

September 20, 2018 04:01 AM GMT

## Bruker Corp

## Downgrade to Underweight on End Market Concerns

📈 Stock Rating	👁 Industry View	🎯 Price Target
Underweight	In-Line	\$32.00

BRKR-specific leading indicators continue to decelerate. See 9% downside to consensus '20 revenue and 12% multiple compression as tough macro and comps drive slowing not contemplated by consensus. PT to \$32, Underweight.

## WHAT'S CHANGED?

Bruker Corp (BRKR.O)	From:	To:
Rating	Equal-weight	<b>Underweight</b>
Price Target	\$31.00	<b>\$32.00</b>

**Top line slowing to drive pressure on the multiple.** We note three drivers of a slower revenue outlook: 1) MS strategists (see [Asia EM](#)) and our own work (Exhibits 12-21) point to deceleration in key markets in semiconductors and materials that represent ~20% of BRKR's sales vs. ~7% for Tools overall (Exhibit 1). 2) Our survey work (Exhibits 3-4) highlights moderating growth expectations in key NMR segments that is incremental to this macro slowing. 3) Comps over the next 12 months are tougher by 1200bps relative to the prior 12 months. At the same time, BRKR commentary has set expectations (see ['18 Outlook](#)) for accelerating revenue growth for '19. Considering these headwinds and elevated expectations, we lower revenues by 2%/6% in '19-'20 to 4-9% below consensus. PT to \$31 from \$32, reflecting a combination of 5% lower estimates, and a 6% higher group multiple. Our PT implies BRKR's P/E contracts from 23x NTM consensus EPS to ~20x '19e EPS over the next year. Our valuation methodology remains FCF yield-driven, our target yield goes to 3.85% from 3.6% based on our lower forecasts. We give BRKR credit for above-group ROIC in our capital deployment forecast, driving a \$32 PT, with a downward risk/reward skew.

**Details on the end market considerations.** We observe: (i) BRKR-specific end market drivers continue to decelerate in '18, driven by lower US and EU instrument production as well as deceleration in APAC Industrial markets; (ii) deceleration in the broad macro environment and earnings outlook for Asia EM (see [Asia EM](#)), where BRKR has significant exposure; (iii) expected deceleration in metals & mining capex, which has a 90% correlation to BRKR's NANO segment (30% of sales); (iv) decelerating semiconductor capex and electromagnetic analyzer sales data, which have a 70%+ correlation to BRKR revenues. While margin expansion likely holds towards the top of our coverage, **the slower top line translates to an EPS CAGR 250bps lower than core Tools over the next two years, despite the stock trading at a ~10% premium to peers on NTM P/E.**

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## Bruker Corp ( BRKR.O, BRKR US )

Life Science Tools &amp; Diagnostics / United States of America

<b>Stock Rating</b>	<b>Underweight</b>
<b>Industry View</b>	<b>In-Line</b>
<b>Price target</b>	<b>\$32.00</b>
Shr price, close (Sep 18, 2018)	\$34.90
Mkt cap, curr (mm)	\$5,482
52-Week Range	\$36.53-28.13

Fiscal Year Ending	12/17	12/18e	12/19e	12/20e
<b>ModelWare EPS (\$)</b>	<b>1.20</b>	<b>1.38</b>	<b>1.58</b>	<b>1.69</b>
<b>Prior ModelWare EPS (\$)</b>	<b>-</b>	<b>1.37</b>	<b>1.62</b>	<b>1.81</b>
<b>P/E</b>	<b>28.5</b>	<b>25.4</b>	<b>22.0</b>	<b>20.7</b>
<b>Consensus EPS (\$)</b> §	<b>1.19</b>	<b>1.37</b>	<b>1.52</b>	<b>1.69</b>
Div yld (%)	0.0	0.0	0.0	0.0

Unless otherwise noted, all metrics are based on Morgan Stanley ModelWare framework

§ = Consensus data is provided by Thomson Reuters Estimates

e = Morgan Stanley Research estimates

## QUARTERLY MODELWARE EPS (\$)

Quarter	2017	2018e Prior	2018e Current	2019e Prior	2019e Current
Q1	0.19	-	0.24a	0.28	0.27
Q2	0.23	-	0.25a	0.29	0.28
Q3	0.29	0.30	0.30	0.36	0.35
Q4	0.51	0.58	0.58	0.70	0.68

e = Morgan Stanley Research estimates, a = Actual Company reported data

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For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report.

**Exhibit 1:** BRKR has significantly higher materials and semis exposure than Tools peers

	End Market as % of sales		
	Materials	Semis	Total
<b>Agilent</b>	2%	1%	3%
<b>BRKR</b>	13%	6%	19%
<b>DHR</b>	8%	1%	8%
<b>MTD</b>	3%	1%	4%
<b>PKI</b>	2%	0%	2%
<b>TMO</b>	4%	2%	6%
<b>WAT</b>	11%	1%	12%
<b>\$ Wghtd Avg</b>	5%	1%	7%

Note: Materials refers to metals, mining, construction & building, paper, and forest exposures but excludes chemicals and oil & gas.

Source: Company Data, Morgan Stanley Research estimates

**We may be too early with our call, and visibility is low.** Our call relies on a range of end-market analyses which observe trends that likely take time to translate into business trends. Recall BRKR management was notably bullish at our HC conference last week. Risks to the upside include semiconductor/materials end markets and European/China macro prove more sustainable driving 3%+ organic growth. Additionally, instrument spending may prove stronger than expected given funding from the NIH in the US and the Horizon Program in Europe; BRKR has 50%+ Academic/Government exposure. On the downside, alongside broader macro, greater than expected FX headwinds or less robust cost initiatives could hinder margin expansion.

**Why is there not more downside?** BRKR has underperformed Tools this year, as the departure of CFO Tony Mattacchione in February and an SEC inquiry in late '17 involving the company's accounting practices related to revenue recognition drove elevated concerns; the stock was down 15% in 1H18 but has bounced back 15% in the last month. Our call is unrelated to these dynamics, and downside is more modest as the multiple has compressed 1000bps vs. Tools this year.

**BRKR relative to our other Underweight stocks.** BRKR's execution over the last three years has improved substantially, as capital deployment, margin expansion, and new product launches have tracked positively. Margin expansion remains likely; we forecast organic margin expansion at 90bps/yr through '20e vs. 60bps for the rest of Tools. **We do not see a structural breakdown for BRKR, rather we expect the top line to slow relative to trend, which is already slower relative to Tools, driving relative underperformance.** Shares trade at a 25%+ premium on '19/'20e FCF yield vs core Tools.

**Lowering estimates given macro deterioration, downgrade to UW.** We adjust our model to account for end markets/macro deceleration. Overall we lower our revenue estimates 2%/6% in '19/'20, primarily in the NANO segment (30% of sales) on slower semiconductor/ materials end markets. We maintain margin estimates as we do not believe slower organic growth will hinder BRKR's above-peer margin expansion. Overall we lower our EPS estimates 3%/8% in '19/'20. We apply a 3.85% FCF yield on our mid '20 FCF estimate and generate a \$32 PT, based on a 24% FCF CAGR, 600bps above Tools' overall CAGR and at a 10% premium to Tools' median FCF yield of 4.3%. Our price target represents a combination of lower EPS estimates and a higher group multiple.

## Risk Reward



Source: Thomson Reuters and Morgan Stanley Research

Price Target **\$32**

Derived from base case scenario.

Bull **\$43****25.0x Bull Case '19e EPS of \$1.73**

Gains in NMR drive volumes and pricing higher than expected, MALDI maintains a high single digit growth rate, and Industrial/Applied markets accelerate, leading to 6% organic growth in 2019. Margins expand 200bps+ in '19 on better pricing and cost controls. Multiple expands to ~25.0x '19e EPS on ~25% EPS growth in '19.

Base **\$32****3.85% FCFY; 20.5x Base Case '19e EPS of \$1.57**

NMR growth is a bit slower at the high end, while CALID/NANO grow LSD off slowing indicators and tough comps, leading to ~50bps organic growth in 2019. EBIT margins expand ~120bps in '19 given benefits from pricing, cost initiatives, and new products. Multiple contracts to 20.5x '19e EPS, below three-year averages, on ~14% EPS growth in '19.

Bear **\$20****14.0x Bear Case '19e EPS of \$1.43**

Academic and Applied end market trends slow faster than expected, leading to a 3% decline in organic growth in '19. Margins expand just 40bps on unfavorable mix and weaker volume leverage. Multiple contracts to 14.0x '19e EPS, below ten-year averages, on MSD EPS growth in '19

## Investment Thesis

■ Our view of organic growth for BRKR reflects deceleration in key BRKR-specific industrial/chemical/materials end markets in '19, driving roughly flat organic growth. We still see a case for a healthy 70-80bps/year organic margin expansion given modest restructuring-driven benefits, higher consumables penetration, improved cash conversion cycle, and efficiencies driven by streamlining the commercial organization through a global SAP rollout and shared offices/services. That said, we think guidance and consensus expectations remain high, and we see no upside to our PT which already assumes a capital deployment benefit.

## Key Value Drivers

- NMR pricing and mix
- MALDI penetration grows in China
- Accelerating Research end markets
- Improving European end markets

## Potential Catalysts

- Daltonics products expected to be profitable growth drivers in '18
- Product launch upside in NMR and MALDI

## Risks to Achieving Price Target

- NIH funding increases do not translate to revenue growth
- Execution missteps hinder cost initiatives
- FX headwinds

## Investment Summary

**Downgrading BRKR to Underweight: Consensus and guidance remain bullish on the outlook, we take a more conservative view.** BRKR has benefitted from a stronger macro environment and easy comps after a weak '16 (organic revenues -2.3% and orders down); on a normalized basis, considering comps and trailing trends, the business over the last year has accelerated, but only by ~40bps normalized vs. 150bps on a non-adjusted basis. Management commentary suggests growth accelerates to at least "market growth" in 2019, which would represent a significant acceleration from our current estimates which already call for the strongest normalized growth since 2014 despite being ~200bps below guidance. **We think organic growth is likely to decelerate post-'18 following a review of macro and end market indicators most critical for BRKR.** We believe this would ultimately lead to downward estimate revisions and multiple compression, thus pressuring the stock. While margin expansion likely holds towards the top of our coverage, the slower top line translates to an EPS CAGR 250bps lower than core Tools over the next two years, despite the stock trading at a ~5% premium to peers on NTM P/E. We give BRKR credit for above-group ROIC in our capital deployment modeling and get to a \$32 PT.

**End markets are slowing.** Our tracking of various macro and BRKR-specific end markets point to a challenging setup over the coming year for BRKR. We flag the following:

**1. Leading Indicators Index:** Our BRKR leading indicators index ([Exhibit 4](#)), which tracks growth in BRKR-specific end markets including US and EU instrument production, as well as APAC Applied/Industrial markets, has decelerated for five consecutive months and remains in negative territory. The index shows a 90%+ correlation to BRKR's BSI growth on a one-quarter lag. (see [Leading indicators](#)).

