

CREDIT OPINION

9 August 2023

Update



Send Your Feedback

RATINGS

ASML Holding N.V.

Domicile	Veldhoven, Netherlands
Long Term Rating	A2
Type	Senior Unsecured - Dom Curr
Outlook	Stable

Please see the [ratings section](#) at the end of this report for more information. The ratings and outlook shown reflect information as of the publication date.

Contacts

Dirk Goedde +49.69.70730.702
VP - Senior Analyst
dirk.goedde@moodys.com

Christian Hendker, +49.69.70730.735
CFA
Associate Managing Director
christian.hendker@moodys.com

Djena Kern +49.69.70730.919
Associate Analyst
djena.kern@moodys.com

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454

ASML Holding N.V.

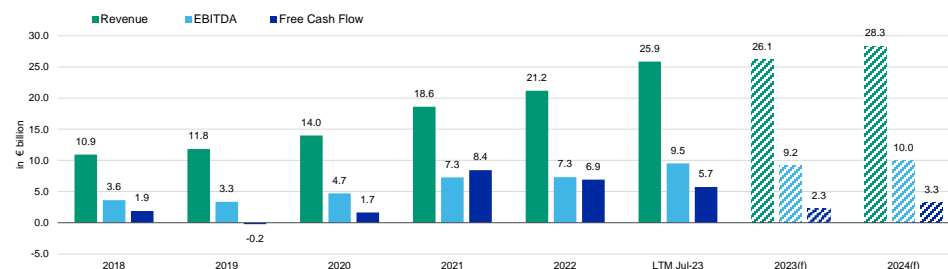
Update to credit analysis

Summary

[ASML Holding N.V.](#)'s (ASML) A2 senior unsecured rating with a stable outlook is supported by the company's strong market positions in semiconductor lithography systems, with a de facto monopoly in sophisticated extreme ultraviolet (EUV) lithography systems and a dominant market position in deep ultraviolet lithography. The A2 rating also reflects the accelerating digitisation trend, driven by an increasing number of devices with higher and more complex semiconductor content in various end markets, including consumer electronics, high performance computing, automotive, industrial applications and telecommunications. These trends are likely to lead to continued high-single-digit market growth rates in the next years.

Exhibit 1

Operating performance is likely to remain strong, supported by the adoption of EUV technology in high-volume manufacturing



Free cash flow (FCF, Moody's-adjusted after dividends) in 2019 was affected by a one-off effect because of the implementation of interim dividends. Forecast represents our forward view, not the view of the issuer and, unless noted in the text, does not incorporate significant acquisitions and divestitures.

Sources: Moody's Financial Metrics™ and Moody's Investors Service estimates

ASML is driving digitisation with its strong innovation track record. Following the introduction of EUV lithography solutions, it is currently expected to ship its first next-generation lithography machines to its customers. In addition, ASML regularly upgrades its product portfolio with higher throughput rates and better energy efficiency.

ASML constantly expands its own production capacity to be able to respond to high market demand. The inherent cyclicality in the industry has generally been lower in recent years. Nevertheless, we expect the current strong growth rates, which are propelled by the current major investment cycle, to normalise. Additionally, trade restrictions can lead to inability to serve certain markets with defined products which may reduce the company's growth potential.

The company has built a high share of recurring revenue from installed base management, which provides stability in case of lower capital investment from its customers. ASML benefits from a highly flexible cost base and has been able to maintain an EBITDA margin (Moody's-adjusted) of around 30% since 2010.

ASML maintains a conservative financial policy, and the company's acquisitions have been highly selective in the past. We expect the company to maintain its commitment to a strong investment-grade rating, including a high cash buffer and the absence of major acquisitions. We expect ASML's Moody's-adjusted debt/EBITDA to not exceed 1.5x in the next years. The company's current strong ability to generate free cash flow (FCF) is somewhat dampened by the ongoing shareholder distributions. In addition, ASML uses excess cash to undertake significant share buybacks, but it has the flexibility to stop the programme or reduce the size of the programme, if needed.

Credit strengths

- » Unique position compared with that of other semiconductor equipment companies because of ASML's market dominance in lithography systems (with a revenue market share of more than 80%), and strong collaboration with its customers and suppliers
- » Stable and growing revenue from installed base management and, to some extent, a flexible operating cost structure
- » Sustained high investment spending from semiconductor manufacturers to support the company's future earnings and FCF, balancing the significant capital spending, R&D costs and shareholder distributions
- » Track record of prudent financial policies, including the public commitment to maintain sufficient liquidity to ensure continued business growth and to provide buffer for cash flow volatility, which is likely to continue to support the company's strong credit metrics (Moody's-adjusted debt/EBITDA below 1.0x expected for 2023)

Credit challenges

- » Volatility in demand for lithography equipment following recently announced strong capacity expansions
- » Trade restrictions, leading to inability to sell some of its products in all markets and, thereby, limiting market opportunities
- » Customer and supplier concentration, mitigated to some extent by ASML's long-standing relationships and closely aligned production plans
- » Technological risks related to the next generation of EUV and high-NA EUV lithography technologies
- » Risk of competitors entering the lithography market, which could strain the company's high margins

Rating outlook

The stable outlook on ASML's A2 rating reflects our expectation that the company will maintain its strong market position, consistent product road map execution (including high NA) and financial discipline through industry cycles.

