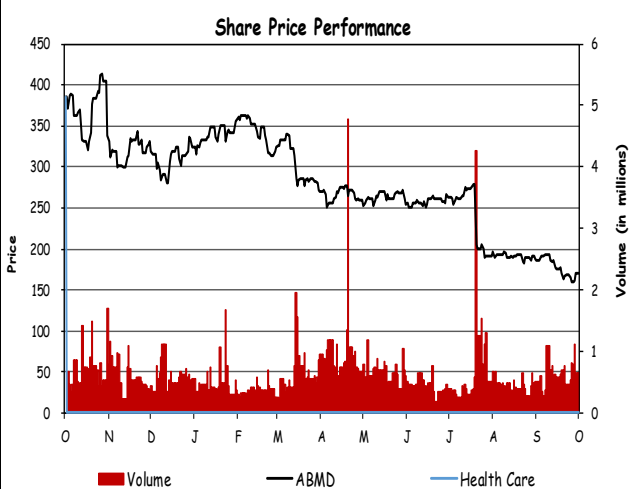


Write up #1: Michael Rautter

Abiomed, Inc.	Symbol: ABMD
Analyst	Mike Rautter
Buy below	\$199.08
Sell above	\$292.03
Probability of Price Increase	98%
Last Price	\$169.64
Intrinsic Value	\$233.62
Target Dividends	\$0.00
Target Price	\$248.85



Description

Abiomed, Inc. engages in the research, development, and sale of medical devices to assist or replace the pumping function of the failing heart.

Sector	Health Care
Industry	Health Care Equipment and Supplies
Last Guidance	December 11, 2018
Next earnings date	October 31, 2019

People

Minogue, Michael, Chairman, CEO & President
Trapp, Todd, CFO & VP
Weber, David, Senior VP & COO
Howley, Michael, VP & GM of Global Sales
Greenfield, Andrew, VP & Chief Commercial Officer
McLeod, Ian, VP & Corporate Controller

Top Competitors

Edwards Lifesciences Corporation	Cardiovascular Systems, Inc.
Insulet Corporation	Penumbra, Inc.
Boston Scientific Corporation	Teleflex Incorporated
LivaNova PLC	Globus Medical, Inc.
AtriCure, Inc.	MicroPort Scientific Corporation

Investment Thesis

High Flying Growth Story but not up to Wall Street Standards. ITS CHEAP!

I am initiating coverage of Abiomed, Inc. with a STRONG BUY at the current market price of \$169 with a target price of \$255. Abiomed is the founder and leader in the heart recovery field. Their Impella product line is the major driver of growth and has been the fastest growing medical device products for the last five years. The circulatory heart pumps provide better outcomes while being the most cost effective solution in the heart recovery industry. ABMD benefits from being the only provider of the Impella products as there is no other products like Impella and no other FDA approvals for this patient population. ABMD has experienced immense growth of 165% in revenue for the last five years from the initiation of the Impella products. ABMD is expanding geographically into European and Asian markets. The company has new products in the pipeline and new indications of countries on the horizon. As a result, ABMD has a clear path to long-term sustainable growth, coupled with strong profitability and a robust balance sheet. Abiomed is well positioned for the future.

For the long:

1. Cardiovascular devices market is expected to reach a value of \$80.68 billion by 2022, at a CAGR of 5.7%.

Coronary artery disease is the number one killer in the U.S and cardiogenic shock has become a clinical crisis, carrying one of the highest mortality rates of approximately 50% nationwide over the last 20 years without Impella technology. Impella products are in all 100 of the top 100 U.S. heart hospitals in the country. The reorder rate is slightly above 100% and the average combined inventory at hospitals is roughly 4.4 units per site. There is a large opportunity for adoption as the company expands internationally. I believe the growing demand for a cost-effective product that provides improved outcomes for patients will contribute to long-term growth.

2. Clinical superiority supported by extensive data

An important aspect of ABMD's business is providing a product that outperforms the industry in improved outcomes for patients. Research has shown the Impella products have improved the survival rate from 50%-82% when cardiogenic shock occurs. The Impella products outperforms all alternative heart recovery options. The success stories provide concrete evidence that the product produces positive outcomes. I believe the company's ability to consistently produce positive product performance will continue to drive adoption.

3. Expanding Impella products across the world

Germany and Japan have adopted Impella and sales have been growing YOY in both countries. Foreign revenues account for 15% of total revenues. Japan has recently treated their 1000th patient using the Impella products and hospitals are continuing to adopt the devices. The company has stated that they are confident in their foreign growth and they believe there are more opportunities on the horizon. I believe international revenues will be a large driver of growth and contribute to long-term sustainability.

For the short:

1. Decrease in performance outcomes

The company has been increasing product performance thus far, I expect positive performances to continue with more advanced technology in the pipeline. If performance is poor, my revenue assumptions will be

2. Slower adoption of Impella:

If the company fails to maintain FDA approvals or get products FDA approved then my prediction of growth through product adoption will be overstated.

Key Catalysts for price change

- Advanced products released and market approved
- Positive product performance
- Increase in earnings through internal growth methods and product adoption

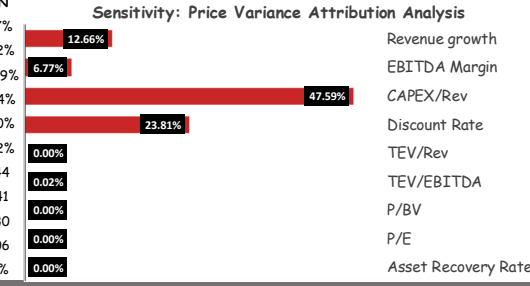
Valuation
 My \$255 price target is derived from 50% Discounted Unlevered Free Cash Flow estimates and 50% EV/EBITDA.

