

October, 25 2018

Abiomed: (ABMD)

Eric Munn

Sector: Medical Device

Industry: Healthcare

Current Price:

Target Price:

Description: Abiomed is essentially a monopoly addressing a highly under penetrated market opportunity with a critical unmet need. This unmet need is the ability to ensure blood flow to critical organs during high-risk procedures on the heart.

BUY/HOLD/SELL

- Current Price: \$330.35
- Target Price: \$397.76
- Market Cap: 15B
- EBITDA: 28.4
- WACC: 8.125
- Short Interest Ratio: 1.44
- Zero Debt



Purple: Edward Life Sciences

Green: ICU Medical Corp

Thesis:

The recent drop in price does not reflect the value of ABMD and is an opportunity to buy. Abiomed has significant opportunity for growth within its current 5B market of 210,000 patients and no direct competition. They have a new indication going through the FDA approval process that could lead to 200,000 new patients and runaway growth.

Catalysts:

- Short Term(within the year): Market penetration within current indications
- Mid to long Term(1-4 years): STEMI Indication continues approval process

Earnings Performance:

Abiomed's marginal EBITDA had a 31% YoY increase from 2017-2018. They are having a massive increase in revenue, which is allowing them to spend more on growing the company, while maintaining this level of EBITDA. They will continue with this trend as their products gain more market exposure.

In Millions of USD	2011 Y	2012 Y	2013 Y	2014 Y	2015 Y	2016 Y	2017 Y	2018 Y	Current/LTM
12 Months Ending	03/31/2011	03/31/2012	03/31/2013	03/31/2014	03/31/2015	03/31/2016	03/31/2017	03/31/2018	06/30/2018
Market Capitalization	547.9	871.5	720.7	1,039.4	2,958.8	4,038.5	5,467.9	12,912.8	14,825.2
- Cash & Equivalents	60.3	77.2	88.1	118.3	146.0	213.1	277.1	399.8	367.4
+ Preferred & Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
+ Total Debt	0.0	0.0	0.0	0.0	0.0	0.0	16.3	0.0	0.0
Enterprise Value	487.6	794.2	632.6	921.1	2,812.9	3,825.5	5,207.1	12,513.0	14,457.8
Revenue, Adj	101.2	126.4	158.1	183.6	230.3	329.5	445.3	593.7	641.3
Growth %, YoY	18.0	24.9	25.1	16.1	25.4	43.1	35.1	33.3	35.1
Gross Profit, Adj	79.2	101.9	126.5	146.3	190.4	279.1	374.7	495.2	533.7
Margin %	78.3	80.6	80.0	79.7	82.7	84.7	84.1	83.4	83.2
EBITDA, Adj	-7.2	5.9	22.4	17.1	32.5	68.4	96.3	168.1	182.3
Margin %	-7.2	4.6	14.1	9.3	14.1	20.8	21.6	28.3	28.4
Net Income, Adj	-12.1	0.8	17.0	11.4	27.9	38.1	55.2	90.2	142.9
Margin %	-11.9	0.7	10.8	6.2	12.1	11.6	12.4	15.2	22.3
EPS, Adj	-0.33	0.02	0.42	0.28	0.65	0.85	1.24	1.97	3.10
Growth %, YoY	48.2	-	1,828.4	-33.9	134.2	31.1	45.8	59.0	76.1
Cash from Operations	1.6	3.6	26.4	23.5	43.3	76.8	115.1	192.5	202.9
Capital Expenditures	-1.8	-1.7	-2.8	-2.8	-5.2	-15.6	-50.4	-55.9	-61.2
Free Cash Flow	-0.2	1.9	23.6	20.7	38.1	61.2	64.7	136.7	141.7