Factors that could lead to an upgrade

Upward rating pressure could arise over time because of ASML's sustained strong performance beyond the recent strong business cycle. We could also upgrade the rating if the company further diversifies its product range and customer base, and increases its recurring revenue while maintaining a strong financial profile.

Factors that could lead to a downgrade

A negative rating action is likely if a relaxation in ASML's financial policy or significantly negative FCF over successive quarters (including dividend payments and shareholder buybacks), or both, leads to a reduction in cash balances to less than €2.0 billion or a deterioration in its Moody's-adjusted gross leverage consistently in excess of 1.5x (after factoring adjustment). In addition, evidence that the

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on <https://ratings.moody.com> for the most updated credit rating action information and rating history.

company is losing market share, for instance, as a result of emerging alternative technologies, could exert downward pressure on its rating.

Key indicators

Exhibit 2

ASML Holding N.V.[1][2][3]

	Dec-18	Dec-19	Dec-20	Dec-21	Dec-22	LTM Jul-23	2023(f)	2024(f)
Revenue (USD billion)	12.9	13.2	16.0	22.0	22.3	27.1	28.2	30.6
EBITDA Margin %	33.1%	28.3%	33.6%	39.1%	34.5%	36.8%	35.2%	35.2%
(EBITDA - CAPEX) / Revenue	26.9%	20.2%	26.0%	33.7%	28.1%	29.2%	27.0%	27.0%
Debt / EBITDA	0.9x	1.3x	1.5x	1.0x	0.6x	0.5x	0.7x	0.7x
EBIT / Interest Expense	70.1x	68.7x	88.7x	116.7x	93.2x	194.5x	196.0x	212.9x
FCF / Debt	59.6%	-5.2%	24.0%	119.7%	146.9%	115.6%	33.8%	48.8%

[1] All figures and ratios are calculated using Moody's estimates and standard adjustments.

[2] Periods are financial year-end unless indicated. LTM = Last 12 months.

[3] Moody's forecasts (f) or projections (proj.) are Moody's opinion and do not represent the views of the issuer.

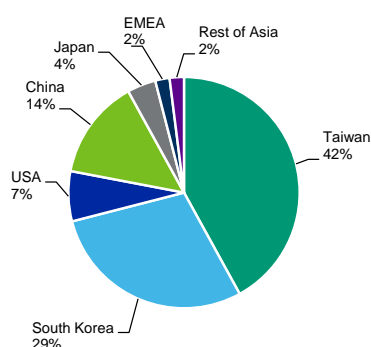
Source: Moody's Investors Service

Profile

ASML Holding N.V. (ASML) is the world's leading provider of lithography systems used in the semiconductor industry in terms of revenue. The company manufactures complex machines that are not only critical to the leading-edge production of integrated circuits but also used for the production of the more matured nodes. Headquartered in Veldhoven, the Netherlands, ASML generated revenue of €25.9 billion in the 12 months that ended June 2023.

Exhibit 3

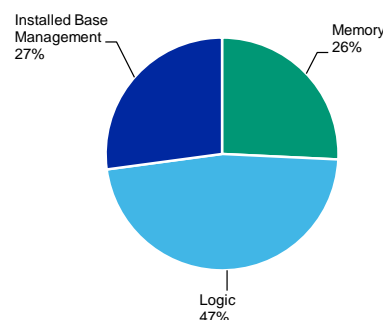
Regional net system sales 2022



Source: Company

Exhibit 4

Revenue split by end use 2022



Source: Company

Detailed credit considerations

Unique position compared with that of other semiconductor companies because of its market dominance in lithography equipment and strong collaboration with customers

ASML dominates the global market for lithography equipment used in the semiconductor industry, with an overall market share of more than 80%. This market share has increased over the past few years and is likely to remain high because of the company's leading-edge technology. ASML has progressively outpaced its sizeable competitors. Both Nikon Corporation and Canon Inc. lack the necessary revenue in lithography systems to invest in R&D as much as ASML does. The company's market share is around 90% in the more technologically advanced ArF immersion business and 100% in EUV lithography. ASML's strong margins, which are partially a result of its dominant market position, could come under pressure if competitors were to successfully introduce their own EUV products.