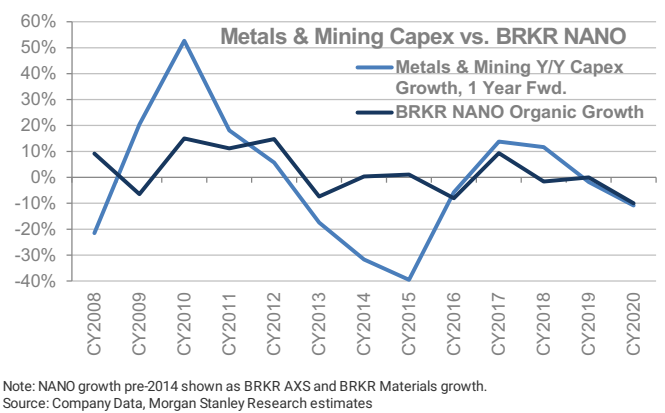
**2. Macro Environment:** MS Strategists note a series of slowing indicators in China and Asia (including semiconductors), where BRKR has key exposures. Semiconductors and materials represent ~30% of BRKR's sales vs. ~7% for Tools overall; we note Metals & Mining capex, which is highly correlated to BRKR's NANO growth, is expected to decelerate over the next two years (see [Metals & Mining](#)). We'd also highlight decelerating semiconductor capex ([Exhibit 19](#)) and electromagnetic analyzer sales data ([Exhibit 20](#)) point to deceleration in BRKR's BSI segment (90% of revenue, see [Semiconductor and METI](#)). We found 70%+ correlations between BSI revenues and both indicators. More broadly, we flag weaker PMI and EU/APAC Applied/Industrial data points.

Exhibit 2: BRKR has significantly higher materials and semis exposure than Tools peers

End Market as % of sales			
	Materials	Semis	Total
Agilent	2%	1%	3%
BRKR	13%	6%	19%
DHR	8%	1%	8%
MTD	3%	1%	4%
PKI	2%	0%	2%
TMO	4%	2%	6%
WAT	11%	1%	12%
\$ Wghtd Avg	5%	1%	7%

Note: Materials refers to metals, mining, construction & building, paper, and forest exposures but excludes chemicals and oil & gas exposures.  
Source: Company Data, Morgan Stanley Research estimates

Exhibit 3: Metals & Mining capex, which is highly correlated to BRKR's NANO growth, is expected to decelerate over the next two years



**3. Equipment Mix:** Our Pharma/Academic surveys continue to show stronger expected growth in consumables vs. equipment budgets (Exhibit 25), a positive for consumables-focused companies such as QGEN/TMO. While over half of BRKR's sales come from Academic markets, we estimate ~90% of the channel's sales are tied to instruments, and **high-end equipment budgets in Pharma/Academic markets are expected to decline ~50/250bps in '18.**

Exhibit 4: BRKR's leading indicators index continues to decline in '18, implying slower organic growth in 2H18/'19

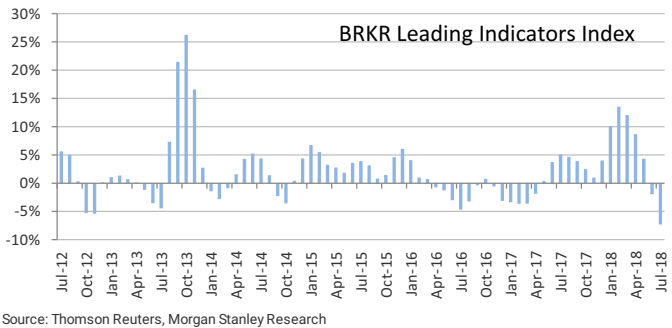
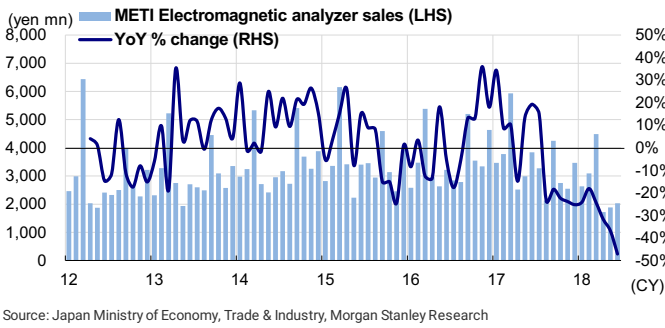


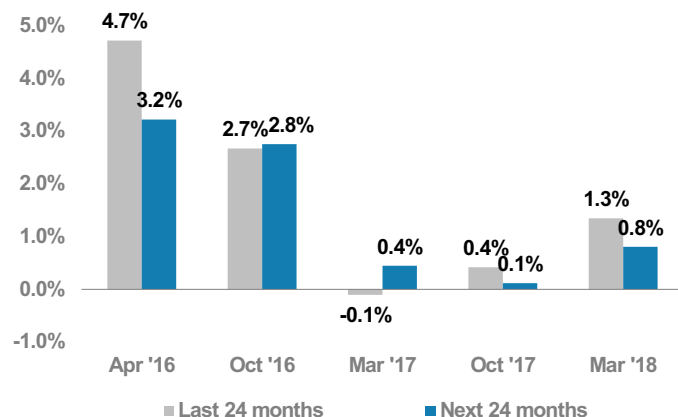
Exhibit 5: Japan electromagnetic analyzer sales growth (75%+ correlation to BRKR BSI sales) continues to decline



**Ultra high-field NMR systems facing near-term headwinds.** BRKR has indicated two different challenges regarding their ultra high-field NMR systems: (i) 1.2 GHz systems (\$10mn+ ASP and a majority of the GHz backlog) still face technical challenges preventing BRKR from ramping production; (ii) management notes a wave of research funding continues to be directed away from ultra-high field NMR towards cryo-EM applications, as many researchers did not previously have access to cryo technology. That said, BRKR expects funding will return to NMR once this initial bolus subsides. Management notes the ultra-high field NMR systems can provide more dynamic and functional information than cryo-EM can, and consultant feedback from ASMS indicated cryo is not a substitute for NMR. We note from our AlphaWise surveys that **Academic NMR spending is expected to grow just 80bps over the next 24 months vs. ~350bps in cryo-EM.** In Pharma, NMR spending is expected to grow 370bps over the next 24 months while cryo spending is expected to grow 100bps, though Academic spending is more critical for BRKR than Pharma spending.

**Exhibit 6:** Academic lab spending on NMR expected to increase just 80bps over next 24 months

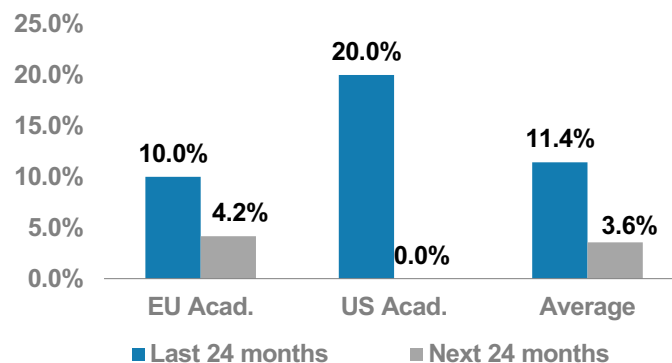
Avg. annual change in lab spending on NMR



Note: 8 total relevant respondents  
Source: Morgan Stanley Research, Alphawise Survey (Mar, 2018)

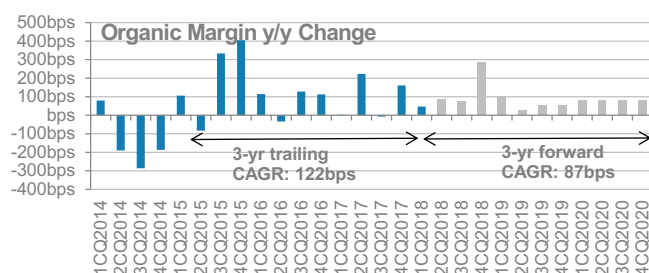
**Exhibit 7:** Pharma lab spending on cryo-EM expected to increase 360bps over next 24 months

Avg. Y/Y change in Cryo-electron microscopy

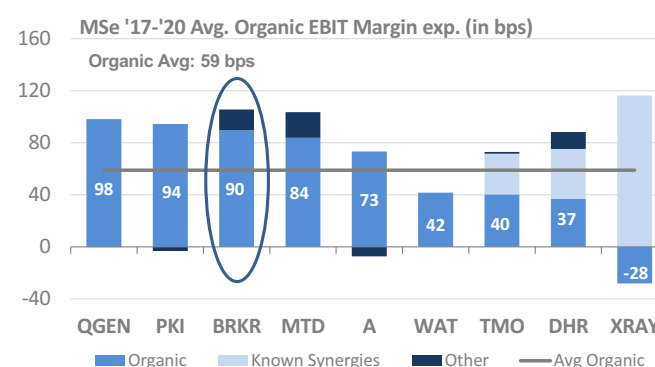


Note: 8 total relevant respondents  
Source: Morgan Stanley Research, Alphawise Survey (Mar, 2018)

**Margin expectations are high, justified in our view.** Over the past three years, BRKR has expanded organic EBIT margins 100bps+/year driven by major cost restructuring programs in various business lines, including factory closures and product exits. While the major downsizing has been completed, there are still some cost structure improvements remaining that could drive \$5-\$10mn/year of additional savings. Going forward, we forecast continued above-peer margin expansion driven by initiatives to streamline the commercial organization, though at 90bps vs. trailing trend closer to 120bps. We believe market expectations for margin expansion remain high (see [Margin Expectations](#)).

**Exhibit 8:** We forecast a less robust trend in organic margin expansion over the next three years

Source: Company Data, Morgan Stanley Research estimates

**Exhibit 9:** BRKR's organic margin expansion is above the peer average

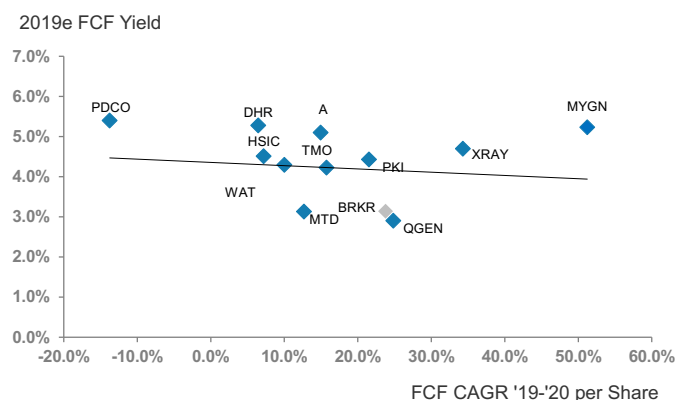
Source: Company Data, Morgan Stanley Research estimates

**EPS growth is below peers despite superior margin profile.** Even considering our margin assumptions for BRKR (~30bps higher than the Tools peer average), we forecast BRKR to grow EPS on average ~11%/year in '18-'20, below the peer average at 14%. Said differently, **if BRKR margins come in below our expectations, BRKR would undergrow peers even further at the earnings line given weaker organic growth and a smaller cash balance to flex compared to peers Agilent/WAT.**

**Tactical and structural valuation setup more challenging in recent weeks.** BRKR's stock

is up ~15% in just the last month and shares now trade at a 25%+ premium on '19/'20e FCF yield. Additionally shares trade at a ~5% premium to peers on NTM P/E despite an EPS CAGR 250bps lower than core Tools. We think slowing end markets could drive downward estimate revisions and multiple compression. Risks to the upside include semiconductor/industrial end markets and European/China macro prove more sustainable driving 3%+ organic growth, and margin expansion proves more robust than expected driven by stronger pricing trends. Our sales estimates are 4-9% below consensus in '19/'20, while our EPS estimates are more in-line given our higher margin assumptions (see [Valuation](#)).

