Overview

Silicon Motion (NASDAQ: SIMO) is a $1.6 billion chip company, which specializes in designing and producing flash memory controllers. They are based in Taiwan, with an ADR (American Depository Receipt) traded on the Nasdaq. More than 90% of their 2016 revenue of $556 million is from flash memory controllers, with the remainder a holdover from pre-2012, before they started to specialize exclusively in flash memory controllers. Their 2016 net income was $111 million and they have about $280 million in net cash with virtually no debt. Silicon Motion has been growing rapidly, yet the stock's valuation has been relatively muted. We believe that SIMO is deeply undervalued, with a highly favorable risk/reward profile.

NAND Flash and Flash Controllers

NAND Flash memory is ubiquitous in modern computing. Smartphones and tablets all use NAND flash for storage. Increasingly, laptops, desktops, and even data centers, are transitioning to NAND flash for storage in place of hard drives. With all its many and growing uses, the NAND flash industry is in the midst of a long-term secular growth boom.

The NAND flash industry is dominated by six major flash manufacturers – Samsung, Toshiba, Western Digital (through their purchase of Sandisk), Micron/Intel (through a joint venture), and SK Hynix. These manufacturers make the raw flash chips as well as most of the finished product. They also sell a part of their flash production to module makers (e.g., Kingston) who use the flash to make the final product.

Wherever you find NAND flash, you will also find a flash controller, which is where Silicon Motion comes in. The controller is in charge of efficiently reading from and writing to the flash, error correction, garbage collection, weak block detection, and hardware-level encryption, among other things. Importantly, NAND flash chips have limited program/erase life cycles (i.e., a limited number of times that data can be erased and rewritten), and the controller is in charge of wear leveling (i.e., utilizing all parts of the flash in an equal manner) and other techniques to prolong the life of the flash. As NAND flash gets more and more sophisticated, from single-level cell to multi-level cell to triple-level cell to 3D NAND, the progression steadily reduces the cost per bit, making flash more economical and attractive. However, the same process makes the flash weaker and more error prone. So as NAND flash becomes cheaper and weaker, the controller has to become more complex and sophisticated to overcome the underlying flash's weakness.

Divisions

Silicon Motion's controllers divide into four segments – legacy external storage controllers (for SD cards, USB keys, etc.), eMMC & eMCP (embedded storage widely used in low-tier and mid-tier smartphones and tablets), client SSDs (consumer-grade solid-state drives, which are replacements for hard drives), and SSD Solutions (industrial SSDs under their Ferri line, and enterprise SSDs through Shannon, their Chinese subsidiary).

Card and USB controllers, which formerly comprised the bulk of their business, are legacy products in a secular downtrend. They now account for just 12% of their revenue and are expected to decline further.

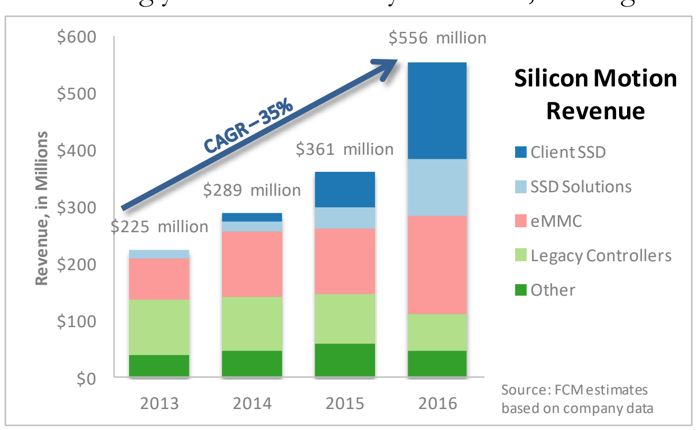
eMMC and eMCP are used primarily in smartphones and tablets. Silicon Motion sells almost all their eMMC and eMCP controllers to SK Hynix, who at present exclusively uses Silicon Motion controllers for these products. Over the past three years, eMMC and eMCP have grown from about $72 million (32% of their revenue) to about $170 million (31% of their revenues). The successor to eMMC and eMCP technology is apparently going to be UFS and possibly PCIe. Although eMMC and eMCP revenue is still growing for Silicon Motion, some of these revenues are at risk of being lost to SK Hynix's internal controller for UFS. Nevertheless, Silicon Motion partners with two flash manufacturers, one of which is SK Hynix, on producing UFS controllers for their flash. We believe that the market is overestimating the risk of Silicon Motion losing SK Hynix as a customer for these controllers.