Currently, there are limited viable alternatives to ASML's high-end lithography solutions for high-volume manufacturing that are capable of providing similar shrink capabilities and yields. The company is the sole supplier of EUV lithography technology, which facilitates the production of more complex chips while reducing customers' unit production costs, reinforcing the continuation of Moore's law.

In the past, ASML's key customers such as [Intel Corporation](#) (A2 negative), [Samsung Electronics Co., Ltd.](#) (Aa2 stable) and [Taiwan Semiconductor Manufacturing Co Ltd](#) (Aa3 stable) supported the company's R&D efforts to achieve EUV volume production via direct investments as well as equity stakes in the company. Following the achievement of this EUV volume production, the customers reduced their support. We do not expect any R&D cost-sharing agreements between ASML and its customers for technologies currently under development, such as high NA. Nevertheless, we expect a close collaboration between ASML and its customers regarding capacity allocation, especially in light of the ongoing trend towards a localised production footprint. This trend has driven demand for semiconductor equipment beyond the already strong demand for semiconductors.

In recent years, ASML has made strategic acquisitions and participations, which are crucial for successfully executing its product road map well beyond 2023 and further solidifying its market position. The takeover of the light source maker Cymer in 2013 was crucial for EUV development, clearing patent issues and paving the way for improvements in light source power, which were major roadblocks in increasing the production speed of EUV up to its commercially viable levels. In addition, ASML acquired a 24.9% minority stake, or €1.0 billion, in the optical lens maker Carl Zeiss SMT. The transaction closed in 2017, and ASML is committed to supporting Carl Zeiss SMT's R&D and capital spending of about €1,230 million over six years. This was an important strategic step that contributed to the development of the higher-NA optical systems required for the next generation of EUV lithography, which are likely to be rolled out in 2023.

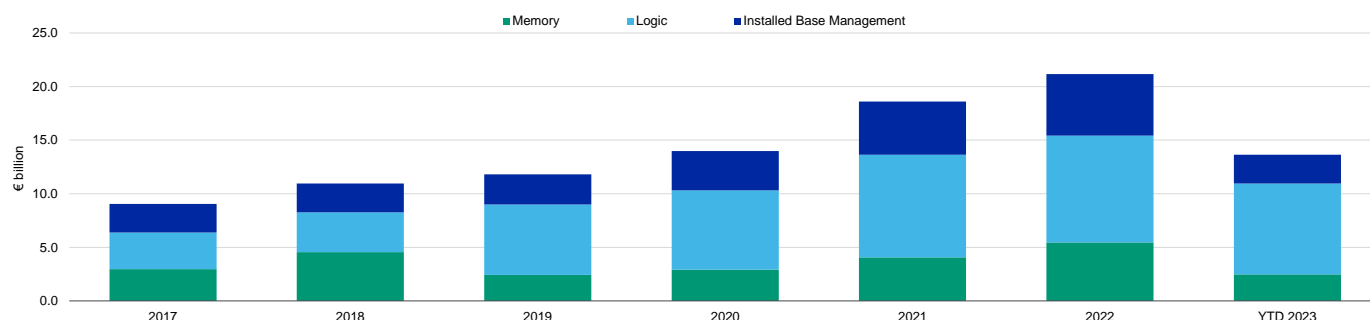
Moreover, the broadening of ASML's product offering into metrology and inspection tools is favourable, although the share of revenue is still limited. These tools generate higher margins because of their higher software content and customer yield enhancement. The acquisition of the Taiwan-based Hermes Microvision, Inc. (HMI) in 2016 strengthened ASML's metrology and inspection tools offering. ASML uses HMI's E-beam metrology and inspection solutions as an add-on to its existing solutions, allowing its customers to improve process control during the lithography process and, thereby, increase manufacturing yields, as the semiconductor industry moves towards smaller sub-10-nanometer technology nodes and three-dimensional integrated circuits. This requires tighter control of the manufacturing process.

Cyclical and structural trends to continue to support growth propelled by public initiatives

In the 12 months that ended June 2023, ASML grew its top line by around 22%, with its Moody's-adjusted gross margin around 51%, above the historical average of 50% between 2017 and 2022. This growth was driven by strong system sales, installed base management growth and improving EUV margins. We expect ASML to continue to demonstrate solid operating performance throughout 2023, driven by the continued strong demand for its EUV systems and growing sales from servicing already installed machinery. The increasing investment costs from the higher interest rate environment could lead to a delay in customer orders, posing a risk of subdued revenue growth in some quarters. However, the company's customer base has announced significant investment spending programmes to build new, partially greenfield, semiconductor fabs in response to the rising demand, which we estimate to be around 7% a year until 2030.

This high demand from ASML's customers is driven by strong end markets and the company's progress on its product road map execution, including that of EUV technology, which entered the high-volume manufacturing stage in 2019. In the 12 months that ended June 2023, ASML sold 54 EUV tools. Nevertheless, ASML's own production capacity is a constraint that could result in longer lead times for its customers.

