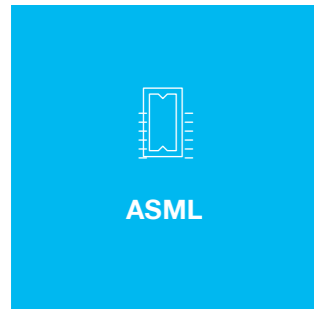


# ASML

## Semiconductor manufacturing

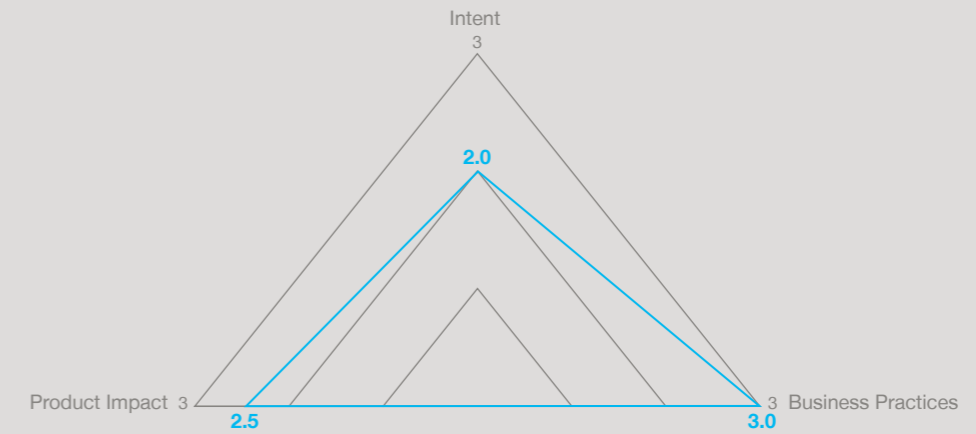


ASML develops and manufactures lithography equipment. Lithography equipment uses light to print the layout of semiconductors onto semiconductor wafers and is a crucial technology in the production of electronic chips. Electronic chips are used in computers, mobile phones, cars, home appliances and many other types of electronic equipment.

## Investment Case

<b>What challenge is the Company tackling?</b>	ASML's vision is to facilitate the production of affordable microelectronics that improve the quality of life. While the company doesn't solve directly any large problems, it is critical for other industries' progress and innovation. This is because lithography is the critical step in the production of electronic chips and one of the main enablers of Moore's Law, which describes the continual shrinkage in size of microchips. The continuation of Moore's Law allows for more powerful, energy-efficient and cheaper electronic devices.
<b>Is the Company's offering sufficiently different and better than the status quo?</b>	ASML's commitment to innovation and R&D has undoubtedly been a key enabler of advancement in semiconductors and has facilitated a material improvement to the status quo in a range of industries. ASML's importance is evidenced by the fact it controls more than 80% of the lithography market. This is because its technology is superior to competitors' and with the transition to a next generation lithography, EUV (Extreme Ultra Violet), ASML will own the market. The company is an enabler for other industries to make an impact and the magnitude of that is only limited by imagination.
<b>Is there a committed management team? What have they done before?</b>	Management has consistently invested in the long-term and showed a willingness to lead industry innovation and ability to work collaboratively with key suppliers and customers. With three of the five management board members having been at the company for 15 years or more it seems fair to give them some credit for this.
<b>How does the Company treat stakeholders?</b>	ASML provides a very detailed overview of their engagement with all stakeholders, which is positive. They strive to make their lithography systems more resource efficient, enabling customers to reduce the carbon footprint per wafer produced. ASML also has various initiatives to reduce its own carbon footprint and is making good progress: 50% emissions reduction over the last five years and 99% of the waste is recycled. The company treats its employees fairly and 90% have a personal development plan. The company scores as one of the top employers in Netherlands.
<b>Is there a potential to create a profitable and defensible business?</b>	Our lives are increasingly dependent on various electronic gadgets and this trend should continue over the next decade. The vast amount of data generated across different sectors will require storage and processing power. These trends underpin the demand for more efficient microelectronic technology which in turn should support the demand for ASML's lithography machines. While silicon-based shrinking will eventually hit a physical limit, there might still be plenty of scope to improve the efficiency of EUV machines via both hardware and software (metrology). Long-term efficiency gains in the semiconductor industry are also likely to come from design companies e.g. power efficient chip designs provided by ARM. ASML retains a dominant position within this growing market.
<b>Is the business attractively valued?</b>	Over the next five years, ASML could grow its revenues at a high single-digit rate, while the bottom line could grow faster as margins expand due to the increasing share of software and services. The company trades at forward mid-twenties PE multiple and this we do not think this is a demanding valuation for a company that is critical to the technological progress of the world.

## Impact Analysis



### Product Impact

The vastness of the breadth of impact, the level of innovation and what that can facilitate means that product impact is still significant, although the relationship between ASML's product and the problem it is addressing is indirect. ASML's centrality in the digital revolution and the benefits that it has brought give it a high score.

### Intent

ASML's commitment to innovation to increase the accessibility, energy efficiency and power of semiconductors is strongly ingrained into the way the company operates. However, the company is not able to dictate or influence how those semiconductors are used.

### Business Practices

ASML has a strong awareness of issues affecting the company and the industry. It also shows a strong commitment to transparency. The company's commitment to building up skills and the local technology ecosystem is positive, as is their work in supporting a more circular economy. Their governance arrangements, whilst not standard tick box compliant, are fit for purpose given the nature of the industry and ASML's place within it.

	Relevant Targets	Relevant Products
<b>8 DECENT WORK AND ECONOMIC GROWTH</b> 	<b>Target 8.2</b> Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.	ASML's lithography equipment is critical to the miniaturisation and cost reduction of semiconductors, which in turn drive new technological breakthroughs in different fields.
<b>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</b> 	<b>Target 9.5</b> Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending.	

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