



Research on Xilinx - 1/30/19

Description: Was founded in 1984 and is headquartered in San Jose, California. They design and develop programmable devices and associated technologies worldwide. The company offers its products to electronic equipment manufacturers in sub-segments, such as wireline and data center, wireless, aerospace and defense, test and measurement, industrial, scientific and medical, automotive, audio, video and broadcast, and consumer.

Ticker: XLNX

Price: \$112.88 (new all-time high)

Market Cap: \$28.6B

Performance: +32.5% YTD

What makes XLNX a unique semiconductor play? Their Field Programmable Gate Arrays (FPGAs). They are semiconductor devices that are based around a matrix of configurable logic blocks (CLBs) connected via programmable interconnects. Now we aren't going to act like we know what the heck these are so we did some research.

FPGAs are:

- Flexible
 - FPGA functionality can change upon every power-up of the device. So, when a design engineer wants to make a change, they can simply download a new configuration file into the device and try out the change.
 - Often, changes can be made to the FPGA without making costly PC board changes.
 - ASICs (Application-Specific Integrated Circuits) have fixed hardware functionality that can't be changed without great cost and time.

- Cost Friendly

- While ASICs (Application-Specific Integrated Circuits) may cost less per unit than an equivalent FPGA, building them requires a non-recurring expense (NRE), expensive software tools, specialized design teams, and long manufacturing cycles.
- Support longer lifecycles avoiding the cost of redesigning and requalifying OEM production equipment if one of the electronic devices on-board goes end of life (EOL).
- FPGAs reduce risk, allowing prototype systems to ship to customers for field trials, while still providing the ability to make changes quickly before ramping to volume production.
- Go-To-Market
 - FPGAs get products to market quicker and/or increase system performance
 - FPGAs are sold “off the shelf” vs. ASICs (which require manufacturing cycles taking many months).
 - Because of FPGA flexibility, OEMs can ship systems as soon as the design is working and tested.
 - FPGAs provide off-load and acceleration functions to CPUs, effectively speeding up the entire system performance.

Analysis:

XLNX has been on an absolute tear. Let's begin with what started the fuse to get the stock to all-time highs. The company recently reported earnings on January 23rd where Q3 Non-GAAP EPS came in at \$0.92 beating estimates by \$0.07 on revenue of \$800M (+33.6% Y/Y) beating by \$29.57M. In addition to this they also reported:

Revenue breakdown

- Data Center and TME: \$168M (consensus: \$170.4M)
- Auto, Broadcast, and Consumer: \$120M (consensus: \$118.8M)
- Communications: \$280M (consensus: \$265.8M)
- Industrial, Aerospace, and Defense: \$216M (consensus: \$198.2M)
- Channel: \$16M (consensus: \$19.8M)

Other:

- Q4 guidance WAY above expectations as they see revenue of \$815M - \$835M vs. consensus of \$776.2M
- Xilinx's non-GAAP operating margin of 32.9% marked a 130 basis point improvement from the second quarter and a 590 basis point gain from a year earlier
- Xilinx expects its operating expenses to rise less than 4% sequentially during the fourth quarter.

Looking at this, it's apparent that their beat mainly came from their Communications and Aerospace & Defense units while the others were either in-line with estimates or missed.

Diving a little deeper, what pushed XLNX revenues higher was the growth of 5G as communications revenues increased 41% Y/Y. Specifically the growth came from preparation for 5G deployment in South Korea, China and North America as well as ongoing LTE upgrades. Taking it a step further, it seems 5G is still in infancy stages as it is expected to hit the market by 2020. By 2021, the number of 5G connections is forecasted to reach a figure of between 20 million and 100 million with some estimates putting the figure at 200 million. This looks to be a big growth driver over the next 2-3 years for XLNX, especially considering Communications now makes up 35% of total revenues.

The great thing that we must also bring to light is that 5G is also expected to advance machine-based, IoT-centric functionalities, for example, in automotive for autonomous and self-driving cars. So not only does a semiconductor like XLNX make money by helping in the communications space, their products then help open the door for other industries that will need their products. We just mentioned how 5G will help pave the way for autonomous vehicles as it is said to be 3x faster than 4G and what do you know, the new Mercedes GLE SUV is powered by Xilinx machine learning algorithms. In addition, ZF Friedrichshafen AG, a global leader and Tier-1 automotive supplier, recently announced a strategic collaboration in which Xilinx technology will power their highly-advanced AI based automotive control unit to enable automated driving applications.

Now that we know how the quarter went and why shares rose, let's dive into the fundamentals and see where shares are valued.

Fundamentals:

	Xilinx (XLNX)	Intel (INTC)	Broadcom (AVGO)	Texas Instruments (TXN)
P/E TTM	34.3x	10.6x	11.0x	18.3x
P/E Forward	30.1x	10.5x	9.5x	19.3x
P/S TTM	9.7x	3.1x	5.3x	6.1x
P/S Forward	8.5x	3.1x	4.5x	6.5x
PEG	2.5x	1.1x	0.9x	1.6x
Dividend Yield	1.28%	2.52%	3.91%	3.02%
Exp. 2019 Rev Growth Rate	+11.7%	-0.2%	+17.7%	-5.9%

Exp. 2019 EPS Growth Rate	+9.1%	-0.5%	+11.0%	-6.0%
Hedge Fund Ownership	6.2%	1.8%	2.4%	2.1%

Looking at the chart above, XLNX is without a doubt the most expensive name. Here's the thing, though, they aren't expected to grow the fastest in 2019, Broadcom is and is actually the one that looks the best out of all the names on the table fundamentally with a cheaper valuation, PEG below 1.0x, and near 4% dividend yield.

Did XLNX have a stellar quarter with insane growth that almost came out of nowhere? Yes. That's both good and bad. For one, volatile earnings are hard to predict and can burn you just as much as they make you. When you look at XLNX history of revenues it's not something to brag about. The company has been dealing with flat to negative growth for nearly 5 years. Now all of a sudden they hit 30% rev growth for the first time ever. In fact, we went back and searched, we couldn't find a quarter in the last 5 years that had rev growth greater than 16%.

Before coming to a conclusion let's examine the technicals:

At \$112.88, XLNX:

- Crushing 50 day moving average of \$90.43
- Overbought on RSI: 76.54
- Overbought on MFI: 86.23
- Overbought on Williams %R: -2.20
- Bollinger Bands: Trading at the upper bound of \$113 indicating its around overbought levels
- Blew past all of its pivot points and is riding heavy on momentum

With this in mind how do we play XLNX? Swing it. Right now this thing is riding so hard on momentum and to be honest it's not even that big of a name yet so even though valuations are steep that doesn't mean it can't go higher. We also say don't invest in it yet because this company has to prove they can actually sustain some revenue growth for once. With that in mind, it looks like it wants to pull back a bit in the short-term. If the company does in fact start to string together some solid growth quarter after quarter than we can have a different discussion. The fact that they pulled off such impressive growth when almost every other semiconductor is trying to stay afloat is impressive and worth noting but at the same time is a strong reason it's getting so much love right now as investors are seeing something shine a bit in a bunch of "darkness". Until management proves they can capitalize consistently we'll say swing it because volatility has been nothing short of wild.