Exhibit 5
Sales by segment



YTD 2023 includes Q1 and Q2 2023.

Source: Company

Over the short term, we expect the cyclically high demand for semiconductors to drive manufacturers' capital spending on ASML's products. In addition, we expect two major trends to support healthy, sustainable annual growth rates for the semiconductor equipment market over the medium term. First, the digital transformation will continue to support demand for semiconductors and lead to increasing complexity of chip design. Second, the growing desire of certain governments for increased technological sovereignty is likely to drive investment spending on new fabs to advance the local production of chips. At the same time, new leading-edge nodes with increased lithography intensity will drive demand for ASML's litho systems.

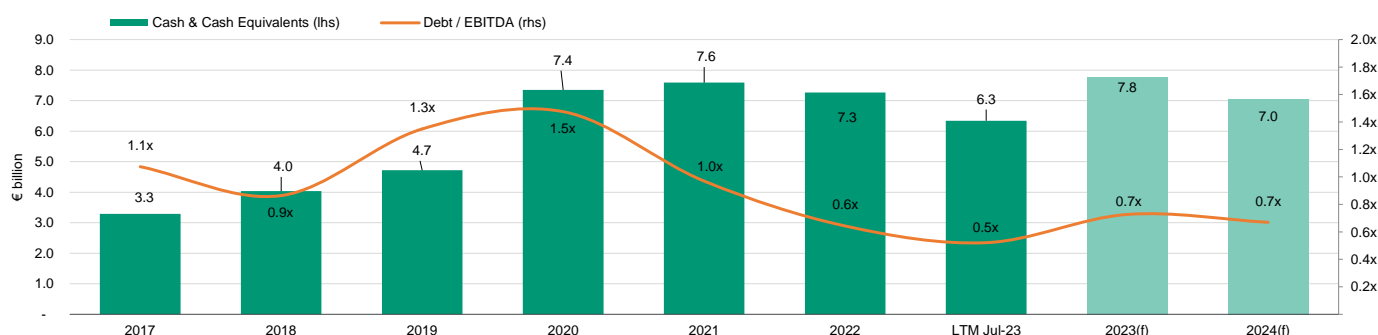
Global trade tensions, which increasingly focus on technology supply chains, pose a significant risk to ASML's ability to serve customers worldwide. However, in the current environment characterised by strong global demand, we do not expect trade tensions and potential export restrictions to strain ASML's top line. In such cases, ASML's management expects to ship equipment to customers in unaffected regions because of the high order book and backlog. Several countries have announced support packages to foster a localisation of semiconductor supply chains. The support packages include significant public funds that aim to reduce the high investment costs, and the first projects have been initiated. This localisation provides an upside to ASML over the medium to long term.

Therefore, we project that ASML will continue to grow its revenue well above GDP and expand profitability despite inflationary pressure, and that its Moody's adjusted debt/EBITDA will remain below 1.0x over the next 12-18 months.

Track record of commitment to prudent financial policies, which is likely to continue to support strong credit metrics

ASML has consistently demonstrated its commitment to maintaining conservative financial policies. ASML's gross leverage has been sustainably below 1.0x since 2010. The company had a net cash position as of the end of fiscal 2010, and even in 2009, when revenue shrank to €1.6 billion from a peak of €3.7 billion in 2007. However, the debt raised to finance a portion of the HMI acquisition and a 24.9% minority stake in Carl Zeiss SMT increased ASML's adjusted leverage to 1.6x as of December 2016 from adjusted debt/EBITDA of 0.6x as of December 2015. Nevertheless, the company promptly reduced its leverage to around 0.9x adjusted debt/EBITDA in 2018 because of strong business performance, and we expect ASML's leverage to remain well below 1.0x in 2023.

Exhibit 6

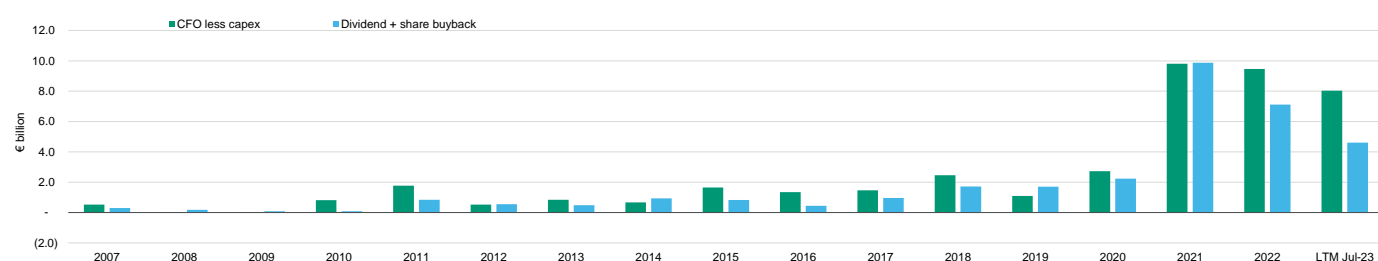
ASML's adjusted leverage, and cash and cash balances (€ billion)

