

The University of Toronto

BDX (BD) Stock Valuation Project Group 23

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Executive Summary

A comprehensive analysis of Becton Dickinson was performed on its corporate financial policies. Part 1 provides an examination of the historical corporate financial policies of the company. Leveraging this information, the current valuation of the company was analyzed using a DCF model and market comparables in Part 2. In the final part of the report, we provide recommendations for the Executive Management Team to create value for BD going forward.

Part 1

Company Overview

Becton Dickinson (BD) is an American company in the medical technology industry operating globally in countries in North America, South America, Asia, Australia, and Europe. The business is centered around creating leading products and solutions to meet the clinical needs of healthcare professionals and patients through investing in R&D, acquisitions in growing markets, and providing reasonable access to medical technologies.[\[1\]](#)

BD operates through BD Medical, BD Life Sciences, and BD Interventional. Each provides products served to consumers such as hospitals, pharmacies, laboratories, government agencies, biotech companies, as well as the general public. BD Medical provides solutions for improving medical procedures. It had the highest revenue at \$9.5B and its gross profit margin rose from 26.2% to 27.3% in 2021. BD Life Sciences focuses on products and services for detecting diseases. Its 2021 revenues were \$6.5B which is lower than BD Medical, however, it had the highest gross profit margin of 36.6% and 30% in 2021 and 2020, respectively. Finally, BD Interventional develops vascular and critical care interventions. Its revenues were \$4.2B in 2021 and had the lowest gross margin at 22% in 2021 and 19.2% in 2020. Overall, BD has demonstrated growth in revenues since 2014, with the exception of 2017. Compared to 2020, its net income rose by 139% as a result of increase in operating margins and due to the COVID-19 pandemic. In addition, its ROA also increased from 1.1% in 2020 to 3.9% in 2021.[\[2\]](#)

Industry Overview

BD is part of the global medical technology industry that has a market size of approximately half a trillion USD.[\[1\]](#) Some competitors include Edwards Lifesciences EW-US, Boston and Intuitive Surgical ISRG-US, among others.

There is an expected continuation of supply chain challenges in the industry leading to increased supply costs, shipping costs, and supply chain disruptions. However, strategic cost cutting and price hiking can be done to help the industry sustain in this tougher time period. There are also speculations of constrained academic and government spending over the coming years.[\[2\]](#)

On the positive side, there is an increasing demand for medical tech companies as the aging baby boomer population places a large need for healthcare. As well, although COVID-19 testing demand is declining, there will be an increase in elective procedures for the healthcare industry as the COVID-19 virus alleviates, leading to increased demand for medical devices and larger R&D spending in the industry.[\[3\]](#) In 2019, 9.3% of the population suffered from diabetes and that proportion is expected to grow to 10.2% by 2030.[\[4\]](#) This fact is supported by the idea that there is also a growing prevalence of chronic diseases and large pushes for early diagnosis and treatment which adds to the increased demand in developed and emerging markets for healthcare technology. As well, there are high switching costs in this industry, allowing leading companies to maintain market capitalization. The industry is expected to grow around 5% per year between 2020-2030.[\[5\]](#)

Capital Structure

As of March 09, 2022, BD has an enterprise value of \$94.3M¹ which consists of \$78.2B of fully diluted equity capitalization, \$17.4B total debt and \$2,055 in cash and

¹ Millions of US dollars

equivalents.² The company has a debt-to-equity ratio of 76.4%.³ Within the medical technology sector, the financial leverage of comparables firms fluctuates significantly. Similar firms such as Lonzo Group and Fresenius have debt-to-equity ratios of 24.6% and 164.7% respectively.⁴

BD's low financial leverage is a result of its consistent ability to satisfy long-term debt obligations. Within the past five years, BD has significantly reduced its leverage from a debt-to-equity ratio of 145.7% in 2017 to 76.4% in 2021, demonstrating its financial ability to fulfill debt obligations. Although BD operates with a low end of leverage, its cash liquidity can only cover \$4,805M of its \$17,424M debt obligations which may indicate some financial uncertainty to its ability to satisfy future repayments.[\[1\]](#)

BD's capital structure corresponds with the pecking order theory. BD prioritizes internal funding and debt capital before relying on equity financing as shown in Figure 1. BD's most recent debt offering was in September of 2021 consisting of \$4,911 in bonds while its latest equity offering was May of 2020.

Dividend Policy

After comparing BD's dividend growth % to its competitors such as Baxter International, Cardinal Health, Eli Lilly, Medtronic, BD has performed within a reasonable range in the past ten-year period. For instance, BD has 7.18% annual growth whereas Cardinal Health and Medtronic have 8.83% and 10.2%, respectively.[\[1\]](#)

Furthermore, BD's competitor, Baxter International (BAX) planned to split the company in two which results in dividend uncertainty as maintaining the same dividend policy

² FactSet; Capital Structure

³ Year-end September 30, 2021

⁴ Year-end December 31, 2021

does not match with the company's strategy moving forward. Due to this uncertainty where the company does not have a clear direction, the BAX shares have devalued in investor's perspective and decreased from \$40 per share in December 2015 to \$33 per share right before its spin-off.[\[2\]](#)

Redistributing earnings back to shareholders is the interest for supporting the company for a long period. BD does not lack good investments nor have cash windfalls. By providing good dividend yield, companies are evaluated positively in terms of future prospects, which provides investors more incentives to hold on to the stock or invest more into the company.

M&A

BD acquired 26 firms, eight in the last five years, and spending over \$37.4B for the acquisitions.[\[1\]](#) M&A serves an integral role for BD in advancing its strategy of improving patient outcomes, reducing cost of care, and expanding access to customers around the world.[\[2\]](#) BD expects the M&As to contribute to growth in the coming years and BD has expressed intentions to expand into higher growth markets at the core of its strategy, outlining plans to spend \$2 billion per year on tuck-in acquisitions and to double sales from new products by 2025[\[3\]](#); throughout that period BD aims to achieve an annual growth rate of 5.5%.

BD's most targeted sectors include life sciences (28%) and medical products (44%); with 80% being directed towards transformative solutions such as smart connected care devices. Its largest sale was Discovery Labware to Corning for \$720M in 2012 and its largest acquisition was its acquisition of C. R. Bard for \$317 per common share for a total consideration of \$24B in 2017.[\[4\]](#) Through acquiring Bard, BD leveraged a broader product

portfolio which helped it gain a stronger market position against bigger companies such as Johnson & Johnson and Medtronic. The day following the announcement BD's stock price declined 4.4% as investors feared it may be moving too quickly with M&A activities, however management's commitment to raise funds quickly along with increased earnings in the following quarter quickly returned the price to pre-announcement levels.[\[5\]](#)

In recent market trends, broader portfolio offerings, international expansion, and increased scale have been the primary motivations of recent M&A activity. Looking at the 30 largest medical technology companies by revenue, more than 60% of their growth from 2011-2016 was due to M&A. Since the end of 2012, \$373B has been spent on M&As in the medical technology sector [\[6\]](#) and the increasing trend has yet to show any signs of decline.

