

**BUSI 121**

# **ASML**

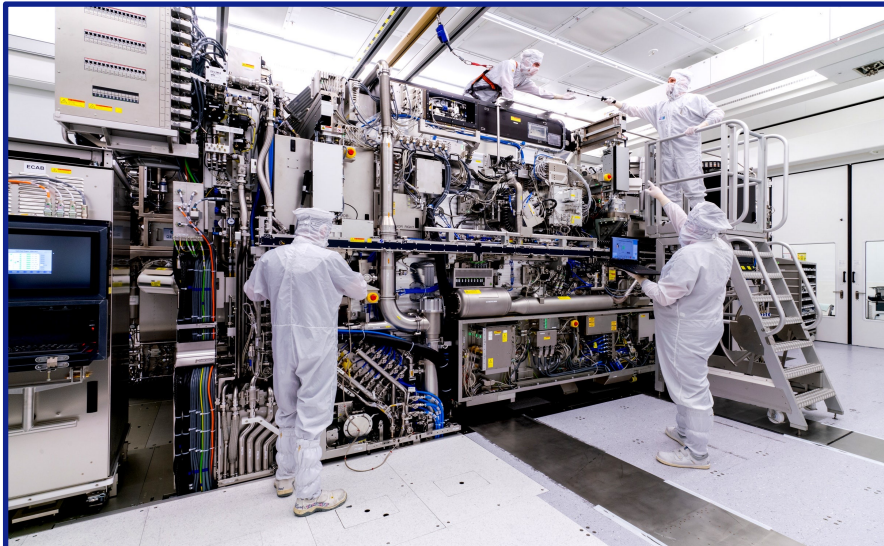
**Company Financial Analysis**

**Team**

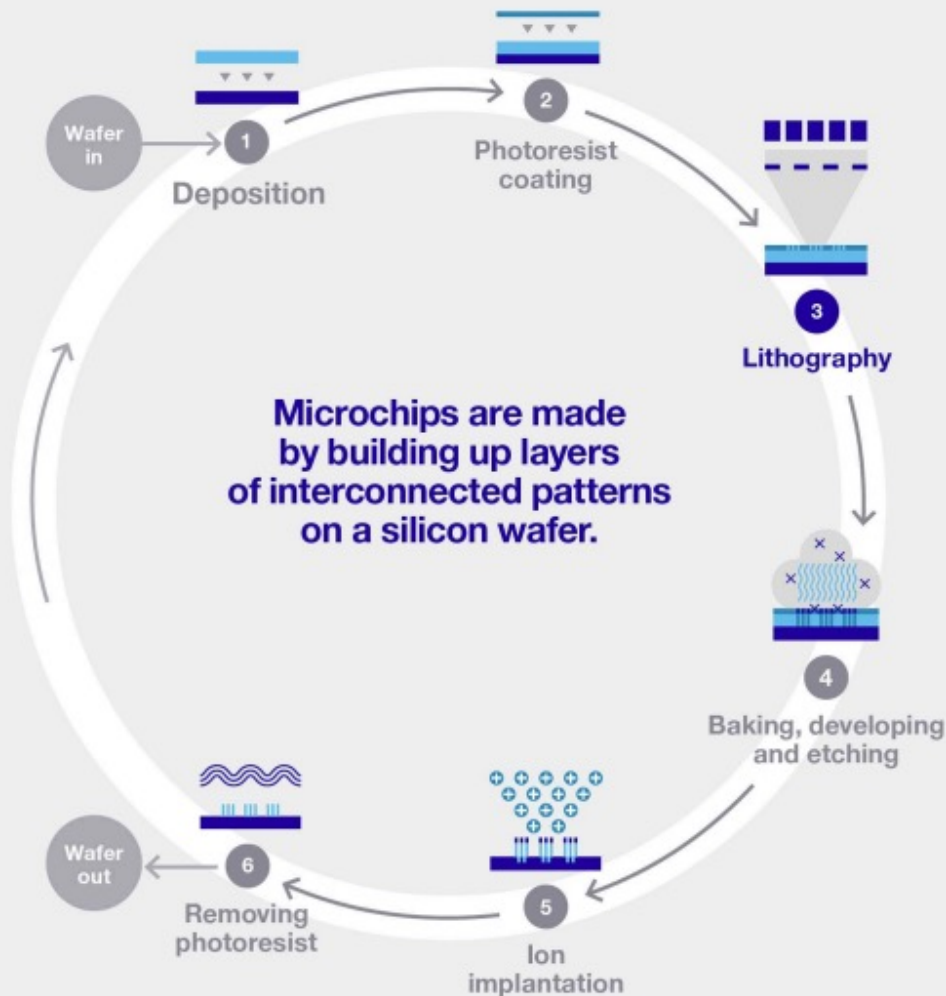
MJ Park, Augie Smith, Max Cherbini,  
Alex Gaetano, Nkosi Johnson-Thrnton

## Company Description

ASML Holding is a leading Dutch technology company that specializes in the development and manufacturing of advanced photolithography systems used in the semiconductor industry. ASML's cutting-edge machines are crucial for the production of integrated circuits (ICs) or chips, which are essential components in various electronic devices such as smartphones, computers, and automotive systems.