**Exhibit 10:** BRKR shares look expensive when comparing FCF CAGR per share vs. FCF yield



Source: Morgan Stanley Research estimates, Thomson Reuters estimates

**Exhibit 11:** Our sales estimates are 4-9% below consensus in '19/'20, while our EPS estimates are more in-line given our higher margin assumptions

BRKR	Metric	2018	2019	2020
Mse	Sales	1,852	1,873	1,845
	EBIT %	16.6%	17.8%	18.7%
	EPS	1.38	1.57	1.66
Cons	Sales	1,878	1,951	2,022
	EBIT %	16.3%	17.0%	17.8%
	EPS	1.37	1.52	1.68
Diff	Sales	-1.4%	-4.0%	-8.7%
	EBIT %	35bps	87bps	98bps
	EPS	0.4%	3.0%	-0.9%

Source: Thomson Reuters, Morgan Stanley Research estimates

## Macro Environment Points to Deceleration

**Key Conclusion:** BRKR's organic growth could significantly decelerate over the next year given weaker leading indicators and slowing metals & mining/semiconductor capex and Japan NMR sales growth.

### Metals & Mining capex sends bearish signal for NANO

**Breaking down NANO exposure.** As we flagged above, BRKR has significantly higher materials and semis exposure than Tools peers. We believe materials exposure is concentrated in BRKR's NANO segment. BRKR notes the XRF (a NANO product) is routinely used not only during exploration and exploitation in the mining process but also during alumina production, in the electrolysis, and finally in metals characterization. BRKR additionally supplies foundries and steel plants with products such as the Q8 CORONADO. Finally, BRKR has exposure to precious metal analysis such as gold, silver, and platinum.

**NANO highly correlated to Metals & Mining capex, which is expected to decelerate.** We correlated BRKR's NANO growth vs. Metals & Mining capex and found a ~90% correlation on a 1-year lead. In other words, the expected capex growth deceleration in metals & mining in late '19/early '20 could show up in BRKR's NANO segment. We used



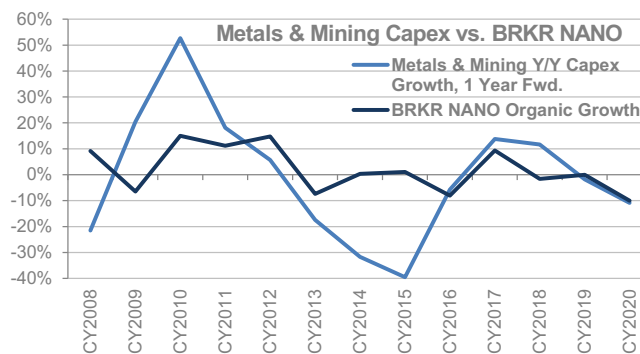
2011-2017 data points in our analysis as the NANO segment pre-2011 only contained AXS, making it less comparable (today NANO is made up of AXS, Surfaces, Analysis, and Semicon metrology). Additionally, the 2007-2010 results are more volatile given the Great Recession.

**Exhibit 12:** BRKR has significantly higher materials and semis exposure than Tools peers

End Market as % of sales			
	Materials	Semis	Total
Agilent	2%	1%	3%
BRKR	13%	6%	19%
DHR	8%	1%	8%
MTD	3%	1%	4%
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TMO	4%	2%	6%
WAT	11%	1%	12%
\$ Wghtd Avg	5%	1%	7%

Note: Materials refers to metals, mining, construction & building, paper, and forest exposures but excludes chemicals and oil & gas exposures.  
Source: Company Data, Morgan Stanley Research estimates

**Exhibit 13:** Metals & Mining capex, which is highly correlated to BRKR's NANO growth, is expected to decelerate over the next two years

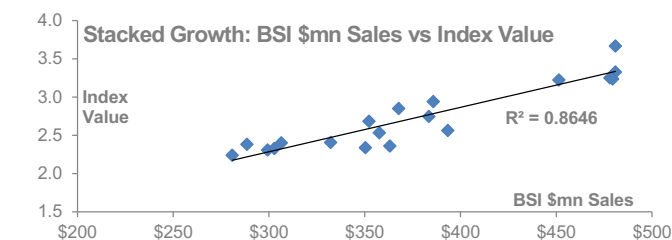


Note: NANO growth pre-2014 shown as BRKR AXS and BRKR Materials growth.  
Source: Company Data, Morgan Stanley Research estimates

## Leading indicators index clearly decelerating

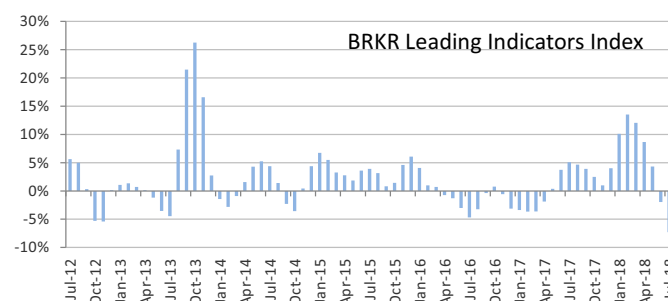
**Revisiting our custom index.** We made edits to our custom BRKR leading indicators index (see [Something Totally Different](#)) that aggregates data from a range of industries and regions, and now find an even stronger correlation between BRKR BSI's normalized stacked growth and the normalized stacked growth of the custom index on a one-quarter lag ([Exhibit 14](#)). Directionally, our leading index is still decelerating ([Exhibit 8](#)), raising questions on the growth outlook for BRKR in 2H18/2019.

**Exhibit 14:** BSI's organic growth is highly correlated with a custom index of research and manufacturing drivers



Source: Company Data, Morgan Stanley Research

**Exhibit 15:** BRKR's leading indicators index continues to decline in '18, implying slower organic growth in 2H18/19



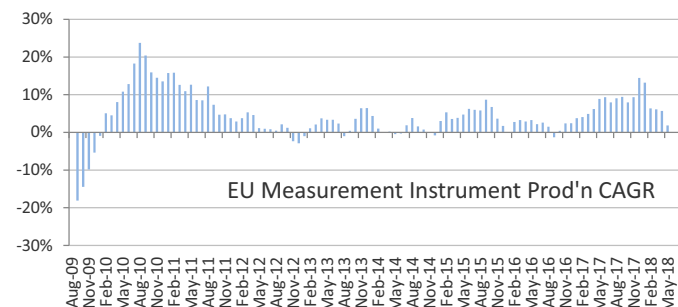
Source: Thomson Reuters, Morgan Stanley Research

**Underlying the BRKR leading index is a series of regional indicators, many of which are decelerating.** EU basic chemical and Eurozone chemical production trends ([Exhibit 16](#)), as well as EU measurement instrument production trends, have decelerated for several consecutive months. In APAC, recent Japan chemical production trends appear lighter, while Japan science research employment continues to decelerate. In China and India, Pharma manufacturing and export trends appear lighter in recent months. Only in the US have indicators remained robust, though on a relative basis the US makes up a lower



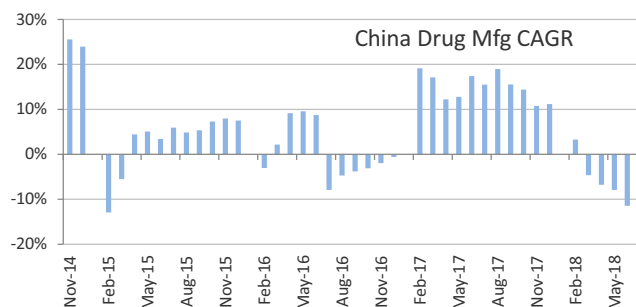
share than Europe of BRKR's sales.

**Exhibit 16: EU measurement production continues to decelerate**



Source: Thomson Reuters, Morgan Stanley Research

**Exhibit 17: China drug manufacturing CAGR continues to decline**



Source: Thomson Reuters, Morgan Stanley Research

**The broad macro environment and earnings outlook for Asia EM continues to deteriorate on multiple fronts.** Our MS Asia/EM Equity Strategy Team recently cut earnings forecasts for the APAC region (see [Asia EM](#)), citing a series of weaker data points including:

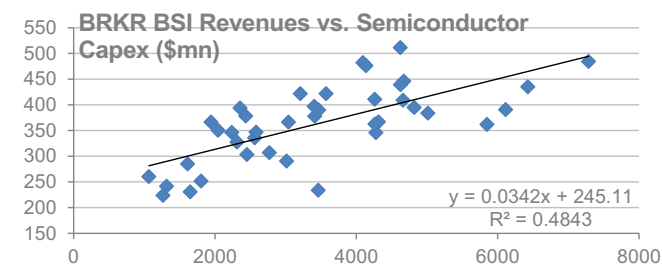
- Major declines in the copper price and global PMIs (particularly export orders), further underperformance of Korea versus EM, and greater-than-expected weakness across the board in China's July macro data points.
- Further downgrades by the Morgan Stanley Asia Tech team of their outlook for the semiconductor industry – a key bellwether cyclical – and an important earnings miss from Tencent.

The Team recommends that investors maintain a highly defensive stance with a focus on value and dividend yield at the stock level. We think BRKR is less defensive than peers considering its high equipment mix and higher exposures to cyclical categories such as semis/chemicals/oil & gas (see [Defensive Scorecard](#)). More broadly, we note the European manufacturing PMI has decelerated for six of the past seven months, with a recent reading of 55.1 in July.

## Semiconductor capex forecasts and METI sales trends point to caution for '19

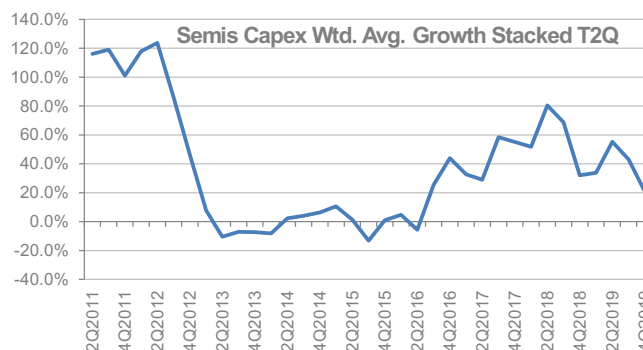
**Morgan Stanley Semiconductor Team forecasts point to capex deceleration in '19.** We analyzed the relationship between BRKR's BSI division (90% of revenues) and semiconductor capex and found a 70% correlation. Our Semiconductor team expects semi capex to decelerate 1500bps+ in '19 on a T2Q stacked basis, negative for BRKR given the correlation. We'd also flag a series of weaker semiconductor earnings prints in the recent quarter as broader evidence of a weakening environment. In Japan Semis, Renesas, Horiba, and Micronics all posted weaker quarters and lowered guidance, while Fanuc cited trade friction with the US as a cause for a slowdown in orders in China (see [Global Diagnostics](#)).

**Exhibit 18:** BRKR's BSI division (90% of revenues) is highly correlated on a coincident basis to semiconductor capex



Source: Company Data, Thomson Reuters, Morgan Stanley Research

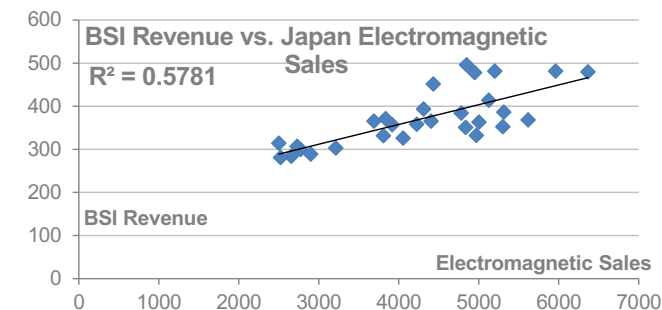
**Exhibit 19:** MS Semiconductor Team forecasts significant deceleration in capex growth in '19 on a stacked trailing basis



Source: Company Data, Thomson Reuters, Morgan Stanley Research estimates

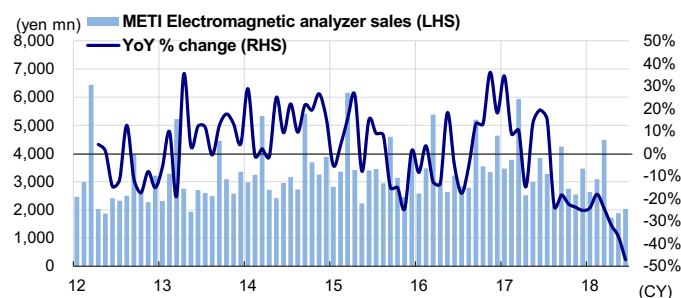
**Japan electromagnetic analyzer sales continue to send bearish signal.** We correlated BRKR's BSI sales (90% of revenues) to Japan electromagnetic analyzer sales and found a 76% correlation on a coincident basis. Electromagnetic analyzers include products such as nuclear magnetic resonance (NMR) spectrometers, X-ray fluorescence spectrometers, and mass spectrometers. We note a nearly uninterrupted decline in Japan electromagnetic analyzer sales growth since mid '17. These results suggest BRKR's BSI growth could begin to decelerate. For more, see [METI](#).

