The Henry Fund
Henry B. Tippie College of Business
Michael Carr (michael-carr-1@uiowa.edu)

Medtronic PLC (MDT)

March 11, 2020

Health Care- Medical Supplier

Stock Rating **Buy**

Investment Thesis

We recommend a buy rating on Medtronic PLC (MDT) with a target range of $120-130, representing an upside of 18-34%. With a growing demand for value-based care and a sharp increase in the number of senior citizens, Medtronic will be able to expand market share and drive revenues going forward. Recent acquisitions have allowed for Medtronic to grow different subsegments and are strong reason we recommend a buy rating.

Drivers of Thesis

- As the United States population continues to age, more cardiovascular devices will be needed to treat cardiovascular diseases. The United States will see the largest shift in age demographic in senior citizens by an increase of 5% and this will help grow the Cardiac and Vascular Group revenues[23].
- New innovative technologies in the Minimally Invasive Therapies portfolio will position Medtronic to be a leader in a shifting healthcare sector trending towards value-based care.
- China is an emerging market with their large population that is aging similar to the United States, it is likely to see an increase in cardiovascular diseases, helping boost Medtronic's largest portfolio increasing their Emerging Markets region.

Risks to Thesis

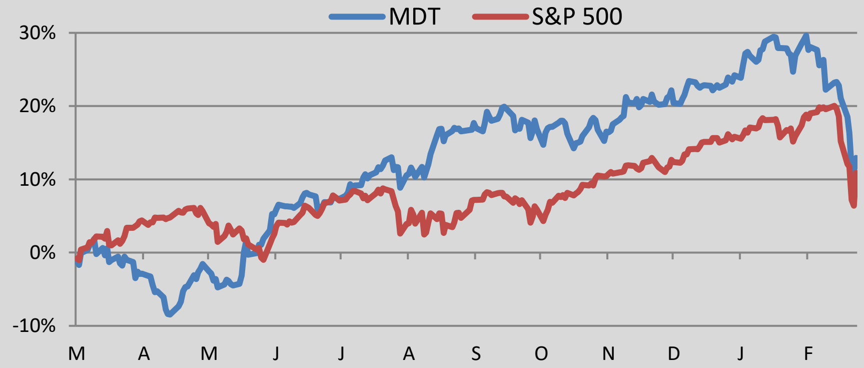
- The Coronavirus will impact the number of procedures being done with medical devices Medtronic supplies, hurting potential revenues for Cardiac and Vascular and Minimally Invasive Therapies segment.
- The Presidential race could increase chance of Medicare-for-All which would hurt company stock and potentially hurt the diabetes portfolio with price caps on insulin.

Source: FactSet

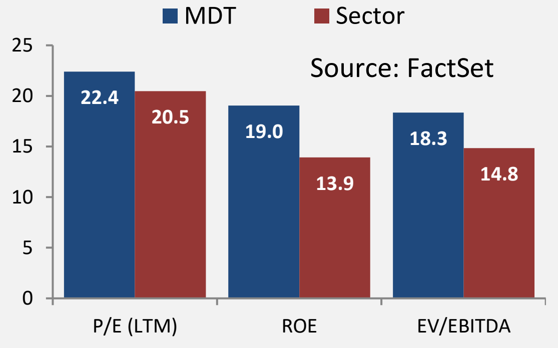
Earnings Estimates

Year	2018	2019	2020E	2021E	2022E
EPS	$2.29	$3.44	$3.60	$3.87	$4.18
Consensus	$2.27	$3.41	$4.45	$4.75	$5.38
growth	*-21.58%*	*50.22%*	*4.65%*	*7.50%*	*8.01%*

12 Month Performance



Target Price	$120-130
Henry Fund DCF	$135
Henry Fund DDM	$120
Relative Multiple	$87
Price Data	
Current Price	$100.18
52wk Range	$82.77-122.15
Consensus 1yr Target	$126.91
Key Statistics	
Market Cap (B)	$134.3
Shares Outstanding (M)	1,346
Institutional Ownership	85.3%
Five Year Beta	0.67
Dividend Yield	2.12%
Est. 5yr Growth	12.15%
Price/Earnings (TTM)	22.44
Price/Earnings (FY1)	47.33
Price/Sales (TTM)	5.03
Source: FactSet	
Profitability	
Operating Margin	20.51%
Profit Margin	15.16%
Return on Assets (TTM)	5.16%
Return on Equity (TTM)	9.22%



Company Description

Medtronic is a global medical supply company headquartered in Dublin, Ireland positioned in the Healthcare sector that focuses on developing and selling medical supplies to help maintain and save lives. Medtronic's portfolio consists of Cardiac and Vascular, Minimally Invasive Therapies, Restorative Therapies, and Diabetes. Medtronic's largest revenue stream comes from the Cardiac and Vascular group, which makes up 38% of total revenues.

Important disclosures appear on the last page of this report.

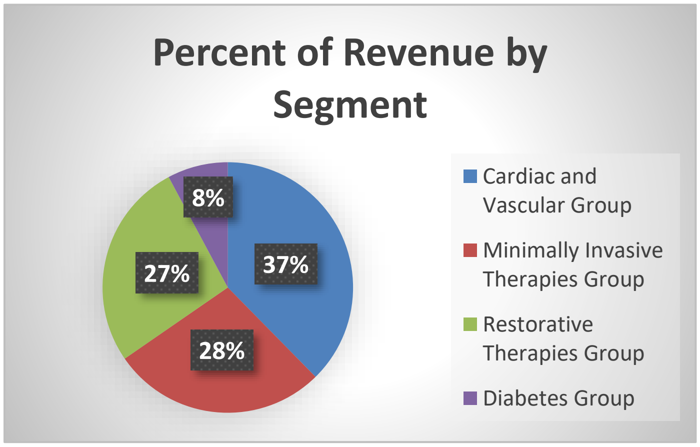
EXECUTIVE SUMMARY

We recommend a buy rating on Medtronic, with an upside of 18-34%. Medtronic offers four different segments in their portfolio including their largest, the Cardiac and Vascular group. Medtronic leads the market share in the cardiovascular device industry and the medical device supply industry. With the United States aging at a higher rate than ever, we believe that Medtronic sales will continue to grow in the Cardiac and Vascular device segment. Medtronic has also taken advances in addressing the need for value-based care and has acquired companies to bolster their Minimally Invasive Therapies segment. We believe that Medtronic's dominant market share along with the recent acquisitions gives them a competitive advantage in the medical supply industry, supporting our buy rating.

What can harm the company is the continued spread of the Coronavirus. Shutdowns across China will slow their Emerging Markets geographic growth for fiscal year 2020 and potentially fiscal year 2021. The Coronavirus will also have a negative effect for number of operations done in the United States if it is not contained quickly. Many physicians and hospitals are postponing procedures right now to focus on fighting the Coronavirus. The backlog could hurt Medtronic in the short run. We do believe that if the virus is contained, China is an aging population that could help drive revenue growth due to the large population. Another significant risk we have to monitor is the 2020 Presidential race in the United States. With proposed Medicare-for-All being a priority from Bernie Sanders, a nomination of Senator Sanders from the Democratic party could significantly hurt investors' confidence and lower insulin and drug prices if his proposals were to get passed.

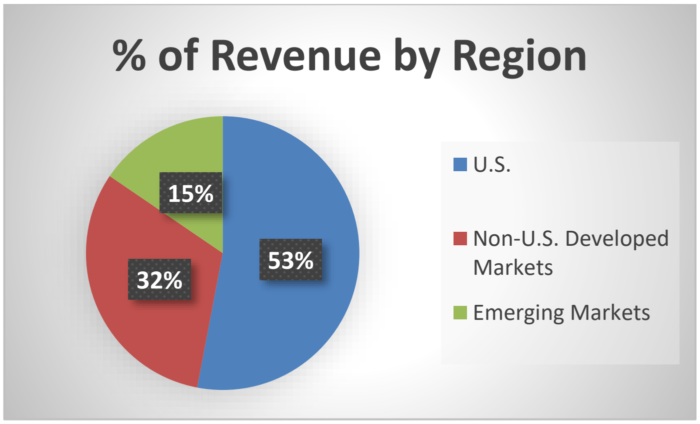
COMPANY DESCRIPTION

Medtronic is a healthcare company that develops and manufactures medical supplies. Medtronic is diversified over four segments: Cardiac and Vascular, Minimally Invasive Therapies, Restorative Therapies, and Diabetes. In the chart at the top of the right column, each group's revenue from 2019 is broken down. Cardiac and Vascular is the largest segment that Medtronic operates with revenues of $11.5 billion in 2019, followed by Minimally Invasive Surgeries which had $8.6 billion in revenue for 2019. Medtronic caters to healthcare institutions and physicians that perform therapies and surgeries within each group of Medtronic's overall portfolio. Medtronic is positioned as the largest medical device manufacturer in the United States with a market cap of 39.8% in 2019[2].



Source: Medtronic 10k and Henry Fund Estimates

Medtronic is a global company that operates in the three defined markets, United States, Non-U.S. Developed Market, and Emerging Markets. Medtronic defines the Non-U.S. Developed Market including the countries of Japan, Australia, New Zealand, Korea, Canada and the countries within Western Europe. The Emerging Markets segment includes the countries of the Middle East, Africa, Latin America, Eastern Europe, and the countries of Asia that are not in the Non-U.S. Developed Market, most notably, China[1]. As shown in the figure below, the U.S. region created over 50% of the revenue for Medtronic in 2019, a trend we see continuing. Another key takeaway is the potential growth in the Emerging Markets segment because of China's large population.



Source: Medtronic 10k and Henry Fund Estimates

Cardiac and Vascular

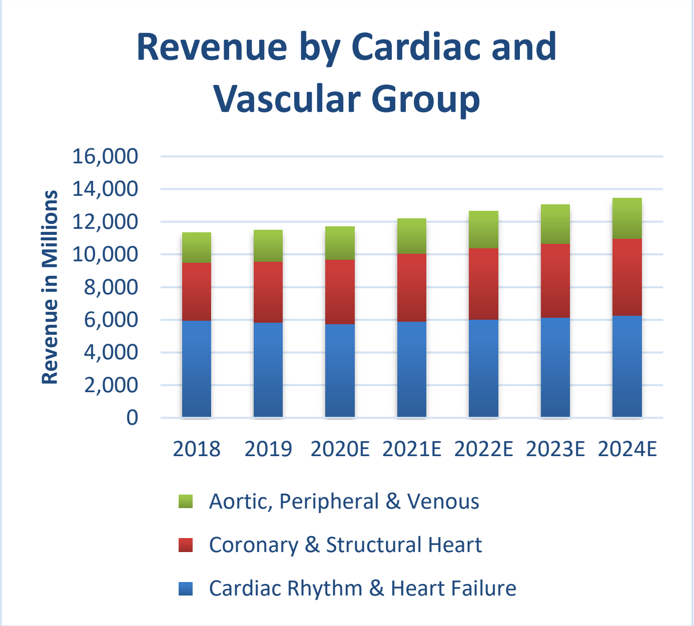
The Cardiac and Vascular group for Medtronic generates their highest revenues, $11.5 billion in 2019. The group is broken down into 3 segments, Cardiac Rhythm & Heart Failure, Coronary & Structural Heart, and Aortic, Peripheral, & Venous. This segment grew at 1.3% in 2019 and we expect a 5-year CAGR of 2.81% through 2024. Our 5-year outlook is bullish due to the aging population in the United States. By 2030, the United States population over the age of 65 is set to grow by over 5% with the largest spike predicted to happen from 2017-2025 with a growth of over 4%[23].