### ASML plays an integral role in the microchip manufacturing process



- 1 **Deposition** – The first step is typically to deposit different materials – such as metals/conductors, insulation films and semiconductors – onto a silicon wafer.
- 2 **Photoresist coating** – The wafer is then coated with a light-sensitive layer called a photoresist.
- 3 **Lithography** – Light is projected onto the wafer through a reticle. Optics shrink and focus the reticle pattern. This pattern is then printed onto the wafer when the resist layer is exposed to light.
- 4 **Baking, developing and etching** – The wafer is then baked and developed to make the pattern permanent, with a pattern of open spaces. Reactive gases are used to etch away material from the open spaces, leaving a 3D version of the pattern.
- 5 **Ion implantation** – The wafer may be bombarded with positive or negative ions to tune the semiconductor properties.
- 6 **Removing photoresist** – After the layer is etched or ionized, the remainder of the photoresist coating that was protecting areas not to be etched is removed.

The entire microchip manufacturing process – from start to tested and packaged device, ready for shipment – can take between 18 and 26 weeks, depending on the complexity of the microchip.



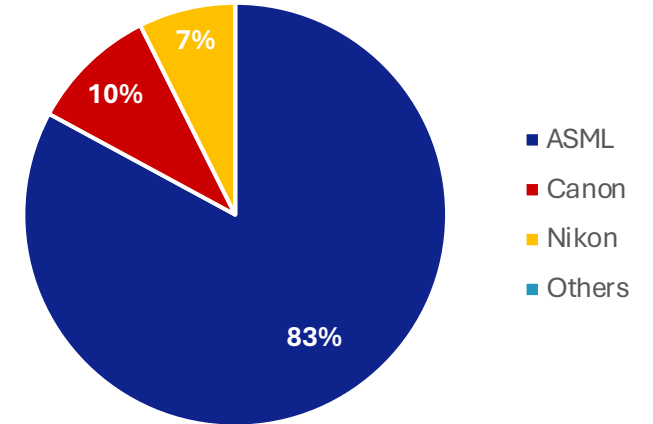
## Semiconductor Industry

ASML operates in the semiconductor equipment industry, providing solutions that enable the production of smaller, faster, and more powerful microchips. The company's products include lithography machines, which use light to transfer circuit patterns onto silicon wafers, a critical step in semiconductor manufacturing.

ASML's technology enables its customers to stay at the forefront of semiconductor manufacturing, driving advancements in electronics and technology.

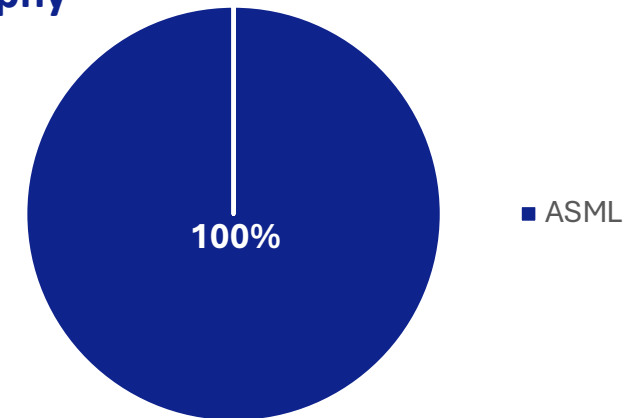
## Leading supplier of lithography systems

### Semiconductor Lithography Equipment Market Share



Source: Khaveen Investments (2023)

### Semiconductor EUV Lithography Equipment Market Share



Source: ASML.com (2023)

ASML business model revolves around innovation and continuous improvement of its lithography systems



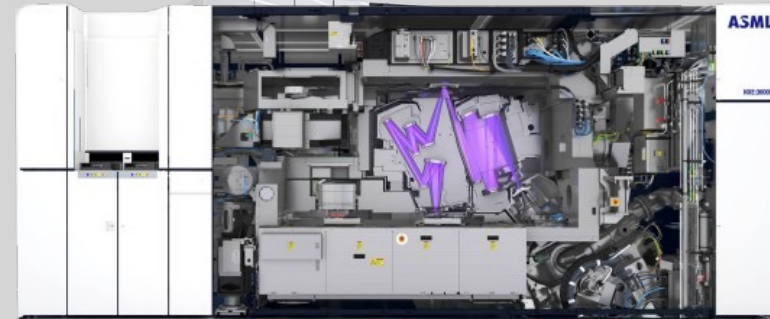
Can buy three latest stealth fighter F-35 with the price for one machine



## Major Products

Price

### Low-NA Twinscan NXE EUV System



**\$200 M**

### High-NA Twinscan EXE Lithography Machine



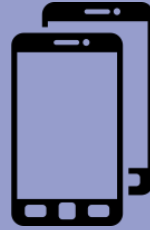
**\$380 M**

## End Markets

ASML caters to a wide range of end markets, including the consumer electronics, automotive, and industrial sectors. The company's customers include major semiconductor manufacturers around the world who rely on ASML's technology to produce high-quality chips for their products.