Sources: Moody's Financial Metrics™ and Moody's Investors Service estimates

The company is committed to its conservative financing policy, illustrated by, among others, its maintenance of sufficient liquidity to ensure continued business growth and to provide buffer for cash flow volatility, in addition to a €700 million undrawn revolving credit facility. The appropriate size of the liquidity buffer is reassessed annually, taking into account multiple factors, such as capital spending. Further, ASML is committed to maintain a capital structure that targets a solid investment-grade credit rating.

In July 2022, ASML revised its dividend policy to provide for dividend payments on a quarterly basis. The company has upsized its share buyback programme, with the recent one totaling up to €12.0 billion until end of 2025. We expect a full execution because of the strong recent cash generation, and ASML may announce a further programme. We expect share buybacks and dividends to remain a key feature of ASML's financial strategy. However, we also expect the company to continue to balance shareholder returns within the context of FCF, its liquidity targets and the current business outlook, as it has done in the past. This was reflected in ASML pausing its share buyback programme (with a total consideration of €1.5 billion over 2016-17) in light of the acquisition of HMI and the investment in Carl Zeiss SMT, and putting the 2020-22 programme on hold in the first, second and third quarters of 2020 amid uncertainties caused by the coronavirus pandemic.

Exhibit 7

Historical shareholder returns have been balanced against operating cash flow and liquidity

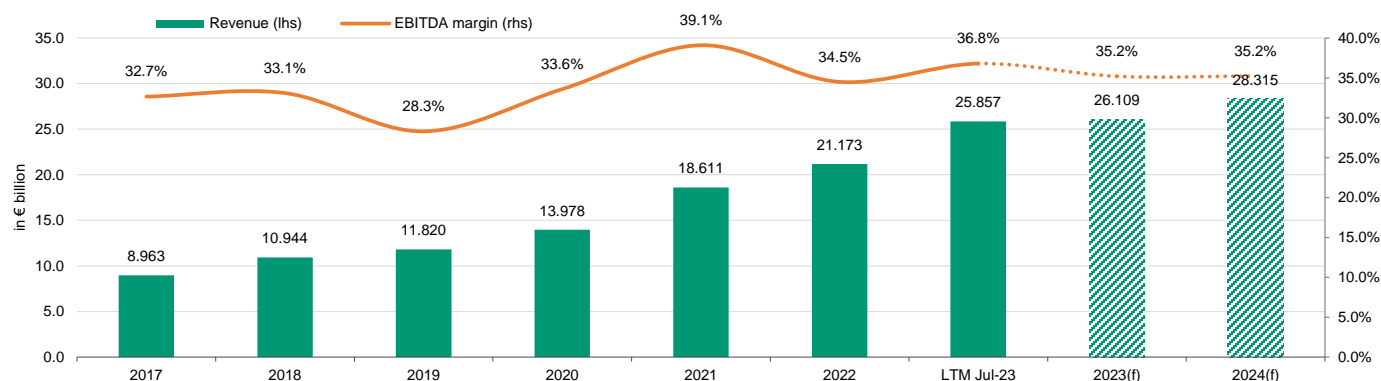
Source: Moody's Financial Metrics™

Volatility in demand for lithography equipment, mitigated by operational flexibility

ASML is exposed to capital equipment spending of semiconductor device manufacturers. These companies tend to postpone or cancel orders during the weaker phases of the semiconductor cycle, which affects semiconductor equipment manufacturers and their suppliers. In 2009, a sharp slowdown occurred in the semiconductor capital equipment industry, resulting in a sharp decline in ASML's revenue (which fell to around €1.6 billion in 2009 from a peak of €3.7 billion in 2007) and adjusted EBITDA margin (which declined to around 3% in 2009 from around 28% in 2007), which, in turn, drove the increase in the company's financial leverage to the double-digit percentages in 2009. In 2010, revenue recovered as the industry resumed spending. However, because the semiconductor industry has long-term sustainable demand fundamentals, we do not expect future declines in performance to be prolonged. This is because we expect end customers to defer investment plans, rather than sustainably reduce capital spending. In addition, we expect equipment sales to the semiconductor sector to be less volatile than historical levels because of the increasing diversification in end markets (data

centres, mobile devices, artificial intelligence, autonomous driving, Internet of Things and others). Additionally, the growing number of installed EUV systems will drive growth in recurring installed base management revenue.