We predict small growth in 2020 due to the Coronavirus interfering with the number of medical procedures taking place in the Emerging Market of China and possibly the United States, so we brought down revenue growth to 1.73% in fiscal year 2020 to adjust for the slow down.

The Cardiac Rhythm & Heart Failure is the largest subsegment of the Cardiac and Vascular segment with revenues of $5.85 billion in 2019. This was a decrease of 1.65% from 2018 and can be attributed to a strong increase in competitor pressure from Boston Scientific and their FDA approval of a new TAVR product. Along with an increase in competition, drug coated balloon sales were hurt due to an FDA release of increased mortality risk in patients. This hurt the industry overall and slowed Medtronic sales in this segment[3]. For both reasons and Q3 results, we have forecasted Medtronic to have a decline in sales through fiscal year 2020 of -2%. We do have this subsegment growing at a 5-year CAGR of 1.80% because of Medtronic's growth in other products, including the HVAD and cardiac monitors.

The Coronary & Structural Heart subsegment is the second largest in the group with $3.73 billion in revenue for 2019. This was a growth of over 4.7% from 2018 and this subsegment has been growing steady since 2017. We project that the subsegment will grow 6% in 2020 and have a 5-year CAGR of 3.58% because of Medtronic's acquisition of EPIX Therapeutics in January of 2019. EPIX Therapeutics specialized in catheters and cardiac ablation systems, which fit directly into the Coronary & Structural Heart subsegment for Medtronic[5]. Because of the acquisition, Medtronic should see an immediate boost in 2020 and constant growth through 2024.

The Aortic, Peripheral & Venous subsegment generated $1.9 billion in revenue in 2019 and has grown steadily from 2017. We project 5-year CAGR of 4.08% because of FDA approval of different products. One product that is expected to receive FDA approval in fiscal year 2020 is the CoreValve Evolut, which is an aortic valve replacement, and we expect this product launch to increase growth in this segment through 2020 and beyond[1].



Source: Medtronic 10k and Henry Fund Estimates

Minimally Invasive Therapies Group

The Minimally Invasive Therapies group of Medtronic focuses on two segments, Surgical Innovations and Respiratory, Gastrointestinal, & Renal. The segment is responsible for 28% of total revenue and is driven, mainly, by Surgical Innovations, which generated $5.7 billion in revenue in 2019, the second largest by any one subsegment in Medtronic's portfolio. We project the Surgical Innovations subsegment to grow at a 5-year CAGR at 4.77%. The reason we project strong growth in this area is, first, the acquisition of Digital Surgery, an AI Robotics company that produces robotics to enhance surgery efficiencies[1]. We believe growth will start off slower than the CAGR due to a minor programming setback that Medtronic sustained during Q4 of fiscal year 2020 that effected overall sales of these products[2]. Another reason we slow growth in 2020 is due to the Coronavirus outbreak which we believe will slow spending on new equipment as hospitals and facilities are focused on the virus. However, healthcare is trending towards value-based care where there is an emphasis on surgical efficiencies that treat patients quicker. This will allow Medtronic to have continued growth in this segment.

Restorative Therapies Group

The Restorative Therapies Group is a broad segment consisting of Spine Therapies, Brain Therapies, Specialty Therapies and Pain Therapies. Overall, we project the Restorative Therapies group to grow at a 5-year CAGR of 6.11%. We expect the Spine Therapies subsegment to stay relatively flat in growth based off historical data and strong Q3 2020 sales. We project the Brain Therapies subsegment to continue growing at a high rate as they have historically because of high Q3 2020 growth in their Neurovascular and Neurosurgery products[4]. The Pain Therapies subsegment is where we project the highest growth percentage due to Medtronic's acquisition of Stimgenics, a spinal cord therapy business that uses technology to help with pain management. Despite the emphasis of spinal cord therapy, Medtronic disclosed in their press release that this acquisition will flow directly into their Pain Therapies area because the products are used to alleviate client pain[6]. We expect an increase in growth from 1% in 2019 to 3% in 2020 because of Q3 earning reports, but project a large jump in 2021 because of clinical trials that are expected to be completed in late fiscal year 2020 and early fiscal year 2021. Medtronic stated in Q3 reports that these products could be done and ready for market within 12 months[4].

Diabetes Group

Diabetes is the smallest part of the Medtronic portfolio, but Medtronic is taking strides in increasing the size. Medtronic recently acquired Klue, a diabetes company that specialized in tracking eating for insulin pump technology. This will allow Medtronic to expand their Diabetes portfolio from insulin to technology and the tracking of insulin levels. Medtronic has seen strong growth in this subsegment historically and we believe that will continue. Despite a small recall on insulin pumps in February of 2020, we project Medtronic to grow by 11% in 2020 and 12% in 2021 with a 5-year CAGR of 7.11%[7].

Enterprise Excellence Program

In 2018, Medtronic announced they would be launching a program called Enterprise Excellence. This program was implemented to lower operating costs by $3 billion by 2022 to improve operating margins. Medtronic did not disclose exactly how they would cut costs but pointed out they would focus on integrating and optimizing global manufacturing and employee costs in their filings[8]. Medtronic has reported success with the program in past quarterly earnings reports and again showed strength in the Q3 2020 earnings report. We project Medtronic will continue to see increased operating margins through 2022 with his program implementation.

The Enterprise Excellence program helps Medtronic's overall cost structure because they face high research and development costs being in the healthcare field. With the trend in value-based care becoming the norm, we believe research and development costs will continue to increase because Medtronic will need to develop new products that are minimally invasive on patients and more efficient for physicians.

We believe that COGS will grow consistently with the projected increase in sales, so we chose to grow COGS at a percentage of revenue through the forecast period. Historically, the gross margin for Medtronic has been between 71.5% and 73% and our forecasts has it at 72.17%.

We think that the Enterprise Excellence program will continue to be effective with our operating margins growing from 20% to 22% over the next 5 years compared to it historically being between 18-20%.

RECENT DEVELOPMENTS

Q3 2020 Earnings Report

On February 18, 2020, Medtronic held their Q3 FY 2020 earnings call. A key takeaway from this call was missed revenue growth compared to projections. CEO Omar Ishrak attributes this to competitive pressure in the TAVR product launch along with other product launches in the Cardiac Rhythm market. Another reason revenue growth was slowed was due to a system upgrade in the Surgical Innovations subsegment of the Minimally Invasive Therapies group[9]. Both issues occurred late in the quarter so it will be important to monitor how the company responds in Q4 2020. Both takeaways have been reflected in our 2020 expected revenue growth.

The positive takeaway from the earnings report was the continued success of the Enterprise Excellence program. This program increased operating margins by 90 basis points in Q3 attributed to reduced SG&A costs[9]. It is a positive takeaway to see the Enterprise Excellence programs success as it will be an important driver to reduce costs throughout the next two fiscal years.

Conversation on the Coronavirus reported slowed growth for the number of medical device performance in China, specifically, and other markets in Asia Pacific. We have projected a decline for Q4 2020 estimates but believe if the virus is contained during fiscal year 2021, revenues will increase due to a spike in the number of procedures taken place.

EPS projections for the period were $1.38 and Medtronic beat those with an EPS of $1.44. Revenue grew at 2.3% compared to analysts' projections of 2.6%. This negatively affected the stock price the next day. The EPS growth is attributed to the increase in operating margins due to a decrease in SG&A costs.

Mergers and Acquisitions

Medtronic's most recent acquisition was of privately held Digital Surgery, announced February 13, 2020. As mentioned in the Minimally Invasive Therapies section, this acquisition will allow for an expansion in Medtronic's Surgical Innovations subsegment. Digital Surgery specializes in Surgical Robotics. Medtronic said in a press release that prices have not yet been disclosed and that the costs will not affect the current 2020 earnings per share outlook[10]. With value-based care becoming the trend in health care, Medtronic is positioning themselves to be the leader in surgical innovations by increasing their AI robotics.

Another recent transaction Medtronic made was the acquisition of Stimgenics LLC. Stimgenics is another privately held company and is based out of Bloomington, Illinois. Stimgenics is renowned for their spinal cord stimulations (SCS) therapies where they use waveform to help ease tension and pain in nervous system cells. Medtronic states that the innovations will fit in the Pain Therapies section, but the research that they are acquiring from Stimgenics will expand across their Restorative Therapies group. Medtronic did not disclose payments of the transaction but again said that the acquisition will not affect the expected 2020 earnings per share[6]. We do not expect Medtronic to take on a lot of debt because of this acquisition. We have modeled in the acquisition to our revenue growth in the Restorative Therapies group. We expect a larger jump in revenue growth in fiscal year 2021 and 2022 due to clinical trials that are underway for products in the Stimgenics portfolio that Medtronic believes will pass at the end of 2020 and beginning of 2021.

The third acquisition that was made in the third quarter for Medtronic was the acquisition on Klue, a diabetics company specializing in technology that tracks insulin levels in patients. What makes Klue stand out from competitors is that their technology can track when a patient is eating and what the patient is eating. Both are extremely important for tracking insulin levels in patients and when a patient needs more insulin. This is another deal that has not disclosed financials and Medtronic again said that they do not expect it to have an impact on 2020 earnings per share or long-term financial metrics for acquisitions. The Diabetes portfolio has grown by over 11% the last two years and are looking to up that with this transaction. Making an emphasis on expanding their smallest segment is a big positive to Medtronic's outlook. We believe this will help their growth immediately and offset loses due to a malfunction in Medtronic's diabetes insulin pump. We have growth of 11% in 2020 and 12% in 2022 with a marginal decrease in growth throughout the forecast.

Overall, Medtronic has continually acquired new, niche companies to implement into their expanding segments and portfolios. It is important in the healthcare field to continually expand research and development, along with new products. Medtronic is showing strengths in this aspect and is a reason why we have a positive outlook on them.

Covid-19

We believe that the current Covid-19 situation could hurt Medtronic in Q4 2020 and Q1 2021 due to the shutdown of major cities in China. With hospitals focusing on fighting the virus, many procedures are not being performed. We have accounted for these setbacks in our projections with the Cardiac and Vascular segment and our Minimally Invasive Therapies segment. We believe that these two segments will be the most impacted because patients spend time in hospitals and healthcare centers getting these procedures done.

We do not believe Medtronic's supply chain will be significantly disrupted because none of their top 10 suppliers operate within China, or the countries that have been hit the worst like Iran and Italy. 5 of Medtronic's top 10 suppliers operate within the United States which is a big positive with shutdowns beginning to happen across countries. One company that could impact Medtronic is Global PMX, their 4th largest supplier, who operates out of Taiwan. Taiwan's proximity to China is concerning incase the virus begins to spread there and forces factory shutdowns similar to China. This could force Medtronic to look for suppliers within the United States and could hurt production.

INDUSTRY TRENDS

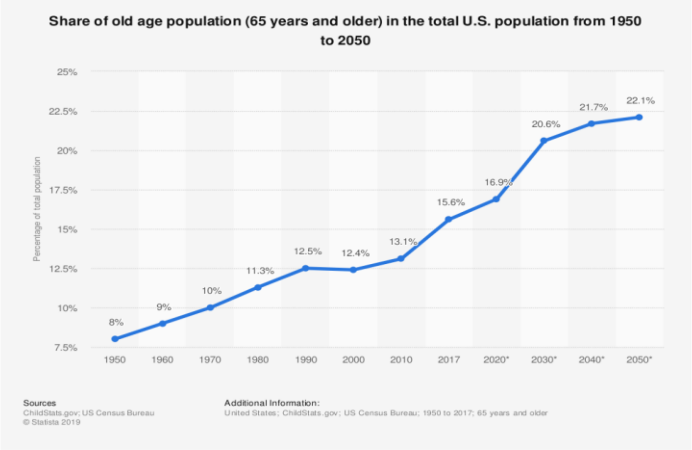
Value-Based Care

The healthcare industry is shifting from traditional fee-for-service to a value-based care. The reason for this is that fee-for-service focused on quantity of patients seen and treated and charged based on total numbers. This creates moral hazard to some who feel the patients were not in the best interest of the providers. Now, value-based care is being implemented which focuses on the quality of care for the patient. Health care providers are under pressure to perform quality care that produces results for patients and keeps them from repeated visits and tests. This change is putting pressure on the individual MedTech companies because it is forcing product innovations.

