

TSMC

Semiconductor manufacturing

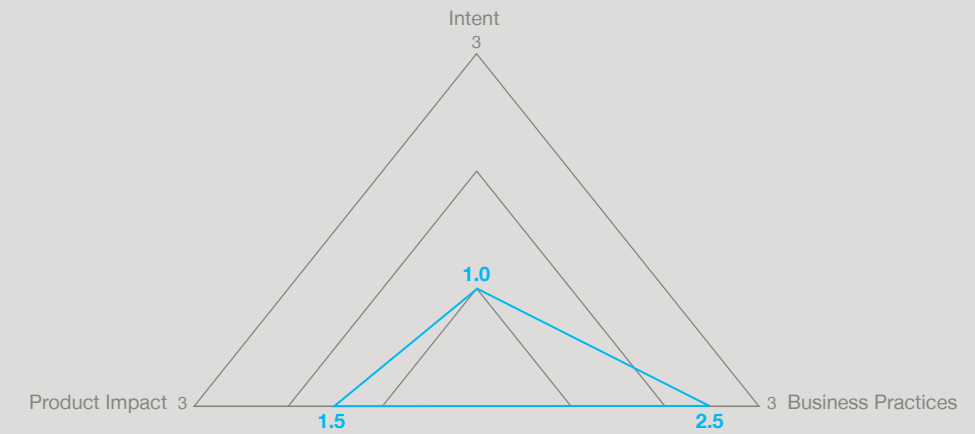


TSMC is the world's largest semiconductor foundry, making semiconductors for a variety of industries ranging from telecommunication to healthcare. TSMC's scale and innovation have been critical to the continued cost decline of semiconductors.

Investment Case

What challenge is the Company tackling?	Innovation is the key for the technology industry to overcome the challenges of global sustainable development and help to ensure a higher quality of life. The spread of low-cost mobile computing has had a hugely positive impact across the world and in developing economies in particular, enhancing the ability of billions of people to connect and communicate with each other. TSMC's ability to manufacture ever-higher performance chips has been a critical driver of this process.
Is the Company's offering sufficiently different and better than the status quo?	Yes, the technical and financial barriers involved in competing at the leading edge of semiconductor manufacturing are enormous. TSMC aims to be 'everyone's foundry', and in doing so the company has provided the manufacturing equipment for semiconductors that has enabled significant innovation and allowed a broader range of industry players to produce chips at scale.
Is there a committed management team? What have they done before?	Yes, TSMC created the industry: the company was set up by Morris Chang in 1987 in order to liberate semiconductor design from the capital-intensive manufacturing process. Morris Chang retired in June 2018, but the bench is deep: CEO Mark Liu has been with TSMC since the early 1990s and is supported by 20 other senior managers, half of whom have spent their entire careers at TSMC.
How does the Company treat stakeholders?	TSMC is widely acknowledged to be a global benchmark when it comes to large manufacturing companies that seek to exert a positive impact on society through their business practices. Management have long been adamant that long-term competitive advantage comes from outstanding relationships with customers, suppliers and employees; the track record — as well as a vast collection of sustainability awards — back this up.
Is there a potential to create a profitable and defensible business?	TSMC's scale and manufacturing advantages underpin a global market share that is now in excess of 50% and rising, as challengers such as UMC and SMIC struggle to close the gap. Heavy counter-cyclical investment has created a virtuous circle whereby TSMC can attract the best engineers, spend more on research and development than the rest of the industry combined, and still make the most attractive returns throughout the cycle.
Is the business attractively valued?	The business is valued on a low-teens multiple of forward earnings — with more than half of those earnings coming back as dividends — despite the prospect of double-digit growth in revenues and profits over the next decade, as continued growth in mobile computing is supplemented by new opportunities in high-performance computing, artificial intelligence and the Internet of Things, underpinning an anticipated ten-fold increase in the number of connected 'intelligent' devices.

Impact Analysis



Product Impact

TSMC makes a significant contribution to the semiconductor industry's ongoing mission to address societal challenges - as a provider of scale the company is crucial to the breadth of impact delivered, whilst also enabling ongoing innovation. TSMC has the ability to innovate and constantly improve. However the indirect nature of the impact relationship and reality that some of its products result in neutral or negative impact prevent a high score.

Intent

TSMC's business model and strong culture of innovation in turn facilitates broader innovation across the semiconductor industry. However, in order to gain a higher score on intent we'd need to see a stronger focus on the end use of the devices that their chips form a part of, and whether they are addressing societal challenges.

Business Practices

TSMC demonstrates thoughtful consideration and treatment of its stakeholders, with particularly strong emphasis on customers and employees. Several of its practices are market leading and almost all compare favourably in a global context. There is some evidence that that company is trying to drive improvement outside its organisation, including collaborating with other industry players.

	Relevant Targets	Relevant Products
8 DECENT WORK AND ECONOMIC GROWTH 	Target 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors	The spread of low-cost mobile computing has had a hugely positive impact across the world and in developing economies in particular, enhancing the ability of billions of people to connect and communicate with each other. TSMC's ability to produce ever-higher performance chips with ever-smaller size and power requirements at a low cost and with best-in-class-service has been a critical driver of this process.
9 INDUSTRY INNOVATION AND INFRASTRUCTURE 	Target 9.5 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	As noted above.

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