated in "mainstream logic," and at today's level the country is clearly above what they consider a normalized demand level. Based on their understanding of that market and ongoing customer dialogues, management expects China revenue to "decline significantly" in 2026 versus the very strong 2024–25 period and "go back to more reasonable business," while acknowledging that China could once again surprise to the upside.

Region	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025LTM	2026
Total	6972	7516	10109	12911	13230	15935	21998	22253	29794	30572	35536	
China	-	864	1031	2169	1548	2645	3234	3071	7836	11037	10839	11814
South Korea	2189	1751	3427	4390	2461	4733	7347	6364	7508	6940	9097	
Taiwan	1722	2307	2396	2350	5993	5386	8667	8501	8730	4708	7782	
USA	1346	1248	1688	2311	2223	1896	1870	2092	3397	4892	5615	
Japan	739	443	435	671	516	622	550	1068	656	1254	1635	
EMEA	237	609	950	749	357	558	154	645	1311	1437	178	
Other	746	293	182	258	132	96	176	490	328	336	426	

Looking ahead, management has indicated that a more "normal" China contribution is around 22% of total sales, compared with the roughly 30–35% range seen in recent years. In our regional bridge, 2025 LTM revenue totals $35,536 million, of which China accounts

for $10,839 million, or roughly 30.5% of total revenue. We therefore treat 2025 LTM as the peak of ASML's "high-cycle" China period.

We translate this guidance directly into our model. First, we use the 2025 LTM China revenue of $10,839 million as the starting point. For CY2026, we initially project what China revenue would have been in our pre-guidance base case by letting it grow in line with our underlying WFE / ex-China assumptions. This yields a baseline 2026 China revenue of $11,814 million, equivalent to roughly +9% YoY from 2025. We then overlay management's assumption of a "significant decline" by normalizing China's mix back to 22% of total 2026 revenue. Holding total 2026 revenue flat at the 2025 LTM level of $35,536 million, this implies an adjusted 2026 China revenue of about $7,818 million.

Formally, we define the China Effect as:

$$\text{China Effect} = \text{China Revenue}_{2025} \times (1 + \text{Baseline YoY Growth}) - \text{China Revenue}_{2026,\text{Mgmt Projection}}$$

Plugging in our assumptions:

China Effect ≈ $10,839m × (1 + 9%) – $7,817m ≈ $3.99 billion

We then distribute this China effect to System Sales Section, which is affected by China demand.

2026 & 2027 Revenue without China Effect:

Year	2025	2026	2027
ASML System Sales	27370	29833	29237
IBM Revenue	8166	9794	11574
Revenue	35536	39627	40811

2026 & 2027 Revenue with China Effect:

Year	2025	2026	2027
ASML System Sales	27370	25837	29237
IBM Revenue	8166	9794	11484
Revenue	35536	35631	40721

This results in a one-time decline of approximately –28% YoY in China revenue from 2025 to 2026 in our forecast, versus an 9% increase in the no-shock baseline. Beyond 2026, we assume China demand stabilizes at this more "reasonable" level rather than continues to fall, as global WFE continues to grow and ASML's ex-China business expands. From 2027

onward, we allow both China and ex-China revenues to grow in line with our broader top-line assumptions, so the 2026 adjustment is modeled as a level reset rather than a persistent drag.

Margin Breakdown

Gross Margin

(Unit: USD thousands)	2025 FY	2026 FY	2027 FY	2028 FY	2029 FY	2030 FY	2031 FY	2032 FY	2033 FY	2034 FY	2035 FY
Gross Profit	18727472	19061077.81	21036603.03	23456067.02	25984258.77	28786629.27	27504131.26	33149704.45	39620872.22	48023799.41	44772361.3
Gross Margin	52.70%	53.50%	51.66%	52.44%	53.23%	54.04%	52.18%	52.97%	53.77%	54.58%	51.15%

Given the cyclical nature of the semiconductor equipment industry, our forecast accounted for both structural growth and recurring downturns observed in ASML's historical performance. Based on reviewing the company's financials over the past two decades, ASML has historically followed a three-year upcycle followed by a one-year downcycle pattern, in line with the broader industry trend.

