VT Tyndall Global Select Fund

Weekly Commentary 26th February 2021

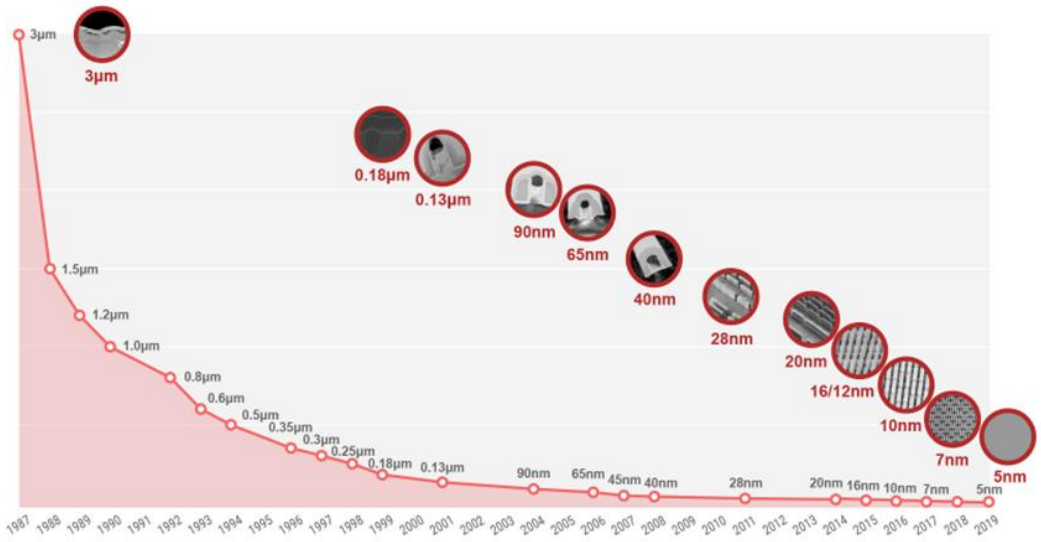
TYNDALL

When will my car arrive?

Over recent years companies have progressively moved towards leaner, just in time supply models which rely upon frictionless trade. Presidential trade wars can upset the finely poised balance between supply and demand, especially when they ban suppliers of key components from trading with companies under their sphere of influence, however the recent pandemic has had ramifications that stretched these models to breaking point.

Semiconductors content is increasing in most of the products we use on a daily basis, creating a structural growth story for both the chip designers and the foundries that make the chips. The reliance on foundries has been increased by the shift towards a 'fabless' business model, with only a few mega cap companies, such as Intel, sticking to an in-house supply chain owing to the costs involved in keeping up with the dynamics of Moore's law. Moore's law is the belief that the number of transistors on a microchip doubles every two to three years at the same cost, and therefore the industry has the option of either making microchips faster and more powerful at half the cost or reducing the size and doubling the number of transistors on a chip at the same cost. For the foundries, the more profitable route to follow is the latter one, especially as the end customers are increasingly wanting the chips to use up as little space as possible in their products.

