



EQUITY DATA SCIENCE

A MODERN PLATFORM FOR FUNDAMENTAL INVESTING

Originally developed inside of multiple funds, EDS provides a **Decision-Support & Analytics Platform**, which is fully configurable to your workflows and drives continuous improvement in investment process & performance. EDS's best-in-class platform consist of three modules across the entire investment lifecycle: **Idea Generation, Portfolio Construction & Risk Management.**

As part of the 2020 CFA Research Challenge, EDS is providing a glimpse into their award winning platform for students.

The EDS Idea Generation Module:

- **The benefits of combining multiple, time-series charts to tell a story.**
- **How to find the “DRIVERS” of stocks. In statistical terms - which metrics are most closely correlated to the stock price.**
- **More efficient research, such as valuation, price target and peer analysis**

Good luck to the students of the 2020 CFA Research Challenge. For more information about Equity Data Science, please see our website at www.equitydatascience.com.

Case Study on Merck (MRK)

Over the past 10 years, Merck has underperformed the S&P 500 (~9% vs 11% annually). However, over the last three years, it has kept pace with the S&P 500. Has the company turned the corner? Can it start to outperform? While it is beyond the scope of our expertise to provide an opinion, one of the strengths of EDS, is the ability to understand “change”, focus investors on the metrics that matter, and put the upside in context.



IDEA GENERATION VALUATION TEARSHEET

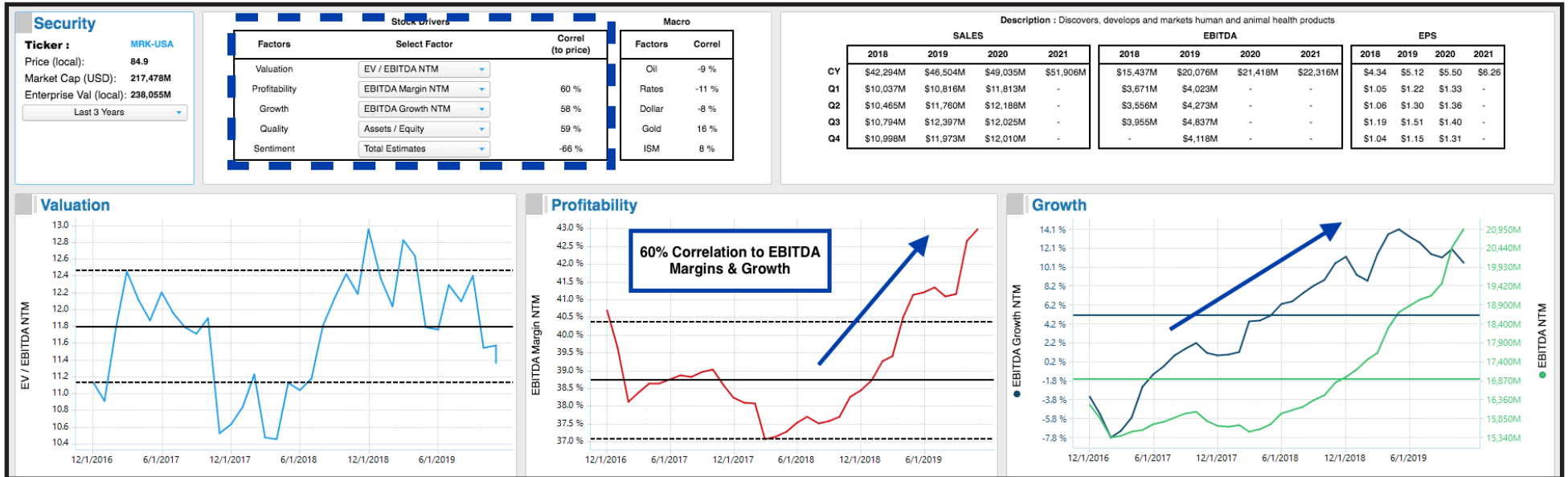


Figure 1. Stock Drivers / Correlation

Rigorous research increasingly includes statistical analysis, which is difficult in Bloomberg, and is inefficient in excel. The EDS Tearsheet provides on-the-fly correlation/regression and time-series analysis across an unlimited set of metrics. For Merck, over the past three years, EBITDA Margins are 60% correlated with the stock price (as margins move higher or lower, the stock follows).



