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Key takeaways from Semicon Taiwan

We completed our Semicon Taiwan Tour, meeting 22 companies as well as attending the wider Semicon Taiwan event last week. Key highlights:

Leading edge capacity shortage likely to worsen in 2027: Based on our industry conversations at Semicon, it appears that the leading edge foundry capacity shortage will likely worsen in 2027, with the N3 demand-supply gap likely to widen, despite TSMC adding more N3 capacity. We estimate that the unfulfilled N3 demand this year is close to 600k wafers in 2026, but this could widen further in 2027, based on our initial conversations with the supply chain. Key demand drivers are: (1) a steep NVDA N3 ramp for Rubin/ Vera, with NVDA taking up 55-60% of total N3 wafers in 2027, up from less than 10% in 1H26; (2) strong CPU ramp, with NVDA Vera, Google Axion 2, Amazon Graviton 5, and MSFT Cobalt 200 all using N3, with a lot of unfulfilled demand slipping into 2027; (3) steady upside in ASIC shipments for TPU v8 (Mediatek, Broadcom) and Trainium 3 (Alchip, Annapurna); and (4) increasing networking attach, with most networking and XPU attach chips migrating to N3. Even with TSMC adding ~40% N3 capacity (mainly Fab 18 P9 and some output from Fab 21 P2 in AZ), the shortage is unlikely to ease materially in 2027.

Advanced packaging investments broadening out, with a focus on CoWoS in 2027 and SoIC in 2028: Capex for advanced packaging is now starting to come through from various OSAT vendors, rather than just TSMC. ASE and Amkor are the leaders in capacity expansion, but we are also starting to see sub-contracting orders likely going to PTI, Xintec and other packaging vendors, given the extreme shortage of clean-room space and high demand. In our estimate, TSMC's CoWoS capacity by end-27 could reach ~190-200k wfpm with limited room for meaningful upside now due to longer equipment lead times. Leading OSAT capacity could reach ~100k wfpm (likely 60% ASE, 30% Amkor), while smaller OSATs may also start contributing some capacity in late 2027 for subcontracting on-substrate and full process orders due to customer demand overflow. Looking into 2028, we expect SoIC to become the primary focus of investment at TSMC, given NVDA Feynman is likely to start using 3DSoIC for GPU-GPU stacking (A16 on A16 dies likely), which should require a significant jump in 3DSoIC capacity (we expect 65k wfpm 3DSoIC capacity by end 2028).

CoPoS development seems slower, EMIB-T progressing with variants being explored in the supply chain: TSMC's CoPoS progress appears to be tracking somewhat slower than expected, with current expectations only for risk production in 2028, with earliest mass production being pegged for 2029. Our checks indicate that there are still several engineering challenges (warpage, glass cracking, etc) that need to be resolved before the process can move into meaningful mass production. Feedback from OSATs such as ASE who are pursuing CoPoS-like PLP technologies also appears to be similar, in our view. At the same time, EMIB-T seems to be showing steady progress, even with the concerns of substrate yield and process flow details among various participants still being finalized. In addition to TPUv9 Humufish, we expect some volume from AWS Trn4 to also be using the EMIB-T packaging in the 2028 timeframe. Key EMIB-T equipment players in Taiwan are All Ring Tech and Scientech. Lastly, we believe that there are several

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EMIB-T like technologies that are being worked upon, aiming to create a RDL layer directly on top of the substrate material, doing away with an interposer and thus reducing costs and increasing package size. We believe that TSMC is working with substrate vendors such as Kinsus to explore similar technologies, while other Fabless vendors (such as Broadcom) are also exploring similar approaches. For customers who are hesitant to go 3D (with 3DSoIC), such an option may help to address larger 2.5D package sizes for certain kinds of accelerator chips.