Data Centers



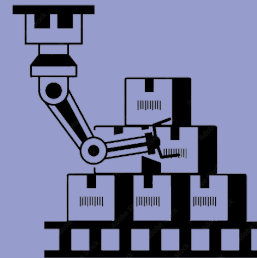
Smartphones



Automotive



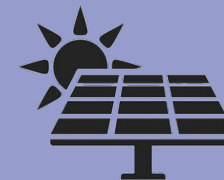
Computers



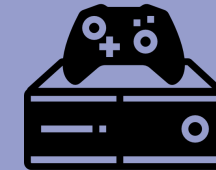
Automated Equipment / Robot



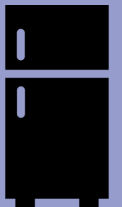
microwaves



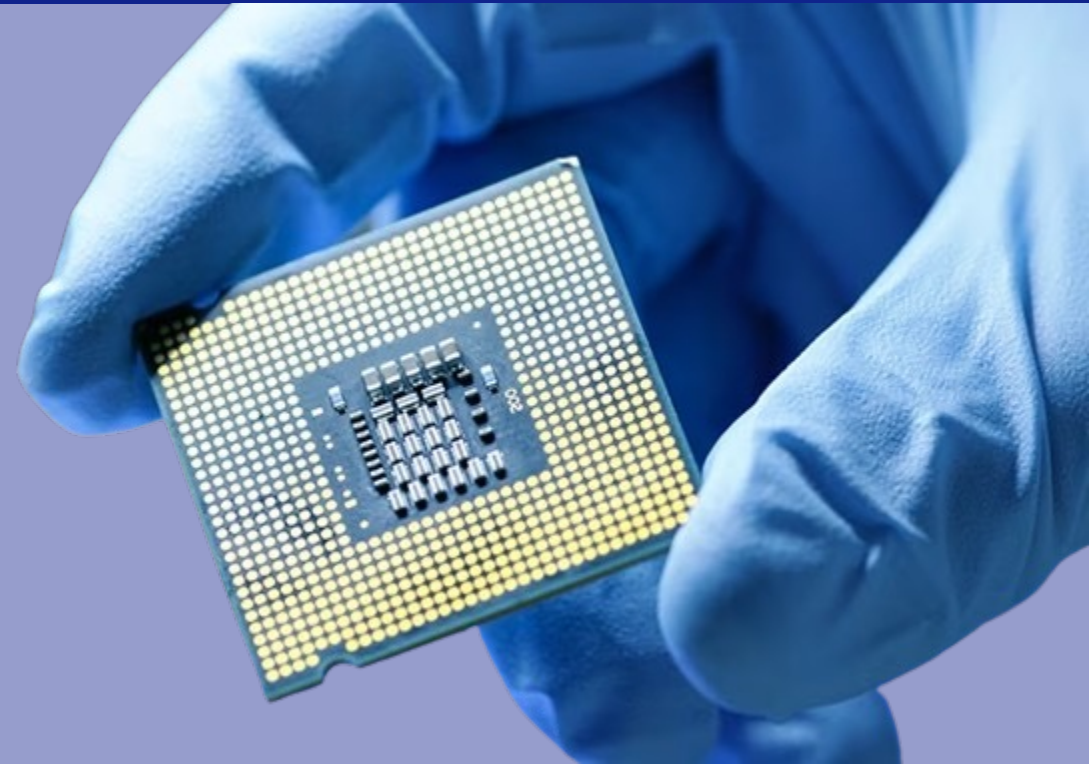
Solar Cell



Games consoles

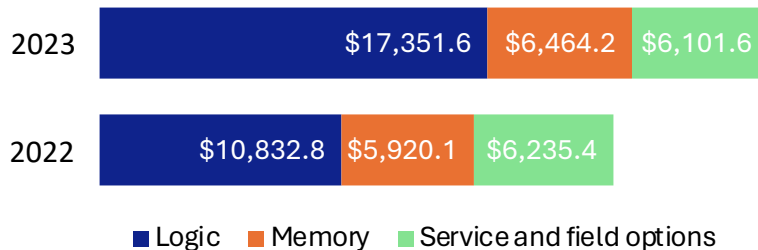


Refrigerators

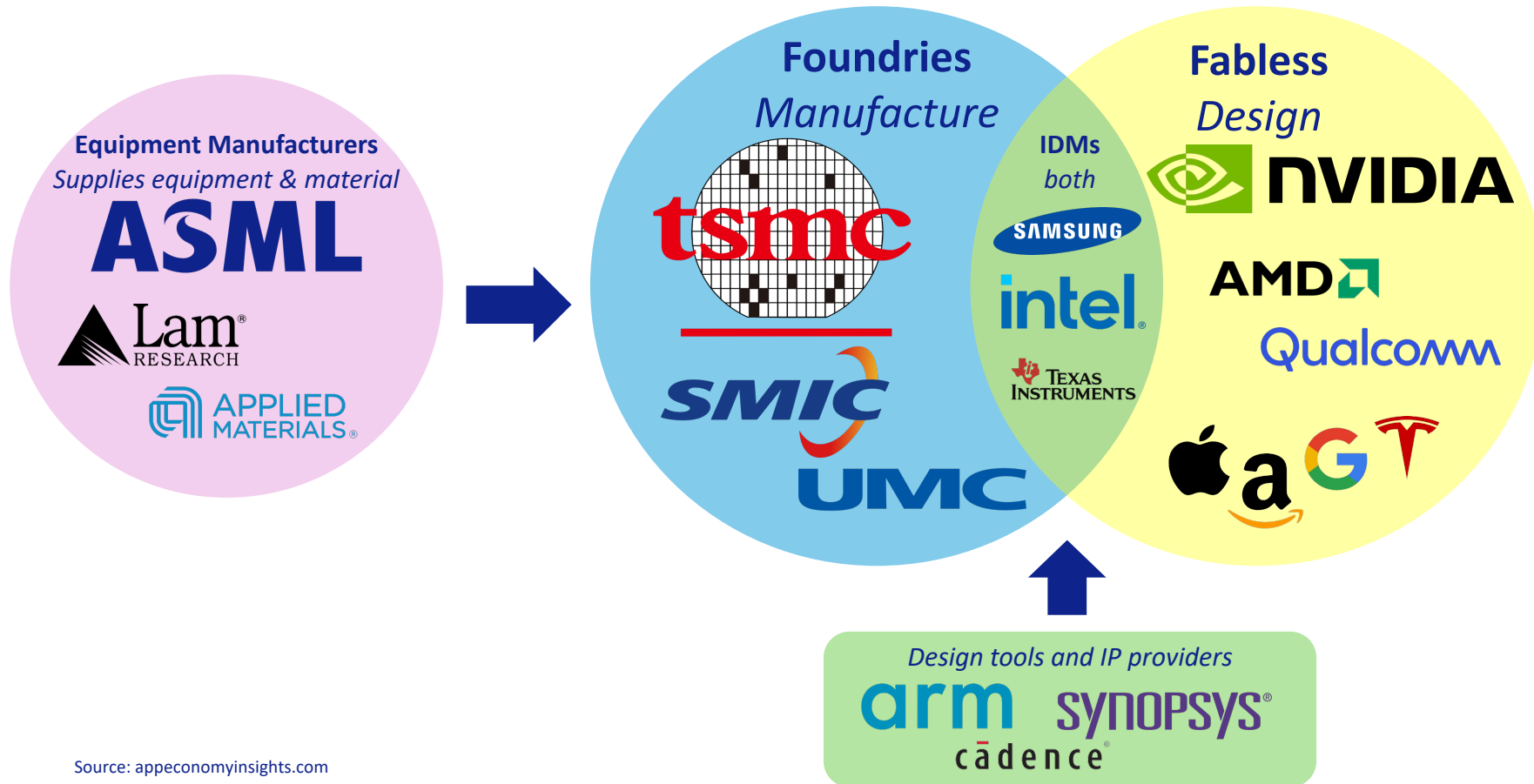


## Major Revenue Growth from Logic markets

(in millions)