To project future gross margins, we first looked at the three most recent upcycles, 2011–2014, 2015–2018, and 2019–2023, to capture ASML's margin expansion during periods of growth. We then averaged these cycles to obtain a gross margin of CAGR of 1.51%, smoothing short-term volatility caused by external factors and producing a total fluctuation of 3.43 percentage points over the typical three-year upcycle. This rate was applied to extend gross margin projections from 2025 through 2035 during up years, representing the company's long-term upward efficiency trend.

To capture cyclical downturns, we identified historical down years—2019 and 2024—and computed the average year-over-year decline in gross margin during those periods (–3.43%). We then applied this average decrease to the projected down years of 2027, 2031, and 2035, ensuring our model realistically reflects the company's recurring contraction phases within each four-year cycle.

Operating Margin

(Unit: USD thousands)	2025 FY	2026 FY	2027 FY	2028 FY	2029 FY	2030 FY	2031 FY	2032 FY	2033 FY	2034 FY	2035 FY
Operating Income	12,366,528	12,937,099	13,390,545	15,391,872	17,534,195	19,931,716	17,932,914	22,237,996	27,284,685	33,880,288	29,401,290
Operating Margin	34.8%	36.3%	32.88%	34.41%	35.92%	37.41%	34.02%	35.53%	37.03%	38.51%	33.59%

We apply the same cyclical forecasting framework used for gross margins to model ASML's operating margin. Using historical operating margin data from 2015 to 2025, we identified industry's three most recent upcycles—2011– 2014, 2015–2018, and 2019–2023 —and calculated the average operating margin of CAGR across these periods. This yields

an upcycle operating margin growth rate of 5.06%, which we apply to forecast operating margin increases in the upcycle years of ASML from 2025 through 2035 (2025–2027, 2029–2031, 2033–2035).

To incorporate cyclical downturn effects, we examined ASML's historical downcycle years—2015 and 2019—and computed the average year-over-year decline in operating margin during those periods (–9.57%). We apply this decline rate to projected down years in 2027, 2031, and 2035, consistent with our four-year industry cycle assumption.

Operating Expense

(Unit: USD thousands)	2025 FY	2026 FY	2027 FY	2028 FY	2029 FY	2030 FY	2031 FY	2032 FY	2033 FY	2034 FY	2035 FY
Expense	6,360,944	6,123,979	7,646,058	8,064,195	8,450,064	8,854,913	9,571,217	10,911,708	12,336,187	14,143,512	15,371,072
Expense Rate	17.90%	17.19%	18.78%	18.03%	17.31%	16.62%	18.16%	17.44%	16.74%	16.07%	17.56%

We forecast operating expenses as a percentage of revenue using the same cyclical framework applied in the margin forecasts, reflecting the industry's alternating periods of expansion and contraction. Historically, ASML's operating expenses have exhibited an inverse relationship to revenue growth—declining as a percentage of revenue during upcycles as scale efficiencies take effect and rising during downcycles when fixed costs represent a larger share of a temporarily reduced revenue base.

We used the same upcycle and downcycle periods referenced in the gross margin forecast—2011–2014, 2015–2018, 2019–2023—to determine expense trends during growth phases. We then averaged the CAGR of operating expenses as a percentage of revenue for each upcycle and applied the resulting upcycle CAGR of –3.98% to forecast operating expense ratios in years reflecting expansion.

To reflect cyclical reversals, we anchored historical down years—2019 and 2024—during which operating expenses increased as a percentage of revenue. The average year-over-year increase of 9.25% observed during these periods was applied to the projected down years of 2027, 2031, and 2035, capturing the temporary peaks in operating expense ratios that accompany industry slowdowns.

