

Foundry Utilization Rates lower than anticipated (TSM, NVDA, AMD, TPE: 2454, Spreadtrum)

- 16nm rates are likely low as NVDA, AMD, MTK and Spreadtrum volumes cannot make up for the Apple volumes.
- 10nm is likely to continue ramping despite possible Mediatek cancellations.
- 20nm is likely being shut down to move customers to either 12/16/ 22/28nm.

Summary:

Current node shifts by key customers and the creation of new nodes enable TSM to increase its offering. While the current utilization rates are relatively low, we believe that TSM's strategy will increase its competitive positioning in 2H17.

We think that TSM's utilization rates for 16nm currently are at around 63%. UT rates below 80% are considered low and usually can cause fabs and OSATs to shut down lines to reduce cost. We believe that the decrease is caused by Apple moving to 10nm and a lack of demand from other manufacturers for that node. In this particular case we believe that other manufacturers using 10nm could be e.g. Mediatek, NVDA, AMD and Spreadtrum do not have comparable volumes with Apple as only part of their products are on 16nm.

We anticipate UT rates on 16nm to slightly increase in Q3 to the low 70% range. Part of the slow increase is additional equipment coming online from the closure of the 20nm node currently produced in Tainan in Fab 14. The move to close the 20nm node is likely TSM's strategy to move existing customers to 16nm from 28nm. The move will also enable TSM to migrate customers to a high performing 22nm or 28nm node should they not want to make a node change to a smaller node. Both, 16nm and 28nm experienced lower utilization rates year to date. 28nm will likely increase its UT rate from the low 80% to mid- to the high 80% range.

The 10nm node, mostly used by Apple in our view, is likely starting to ramp in June with a UT range of around 85%. This is despite possible cancellations from Mediatek. We believe that Mediatek cancelled all Helio X35, P35 and X30 volumes on 10nm. Furthermore, we anticipate the utilization rate to continue to increasing in Q3 and Q4 due to the release of the new iPhone series. Utilization rates we anticipate are in July/August in the 88% range, progressing into September and October to 95%. Depending on the delay of the Apple phone, the UT rate could continue to be in the high 80% range in December and potentially reaching into Q118.