ROBOGLOBAL®

2Q17: SUMMER BRINGS BEST ROBO EARNINGS IN SIX YEARS

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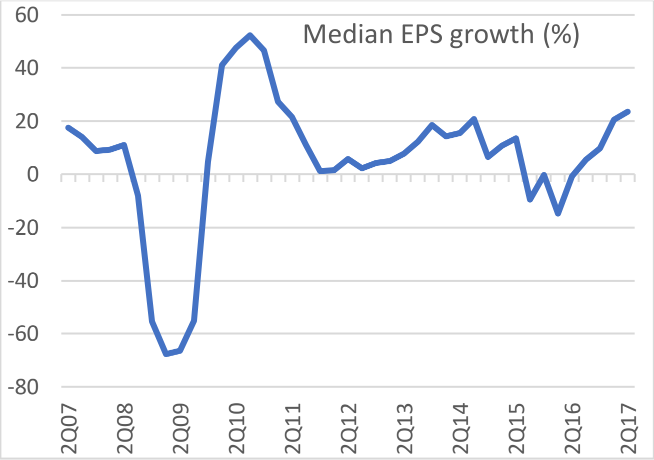
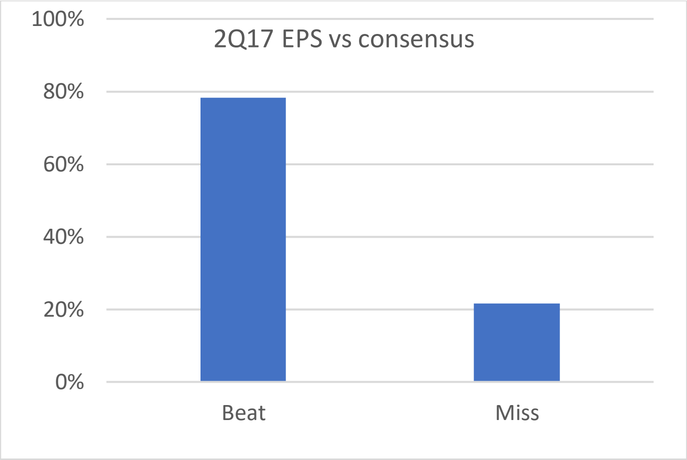
SUMMARY

The ROBO Global Robotics & Automation Index just posted its strongest EPS growth since 2011, with the 2Q17 median EPS growth looking up 24% YoY, significantly better than anticipated. 78% of index members beat consensus estimates. Revenue growth accelerated to 9%, led by a return to double-digits in some of the largest subsectors, including Actuation, Sensing, Industrial Automation and Healthcare.

Inside, we discuss some of the more interesting trends that emerged from the results of the 83 members of the index, including very strong demand for industrial robotics and the emergence of capacity constraints in various areas of the supply chain, the boom in China sales and the increasing prevalence of Artificial Intelligence, among others.

The ROBO Global Robotics & Automation Index posted its strongest EPS growth since 2011. The median EPS growth[1] for 2Q17 stood at 24% YoY, up from 22% in the prior quarter and significantly better than the mid-to-high teens we had anticipated. This is more than double Factset's estimate of 10% YoY earnings growth for the S&P500, also well above expectations for 6% growth at the end of the quarter. This is all the more remarkable as the 2Q comp (-1%) was tougher than the 1Q comp (-15%). 78% of companies beat consensus EPS estimates and 70% beat revenue estimates.





Earnings growth for the ROBO Global Robotics & Automation index is led by the top line, with the median sales growth accelerating to 8.6%, from 6.0% in the prior quarter - the fastest sales growth since 2014.

[1] This report discusses median sales and EPS for the 83 index members as of August 15, 2017. The ROBO Global Robotics & Automation Index is a two-tiered equal-weight index.

This was driven by a *return to double-digit sales growth in some of the largest subsectors*, including Actuation (+17%), Sensing (+14%), Industrial/Manufacturing (+10%) and Healthcare (+13%). The Energy subsector turned to positive organic sales growth for the first time in nearly three years. Computing, Processing & AI continued to accelerate (+7%). Integration, which includes the large, diversified automation powerhouses, posted the best revenue growth in years (+6%). On the other hand, 3D Printing disappointed with 3 out of 4 members missing on revenue and experiencing renewed declines in sales.