One way Medtronic is becoming a leader in this trend is their recent acquisition of Digital Surgery. As stated earlier, the implementation of robotics-based surgery will increase physician efficiency along with patient recovery time. Value-based care is not limited to just surgery equipment, it spans across all of Medtronic's portfolios. An example of this is Medtronic with their new TAVR Heart Valve. This procedure creates a synthetic heart valve that can replace a failing or diseased heart valve and act as a healthy heart valve for the patient. This minimally invasive procedure helps cut down on recovery time for the patient and the time needed to perform the surgery[11]. Many other companies are taking similar approaches as Medtronic to fit the new value-based care mold. A common trend in the market is heading towards innovative technology that works and reduces patients time in the hands of a physician. This is positive for the industry because it will make procedures that once took a lengthy time period to plan, execute, and recover be done much quicker. More consumers will engage in procedures they once shied away from as they become easier and more common.

Aging Population Growth

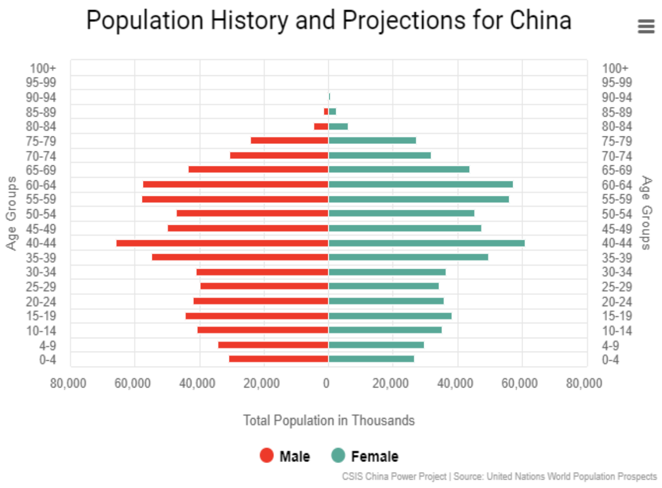
The Baby Boomer generation is aging and will become the largest generation of senior citizens at one time. For the first time in United States history, there is projected to be more adults over the age of 65 than children under the age of 18.[2]



Source: Statista[23]

The above graph shows the rise in adults over the age of 65 until 2050. This is important for the economic outlook of this industry because cardiovascular disease is most prevalent in adults over the age of 65.

China is seeing similar aging to the United States because they had an exponential boom in babies from 1960-1980 and then implemented government regulations to slow childbirth.



Source: Csis.org

Asia Pacific is an emerging region for the Cardiovascular Devices market and will be driven significantly by China and their large population. The above projection looking forward to 2030 shows that with China's aging population, they will experience an increase in cardiovascular diseases that are similar to the United States. This trend will help expand the market and help push growth in Emerging Markets and the Cardiac and Vascular segment from 2020-2030[20].

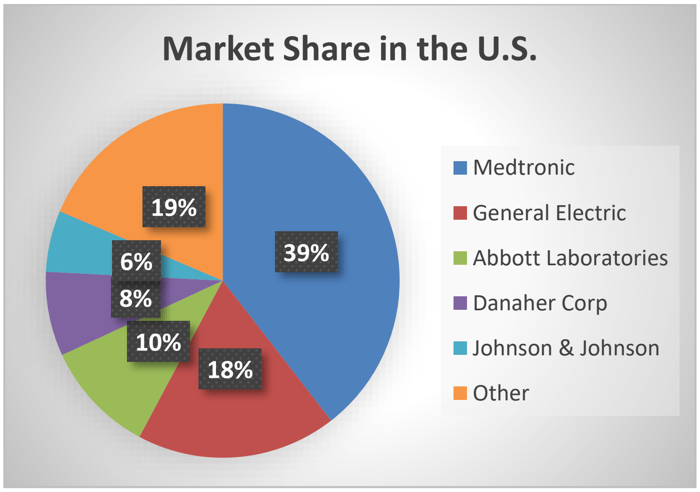
Increase in Obesity

Increase in obesity can cause increase in high blood pressure and increase in hypertension. These are two of the leading factors of cardiovascular diseases and will be a leading driver to the demand for cardiovascular devices. 42.8% of Americans between the age of 40-59 are considered obese and 41% of adults aged 60 and over are considered obese. These numbers are predicted to grow to almost 50% by 2030 and the number of severe obese people is expected to rise to 24.2% in the United States[22]. The increase in obesity, especially among the 60+ demographic, will be a key catalyst to monitor. The projections show more cardiovascular diseases which will drive higher revenues within the market.

MARKETS AND COMPETITION

The medical devices industry is highly competitive with many small companies entering the market with niche products. To compete in the industry, a company must acquire patents for their products and pass FDA regulation to get their products on the market. This can create barrier to entry to some of the smaller companies trying to compete with the major players who control over 80% of the market[13]. The common trend in the industry, as shown by Medtronic, is for a high number of small firms to enter, and the large firms then buy them out to add to already existing portfolios. This has kept the major players on top and continually dominating the overall market share.

Another key to success in the market is the ability to establish trusting relationships with the physicians and hospitals. It is ultimately the physician's decision on which medical devices they want to use to cure patients and with the emphasis on value-based care, the physicians will continue to use trusted products that work and do not require patients to continually come back for visits. This is another reason that the major players have, and will continue, to dominate the landscape because physicians are less likely to take risks with new, smaller companies.



Source: IBISWorld

As seen in the figure above, Medtronic is a sizeable leader in the medical device industry in the United States. What sets Medtronic apart from these companies is that all of their products fit in the medical device's category compared to Danaher Corp (DHR) or General Electric (GE) that have only a small percentage of their business in medical devices. This focus has allowed for Medtronic to separate from peers and make necessary transactions to boost their existing portfolios.

The peers that we have chosen to focus on are Abbot Laboratories (ABT), Boston Scientific (BSX), Johnson & Johnson (JNJ) and Edwards Lifesciences (EW) due to their similar portfolio structure and products compared to Medtronic.

Peer Comparisons

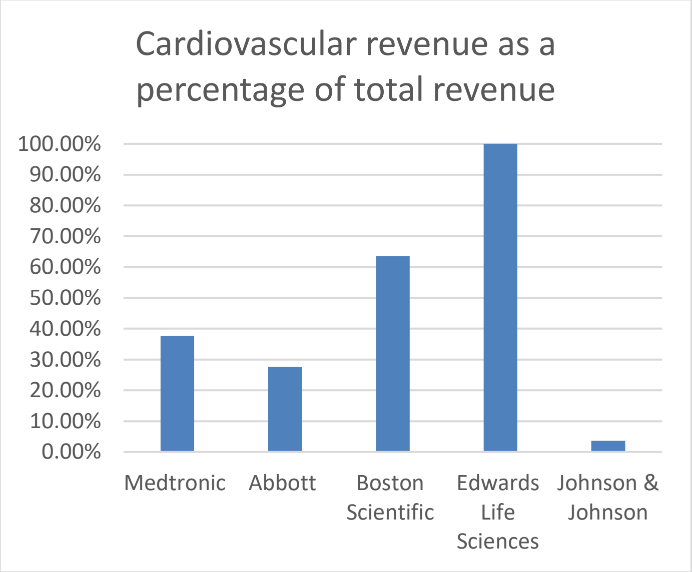
Abbott Laboratories specializes in cardiovascular products, diagnostics, and pharmaceuticals. Abbott has a product line similar to Medtronic with their cardiovascular diseases and diabetes treatments.

Abbott took a major leap forward in the Cardiovascular Devices market with their acquisition of St. Jude Medical in January of 2017. This acquisition gave them growth of 69.3% in 2017 and are continued to be projected high growth through 2022.[14] Because of this large acquisition, Abbott is in position to be one of the largest companies in the cardiovascular industry and compete with Medtronic at the top for new innovation and top revenue earnings.

Boston Scientific specializes in Cardiovascular Devices with their Cardiovascular segment and their Rhythm Management segment. Together these segments make up about 70% of the company revenue, worth $6.81 billion. Boston Scientific has continually made acquisition to broaden their portfolio, their most noticeable being the acquisition of BTG Plc, who they acquired in August of 2019. This acquisition was to increase their pharmaceuticals product, essentially adding their entire pharmaceuticals portfolio through the acquisition worth $4.2 billion.[17] Strong growth from Boston Scientific through the acquisition of BTG will increase revenues for the company as a whole and allow them to continue competing with Medtronic and Abbott by being able to invest in research and development.

Edwards Lifesciences is a much smaller company that generated $4.3 billion in sales for 2019. Edwards Lifesciences focuses only on cardiovascular devices, and specifically, their Transcatheter Aortic Valve Replacement (TAVR) devices. Out of the $4.3 billion the company did in sales in 2019, $2.7 billion came from their TAVR devices.

Johnson & Johnson has a much larger and diverse portfolio than Medtronic which includes pharmaceuticals, consumer health products, and medical devices. In the medical device's segments, JNJ holds similar products in cardiovascular equipment, and surgical precision (minimally invasive therapies). JNJ has been in a decline in growth over the last 5 years in their medical device's income. One reason for this is Abbott's acceleration in their cardiovascular portfolio, which is giving them a greater market share overall and more competitive pressure on JNJ[13].

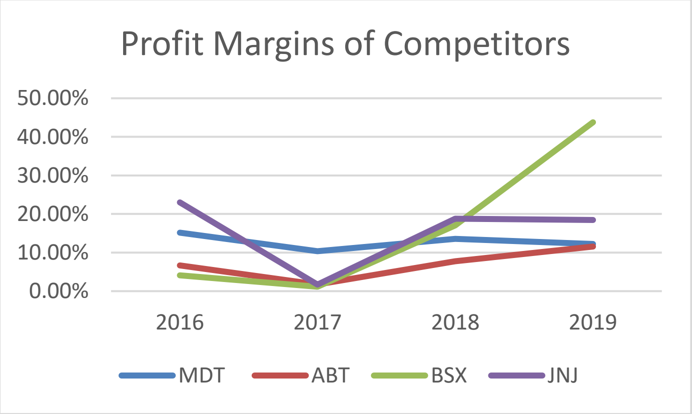


When comparing the firms, it is important to look at the similar portfolios within each company. The graph above shows each cardiovascular segment revenue as a percentage to the total revenue of each company. We feel the cardiovascular portfolios are the most similar across the competitors in terms of products and total revenue so we wanted to compare each company to their overall portfolio. What's worth pointing out is that Edwards Lifesciences focuses their company entirely on cardiovascular devices, specifically their TAVR devices which make up about $2.8 of their $4.3 billion dollar portfolio. On the other end, Johnson & Johnson only generates 3% of their total revenue from their comparative cardiovascular portfolio. Johnson & Johnson is a massive company that focuses on many different products. Their medical device segment, specifically cardiovascular, is their smallest line. Medtronic and Abbott are structured similarly with the cardiovascular market being their largest in their respective portfolios and also offering a mix of other products. We believe this shows how Medtronic and Abbott will continue to compete in the cardiovascular market to keep each of their respective companies with adequate cash flows.

