

Historical Valuation Update

Insight into the Resetting of Historical Average Valuations

Summary: On November 29 of this year I updated the historical data sets used to calculate price-sales and price-earnings in the Tokeneke Research Universe Valuation spreadsheet with data from 1/11/13 to 10/3/14. Inclusion of 2013 and 2014 into the dataset generally only slightly lowered historical average valuations due to the inclusion of additional data, although several newer equities with limited datasets enjoyed higher historical averages.

Observations:

- I used the Bloomberg terminal in the Darien, CT public library and downloaded historical price-earnings, price-book, and price-sales data on a weekly interval for the period from January 11, 2013 to October 3, 2014 during the weekend following the latter date. This information was subsequently incorporated into the Tokeneke Research spreadsheet beginning on December 1, 2014. The Tokeneke Universe totals 91 issues as of this writing.
- As noted in my previous updates from February 2, 2013, November 7, 2011 and March 8, 2010, there is no data available prior to 1/1/08, so there is a structural defect in my dataset between 9/28/07 and 1/1/08. There is also limited availability of data for smaller and international and lesser-followed issues.
- Datasets were introduced for two new issues over the 2013-14 period including AMBA and PSMI. No data was available yet for the more recent issue of MONT, and only price-sales data was updated for NLST.
- Price-earnings datasets are limited due to the cyclical nature of the chip sector. There were a number of new highs established over the last two years (a total of 19 mostly newer issues from recent years) and a small number of new lows (3). The historical average calculations dropped down for 34 issues and moved up for an equal number of 34, as well. The historical average did not change for the balance of 23 issues.
- Price-Sales Updates:
 - A plurality of 41 issues had historical average calculations that were nudged down, as expected.
 - There were 26 issues whose historical average price-sales ratios did not change.
 - Twenty stocks had historical averages that increased, including: ADI, ADNC, AVGO, CAVM, CEVA, FSL, GSIT, HIMX, INVN, MOSY, MPWR, MSCC, MTSI, NLST, NXPI, ONNN, QUIK, SQNS, SWKS and TXN. I categorize them into three buckets. First are those issues with limited datasets that have only been public since 2005, including ADNC, AVGO, CAVM, FSL, GSIT, HIMX, INVN, MPWR, MTSI, NLST, NXPI and SQNS. Second are established companies that underwent strategic changes to their businesses warranting richer fundamental valuations, including ADI, CEVA, MSCC, ONNN, SWKS and TXN. Note it is very difficult to move the statistical needle for such long-time issues, with four of them only benefiting by a single decimal point—and CEVA and SWKS enjoying two. And third are special cases amid business transformations that include MOSY and QUIK.
 - There were a total of 18 new highs, including: ADNC, AOSL, AVGO, CAVM, CODE, FSL, GSIT, HIMX, INFN, INVN, MOSY, MTSI, MX, NLST, NXPI, QUIK, SQNS and SWKS. This group of tickers largely correlates with the 20—mostly newer issues—noted above whose historical averages increased. AOSL, CODE, INFN and MX are all new issues since 2007.
 - There were only three stocks establishing new lows, including GIG, INVN and SIMO—each of which I consider to be special cases.

Semiconductor Fundamental Valuations: Historical Valuation at Tokeneke Research reflects fundamental equity valuation metrics compared against the history of those metrics for the life of that equity. Specifically, I compare current trailing-12-month price-sales and price-earnings ratios against the average history of those criteria for a specific equity issue. I use the Bloomberg data base to capture historical price-earnings, price-book and price-sales ratios on a weekly basis. I then capture the high and low numbers and calculate the mean average for each ratio.

I do not consider price-book to be a meaningful valuation ratio for the semiconductor industry, in general, mostly because of the huge variance in book values between integrated manufacturers, foundries, fabless and IP business models, but also because of a significant portion of intangible book value reflected in goodwill and acquisition-related intangibles on balance sheets across the sector. While book value appears to be a more relevant metric for valuing the share prices of semiconductor capital equipment issues, it does not appear to carry much relevance for semiconductor suppliers.

Price-earnings is an extremely robust fundamental valuation metric. However, it is inherently problematic in the highly cyclical and volatile chip sector. The volatility of the business itself leads to a very wide range of earnings over the course of a business cycle, and the cyclical nature of the sector results in meaningful periods of financial losses that render historical datasets incomplete and truncated to a significant degree. Even worse, periods of highly depressed earnings render meaningless quadruple-digit price-earnings ratios that skew averages into useless magnitudes in the mid- and high-double digits. Very few issues have big enough data sets available to calculate meaningful averages, and those relatively limited datasets are polluted by exorbitant ratios associated with periods of depressed earnings. Complicating matters even further is the extensive use of pro forma earnings with the lack of consistent definitions thereof. I generally use price-earnings ratios consistent with expected long-term growth rates to establish price targets—but only in concert with other valuation metrics. Specifically, price-sales.

Price-sales is by far the best fundamental valuation metric to employ when addressing the semiconductor sector: the historical datasets are comprehensive and extensive, and the inherent volatility of the sector is limited to the single-digit multiple variances in revenue gyrations across business cycles. The historical trailing 12 month average is a meaningful metric by which to gauge the relative fundamental valuation of a given equity issue in the semiconductor sector.

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