**Exhibit 20:** Bruker's BSI division is 76% correlated to Japan electromagnetic analyzer sales



Source: Company Data, Japan Ministry of Economy, Trade & Industry, Morgan Stanley Research

**Exhibit 21:** Japan electromagnetic analyzer sales growth continues to decline



Source: Japan Ministry of Economy, Trade & Industry, Morgan Stanley Research

## Relative Geographic/End Market Exposure Contributes to Underperformance

**Key Conclusion:** BRKR is less favorably positioned on a relative basis vs. peers given lower US and consumables exposure, where we see more robust indicators and stronger expected growth. We believe this positioning has led and will continue to lead to relative organic growth underperformance vs. peers.

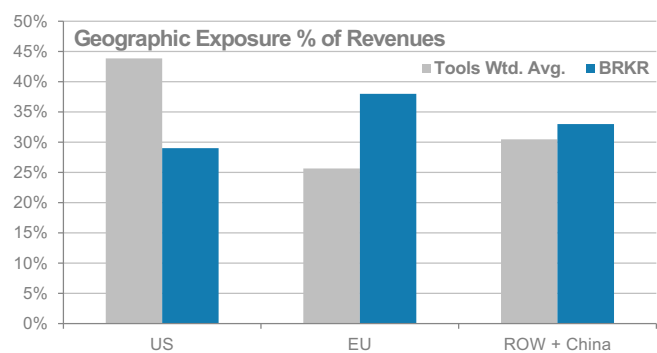
Relative exposures less favorable

**For Tools, we prefer US and consumables exposure.** As we laid out in [Strong](#)

**Fundamentals**, we prefer companies with more exposure geographically to US markets, where PMI levels are strongest, and where our macro data continues to look robust across various end markets. On a mix basis, we prefer higher consumables exposure given survey data (see [Pharma Lab Survey](#) and [Academic Lab Survey](#)) and the more defensive nature of having a lower capital mix (see [Defensive Scorecard](#)). While Academic/Government funding is broadly encouraging for BRKR (55% of revenues), we note that (i) US Government exposure is likely lower at 10-15% of sales, capping upside from increased NIH funding; and (ii) 75% of BRKR sales come from instruments, and high-end equipment budgets in Pharma/Academic markets are expected to decline ~50/250bps in '18. On their 2Q EPS call, BRKR management noted "It's not so clear yet that all this good NIH funding news has translated into orders and revenue for us yet, although the customers tend to be upbeat."

**Geographic exposure tied to Europe; BRKR-specific end markets are decelerating there.** As of 4Q17, BRKR had 38% revenue exposure to Europe, compared to peers at 25%. While this was favorable for BRKR in '17 as Europe grew at a MSD pace, we believe growth likely decelerates in '18/'19 given weaker indicators. Additionally, BRKR drove MSD EU growth in '17 off a low-teens comp; management noted at a recent conference that "the growth rates in Europe from '17 are not -- they're not sustainable because they are the recovery from dropping into a hole in '16."

**Exhibit 22:** BRKR has 1200bps more exposure to EU, 1500bps less exposure to the US vs. Tools peers



Source: Company Data, Morgan Stanley Research

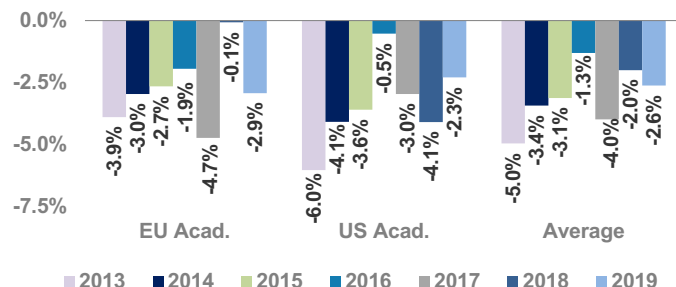
**Exhibit 23:** BRKR has more Academic/Government exposure than peers, less Pharma and Industrial

	Life Sciences				Regulated				Cyclical				Environmental				
	Total	Science	Academic/ Gov't	Pharma	Total	Regulated	Diagnostics	Food	Environmental	Forensics/ Other	Total	Cyclical	Energy/ Chem	Diagnostics	Food	Environmental	Other Industrial
A	38%	8%	30%		28%	12%	8%	8%	0%		34%	23%	4%	3%	4%	0%	
PKI	35%	8%	27%		33%	26%	3%	4%	0%		32%	9%	14%	5%	4%	0%	
TMO	60%	23%	37%		22%	16%	3%	3%	0%		18%	4%	6%	3%	3%	4%	
WAT	69%	13%	56%		10%	1%	8%	1%	0%		21%	2%	1%	4%	4%	10%	
BRKR	65%	55%	10%		15%	5%	5%	5%	0%		20%	7%	1%	1%	1%	10%	
MTD	32%	4%	28%		17%	0%	15%	2%	0%		52%	13%	0%	15%	0%	24%	
DHR*	24%	13%	11%		46%	20%	0%	8%	5%		30%	0%	10%	0%	4%	13%	
QGEN	42%	22%	20%		39%	32%	0%	0%	7%		19%	0%	17%	2%	0%	0%	

Source: Company Data, Morgan Stanley Research estimates

**Exhibit 24:** High-end equipment budgets expected to decline 2% in '18, 200bps better than '17 and 30bps faster than our October '17 survey called for

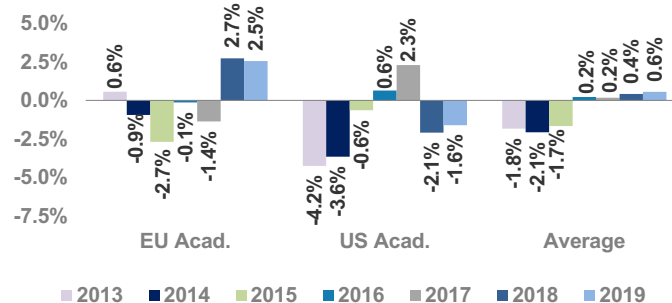
High-end equipment and instruments budget (>\$20K)  
- Growth estimates



Note: 100 total relevant respondents  
Source: Morgan Stanley Research, AlphaWise Survey (Mar, 2018)

**Exhibit 25:** Consumables budgets expected to grow 40bps in '18, 20bps better than '17 though 100bps slower than our October '17 survey called for

Consumables budget - Growth estimates

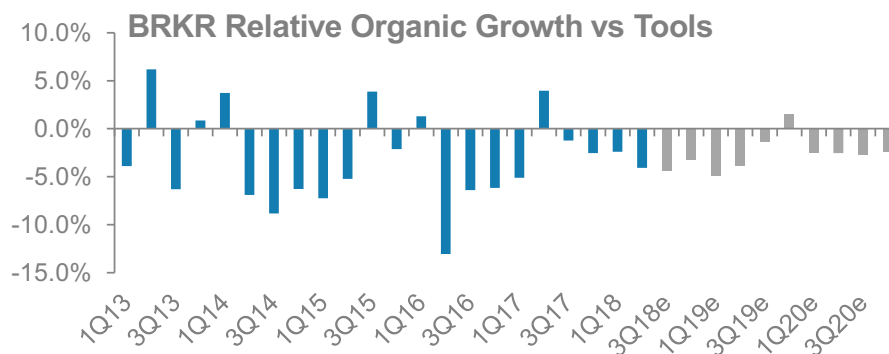


Note: 100 total relevant respondents  
Source: Morgan Stanley Research, AlphaWise Survey (Mar, 2018)

Relative growth has lagged peers; normalized growth trend <1%

**Relative growth has consistently lagged peers, a trend we do not see changing.** We believe BRKR's unique geographic, end market, and capital exposures have led to relative organic underperformance vs. peers. On average, **BRKR has undergrown Tools peers on an organic basis by 300bps/quarter over the past five years**, as HSD Pharma growth benefited peers Agilent/TMO/WAT on a relative basis more than BRKR, while Academic markets lagged and grew LSD. '17 was better than trend, but BRKR still undergrew peers by 130bps/quarter. Going forward, we forecast BRKR to undergrow Tools peers ~330bps/quarter, in-line with historical trend.

**Exhibit 26:** BRKR has consistently undergrown Tools peers on the top line, a trend we expect to continue

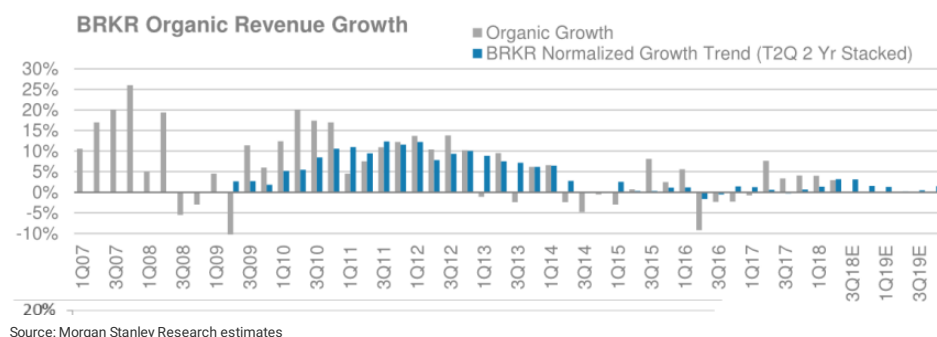


Note: Tools refers to weighted average composite index of Agilent/DHR/PKI/QGEN/TMO/WAT.  
Source: Company Data, Morgan Stanley Research estimates

**BRKR delivers volatile organic results, but the normalized organic trend is stable at ~50bps.** Given quarter-to-quarter volatility in reporting, we looked at BRKR's growth on a trailing two quarter, two year stacked basis. We believe BRKR's volatility stems from its instrument heavy mix, higher than all peers at 75% of revenues. Our analysis tells us that on a normalized basis, BRKR grew organic revenues 1.1% in '15, 0.1% in '16, and 0.5% in '17. For '18, our estimates imply ~1.5% normalized growth, the highest level since '14. **This analysis indicates that while it appears BRKR's organic growth has significantly accelerated, in reality on a normalized basis the acceleration has been modest.** Our

analysis also suggests that BRKR's growth on a normalized basis is generally in the 0-2% range, slower than Tools peers growing ~4% and consistent with our analysis above that BRKR consistently undergrows Tools peers.

**Exhibit 27:** Trailing three-year normalized organic growth trend is just 50bps, forward two-year CAGR calls for acceleration to ~100bps



## Project accelerate can drive outsized growth; Ultra high-field GHz not ready yet

**BRKR's Project Accelerate is expected to grow HSD+.** Project Accelerate, BRKR's name for its six high-growth, high-margin initiatives, is composed of six segments: Proteomics & Phenomics; Biopharma & Applied; Microbiology & Diagnostics; Neuroscience & Cell Microscopy; Nanotechnology Tools; and Aftermarket. We expect Project Accelerate to grow 10% in '18, representing ~42% of BRKR's sales by year-end. We note the TimsToF launch (\$700K system launching into a \$500mn market) is expected to drive incremental revenue growth in Proteomics. Additionally, BRKR expects to generate \$50mn of incremental revenue in two years in Microbiology, a ~20% CAGR.