## Position In the Semiconductor Market



Source: appeconomyinsights.com

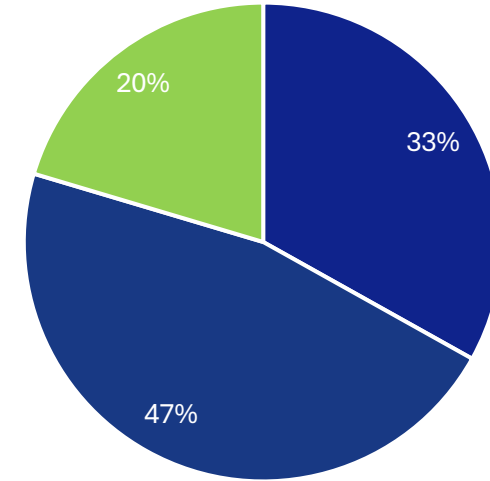


## Financial Trend Analysis

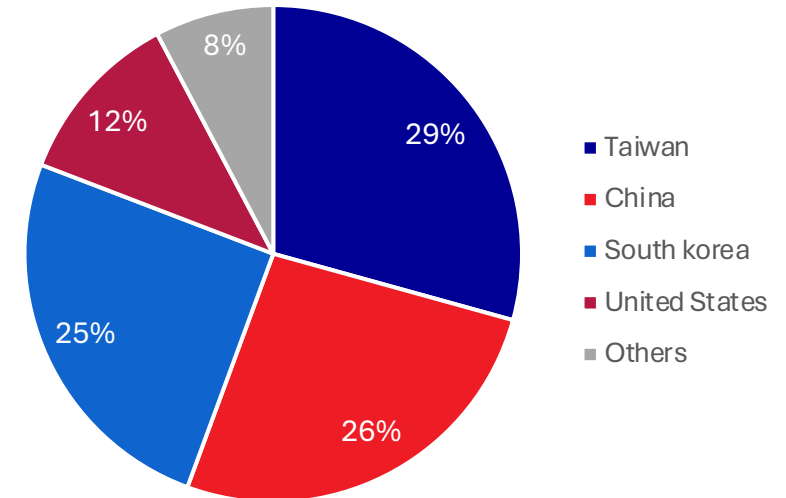
Income Statement Trend Analysis						
(in millions of dollars)	Trend	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Revenue Trend		\$ 13,232.30	\$ 15,959.70	\$ 22,012.50	\$ 22,301.50	\$ 29,805.30
% growth		2.37%	20.61%	37.93%	1.31%	33.65%
COGS trend		\$ 7,321.70	\$ 8,199.10	\$ 10,410.70	\$ 11,228.70	\$ 14,907.90
% growth		4.80%	11.98%	26.97%	7.86%	32.77%
Gross Profit trend		\$ 5,910.70	\$ 7,760.60	\$ 11,601.80	\$ 11,072.80	\$ 14,897.40
% growth		-0.49%	31.30%	49.50%	-4.56%	34.54%
% margin		44.67%	48.63%	52.71%	49.65%	49.98%
Operating income Trend		\$ 3,124.30	\$ 4,625.70	\$ 7,983.80	\$ 7,711.10	\$ 10,287.40
% growth		-10.80%	48.06%	72.60%	-3.42%	33.41%
% margin		23.61%	28.98%	36.27%	34.58%	34.52%
Net Income Trend		\$ 2,902.00	\$ 4,057.40	\$ 6,958.50	\$ 6,736.60	\$ 8,776.80
% growth		-5.19%	39.81%	71.50%	-3.19%	30.29%
EPS Trend		6.9	9.69	16.98	16.94	22.29
% growth		-4.17%	40.43%	75.23%	-0.24%	31.58%

## Revenue by segment

■ NXE machines sales ■ Other machines sales ■ Service and field option sales



## Revenue by geography



## Financial Trend Analysis

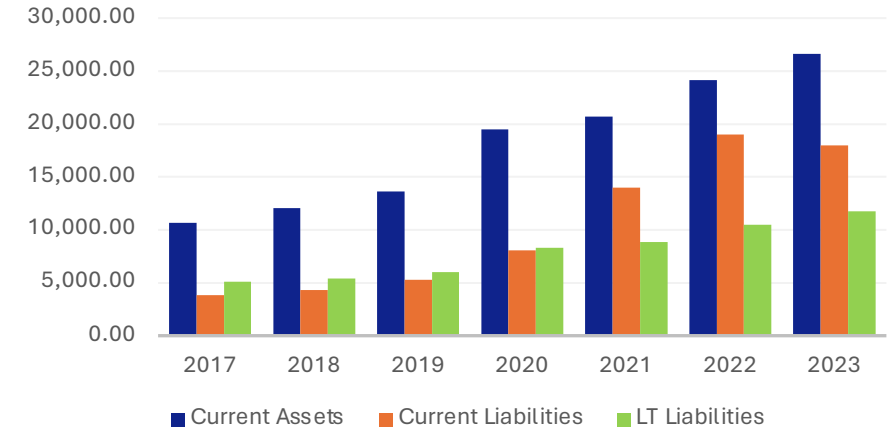
### Balance Sheet Trend Analysis

(in millions of dollars)

	Trend	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Total Asset Trend		\$ 25,410.80	\$ 33,334.40	\$ 34,421.00	\$ 41,586.50	\$ 47,662.20
% growth		10.19%	31.18%	3.26%	20.82%	14.61%
Total Liabilities Trend		\$ 11,271.00	\$ 16,383.90	\$ 22,874.90	\$ 29,498.10	\$ 29,728.00
% growth		15.84%	45.36%	39.62%	28.95%	0.78%
Shareholders' Equity		\$ 14,139.80	\$ 16,950.50	\$ 11,546.10	\$ 12,088.40	\$ 17,934.20
% growth		6.06%	19.88%	-31.88%	4.70%	48.36%
Working Capital Trend		\$ 8,351.00	\$ 11,401.60	\$ 6,708.90	\$ 5,127.40	\$ 8,625.10
% growth		8.20%	36.53%	-41.16%	-23.57%	68.22%

### Current Assets vs. St & LT Liabilities

(in millions of dollars)