TSMC's progression towards a 3nm fabrication node

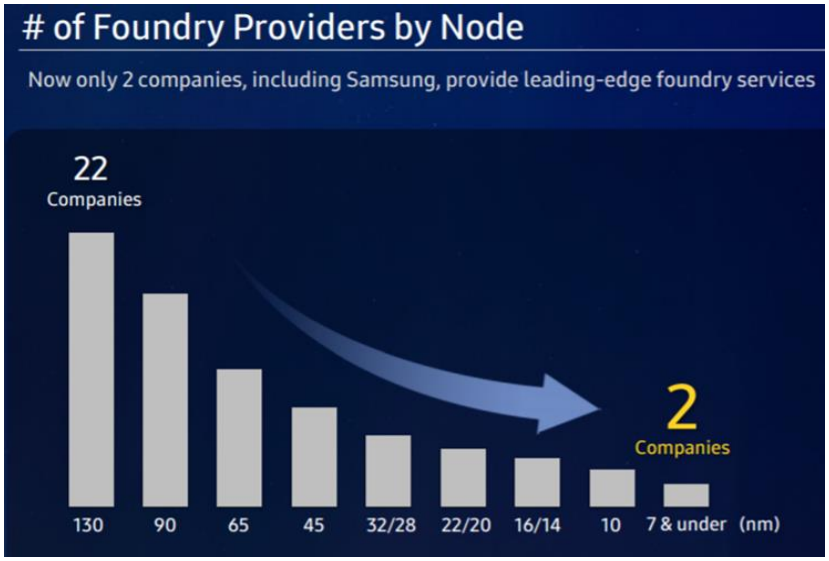


Source: TSMC

*A nanometre is one billionth of a metre.

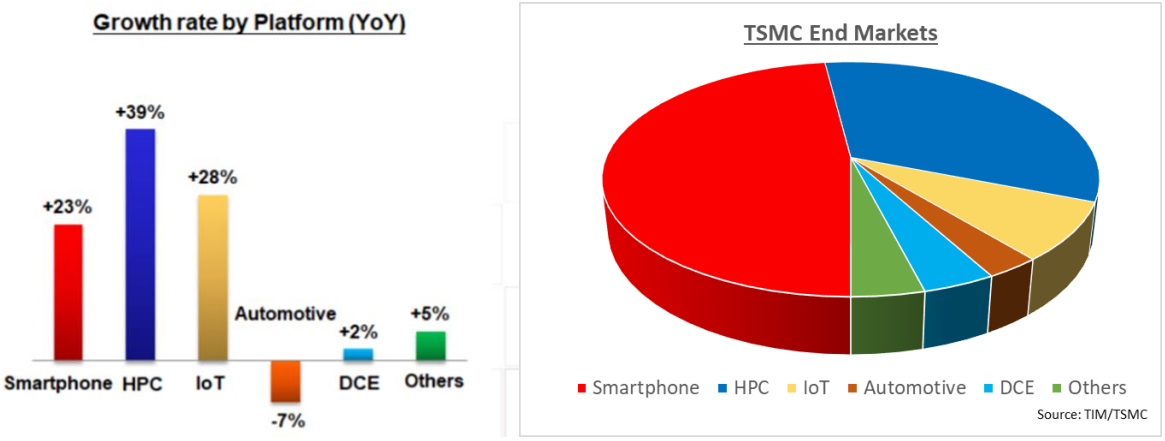
The costs, timelines, and technological difficulties in maintaining a leading position in this field provide those with the scale significant defensive moats; even Intel has resorted to outsourcing some of its production to TSMC as it struggles with quality issues in its own 10 nanometer transistors. Once a company falls behind it is rare that it can catch the leaders up, thereby increasing the order books for those with the capabilities and consequently the cash flows to invest in even more advanced production facilities. TSMC is due to start production at its 3nm foundry in late 2022, at a cost of $19.5bn and a 3½ year build program. This node is expected to be 30 per cent more energy efficient and 15 per cent faster than the current state-of-the art 5nm one.

Only Samsung & TSMC can produce under 10mn



Source: Samsung

The unintended consequence is that Samsung and TSMC are running at maximum capacity in all their nodes, despite building new production plants and hence backlogs of orders have increased. The foundries are having to prioritise their orders and thus delay orders due to temporary demand dips by OEMs, which can have disastrous consequences, as the car companies are now finding out. Ford, GM, Honda, Fiat Chrysler and VW have all cited that a shortage of chips is leading to production difficulties. In 2020 they cut their orders, while companies such as Apple increased their orders on the back of the uptick in demand for 5G phones, and other technology companies asked for a greater supply for personal computers as working from home surged. Having spent billions of Euros (or Dollars) on state-of-the-art seamless production plants, bottleneck costs can lead to significant costs and result in margin compression.