	ROA	ROE	ROIC
Medtronic	5.18%	9.63%	21.82%
Abbott	5.43%	11.57%	7.45%
Boston Scientific	15.38%	33.84%	25.91%
Edwards Lifesci.	17.29%	25.22%	24.53%
Johnson & Johnson	9.55%	25.22%	17.37%

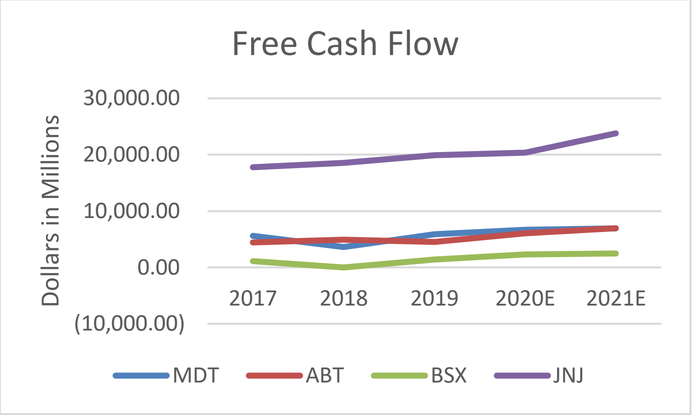
Source: FactSet

The chart above shows operating metrics for the competing companies. What's worth noting is Medtronic's low ROA and ROE relative to their peers. When looking at financials, we believe this stems from Medtronic's high Goodwill and Intangible Asset accounts compared to their peers. We believe that the number of patents and other items that fall in these categories will help generate revenue, and don't create a negative for the company. A positive for Medtronic from the chart is their ROIC compared to Abbott. These two have very similar portfolios and are competing at the top of the cardiovascular device market. This tells us that Medtronic has made good returns on their investments and we expect this number to increase moving forward.



Source: FactSet

Above is a graph of profit margins for the four largest competitors and shows a big decrease in 2017 due to a large payoff of taxes from the corporate tax rate being lowered. After the drop BSX saw a large spike due to an income tax benefit they received, but JNJ and MDT remained relatively flat with constant marginal net income and sales increase. Abbott has experienced greater net sales due to their acquisition of St. Jude Medical which allowed them to compete for market share with Medtronic in the cardiovascular devices market.



Source: Bloomberg

The above graph shows the free cash flows to the firms from 2017-2021. The free cash flows largely depict the size of the firms, with JNJ being the largest, BSX the smallest, and MDT and ABT having almost the same market cap. The free cash flows are important to a healthcare company for acquisitions and for debt payoff if the economy were to slowdown. It has been noted in the report that acquisitions are a major part of the healthcare landscape and being able to buy smaller companies that can complement a company's portfolios is important. JNJ might look to acquire in this field due to their large amount of free cash flow and their negative growth in the industry. MDT and ABT are both positioned with $6-8 billion in expected 2020-21 free cash flow and can continue their acquisitions. The other importance in strong free cash flow is ability to pay off debt in case of a recession. Johnson & Johnson holds a AAA rating on their debt and show that if a recession were to hit, they are positioned to have very little exposure to default. Medtronic's debt rating is A3, according to Moody's, showing that they can likely handle their debt obligations. This gives us confidence moving forward with upcoming debt payments and positions them well with competitors in the case of a recession.

ECONOMIC OUTLOOK

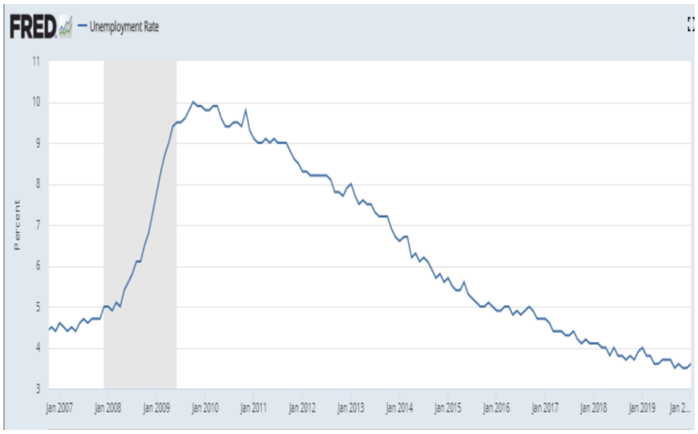
Coronavirus

The coronavirus that began in Wuhan, China has shifted markets and taken over global headlines. The deadly virus has no known cure, and can spread rapidly through person to person contact. The disease initially caused China to shut down many manufacturing operations along with a city lockdown of Wuhan. The virus has since spread globally, causing massive shutdowns in Italy and various other countries, including the United States. Right now, the manufacturing shut down in China is not a large problem for Medtronic because most of their manufacturing and supply chain is in the United States. The concern for Medtronic for supply chain is if the Coronavirus begins to spread within the United States and the U.S. takes similar precautions like China did and manufacturing plants begin to shut down[16].

The Coronavirus is very disruptive in the number of overall medical procedures that are being done. China is in the Emerging Markets geographic region for Medtronic and is one of the drivers in future growth outlook. A shutdown in China will hurt the growth of Emerging Markets and hurt Medtronic revenues in the short run. The same can be said with the United States but will hurt revenues much greater. If the Coronavirus continues to run without being contained in the United States, all companies are going to continue to hurt as markets go down and manufacturing gets shut down. If the Coronavirus can be contained, then the number of procedures that are being delayed now, will be done in future years. This will allow for Medtronic to rebound strongly against hurt revenues during this time[12].

Unemployment

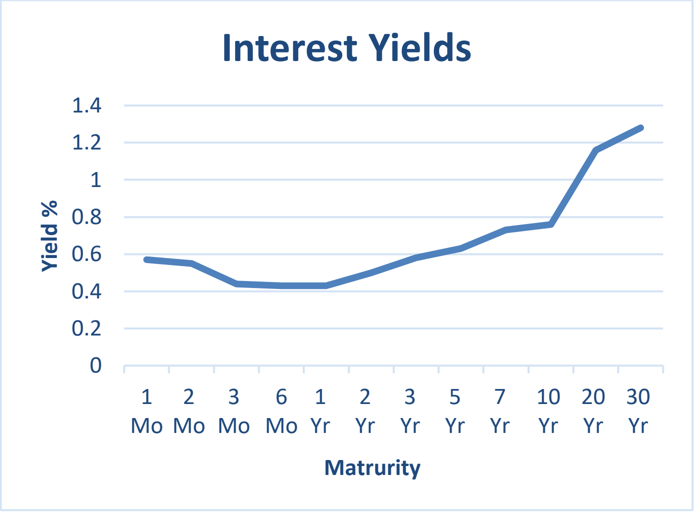
Unemployment can affect the number of people that can receive and afford expensive medical procedures. The United States has hit record numbers of unemployment and the latest job call, March 6, 2020, showed consistent unemployment at 3.5%. The other important takeaway from this report was the continued increase in payroll employment, which correlates to the number of insured employees. More people employed will lead to more people being able to afford surgeries for treatment with cardiovascular diseases and group therapy issues. The procedures being done with Medtronic devices are very expensive and most people cannot afford to undergo operations unless they are medically insured, which can come from employment. Unemployment numbers can also be a good indicator of where the market is currently at in terms of a recession. Having strong employment numbers with the way the market is trending downward can indicate the market is not heading towards a recession but more of a correction with the scare of Coronavirus. The graph in the top right column shows the constant decline in unemployment since the great recession.



Source: FRED

Interest Rates

With the current market downturn, many investors have fled from equities and gone to the fixed income market. This has caused record low numbers, including our Risk-Free Rate, the 10-Yr. T-Note. As seen below, the yield curve as of March 10th shows an inversion. An inverted yield curve can point to a recession, which could be an issue for a company that has large debt payments upcoming. Medtronic has larger debt payments upcoming in fiscal year 2020 and 2021, but not by any amount that would exceed free cash flow, even if a recession were to take place. Another takeaway from the low interest rates is the ability for a company to refinance. Medtronic could look to refinance debt obligations at these significantly low levels to reduce future interest payments on outstanding debt.



Source: U.S. Treasury[18]

2020 Presidential Election

The 2020 presidential election can have significant implications for the entire healthcare sector with proposed Medicare-For-All coming from Bernie Sanders, a frontrunner in the Democratic party. Sanders' policies are also targeting pharmaceuticals and diabetes for prices on prescription drugs and insulin. Markets have reacted negatively to Sanders' early victories in the primary race but rose sharply when competitor Joe Biden won Super Tuesday on March 3rd. Most notably, the healthcare stocks were the big winners when Biden took over as the front runner due to his stances on Medicare-For-All, which he does not support. It will be important to closely monitor the election race as healthcare stocks will react heavily throughout the nominations.

INVESTMENT POSITIVES

- **Aging population**: With a significantly aging population, we expect revenue increases in the Cardiac and Vascular group of Medtronic because the senior citizen population will have an increase in cardiovascular diseases.

- **New Technologies:** With an emphasis on value-based care, new technology innovation will allow companies to grow. Medtronic has made acquisitions to align themselves with this growing market.

- **Emerging Markets:** China is an emerging market for Medtronic because of their large population that is aging similar to the United States. The aging of the population will increase the number of cardiovascular diseases and the number of supplies needed to treat them. Medtronic can find new growth in this market.

INVESTMENT NEGATIVES

- **Coronavirus:** The Coronavirus has scared markets across the world. The decrease in the United States stock market could send the country into a recession, hurting overall sales for Medtronic. Also, this disease deters people from getting treatment and using Medtronic products in the short-term.

- **Presidential Race:** The 2020 Presidential race could shift the healthcare landscape if Bernie Sanders were to win the Democratic nomination and win the Presidency. His Medicare-for-All plan scares healthcare investors and has hurt stocks when he has won primaries. He has also targeted drug prices and insulin prices during his campaign. Although Diabetes is the smallest group for Medtronic, they have had high growth and insulin price caps could stunt this.

VALUATION

Revenue Growth

The revenue growth that was elaborated on in the Company Description section under each subsegment was driven by economic outlook and Medtronic reports. Medtronic is in Q3 of fiscal year 2020, allowing us to account for 75% of fiscal year 2020. We used earnings calls and the declining economy in Q4 to create a revenue growth in 2020 of 3.12%. Bloomberg analyst have projected Medtronic to finish 2020 with a 2.5% revenue growth from 2019 and an overall revenue of $31,318 billion. The growth is slightly lower, but our predictions give us a revenue of $31,542, so we are taking a slightly more bullish outlook. We back this stance based off of strong acquisitions in 2020 that will boost Q4 results and allow Medtronic to earn strong revenues. We have 2021 growth of revenue at 4.61% compared to analyst predictions of 4.5%. These predictions stem from earnings call adjustment on revenue outlook and projections from historical growth and recent acquisitions[2].

Operating Expenses

We grew our COGS and SG&A accounts by a percentage of revenue based on 5-year historical average of revenue. The reason for this was Medtronic has maintained a stable percentage of revenue with their COGS and R&D so we felt it necessary to keep these consistent. Although Medtronic has implemented their Enterprise Excellence program, we believe that the decline in percentage of revenue will be offset by the multiple acquisitions where these programs have not yet been implemented. We have grown COGS at 27.83% of revenue and R&D by 7.56% of revenue, the 5-year historical averages.