Investments

In May 2021, BD announced in its press releases its efforts to “build a new €165M high-tech manufacturing facility in Zaragoza, Spain to support ongoing strong growth of pre-filled drug delivery business.”[\[1\]](#) The plant will supply European pharmaceutical companies drug delivery devices, and support COVID-19 Vaccine campaigns. Though still under construction, it is on track to be a fully digital site with the latest technology to meet sustainability standards. The facility will likely not be obsolete in decades and will help the company's growth going forward.

In July 2020, BD formed a PPP agreement (Public Private Partnership) with the U.S government which included a \$70M manufacturing infrastructure project for mass vaccination campaigns. The company fulfilled the initial pandemic order for 50M injection devices to

support the vaccination program. BD is looking to continue its partnership with the government to develop injection devices to support vaccination efforts.

Comparing the two investment opportunities, the expansion in Europe would likely have a higher discount rate than the PPP project with the U.S government as it involves more demand risks of the pharmaceutical companies and cost risks involving the construction of the factory, especially within the current market dynamics of supply chain issues, geopolitical tensions, and COVID-19-related uncertainties. Conversely, PPP projects are backed and guaranteed by a stable government with a more predictable cash flow.[\[2\]](#)

The outbreak of COVID-19 increases the NPV of both projects as they are fuelling the improvements of vaccination rate. Given its relatively healthy and continuously decreasing debt-to-equity ratio of 76%⁵, the company should be financially capable of initiating high cash flow and debt funded projects.

⁵ At September 2021

Part 2

WACC

The WACC obtained from our calculation is 5.29%. Cost of debt was estimated using BD's outstanding notes and bonds.⁶ CAPM was used to estimate the cost of equity where beta was calculated through regression.⁷ The risk-free rate and risk premium were obtained using the 10-year US Treasury rate and recent market averages to reflect current market conditions.⁸ BD's cost of capital is relatively low compared to similar firms in the industry such as Cardinal Health (5.45%), Cooper Companies (6.29%) and Intuitive Surgical Inc. (7.99%); the lower WACC mainly reflects BD's decision to use more debt, which has a lower cost of capital, to finance pending M&A deals.

Assumptions and Data Sources

Using the estimated WACC, we valued BD using a simple DCF model and Comparables. Based on our DCF, the estimated value per share as of January 24, 2022, is \$267.19.⁹ For Comparables, we used an average of two metrics of PE and EV/EBIT ratios of relevant competitors.¹⁰ Assuming both metrics are reasonable predictions of the price, we took an average of the price obtained from both metrics which came down to \$307.84.¹¹

In building the DCF, significant assumptions were made which are outlined in Appendix Figure 4. Revenues were forecasted leveraging the historical annual growth rate adjusted for future prospects and outliers for each business line.¹² For other elements of the free

⁶ See tab "Cost of Debt" in Excel

⁷ See tab "Cost of Equity" in Excel

⁸ See Appendix Figure 4 Assumptions 29 & 30

⁹ See Appendix Figure 11

¹⁰ See Appendix Figure 12

¹¹ See Appendix Figure 13

¹² See Appendix Figures 6 & 7

cash flows, we observed they had a high correlation with revenue. Furthermore, historical revenue was quite volatile, so we used the historical average of each element as a percentage of revenue as a basis of our estimate and adjusted for future prospects and market conditions for each forecasted year.¹³

Other major assumptions made include the explicit horizon and terminal value.¹⁴ The explicit horizon selected is five years as we assume we can reasonably estimate the cash flows for this period. The terminal value is estimated using a conservative estimate of a perpetual growth rate of 2% each year which is the target inflation rate set by the Federal Reserve. We use this conservative estimate as there is insufficient evidence that the company and industry will grow significantly compared to the market in the long term.¹⁵

For BD and the medical technology industry, we believe that the DCF model is not an appropriate framework. Firms in the medical technology industry often experience large fluctuations in revenues due to patent and government regulations. These factors influence the reliability of the prediction of future cash flows. From our DCF model, we see that this is the case for BD as its historical revenue growth rates from 2016 to 2021 exhibit high volatility ranging from -3% to 32%.¹⁶ As a result, the Comparables valuation might yield more accurate analyses.

Market's Current Valuation

Through the DCF valuation, we believe the company is slightly undervalued by \$14.72, a difference of 5.72% when considering our derived price of \$267.19 in comparison to the

¹³ See Appendix Figure 8 & Figure 4 Assumptions 23-25

¹⁴ See Appendix Figure 1

¹⁵ See Appendix Figure 10 Assumption 26

¹⁶ See Appendix Figure 6

market value of \$252.72 as of January 24, 2022. Our implied value from market comparables, lies at \$330.50 which implies a difference of 30.79% in comparison to the market value. The comparables valuation helps support our DCF valuation as a ballpark estimate. We are standing by our DCF valuation of being slightly undervalued.

Sensitivity Analysis

The sensitivity analyses are displayed in Appendix Figures 14, 15, and 16. The figures demonstrate how changes in WACC, terminal growth rate, cost of equity, cost of debt, and tax rate can affect the share price based on our DCF model and corresponding assumptions.¹⁷

For terminal growth, a 1% increase contributes to an increase of share price by 45.8%. The share price has the highest sensitivity to terminal growth rate changes, implying that it is crucial to make the right estimation. For WACC, an increase of 1% decreases share price by 27.5%. For cost of equity, a 1% increase in cost of equity causes a 23.1% decrease in share price. Changes in WACC and cost of equity both have a significant impact on share price, implying that it is also important to ensure a precise estimation. The results prove that a small change in the cost of debt and tax rate will not affect the share price by a great amount as a 1% increase leads to only a 5.4% and 1.7% respectively. Therefore, it is less of a concern to make the correct estimation for these variables.

¹⁷ See Appendix Figure 14, 15 and 16

Part 3

Future

The infusion market is an oligopoly where few companies, including BD, have historically controlled the entire market. BD has been historically successful with the Alaris Pump, which delivers high risk IV fluids, medications, blood, and parenteral nutrition to a patient. Failures in the system can cause extreme harm to patients.[\[1\]](#)¹⁸

Over recent years, the Alaris pump, one of BD's main revenue sources, has been recalled many times with at least 22 recalls between June 2008 and March 2020.[\[2\]](#)¹⁹ These have occurred due to defective software leading to serious injuries and at least one death.[\[3\]](#) On February 6, 2020, BD cut its revenue guidance causing its stock price to drop more than 13%. This has had an impact on its ESG rating alongside its medical segment declining 2.1% during Q1.[\[4\]](#)

In Q4 of 2020, BD filed for a 510k submission that has since been delayed due to the pandemic. Until the FDA signs off on this, BD is not planning to make any new pump sales or upgrades unless medically necessary.[\[5\]](#)

We believe that BD must completely re-innovate its infusion to re solidify its currently tarnished brand name. We view this re-innovation as two-fold. After many recalls, the company should first prioritize changing its software through alarm optimization ensuring that the system is sound and has virtually no chance of another defect, alongside changing the design of the product. Second, BD can create a fresh brand image by renaming its product to be “Magentas Infusion Pump” from “Alaris Infusion Pump”, alongside renaming the current

¹⁸ According to the US Food and Drug Administration

¹⁹ Based on the FDA's medical device recall database

subsidiary that it lies in from “Carefusion Inc.” to “Vitalitycare Inc”. These changes are costly and timely, especially in terms of the added R&D spending but are crucial to help start the company off again with a clean slate. When considering how the estimated costs of remediation are around 240M due to the recalls[\[6\]](#), it is fundamental that the company generously invests in this product to preserve the future of its once very renowned infusion pump.