High level of interest in CPO, but lack of clarity on testing process flow, with Insertion 2 test likely skipped in initial production: CPO continues to be a focal point for most back-end vendors, but the exact test process flow remains uncertain. Most participants and our checks are leaning towards TSMC skipping Insertion 2 Test in initial CPO production and pushing more of the test intensity to Insertion 3 and 4 at the OSATs, due to much lower throughput at Insertion 2 Test. If this eventually becomes confirmed, this should be positive for Chroma, Hon Precision, given their strong presence in Insertion 3 and 4 respectively. We believe that new entrants may also enter the fray for the next generation of CPO testing flow, given the throughput limitations in the current process flow.

Equipment suppliers and market share dynamics for CPO test insertion 1-4 and SiPh optical test are investors' key focus: On CPO test insertion 1 and silicon photonics PIC wafer test, the number of wafer prober suppliers is likely quite complicated at this point, as each supplier can configure probers, instruments, six-axis robotic arms, etc. While Foundry COUPE currently uses FormFactor, our research suggests there are 3-4 other prober solutions for PIC wafer testing (i.e. ficonTEC, Hermes Testing, Semight, etc.) targeting different SiPh customers (i.e. GlobalFoundries, UMC, etc.). For the eventual outcome of Insertion 2, the key would likely be TSMC's wafer bonding yield, which if proven to be high, will likely reduce/remove the need for Insertion 2 and could subsequently increase the Insertion 3 testing intensity. This would benefit Chroma, which we believe still holds the lead in Insertion 3 despite chatter that companies such as ficonTEC could be entering. For Insertion 4, Hon Precision re-iterated that its first optical-electrical co-test handler will be shipped to the tester partner in 4Q26, while the mass production still depends on the testers' finalization timeline. We expect 2H27 could be a possible timing for a meaningful contribution for this co-test handler.

Logic TCB growth remains strong, memory TCB a bit uncertain due to recent HBM despeccing concerns: Most TCB vendors in the tour are anticipating strong growth in Logic TCB, from on-substrate expansion for TSMC and OSAT vendors, capacity buildout at Intel for EMIB and other advanced packaging areas, and potential adoption of TCB for CoW step in CoWoS, especially as the logic die moves to a composite 3DSoIC based package. We also believe that China is becoming a fast growing market for TCB tools since multiple Chinese OEMs are starting to build out their CoWoS like packaging solutions. ASMPT (at TSMC and OSATs) and KLIC (at Intel) are the incumbent players, but Hanmi also indicated that they have secured some initial evaluation at an OSAT vendor. Given the long equipment lead times and strong demand, OSATs are likely to qualify more TCB vendors, which will increase competition. HBM-related TCB demand continues to remain uncertain due to SK Hynix's pause in back-end investment and recent concerns over HBM despeccing to 8Hi or 12Hi stacks. However, vendors are expecting orders to resume from late 2026, as HBM4 based Rubin shipments start accelerating. We also believe that HBM demand from Chinese vendors is likely to accelerate meaningfully in 2027.

Substrate driving lamination and other tool demand: Substrate related equipment vendors are indicating very strong orders coming from customers. Driven by rapidly rising substrate shipment (and size migration), plus the new technology such as EMIB-T, Eternal Precision (7795 TT, NC), a global leading vacuum lamination tool provider, suggests its order

backlog visibility is now extending to Year 2030e. The company indicates that despite the fast capacity growth (+50% in the coming year), the demand (which comes from both new and established substrate makers) is still outpacing the supply. Meanwhile, we also see EMIB-T to bring more challenges to lamination (thinner materials), and the driving substrate vendors to acquire higher precision bonding tools such as TCB which are needed to attach the silicon bridges to the substrate. CHPT (6510 TT, OW, covered by Jerry Tsai) also discussed the need for double-sided testing of substrates in the future, which we suspect is also related to advanced substrate designs such as EMIB-T.

Stock picks: Our top picks in the equipment space are GPTC, Chroma, ASMPT, Hon Precision.