We decided to grow litigations constant through 2029 due to ongoing current legal issues, and the common occurrence of litigation charges in the healthcare field. We used the 5-year average to project these costs moving forward. We did not grow gain on sale of businesses as we think the divesture in the Respiratory, Gastrointestinal, & Renal in 2018 was a one-time occurrence.

We grew depreciation on the income statement by a percentage of Net PP&E and we grew amortization by the amortization schedule that Medtronic listed in their 2019[1]. We forecasted our Net PP&E out by adding expected Capital Expenditure to Gross PP&E year prior. To forecast our Capital Expenditure, we used historical data on additions to PP&E and grew it by 5%, which is slightly above our 5-year average, but this data was skewed by a large decrease in 2018.

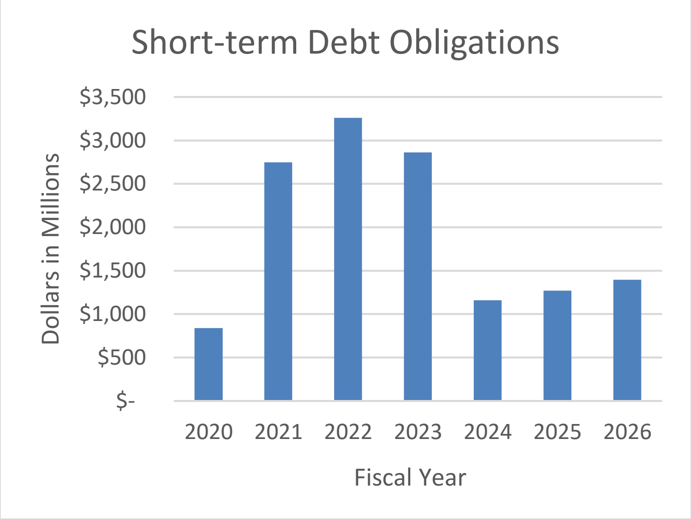
Our Intangible Asset account steadily decreased when we forecasted it as year prior less accumulated depreciation. Considering Medtronic's active acquisitions, we felt necessary to grow the Intangible Asset account because of the patents and research they would be acquiring with future acquisitions. Not including the 2015 acquisition of Covidien worth $15 billion, Medtronic's 4-year average of historical acquisition charges was $1.12 billion. We took this average and grew the Intangible Asset account by $1.1 billion to account for continued acquisitions by Medtronic.

One ration that sticks out is an increasing debt-to-equity ratio, hinting at more risk in the future. The reason we believe this is true is due to short-term debt obligations coming in the short run along and a continually increasing dividend payment. It will be very important to monitor how Medtronic handles their upcoming debt, and if it is paid off, will help reduce the debt-to-equity ratio.

A positive outlook is our increasing profit margin over the next 10 years. With revenues growing at a 5-year CAGR of 3.52% and expenses, like amortization, decreasing along with a lower income tax compared to historical average will help keep this growth constant.

Debt Maturity

The graph on the top right of the next column shows the upcoming debt obligations for Medtronic. Medtronic has large debt payments to be made in 2021, 2022, and 2023. A positive from the graph is Medtronic's low debt obligation for 2020 because of the market slowdown due to coronavirus. They should have adequate cash in 2020 to make these payments. What is worrisome is the 2021 and 2022 payments because of the coronavirus. We believe that the Medtronic's earnings will take the biggest hit in fiscal year 2020, which ends April 30th. However, we expect a small decline into 2021 even if the coronavirus spread is stopped because hospitals will still be recovering from the number of patients and change in day to day operations. What is a concerning is if the coronavirus continues to spread throughout the United States and goes into fiscal year 2021 for Medtronic. If they take a hit in revenue for 2021 then they could have a liquidity issue for their increasing debt payments in 2021 and 2022. It will be important for management to give guidance on their capital structure and how they plan to finance these payments.



Source: Company 10k and Henry Fund Estimates

We believe that Medtronic will have adequate cash flows to pay off debt obligations and be able to survive through the coronavirus pandemic. We have forecasted each segment's revenue growth to represent how we think the slowdown will affect the company and are confident that their cash flows will get them through a tough time.

Valuation Models

- **DCF/EP= $135**
- **DDM= $120**
- **Relative P/E= $87**

What sticks out most in the prices we generated was DCF/EP being significantly higher than the other two models was due to a very low risk-free rate that is used to calculate cost of equity. We used the 10-year treasury rate at 1.12%, the yield on March 1st. With markets driving down interest rates, it has caused our model to come out with higher prices for the DCF/EP Model. We still have confidence in our DCF model even though it is about $9 higher than FactSet and Bloomberg analysts who have a target price of $126. The DCF model takes into account all of our revenue forecasts that we have made in trying to adjust for the ongoing coronavirus pandemic versus the DDM and the relative P/E valuations.

The relative P/E is significantly less than both the DCF/EP and DDM. The reason for this is the average multiple of the competitors trades at 24.23x earnings versus Medtronic trading at 27.9x earning. I believe that it is justified for Medtronic to trade at a higher multiple due to their large markets share in the overall medical devices industry and their leading market share in the cardiovascular devices market. Both market shares give them an advantage over their competitors and is a leading reason to why they are trading higher.

We do like the dividend discount model which generated a price of $120. The reason we like this model is because Medtronic has historically had strong and consistent dividend growth. We have forecasted Medtronic's dividends to grow at a 5-year historical average of 13.5% through our forecast period and are confident that through continued growth in earnings they will achieve this.

Overall, we put the most emphasis on the DCF/EP and the DDM because they reflect the current value of the company versus the relative valuation model because it trades at a higher P/E compared to its competitors.

KEYS TO MONITOR

It will be important to monitor the ongoing Coronavirus scare for our buy rating. The Coronavirus has the potential to hurt revenue and share price due to scares in the market. A containment of the Coronavirus will ease investor's anxieties and allow for the market to trend upwards, significantly helping healthcare stocks.

It will also be important to monitor economic indicators like employment and interest rates. A recession can hurt a company like Medtronic that has upcoming debt payments. Even though we believe their strong credit rating and free cash flows will allow them to be default free, a significant recession could drive down revenues and cash flows.

We have a positive outlook on Medtronic because of the U.S. and Chinese populations aging which correlates directly to the amount of cardiovascular diseases there are and the amount of people that will be seeking treatment. These patients and physicians will be seeking minimally invasive procedures to create quick procedure and recovery times. Medtronic is well positioned in both industries to provide the equipment to help with cardiovascular diseases and the surgical innovations to ensure they get performed in the most efficient way. All of these procedures could be pushed off, however, if there is a continued spread of the coronavirus. Many hospitals and healthcare centers will be focused on fighting the pandemic and will not perform surgeries or operations on any non-life threating issues. This could push off revenue growth for Medtronic in the short-term, but allow for a spike long-term when the medical world begins to operate at normal capacity again.

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Medtronic

Revenue Decomposition

Fiscal Years Ending Apr. 30	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Cardiac and Vascular Group													
Cardiac Rhythm & Heart Failure	5,649	5,947	5,849	5,732	5,904	6,022	6,143	6,265	6,391	6,518	6,649	6,782	6,850
Yoy Growth	3.37%	5.28%	-1.65%	-2.00%	3.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	1.00%
Coronary & Structural Heart	3,113	3,562	3,730	3,954	4,151	4,359	4,533	4,715	4,903	5,099	5,303	5,516	5,626
Yoy Growth	0.65%	14.42%	4.72%	6.00%	5.00%	5.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	2.00%
Aortic, Peripheral & Venous	1,736	1,845	1,926	2,022	2,144	2,262	2,375	2,470	2,568	2,645	2,725	2,807	2,863
YoY Growth	5.98%	6.28%	4.39%	5.00%	6.00%	5.50%	5.00%	4.00%	4.00%	3.00%	3.00%	3.00%	2.00%
Total	**10,498**	**11,354**	**11,505**	**11,708**	**12,199**	**12,643**	**13,051**	**13,450**	**13,862**	**14,263**	**14,677**	**15,104**	**15,338**
	2.96%	**8.15%**	**1.33%**	**1.73%**	**4.02%**	**3.51%**	**3.13%**	**2.97%**	**2.98%**	**2.81%**	**2.82%**	**2.83%**	**1.53%**
Minimally Invasive Therapies Group													
Surgical Innovations	5,145	5,537	5,753	5,926	6,281	6,721	7,124	7,480	7,854	8,247	8,659	9,092	9,274
Yoy Growth	-2.28%	7.62%	3.90%	3.00%	6.00%	7.00%	6.00%	5.00%	5.00%	5.00%	5.00%	5.00%	2.00%
Respiratory, Gastrointestinal, & Renal	4,774	3,179	2,725	2,671	2,537	2,562	2,588	2,614	2,640	2,666	2,693	2,720	2,747
Yoy Growth	11.07%	-33.41%	-14.28%	-2.00%	-5.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%
Total	**9,919**	**8,716**	**8,478**	**8,596**	**8,818**	**9,283**	**9,712**	**10,094**	**10,494**	**10,913**	**11,352**	**11,812**	**12,021**
Yoy Growth	**3.72%**	**-12.13%**	**2.73%**	**1.37%**	**2.52%**	**5.01%**	**4.42%**	**3.79%**	**3.81%**	**3.84%**	**3.87%**	**3.89%**	**1.74%**
Restorative Therapies Group													
Spine	2,641	2,668	2,654	2,707	2,734	2,761	2,789	2,817	2,845	2,874	2,902	2,931	**2,961**
Yoy Growth	-9.68%	1.02%	-0.52%	2.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	**1.00%**
Brain Therapies	2,098	2,354	2,604	2,864	3,122	3,372	3,541	3,718	3,903	4,099	4,304	4,519	**4,609**
Yoy Growth	8.93%	12.20%	10.62%	10.00%	9.00%	8.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	**2.00%**
Specialty Therapies	1,491	1,556	1,641	1,690	1,741	1,793	1,847	1,902	1,959	2,018	2,079	2,141	**2,184**
Yoy Growth	-15.91%	4.36%	5.46%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	**2.00%**
Pain Therapies	1,136	1,165	1,284	1,323	1,481	1,629	1,727	1,779	1,832	1,887	1,944	2,002	2,042
Yoy Growth	93.53%	2.55%	0.10%	3.00%	12.00%	10.00%	6.00%	3.00%	3.00%	3.00%	3.00%	3.00%	2.00%
Total	**7,366**	**7,743**	**8,189**	**8,584**	**9,079**	**9,556**	**9,904**	**10,216**	**10,540**	**10,878**	**11,229**	**11,593**	**11,796**
Yoy Growth	**2.16%**	**5.12%**	**5.76%**	**4.60%**	**5.44%**	**5.00%**	**3.51%**	**3.06%**	**3.08%**	**3.10%**	**3.12%**	**3.15%**	**2.00%**
Diabetes Group													
Total	**1,927**	**2,140**	**2,391**	**2,654**	**2,972**	**3,299**	**3,563**	**3,742**	**3,929**	**4,125**	**4,331**	**4,548**	**4,639**
	3.38%	**11.05%**	**11.73%**	**11.00%**	**12.00%**	**11.00%**	**8.00%**	**5.00%**	**5.00%**	**5.00%**	**5.00%**	**5.00%**	**2.00%**
Total Revenues	**29,710**	**29,953**	**30,557**	**31,542**	**33,068**	**34,781**	**36,230**	**37,501**	**38,826**	**40,180**	**41,589**	**43,058**	**43,794**
	3.04%	**0.82%**	**2.02%**	**3.12%**	**4.61%**	**4.93%**	**4.00%**	**3.39%**	**3.41%**	**3.37%**	**3.39%**	**3.41%**	**1.68%**