After these hard hits, BD must swiftly bring back its Alaris Pump to market and ensure no hiccups are present in this process. Otherwise, The company may have a hard shot at reclaiming its market share in the infusion pump industry. If successful, we believe that BD could see an annual revenue growth increase of around 4% on average in its medical segment. This change could increase shareholder value to \$300.90 from the comparable market value of \$252.72.²⁰

Furthermore, BD has grown at an exponential pace globally, increasing its revenue by 14.7% from 2020 to 2021; within the BD medical sector, the revenue has grown by 9.2%.[\[3\]](#) Since BD’s medical sector’s revenue is heavily dependent on the demand for catheters and vascular care products, BD should acquire the firm Biosensors international which possess industrial leading abluminal biodegradable technology to further enhance this sector.[\[4\]](#)

Acquiring Biosensors International’s PLA Polymer technology will enhance BD’s surgical sector by optimizing arterial healing, and minimizing tissue damage. Moreover, Biosensors international hybrid Cobalt-Chromium Abluminal Biodegradable Polymer DES can help BD diversify its surgical portfolio by allowing the company to perform soft tissue repairs. The technology creates 8x more tissue retention and 10x more lipophilic compared to

²⁰ As at January 24th, 2022

Sirolimus and other drugs. This acquisition will be considered as a vertical integration as Biosensors international mainly focuses on artery disease operations. The company is able to provide a wide range of cardiovascular supplies to BD with not only its industrial leading technology but also proprietary products designed for stents use.

BD has acquired dozens of enterprises where the recent prominent ones are TVA Medical and Medafor.^[6] TVA Medical continues its endeavors in developing Hemodialysis which is a form of treatment for kidney failure and Medafor specializes mainly in developing procedures to control bleeding and reducing hemorrhage during operations.^[7] Thus, if the acquisition of Biosensors is successful, BD will have a nearly perfect surgical profile which will undoubtedly dominate the medical industry. However it may create antitrust issues.

As BD monopolizes the market, the company is incentivized to manipulate its distributors since there are growing options for BD while facing little competition.^[8] This can be a potential concern as antitrust issues can be detrimental. In the short term, BD's stock price is expected to spike up while Biosensors' price is expected to decrease due to uncertainty in the financial market. However, in the longer term, as two companies become more efficiently integrated after the acquisition, the stock price for both stocks should thrive.

Furthermore, both companies have to ensure to integrate on every possible level, including corporate culture, management level, and operational systems. The CEO should not be changed but bringing upper managers from Biosensors should be considered to assure harmony within companies. Lastly, the ideal type of financing for the acquisition should not bring financial distress to either company; thus, a combination of debt, equity securities and common stock should be used as it creates the optimal capital structure for BD. Issuing a

percentage of common stock to Biosensors gives the company an obligation to perform at an optimal level since its company's evaluation is positively correlated with BD.

Sources

Company Overview:

BD. (2021). Annual Report, from <https://investors.bd.com/static-files/03868372-10f7-4930-ab98-b82c88a44f22>

Our Company. BD. (n.d.). Retrieved March 6, 2022, from <https://www.bd.com/en-us/about-bd/our-company>

Industry Overview:

Bloomberg. (n.d.). Bloomberg.com. Retrieved April 1, 2022, from <https://www.bloomberg.com/markets/rates-bonds/government-bonds/us>

Medical devices market size, share, trends: Analysis, 2028. Medical Devices Market Size, Share, Trends | Analysis, 2028. (n.d.). Retrieved April 1, 2022, from <https://www.fortunebusinessinsights.com/industry-reports/medical-devices-market-100085>

Stewart, C. (n.d.). *Topic: Medical technology*. Statista. Retrieved April 1, 2022, from https://www.statista.com/topics/1702/medical-technology-industry/#topicHeader__wrapper

Marketsoverview. Markets Overview. (n.d.). Retrieved April 1, 2022, from <https://marketsandresearch.td.com/TDWCA/Public/Markets/Overview?language=english>

The worldwide medical device industry is expected to reach \$745 billion by 2030 - researchandmarkets.com. Business Wire. (2021, August 30). Retrieved April 1, 2022, from <https://www.businesswire.com/news/home/20210830005465/en/The-Worldwide-Medical-Device-Industry-is-Expected-to-Reach-745-Billion-by-2030---ResearchAndMarkets.com>

Capital Structure:

Figure 1, Becton, Dickinson and Company (BD) Sources of Capital. Adapted from “Transactions and Sources of Capital”, FactSet. Retrieved March 12, 2022 from <https://my.apps.factset.com/navigator/company-security/source-of-capital/BD-US>

Dividend Policy:

BD (Becton, Dickinson and Company). “BD Board Increases Dividend for 50th Consecutive Year, Authorizes 10 Million Additional Share Repurchases.” *BD Board Increases Dividend for 50th Consecutive Year, Authorizes 10 Million Additional Share Repurchases*, 4 Nov. 2021, <https://www.prnewswire.com/news-releases/bd-board-increases-dividend-for-50th-consecutive-year-authorizes-10-million-additional-share-repurchases-301415996.html>.

“Becton Dickinson (NYSE:BDX) - Share Price, News & Analysis.” *Simply Wall St*, <https://simplywall.st/stocks/us/healthcare/nyse-bdx/becton-dickinson?blueprint=1726205>.

Investments, Willow Street. “Baxter International: Dividend Uncertainty Creates a Buying Opportunity (NYSE:BAX).” *SeekingAlpha*, Seeking Alpha, 22 Feb. 2015, <https://seekingalpha.com/article/2937856-baxter-international-dividend-uncertainty-creates-a-buying-opportunity>.

“Market Activity.” *Nasdaq*, <https://www.nasdaq.com/market-activity/stocks/BD/dividend-history>.

“MDT: Dividend Date & History for Medtronic, Inc..” *Dividend.com*, <https://www.dividend.com/stocks/health-care/medical-equipment-devices/medical-devices/mdt-medtronic-inc/>.

Investments:

BD to build new €165 million manufacturing facility in Zaragoza, Spain to support ongoing strong growth of pre-filled drug delivery business. BD. (2021, May 18). Retrieved April 1, 2022, from <https://investors.bd.com/news-releases/news-release-details/bd-build-new-eu165-million-manufacturing-facility-zaragoza-spain>

BD partners with U.S. government on \$70 million manufacturing infrastructure project for mass vaccination campaigns. BD Newsroom. (n.d.). Retrieved April 1, 2022, from <https://news.bd.com/2020-07-08-BD-Partners-with-U-S-Government-on-70-Million-Manufacturing-Infrastructure-Project-for-Mass-Vaccination-Campaigns>

M&A:

Copp, Josh, et al. “Delivering Growth: M&A in Medical Technology.” *McKinsey & Company*, McKinsey & Company, 15 Sept. 2021, <https://www.mckinsey.com/industries/life-sciences/our-insights/delivering-growth-m-and-a-in-medical-technology>.