Exhibit 8

ASML's historical and projected revenue, and EBITDA margin

Sources: Company reports and Moody's Investors Service estimates

We also expect ASML's flexible cost structure to allow the company to absorb the impact of a pronounced setback in revenue on its operating performance. With the sharp decline in ASML's revenue and margins in 2009, the company's FCF was marginally negative, around €90 million (including €86 million of dividend payments). However, its liquidity remained solid, with cash and cash equivalents amounting to €1.1 billion. A substantial part of its cost of goods sold (about 80%) and R&D is outsourced. The company also has flexible personnel schemes. In addition, ASML's strong relationships with its major suppliers, and the specialised nature of the company's requirements in terms of lasers and lenses allow it to share the burden of business volatility down the value chain.

Technological risk related to the next generation of EUV and capacity constraints

EUV technology is likely to reduce the lithography cost of critical layers as the industry moves towards more advanced nodes. For EUV technology to be used in high-volume manufacturing, ASML needs to achieve a number of technological milestones to meet the required performance targets. In 2023, ASML continued to make progress in productivity improvement of EUV technology and shipped further higher-productivity NXE:3600D systems for use in high-volume manufacturing. ASML has increased the system productivity of the NXE:3600D tool by around 15%-20% (compared with its predecessor model NXE:3400C), and will additionally allow for higher availability (more than 90%) because of reduced maintenance time. ASML is currently investing in the EUV upgrade to the new NXE:3800E system while also exploring the first 0.55NA systems that could further strengthen the company's market position.

With the growing demand for its systems, ASML needs to increase own production capacities. ASML adapts to this by closely assessing the investment road maps of its customers. The company is currently building further capacity, which will dampen FCF generation in the coming years. However, we expect this expansionary capital spending to be adequately covered by operating cash flow.

ESG considerations

ASML Holding N.V.'s ESG Credit Impact Score is Neutral-to-Low CIS-2

Exhibit 9

ESG Credit Impact Score

CIS-2

Neutral-to-Low

For an issuer scored CIS-2 (Neutral-to-Low), its ESG attributes are overall considered as having a neutral-to-low impact on the current rating; i.e., the overall influence of these attributes on the rating is non-material.

NEGATIVE IMPACT : POSITIVE IMPACT

Source: Moody's Investors Service

ESG considerations have a neutral impact on ASML's rating. Whilst moderate environmental risks exist, the company's strong governance - especially in terms of financial strategy and risk management - represents a strong mitigant.

Exhibit 10

ESG Issuer Profile Scores

ENVIRONMENTAL

E-3

Moderately Negative



SOCIAL

S-2

Neutral-to-Low



GOVERNANCE

G-2

Neutral-to-Low



Source: Moody's Investors Service

Environmental

ASML is exposed to environmental risks. Though the company's manufacturing is largely outsourced, the company does not escape its suppliers' longer-term environmental risks, including exposure generally to physical climate and other environmental risks as a manufacturer. In addition, the company has a concentrated manufacturing footprint. These risks are partially mitigated by the supply chain partners' continuous efforts to reduce the water consumption, increase the share of renewable energy and resources, and limit the creation of hazardous waste.

Social

The company has moderate risks arising from the dependence on highly skilled technical and engineering talent characteristic of the sector broadly. Still, we see a positive impact from intermediate to long term societal trends driving expanded computing needs and data creation from smartphones, Internet of Things devices, autonomous driving systems, and industrial automation. The growing computing demands on devices and related telecommunications infrastructure will require expanded production of sophisticated semiconductors, technology hardware, and related software.

Governance

ASML's governance risk is overall low. The company pursues a prudent financial policy with consistently low leverage and adheres to policies and standards of a listed company, has a fully independent board and control structures as well as a strong management track record.

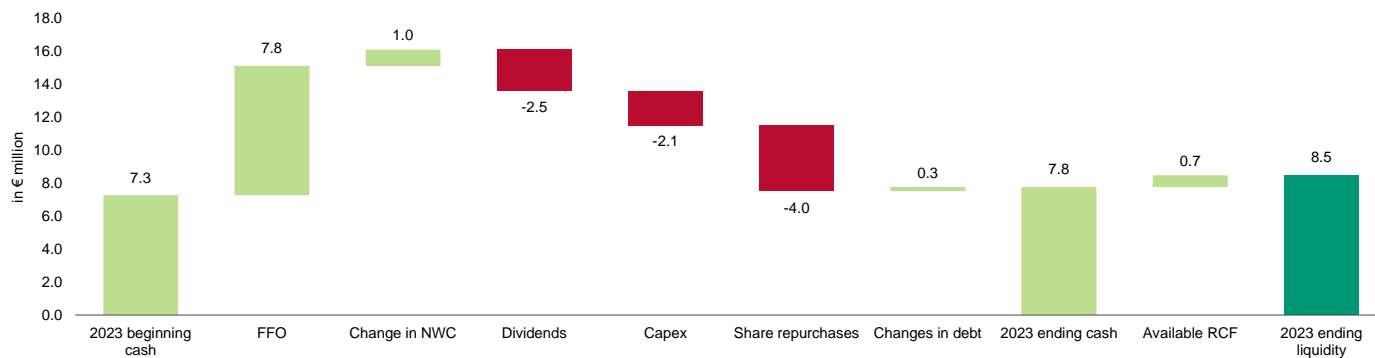
ESG Issuer Profile Scores and Credit Impact Scores for the rated entity/transaction are available on Moody's.com. In order to view the latest scores, please click [here](#) to go to the landing page for the entity/transaction on MDC and view the ESG Scores section.