**BRKR deals expected to drive significant revenue.** In Nov. '16, BRKR acquired WIP multiplex PCR assays and syndromic panel technology for microbiology. In Jan. '17, BRKR acquired molecular biology consumables for microbiology CMO on MALDI biotyper, as well as software for interpretation of MS imaging data. More recent deals in '18 include Anasys in nanoscale infrared spectroscopy, JPK in microscopy and Hain Lifescience in infectious disease MDx. The deals are expected to be accretive to BRKR's operating margins and further drive consumables mix higher.

**Ultra high-field GHz systems still facing production challenges.** We spoke with BRKR management who indicated 1.2 GHz systems (\$10mn+ ASP) still face technical challenges, preventing BRKR from ramping production. While the overall GHz backlog is \$100mn+ (most of the backlog is for 1.2GHz systems), we model only \$10mn of incremental revenue from GHz systems in '18/'19, and note the GHz system expect in 4Q18 is 1.0 GHz.

*Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. ("MUMSS") is acting as financial advisor to Renesas Electronics Corporation ("Renesas") in relation to its acquisition of Integrated Device Technology, Inc. ("IDT") as announced on September 11, 2018. The proposed transaction is subject to IDT shareholder approval, regulatory approvals and other customary closing conditions. Renesas has agreed to pay advisory fees to MUMSS for its financial advisory services.*

## Margin Expectations Remain High

**Cost actions have been a significant driver of margin expansion.** Over the past three years, BRKR has expanded organic EBIT margins 100bps+/year driven by major cost restructuring programs in various business lines, including factory closures and product exits. While the major downsizing has been completed, there are still some cost structure improvements remaining that could drive \$5-\$10mn/year of additional savings. BRKR management expects another 400-500bps margin expansion over the next 4-5 years through a global SAP rollout and shared offices/services.

**Margin expansion opportunity is still compelling.** We think there is more runway for margin expansion for BRKR going forward given its instrument mix ([Exhibit 13](#)) and OPEX load ([Exhibit 14](#)) compared to peers. Recent acquisitions will also provide a tailwind to margins once they are anniversaried in '18. As discussed above, BRKR's gross margins have been bolstered by NMR pricing, which drove an estimated 70bps of total company gross margin expansion in '16. Given the smaller price increases going forward, we expect NMR to be a smaller driver of margin expansion in the near-term. That being said, there is a significant margin expansion opportunity in the BEST group with the OST acquisition.

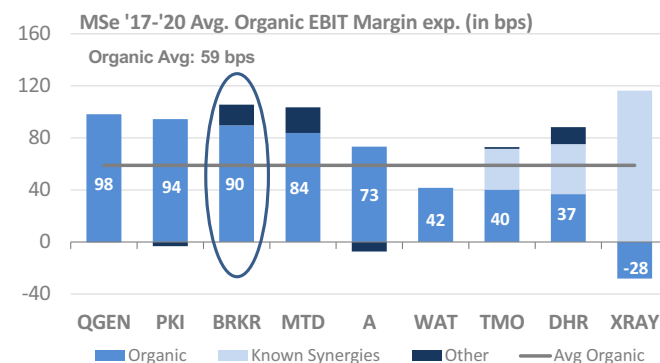
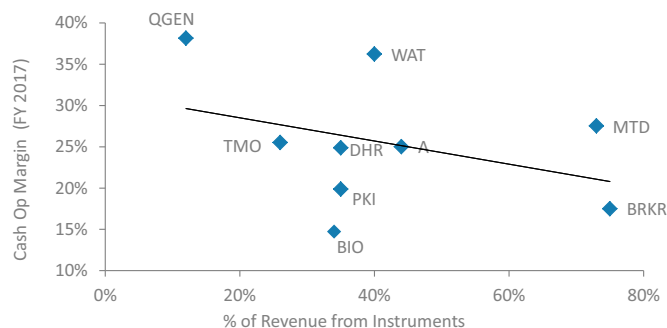
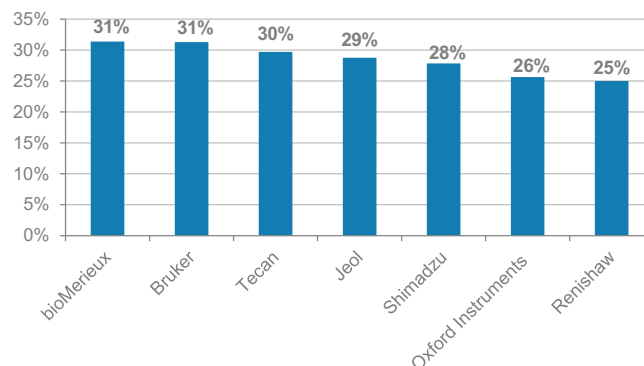
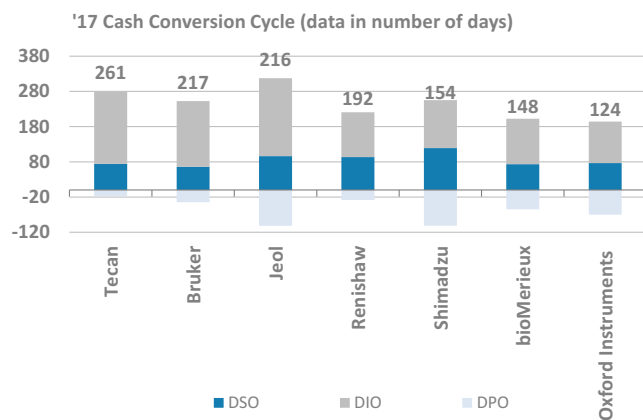
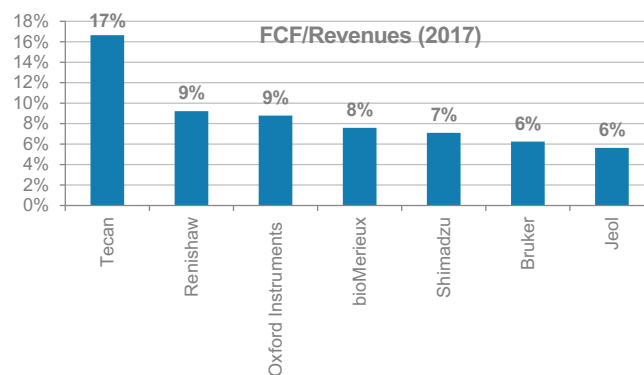
**Working capital has room to improve, but comps are key.** Due to BRKR's diverse product offering and high instrumentation mix relative to traditional Life Science Tools peers (A, PKI, TMO, WAT), we view the more appropriate comparable universe to be comprised of companies with a similarly high instrumentation mix, which we find to be the most significant predictor of potential margin level and operating efficiency. Our criteria leads us to consider non-US based companies with similar product offerings.

BRKR has a cash conversion cycle of 204 days, compared to close peers at 190 days ([Exhibit 15](#)) and Tools peers at 120 days. **This analysis suggests a traditional comp set is overestimating the amount of improvement BRKR could make in working capital management.** Working capital was a \$90mn drag on FCF in '16, leading to a below-average FCF conversion compared to peers ([Exhibit 14](#)). On the 4Q16 call, BRKR attributed its higher inventory levels to factory consolidation efforts and long-term contracts at BIOSPIN and BEST. Given the cost actions in the CALID/NANO group in '17, we do not expect this inventory headwind to completely fade in the near-term.

**Exhibit 28:** BRKR has expanded organic EBIT margins 80-200bps+ over the last two years; we forecast ~80bps/year through 2021

	2013A	2014A	2015A	2016A	2017A	2018E	2019E
Reported EBIT Margin	11.2%	10.2%	13.3%	14.8%	15.9%	16.6%	17.8%
Y/Y change	11.2%	-1.0%	3.1%	1.5%	1.1%	0.8%	1.2%
Restructuring impact	0.0%	0.9%	1.1%	0.6%	0.7%	0.4%	0.4%
FX	-1.1%	-0.7%	0.1%	0.1%	-0.2%	-0.7%	0.0%
Organic EBIT Margin	12.3%	9.6%	12.4%	14.1%	15.8%	17.0%	17.4%
Y/Y change	n/a	-1.5%	2.2%	0.8%	1.1%	1.1%	0.8%
Organic Revenues	\$1,849	\$1,832	\$1,847	\$1,587	\$1,669	\$1,798	\$1,863
Organic EBIT	\$228	\$177	\$228	\$223	\$264	\$305	\$324
Organic OM incrementals	14.9%	392.6%	115.2%	-21.8%	45.7%	81%	144.0%

Source: Company Data, Morgan Stanley Research estimates

**Exhibit 29:** BRKR's organic margin expansion is above the peer average**Exhibit 30:** Based on its instrument mix, BRKR's margins do not look optimized**Exhibit 31:** BRKR has an above average OPEX load compared to close peers**Exhibit 32:** BRKR's cash conversion cycle is less-optimized than close peers**Exhibit 33:** BRKR FCF conversion was lower than the peer average in '16

## Capital Efficiency and Returns



**BRKR has a bias for share buybacks over M&A and dividends.** BRKR has historically used >50% of its FCF to buyback shares, vs. 15-25% for M&A and dividends ([Exhibit 34](#)). Acquisitions are generally small bolt-ons rather than major transformative deals. Acquisitions are expected to add nearly 400bps of non-organic growth this year. BRKR has indicated that M&A will be geared towards increasing consumables mix.

**Buybacks could provide limited upside in the near-term.** In 2016, BRKR bought back \$160mn worth of shares. In May, BRKR announced a \$225 million two-year share repurchase program. We model ~\$160/180mn of share buybacks in '17/'18. BRKR's potential for a more robust buyback program is limited given a modest cash position of ~\$275mn.

**Free cash flow growth has been volatile.** Over the past three years, BRKR has seen FCF declines of 15-50%, as well as FCF growth >140%. BRKR should grow FCF >60% this year off an easy comp. Going forward, we think the normalized FCF growth per share potential for BRKR is in the 10-20% range, with FCF conversion from net income ~100%.