Write up #1: Michael Rautter

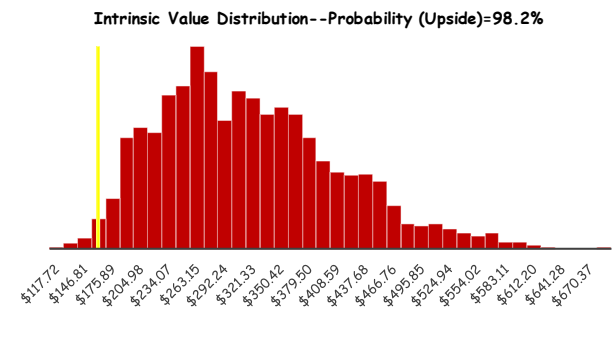
Abimed, Inc.	Symbol: ABMD	Cost of Capital Estimates		
Analyst	Mike Rautter	CGFS Credit Rating	Credit Rating Model	Probability of Default ModelModel
Buy below	\$199.08	Implied Cost of Borrowing (ABMD)	3.0%	3.1%
Sell above	\$292.03	Implied Cost of Borrowing (Peers)	4.5%	3.9%
Probability of Price Increase	98%	Base Year	Explicit Period (15 years)	Continuing Period
Last Price	\$169.64	Cost of New Debt Estimate	1.90%	1.90%
Intrinsic Value	\$233.62	Country Risk Premium Estimate	4.77%	4.77%
Target Dividends	\$0.00	Cost of Equity Estimate	6.67%	6.67%
Target Price	\$248.85	WACC Estimate	6.66%	6.66%

Fiscal Year	Revenue Growth	EBITDA Margin	CAPEX/Revenue	DPR/CAPEX	Other
Base Year (Actual)	33.76%	37.3%	5.7%	0.32	SBC/Revenue 6.95%
year 1	14.49%	31.6%	5.7%	0.32	Constant/same as LTM
year 2	17.89%	33.4%	5.8%	0.32	Lease term 10
year 3	16.72%	33.5%	5.8%	0.32	Rent Expense/Revenue 0.58%
year 4	16.18%	36.2%	5.8%	0.32	Tappers off to historical average
year 5	15.04%	35.8%	5.8%	0.32	R&D life 10
year 6	13.91%	35.5%	5.8%	0.32	R&D Expense/Revenue 10.52%
year 7	12.77%	35.1%	5.8%	0.32	Constant/same as LTM
year 8	11.63%	34.8%	5.9%	0.32	LIFO Reserve Tappers off to zero
year 9	10.49%	34.4%	5.9%	0.32	Non-operating pension costs Tappers off to zero
year 10	9.35%	34.1%	5.9%	0.32	Net financing pensions costs Tappers off to zero
year 11	8.21%	33.7%	5.9%	0.32	Overfunded pension plans Tappers off to zero
year 12	7.07%	33.4%	5.9%	0.32	Capitalized interests Constant/same as LTM
year 13	5.93%	33.0%	5.9%	0.32	Dividends/Revenue 0.00%
year 14	4.80%	32.7%	6.0%	0.32	Tax Rate 25.65%
year 15	3.66%	32.0%	6.0%	0.32	
Continuing Period	2.52%	32.0%	6%	0.32	

Random Variables	Distribution Assumption	MAX	Likely	MIN
Deviations in annual Revenue Growth--Expl. Per.	Triangular	20.00%	0%	8.57%
Deviations in annual Revenue Growth --Cont. Per.	Normal	1.52%	0%	-1.52%
Deviations from EBITDA Margin base annual estimates	Triangular	4.22%	0%	-21.29%
Deviations from CAPEX/Revenue base annual estimates	Triangular	1.59%	0%	-2.04%
Deviations from Kd base annual estimates	Triangular	5.29%	0%	-1.90%
Deviations from CRP base annual estimates	Triangular	1.82%	0%	-1.92%
Deviations from TEV/Revenue base estimate	Triangular	8.24	0%	-3.44
Deviations from TEV/Revenue base estimate	Triangular	105.44	0%	-6.41
Change in P/BV (TTM)	Triangular	31.32	0%	-3.30
Change in P/E (FW)	Triangular	128.49	0%	-5.06
Recovery Rate	Triangular	10.00%	0%	-10%



DCF Valuation	Base	Explicit Period (Average)	Continuing Period
Revenues	\$797.09	\$2,307.62	\$3,974.60
EBITDA Margin	39%	34%	32%
UFCF	\$190.54	\$586.64	\$946.14
WACC	6.66%	6.66%	6.66%
ROIC	25.00%	28.20%	24.66%



Relative Valuation	Median Justified Multiple	Basis	Implied Equity Value
EV/Rev (FW)	5.9x	\$962.06	\$6,246.00
EV/EBITDA (FW)	21.4x	\$309.24	\$7,241.42
P/BV (TTM)	5.6x	\$1,525.54	\$8,565.97
P/E (FW)	27.1x	\$270.69	\$7,329.07

Asset Based Valuation	Recovery Rate	Capital	Intangibles	Claims	Implied Equity Value
Recovery Rate	60%	\$11,865.13	\$38.19	\$13.67	\$7,082.50

Valuation Summary	Intrinsic Value	Target Price	Model Weight
DCF Valuation	\$ 326.74	\$ 346.89	50%
EV/Rev (FW)	\$ 133.62	\$ 142.51	0%
EV/EBITDA (FW)	\$ 154.91	\$ 165.23	50%
P/BV (TTM)	\$ 183.25	\$ 195.45	0%
P/E (FW)	\$ 156.79	\$ 167.23	0%
Asset Based Valuation	\$ 151.51	\$ 161.60	0%
Price per Share	\$ 240.83	\$ 256.06	100%