Liquidity analysis

ASML's strong liquidity buffer is a key credit strength. As of June 2023, ASML had cash and cash equivalents of around €6.3 billion, which included liquid short-term investments such as deposits and low-risk money-market funds (with tenors greater than three months but less than one year). The company also has full access to a €700 million committed credit facility due 2026, with no financial covenants. From time to time, the company enters into one-off factoring transactions. The high cash balance and our projection of funds from operations in excess of €7.4 billion are more than sufficient to accommodate its dividend payments, share buybacks, working capital and capital spending needs.

Exhibit 11

Moody's-expected 2023 liquidity development



Cash includes short-term investments.

Source: Moody's Investors Service

Methodology and scorecard

The following table shows ASML's scorecard-indicated outcome using the [Semiconductors Methodology](#), with data as of 2 July 2023 and on a forward-looking basis. The assigned rating is one notch below the scorecard-indicated outcome in the forward view, reflecting the uncertain economic environment with increasing interest rates that could reduce investments in semiconductor manufacturing fabs.

Exhibit 12

Rating factors

ASML Holding N.V.

Semiconductor Industry Scorecard [1][2]			Current LTM 7/2/2023		Moody's 12-18 Month Forward View As of 8/1/2023 [3]	
Factor 1 : Scale (20%)	Measure	Score			Measure	Score
a) Revenue (USD Billion)	\$27.1	A			\$28.2 - \$30.6	A
Factor 2 : Business Profile (25%)						
a) Business Profile	A	A			A	A
Factor 3 : Profitability (10%)						
a) EBITDA Margin	36.8%	Aa			35% - 36%	Aa
b) (EBITDA - CAPEX) / Revenue	29.2%	A			27%	A
Factor 4 : Leverage and Coverage (25%)						
a) Debt / EBITDA	0.5x	Aa			0.7x	Aa
b) FCF / Debt	115.6%	Aaa			35% - 50%	Aa
c) EBIT / Interest Expense	194.5x	Aaa			190x - 215x	Aaa
Factor 5 : Financial Policy (20%)						
a) Financial Policy	A	A			A	A
Rating:						
a) Scorecard-Indicated Outcome						
b) Actual Rating Assigned						

[1] All ratios are based on 'Adjusted' financial data and incorporate Moody's Global Standard Adjustments for Non-Financial Corporations.

[2] As of 2 July 2023 (LTM).

[3] This represents Moody's forward view, not the forward view of the issuer and, unless noted in the text, does not incorporate significant acquisitions and divestitures.

Source: Moody's Investors Service

Appendix

Exhibit 13

Peer comparison

	ASML Holding N.V.			KLA Corporation			Lam Research Corp.			Applied Materials Inc.		
	A2 Stable			A2 Stable			A2 Stable			A2 Stable		
(in US millions)	FYE Dec-21	FYE Dec-22	LTM Jul-23	FYE Jun-21	FYE Jun-22	LTM Mar-23	FYE Jun-21	FYE Jun-22	LTM Mar-23	FYE Oct-21	FYE Oct-22	LTM Apr-23
Revenue	\$22,020	\$22,315	\$27,085	\$6,919	\$9,212	\$10,628	\$14,626	\$17,227	\$18,857	\$23,063	\$25,785	\$26,638
FCF	\$9,983	\$7,280	\$6,005	\$1,422	\$2,395	\$2,511	\$2,576	\$1,796	\$3,126	\$4,025	\$3,820	\$5,016
Total Debt	\$8,018	\$5,019	\$5,411	\$3,884	\$7,077	\$6,364	\$5,825	\$5,815	\$5,815	\$6,723	\$6,631	\$6,924
Cash + Marketable Sec.	\$8,632	\$7,872	\$6,924	\$2,495	\$2,708	\$2,890	\$5,729	\$3,658	\$5,369	\$7,514	\$4,561	\$7,122
EBITDA Margin	39.1%	34.5%	36.8%	41.6%	43.9%	44.0%	33.7%	33.5%	32.8%	33.8%	32.4%	31.4%
EBIT / Int. Exp.	116.7x	93.2x	194.5x	15.7x	22.1x	15.4x	21.6x	28.1x	30.1x	29.8x	32.1x	31.3x
Debt / EBITDA	1.0x	0.6x	0.5x	1.4x	1.8x	1.4x	1.2x	1.0x	0.9x	0.9x	0.8x	0.8x
(Cash + Mkt Sec) / Debt	107.6%	156.8%	127.9%	64.2%	38.3%	45.4%	98.3%	62.9%	92.3%	111.8%	68.8%	102.9%
FCF / Debt	119.7%	146.9%	115.6%	36.6%	33.8%	39.5%	44.2%	30.9%	53.8%	59.9%	57.6%	72.4%

All figures and ratios are calculated using Moody's estimates and standard adjustments.