Better than expected results have led to upward revisions to consensus estimates, with the median 2017 sales growth now standing at 8.7%, up 110bps from two month ago. However, the median EPS growth for the current year increased only marginally (+210bps) to 13.3%, implying a significant slowdown after more than 20% growth in the first half of the year. Over three years, median EPS growth stands at 42% based on Factset consensus estimates.

NOTABLE TRENDS

Very strong demand for industrial robotics. Order growth at the world's top-3 suppliers of industrial robots continued to accelerate, up 35% at FANUC**,** 14% at YASKAWA and 14% at ABB Robotics & Motion. Meanwhile, TERADYNE's Universal Robotics sales jumped 56% YoY reflecting the continued adoption of collaborative robots.

Capacity constraints emerging. For the first time since 2007, capacity constraints are starting to emerge in various areas of the supply chain. Despite aggressive expansion plans, FANUC is unlikely to be able to meet demand for its robots and Computerized Numerical Control systems until September. Several component suppliers are also running very full and extending lead times for delivery of servo-motors, linear motion guides and ball-screws (THK, HIWIN), compact reduction gears (HARMONIC DRIVE) and ceramic bearings. HARMONIC DRIVE, the world's #2 supplier of precision speed reducers for industrial robots and a leader in cobots, saw orders nearly triple in the June quarter.

Improving conditions in the global manufacturing environment is driving broad-based growth in factory automation spending. This is not just about robots. Demand for factory automation equipment in general continues to accelerate as manufacturing activity remains on an upward trajectory in the world's major manufacturing hubs. This is perhaps best reflected in the continued acceleration in revenue growth at the global factory automation do-it-all companies such as SIEMENS which grew Digital Factory sales by 11%, ROCKWELL AUTOMATION (+8% the fastest pace since 2011), as well as MITSUBISHI ELECTRIC (IA +16%) and OMRON (IA +22%).

The Electronics industry remains a key driver, with a major investment cycle unfolding around OLED technology as well as smartphone assembly and Lithium Battery production. This is driving demand for Sensing, as reflected in astounding 3Q guidance at COGNEX and massive beats at KEYENCE and new index member KOH YOUNG. Laser companies are also major beneficiaries, including IPG PHOTONICS and JENOPTIK. In addition, the Semiconductor industry is now a source of positive commentary for many index members.

China stands out and it's not just electronics. Sales to China surprised on the upside for nearly every index member with sizeable exposure to the country. IPG PHOTONICS' China sales more than doubled YoY to reach 50% of group revenue on high power laser adoption in cutting, welding and engraving applications. China provided a major boost at OMRON (+54%), COGNEX (+50%), ROCKWELL (+20%), FANUC, YASKAWA, KEYENCE, RENISHAW and many others.

Artificial Intelligence is hot. AI is now a key buzzword on earnings calls, to the point that it has become difficult to track the number of management teams mentioning it in their prepared remarks. Many of the ROBO Global Robotics & Automation Index members are direct beneficiaries of the rise of Artificial Intelligence, from those providing the technologies to those using AI to gain a competitive advantage. NVIDIA, whose results and guidance blew past consensus estimates, remains front and center in the AI race with its chips taking leadership in Deep Learning and Autonomous Vehicle applications. Its new line of Volta accelerators for datacenters provides 10x the deep learning power of its predecessor, which was already the preferred choice to most of the internet giants. Its DrivePX platform is showing impressive growth in engagement and adoption by high quality OEMs such as Tesla, Mercedes, Audi, Volvo and most recently Toyota. COGNEX acquired Vidi, a leader in deep learning-based machine vision, which can solve some of the most difficult quality inspection problems in manufacturing. Korean 3D inspection specialist KOH YOUNG announced the release of a new AI-powered software for its Automated Optical Inspection equipment. Industrial robot powerhouses FANUC and ABB HAVE announced the deployment of AI-based solutions to facilitate programming. In healthcare, AI is making headway from surgical robotics (INTUITIVE SURGICAL and MAZOR ROBOTICS) to radiology and radiation treatment (VARIAN).

Logistics plays all beat forecasts, with the exception of Cargotec which saw weaker orders for port automation equipment but continued to grow software impressively. DAIFUKU, the global leader in logistics automation, raised its full-year profit outlook after a 145% surge in first quarter orders. ZEBRA TECHNOLOGIES, the world's leading Automatic ID and Data Capture company, also raised its outlook after exceptional performance in mobile computing and in the retail/e-commerce vertical.