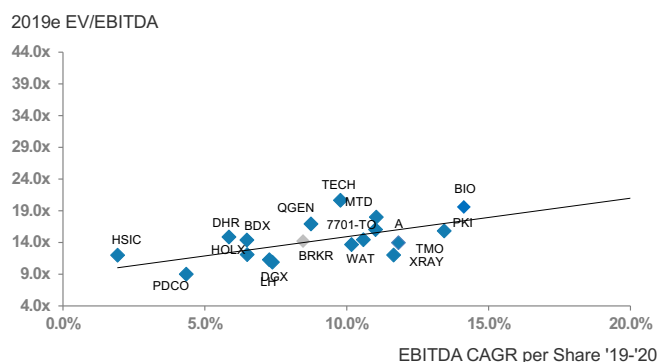
**Exhibit 34:** BRKR prefers to buyback shares over M&A and dividend payments

	2013	2014	2015	2016	2017e	2018e	2019e
<b>Net Income</b>	\$82	\$60	\$105	\$155	\$80	\$183	\$200
% growth		-27%	76%	47%	-48%	128%	9%
Depreciation/Amortization	61	60	53	54	64	59	59
Non-cash charges/expenses	41	44	54	34	23	40	21
Tax benefits/charges	14	(9)	(29)	(23)	28	(7)	-
Working Capital	(53)	(39)	46	(89)	(41)	(107)	(58)
Capex	(50)	(34)	(34)	(37)	(44)	(37)	(45)
<b>Free Cash Flow</b>	\$95	\$81	\$195	\$94	\$111	\$131	\$176
% growth		-15%	142%	-52%	18%	18%	35%
<b>Free Cash Flow per share</b>	\$0.56	\$0.47	\$1.15	\$0.58	\$0.70	\$0.83	\$1.13
% growth		-15%	143%	-50%	20%	19%	36%
<b>Share Repurchases (\$MM)</b>	\$0	\$0	\$90	\$160	\$152	\$0	\$100
% of FCF to Share Repurchases	0%	0%	46%	171%	137%	0%	57%
% of FCF to M&A	12%	5%	15%	26%	60%	29%	0%
% of FCF to Dividends	0%	0%	0%	28%	23%	19%	14%

Source: Company Data, Morgan Stanley Research estimates

## Valuation No Longer Favorable

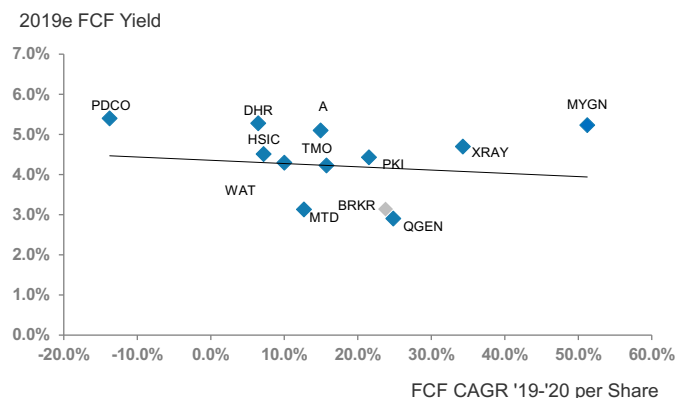
**Exhibit 35:** BRKR shares look fairly valued when comparing EBITDA CAGR per share vs. EV/EBITDA



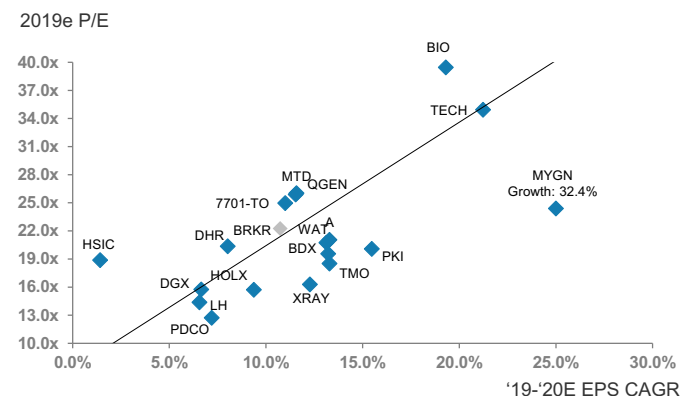
Source: Company Data, Morgan Stanley Research

### Tactical and structural setup more challenging in recent weeks.

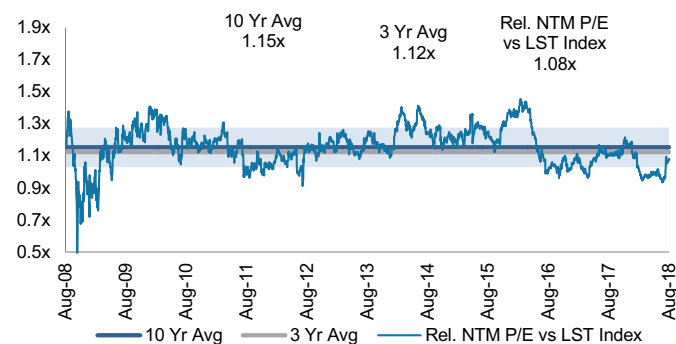
BRKR shares trade at a ~10% premium to peers on NTM P/E, ~5% lower than historical averages though up ~15% in just the last month. This is despite an expected EPS CAGR 250bps lower than core Tools over the next two years. On our preferred FCF yield metric, BRKR trades at a ~25% premium to core Tools peers on '19e/'20e FCF yield. We think slowing end markets could drive downward estimate revisions and multiple compression, thus pressuring stock returns.

**Exhibit 36:** BRKR shares look expensive when comparing FCF CAGR per share vs. FCF yield

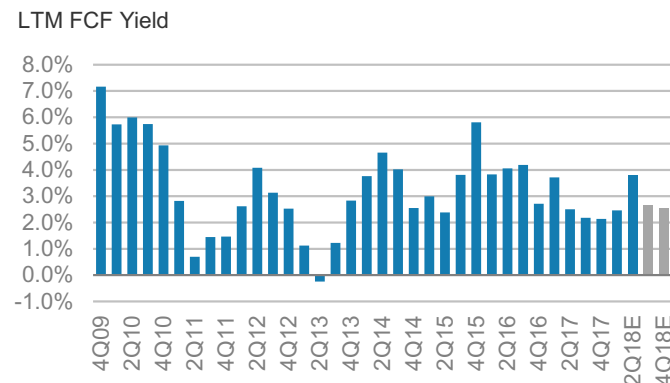
Source: Morgan Stanley Research, Thomson Reuters estimates

**Exhibit 37:** BRKR shares look a bit expensive when comparing P/E to EPS CAGR

Source: Morgan Stanley Research, Thomson Reuters estimates

**Exhibit 38:** BRKR trades at a ~10% premium to peers, ~5% lower than historical averages

Source: Morgan Stanley Research, Thomson Reuters

**Exhibit 39:** BRKR's FCF yield looks less attractive in 2H18

Source: Morgan Stanley Research, Thomson Reuters

## Catalysts Timeline

Exhibit 40: Catalysts Timeline

Bruker Timeline	2016				2017E				2018E				2019E
Product/Catalyst	Mar-16	Jun-16	Sep-16	Dec-16	Mar-17	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	
Biospin	Skycan 1276				Novel NMR Phenomics NEO NMR				GHZ in 2H18, \$5-10mn				
Calid	timsTOF MS                      Ultima NeuraLight 3D rapifleX MALDI PharmaPulse uHTS				MALDI PharmaPulse 2.0	MS MALDI Microbial Stain New kits	timsTOF Pro MS launch FDA 3rd MALDI Biotyper						
Nano	TRACER 5i				S8 TIGER		EIGER2 R 500K Detector D8 VENTURE BIOTOOLS						
BEST									OST into organic				
Corporate M&A	Yingsheng Tech acq		OST NAT assays PET Active Spectrum		Hysitron SCiLS InVivo	Luxendo	Field Portable XGLab						
Other	CDC	FlavorActiV 3M license	IPCN										

Source: Company Data and Morgan Stanley Research

## Valuation methodology/risk section

## BRKR.O

Our \$32 price target for Bruker is based on a 3.85% FCF yield on our mid '20 FCF estimate. We believe Bruker can generate ~100bps/year of organic margin expansion in '18/'19, and LSD organic revenue growth on momentum in Academic markets and deceleration in Applied markets. While we acknowledge that upside to our estimates is possible on better execution, a key driver of the company's premium multiple, potential upside is more likely in other names in our coverage universe. Risks to our price target include NIH funding increases not translating to revenue growth, execution missteps, and FX headwinds.

## Financials

Exhibit 41: BRKR Income Statement

	2012A	2013A	2014A	2015A	2016A	2017A	2018E				2018E	2019E				2019E	2020E	2021E
							Mar-18	Jun-18	Sep-18	Dec-18		Mar-19	Jun-19	Sep-19	Dec-19			
Total Revenue	\$1,791.4	\$1,839.4	\$1,808.9	\$1,623.8	\$1,611.3	\$1,765.9	\$431.7	\$443.7	\$439.8	\$536.6	\$1,851.8	\$425.3	\$448.1	\$458.4	\$582.6	\$1,914.4	\$1,888.6	\$1,868.5
Total Cost of Goods Sold	938.1	1,006.9	1,001.2	872.8	836.9	915.8	226.7	232.3	223.4	253.3	935.7	222.5	233.7	231.9	273.8	962.0	937.7	914.6
Gross Profit	\$853.3	\$832.5	\$807.7	\$751.0	\$774.4	\$850.1	\$205.0	\$211.4	\$216.4	\$283.3	\$916.1	\$202.8	\$214.4	\$226.4	\$308.8	\$952.4	\$950.9	\$953.8
R&D	195.3	190.5	174.2	145.7	149.0	161.6	43.2	43.6	42.2	44.5	173.6	41.3	42.7	42.6	46.6	173.2	167.1	159.7
SG&A	439.0	407.9	416.4	365.1	361.7	388.9	101.1	106.7	101.1	107.3	416.3	98.8	106.9	104.5	115.4	425.5	412.3	404.1
Total Operating Expenses	\$634.3	\$627.0	\$623.3	\$535.8	\$536.5	\$570.2	\$152.1	\$152.5	\$147.4	\$155.9	\$607.8	\$144.0	\$153.6	\$151.1	\$166.0	\$614.7	\$595.4	\$579.8
EBITA (Non-GAAP)	\$219.0	\$205.5	\$184.4	\$215.2	\$237.9	\$279.9	\$52.9	\$58.9	\$69.0	\$127.5	\$308.3	\$58.8	\$60.8	\$75.3	\$142.8	\$337.7	\$355.5	\$374.0
EBITDA (Non-GAAP)	\$256.1	\$246.1	\$223.9	\$247.8	\$270.5	\$314.2	\$61.9	\$67.7	\$77.9	\$136.5	\$343.9	\$68.3	\$70.4	\$85.0	\$152.6	\$376.4	\$396.1	\$416.4
Interest Income	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.4
Interest Expense	(17.7)	(23.6)	(12.5)	(13.0)	(8.8)	(20.9)	(2.3)	(5.5)	(5.5)	(5.5)	(18.8)	(1.3)	(1.3)	(1.3)	(1.3)	(5.1)	(5.1)	(5.1)
Other Income/Expense	0.0	(2.4)	2.5	(5.7)	0.0	(1.1)	0.0	0.0	0.0	0.0	0.0	(0.6)	(0.6)	(0.6)	(0.8)	(2.5)	(2.5)	(2.4)
Pretax Income	\$201.3	\$179.5	\$174.4	\$197.7	\$229.1	\$257.9	\$50.6	\$53.4	\$63.5	\$122.0	\$289.5	\$57.0	\$59.0	\$73.4	\$140.8	\$330.1	\$348.0	\$423.9
Income Tax Expense (benefit)	62.3	48.5	43.8	43.4	35.9	64.7	12.0	14.4	15.8	30.3	72.4	14.2	14.7	18.4	35.2	82.5	87.0	106.0
Net income attributable to noncontrolling	0.7	1.7	2.9	3.3	0.9	1.7	0.4	(0.2)	0.4	0.4	1.0	0.4	0.4	0.4	0.4	1.6	1.6	1.6
Net Income (Non-GAAP)	\$138.3	\$129.3	\$127.7	\$151.0	\$192.3	\$191.5	\$38.2	\$39.2	\$47.4	\$91.3	\$216.1	\$42.3	\$43.8	\$54.7	\$105.2	\$246.0	\$259.4	\$316.3
Extraordinary Items	(60.8)	(49.2)	(71.0)	(49.4)	(38.7)	(116.3)	(11.4)	(7.4)	(7.6)	(7.6)	(34.0)	(11.3)	(11.3)	(11.3)	(11.3)	(45.0)	(45.0)	(45.0)
Net Income (GAAP)	\$77.5	\$80.1	\$56.7	\$101.6	\$153.6	\$75.2	\$26.8	\$31.8	\$39.8	\$83.7	\$182.1	\$31.1	\$32.6	\$43.4	\$93.9	\$201.0	\$214.4	\$271.3
Diluted EPS (Non-GAAP)	\$ 0.83	\$ 0.77	\$ 0.75	\$ 0.89	\$ 1.19	\$ 1.20	\$ 0.24	\$ 0.25	\$ 0.30	\$ 0.58	\$ 1.38	\$ 0.27	\$ 0.28	\$ 0.35	\$ 0.68	\$ 1.58	\$ 1.69	\$ 2.08
Average diluted shares	167.4	168.5	169.5	169.1	162.2	159.1	157.0	157.0	157.2	157.2	157.1	156.5	155.7	155.0	154.3	155.4	153.8	152.3