“Here Comes Number Twelve: C. R. Bard Joins Becton Dickinson's Relentless String of Acquisitions for \$25.7bn.” *BSIC*, 7 May 2017, <https://bsic.it/comes-number-twelve-c-r-bard-joins-becton-dickinsons-relentless-string-acquisitions-25-7bn/>.

Investments, Alephbe. “Becton, Dickinson and Company: R&D and M&A Could Raise Stock Price (NYSE:BDX).” *SeekingAlpha*, Seeking Alpha, 13 Oct. 2021,

<https://seekingalpha.com/article/4459737-becton-dickinson-and-company-r-and-d-and-m-and-a-could-make-the-price-spike-by-47-percent>.

“Recent Mergers and Acquisitions.” *Recent Mergers and Acquisitions*, <https://www.bd.com/en-us/about-bd/recent-mergers-and-acquisitions>.

“Becton Dickinson Mergers and Acquisitions Summary.” *Mergr*, <https://mergr.com/becton-dickinson-acquisitions>.

Taylor, Nick Paul. “BD's \$2B Annual M&A War Chest, Connected Care Devices at Heart of Growth Plan.” *MedTech Dive*, 15 Nov. 2021, <https://www.medtechdive.com/news/bd-analyst-day-acquisitions-connected-care/610025/>.

“BD to Acquire Bard for \$24 Billion.” *BD*, 23 Apr. 2017, <https://investors.bd.com/news-releases/news-release-details/bd-acquire-bard-24-billion>.

Future:

BD Alaris Systems lawsuits: Reasons for recalls, litigation status. Drugwatch.com. (n.d.). Retrieved April 1, 2022, from <https://www.drugwatch.com/bd-alaris-systems/lawsuits/>

FDA announces several new recalls of BD Alaris Pump Module Model 8100 because of key and bezel problems. ONS Voice. (2022, March 18). Retrieved April 1, 2022, from <https://voice.ons.org/news-and-views/fda-announces-several-new-recalls-of-bd-alaris-pump-module-model-8100-because-of-key#:~:text=FDA%20Announces%20Several%20New%20Recalls,of%20Key%20and%20Bezel%20Problems&text=On%20April%2016%2C%202021%2C%20the,or%20unresponsive%20keys%20during%20operation>

Llamas, M., & Written By Michelle Llamas Senior Writer Email . (n.d.). *Thousands of infusion pumps recalled after several injuries and a death*. Drugwatch.com. Retrieved April 1, 2022, from <https://www.drugwatch.com/news/2020/08/03/infusion-pumps-recalled-after-injuries-and-death/>

Zipp, R. (2021, April 19). *BD files new 510(K) submission for troubled Alaris Infusion Pump*. MedTech Dive. Retrieved April 1, 2022, from <https://www.medtechdive.com/news/bd-files-new-510k-submission-for-troubled-alaris-infusion-pump/598613/>

“Ba9™ a Drug Specifically Designed for Stent Use.” *BA9™ Proprietary Technology | Biosensors International Ltd*, <https://www.biosensors.com/intl/products-and-technology-ba9-proprietary-technology>.

“Bard Announces Agreement to Acquire Medafor, Inc..” *Business Wire*, 19 Aug. 2013, <https://www.businesswire.com/news/home/20130819005341/en/Bard-Announces-Agreement-Acquire-Medafor>.

“BD Acquires TVA Medical to Advance Leadership in Solutions for Chronic Kidney Disease.” *BD Newsroom*, <https://news.bd.com/2018-07-09-BD-Acquires-TVA-Medical-to-Advance-Leadership-in-Solutions-for-Chronic-Kidney-Disease>.

“BD Announces Fourth Fiscal Quarter and Full Year 2021 Results; Issues Fiscal Year 2022 Guidance.” *BD*, 4 Nov. 2021, <https://investors.bd.com/news-releases/news-release-details/bd-announces-fourth-fiscal-quarter-and-full-year-2021-results>.

“BD Announces Offerings of \$2.25 Billion of Common Stock and \$2.25 Billion of Depositary Shares Representing Interests in Mandatory Convertible Preferred Stock.” *BD*, 7 May 2017, <https://investors.bd.com/news-releases/news-release-details/bd-announces-offerings-225-billion-common-stock-and-225-billion>.

Newmarker, Chris. “Federal Judge Dismisses Antitrust Lawsuit against BD.” *MassDevice*, 16 Mar. 2021, <https://www.massdevice.com/federal-judge-dismisses-antitrust-lawsuit-against-bd/>.

Appendix

EX/EFF DATE	TYPE	CASH AMOUNT	DECLARATION DATE	RECORD DATE	PAYMENT DATE
03/09/2022	CASH	\$0.87	01/25/2022	03/10/2022	03/31/2022
12/09/2021	CASH	\$0.87	11/04/2021	12/10/2021	12/31/2021
09/08/2021	CASH	\$0.83	07/27/2021	09/09/2021	09/30/2021
06/08/2021	CASH	\$0.83	04/27/2021	06/09/2021	06/30/2021
03/09/2021	CASH	\$0.83	01/25/2021	03/10/2021	03/31/2021
12/09/2020	CASH	\$0.83	11/24/2020	12/10/2020	12/31/2020
09/08/2020	CASH	\$0.79	07/27/2020	09/09/2020	09/30/2020
06/08/2020	CASH	\$0.79		06/09/2020	06/30/2020
03/09/2020	CASH	\$0.79	01/27/2020	03/10/2020	03/31/2020
12/09/2019	CASH	\$0.79	11/25/2019	12/10/2019	12/31/2019
09/06/2019	CASH	\$0.77	07/22/2019	09/09/2019	09/30/2019
06/06/2019	CASH	\$0.77	04/29/2019	06/07/2019	06/28/2019
03/07/2019	CASH	\$0.77	01/21/2019	03/08/2019	03/29/2019
12/07/2018	CASH	\$0.77	11/19/2018	12/10/2018	12/31/2018
09/06/2018	CASH	\$0.75	07/24/2018	09/07/2018	09/28/2018
06/07/2018	CASH	\$0.75	04/23/2018	06/08/2018	06/29/2018
03/08/2018	CASH	\$0.75	01/23/2018	03/09/2018	03/30/2018
12/07/2017	CASH	\$0.75	11/21/2017	12/08/2017	12/29/2017
09/07/2017	CASH	\$0.73	07/27/2017	09/08/2017	09/29/2017
06/07/2017	CASH	\$0.73	05/24/2017	06/09/2017	06/30/2017
03/08/2017	CASH	\$0.73	01/24/2017	03/10/2017	03/31/2017
12/07/2016	CASH	\$0.73	11/22/2016	12/09/2016	12/30/2016
09/07/2016	CASH	\$0.66	07/27/2016	09/09/2016	09/30/2016
06/07/2016	CASH	\$0.66	05/25/2016	06/09/2016	06/30/2016
03/08/2016	CASH	\$0.66	01/26/2016	03/10/2016	03/31/2016
12/08/2015	CASH	\$0.66	11/24/2015	12/10/2015	12/31/2015
09/04/2015	CASH	\$0.60	07/29/2015	09/09/2015	09/30/2015
06/05/2015	CASH	\$0.60	05/20/2015	06/09/2015	06/30/2015
03/06/2015	CASH	\$0.60	01/27/2015	03/10/2015	03/31/2015
12/08/2014	CASH	\$0.60	12/08/2014	12/10/2014	12/31/2014
09/05/2014	CASH	\$0.545	07/22/2014	09/09/2014	09/30/2014
06/05/2014	CASH	\$0.545	05/20/2014	06/09/2014	06/30/2014
03/06/2014	CASH	\$0.545	01/28/2014	03/10/2014	03/31/2014
12/06/2013	CASH	\$0.545	11/26/2013	12/10/2013	12/31/2013
09/05/2013	CASH	\$0.495	07/23/2013	09/09/2013	09/30/2013

