Semiconductors

Earnings Wrap:100% Beat/Raise for the Group; Tight Supply Drives Multiple Qtrs of Strength; See Further Upside in Stocks

Semiconductors & Semiconductor Capital Equipment / IT Hardware

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We continue to remain positive on semiconductor stocks as we expect to see continued positive earnings revisions in 2021 (see our 2021 outlook note here) as global semiconductor demand continues to expand and supply-side dynamics remain tight. In the just completed December quarter earnings season, as expected, we saw earnings (CY21 consensus EPS estimates) for the group revised higher by ~9% and 100% of our semi/semicap companies (ex-memory/discrete component companies) reported a revenue/EPS beat on the reported quarter as well as on the 1Q outlooks – the first time this dynamic has occurred since we began tracking the earnings performance, and reflective of strong demand trends and tight supply dynamics across almost every end-market in semis (automotive, industrial, cloud compute/networking/storage, PCs, smartphones, and gaming). In memory and discrete components - we saw earnings estimates revised higher by 22% in the just reported quarter as these companies have much more earnings leverage to the early positive changes in pricing. Semicap equipment companies saw solid 6-8% positive earnings revisions driven by foundry/memory spending upside. Despite near-term concerns on a "peaking in fundamentals/stocks," we see continued positive EPS revisions for the next several quarters (and expect stocks to follow) on strong demand and pricing power amidst a tight supply environment - we believe semi companies are shipping 10% to 30% BELOW current demand levels and it will take at least 3-4 quarters for supply to catch up with demand and then another 1-2 quarters for inventories at customers/distribution channels to be replenished back to normal levels. For example, customer and distribution inventories in analog / MCU markets declined by 20-40% in the December quarter and we believe customer finished product inventories are also well-below target levels (GM has said that auto inventory on new car lots are 500K below target in the US for auto makers). In addition to strong auto/industrial/PC/gaming fundamentals, cloud spending has started to inflect strongly here in the 1H of the year and our tech team continues to see 25%+ cloud spending in 2021. OW AVGO (our top pick in semis), OW MU, OW NVDA, and OW INTC should benefit from the strong cloud spending trends this year. On the continued cyclical demand recovery/tight supply environment, we favor OW TXN and OW MCHP and we favor semicaps (OW KLAC, OW LRCX, OW AMAT) as the strong focus on capacity expansion (to alleviate supply constraints) and continued aggressive technology migrations should be a strong tailwind.

- **We estimate that the industry is only 40% through the current up-cycle and that it will take another 4-6 quarters for supply to catch up with demand AND inventories across the value-chain to get back to normalized levels.** Recall in the 2016-2018 upturn, there were 10 quarters of positive Y/Y growth before the start of the 2019 down cycle. As of the December quarter 2020, the semiconductor industry has seen 4 quarters of positive Y/Y dynamics and in addition to strong end-market demand dynamics this year, we believe that it could take another 4-6 quarters for supply to catch up with demand and bring value chain inventories back to normal levels: at least 3-4 quarters for supply to catch up with demand and then another 1-2 quarters for inventories at customers/distribution channels to be replenished back to normal levels. We believe semi companies are shipping 10% to 30% BELOW current demand AND customer and distribution inventories in analog / MCU markets declined by 20-40% in the December quarter.

- **Tight supply dynamics started well-before the auto/industrial component**

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tightness observed in 4Q......leading edge capacity was already very tight by July 2020 due to the Sept Huawei component ban and strong 1H WFH dynamics in cloud and PCs. While much of the recent focus of the tight semiconductor component environment has been centered around the automotive/industrial markets (lagging edge 28nm and 40nm wafer capacity), we believe the component tightness actually started in the middle of last year with leading edge technologies (16nm, 14nm, 10nm, and 7nm) as work-from-home (WFH) dynamics drove strong demand for leading edge server, networking, gaming, and PC demand amidst a supply chain that was hampered by the COVID-19 pandemic. Compounding the strong leading edge semiconductor demand in the 1H was the large Huawei orders for networking, compute, memory, and smartphone components ahead of the Sept 2020 shipment ban (which also consumed a large amount of lagging edge capacity as well). As a result, by the end of summer, both leading edge and lagging edge wafer capacity were already very tight. We believe Broadcom and Microchip, for example, were already telling their customers in July/August to start placing longer lead time orders on tight supply dynamics. By the time that auto/industrial customers started turning on factories broadly in Q3, they compounded the tight supply situation, especially as their inventory of components were at levels well-below historical norms. Bottom-line, the component shortages are across almost ALL end-markets and it will take multiple quarters for the semiconductor value chain to 1) match supply with current production rates, 2) replenish component inventories with direct customers and distributors, and 3) allow customers to replenish their end-product inventories at product wholesalers/retailers/distributors.

- **We remain positive on semiconductor and semiconductor capital equipment stocks as we are still in the early innings of a multi-quarter upcycle and in addition to strong demand trends, we believe our companies will exert strong pricing power amidst a tight supply environment**. Despite the 15% move higher in semis YTD, we continue to see 10-15% upside in the group and our OWs having 20%+ upside from current levels over the next 12-18 months as the positive earnings revisions cycle continues into 2021 (another 20%+ upside in out-year EPS estimates) amid a cyclical upswing on strong demand and tight component supply. We continue to favor semiconductor companies with cloud data center, 5G networking, and gaming exposure. Our top overall pick remains Overweight-rated Broadcom (AVGO) on strong cloud networking/compute acceleration semiconductor leadership, 5G networking exposure via its ASIC/optical segments, and mission-critical software for the top global corporations. We also favor OW-rated NVDA, INTC, TXN, MCHP, and MU. In semicap equipment, we remain OW on all three of the large cap stocks KLAC, LRCX, and AMAT as they should benefit from the expansion of wafer capacity to meet the tight chip supply environment along with the continued capital intensity tailwinds on aggressive technology migration in foundry/logic, and memory.

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