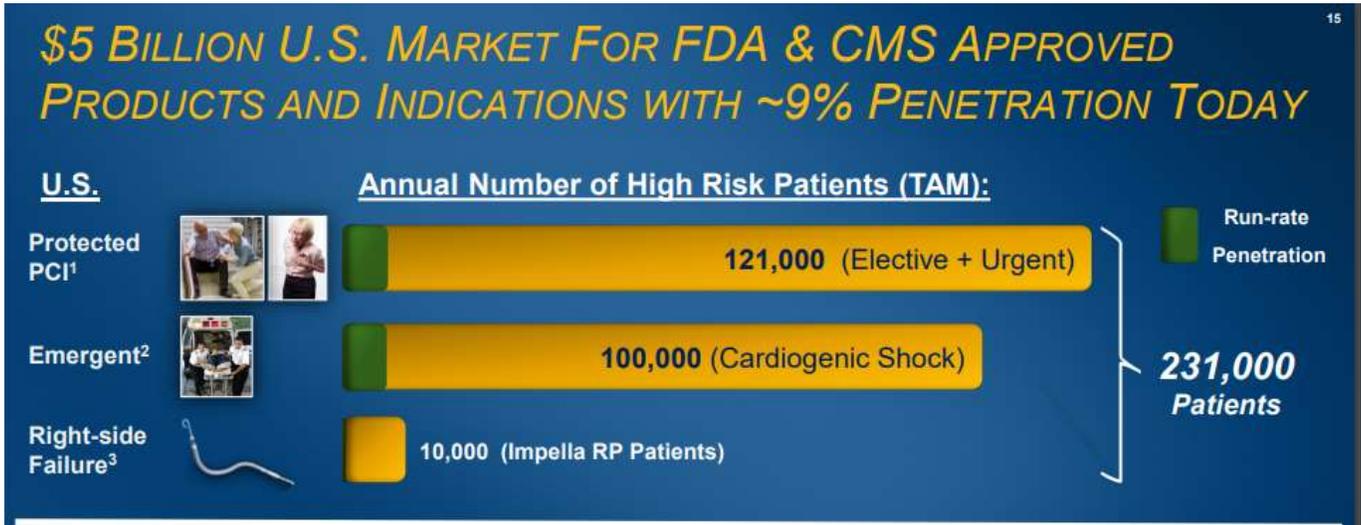
Medical Device Industry Outlook:

The medical device sector has outperformed the healthcare industry. The Centers for Medicare & Medicaid Services National Health Expenditures projects steady growth in Hospital Care at around 5.6 percent, which is up from 4.6 percent over 2016 and 2017. The baby boomer population is getting to the age where they will need more and more healthcare. Heart care is currently #1 in The 2016 American Heart association report predicted heart care expenditures to jump from \$555B in 2016 to \$1.1T by 2035. Major growth is inevitable for Abiomed if they can keep up with the rising demand.

Competition and Market Penetration:

A major plus for investors is the lack of competition Abiomed faces. Impella heart pumps are currently the only FDA PMA approved minimally invasive hemodynamic support devices for high risk PCI or cardiogenic shock. When questioned regarding market entrants, the CEO suggested that any similar device is at least 4 to 6 years out.

The current FDA approved products and their approved indications have a 5 billion dollar annual U.S. market based on number of high-risk patients. Now, what is so exciting about this company's potential for organic growth is its lack of market penetration. Of the 210k potential patients who stand to benefit from treatment from Impella, only 9-10% with the products.



Business Model:

Their business model is set for success. A sales representative convinces the decision makers at a hospital to use the Impella Device. Once they are on board, the hospital orders a few. If the surgeons give positive reviews, they make a reorder.

Something that jumped out was that in the total surgeries where Impella is used, 70% have an Abiomed employee in the operating room. This philosophy induces a relationship between Abiomed and the surgeon and helps to mitigate the risk of improper usage.

The Impella device has proven to lower length of hospital stay and overall hospital stay by reducing complications. Hospitals and surgeons have a goal to save patients' lives, but money runs the world. Reducing costs and saving lives is Abiomed's value proposition.

Training and Marginal Increase in Sales Force:

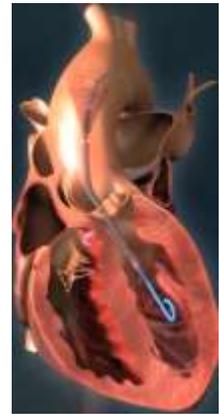
A major focus in the most recent earnings call was the training of physicians and internal sales force. In Q1 nearly half of the employees came to the commercial kickoff meeting. A combined 750 physicians were educated on product usage either through onsite training or at the heart recovery institutes in Danvers, Massachusetts and Aachen, Germany.

They added fifty-two employees to the company over Q1. Historically Abiomed had 5 to 10 additional distribution employees per quarter. Q1 had 14 hires, which is a 40% increase over the previous quarter. Sales force is the driving force behind growing the hospitals, surgeons, and patients. Management is strategically using the cash flow to increase value.