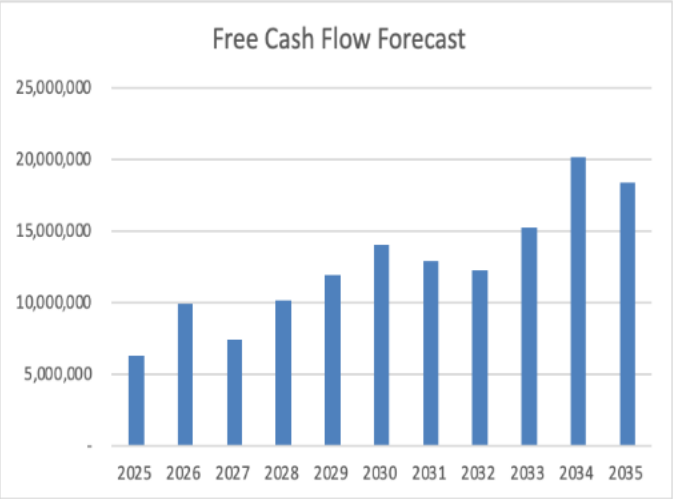
Production Bottle Neck Concern

A key structural constraint in ASML's near-term growth profile is its own production bottleneck for High-NA EUV systems. Despite strong customer interest, ASML can currently manufacture only a very limited number of High-NA tools per year—industry estimates place output in the mid-single-digit range (roughly five to six units). In the 3Q 2025 Earnings Call, analysts expressed concerns whether ASML is able to support broad

deployment of High NA EUV even if customers wished to accelerate adoption. In response, management has announced plans to expand High-NA EUV capacity to 20 systems by 2027–2028 in a more recent news release on Nov. 10. 2025, but the current constraint remains binding. Importantly, near-term demand for High-NA is relatively modest—updated shipment forecasts indicate roughly 10 High-NA tools in 2027 and 20 combined across 2026–2027 —meaning ASML's limited capacity is unlikely to constrain customers in the next 24 months. However, it also means ASML cannot achieve meaningful High-NA revenue scale until its own manufacturing capability catches up. As a result, High-NA is unlikely to contribute materially to system-sales growth before 2028 and is not a near-term catalyst for upside. Post 2028, production bottleneck may remain a downside risk.