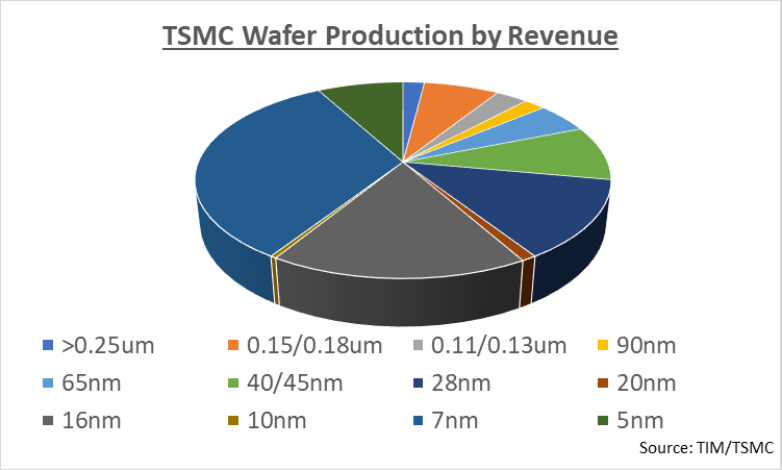
Source: TSMC

*HPC: High Performance Computing, IoT: Internet of Things, DCE: Distributed Computing Environment

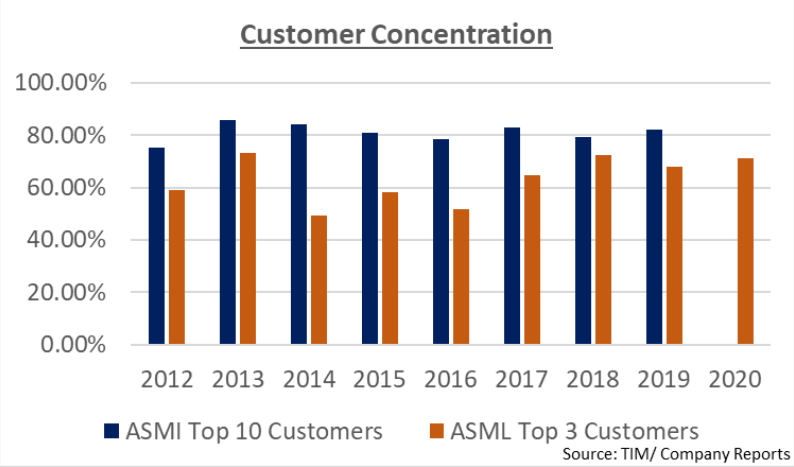
The car companies are not alone in their struggle, companies that sell their chips to the electronics industry such as AMD and Qualcomm are also citing shortages in chip supply and Sony blamed the situation for the difficulties in producing enough PlayStation 5 consoles to meet demand. The

Semiconductor Industry Association estimated that global chip sales in 2021 would rise a further 8.4% from the record $433 billion of sales registered in 2020.

Despite foundries racing towards the bottom, they still have significant production facilities at larger nodes, however this does little to allay the problems for the automotive companies, or those that do not necessarily need the smallest semiconductors, as almost all the foundries are running at maximum capacity across their spectrum. The Sino-US stand-off has compounded the issue further with SMIC no longer allowed to supply US companies and TSMC had to halt producing chips to Huawei, the worlds largest maker of 5G phones and about 12-15% of TSMC's revenues in 2019; fortunately, the increased demand from Apple, AMD, Intel, Nvidia and other fabless companies more than offset this drop.