Margins (Non-GAAP)																		
COGS	52.4%	54.7%	55.3%	53.8%	51.9%	51.9%	52.5%	52.4%	50.8%	47.2%	50.5%	52.3%	52.2%	50.6%	47.0%	50.2%	49.7%	49.0%
Product Gross Margin	47.5%	46.4%	45.8%	47.0%	49.3%	49.1%	48.8%											
Service Gross Margin	48.5%	37.5%	36.9%	41.9%	41.9%	43.4%	41.5%											
Gross Margin	47.6%	45.3%	44.7%	46.2%	48.1%	48.1%	47.5%	47.6%	49.2%	52.8%	49.5%	47.7%	47.8%	49.4%	53.0%	49.8%	50.3%	51.0%
R&D	10.9%	10.4%	9.6%	9.0%	9.2%	9.2%	10.0%	9.8%	9.6%	8.3%	9.4%	9.7%	9.5%	9.3%	8.0%	9.0%	8.8%	8.5%
SG&A	24.5%	22.2%	23.0%	22.5%	22.4%	22.0%	23.4%	24.0%	23.0%	20.0%	22.5%	23.2%	23.8%	22.8%	19.8%	22.2%	21.8%	21.6%
EBIT	12.2%	11.2%	10.2%	13.3%	14.8%	15.9%	12.3%	13.3%	15.7%	23.8%	16.6%	13.8%	13.6%	16.4%	24.5%	17.6%	18.8%	20.0%
Incremental EBIT	10.2%	-28.1%	69.2%	-16.6%	-181.6%	27.2%	7.9%	18.8%	64.8%	269.9%	33.0%	-92.5%	44.0%	33.9%	33.4%	47.1%	-69.0%	-91.5%
Organic EBIT Margin Expansion			-1.5%	2.2%	0.8%	1.1%	0.5%	0.9%	0.8%	2.8%	1.1%	1.0%	0.3%	0.6%	0.6%	0.8%	0.8%	0.8%
EBITDA	14.3%	13.4%	12.4%	15.3%	16.8%	17.8%	14.3%	15.3%	17.7%	25.4%	18.6%	16.1%	15.7%	18.5%	26.2%	19.7%	21.0%	22.3%
Income tax rate	30.9%	27.0%	25.1%	22.0%	15.7%	25.1%	23.7%	27.0%	24.8%	24.8%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Net Income	7.7%	7.0%	7.1%	9.3%	11.9%	10.8%	8.8%	8.8%	10.8%	17.0%	11.7%	9.9%	9.8%	11.9%	18.1%	12.9%	13.7%	16.9%
Growth																		
Revenues	8.5%	2.7%	-1.7%	-10.2%	-0.8%	9.6%	12.2%	6.9%	1.0%	1.2%	4.9%	-1.5%	1.0%	4.2%	8.6%	3.4%	-1.3%	-1.1%
R&D	10.2%	-2.5%	-8.6%	-16.4%	2.3%	8.5%	14.9%	8.2%	4.2%	3.1%	7.4%	-4.4%	-2.1%	1.0%	4.6%	-0.2%	-3.5%	-4.4%
SG&A	10.6%	-7.1%	2.1%	-12.3%	-0.9%	7.5%	8.1%	13.3%	4.1%	3.2%	7.0%	-2.3%	0.2%	3.3%	7.5%	2.2%	-3.1%	-2.0%
Operating Expenses	10.6%	-1.2%	-0.6%	-14.0%	0.1%	6.3%	13.3%	8.2%	3.8%	1.8%	6.6%	-5.3%	0.7%	2.6%	6.5%	1.1%	-3.1%	-2.6%
Organic Operating Expenses	NM	NM	-0.1%	-14.8%	1.2%	7.4%	13.3%	8.3%	3.5%	2.0%	6.8%	-4.5%	1.3%	3.2%	8.0%	2.0%	-2.7%	-2.1%
EBIT	7.0%	-6.2%	-10.3%	16.7%	10.5%	17.7%	7.5%	10.1%	4.1%	14.9%	10.1%	11.1%	3.3%	9.1%	12.0%	9.6%	5.3%	5.2%
EBITDA	6.9%	-3.9%	-9.0%	10.7%	9.2%	16.2%	7.8%	9.2%	3.6%	14.1%	9.5%	10.3%	4.0%	9.1%	11.9%	9.4%	5.2%	5.1%
Adj EPS	-4.0%	-7.1%	-1.8%	18.5%	32.8%	1.5%	30.6%	10.9%	2.2%	14.9%	14.3%	11.1%	12.8%	17.1%	17.4%	15.1%	6.5%	23.1%
Net Income	-3.8%	-6.5%	-1.2%	18.2%	27.4%	-0.4%	27.8%	8.6%	1.2%	16.1%	12.8%	10.8%	11.8%	15.4%	15.2%	13.8%	5.4%	21.9%

Source: Morgan Stanley Research estimates, Company data

Exhibit 42: BRKR Revenue Build

	2012A	2013A	2014A	2015A	2016A	2017A				2017A	2018E				2018E	2019E				2019E	2020E	2021E
						Mar-17	Jun-17	Sep-17	Dec-17		Mar-18	Jun-18	Sep-18	Dec-18		Mar-19	Jun-19	Sep-19	Dec-19			
<b>Revenue Drivers by Reporting Segment</b>																						
<b>Sci Instruments Rev</b>																						
<b>BIOSPIN</b>	566.2	622.8	623	547	568.3	126.0	129.2	150.8	162.2	568.2	134.2	139.9	150.8	171.0	595.8	132.3	145.8	152.3	182.7	613.2	619.3	619.3
YoY Growth %		10.0%	0.0%	-12.2%	3.9%	-0.1%	-5.2%	2.6%	2.2%	0.0%	6.5%	8.3%	0.0%	5.4%	4.9%	-1.4%	4.3%	1.0%	6.8%	2.9%	1.0%	0.0%
CC Growth (YoY)		10.6%	1.5%	-3.3%	4.4%	1.9%	-3.4%	0.2%	-3.0%	-1.2%	-1.2%	5.0%	1.0%	6.0%	2.8%	1.0%	5.3%	1.0%	6.8%	3.7%	1.0%	0.0%
FX Impact		-0.6%	-1.5%	-8.9%	-0.5%	-2.0%	-1.8%	2.4%	5.2%	1.2%	7.7%	3.3%	-1.0%	-0.6%	2.0%	-2.4%	-1.0%	0.0%	0.0%	-0.8%	0.0%	0.0%
Acq/Div		0.8%	0.0%	0.0%	0.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
GHz Systems						0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	0.0%	5.8%	2.8%	0.0%	0.0%
<b>Organic Growth</b>		9.8%	1.5%	-3.3%	4.4%	1.7%	-3.6%	0.0%	-3.2%	-1.4%	-1.2%	5.0%	1.0%	6.0%	2.8%	1.0%	1.0%	1.0%	1.0%	0.9%	1.0%	0.0%
<b>CALID</b>	552.4	582.7	554	493	474.9	104.4	114.9	137.8	141.8	498.8	120.8	128.0	139.1	148.1	536.0	124.8	133.3	155.1	167.5	580.8	604.0	579.9
YoY Growth %		5.5%	-5.0%	-11.0%	-3.6%	-8.9%	10.2%	9.8%	8.6%	5.0%	15.7%	11.4%	0.9%	4.5%	7.5%	3.3%	4.2%	11.5%	13.1%	8.4%	4.0%	-4.0%
CC Growth (YoY)		6.1%	-3.5%	-0.3%	-3.1%	-6.9%	12.0%	7.4%	3.4%	3.8%	8.0%	8.1%	1.9%	5.1%	5.4%	5.7%	5.2%	11.6%	13.1%	9.2%	4.0%	-4.0%
FX Impact		-0.6%	-1.5%	-10.7%	-0.5%	-2.0%	-1.8%	2.4%	5.2%	1.2%	7.7%	3.3%	-1.0%	-0.6%	2.0%	-2.4%	-1.0%	0.0%	0.0%	-0.8%	0.0%	0.0%
Acq/Div		0.0%	-3.8%	-7.7%	0.0%	1.6%	1.0%	1.4%	2.3%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	8.7%	8.2%	7.6%	7.1%	7.8%	0.0%	0.0%
<b>Organic Growth</b>		6.1%	0.3%	7.4%	-3.1%	-8.5%	11.0%	6.0%	1.1%	2.2%	8.0%	8.1%	1.9%	5.1%	5.4%	-3.0%	-3.0%	4.0%	6.0%	1.3%	4.0%	-4.0%
<b>NANO</b>	547.6	504.0	498	460	449.6	115.9	118.4	105.7	180.2	520.2	132.0	134.5	104.1	169.5	540.2	128.9	125.6	109.3	180.1	543.9	489.5	489.5
YoY Growth %		10.1%	-8.0%	-1.1%	-7.7%	5.7%	12.5%	18.7%	23.7%	15.7%	13.9%	13.6%	-1.5%	-5.9%	3.8%	-2.4%	-6.6%	5.0%	6.2%	0.7%	-10.0%	0.0%
CC Growth (YoY)		14.8%	-7.4%	0.4%	1.6%	7.7%	14.3%	16.3%	18.5%	14.5%	6.2%	10.3%	-0.5%	-5.3%	1.8%	0.0%	-5.6%	5.0%	6.2%	1.5%	-10.0%	0.0%
FX Impact		-4.6%	-0.6%	-1.5%	-9.3%	-0.5%	-2.0%	-1.8%	2.4%	5.2%	7.7%	3.3%	-1.0%	-0.6%	2.0%	-2.4%	-1.0%	0.0%	0.0%	-0.8%	0.0%	0.0%
Acq/Div		0.0%	0.0%	0.5%	6.4%	4.7%	4.8%	5.6%	5.5%	5.2%	1.2%	2.5%	6.6%	3.9%	3.4%	4.0%	2.4%	0.0%	0.0%	1.5%	0.0%	0.0%
<b>Organic Growth</b>		14.8%	-7.4%	0.4%	1.1%	-8.1%	3.1%	9.6%	10.7%	13.0%	5.0%	7.8%	-7.1%	-9.2%	-1.6%	-4.0%	-8.0%	5.0%	6.2%	0.0%	-10.0%	0.0%
<b>Total Revenues</b>	1,666.1	1,709.5	1,674.6	1,499.4	1,492.6	346.4	362.5	390.6	484.2	1,583.7	387.0	402.4	394.0	488.7	1,672.0	386.0	404.8	416.7	530.3	1,737.8	1,712.8	1,688.6
YoY Growth %		7.2%	2.6%	-2.0%	-0.5%	-1.1%	4.9%	8.0%	11.3%	6.1%	11.7%	11.0%	0.9%	0.9%	5.6%	-0.2%	0.6%	5.8%	8.5%	3.9%	-1.4%	-1.4%
CC Growth (YoY)		11.5%	3.2%	-0.5%	0.0%	0.9%	6.7%	5.6%	6.1%	4.9%	4.0%	7.7%	1.9%	1.5%	3.6%	2.1%	1.6%	5.8%	8.5%	4.7%	-1.4%	-1.4%
FX Impact		-4.3%	-0.6%	-1.5%	-9.5%	-2.0%	-1.8%	2.4%	5.2%	1.2%	7.7%	3.3%	-1.0%	-0.6%	2.0%	-2.4%	-1.0%	0.0%	0.0%	-0.8%	0.0%	0.0%
Acquisitions/GHz		1.3%	-0.2%	0.2%	-2.2%	2.0%	1.8%	2.0%	2.6%	2.1%	0.4%	0.8%	1.8%	1.4%	1.1%	4.1%	4.9%	2.7%	4.2%	4.0%	0.0%	0.0%
<b>Organic Growth</b>		10.2%	3.4%	-0.7%	-8.3%	-1.9%	-1.2%	4.4%	4.2%	3.4%	3.6%	6.9%	0.1%	0.1%	2.4%	-2.0%	-3.3%	3.1%	4.3%	0.8%	-1.4%	-1.4%
<b>Energy &amp; Supercon Tech Revenues</b>																						
<b>Total Revenues</b>	136.2	147.4	152.9	133.7	130.2	40.1	54.0	46.1	51.1	191.3	45.6	42.7	49.3	52.3	189.9	42.7	47.0	45.4	57.0	192.0	191.1	194.9
YoY Growth %		8.2%	3.7%	-12.6%	-2.6%	47.9%	89.0%	26.5%	30.9%	46.9%	13.8%	-20.9%	7.0%	2.4%	-0.7%	-6.4%	10.0%	-8.0%	9.0%	1.1%	-0.5%	2.0%
CC Growth (YoY)		29.9%	4.8%	3.7%	-2.1%	49.9%	90.8%	24.1%	25.7%	44.6%	6.1%	-24.2%	8.0%	3.0%	-2.8%	-4.0%	11.0%	-8.0%	9.0%	1.9%	-0.5%	2.0%
FX Impact		-9.8%	3.5%	0.1%	-16.4%	-0.5%	-2.0%	-1.8%	2.4%	5.2%	7.7%	3.3%	-1.0%	-0.6%	2.0%	-2.4%	-1.0%	0.0%	0.0%	-0.8%	0.0%	0.0%
Acquisitions		0.0%	0.0%	-2.3%	-0.2%	4.1%	47.0%	47.6%	33.8%	14.1%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Organic Growth</b>		29.9%	4.8%	5.9%	4.0%	-6.2%	2.9%	43.2%	-9.7%	11.6%	5.1%	-24.2%	8.0%	3.0%	-2.7%	-4.0%	11.0%	-8.0%	9.0%	1.9%	-0.5%	2.0%
<b>Eliminations</b>	(10.9)	(17.5)	(18.6)	(9.3)	(11.5)	(1.6)	(1.6)	(1.1)	(4.8)	(9.1)	(0.9)	(1.4)	(3.5)	(4.3)	(10.2)	(3.4)	(3.6)	(3.7)	(4.7)	(15.4)	(15.2)	(15.1)
% of Revenues		-0.6%	-1.0%	-1.0%	-0.6%	-0.7%	-0.4%	-0.4%	-0.3%	-0.9%	-0.2%	-0.3%	-0.8%	-0.8%	-0.5%	-0.8%	-0.8%	-0.8%	-0.8%	-0.8%	-0.8%	-0.8%
<b>Total Revenues</b>	1,791.4	1,839.4	1,808.9	1,623.8	1,611.3	384.9	414.9	435.6	530.5	1,765.9	431.7	443.7	439.8	536.6	1,851.8	425.3	448.1	458.4	582.6	1,914.4	1,888.6	1,868.5
YoY Growth %		8.5%	2.7%	-1.7%	-10.2%	-0.8%	2.5%	11.6%	10.6%	12.8%	12.2%	6.9%	1.0%	1.2%	4.9%	-1.5%	1.0%	4.2%	8.6%	3.4%	-1.3%	-1.1%
CC Growth (YoY)		13.1%	3.0%	-0.3%	0.0%	4.5%	13.4%	8.2%	7.6%	8.4%	4.5%	3.6%	2.0%	1.8%	2.8%	0.9%	2.0%	4.2%	8.6%	4.2%	-1.3%	-1.1%
FX Impact		-4.6%	-0.3%	-1.4%	-10.2%	-2.0%	-1.8%	2.4%	5.2%	1.2%	7.7%	3.3%	-1.0%	-0.6%	2.0%	-2.4%	-1.0%	0.0%	0.0%	-0.8%	0.0%	0.0%
Acquisitions/GHz		1.2%	-0.2%	0.1%	-2.1%	2.0%	5.3%	5.8%	4.8%	3.6%	0.5%	0.7%	1.6%	1.3%	1.0%	3.6%	4.5%	2.4%	3.8%	3.6%	0.0%	0.0%
<b>Organic growth</b>		11.9%	3.2%	-0.4%	2.1%	-2.3%	-0.8%	7.6%	3.4%	4.0%	4.0%	2.9%	0.3%	0.4%	1.8%	-2.8%	-2.4%	1.9%	4.7%	0.6%	-1.3%	-1.1%