Current Indications and Related Products:

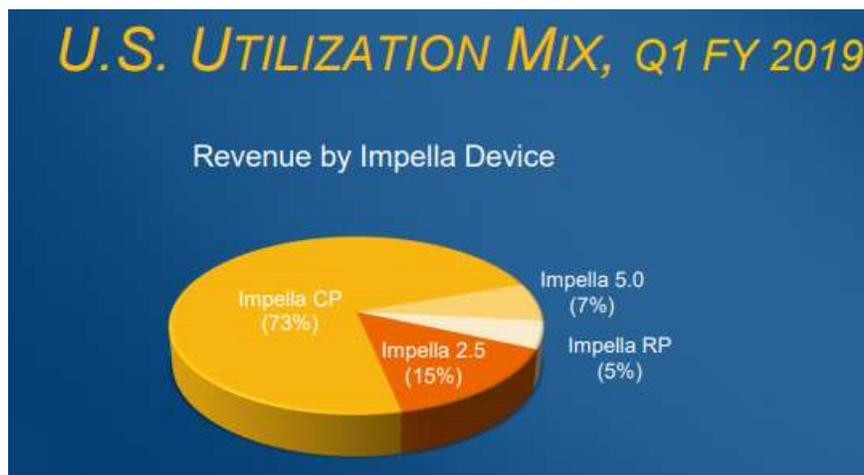
System Explained:

Physicians use Impella devices by inserting a catheter (tube) through an artery or vein, navigating and entering the heart, and artificially pumping blood to essential organs.



Indications:

- **Advanced Heart Failure: late stage weakening of the heart over time that often leads to death. Coronary artery disease and heart failure as a result is the #1 cause of death in the United States.**
 1. Impella 2.5 and Impella CP devices are approved to treat certain advanced heart failure patients undergoing elective and urgent percutaneous coronary interventions (PCI) such as stenting or balloon angioplasty, to re-open blocked coronary arteries.
 2. Protected PCI is the use of a device like Impella to provide extra blood flow, while a heart blockage is opened with a stent or angioplasty.
- **Cardiogenic Shock: extremely low blood flow from the heart. The heart cannot pump enough blood to essential organs. It happens most often after a severe heart attack. It is the #1 Cardiac Mortality Risk.**
 1. The Impella 2.5®, Impella CP®, Impella CP® with SmartAssist, Impella 5.0® and Impella LD® are FDA-approved heart pumps used to treat heart attack or cardiomyopathy patients in cardiogenic shock, and have the unique ability to enable native heart recovery, allowing patients to return home with their own heart.
 2. According to a 2015 to 2018 study done on 11,566 U.S. Patients with acute myocardial infarction cardiogenic shock, which is a severe heart attack with cardiogenic shock, the survival rate increased by 24% since Impella's FDA approval on the Cardiogenic Shock indication. The historical survival rate was at around 50%. Patients and physicians have benefited to a major extent.
- **Right Heart Failure**
 1. Abiomed's right-side heart pump, the Impella RP® device, is FDA approved to treat patients experiencing acute right heart failure or decompensation following left ventricular assist device implantation, myocardial infarction, heart transplant, or open-heart surgery.



Market Share Increase:

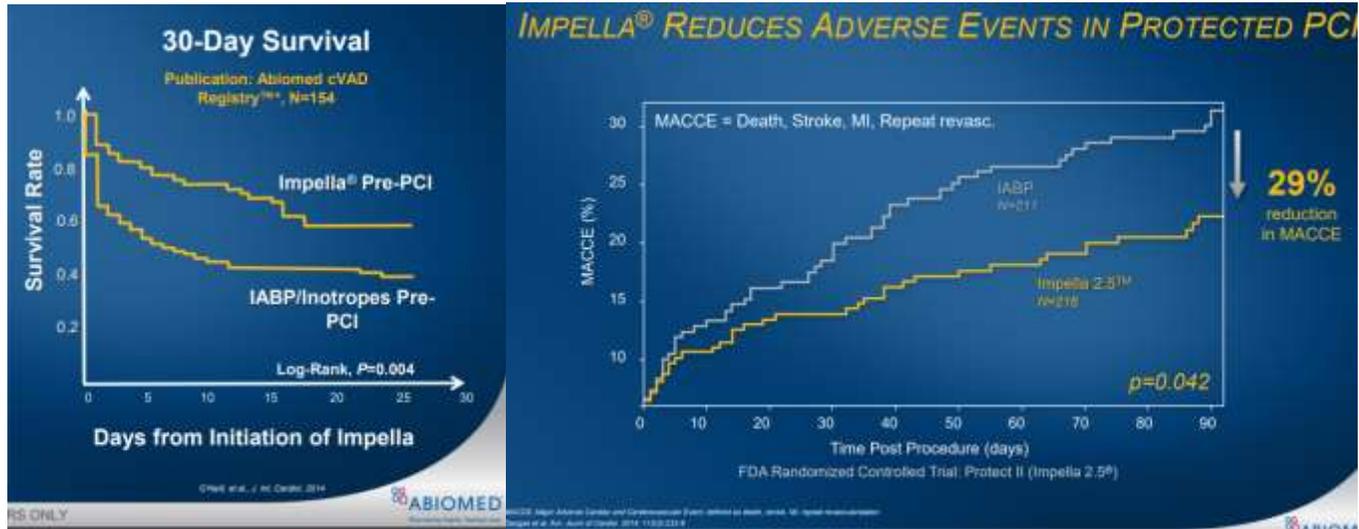
In the first quarter of fiscal 2019, Impella adoption in the Protected PCI and cardiogenic shock grew 24% and 37%, respectively.

Utilization of Devices:

88% of the revenue comes from the Impella CP and Impella 2.5. The primary use of these devices is in cardiogenic shock and Protected PCI procedures. The figures below show the survival increases in these procedures.

The figure on the left depicts the increase in survival rate versus the older technology for cardiogenic shock.

The figure on the right depicts the increase in survival rate versus older technology for Protected PCI.



Higher Investment in R&D

R&D jumped 26% in Q1 from the previous year. They are focusing on utilizing their revenue to invest in products in the pipeline. The earnings call specifically mentioned the clinical costs for an entirely new indication. The overall R&D expense has continued to grow YoY. Fiscal 2018 had an increase of \$8.9 million, or 13%, to \$75.3 million from \$66.4 million for fiscal 2017.

Abiomed’s future cash flows rely on the success rate of their research and development. More successful indications and products available on the market, brings more value to the investors.

Current Product Pipeline:

Impella 5.5: 2018 CE marked. 30-day, ambulatory, wean-able, forward-flow unloading heart device with peak flows of more than 6 liters per minute

Impella ECP: blood flow of greater than three liters per minute

Impella BTR: micro heart pump with integrated motors and sensors

Pre-Clinical Study & New Indication:

On February 14, 2018 the Impella 2.5 and Impella CP heart pumps were given extended FDA approval beyond their previous scope. The price reflected the additional possible revenue. The price below reflects the jump.



STEMI Indication:

STEMI Explained:

STEMI is a type of major heart attack. Abiomed hopes to provide an Impella system that reduces the possibility of heart failure in situations where cardiogenic shock does not occur. The basic idea is to prevent heart failure for patients who have severe heart attacks.

The just completed a feasibility trial, which is test in a small number of patients. The results of the trial will be unveiled on November 1, 2018 at the American Heart Association. Abiomed was tight lipped on the approval for RCT (random clinical trials), but they seem optimistic, because they often mention it in their releases and presentations.

Investor Presentation Information on STEMI:

- FDA approval of feasibility study to evaluate Impella CP® use patients with ST segment elevation myocardial infarction (STEMI), without cardiogenic shock.
- Hypothesis: Unloading may have impact on infarct size related to reperfusion injury in STEMI patients.

- STEMI patient represents a potential new patient indication (200k / year) that may benefit from Impella unloading the left ventricle.

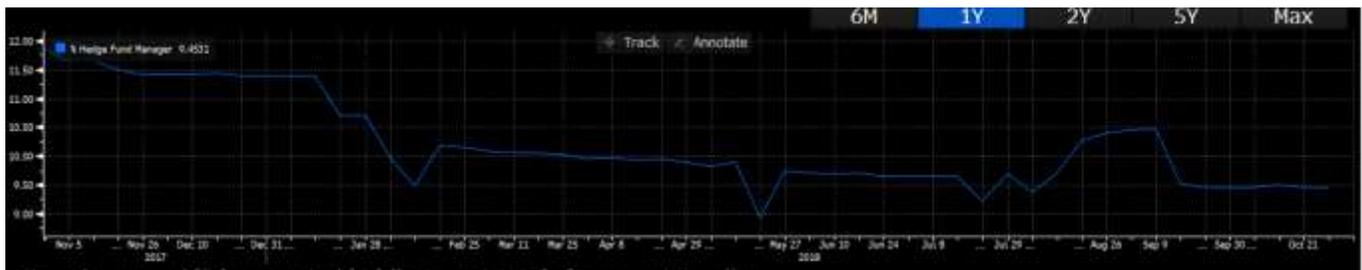
What does this mean?