IDEA GENERATION SCREENING

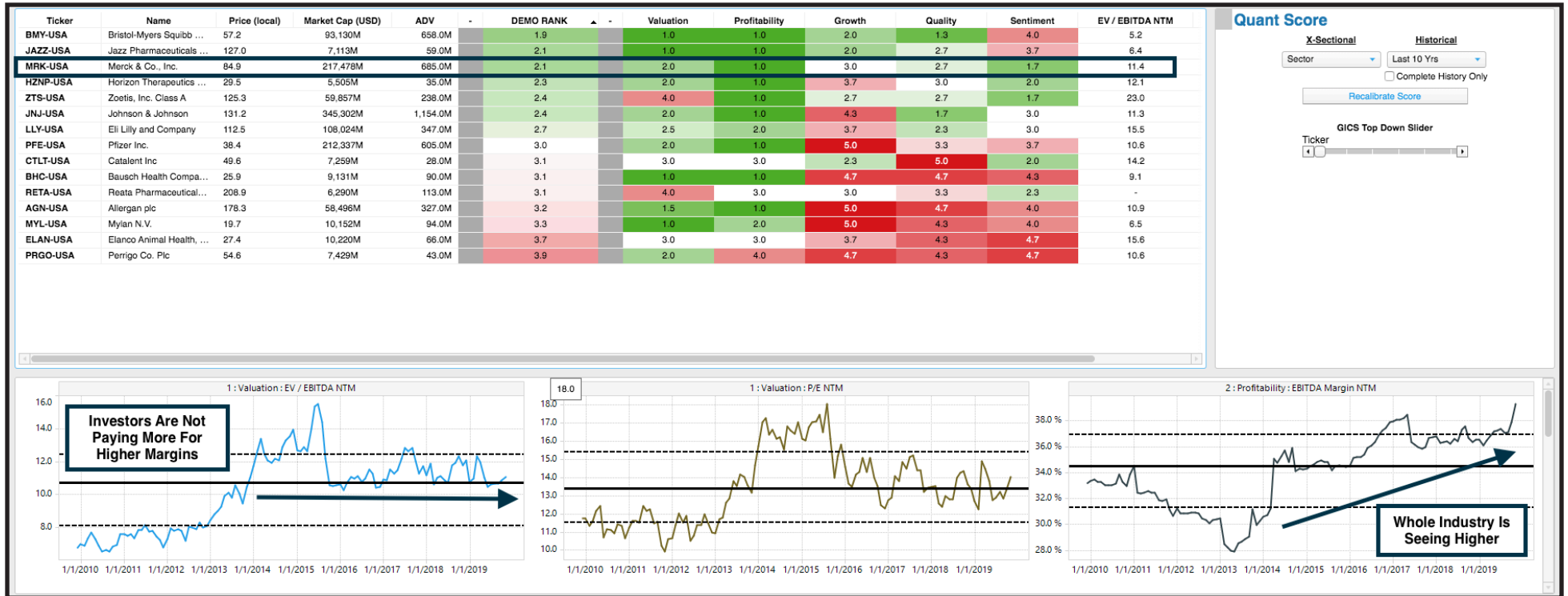


Figure 2. Cross-Sectional Industry Analysis:

While it is important to focus on Merck, we also need to put their performance into context. relative to the US Pharma industry. EDS provides rigorous search, screening and ranking, both historically and cross-sectionally (snap shot in today’s market). In this case, margins have been rising for the whole industry and are at multi-year highs. In addition, the valuation multiple (EV/EBITDA) investors are paying has been flat for several years. A natural question for your research would be to ask why are investors paying a lower valuation multiple for better margins?