Client SSDs have been another major growth driver for Silicon Motion, launching in mid-2014 with $15 million for the year, and already up to $170 million (31% of revenue) in 2016. They partner with four flash manufacturers for SSD controllers, as well as provide controllers to module makers. Silicon Motion is the leading merchant supplier of controllers for client SSDs, and they are in all of the top 5 PC makers (non-Apple). These client SSDs are sometimes used in low-end enterprise and data center applications as well. Their main merchant competition for this segment is Marvell, a heavyweight from HDD controllers (for hard drives) who is moving into SSD controllers, and Phison.

SSD Solutions rounds out Silicon Motion's product line-up. Silicon Motion markets industrial SSDs under the Ferri line. This is a stodgier, yet still growth, business line. More exciting is their Chinese subsidiary, Shannon, which they purchased in July 2015. Shannon is focused solely on China enterprise and data center and has been ramping up rapidly, with its revenue highly concentrated in Alibaba, the Chinese internet giant. Together, Ferri and Shannon had about $80 million revenue for 2016, 15% of Silicon Motion's total revenue. On their January 24th year-end earnings call, Silicon Motion guided lower for this segment due to industry-wide supply constraints, which constrained Alibaba from obtaining flash on an economical basis. Silicon Motion says that the lowered guidance mostly represents delayed sales, not lost sales, and they're hopeful that in the second half of the year they can re-raise guidance.

Secular Trends and Growth Prospects

Silicon Motion is a growth company in a growth industry, with strong secular tailwinds. As NAND flash gets cheaper and cheaper over time, its use is exploding. SSDs are replacing hard drives everywhere, with about a third of computers now being sold with SSDs and the computer industry on a clear and steady track to virtually entirely SSDs. Even data centers, which need to focus on cost effective solutions, are starting to switch to SSDs due to their speed, efficiency, and performance, as SSD prices continue to drop. This is a segment of the market that Silicon Motion is just starting to really get involved in. Smartphones and tablets, as well, are trending to include more and more storage space embedded within the device. And the IoT space (Internet of Things) is also expected to increasingly use flash memory over time, although this is not yet happening at large scale. The only segment of Silicon Motion's controllers that is not in strong secular growth is their legacy cards and USB controllers, which account for only 12% of their revenue.



Against the backdrop of this secular growth for the entire industry, Silicon Motion has been winning and keeping market share. Silicon Motion has grown their revenue an incredible 35% per year over the last three years (see chart).

FCM Reacts To Mr. Market:

An In-Depth Analysis of 2017 Guidance

On January 6, 2017, Silicon Motion announced preliminary fourth-quarter revenue and gross margins towards the high end of their prior guidance for the quarter. The market dutifully rewarded the stock with a 3% boost.

Indeed, when Silicon Motion reported their full results on January 24, 2017, they had capped off a strong year with a strong quarter, with 47% growth in revenue and 92% growth in EPS. Nevertheless, the market "rewarded" SIMO with a sharp rebuke, sending the stock as much as 10% down from its previous post-preliminary boost. The culprit, as is often the case, was guidance. Specifically, in a reversal from commentary on their previous quarterly conference call, they disclosed that their Shannon subsidiary (focused on China hyperscale data centers, almost exclusively Alibaba at the moment) was running into temporary headwinds, and they forecast company-wide revenue growth for 2017 of just 0-10%.