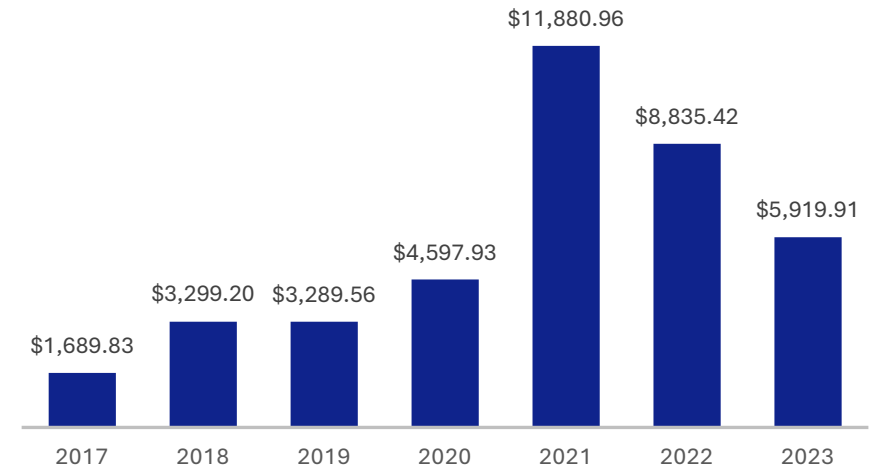
### Cashflow Statement Trend

(in millions of dollars)

	Trend	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Operating Cash flow trend		\$ 3,667.90	\$ 5,283.50	\$ 12,828.00	\$ 9,937.60	\$ 7,069.10
% change		1.07%	44.05%	142.79%	-22.53%	-28.87%
Investing cash flow trend		\$ (1,295.80)	\$ (1,543.80)	\$ (85.20)	\$ (2,024.40)	\$ (3,930.90)
% change		-123.22%	-19.14%	94.48%	-2276.06%	-94.18%
Financing cash flow trend		\$ (1,916.90)	\$ (859.70)	\$ (11,699.60)	\$ (7,576.50)	\$ (3,408.30)
% change		5.88%	55.15%	-1260.89%	35.24%	55.01%
Free cash flow trend		\$ 3,289.56	\$ 4,597.93	\$ 11,880.96	\$ 8,835.42	\$ 5,919.91
% change		-0.29%	39.77%	158.40%	-25.63%	-33.00%

### FCF Trend

(in millions of dollars)





## Financial Ratio Analysis

### Balance Sheet Ratios

	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
<b>Liquidity</b>										
Current Ratio	2.47	2.48	2.61	2.8	2.78	2.58	2.41	1.48	1.27	1.48
Quick Ratio	1.39	1.45	1.59	1.6	1.62	1.51	1.57	0.96	0.79	0.78
<b>Solvency</b>										
Debt to Equity Ratio	0.15	0.13	0.33	0.28	0.24	0.25	0.33	0.39	0.33	0.29
Interest Coverage Ratio	64.42	82.37	43.62	42.4	70.9	76.2	93.64	123.59	120.49	62.31
<b>Leverage</b>										
Debt Ratio	0.09	0.08	0.19	0.17	0.15	0.15	0.18	0.16	0.11	0.11

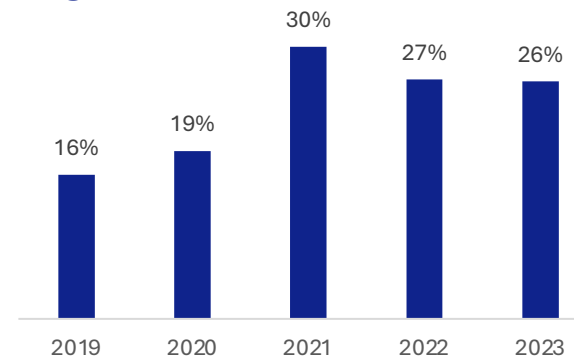
- The current and quick ratio, indicate a general decline in the ASML's ability to cover short term liabilities over the years
- Debt to equity and the debt ratio indicates an increased reliance on debt financing in recent years with a particularly large spike in FY 2016

### Income Statement Ratios

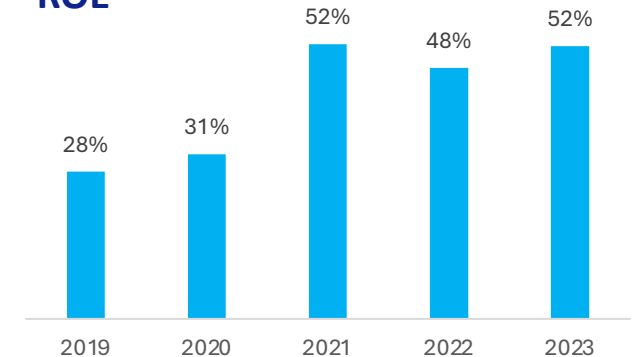
	<u>FY 2017</u>	<u>FY 2018</u>	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021</u>	<u>FY 2022</u>	<u>FY 2023</u>
<b>Profitability</b>							
Return on Assets	15.81%	21.19%	15.99%	18.56%	30.17%	26.51%	26.33%
Return on Equity	25.68%	33.58%	28.02%	31.32%	52.20%	47.64%	51.78%
<b>Margins</b>							
Gross Profit	44.85%	45.95%	44.67%	48.63%	52.71%	49.65%	49.98%
Operating Profit	27.22%	27.10%	23.61%	28.98%	36.27%	34.58%	34.52%
Net Profit	23.06%	23.68%	21.93%	25.42%	31.61%	30.21%	29.45%
<b>Efficiency</b>							
Asset Turnover Ratio	0.51	0.58	0.55	0.54	0.65	0.59	0.67
Inventory Turnover Ratio	1.62	1.77	1.7	1.59	1.75	1.55	1.62
Receivables Turnover Ratio	4.15	3.69	3.94	5.08	4.11	2.7	3.09
Payables Turnover Ratio	7.19	6.66	6.38	6.36	5.07	4.8	6.08