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Companies Discussed in This Report (all prices in this report as of market close on 08 September 2026, unless otherwise indicated)
ASMPT Ltd (0522)(0522.HK/HK$161.40/OW), Chroma ATE(2360.TW/NT$2,265.00/OW), Grand Process Technology(3131.TW/NT$2,635.00/OW), Hon Hai Precision(2317.TW/NT$251.50/OW)

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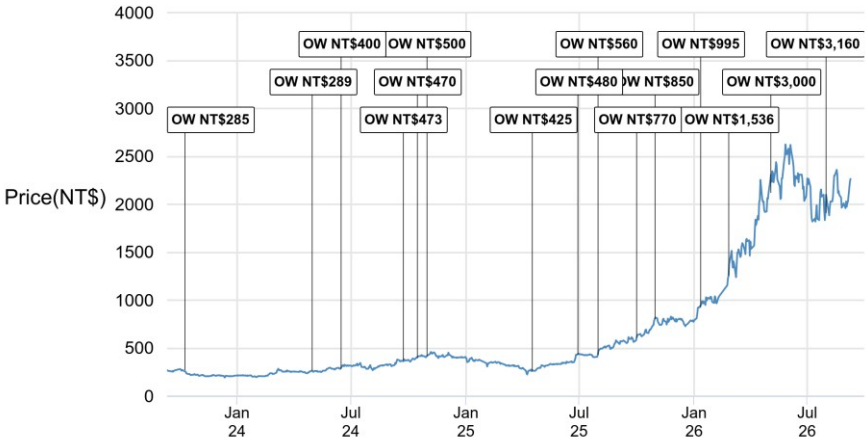
ASMPT Ltd (0522) (0522.HK, 522 HK) Price Chart



Date	Rating	Price (HK$)	Price Target (HK$)
26-Oct-23	OW	68.90	82
08-Feb-24	OW	87.15	100
24-Apr-24	OW	95.65	120
25-Jul-24	OW	88.00	115
27-Feb-25	OW	64.05	90
01-May-25	N	52.20	58
23-Jul-25	N	61.20	67
30-Oct-25	N	87.25	76
11-Feb-26	OW	100.90	125
05-Mar-26	OW	108.00	130
22-Apr-26	OW	148.10	175
15-Jul-26	OW	188.30	225

Source: Bloomberg Finance L.P. and J.P. Morgan; price data adjusted for stock splits and dividends.
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Chroma ATE (2360.TW, 2360 TT) Price Chart



Date	Rating	Price (NT$)	Price Target (NT$)
11-Oct-23	OW	269.50	285
01-May-24	OW	266.50	289
16-Jun-24	OW	283.00	400
23-Sep-24	OW	369.00	473
16-Oct-24	OW	400.00	470
31-Oct-24	OW	415.50	500
18-Apr-25	OW	263.00	425
30-Jun-25	OW	429.50	480
01-Aug-25	OW	430.50	560
02-Oct-25	OW	606.00	770
31-Oct-25	OW	804.00	850
12-Jan-26	OW	923.00	995
26-Feb-26	OW	1255.00	1,536
04-May-26	OW	2120.00	3,000
31-Jul-26	OW	1910.00	3,160

Source: Bloomberg Finance L.P. and J.P. Morgan; price data adjusted for stock splits and dividends.
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Grand Process Technology (3131.TW, 3131 TT) Price Chart



Date	Rating	Price (NT$)	Price Target (NT$)
12-Oct-25	OW	1750.00	2,100
10-Nov-25	OW	1370.00	1,930
07-Jan-26	OW	1760.00	2,100
27-Mar-26	OW	2755.00	3,300
05-May-26	OW	3065.00	3,700
27-May-26	OW	3115.00	4,400

Source: Bloomberg Finance L.P. and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Oct 12, 2025. All share prices are as of market close on the previous business day.



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



Date	Rating	Price (NT$)	Price Target (NT$)
15-Mar-24	OW	121.00	140
27-Mar-24	OW	142.00	170
15-May-24	OW	172.00	200
09-Jul-24	OW	226.50	260
14-Aug-24	OW	181.00	250
16-Mar-25	OW	170.00	225
15-May-25	OW	163.00	210
08-Aug-25	OW	194.50	230
15-Aug-25	OW	199.50	240
30-Sep-25	OW	219.50	270
13-Nov-25	OW	251.00	285
17-Mar-26	OW	216.50	270
15-May-26	OW	244.50	310
13-Aug-26	OW	270.00	330

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