Medtronic

Income Statement

Fiscal Years Ending Apr. 30	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Opertaing Results:													
Net sales	29,710	29,953	30,557	31,542	33,068	34,781	36,230	37,501	38,826	40,180	41,589	43,058	43,794
Cost of products sold	8,357	8,246	8,260	8,778	9,202	9,679	10,082	10,436	10,805	11,181	11,574	11,982	12,187
Research and development expense	2,193	2,256	2,330	2,386	2,501	2,630	2,740	2,836	2,936	3,039	3,145	3,256	3,312
Selling, general, and administrative expense	10,018	10,238	10,418	10,632	11,147	11,724	12,212	12,641	13,088	13,544	14,019	14,514	14,762
Depreciation	937	821	895	943	990	1,040	1,093	1,148	1,205	1,266	1,329	1,396	1,467
Amortization of intangible assets	1,980	1,823	1,764	1,741	1,724	1,684	1,615	1,574	1,523	1,474	1,426	1,380	1,335
Restructuring credits / charges, net	303	30	198	219	229	241	251	260	269	279	288	299	304
Certain litigation charges, net	300	61	166	119	119	119	119	119	119	119	119	119	119
Gain on sale of businesses	-	697	0	0	0	0	0	0	0	0	0	0	0
Other expense / income, net	239	535	258	277	290	305	318	329	341	353	365	378	384
Operating profit	**5,383**	**6,640**	**6,268**	**6,448**	**6,865**	**7,358**	**7,799**	**8,158**	8,540	8,926	9,323	9,733	9,924
Other non-operating income, net	313	181	373	319	335	352	367	380	393	407	421	436	443
Interest expense	1,094	1,146	1,444	1,321	1,387	1,457	1,530	1,607	1,687	1,772	1,860	1,954	2,052
Income from operations before income taxes	**4,602**	**5,675**	**5,197**	**5,446**	**5,813**	**6,253**	**6,636**	**6,932**	7,246	7,561	7,884	8,216	8,316
Provision for income taxes	578	2,580	547	610	651	700	743	776	812	847	883	920	931
Net income / loss	**4,024**	**3,095**	**4,650**	**4,836**	**5,162**	**5,553**	**5,893**	**6,155**	**6,435**	**6,714**	**7,001**	**7,295**	**7,384**
Net loss attributable to noncontrolling interests	4	9	19	0	0	0	0	0	0	0	0	0	0
Net income attributable to Medtronic	**4,028**	**3,104**	**4,631**	**4,836**	**5,162**	**5,553**	**5,893**	**6,155**	**6,435**	**6,714**	**7,001**	**7,295**	**7,384**
Earnings per share													
Basic	2.92	2.29	3.44	3.59	3.83	4.13	4.37	4.57	4.78	4.98	5.20	5.42	5.48
Weighted average shares													
Basic	1,379	1,357	1,346	1,346	1,346	1,346	1,347	1,347	1,347	1,347	1,347	1,347	1,347
Dividends per Share	1.72	1.84	2.00	2.27	2.57	2.91	3.30	3.74	4.24	4.81	5.45	6.18	7.01
Dividend Paid	2,371.71	2,496.33	2,692.80	3,052	3,459	3,921	4,448	5,042	5,715	6,479	7,344	8,325	9,436

Medtronic

Balance Sheet

Fiscal Years Ending Apr. 30	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
ASSETS													
Current Assets:													
Cash and cash equivalents	4,967	3,669	4,393	6,067	8,747	9,972	10,134	8,699	8,693	8,224	7,197	5,503	2,874
Investments	8,741	7,558	5,455	5,631	5,903	6,209	6,468	6,695	6,931	7,173	7,424	7,687	7,818
Accounts receivable, less allowances	5,591	5,987	6,222	6,541	6,858	7,213	7,513	7,777	8,052	8,332	8,625	8,929	9,082
Inventories	3,338	3,579	3,753	3,874	4,061	4,272	4,450	4,606	4,769	4,935	5,108	5,288	5,379
Other current assets	1,865	2,187	2,144	2,152	2,256	2,373	2,472	2,559	2,649	2,741	2,838	2,938	2,988
Total current assets	**24,873**	**22,980**	**21,967**	**24,265**	**27,825**	**30,039**	**31,037**	**30,336**	**31,093**	**31,406**	**31,192**	**30,345**	**28,141**
Gross Property, Plant, and Equipment	9,691	10,259	10,920	12,111	13,361	14,674	16,052	17,499	19,019	20,615	22,290	24,049	25,896
Less accumulated depreciation	5,330	5,655	6,245	7,188	8,179	9,219	10,311	11,459	12,664	13,930	15,259	16,656	18,122
Property, plant, and equipment, net	4,361	4,604	4,675	4,923	5,182	5,455	5,741	6,040	6,355	6,685	7,031	7,394	7,774
Goodwill	38,515	39,543	39,959	39,959	39,959	39,959	39,959	39,959	39,959	39,959	39,959	39,959	39,959
Other intangible assets, net	23,407	21,723	20,560	19,919	19,295	18,711	18,196	17,722	17,299	16,925	16,599	16,319	16,084
Long-term tax assets	1,509	1,465	1,519	1,573	1,629	1,687	1,747	1,809	1,873	1,940	2,009	2,080	2,154
Other assets	1,232	1,078	1,014	950	890	834	781	732	686	642	602	564	528
Total assets	**99,816**	**91,393**	**89,694**	**91,589**	**94,781**	**96,685**	**97,461**	**96,598**	**97,265**	**97,557**	**97,392**	**96,661**	**94,641**
LIABILITES AND EQUITY													
Current Liabilities:													
Current debt obligations	7,520	2,058	838	838	2,747	3,258	2,862	1,161	1,272	1,394	1,528	1,675	1,835
Accounts payable	1,731	1,628	1,953	1,989	2,085	2,193	2,284	2,365	2,448	2,533	2,622	2,715	2,761
Accrued compensation	1,860	1,988	2,189	2,234	2,342	2,463	2,566	2,656	2,750	2,846	2,946	3,050	3,102
Accrued income taxes	633	979	567	585	614	645	672	696	720	746	772	799	813
Other accrued expenses	2,442	3,431	2,925	3,019	3,165	3,329	3,468	3,590	3,717	3,846	3,981	4,122	4,192
Total current liabilities	**14,220**	**10,084**	**8,472**	**8,666**	**10,953**	**11,889**	**11,853**	**10,467**	**10,907**	**11,365**	**11,849**	**12,360**	**12,703**
Deferred tax liabilities	2,978	1,423	1,278	1,214	1,153	1,096	1,041	989	939	892	848	805	765
Long-term debt	25,921	23,699	24,486	25,525	25,736	25,997	26,243	26,482	26,753	27,052	27,385	27,751	28,022
Accrued compensation and retirement benefits	1,641	1,425	1,651	1,704	1,787	1,879	1,957	2,026	2,098	2,171	2,247	2,326	2,366
Accrued income taxes	2,405	3,051	2,838	2,980	3,128	3,285	3,449	3,621	3,802	3,991	4,191	4,400	4,620
Other long-term liabilities	1,515	889	757	781	819	862	898	929	962	995	1,030	1,067	1,085
Total liabilities	**49,400**	**40,571**	**39,482**	**40,871**	**43,577**	**45,007**	**45,441**	**44,514**	**45,461**	**46,468**	**47,550**	**48,709**	**49,561**
Retained earnings	23,356	24,379	26,270	28,055	29,757	31,389	32,834	33,947	34,667	34,902	34,559	33,530	31,478
Common Equity	29,551	28,127	26,532	25,253	24,037	22,878	21,776	20,727	19,728	18,777	17,872	17,011	16,191
Accumulated other comprehensive loss / income	(2,613)	(1,786)	(2,711)	(2,711)	(2,711)	(2,711)	(2,711)	(2,711)	(2,711)	(2,711)	(2,711)	(2,711)	(2,711)
Total shareholders' equity	50,294	50,720	50,091	50,597	51,083	51,556	51,899	51,963	51,683	50,968	49,721	47,830	44,958
Noncontrolling interests	122	102	121	121	121	121	121	121	121	121	121	121	121
Total equity	**50,416**	**50,822**	**50,212**	50,718	51,204	51,677	52,020	52,084	51,804	51,089	49,842	47,951	45,079
Total liabilities and equity	**99,816**	**91,393**	**89,694**	**91,589**	**94,781**	**96,685**	**97,461**	**96,598**	**97,265**	**97,557**	**97,392**	**96,661**	**94,641**

Medtronic

Historical Cash Flow Statement

Fiscal Years Ending Apr. 30	2015	2016	2017	2018	2019
Operating Activities:					
Net income	2,675	3,538	4,024	3,095	4,650
Adjustment to reconcile net income to net cash provided by operating activities:					
Depreciation and amortization	1,306	2,820	2,917	2,644	2,659
Provision for doubtful accounts	35	49	39	52	78
Deferred income taxes	(926)	(460)	(459)	(919)	(304)
Stock-based compensation	439	375	348	344	290
Loss on debt extinguishment	-	163	0	38	457
Gain on sale of businesses	-	-	-	(697)	0
Investment loss	-	-	-	227	0
Other, net	576	136	(128)	73	257
Change in operating assets and liabilities, net of acquisitions and divestitures					
Accounts receivable, net	(413)	(435)	(75)	(275)	(581)
Inventories	(282)	(186)	(227)	(192)	(274)
Accounts payable and accrued liabilities	1,616	(65)	356	65	399
Other operating assets and liabilities	643	(403)	85	229	(624)
Net cash provided by operating activity	**5,669**	**5,532**	**6,880**	**4,684**	**7,007**
Investing Activities					
Acquisitions, net of cash acquired	(14,884)	(1,213)	(1,324)	(137)	(1,827)
Proceeds from sale of businesses	-	-	-	6,058	0
Additions to property, plant, and equipment	(571)	(1,046)	(1,254)	(1,068)	(1,134)
Purchases of investments	(7,582)	(5,406)	(4,371)	(3,200)	(2,532)
Sales and maturities of investments	5,890	9,924	5,356	4,227	4,683
Other investing activities, net	89	(14)	22	(22)	36
Net cash used in / provided by financing activities	**(17,058)**	**2,245**	**(1,571)**	**5,858**	**(774)**
Financing Activities:					
Change in current debt obligations, net	(1)	7	906	(249)	(713)
Issuance of long-term debt	19,942	0	2,140	21	7,794
Payments on long-term debt	(1,268)	(5,132)	(863)	(7,370)	(7,948)
Dividends to shareholders	(1,337)	(2,139)	(2,376)	(2,494)	(2,693)
Issuance of ordinary shares	649	491	428	403	992
Repurchase of ordinary shares	(1,920)	(2,830)	(3,544)	(2,171)	(2,877)
Other financing activities	(116)	60	26	(94)	14
Net cash used in financing activities	**15,949**	**(9,543)**	**(3,283)**	**(11,954)**	**(5,431)**
Effect of exchange rate changes on cash and cash equivalents	(353)	113	65	114	(78)
Net change in cash and cash equivalents	3,440	(1,967)	2,091	(1,298)	724
Cash and cash equivalents at beginning of period	1,403	4,843	2,876	4,967	3,669
Cash and cash equivalents at end of period	4,843	2,876	4,967	3,669	4,393