- Increased ROA and ROE indicate improved profitability and efficiency.
- Margins and ROE indicate a considerable increase in efficiency between FY 2020 & FY 2021

### ROA



### ROE



## Future Prospects

### Semiconductor Shortage

The ongoing chip shortage benefits ASML in the short term as demand for their equipment to produce more chips remains high. However, if the shortage eases significantly, it could lead to a temporary slowdown in demand for ASML's products.

### Trade Tensions

Geopolitical tensions, particularly between the US and China, could disrupt global supply chains and impact ASML's ability to source components or deliver equipment to certain regions. This is a risk to monitor closely.

### Revenue Growth

The steady rise in revenue, particularly the jump in FY 2021 and the continued growth in FY 2023, suggests strong demand for ASML's lithography systems, a core product in the chipmaking process. This indicates a favorable market for the foreseeable future.

## Overall View

Despite potential headwinds from global events, ASML's strong financial performance and its leading position in the essential chipmaking equipment market suggest a positive outlook. The company is well-positioned to benefit from the long-term trend of increasing demand for semiconductors.

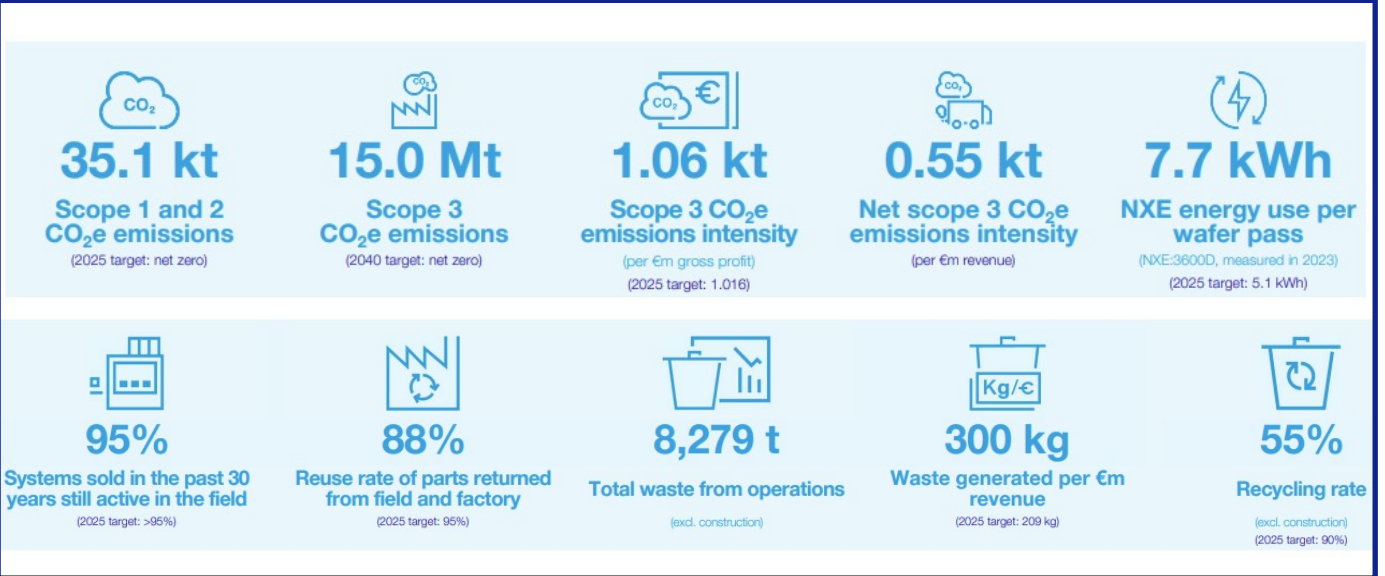
## Environmental, Social, and Governance (ESG)

**Environmental** – We want to continue to expand computing power but with minimal waste, energy use and emissions. Our focus is on energy efficiency and climate action, and the transition to a circular economy.

**Social** – We want to ensure responsible growth that benefits all stakeholders – to provide an attractive workplace for all, build a responsible supply chain, fuel innovation in our ecosystems and be a valued partner to communities.

**Governance** – We want to anchor our responsibilities in the way we do business through integrated governance, engaged stakeholders and transparent reporting.