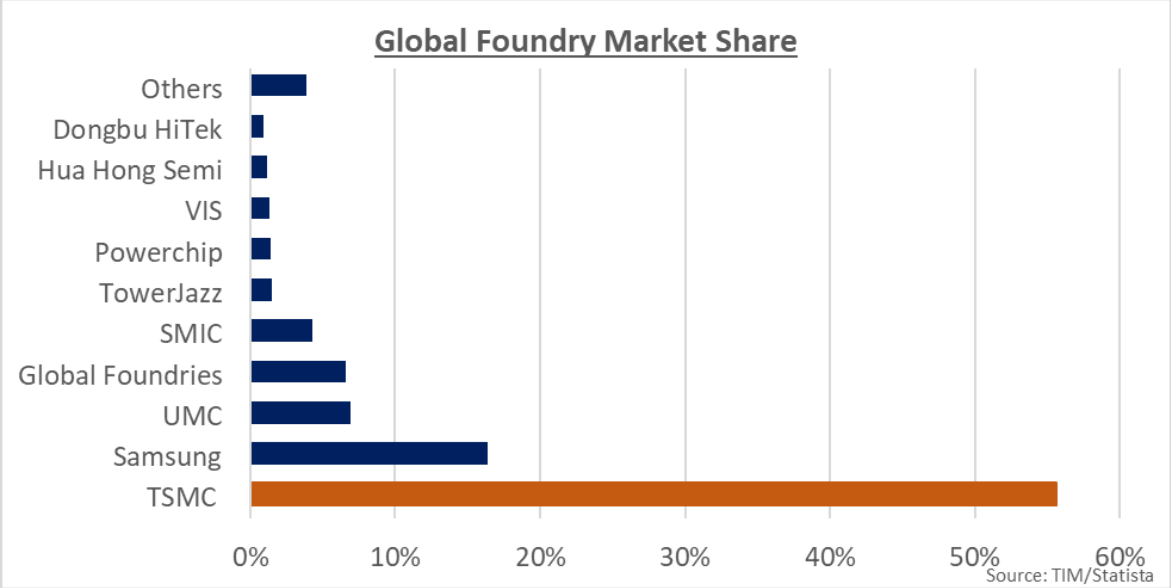


There are many ways for investors to capitalise on this trend, however none are to be found on value multiples given the growth prospects for the sector. ASML in the Netherlands is the global leader in producing the hardware and software required by the foundries to mass produce patterns on silicon through lithography. ASM International supplies equipment for processing wafers, specifically the niche, but essential, deposition stage, both companies are reporting record numbers. Given the concentrated nature of the sector any one foundry would represent a significant percentage of sales, so the loss of a key client would be meaningful. However, we see this risk as minimal baring product issues given the essential nature of their machines in a rapidly growing market.



Within the foundry arena Samsung and TSMC lead the pack both in scale and technological prowess, and there is also the prospect of Intel fighting off the attack from Third Point and regain some of its prior profitability under the new CEO, Pat Gelsinger, who was latterly CEO of VM Ware. Samsung and TSMC both place client outcomes at the forefront of their thinking when it comes to chip production, and thus have price discipline, and do not over excerpt power over their customers, which generates significant client loyalty and goodwill, which we applaud.

In the VT Tyndall Global Select Fund, our process has a higher propensity towards companies with a capital light structure. In the same way that we do not exclude any sector simply due to sentiment towards it, or other arbitrary reasons, we also leave open the ability to invest in companies with a high amount of capital intensity should the investment case be compelling. With 11,617 different products and 281 different process technologies and a capacity of over 12 million wafers, TSMC does certainly not have a capital light structure. The company continues to invest in future growth and expansion, and in 2021 their capital budget is expected to be between $25 billion and $28 billion. (54%-61% of 2020 revenue). However, the company has delivered 17.2% revenue CAGR since listing in 1994, a Return on Equity consistently in excess of 20%, and the Free Cash Flow is such that it has relied solely on internally generated funds to finance organic growth. We continue to like the prospects for our holding in the company.



Richard Scrope, Fund Manager, VT Tyndall Global Select Fund, 26th February 2021

Contact Details:

Fund Manager – rscrope@tyndallim.co.uk

Sales Director - hnolan@tyndallim.co.uk

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Investment Manager: 5-8 The Sanctuary, London, SW1P 3JP.