Medtronic

Forecasted Cash Flow Statement

Fiscal Years Ending Apr. 30	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Net income	**4,836**	**5,162**	**5,553**	**5,893**	**6,155**	**6,435**	**6,714**	**7,001**	**7,295**	**7,384**
Adjustment to reconcile net income to net cash provided by operating activities:										
Depreciation and amortization	2,684	2,714	2,724	2,708	2,722	2,728	2,740	2,756	2,776	2,802
Deferred income taxes	(64)	(61)	(58)	(55)	(52)	(49)	(47)	(45)	(42)	(40)
Change in operating assets and liabilities, net of acquisitions and divestitures										
Accounts receivable, net	(319)	(316)	(355)	(300)	(264)	(275)	(281)	(292)	(304)	(153)
Inventories	(121)	(187)	(210)	(178)	(156)	(163)	(166)	(173)	(180)	(90)
Other current assets	(8)	(104)	(117)	(99)	(87)	(90)	(92)	(96)	(100)	(50)
Accounts payable	36	96	108	91	80	84	85	89	93	46
Current accrued compensation and retirement bene	45	108	121	103	90	94	96	100	104	52
Current accrued income tax	18	28	32	27	24	25	25	26	27	14
Other accrued expenses	94	146	164	139	122	127	130	135	141	71
Long term tax asset	(54)	(56)	(58)	(60)	(62)	(64)	(67)	(69)	(71)	(74)
Other assets	64	60	56	53	49	46	43	41	38	36
Other liabilities	24	38	42	36	32	33	34	35	36	18
Net cash provided by operating activity	**7,236**	**7,628**	**8,003**	**8,357**	**8,652**	**8,929**	**9,214**	**9,507**	**9,812**	**10,015**
Investing Activities										
Acquisitions assumptions, net of cash acquired	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)	(1,100)
Additions to property, plant, and equipment	(1,191)	(1,250)	(1,313)	(1,378)	(1,447)	(1,520)	(1,596)	(1,675)	(1,759)	(1,847)
Purchases of investments	(176)	(272)	(306)	(259)	(227)	(236)	(242)	(252)	(262)	(132)
Net cash used in / provided by financing activities	**(2,467)**	**(2,623)**	**(2,719)**	**(2,737)**	**(2,774)**	**(2,856)**	**(2,937)**	**(3,027)**	**(3,121)**	**(3,079)**
Financing Activities:										
Change in common equity	(1,279)	(1,217)	(1,158)	(1,102)	(1,049)	(999)	(951)	(905)	(861)	(820)
Change in current debt obligations, net	0	1,909	511	(396)	(1,701)	111	122	134	147	161
Change in Long-Term Debt	1,039	211	261	246	238	271	300	333	366	271
Dividends to shareholders	(3,052)	(3,459)	(3,921)	(4,448)	(5,042)	(5,715)	(6,479)	(7,344)	(8,325)	(9,436)
Accrued compensation and retirement benefits	53	82	93	78	69	72	73	76	79	40
Accrued income taxes	142	149	156	164	172	181	190	199	209	220
Change in AOIC	0	0	0	0	0	0	0	0	0	0
Net cash used in financing activities	**(3,096)**	**(2,325)**	**(4,059)**	**(5,458)**	**(7,313)**	**(6,079)**	**(6,745)**	**(7,507)**	**(8,385)**	**(9,565)**
Net change in cash and cash equivalents	**1,674**	**2,680**	**1,226**	**162**	**(1,435)**	**(6)**	**(468)**	**(1,027)**	**(1,694)**	**(2,629)**
Cash and cash equivalents at beginning of period	4,393	6,067	8,747	9,972	10,134	8,699	8,693	8,224	7,197	5,503
Cash and cash equivalents at end of period	6,067	8,747	9,972	10,134	8,699	8,693	8,224	7,197	5,503	2,874

Medtronic

Common Size Income Statement

Fiscal Years Ending Apr. 30	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Net sales	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Cost of products sold	27.53%	27.03%	27.83%	27.83%	27.83%	27.83%	27.83%	27.83%	27.83%	27.83%	27.83%	27.83%	27.83%
Research and development expense	7.53%	7.63%	7.56%	7.56%	7.56%	7.56%	7.56%	7.56%	7.56%	7.56%	7.56%	7.56%	7.56%
Selling, general, and administrative expense	34.18%	34.09%	33.71%	33.71%	33.71%	33.71%	33.71%	33.71%	33.71%	33.71%	33.71%	33.71%	33.71%
Depreciation	2.74%	2.93%	2.99%	2.99%	3.00%	2.99%	3.02%	3.06%	3.10%	3.15%	3.20%	3.24%	3.35%
Amortization of intangible assets	6.09%	5.77%	5.52%	5.52%	5.21%	4.84%	4.46%	4.20%	3.92%	3.67%	3.43%	3.20%	3.05%
Restructuring credits / charges, net	0.10%	0.65%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%
Certain litigation charges, net	0.20%	0.54%	0.38%	0.38%	0.36%	0.34%	0.33%	0.32%	0.31%	0.30%	0.29%	0.28%	0.27%
Gain on sale of businesses	2.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other expense / income, net	1.79%	0.84%	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%	0.88%
Operating profit	**22.17%**	**20.51%**	**20.44%**	**20.44%**	**20.76%**	**21.15%**	**21.53%**	**21.75%**	**22.00%**	**22.21%**	**22.42%**	**22.61%**	**22.66%**
Other non-operating income, net	0.60%	1.22%	1.01%	1.01%	1.01%	1.01%	1.01%	1.01%	1.01%	1.01%	1.01%	1.01%	1.01%
Interest expense	3.83%	4.73%	4.19%	4.19%	4.20%	4.19%	4.22%	4.28%	4.35%	4.41%	4.47%	4.54%	4.68%
Income from operations before income taxes	18.95%	17.01%	17.27%	17.27%	17.58%	17.98%	18.32%	18.48%	18.66%	18.82%	18.96%	19.08%	18.99%
Provision for income taxes	8.61%	1.79%	1.93%	1.93%	1.97%	2.01%	2.05%	2.07%	2.09%	2.11%	2.12%	2.14%	2.13%
Net income / loss	**10.33%**	**15.22%**	**15.33%**	**15.33%**	**15.61%**	**15.96%**	**16.27%**	**16.41%**	**16.57%**	**16.71%**	**16.83%**	**16.94%**	**16.86%**
Net loss attributable to noncontrolling interests	0.03%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Net income attributable to Medtronic	**10.36%**	**15.16%**	**15.33%**	**15.33%**	**15.61%**	**15.96%**	**16.27%**	**16.41%**	**16.57%**	**16.71%**	**16.83%**	**16.94%**	**16.86%**
Earnings per share	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Basic	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%
Weighted average shares													
Basic	4.53%	4.41%	4.27%	4.27%	4.07%	3.87%	3.72%	3.59%	3.47%	3.35%	3.24%	3.13%	3.08%
Dividends per Share	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.02%

Medtronic

Common Size Balance Sheet

Fiscal Years Ending Apr. 30	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Current Assets:													
Cash and cash equivalents	4.98%	4.01%	4.90%	6.62%	9.23%	10.31%	10.40%	9.01%	8.94%	8.43%	7.39%	5.69%	3.04%
Investments	8.76%	8.27%	6.08%	6.15%	6.23%	6.42%	6.64%	6.93%	7.13%	7.35%	7.62%	7.95%	8.26%
Accounts receivable, less allowances	5.60%	6.55%	6.94%	7.14%	7.24%	7.46%	7.71%	8.05%	8.28%	8.54%	8.86%	9.24%	9.60%
Inventories	3.34%	3.92%	4.18%	4.23%	4.29%	4.42%	4.57%	4.77%	4.90%	5.06%	5.24%	5.47%	5.68%
Other current assets	1.87%	2.39%	2.39%	2.35%	2.38%	2.45%	2.54%	2.65%	2.72%	2.81%	2.91%	3.04%	3.16%
Total current assets	**24.92%**	**25.14%**	**24.49%**	**26.49%**	**29.36%**	**31.07%**	**31.85%**	**31.40%**	**31.97%**	**32.19%**	**32.03%**	**31.39%**	**29.73%**
Gross Property, Plant, and Equipment	9.71%	11.23%	12.17%	13.22%	14.10%	15.18%	16.47%	18.12%	19.55%	21.13%	22.89%	24.88%	27.36%
Less accumulated depreciation	5.34%	6.19%	6.96%	7.85%	8.63%	9.53%	10.58%	11.86%	13.02%	14.28%	15.67%	17.23%	19.15%
Property, plant, and equipment, net	4.37%	5.04%	5.21%	5.37%	5.47%	5.64%	5.89%	6.25%	6.53%	6.85%	7.22%	7.65%	8.21%
Goodwill	38.59%	43.27%	44.55%	43.63%	42.16%	41.33%	41.00%	41.37%	41.08%	40.96%	41.03%	41.34%	42.22%
Other intangible assets, net	23.45%	23.77%	22.92%	21.75%	20.36%	19.35%	18.67%	18.35%	17.79%	17.35%	17.04%	16.88%	16.99%
Long-term tax assets	1.51%	1.60%	1.69%	1.72%	1.72%	1.74%	1.79%	1.87%	1.93%	1.99%	2.06%	2.15%	2.28%
Other assets	1.23%	1.18%	1.13%	1.04%	0.94%	0.86%	0.80%	0.76%	0.71%	0.66%	0.62%	0.58%	0.56%
Total assets	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
LIABILITES AND EQUITY													
Current Liabilities:													
Current debt obligations	15.22%	5.07%	2.12%	2.05%	6.30%	7.24%	6.30%	2.61%	2.80%	3.00%	3.21%	3.44%	3.70%
Accounts payable	3.50%	4.01%	4.95%	4.87%	4.78%	4.87%	5.03%	5.31%	5.39%	5.45%	5.51%	5.57%	5.57%
Accrued compensation	3.77%	4.90%	5.54%	5.47%	5.37%	5.47%	5.65%	5.97%	6.05%	6.12%	6.19%	6.26%	6.26%
Accrued income taxes	1.28%	2.41%	1.44%	1.43%	1.41%	1.43%	1.48%	1.56%	1.58%	1.60%	1.62%	1.64%	1.64%
Other accrued expenses	4.94%	8.46%	7.41%	7.39%	7.26%	7.40%	7.63%	8.06%	8.18%	8.28%	8.37%	8.46%	8.46%
Total current liabilities	**28.79%**	**24.86%**	**21.46%**	**21.20%**	**25.14%**	**26.42%**	**26.08%**	**23.51%**	**23.99%**	**24.46%**	**24.92%**	**25.37%**	**25.63%**
Deferred tax liabilities	6.03%	3.51%	3.24%	2.97%	2.65%	2.43%	2.29%	2.22%	2.07%	1.92%	1.78%	1.65%	1.54%
Long-term debt	52.47%	58.41%	62.02%	62.45%	59.06%	57.76%	57.75%	59.49%	58.85%	58.22%	57.59%	56.97%	56.54%
Accrued compensation and retirement benefits	3.32%	3.51%	4.18%	4.17%	4.10%	4.18%	4.31%	4.55%	4.61%	4.67%	4.73%	4.78%	4.77%
Accrued income taxes	4.87%	7.52%	7.19%	7.29%	7.18%	7.30%	7.59%	8.13%	8.36%	8.59%	8.81%	9.03%	9.32%
Other long-term liabilities	3.07%	2.19%	1.92%	1.91%	1.88%	1.91%	1.98%	2.09%	2.12%	2.14%	2.17%	2.19%	2.19%
Total liabilities	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Retained earnings	46.44%	48.07%	52.44%	55.45%	58.25%	60.88%	63.27%	65.33%	67.07%	68.48%	69.51%	70.10%	70.02%
Common Equity	58.76%	55.46%	52.97%	49.91%	47.05%	44.38%	41.96%	39.89%	38.17%	36.84%	35.95%	35.57%	36.01%
Accumulated other comprehensive loss / income	-5.20%	-3.52%	-5.41%	-5.36%	-5.31%	-5.26%	-5.22%	-5.22%	-5.25%	-5.32%	-5.45%	-5.67%	-6.03%
Total shareholders' equity	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Noncontrolling interests	0.50%	0.60%	0.60%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%	0.38%
Total equity	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**
Total liabilities and equity	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**	**100.00%**