Figure 1: BD Dividend Payout

BDX Dividend Growth

1 YEAR ANNUALIZED GROWTH	3 YEAR ANNUALIZED GROWTH	5 YEAR ANNUALIZED GROWTH	10 YEAR ANNUALIZED GROWTH	20 YEAR ANNUALIZED GROWTH	YEARS OF CONSECUTIVE DIVIDEND GROWTH
5.00%	3.62%	4.39%	7.18%	11.48%	50

CAH Dividend Growth

1 YEAR ANNUALIZED GROWTH	3 YEAR ANNUALIZED GROWTH	5 YEAR ANNUALIZED GROWTH	10 YEAR ANNUALIZED GROWTH	20 YEAR ANNUALIZED GROWTH	YEARS OF CONSECUTIVE DIVIDEND GROWTH
1.01%	1.17%	2.47%	8.83%	16.33%	35

LLY Dividend Growth

1 YEAR ANNUALIZED GROWTH	3 YEAR ANNUALIZED GROWTH	5 YEAR ANNUALIZED GROWTH	10 YEAR ANNUALIZED GROWTH	20 YEAR ANNUALIZED GROWTH	YEARS OF CONSECUTIVE DIVIDEND GROWTH
14.98%	14.81%	11.48%	6.06%	5.77%	8

BAX Dividend Growth

1 YEAR ANNUALIZED GROWTH	3 YEAR ANNUALIZED GROWTH	5 YEAR ANNUALIZED GROWTH	10 YEAR ANNUALIZED GROWTH	20 YEAR ANNUALIZED GROWTH	YEARS OF CONSECUTIVE DIVIDEND GROWTH
13.61%	14.12%	16.53%	-1.52%	3.16%	5

MDT Dividend Growth

1 YEAR ANNUALIZED GROWTH	3 YEAR ANNUALIZED GROWTH	5 YEAR ANNUALIZED GROWTH	10 YEAR ANNUALIZED GROWTH	20 YEAR ANNUALIZED GROWTH	YEARS OF CONSECUTIVE DIVIDEND GROWTH
8.33%	8.01%	8.14%	10.00%	12.79%	45

Figure 2: Dividend Growth of BDX and Competitors

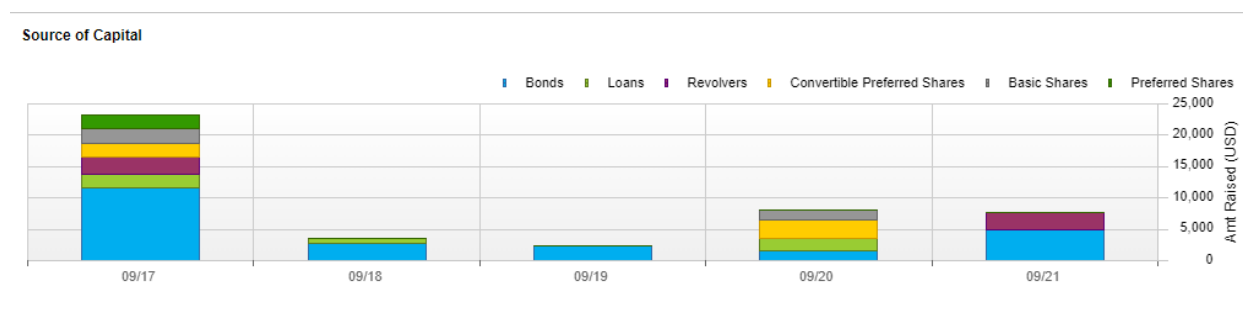


Figure 3: Capital Structure (BD Sources of Capital)

Ref. #	Explanation of Assumption
1	The revenue growth rate is based on each segment's historical growth rate subject to adjustments based on current market conditions and future prospects.
2	COGS as % of revenue is used in our model since it is relatively stable over the years and it is highly correlated with revenue. There are significant inflation pressures which are expected to increase the prices of raw materials. It is also stated in BD's 2021 Annual Report that costs of raw materials, transportation, construction and other necessary costs for production and distribution of products have increased significantly. These pressures on its supply chain are expected to continue to increase. Therefore, we have adjusted the COGS as a % of revenue to be 3% higher than the historical average from 2016-2021. (BD Annual Report 2021 page 15)
3	OpEx as % of revenue is used in our model since it is relatively stable over the years and it is highly correlated with revenue. We then adjusted the cost to be a higher percentage as BD's costs are anticipated to increase. Firstly, the EU has recently adopted the EU Medical Device Regulation and the In Vitro Diagnostic Regulation which impose strict requirements for the marketing and sale of medical devices. Compliance and maintenance of medical devices subject to these regulations will increase operating expenses (BD Annual Report 2021 page 18). As mentioned in assumption 2, BD is subject to high inflation pressures which are expected to increase its operating expenses. In addition, the higher transportation and shipping costs as outlined in assumption 2 are expected to increase selling and administrative expenses. Overall, to account for these inflationary pressures on BD's costs, we have increased the OpEx as a % of revenues by 4% compared to the historical average.
4	D&A as % of revenue is used in our model since it is relatively stable over the years and D&A has a higher correlation with revenue compared to Net PPE.
5	Statutory US tax rate in 2021 is 21%.