The current patient population for Impella devices is 210,000 patients. If approval for STEMI patients happens, Abiomed will have access to 200,000 new patients. The potential market doubling will create runaway growth for Abiomed.

They have shown proven profitability in their other indications. It is important to note that as great of technologies purpose, the bottom line is that physicians need to adopt it. Their increased use of the impella system gives cause for belief in this study and belief in adoption.

Ownership:

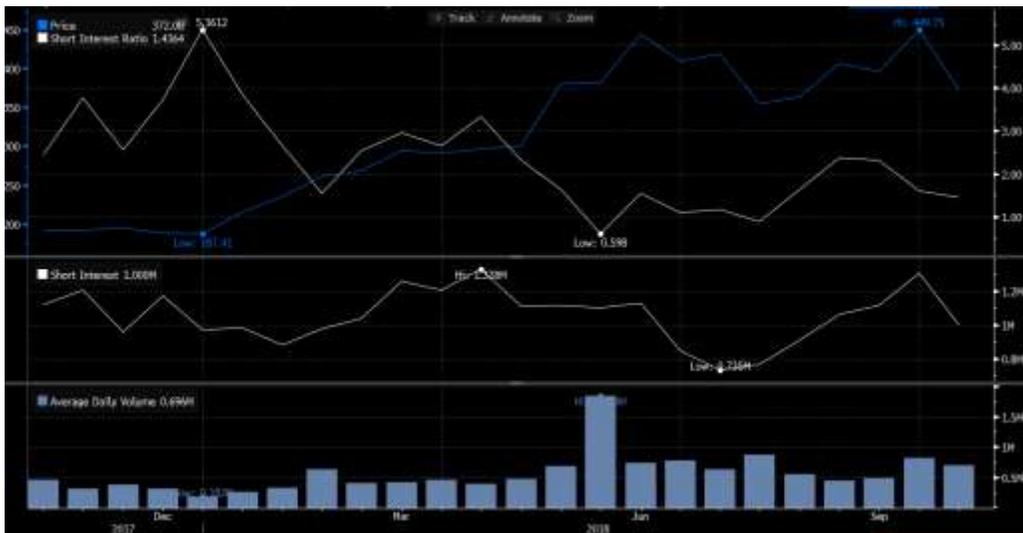
Ownership Type	10/21/18	Curr]	Change
1) Investment Advisor	76.58	76.53	-0.05
1) Hedge Fund Manager	9.46	9.46	0.00



% of Hedge fund managers have fluctuated during this year, but the last two months have been consistent. This means that

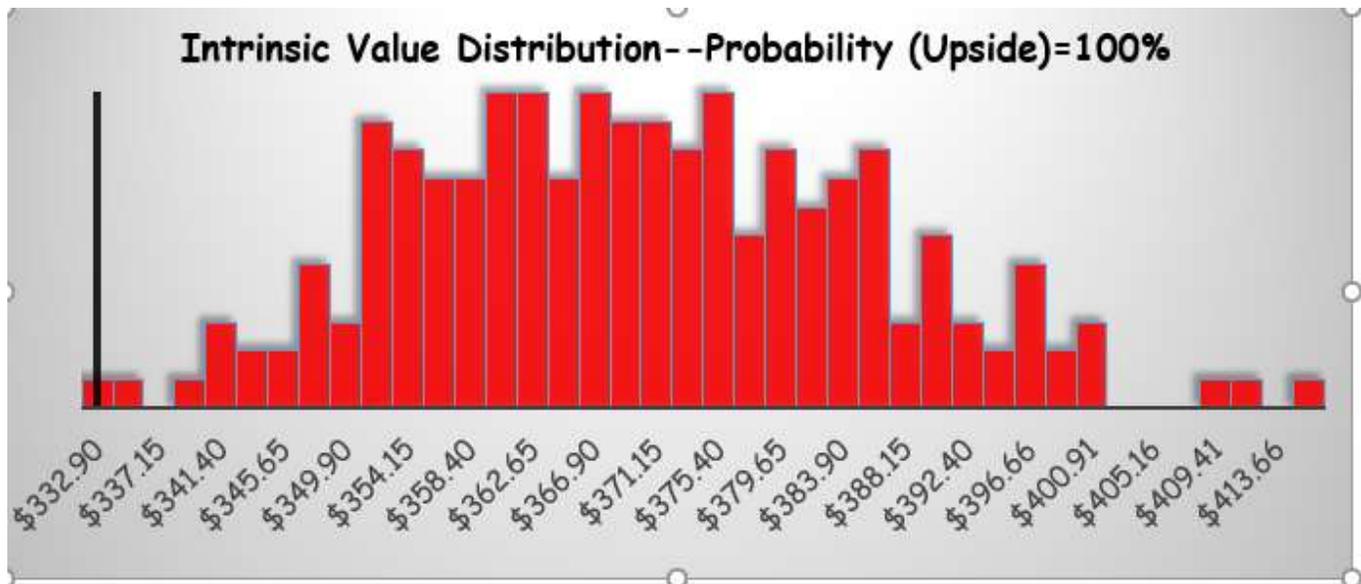
Short Interest:

The short interest ratio has trended downward, reflecting positivity on the stock, and/or a possible profit take on their shorts.

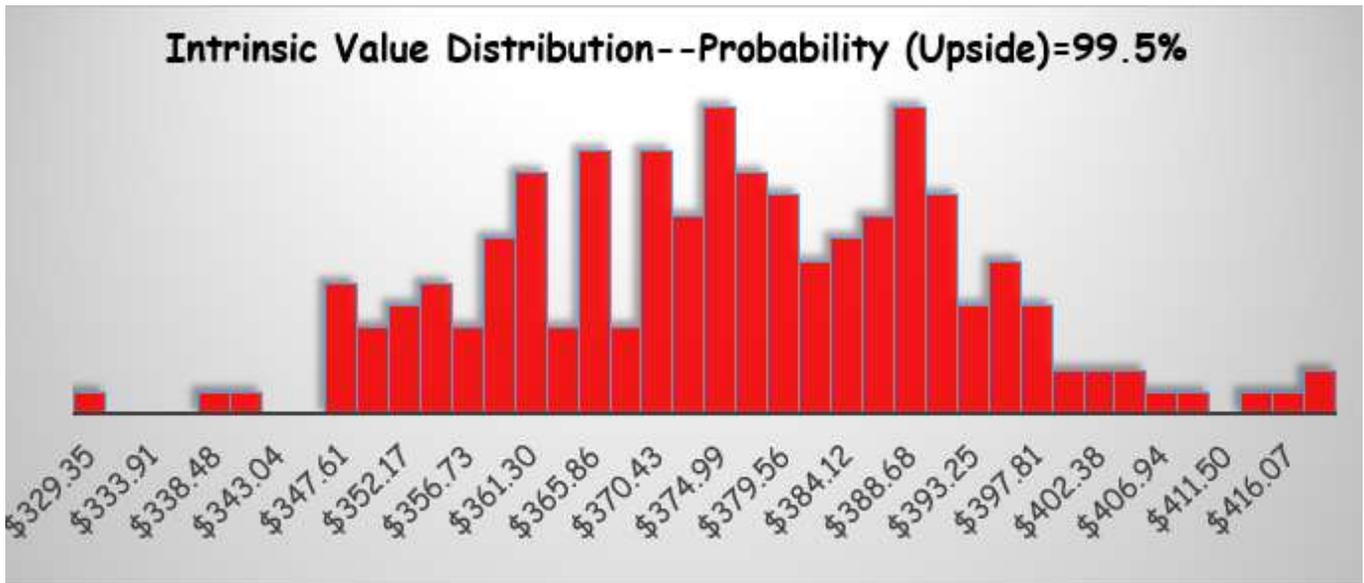


Sensitivity Analysis:

Base Case: Median Analyst Estimates. Intrinsic value at \$369.35 and target at \$397.76

