

TSMC

Sony ASIC issues for PS5? Partly true, but impact overstated

This morning, Bloomberg reported that Sony is cutting its PS5 volume forecasts from 15m to 11m for 2H20 due to yield issues (final chip yield at 50% levels) for its ASIC (designed by AMD) at TSMC ([link](#)). Our industry research indicates that this news is partly true, but its impact may be overblown. Based on our supply chain research, we believe final CP (Chip Probe) yield for the 7nm ASICs (CPU and GPU designed by AMD for Sony) is ~10-15% lower than expected in 3Q20. In such situations, TSMC usually offers upside in capacity to make up the supply. However, given tight capacity of 7nm through the end of the year, we believe TSMC may be able to offer meaningful additional capacity to AMD only by end-2020, which could result in some shortfall in 4Q20 and early 1Q21. Based on our current findings, we do not believe the shortage is likely to be as big as 4M units, and yield is likely to also improve in 4Q20.

- Impact on TSMC:** For TSMC, we do not believe this will result in any material impact at the moment, especially since defect density (defects per sq. mm) remains pretty low for 7nm and typical chip yields are above 90% at 7nm for multiple quarters already. 7nm is a proven process, with >1bn defect-free chips already shipped using the process, [according to TSMC](#). The capacity situation is already quite tight on 7nm (we believe 97-98% utilization in 4Q20), and upside to Sony demand (and other customers) could keep capacity tight into 1H21, as well, during typical slow season. While yield concerns usually raise questions on margins, we believe this issue is unlikely to be impactful for TSMC margins, unless there is further escalation. In addition, the drag from 5nm ramp-up is likely to be the primary area of margin drag for TSMC in 2H20, which is well flagged to the market already.
- Impact on Sony and PS5 supply chain:** While a sentiment-negative, we note that our PS5 unit shipment forecasts (*from our Sony Analyst Junya Ayada*) are only 9M for FY20 (year ending Mar-21), well below the numbers stated in the press. We remain positive on a strong game console cycle from Sony, benefiting supply chain companies such as Hon Hai, Pegatron and TSMC.

Overweight

2330.TW, 2330 TT

Price: NT\$445.0

15 Sep 2020

Price Target: NT\$500.0

PT End Date: 30 Jun 2021

Semiconductors

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Investment Thesis

We are starting to see the first signs of Intel 5nm CPU activity at TSMC, which could result in mass production from 1H22 onwards, 6-12 months earlier than previous expectations.

We also believe that near-term demand trends are quite healthy, with 4Q headed for a flattish quarter despite Huawei restrictions and no sign of an inventory correction.

We further think TSMC's 2021 capex may see yoy growth, given the progress with Intel CPU outsourcing. We remain OW on the stock with a Jun-21 PT of NT\$500.

Valuation

Our Jun-21 PT of NT\$500 is based on 25x 12m forward EPS (higher than a mid-cycle multiple to reflect P/E re-rating, benchmarking global semis leaders like ASML and TXN, thanks to the opening up of Intel outsourcing opportunities).

Risks to Rating and Price Target

Key downside risks include: (1) market share losses toward Samsung foundry; (2) a longer-than-expected logic semi inventory correction; and (3) if acquiring Intel Fabs becomes a prerequisite for meaningful outsourcing business in the future, which could cause execution risks.

Other Companies Discussed in This Report (all prices in this report as of market close on 15 September 2020)

Hon Hai Precision(2317.TW/NT\$79.10/OW), Pegatron Corp(4938.TW/NT\$63.90/OW), Sony (6758)(6758.T/¥8058/OW)

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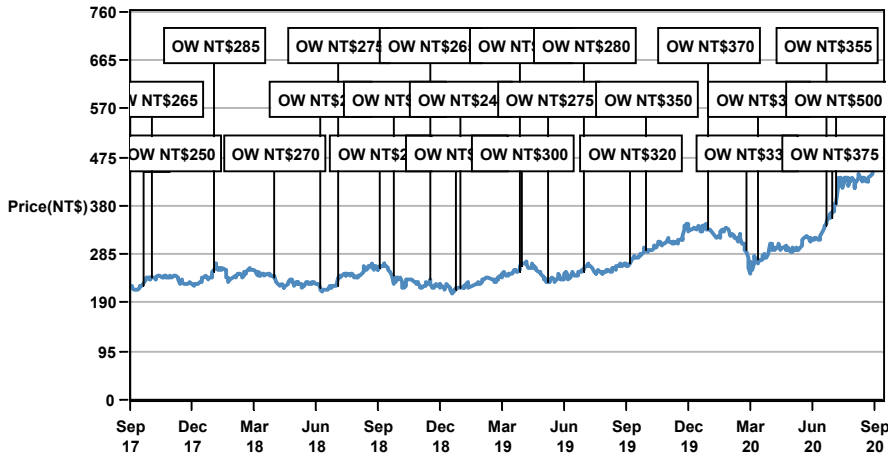
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TSMC (2330.TW, 2330 TT) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
 Initiated coverage Apr 28, 2002. All share prices are as of market close on the previous business day.

