

# TSMC Will Spend an Extra \$10B on Chip Production in 2021

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- By [Joel Hruska](#) on January 19, 2021 at 10:01 am
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TSMC has announced that it will divert significantly more money than expected into its capital budget this year, with most of the investment geared towards boosting advanced processor technology deployment and development. The company expects to spend \$25B – \$28B, up from \$17.2B in 2020. That’s a 1.54x increase if you take \$26.5B as a midpoint estimate, and it comes on the heels of the largest demand surge the semiconductor industry has absorbed in decades, if ever.

We can’t say for certain that TSMC’s [announcement](#) is directly tied to whatever plans Intel is making for its own future, but a huge increase in capital spending is what we’d expect to see if Intel wanted to purchase a significant amount of capacity from TSMC by 2023. Trendforce has recently claimed that this shift is happening even quicker, with the Core i3 supposedly moving to TSMC’s 5nm node in the second half of 2021, while midrange and high-end chips would supposedly debut on TSMC’s 3nm node in 2022.

TSMC has previously said it will ramp 3nm in the back half of 2022, but it has historically led off on new nodes with mobile SoCs, not high-end desktop, laptop, or server chips. There’ve also been recent rumors of bottlenecks in TSMC’s 3nm R&D. That doesn’t mean the node will

automatically be delayed, but it wouldn't surprise us to see it slip into 2023 if the rumors are true.

**TSMC's 2020 fourth quarter consolidated results:**

(Unit: NT\$ million, except for EPS)

	4Q20 Amount <sup>a</sup>	4Q19 Amount	YoY Inc. (Dec.) %	3Q20 Amount	QoQ Inc. (Dec.) %
Net sales	361,533	317,237	14.0	356,426	1.4
Gross profit	195,236	159,202	22.6	190,494	2.5
Income from operations	157,120	124,244	26.5	150,048	4.7
Income before tax	161,107	128,782	25.1	155,124	3.9
Net income	142,766	116,035	23.0	137,310	4.0
EPS (NT\$)	5.51 <sup>b</sup>	4.47 <sup>b</sup>	23.0	5.30 <sup>b</sup>	4.0

a: 4Q2020 figures have not been approved by Board of Directors

b: Based on 25,930 million weighted average outstanding shares

Part of what makes TSMC's investment increase interesting is that the company isn't predicting dramatically increased revenue. TSMC's anticipated revenue growth for 2021 over 2020 is in the mid-teens — very healthy — but the company's budget increase will likely eat more than half its total revenue.

TSMC has also transformed its business to focus more on leading-edge revenue. Only 38 percent of its revenue is based on 28nm or older nodes. While that's still quite a bit of money in absolute terms, the revenue split between advanced nodes and trailing nodes used to be much closer to 50/50. In this past quarter, 5nm shipments accounted for 20 percent of TSMC's revenue, while 7nm held 29 percent and 16nm grabbed 13 percent.

Some of TSMC's new capital outlay will be used to break ground on a new fab the company is building in Arizona, but that plant isn't expected to be online until 2024. It'll be interesting to see if any other foundries announce similar plans to keep pace with TSMC — Samsung would be the most obvious choice, but Intel could conceivably announce a massive new R&D effort as part of putting the company back on track, and there are second-source foundries like GlobalFoundries and UMC that might announce their own efforts to improve older / specialized nodes as well.

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