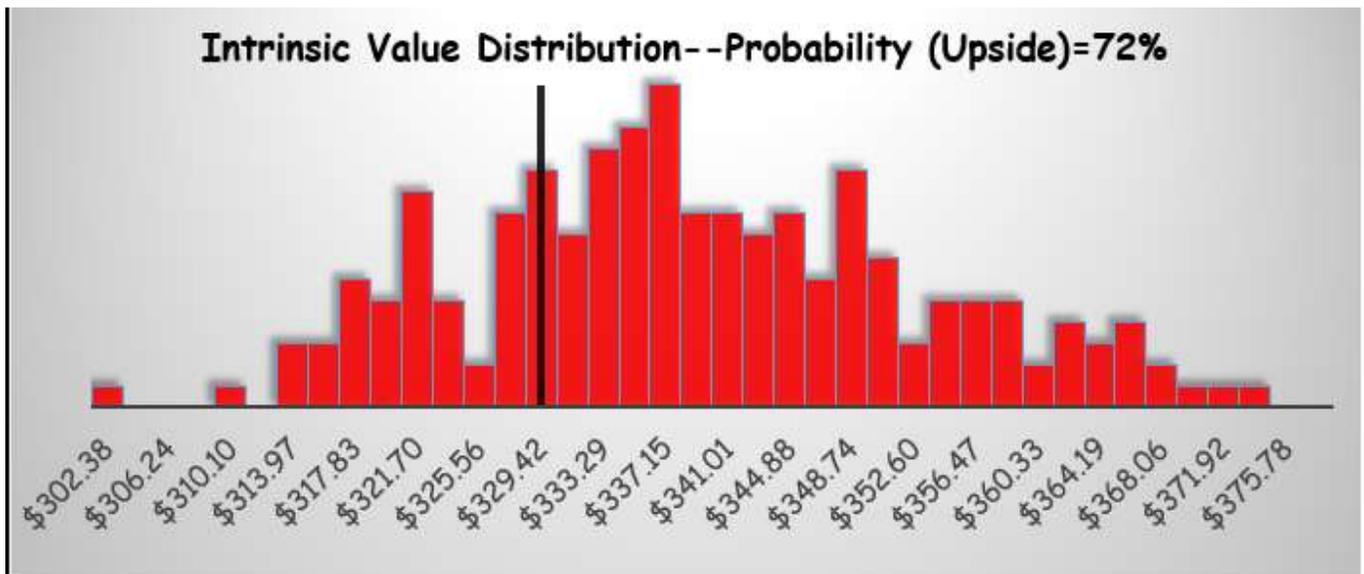


Bullish Case: 1% increase in revenues for 2022 and 2023, STEMI FDA approval happens early. Intrinsic value at \$375.47 and target at \$403.99



Bearish Case:

STEMI fails and slows growth by 2% for 2022-2028. Intrinsic value at \$337.61 and target at \$363.44.



Conclusion:

Abiomed is in position for runaway growth with their business model. They have no current completion, and any comparable device is 4-6 years out at the earliest. They are strategically growing their ability to utilize their remarkable Impella devices with new indications. Their opportunity to double the patients they can reach with the STEMI indication is cause to buy into this company at the current price.

ABIOMED, Inc. (ABMD)
CENTER FOR GLOBAL FINANCIAL STUDIES
BULLISH
Analysis by Al Capone
 10/26/2018

Current Price:
Dividend Yield:
\$330.35
0.0%
Intrinsic Value
Target Price:
\$46.21
\$397.17
Target 1 year Return: 20.23%
Probability of Price Increase: 0%


Description	
ABIOMED, Inc. engages in the research, development, and sale of medical devices to assist or replace the pumping function of the failing heart.	
General Information	
Sector	Health Care
Industry	Health Care Equipment and Supplier
Last Guidance	July 26, 2018
Next earnings date	November 1, 2018
Market Assumptions	
Estimated Equity Risk Premium	5.12%
Effective Tax Rate	21%

Market Data	
Market Capitalization	\$14,925.17
Daily Volume (mil)	0.75
Shares outstanding (mil)	44.88
Diluted shares outstanding (mil)	45.99
% shares held by institutions	91%
% shares held by investment Managers	74%
% shares held by hedge funds	11%
% shares held by insiders	2.15%
Short interest	2.23%
Days to cover short interest	1.55
52-week high	\$459.75
52-week low	\$177.40
Volatility	40.91%

Quarter ending	Revenue	EBITDA
6/30/2017	1.24%	8.24%
9/30/2017	1.24%	7.95%
12/31/2017	0.01%	14.17%
3/31/2018	6.43%	7.05%
6/30/2018	2.25%	-2.62%
Mean	2.43%	6.96%
Standard error	20.2%	29.0%