Our view of Silicon Motion's guidance and future prospects is diametrically opposed to the market's. We believe that the market, as is its wont, is reacting purely to the short-term news. We, on the other hand, focus on the long-term implications. We remain confident in Silicon Motion's long-term prospects and are unconcerned with quarter-by-quarter volatility. And although it would certainly be easier to hear only great guidance, we believe the market overreacted to news that on closer examination contained a number of very positive nuggets with important positive implications for the long-term.

Guidance

Let us examine the guidance division by division. On the client SSD front, they guided for 2017 growth of 20-25%. They also mentioned that, based on their discussions with flash manufacturers, "we believe that it's more than likely that in a few years' time, most of their client SSD controller requirement will be provided by a merchant controller supplier" as opposed to internally, a very positive indication for long-term growth.

For eMMC, they guided for growth in line with smartphone growth of about 5%, in line with previous

They are now the leading merchant supplier of flash controllers. As you would expect, their EPS has more than kept pace, increasing at an even faster rate of 57% per year over the last three years.

Silicon Motion has gained market share by virtue of their cost-effective solutions for the latest technologies. They have shown industry leadership, being first to market with a merchant controller for SD 5.1, SD 6.0, and UFS 2.1, and developing the world's first 12.8TB PCIe SSD. Silicon Motion has strong partnerships with all the flash manufacturers, with whom they work hand-in-hand to develop controller solutions for their technology roadmap years into the future.

Valuation and Risks

Despite this impressive growth and their high profitability (operating margins of approximately 25%), the market has not rewarded SIMO with a commensurate valuation. At the current price of $42.38, SIMO's P/E is just 13.8. And if you subtract their $280 million in cash (net of minimal bank debt), SIMO has a P/E of just 11.3. This is incredibly low for such a high-growth, profitable company.

This is not to say that the company faces no risk. Their main risk is internal competition from the flash makers themselves. Samsung has always made their own controllers for their own branded drives and there has been chatter of the possibility that SK Hynix would seek to transition to their own controllers as eMMC transitions to UFS. With SK Hynix representing the bulk of Silicon Motion's eMMC business and 28% of their overall revenue, that is not insignificant.

Nevertheless, we believe that these risks are being taken out of proportion. As time has progressed and the industry has matured, the flash manufacturers have outsourced *more* of their flash controller needs to merchant companies like *expectations. Importantly, they specifically called out SK Hynix as having chosen them for UFS 2.1 controllers launching in the late second half of 2017, as their relationship with SK Hynix continues to grow stronger. We take this as good news on keeping their market position in the transition to UFS.*

Which brings us to SSD Solutions, the source of the market's disappointment. Ferri industrial controllers are apparently continuing to do well, but Shannon has hit a speed bump. For the fourth quarter, SSD Solutions dropped 40% quarter-over-quarter, and instead of the 15-20% growth for 2017 they had indicated in their previous quarterly conference call, they now guided SSD Solutions for a 15-20% decline for 2017. Silicon Motion explained that this is a delay in sales due to temporary NAND flash supply constraints that limit high-grade flash availability at favorable prices for their Chinese hyperscale client. They stressed that Shannon did not lose any customers nor did they lose any programs at these customers. It is simply that their hyperscale customer is unable to secure sufficient NAND components to build at the original planned levels. They also clarified that the present guidance is based on the current tight NAND flash market conditions. If NAND flash supply in the second half of 2017 is confirmed to improve at the rate they anticipate, they may revise their guidance upwards in the future.

We would also like to highlight one more important nugget from the conference call that we think may have been lost among the rest. Silicon Motion said that they have started development of enterprise-grade SSD controllers (as opposed to the repurposed client SSD controllers they offer enterprise customers now) that they will introduce in 2018. We see this as highly significant, opening further avenues for long-term growth in the future.