IDEA GENERATION COMP SHEET

Compares													
Ticker	Price (USD)	Market Cap	EBITDA Beat %	Return (YTD)	EV / EBITDA CY1	EV / EBITDA CY2	EBITDA Growth CY2	EBITDA Margin CY1	EBITDA Margin CY2	P/E CY1	P/E CY2	EPS Growth CY2	Short Interest (1M Chg)
JAZZ-USA	127.0	7,113M	64 %	2 %	7.1	6.3	12.8 %	53.2 %	54.4 %	8.5	7.5	13.2 %	3 %
PFE-USA	38.4	212,337M	27 %	-12 %	10.0	10.7	-6.1 %	47.8 %	49.4 %	13.3	14.2	-6.3 %	-16 %
AGN-USA	178.3	58,496M	82 %	33 %	10.8	10.9	-1.1 %	47.4 %	46.5 %	10.6	10.6	0.7 %	21 %
BMY-USA	57.2	93,130M	44 %	10 %	11.1	4.7	133.2 %	33.3 %	45.0 %	13.2	12.4	6.7 %	3 %
MRK-USA	84.9	217,478M	73 %	11 %	12.1	11.2	8.1 %	42.2 %	43.1 %	16.8	15.3	9.9 %	19 %
ZTS-USA	125.3	59,857M	73 %	47 %	25.0	22.7	10.4 %	41.4 %	42.8 %	35.1	31.5	11.4 %	18 %
BHC-USA	25.9	9,131M	82 %	40 %	9.3	9.1	2.1 %	41.4 %	41.1 %	6.1	5.8	5.5 %	18 %
JNJ-USA	131.2	345,302M	58 %	2 %	12.2	11.1	9.4 %	35.8 %	37.7 %	15.1	14.4	5.2 %	17 %
HZNP-USA	29.5	5,505M	82 %	51 %	13.0	12.0	8.6 %	36.3 %	36.9 %	16.2	14.7	9.9 %	12 %
LLY-USA	112.5	108,024M	36 %	-3 %	17.5	15.2	15.5 %	31.5 %	34.4 %	19.5	17.3	12.4 %	-12 %
MYL-USA	19.7	10,152M	45 %	-28 %	6.7	6.5	2.8 %	30.1 %	29.9 %	4.6	4.4	5.1 %	13 %
ELAN-USA	27.4	10,220M	75 %	-13 %	17.1	15.4	11.1 %	23.3 %	25.3 %	25.5	22.1	15.6 %	3 %
CTLT-USA	49.6	7,259M	73 %	59 %	16.0	14.0	14.3 %	24.5 %	25.3 %	26.2	23.5	11.5 %	-1 %
PRGO-USA	54.6	7,429M	45 %	41 %	11.1	10.5	5.8 %	18.8 %	19.3 %	13.9	12.8	8.4 %	9 %
RETA-USA	208.9	6,290M	-	272 %	-	-	-	-	-	-	-	-20.6 %	10 %

	Sentiment				Valuation				Profitability				Growth						
	MRK-USA	Median	P10	P90	MRK-USA	Median	P10	P90	MRK-USA	Median	P10	P90	MRK-USA	Median	P10	P90			
EBITDA Beat %	73%	68%	39%	82%	EV / EBITDA CY1	12.1	11.6	7.8	17.4	EBITDA Margin CY1	42.2%	36.1%	23.7%	47.7%	EBITDA Growth CY2	8.1%	9.0%	-0.2%	15.2%
Return (YTD)	11%	11%	-13%	56%	EV / EBITDA CY2	11.2	11.0	6.4	15.3	EBITDA Margin CY2	43.1%	39.4%	25.3%	48.5%	EPS Growth CY2	9.9%	8.4%	-3.5%	12.9%
Short Interest (1M Chg)	19%	10%	-8%	19%	P/E CY1	16.8	14.5	6.8	26.0										
					P/E CY2	15.3	14.3	6.3	23.1										

Figure 3. Comp Sheet for Peer Analysis

While Merck's margins are slightly higher than peers, its projected growth rate is a bit lower. Making the case for a higher valuation (*EV/EBITDA 2020 multiple of 11.2X is in-line with peers and the 2020 PE of 15.3X is already higher*) would likely rely on the company exceeding estimates. A case for this might be made, as we can see Merck has beaten EBITDA estimates 73% of the time over the last three years. However, offsetting this positive datapoint is a 19% increase in short interest (people betting stock is going down) over the past month (at the time of this report).