Market and Credit Scores	
Recommendation (STARS) Value	-3
Recommendation (STARS) Description	Hold
Quality Ranking Value	-B-
Quality Ranking Description	Lower
Short Score	-0
Market Signal Probability of Default % (Non-Rating)	-0.05%
Credit Model Score (Non-Rating)	N/A

Industry and Segment Information	
LTM Revenue by Geographic Segment	LTM Revenue by Business Segments
United States--8%	Research, Development and Sale of Medical Devi
International--11%	--
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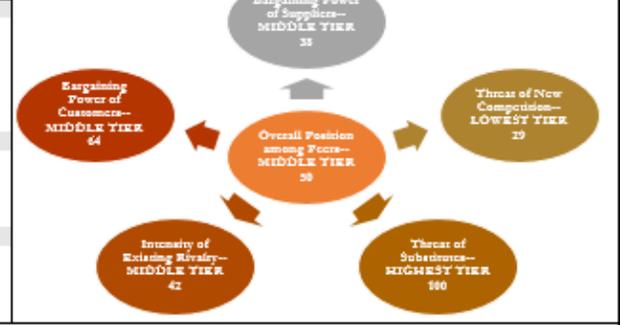
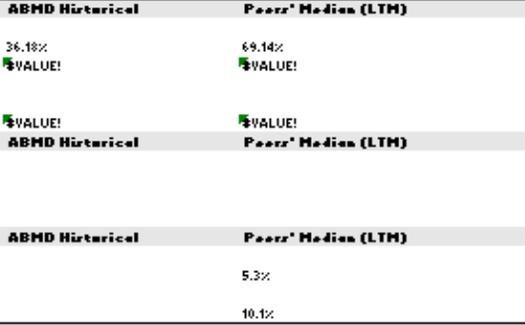
Management	Partitions	Total Compensation Growth	Stock Price Growth During Tenure
Minaque, Michael Chairman, CEO & President		18.24% per annum over 6y	9.85% per annum over 6y
Weber, David Chief Operating Officer		9.66% per annum over 6y	9.85% per annum over 6y
Hauley, Michael VP & GM of Global Sales		9.47% per annum over 6y	9.85% per annum over 6y
Balt, William Senior Vice President of Global Quality, Regula		9.68% per annum over 6y	9.85% per annum over 6y
McLeod, Ian VP & Corporate Controller			40.57% per annum over 6y
Trapp, Todd CFO & VP			

Profitability		ABMD Historical		Peer's Median (LTM)	
Return on Capital (GAAP)					
Operating Margin	82%	36.18%		69.14%	
Revenue/Capital (GAAP)	VALUE!	VALUE!		VALUE!	
ROE (GAAP)					
Net margin					
Revenue/Book Value (GAAP)		VALUE!		VALUE!	

Peer's 5 Forces (Scores are percentiles)	
Bargaining Power of Suppliers	MIDDLE TIER 35
Bargaining Power of Customers	MIDDLE TIER 64
Threat of New Competition	LOWEST TIER 19
Threat of Substitutes	HIGHEST TIER 100
Intensity of Existing Rivalry	MIDDLE TIER 42
Overall Position among Peers	MIDDLE TIER 58

Invested Funds		ABMD Historical		Peer's Median (LTM)	
Cash/Capital					
NWC/Capital					
Operating Assets/Capital					
Goodwill/Capital					

Capital Structure		ABMD Historical		Peer's Median (LTM)	
Total Debt/Market Capitalization					
Cost of Debt				5.3%	
CGFS Rating (F-rare, Z-rare, and default Probability: AA)				10.1%	
WACC	41.6%				



Forecast Assumptions	Explicit Period (13 years)	Continuing Period
Revenue Growth CAGR	18%	2.5%
Average Operating Margin	30%	29%
Average Net Margin	29%	25%
Growth in Capital CAGR	20%	3%
Growth in Claims CAGR	VALUE!	3%
Average Return on Capital	20%	11%
Average Return on Equity	20%	11%
Average Cost of Capital	8%	9%
Average Cost of Equity	8%	9%

Valuation	
Revenue	1.2%
Operating costs	24.2%
Capital expenditures	30.7%
Discount Rate	24.7%

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