Healthcare Robotics continues to deliver positive surprises. INTUITIVE SURGICAL delivered another quality beat with growth in systems shipments trending above 20% for a second consecutive quarter and procedures up 16% YoY. Meanwhile, results at MAZOR ROBOTICS confirmed that spine surgery is rapidly moving towards robotics adoption, with a record 19 system orders in the quarter and suggestions that its partnership with Medtronic may move into phase 2 earlier than initially expected.

Energy back to growth, beating forecasts. The Energy subsector returned to revenue growth for the first time since 2014 and OCEANEERING, HELIX and TECHNIPFMC all delivered better sales than expected.

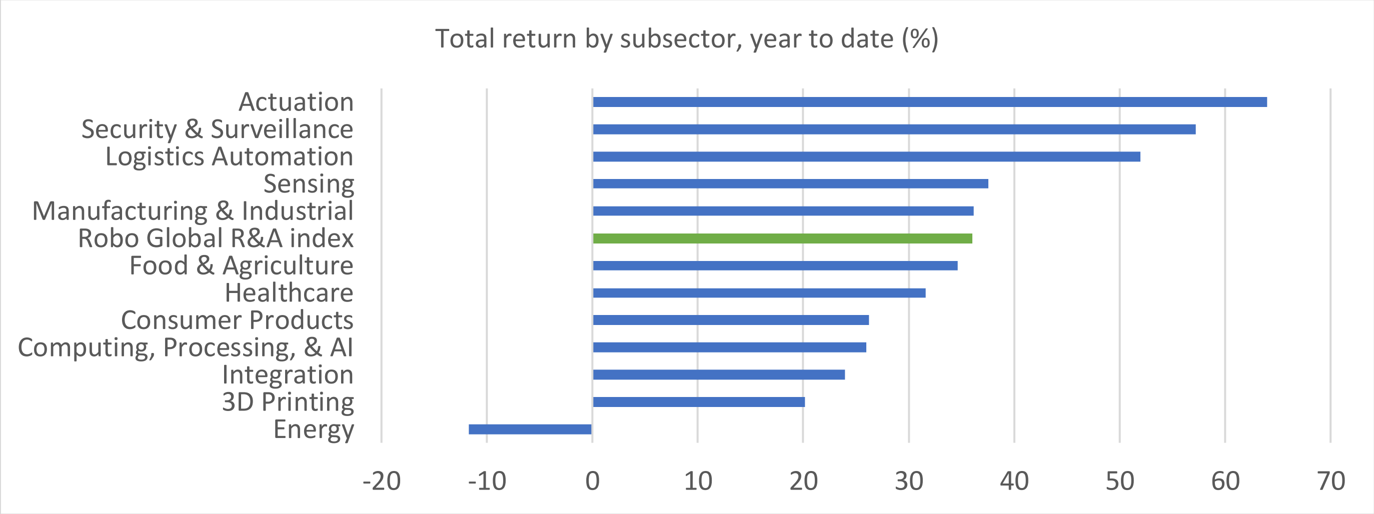
3D Printing disappointed with 3 out of 4 members missing on revenue and experiencing renewed declines in sales. SLM SOLUTIONS and EXONE both reported sales more than 15% below expectations. 3D SYSTEMS lowered full-year guidance to flat EPS. STRATASYS was the only bright spot, with strong orders for its new professional prototyping printer and strong growth in its GrabCAD software community.

2Q17: THE BEST AND THE WORST OF THE EARNINGS SEASON

Positive surprises: THK, Topconn, Nvidia, IPG Photonics, Yaskawa, iRobot, Renishaw, Cognex, Omron, Teledyne, Keyence, Zebra, Daifuku. Negative surprises: Exone, Immersion, SLM Solutions, Nuance, 3D Systems, Faro, Manhattan, Cargotec.

Year-to-date performance

The ROBO Global Robotics & Automation Index rose 36% year-to-date through September 30, 2017.



The ROBO Global Robotics & Automation Index largely outpaced the MSCI All-Country World Index (+18%), the S&P500 (+14%) and the Nasdaq (+22%)[2]. The top and bottom performers and returns of each of the 12 ROBO subsectors are shown in the figures below.

Year to date performance through September 30, 2017 (%) In USD Terms

TOP 5			BOTTOM 5	
Daifuku	134		Manhattan Associates	-13
Mazor Robotics	113		Helix Energy	-16
Harmonic Drive	109		Qualcomm	-18
Renishaw	107		TechnipFMC	-21
Yaskawa Electric	105		Immersion	-23

[2] All data sourced from Bloomberg

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