6	The effective tax rate is much lower than federal statutory tax rate each year due to different foreign income tax on its foreign income (See BD Annual Report 2021 Note 16 - Income Taxes pg 99 and BD Annual Report 2018 Note 16 - Income Taxes pg 97). Since there is very high variability in the effective tax rate and we cannot reasonably predict the changes in the tax rates for each foreign country that BD operates in, we assume the US statutory tax rate of 21%.
7	It is more reasonable to use change in NWC as a % of revenue since the annual growth rate is very volatile with a high standard deviation.
8	CAPEX as % of revenue is used in our model since it is relatively stable over the years and it is highly correlated with revenue. We increased CAPEX as a % of revenue by 2% of the previous year as the CAPEX has been increasing each year from 2016 to 2021, with the exception of 2020 which was affected by the COVID-19 pandemic. Furthermore, management has expressed its strategy of geographic expansion which supports our assumption. (BD Annual Report 2021 page 39)
9	Increased revenue growth by .25 percentage points in bull case supported by an increase in the aging baby boomer population, an increase in chronic disease prevalence, and an assumed increase in elective procedures as virus eliminates all increasing demand.
10	COGS as % of revenue in the Bull case is decreased by 1 percentage point as supported in the company successfully cutting manufacturing and supplier costs.
11	OpEx as a % of revenue in Bull case decreases by 1 percentage point as supported in successfully cutting operational expenses.
12	We assume that D&A as a % of revenue decreases in the Bull case by 1 percentage point.
13	We assume that CAPEX as a % of revenue in the Bull case decreases by 0.2 percentage points. We adjust for a small decrease as we believe that it is unlikely that the firm will decrease capital expenditures based on its increased spending on capital expenditures in the past few years.
14	We assume that net working capital as % of revenue increases by 0.5 percentage points in the Bull case.
15	Effective tax rate decreases in bull case to account for possible decrease compared to the statutory rate, especially due to foreign tax rate fluctuations.
16	Revenue growth decreases in bear market as explained potentially due to maturing product lines and inability of company to continually innovate
17	Increased COGS as % of revenue in the Bear case by 3 percentage points relating to increased supply chain challenges, higher shipping costs, and cost inflation
18	Increasing OPEX as % of revenue in Bear case due to continued inflation, higher supply chain challenges, and higher shipping costs
19	D&A as a % of revenue increases in Bear case as the company is investing in fixed assets as seen in the cash flow statement.
20	We assume in the Bear case that capital expenditures as % of revenue increases by 2 percentage points as it is probable that capital expenditures will increase based on the historical trend of increased capital expenditures over the years.
21	In the Bear case, we assume that the change in NWC as % of revenue decreases by 0.5 percentage points.
22	In the Bear case, effective tax rate increases to account for possible increase compared to the statutory rate, especially due to foreign tax rate fluctuations.

23	BD has announced that it will spin-off the Diabetes Care Unit which produced \$1.16 billion in revenue in FY2021 (BD Annual Report 2021 page 27). We adjust the revenue of FY2022 down by the same amount multiplied by the average annual growth rate of the past 5 years to arrive at a negative annual growth rate for the year. The average of the past five year's annual revenue growth rate is used as the base for our projections of the annual growth rate in the next four years and it is multiplied by ratio of all of the other revenues excluding the Diabetes Care unit over the total revenues in the Medical Segment in 2021 to account for a lower growth due to the loss of the unit (BD Annual Report 2021 page 27). We did not adjust for COVID-19 impacts on revenues as the decrease in the growth rate in FY2020 due to COVID-19 related pressures is offset by the increase in the growth rate in FY2021.
24	The BD Life Sciences Segment experienced tremendous growth in revenues in FY2021 largely due to its COVID testing systems. The FY2022 is adjusted down to be the historical growth rate as demand for testing kits is expected to decrease as the pandemic conditions are anticipated to improve. We then further decreased the growth rate in FY2022 by 5% due to a product recall of Alaris which accounts for a large portion of the Medical Segment revenues. Although the liabilities incurred from the recall are only around \$156 million with respect to remediation costs (BD Annual Report 2021 page 28), we assume that there will be lost sales due to its impact on customer perception and decreased ESG reporting score. The FY2023, FY2024, FY2025 and FY2026 annual growth rates take the average of the growth rates from FY2017-FY2020, which excludes the high demand in FY2021, and is further adjusted downward to account for the Alaris product recall (BD Annual Report 2021 pg. 21).
25	For the BD Interventional Segment, the average of the historical annual revenue growth rate is used as the base for our projections of the annual growth rate in the next five years. However, we remove the annual growth rate in 2019 as it reflects an inflated increase due to the inclusion of revenues from a new acquisition (BD Annual Report 2019 page 28). We believe this segment will continue to grow as the company has invested a consistent amount as capital expenditures into this segment with \$120 million, \$119 million, and \$125million in FY2019, FY2020, and FY2021 respectively (BD Annual Report 2021 page 76). We did not adjust for COVID-19 impacts on revenues as the decrease in the growth rate in 2020 due to COVID-19 related pressures is offset by the increase in the growth rate in FY2021.
26	We assumed that the terminal growth rate is 2% with a conservative estimate aligned with the target inflation rate of the Federal Reserve . This is below the historical average GDP growth rate of around 3.14% from 1948 until 2021.
27	Since the cash flows are discounted to the fiscal year end of the company of September 31, 2021 under our DCF model, we adjust the discounted time period to discount back to January 24, 2022.
28	Located comparable companies through Factset, filtering through General Medical Devices in the North American region, with market caps over 10,000,000
29	Benchmark 10 year American treasury yield as of March 25th, 2022.
30	Risk premium in the US has an average of 5.5% in 2021, where the historical average has been between 5.2%-5.7%. Thus, we believe that a 5.5% estimate is reasonable.

Figure 4: DCF and Comparables Assumptions Explanation

Base Case	FY2016A	FY2017A	FY2018A	FY2019A	FY2020A	FY2021A	FY2022E	FY2023E	FY2024E	FY2025E	FY2026E
Revenue Growth		-3.12%	32.17%	8.18%	-1.00%	18.29%	-1.72%	3.17%	3.19%	3.20%	3.22%
COGS as a % of Revenue	43.60%	43.10%	42.91%	39.75%	43.87%	42.66%	45.65%	45.65%	45.65%	45.65%	45.65%
OpEx as a % of Revenue	30.71%	30.59%	31.41%	31.20%	31.67%	30.65%	35.04%	35.04%	35.04%	35.04%	35.04%
D&A as a % of Revenue	8.41%	7.76%	11.61%	12.32%	11.86%	10.54%	10.42%	10.42%	10.42%	10.42%	10.42%
CAPEX as a % of Revenue	5.75%	6.01%	5.60%	5.53%	4.73%	6.08%	6.62%	7.62%	8.62%	9.62%	10.62%
Change in NWC as % of Revenue	3.20%	-3.07%	5.61%	-2.13%	0.66%	1.65%	0.99%	0.99%	0.99%	0.99%	0.99%
Effective Tax Rate	9.12%	-12.70%	73.49%	-4.85%	11.27%	6.69%	21.00%	21.00%	21.00%	21.00%	21.00%

Figure 5: Base Case Inputs

Analysis	FY2016A	FY2017A	FY2018A	FY2019A	FY2020A	FY2021A	Average	Standard Deviation
<i>(millions of dollars)</i>								
Medical	8,654	8,105	8,616	9,064	8,680	9,479		
Annual Growth Rate		-6.34%	6.30%	5.20%	-4.24%	9.21%	2.03%	6.88%
% of Total Revenues		67.02%	53.91%	52.42%	50.71%	46.81%		
Life Sciences	3,829	3,988	4,330	4,300	4,675	6,530		
Annual Growth Rate		4.15%	8.58%	-0.69%	8.72%	39.68%	12.09%	15.90%
% of Total Revenues		32.98%	27.09%	24.87%	27.31%	32.25%		
Interventional	0	0	3,037	3,926	3,762	4,239		
Annual Growth Rate				29.27%	-4.18%	12.68%	12.59%	16.72%
% of Total Revenues			19.00%	22.71%	21.98%	20.94%		
	12,483	12,093	15,983	17,290	17,117	20,248		
Annual Growth Rate		-3.12%	32.17%	8.18%	-1.00%	18.29%	10.90%	14.60%