## Global Aim For Net Zero Emissions By 2050

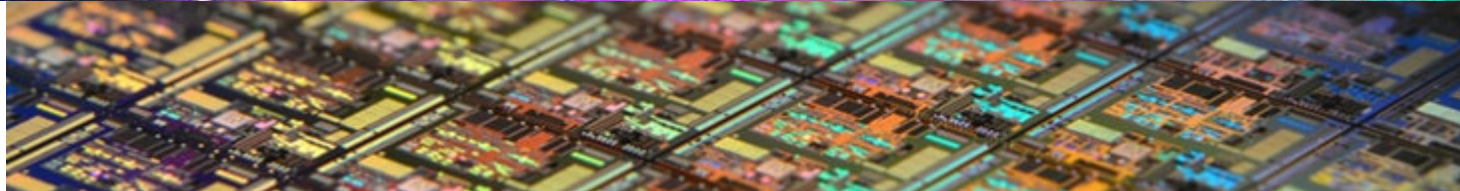
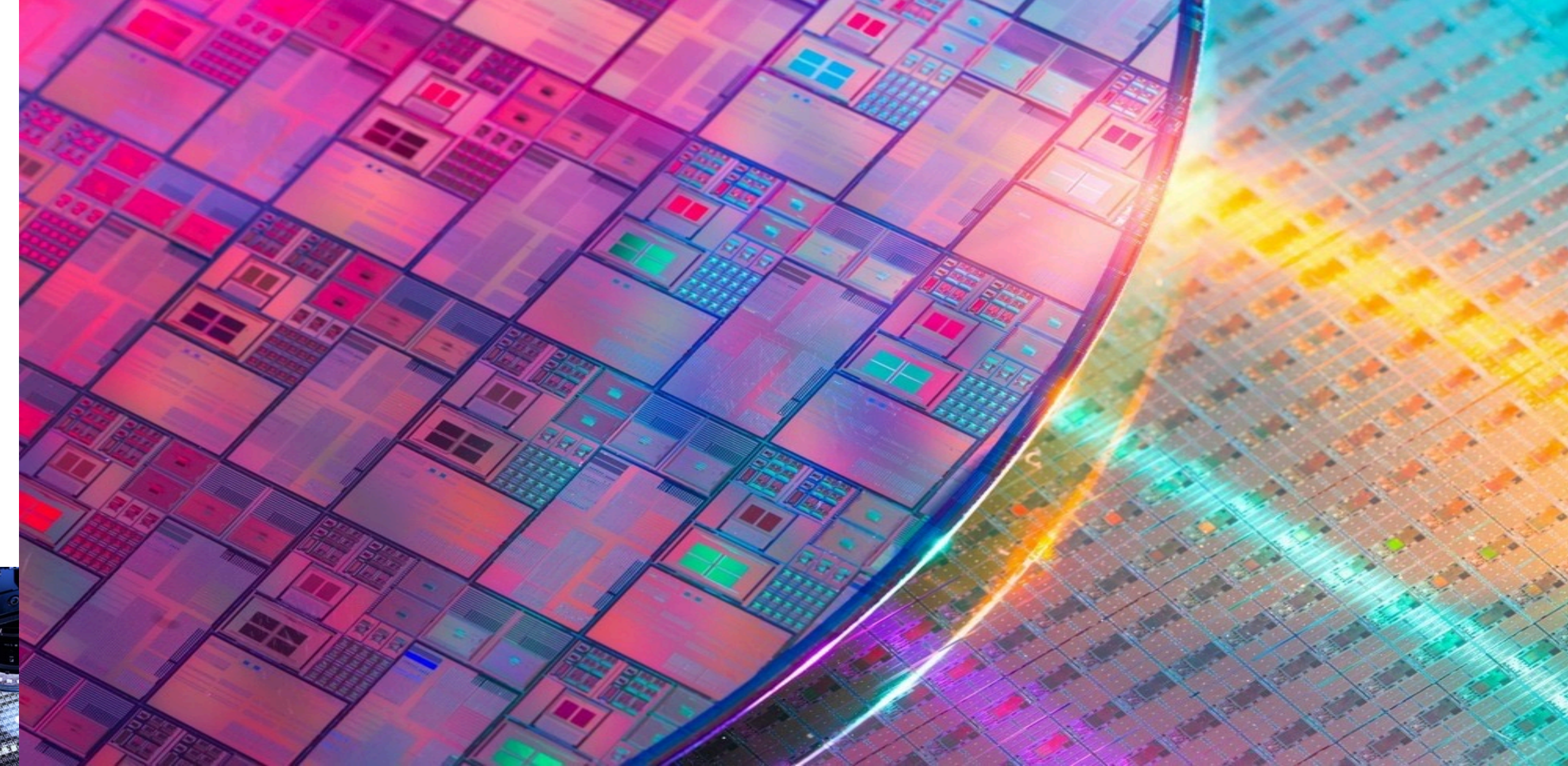


## Consistent Improvement for Diverse Workplace and Leadership



An aerial, high-angle photograph of a city grid, showing a dense pattern of streets and buildings. The colors are muted, with a mix of greys, browns, and greens. The word "Questions?" is centered in the middle of the image in a large, white, sans-serif font.

Questions?



-produced plasma