Date	Rating	Price (NT\$)	Price Target (NT\$)
10-Oct-17	OW	224.5	250
19-Oct-17	OW	237.5	265
19-Jan-18	OW	248.5	285
19-Apr-18	OW	238.0	270
26-Jun-18	OW	218.0	260
20-Jul-18	OW	224.5	275
20-Sep-18	OW	258.0	290
11-Oct-18	OW	244.0	285
05-Dec-18	OW	234.0	265
11-Jan-19	OW	216.0	245
17-Jan-19	OW	217.5	240
15-Apr-19	OW	252.0	280
18-Apr-19	OW	261.5	300
28-May-19	OW	231.0	275
18-Jul-19	OW	252.0	280
25-Sep-19	OW	265.0	320
18-Oct-19	OW	293.5	350
17-Jan-20	OW	334.5	370
13-Mar-20	OW	294.0	335
01-Apr-20	OW	274.0	325
09-Jul-20	OW	341.0	355
17-Jul-20	OW	357.5	375
24-Jul-20	OW	381.5	500

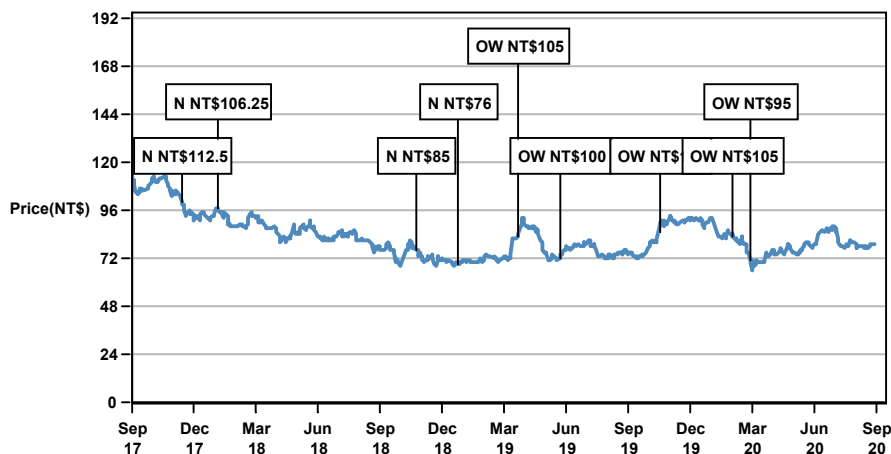
Sony (6758) (6758.T, 6758 JP) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
 Initiated coverage May 13, 2001. All share prices are as of market close on the previous business day.

Date	Rating	Price (Y)	Price Target (Y)
01-Nov-17	OW	4413	5,500
24-Jan-18	N	5732	5,400
28-Apr-18	N	5400	5,200
31-Jul-18	N	5865	5,600
11-Oct-18	N	6569	5,800
28-Nov-19	OW	6932	10,000
20-Apr-20	OW	6969	9,300
27-May-20	OW	6737	9,000
03-Sep-20	OW	8420	9,400

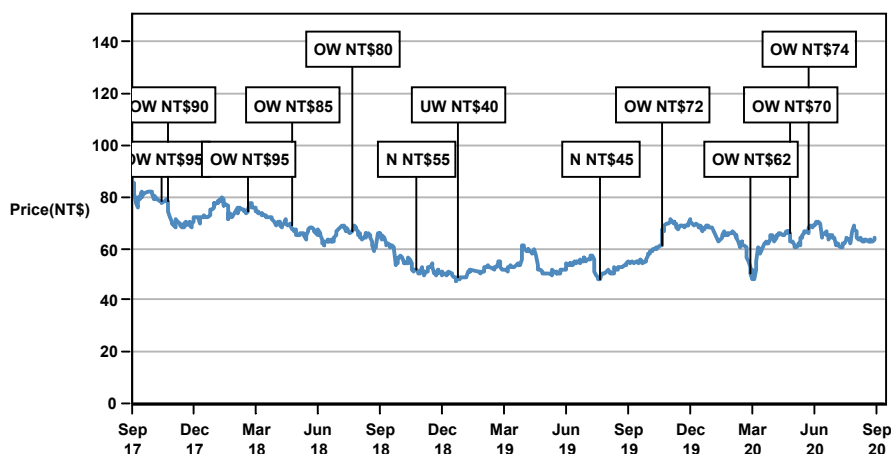
Hon Hai Precision (2317.TW, 2317 TT) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Sep 02, 2001. All share prices are as of market close on the previous business day.

Date	Rating	Price (NT\$)	Price Target (NT\$)
01-Dec-17	N	100.00	112.5
24-Jan-18	N	96.90	106.25
11-Nov-18	N	76.10	85
11-Jan-19	N	69.30	76
11-Apr-19	OW	83.00	105
12-Jun-19	OW	72.40	100
04-Nov-19	OW	84.80	110
19-Feb-20	OW	83.40	105
18-Mar-20	OW	70.60	95

Pegatron Corp (4938.TW, 4938 TT) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Jun 29, 2010. All share prices are as of market close on the previous business day.

Date	Rating	Price (NT\$)	Price Target (NT\$)
31-Oct-17	OW	78.40	95
10-Nov-17	OW	78.00	90
09-Mar-18	OW	74.20	95
11-May-18	OW	68.60	85
09-Aug-18	OW	66.60	80
11-Nov-18	N	52.20	55
11-Jan-19	UW	48.50	40
09-Aug-19	N	48.00	45
08-Nov-19	OW	61.20	72
18-Mar-20	OW	50.70	62
15-May-20	OW	66.00	70
11-Jun-20	OW	67.00	74

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