Figure 6: Historical Analysis of Revenue

Revenue Build	FY2016A	FY2017A	FY2018A	FY2019A	FY2020A	FY2021A	FY2022E	FY2023E	FY2024E	FY2025E	FY2026E
<i>(millions of dollars)</i>											
Medical	8,654	8,105	8,616	9,064	8,680	9,479	8,488	8,638	8,792	8,948	9,107
Annual Growth Rate		-6.34%	6.30%	5.20%	-4.24%	9.21%	-10.46%	1.78%	1.78%	1.78%	1.78%
% of Total Revenues		67.02%	53.91%	52.42%	50.71%	46.81%	42.65%	42.07%	41.50%	40.93%	40.36%
Life Sciences	3,829	3,988	4,330	4,300	4,675	6,530	6,993	7,286	7,591	7,909	8,240
Annual Growth Rate		4.15%	8.58%	-0.69%	8.72%	39.68%	7.09%	4.19%	4.19%	4.19%	4.19%
% of Total Revenues		32.98%	27.09%	24.87%	27.31%	32.25%	35.14%	35.49%	35.83%	36.17%	36.51%
Interventional	0	0	3,037	3,926	3,762	4,239	4,419	4,607	4,803	5,007	5,220
Annual Growth Rate		n/a	n/a	29.27%	-4.18%	12.68%	4.25%	4.25%	4.25%	4.25%	4.25%
% of Total Revenues		n/a	19.00%	22.71%	21.98%	20.94%	22.21%	22.44%	22.67%	22.90%	23.13%
Total Revenue	12,483	12,093	15,983	17,290	17,117	20,248	19,900	20,531	21,186	21,864	22,568
Annual Growth Rate		-3.12%	32.17%	8.18%	-1.00%	18.29%	-1.72%	3.17%	3.19%	3.20%	3.22%

Figure 7: Revenue Model

Analysis	FY2016A	FY2017A	FY2018A	FY2019A	FY2020A	FY2021A	Average	Standard Deviation	Correl. with Revenue
<i>(millions of dollars)</i>									
From Income Statement									
Revenue	12,483	12,093	15,983	17,290	17,117	20,248			100.00%
Revenue Annual Growth Rate		-3.12%	32.17%	8.18%	-1.00%	18.29%	10.90%	14.60%	100.00%
COGS	5,442	5,212	6,859	6,872	7,510	8,638			
COGS as a % of Revenue	43.60%	43.10%	42.91%	39.75%	43.87%	42.66%	42.65%	1.49%	98.22%
COGS Annual Growth Rate		-4.23%	31.60%	0.19%	9.28%	15.02%	10.37%	14.06%	89.08%
OpEx	3,833	3,699	5,020	5,394	5,421	6,206			
OpEx as a % of Revenue	30.71%	30.59%	31.41%	31.20%	31.67%	30.65%	31.04%	0.45%	99.73%
OpEx Annual Growth Rate		-0.38%	2.68%	-0.67%	1.52%	-3.22%	-0.02%	2.26%	16.95%
D&A	1,050	939	1,855	2,130	2,030	2,134			
D&A as a % of Revenue	8.41%	7.76%	11.61%	12.32%	11.86%	10.54%	10.42%	1.91%	93.76%
D&A as a % of Net PPE	26.92%	20.25%	34.51%	37.64%	32.01%	31.20%	30.42%	6.13%	87.72%
D&A Annual Growth Rate		-10.57%	97.55%	14.82%	-4.69%	5.12%	20.45%	44.17%	88.22%
Effective Tax Rate	9.12%	-12.70%	73.49%	-4.85%	11.27%	6.69%	13.84%	30.63%	12.98%
From Balance Sheet									
Net PPE	3,901	4,638	5,375	5,659	6,341	6,839			
Net PPE as a % of Revenue	31.25%	38.35%	33.63%	32.73%	37.05%	33.78%	34.46%	2.69%	93.93%
Net PPE Annual Growth Rate		18.89%	15.89%	5.28%	12.05%	7.85%	11.99%	5.59%	-8.24%
From Cash Flow Statement									
Change in NWC	399	-371	897	-369	113	334			
Change in NWC as % of Revenue	3.20%	-3.07%	5.61%	-2.13%	0.66%	1.65%	0.99%	3.26%	16.18%
Change in NWC Annual Growth Rate		-192.98%	-341.78%	-141.14%	-130.62%	195.58%	-122.19%	196.62%	-10.25%
CAPEX	718	727	895	957	810	1,231			
CAPEX as a % of Revenue	5.75%	6.01%	5.60%	5.53%	4.73%	6.08%	5.62%	0.49%	90.12%
CAPEX as a % of Net PPE	18.41%	15.67%	16.65%	16.91%	12.77%	18.00%	16.40%	2.03%	78.80%
CAPEX Annual Growth Rate		1.25%	23.11%	6.93%	-15.36%	51.98%	13.58%	25.49%	68.65%

Figure 8: Historical Analysis of Inputs of DCF

DCF Projections											
FY Ending September											
FCF	FY2016A	FY2017A	FY2018A	FY2019A	FY2020A	FY2021A	1	2	3	4	5
(millions of dollars)							FY2022E	FY2023E	FY2024E	FY2025E	FY2026E
Revenue	12,483	12,093	15,983	17,290	17,117	20,248	19,900	20,531	21,186	21,864	22,568
COGS	5,442	5,212	6,859	6,872	7,510	8,638	9,084	9,372	9,671	9,981	10,302
OpEx	3,833	3,699	5,020	5,394	5,421	6,206	6,972	7,193	7,423	7,661	7,907
EBIT	3,208	3,182	4,104	5,024	4,186	5,404	3,844	3,966	4,092	4,223	4,359
Taxes	293	-404	3,016	-244	472	362	807	833	859	887	915
NOPAT	2,915	3,586	1,088	5,268	3,714	5,042	3,036	3,133	3,233	3,336	3,444
+ D&A	1,050	939	1,855	2,130	2,030	2,134	2,073	2,139	2,207	2,278	2,351
- Change in NWC	399	-371	897	-369	113	334	196	202	209	216	223
- CAPEX	718	727	895	957	810	1,231	1,317	1,564	1,826	2,103	2,396
FCF	2,848	4,169	1,151	6,810	4,821	5,611	3,596	3,505	3,405	3,295	3,176
Discount Factor							0.9498	0.9020	0.8567	0.8137	0.7728
Discounted FCF							3,415	3,162	2,917	2,681	2,454

Figure 9: FCFs in Explicit Horizon

Terminal Value	
Terminal Year	FY2027
Terminal Cash Flow	3,239
Terminal Growth Rate	2.00%
Discount Rate	5.29%
Terminal Value	98,445
PV of Terminal Value	76,077

Figure 10: Terminal Value

Value per Share	
Enterprise Value	90,706
Debt	18,520
Cash	2,404
FCFE	74,590
No. of Shares	285
Value per Share	261.93
Value per Share Adjusted to Jan 24, 2022:	
Enterprise Value, Jan 24, 2022	92,204
FCFE, Jan 24, 2022	76,088
No. of Shares	284.8
Value per Share, Jan 24, 2022	267.19
Actual Value per Share on Jan 24, 2022	252.72
Over (Under) Valued	-14.47