Source: Morgan Stanley Research estimates, Company data

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Overweight, Equal-weight, Not-Rated and Underweight are not the equivalent of buy, hold, and sell but represent recommended relative weightings (see definitions below). To satisfy regulatory requirements, we correspond Overweight, our most positive stock rating, with a buy recommendation; we correspond Equal-weight and Not-Rated to hold and Underweight to sell recommendations, respectively.



STOCK RATING CATEGORY	COVERAGE UNIVERSE		INVESTMENT BANKING CLIENTS (IBC)			OTHER MATERIAL INVESTMENT SERVICES CLIENTS (MISC)	
	COUNT	% OF TOTAL	COUNT	% OF TOTAL IBC	% OF RATING CATEGORY	COUNT	% OF TOTAL OTHER MSC
Overweight/Buy	1156	37%	296	40%	26%	546	39%
Equal-weight/Hold	1363	44%	348	48%	26%	635	45%
Not-Rated/Hold	50	2%	5	1%	10%	7	0%
Underweight/Sell	553	18%	82	11%	15%	223	16%
<b>TOTAL</b>	<b>3,122</b>		<b>731</b>			<b>1411</b>	

Data include common stock and ADRs currently assigned ratings. Investment Banking Clients are companies from whom Morgan Stanley received investment banking compensation in the last 12 months. Due to rounding off of decimals, the percentages provided in the "% of total" column may not add up to exactly 100 percent.

### Analyst Stock Ratings

Overweight (O). The stock's total return is expected to exceed the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Equal-weight (E). The stock's total return is expected to be in line with the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Not-Rated (NR). Currently the analyst does not have adequate conviction about the stock's total return relative to the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Underweight (U). The stock's total return is expected to be below the average total return of the analyst's industry (or industry team's) coverage universe, on a risk-adjusted basis, over the next 12-18 months.

Unless otherwise specified, the time frame for price targets included in Morgan Stanley Research is 12 to 18 months.

### Analyst Industry Views

Attractive (A): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be attractive vs. the relevant broad market benchmark, as indicated below.

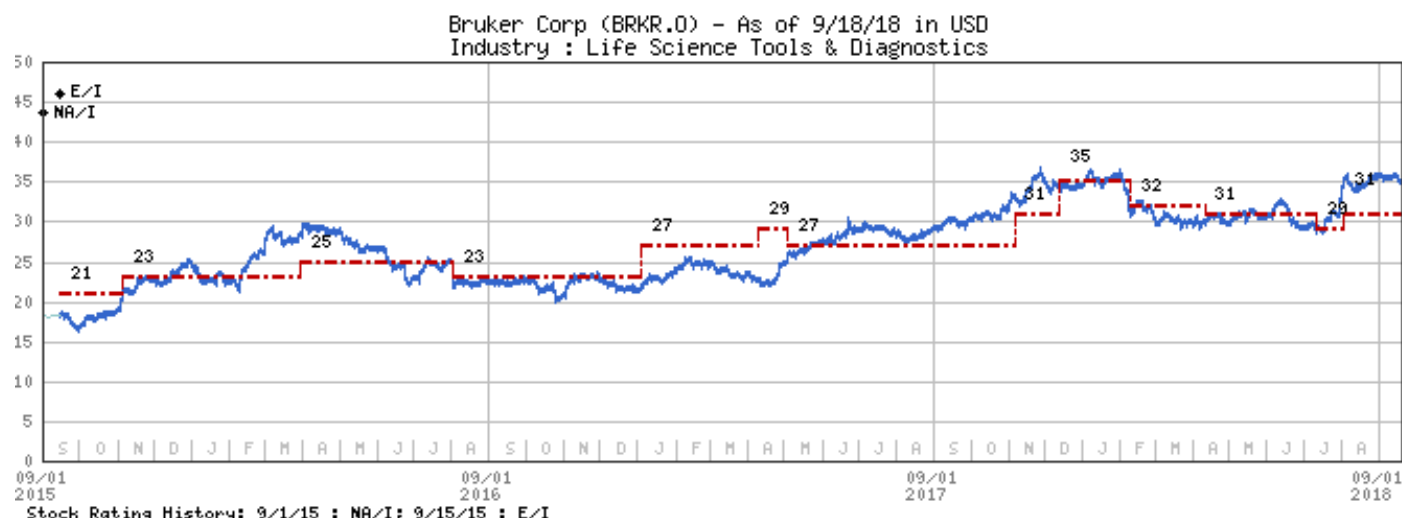
In-Line (I): The analyst expects the performance of his or her industry coverage universe over the next 12-18 months to be in line with the relevant broad market benchmark, as indicated below.

Cautious (C): The analyst views the performance of his or her industry coverage universe over the next 12-18 months with caution vs. the relevant broad market benchmark, as indicated below.

Benchmarks for each region are as follows: North America - S&P 500; Latin America - relevant MSCI country index or MSCI Latin America Index; Europe - MSCI Europe; Japan - TOPIX; Asia - relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

### Stock Price, Price Target and Rating History (See Rating Definitions)





Effective January 13, 2014, the stocks covered by Morgan Stanley Asia Pacific will be rated relative to the analyst's industry (or industry team's) coverage.

Effective January 13, 2014, the industry view benchmarks for Morgan Stanley Asia Pacific are as follows: relevant MSCI country index or MSCI sub-regional index or MSCI AC Asia Pacific ex Japan Index.

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#### INDUSTRY COVERAGE: Life Science Tools & Diagnostics

COMPANY (TICKER)	RATING (AS OF)	PRICE* (09/18/2018)
<b>Steve Beuchaw</b>		
Agilent Technologies, Inc. (AN)	O (03/15/2017)	\$68.93
Bruker Corp (BRKR.O)	U (09/20/2018)	\$34.90
Danaher (DHR.N)	O (12/13/2016)	\$106.76
Illumina Inc. (ILMN.O)	E (08/07/2018)	\$350.88
Mettler-Toledo International Inc. (MTD.N)	E (04/02/2015)	\$606.04
Myriad Genetics Inc. (MYGN.O)	O (07/11/2018)	\$47.70
NanoString Technologies Inc (NSTG.O)	E (04/20/2017)	\$16.87
Natera Inc (NTRA.O)	O (08/14/2015)	\$24.47
PerkinElmer Inc. (PKI.N)	O (09/08/2014)	\$94.96
Qiagen NV (QGEN.N)	O (09/15/2015)	\$38.12
Thermo Fisher Scientific Inc. (TMO.N)	O (09/05/2017)	\$239.10
Waters Corp. (WAT.N)	E (12/04/2017)	\$195.73

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\* Historical prices are not split adjusted.

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