Our Reaction

Overall, we were very pleased with guidance, because we were listening to the call with an ear towards long-term implications. The main growth drivers remain in place, with more avenues for growth from enterprise-grade SSD controllers coming online in 2018. Commentary on the call was reassuring in regard to the major potential risks,

Silicon Motion who can specialize in making the mass market controllers, leaving the flash makers to concentrate on their area of expertise in manufacturing technology and efficiency. Silicon Motion has continued to indicate that their design pipeline with SK Hynix is robust. Even if SK Hynix were to indeed begin tapering down their purchases from Silicon Motion, we believe this would be a multi-year story, and Silicon Motion's growth would more than make up for any slack.

If Silicon Motion would be valued at the super-growth levels it has experienced and is experiencing, these possible downside shocks would be of greater concern. Given its actual super-low valuation, we are confident that it remains deeply undervalued despite these risks. With the fund's long term focus, we are willing to weather any potential short-term shortfalls for the long-term gain.

Conclusion and Recent Events

In conclusion, Silicon Motion is a textbook example of the type of company that Focus Capital Management is eager to buy. A fast-growing, highly profitable company with a low valuation and muted risks. With its high growth, we anticipate a return of 2x-3x on our purchase price over the next few years. Although there are always risks, the risks appear to be less severe than the market's weighting, and the low valuation provides a hefty margin of safety. This margin of safety protects us so that even if many of the theoretical risks come to pass, we are still likely to come out ahead in the long term. As such, the risk/reward profile here is exceedingly attractive. The Fund's focus on the long-term performance of the company and its industry allows us to ignore the short-term gyrations of the stock market and, indeed, to profit from them.

Towards the end of 2016, SIMO drifted down, entering 2017 down 20% from its 2016 *namely internal competition from the flash manufacturers and the transition to UFS. And the drop in SSD Solutions revenue, which drop represents less than 3% of 2016 revenue, appears to be transitory in nature. The market's knee-jerk negative reaction to guidance was due solely to its myopic emphasis on short-term results, and was probably an overreaction even to that.*

SIMO is a stock we have been actively following and monitoring since we first bought in 2014, and we had been considering an increase in our position for some time already. Even before the 2017 guidance, SIMO was 20% off its 2016 highs and was very attractively priced. FCM's deep research into companies and our continual analysis of their business prospects allows us to move quickly when necessary. After the unwarranted 10% drop in response to guidance, we pulled the trigger, tripling our SIMO position that day and over the next week. We were happy to buy SIMO from the market for under $40 a share, and we have continued to add since. We believe that this is a good example of our long-term focus allowing us to confidently take advantage of unwarranted short-term volatility in stock prices.♦

highs. In January, Silicon Motion reported year-end 2016 results and revised guidance for 2017 downwards, triggering another 10% drop. Although the market was focused on the tight supply of NAND flash industry-wide creating short-term headwinds for the company, we found much to like in the conference call, when analyzed with a focus on their long-term success. We took advantage of this opportunity to substantially increase our position in SIMO during the first quarter. (See ***FCM Reacts to Mr. Market***, starting on page 3, for a fuller discussion of 2017 guidance and our reaction.)

Since increasing our position in the first quarter, events have progressed pretty much as we expected. Silicon Motion reported first quarter results at the very high end of their guidance for the quarter and reiterated their full-year guidance for 2017. Just this past week, Silicon Motion announced their preliminary results for the second quarter. They announced that second quarter results were just below their anticipated guidance range for the quarter, with full details and a conference call scheduled for August 1st. As always, we will be listening and analyzing for the long-term, multi-year implications for their competitive position.

The next few quarters may well herald "bad" news as the tight supply of NAND flash industry-wide keeps flash pricing high and slows the transition to SSDs throughout the various end markets. But the long-term story remains intact. Inevitably, the flash supply will return to equilibrium and the long-term price and growth trend will continue, and with it, Silicon Motion's revenues and profits will continue to shine.