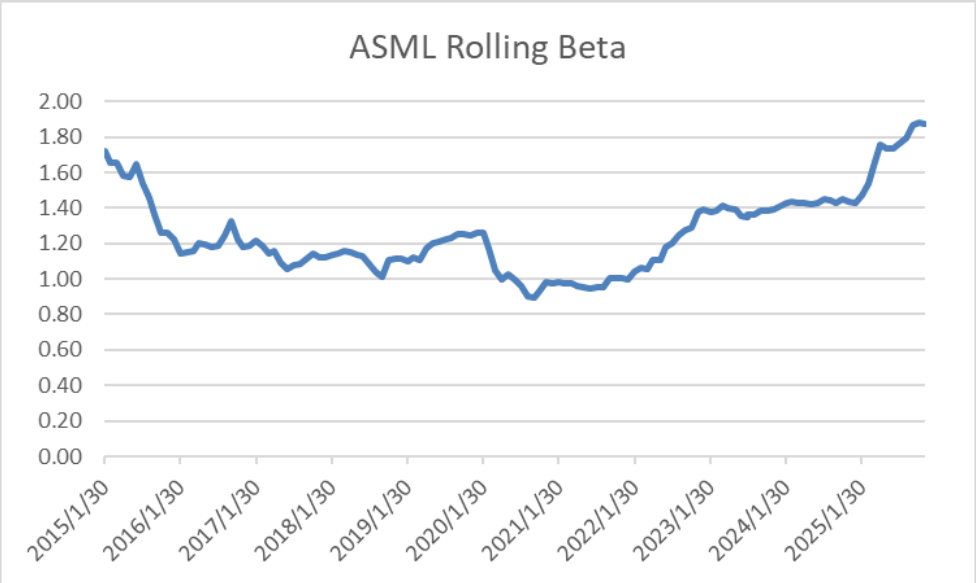
DCF

Discounted Cash Flow	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Date	12/31/2025	12/31/2026	12/31/2027	12/31/2028	12/31/2029	12/31/2030	12/31/2031	12/31/2032	12/31/2033	12/31/2034	12/31/2035	12/31/2036
Time Periods	0	1	2	3	4	5	6	7	8	9	10	11
Sales	35,536,000.00	35,631,000.00	40,721,000.00	44,729,000.00	48,813,000.00	53,273,000.00	52,708,000.00	62,582,000.00	73,686,000.00	87,985,000.00	87,527,000.00	87,527,000.00
Less: COGS	16,808,528.00	16,569,922.19	19,684,396.97	21,272,932.98	22,828,741.23	24,486,370.73	25,203,868.74	29,432,295.55	34,065,127.78	39,961,200.59	42,754,638.69	42,754,638.69
Less: Expense	6,360,944.00	6,123,979.07	7,646,058.50	8,064,195.10	8,450,063.89	8,854,913.09	9,571,217.40	10,911,708.05	12,336,186.79	14,143,511.53	15,371,071.72	15,371,071.72
EBIT	12,366,528	12,937,099	13,390,545	15,391,872	17,534,195	19,931,716	17,932,914	22,237,996	27,284,685	33,880,288	29,401,290	29,401,290
Less: Cash Taxes	1,607,649	1,681,823	1,740,771	2,000,943	2,279,445	2,591,123	2,331,279	2,890,940	3,547,009	4,404,437	3,822,168	3,822,168
Plus: D&A	1,131,670	1,134,695	1,296,790	1,424,428	1,554,486	1,696,518	1,678,525	1,992,970	2,346,585	2,801,947	2,787,362	2,787,362
Less: Capex	2,537,762	2,588,966	2,830,230	3,093,374	3,318,789	3,303,389	4,046,944	5,018,737	6,298,141	6,322,331	8,275,798	8,275,798
Less: Changes in NWC	3,065,612	(87,528)	2,743,978	1,561,212	1,583,799	1,692,832	388,196	4,118,828	4,548,727	5,819,422	1,723,845	-
FCF	6,287,176	9,888,533	7,372,356	10,160,771	11,906,647	14,040,890	12,845,020	12,202,462	15,237,394	20,136,045	18,366,840	20,090,686



Re	11.29%
Rd	4.30%
10 Yr Treasury	4.02%
Beta	1.68
Tax Rate	13.00%
Total Debt	3,171,423
Total Equity	19,129,102
MRP	4.33%
D/(D+E)	14.22%
Perpetural Growth	2.50%
WACC	10.22%

Rolling Beta



We computed ASML's rolling beta for a 60-month rolling window. Given significant time-variation in ASML's market beta driven by structural shifts and recent macro conditions; we use the semiconductor equipment industry beta of 1.68 as a more stable proxy for ASML's forward-looking systematic risk.

Conclusion

We initiate a Sell rating on ASML with a target price of $907.6, implying a 17.6% downside. While we acknowledge that the recent upward revision of memory industry demand has led many analysts to upgrade ASML, we believe the market is reflecting this too optimistically. 60–70% of ASML's revenue is still driven by logic, and key customers such as TSMC are unlikely to deploy High-NA EUV at scale before 2028, limiting the near- to medium-term uplift from the most advanced tools.

In our view, the stock's recent rerating reflects a narrative of broad-based AI and memory-driven upside that is not fully aligned with ASML's revenue mix and technology adoption timeline. Memory strength may provide some support, but it is unlikely to offset the slower, more gradual ramp in leading-edge logic investments over the next five years. As a result, we expect ASML to underperform peers, and we see the current valuation as leaving investors with a skewed risk-reward to the downside.