FYE = Financial year-end. LTM = Last 12 months. RUR* = Ratings under review, where UPG = for upgrade and DNG = for downgrade.

Source: Moody's Financial Metrics™

Exhibit 14

Moody's-adjusted debt reconciliation for ASML Holding N.V.

	FYE	FYE	FYE	FYE	FYE	LTM
(in EUR million)	Dec-18	Dec-19	Dec-20	Dec-21	Dec-22	Jun-23
As Reported Total Debt	3,027	3,108	4,678	4,584	4,260	4,518
Leases	140	219	189	167	199	199
Securitization	0	1,300	2,200	2,300	0	0
Non-Standard Adjustments	(38)	(115)	(140)	0	243	243
Moody's Adjusted Total Debt	3,129	4,512	6,927	7,051	4,703	4,960

All figures are calculated using Moody's estimates and standard adjustments.

Periods are financial year-end unless indicated. LTM = Last 12 months.

Source: Moody's Financial Metrics™

Exhibit 15

Moody's-adjusted EBITDA reconciliation for ASML Holding N.V.

	FYE	FYE	FYE	FYE	FYE	LTM
(in EUR million)	Dec-18	Dec-19	Dec-20	Dec-21	Dec-22	Jun-23
As Reported EBITDA	3,420	3,266	4,626	7,425	7,253	9,453
Unusual Items - Income Statement	131	0	0	(214)	0	0
Leases	70	78	69	60	60	60
Moody's Adjusted EBITDA	3,621	3,344	4,696	7,271	7,313	9,513

All figures are calculated using Moody's estimates and standard adjustments.

Periods are financial year-end unless indicated. LTM = Last 12 months.

Source: Moody's Financial Metrics™

Exhibit 16

ASML's historical Moody's-adjusted financial data

	FYE	FYE	FYE	FYE	FYE	LTM
(in EUR million)	Dec-18	Dec-19	Dec-20	Dec-21	Dec-23	Jun-23
INCOME STATEMENT						
Revenue	10,944	11,820	13,979	18,611	21,173	25,857
EBITDA	3,621	3,344	4,696	7,271	7,313	9,513
BALANCE SHEET						
Cash & Cash Equivalents	4,034	4,718	7,352	7,590	7,268	6,341
Total Debt	3,129	4,512	6,927	7,051	4,703	4,960
(Cash + Marketable Securities) / Debt	128.9%	104.6%	106.1%	107.6%	156.8%	127.9%
CASH FLOW						
Cash Flow From Operations (CFO)	3,140	2,050	3,793	10,802	10,836	9,988
Capital Expenditures	(677)	(959)	(1,066)	(997)	(1,369)	(1,964)
Dividends	(597)	(1,326)	(1,066)	(1,368)	(2,560)	(2,292)
Free Cash Flow (FCF)	1,866	(235)	1,660	8,437	6,908	5,733
FCF / Debt	59.6%	-5.2%	24.0%	119.7%	146.9%	115.6%
PROFITABILITY						
% Change in Sales (YoY)	22.1%	8.0%	18.3%	33.1%	13.8%	34.7%
EBITDA margin %	33.1%	28.3%	33.6%	39.1%	34.5%	36.8%
INTEREST COVERAGE						
EBIT / Interest Expense	70.1x	68.7x	88.7x	116.7x	93.2x	194.5x
LEVERAGE						
Debt / EBITDA	0.9x	1.3x	1.5x	1.0x	0.6x	0.5x

All figures are calculated using Moody's estimates and standard adjustments.

Periods are financial year-end unless indicated. LTM = Last 12 months.

Source: Moody's Financial Metrics™

Ratings

Exhibit 17

Category	Moody's Rating
ASML HOLDING N.V.	
Outlook	Stable
Senior Unsecured -Dom Curr	A2

Source: Moody's Investors Service

© 2023 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved. CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER.

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from \$1,000 to approximately \$5,000,000. MCO and Moody's Investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moody's.com under the heading "Investor Relations — Corporate Governance — Charter Documents - Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657 AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY100,000 to approximately JPY550,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

REPORT NUMBER

1375707

CLIENT SERVICES

Americas	1-212-553-1653
Asia Pacific	852-3551-3077
Japan	81-3-5408-4100
EMEA	44-20-7772-5454