Figure 11: DCF Value per Share

Comps Tables - FactSet RBICS Sub-Sector - General Medical Devices Assumption 28													
Selected Financials													
Market Data (\$)				Financial (\$)				Valuation (x)					
Company	Fiscal	Date		Shares Out	Shares Out	Financial (\$)		Valuation (x)	Valuation (x)	Valuation (x)	Valuation (x)	Valuation (x)	Valuation (x)
Name	Ticker	Period	Price	Mkt Cap (M)	EV (M)	(M)	Diluted (M)	Sales (M)	EBIT (M)	EBITDA (M)	EV/ EBIT	EV/ EBITDA	EV/ EBITDA
Becton, Dickinson	BDX-US	12/31/2021	267.60	76,204.7	91,575.7	284.8	286.7	19,927.0	2,815.0	5,090.0	32.53x	17.99x	17.99x
Edwards Lifesciences	EW-US	12/2021	111.55	69,518.8	68,740.8	623.2	631.2	5,232.5	1,610.4	1,773.7	42.69x	38.76x	38.76x
Boston Scientific	BSX-US	12/2021	44.32	63,232.4	70,644.4	1,426.7	1,433.8	11,888.0	1,922.0	3,015.0	36.76x	23.43x	23.43x
Stryker Corp	SYK-US	12/2021	265.79	100,347.6	110,229.6	377.5	382.3	17,108.0	3,661.0	4,651.0	30.11x	23.70x	23.70x
Intuitive Surgical	ISRG-US	12/2021	283.28	101,752.7	97,686.1	359.2	365.8	5,710.1	1,821.0	2,138.0	53.64x	45.69x	45.69x
Baxter Intl	BAX-US	12/2021	79.05	39,706.3	55,104.3	502.3	508.0	12,784.0	2,083.0	2,973.0	26.45x	18.53x	18.53x
Danaher	DHR-US	12/2021	289.27	206,930.0	230,894.0	715.4	736.8	29,453.0	8,050.0	10,218.0	28.68x	22.60x	22.60x
Abbott Laboratories	ABT-US	12/2021	121.76	215,306.6	224,530.6	1,768.3	1,789.0	43,075.0	9,200.0	12,738.0	24.41x	17.63x	17.63x
Average											34.41x	26.04x	26.04x
Median											31.32x	23.01x	23.01x
Valuation													
P/E (x)				EV/ (x)				Financial (\$)					
Company	Fiscal	Date		EV (M)	Actual	FY1	FY2	Sales	EBIT	EBITDA	Sales (M)	EBIT (M)	EBITDA (M)
Becton, Dickinson	BDX-US	12/31/2021	09/2022	91,575.7	46.25x	20.71x	19.18x	4.60x	32.53x	17.99x	19,927.0	2,815.0	5,090.0
Edwards Lifesciences	EW-US	12/2021	12/2022	68,740.8	46.84x	43.83x	38.80x	13.14x	42.69x	38.76x	5,232.5	1,610.4	1,773.7
Boston Scientific	BSX-US	12/2021	12/2022	70,644.4	64.51x	25.02x	22.08x	5.94x	36.76x	23.43x	11,888.0	1,922.0	3,015.0
Stryker Corp	SYK-US	12/2021	12/2022	110,229.6	50.96x	27.14x	24.25x	6.44x	30.11x	23.70x	17,108.0	3,661.0	4,651.0
Intuitive Surgical	ISRG-US	12/2021	12/2022	97,686.1	60.79x	56.47x	47.83x	17.11x	53.64x	45.69x	5,710.1	1,821.0	2,138.0
Baxter Intl	BAX-US	12/2021	12/2022	55,104.3	31.27x	18.39x	16.10x	4.31x	26.45x	18.53x	12,784.0	2,083.0	2,973.0
Danaher	DHR-US	12/2021	12/2022	230,894.0	33.58x	27.71x	26.16x	7.84x	28.68x	22.60x	29,453.0	8,050.0	10,218.0
Abbott Laboratories	ABT-US	12/2021	12/2022	224,530.6	30.93x	25.11x	23.74x	5.21x	24.41x	17.63x	43,075.0	9,200.0	12,738.0
Average					45.64x	30.55x	27.27x	8.07x	34.41x	26.04x			
Median					46.55x	26.13x	23.99x	6.19x	31.32x	23.01x			

Figure 12: Companies used as Comparables

Valuation by Multiples - PE LTM	
Peer Group's PE Ratio LTM	45.6x
LTM Net Income	2,002
Equity Value	91,376
Number of Shares Outstanding	285
Implied Share Price	320.88
Actual Share Price Jan 24th, 2022	252.70
Over (under) valued	-68.18

Valuation by Multiples - EV/EBIT	
Peer Group's EV/EBIT	34.41
BDX EBIT	2815
Enterprise Value	96860
Number of Shares Outstanding	285
Implied Share Price	340.13
Actual Share Price Jan 24th, 2022	252.70
Over (under) valued	-87.43

Valuation by Multiples - Conclusion	
Concluded Fair Value	330.50
Actual Share Price Jan 24th, 2022	252.70
Over (under) valued	-77.80

Figure 13: Valuation by Multiples

		WACC						
		3.79%	4.29%	4.79%	5.29%	5.79%	6.29%	6.79%
Terminal Growth	0.50%	283.72	239.79	206.09	179.41	157.77	139.86	124.80
	1.00%	336.68	278.09	234.95	201.85	175.66	154.40	136.82
	1.50%	412.76	330.12	272.58	230.21	197.71	171.98	151.11
	2.00%	531.34	404.87	323.70	267.19	225.58	193.65	168.38
	2.50%	741.83	521.37	397.14	317.42	261.92	221.04	189.68
	3.00%	1218.67	728.16	511.61	389.59	311.28	256.76	216.60
	3.50%	3338.41	1196.64	714.79	502.07	382.20	305.27	251.71

Figure 14: Share Price's Sensitivity to WACC and Terminal Growth

		Cost of Equity						
		4.63%	5.13%	5.63%	6.13%	6.63%	7.13%	7.63%
Cost of Debt	0.91%	511.76	412.26	342.78	291.52	252.13	220.92	195.58
	1.41%	489.00	396.76	331.55	283.00	245.46	215.55	191.16
	1.91%	468.02	382.26	320.94	274.90	239.07	210.38	186.89
	2.41%	448.61	368.69	310.91	267.19	232.95	205.41	182.78
	2.91%	430.61	355.94	301.41	259.84	227.09	200.63	178.81
	3.41%	413.87	343.95	292.40	252.82	221.47	196.03	174.97
	3.91%	398.26	332.64	283.84	246.11	216.08	191.59	171.26

Figure 15: Share Price's Sensitivity to Cost of Equity and Cost of Debt

		Terminal Growth						
		0.50%	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%
Tax Rate	36%	182.90	206.13	235.60	274.24	327.08	403.75	525.04
	31%	181.72	204.69	233.78	271.85	323.81	398.93	517.17
	26%	180.56	203.26	231.99	269.50	320.59	394.21	509.52
	21%	179.41	201.85	230.21	267.19	317.42	389.59	502.07
	16%	178.27	200.46	228.46	264.91	314.31	385.06	494.81
	11%	177.14	199.08	226.73	262.66	311.25	380.63	487.75
	6%	176.03	197.71	225.02	260.44	308.25	376.29	480.87

Figure 16: Share Price's Sensitivity to Terminal Growth and Tax Rate