Medtronic
Value Driver Estimation

Fiscal Years Ending Apr. 30	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
NOPLAT:													
EBITA													
Total Revenues	**29,710**	**29,953**	**30,557**	**31,542**	**33,068**	**34,781**	**36,230**	**37,501**	**38,826**	**40,180**	**41,589**	**43,058**	**43,794**
-COGS	8,357	8,246	8,260	8,778	9,202	9,679	10,082	10,436	10,805	11,181	11,574	11,982	12,187
-Research and development expense	2,193	2,256	2,330	2,386	2,501	2,630	2,740	2,836	2,936	3,039	3,145	3,256	3,312
-SG&A	10,018	10,238	10,418	10,632	11,147	11,724	12,212	12,641	13,088	13,544	14,019	14,514	14,762
-Depreciation	937	821	895	943	990	1,040	1,093	1,148	1,205	1,266	1,329	1,396	1,467
-Amortization of intangibles	1,980	1,823	1,764	1,709	1,655	1,605	1,561	1,521	1,484	1,452	1,424	1,400	1,380
-Other Operating Expenses	239	535	258	277	290	305	318	329	341	353	365	378	384
+ Implied interst on operating leases	15	17	20	22	23	24	25	26	28	29	30	32	34
EBITA	**6,001**	**6,051**	**6,652**	**6,839**	**7,305**	**7,820**	**8,248**	**8,617**	**8,995**	**9,374**	**9,763**	**10,162**	**10,335**
Adjusted Taxes													
Income Tax Provision	**578**	**2,580**	**547**	**610**	**651**	**700**	**743**	**776**	**812**	**847**	**883**	**920**	**931**
+Tax shield on interest expense	(89)	(142)	(162)	148	155	163	171	180	189	198	208	219	230
+Tax on gain of sale of business		86											
+Tax on certain litigation charges	(24)	(8)	(19)	13	13	13	13	13	13	13	13	13	13
+Tax on other non-operating income	(25)	(22)	(42)	31	33	34	36	37	38	39	41	42	43
+Tax on restructuring charges	(25)	(4)	(22)	24	26	27	28	29	30	31	32	33	34
Total Adjusted Tax	**440**	**2,494**	**325**	**827**	**878**	**938**	**992**	**1,036**	**1,082**	**1,129**	**1,178**	**1,228**	**1,252**
NOPLAT													
EBITA	6,001	6,051	6,652	6,839	7,305	7,820	8,248	8,617	8,995	9,374	9,763	10,162	10,335
Adjusted Taxes	440	2,494	325	827	878	938	992	1,036	1,082	1,129	1,178	1,228	1,252
Change in deferred taxes	(877)	(1,511)	(199)	(64)	(61)	(58)	(55)	(52)	(49)	(47)	(45)	(42)	(40)
Total NOPLAT	**4,684**	**2,046**	**6,128**	**5,949**	**6,366**	**6,825**	**7,202**	**7,529**	**7,863**	**8,198**	**8,540**	**8,892**	**9,043**
Invested Capital (IC):					7.02%	7.20%	5.53%	4.55%	4.43%	4.26%	4.18%	4.12%	1.70%
Operating Current Assets													
Normal Cash	224	165	198	273	394	449	456	391	391	370	324	248	129
Accounts Receivable	5,591	5,987	6,222	6,541	6,858	7,213	7,513	7,777	8,052	8,332	8,625	8,929	9,082
Inventories	3,338	3,579	3,753	3,874	4,061	4,272	4,450	4,606	4,769	4,935	5,108	5,288	5,379
Other operating current assets	1,865	2,187	2,144	2,152	2,256	2,373	2,472	2,559	2,649	2,741	2,838	2,938	2,988
Total opearting current assets	**11,018**	**11,918**	**12,317**	**12,840**	**13,569**	**14,307**	**14,891**	**15,333**	**15,860**	**16,379**	**16,894**	**17,403**	**17,578**
Operating Current Liabilities													
Accounts payable	1,731	1,628	1,953	1,989	2,085	2,193	2,284	2,365	2,448	2,533	2,622	2,715	2,761
Accrued compensation	1,860	1,988	2,189	2,234	2,342	2,463	2,566	2,656	2,750	2,846	2,946	3,050	3,102
Accrued income taxes	633	979	567	585	614	645	672	696	720	746	772	799	813
Other accrued expenses	2,442	3,431	2,925	3,019	3,165	3,329	3,468	3,590	3,717	3,846	3,981	4,122	4,192
Total operating current liabilities	**6,666**	**8,026**	**7,634**	**7,828**	**8,206**	**8,631**	**8,991**	**9,306**	**9,635**	**9,971**	**10,321**	**10,685**	**10,868**
Net Working Capital	**4,352**	**3,892**	**4,683**	**5,013**	**5,363**	**5,675**	**5,900**	**6,027**	**6,226**	**6,408**	**6,574**	**6,718**	**6,710**
Net PPE	**4,361**	**4,604**	**4,675**	**4,923**	**5,182**	**5,455**	**5,741**	**6,040**	**6,355**	**6,685**	**7,031**	**7,394**	**7,774**
Other LT operating assets													
Other intangible assets, net	23,407	21,723	20,560	19,919	19,295	18,711	18,196	17,722	17,299	16,925	16,599	16,319	16,084
PV of operating leases	601	698	604	649	698	750	806	867	932	1,002	1,077	1,158	1,244
Long-term tax assets	1,509	1,465	1,519	1,573	1,629	1,687	1,747	1,809	1,873	1,940	2,009	2,080	2,154
Other assets	1,232	1,078	1,014	950	890	834	781	732	686	642	602	564	528
Total other LT operating assets	**26,749**	**24,964**	**23,697**	**23,091**	**22,512**	**21,982**	**21,530**	**21,130**	**20,790**	**20,509**	**20,287**	**20,121**	**20,011**
Other LT Operating Liabilities													
Long-term accrued income taxes	2,405	3,051	2,838	2,980	3,128	3,285	3,449	3,621	3,802	3,991	4,191	4,400	4,620
Long-term accrued compensation and retirement benefits	1,641	1,425	1,651	1,704	1,787	1,879	1,957	2,026	2,098	2,171	2,247	2,326	2,366
Other long-term liabilities	1,515	889	757	781	819	862	898	929	962	995	1,030	1,067	1,085
Total other LT operating liabilities	**5,561**	**5,365**	**5,246**	**5,465**	**5,734**	**6,026**	**6,304**	**6,576**	**6,861**	**7,158**	**7,468**	**7,793**	**8,071**
Invested Capital													
Net operating working capital	4,352	3,892	4,683	5,013	5,363	5,675	5,900	6,027	6,226	6,408	6,574	6,718	6,710
Net PPE	4,361	4,604	4,675	4,923	5,182	5,455	5,741	6,040	6,355	6,685	7,031	7,394	7,774
Other LT operating assets	26,749	24,964	23,697	23,091	22,512	21,982	21,530	21,130	20,790	20,509	20,287	20,121	20,011
Other LT operating liabilities	5,561	5,365	5,246	5,465	5,734	6,026	6,304	6,576	6,861	7,158	7,468	7,793	8,071
Total Invested Capital	**29,901**	**28,095**	**27,809**	**27,561**	**27,323**	**27,087**	**26,868**	**26,621**	**26,509**	**26,444**	**26,423**	**26,439**	**26,425**
Free Cash Flow (FCF):													
NOPLAT	4,684	2,046	6,128	5,949	6,366	6,825	7,202	7,529	7,863	8,198	8,540	8,892	9,043
Change in IC	(3,632)	(1,805)	(287)	(247)	(239)	(236)	(219)	(247)	(112)	(65)	(21)	17	(15)
FCF	**8,316**	**3,851**	**6,415**	**6,196**	**6,605**	**7,061**	**7,421**	**7,776**	**7,975**	**8,263**	**8,562**	**8,875**	**9,058**
Return on Invested Capital (ROIC):													
NOPLAT	4,684	2,046	6,128	5,949	6,366	6,825	7,202	7,529	7,863	8,198	8,540	8,892	9,043
Beg. IC	33,532	29,901	28,095	27,809	27,561	27,323	27,087	26,868	26,621	26,509	26,444	26,423	26,439
ROIC	**13.97%**	**6.84%**	**21.81%**	**21.39%**	**23.10%**	**24.98%**	**26.59%**	**28.02%**	**29.54%**	**30.92%**	**32.30%**	**33.65%**	**34.20%**
Economic Profit (EP):													
Beg. IC	33,532	29,901	28,095	27,809	27,561	27,323	27,087	26,868	26,621	26,509	26,444	26,423	26,439
x (ROIC - WACC)	13.97%	6.84%	21.81%	16.38%	18.09%	19.97%	21.58%	23.01%	24.53%	25.91%	27.29%	28.64%	29.19%
EP	**4,684**	**2,046**	**6,128**	**4,555**	**4,985**	**5,456**	**5,845**	**6,183**	**6,529**	**6,869**	**7,215**	**7,568**	**7,719**

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Key Management Ratios

Fiscal Years Ending Apr. 30	2017	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Liquidity Ratios:													
Current Assets	24,873	22,980	21,967	24,265	27,825	30,039	31,037	30,336	31,093	31,406	31,192	30,345	28,141
Current Liabilites	14,220	10,084	8,472	8,666	10,953	11,889	11,853	10,467	10,907	11,365	11,849	12,360	12,703
Current Ratio	**1.75**	**2.28**	**2.59**	**2.80**	**2.54**	**2.53**	**2.62**	**2.90**	**2.85**	**2.76**	**2.63**	**2.46**	**2.22**
Cash + Accounts Receivable	10,558	9,656	10,615	12,608	15,604	17,185	17,648	16,476	16,744	16,557	15,822	14,432	11,956
Current Liabilities	14,220	10,084	8,472	8,666	10,953	11,889	11,853	10,467	10,907	11,365	11,849	12,360	12,703
Quick Ratio	0.74	0.96	1.25	1.45	1.42	1.45	1.49	1.57	1.54	1.46	1.34	1.17	0.94
Cash Assets	4,967	3,669	4,393	6,067	8,747	9,972	10,134	8,699	8,693	8,224	7,197	5,503	2,874
Current Liabilites	14,220	10,084	8,472	8,666	10,953	11,889	11,853	10,467	10,907	11,365	11,849	12,360	12,703
Cash Ratio	**0.35**	**0.36**	**0.52**	**0.70**	**0.80**	**0.84**	**0.86**	**0.83**	**0.80**	**0.72**	**0.61**	**0.45**	**0.23**
Asset-Management Ratios:													
Net Sales	29,710	29,953	30,557	31,542	33,068	34,781	36,230	37,501	38,826	40,180	41,589	43,058	43,794
Average Accounts Receivable	5,577	5,789	6,105	6,382	6,699	7,035	7,363	7,645	7,914	8,192	8,479	8,777	9,006
Accounts Revivable Turnover	**5.33**	**5.17**	**5.01**	**4.94**	**4.94**	**4.94**	**4.92**	**4.91**	**4.91**	**4.90**	**4.91**	**4.91**	**4.86**
Net Sales	29,710.0	29,953.0	30,557.0	31,542.5	33,068.2	34,781.3	36,229.7	37,501.3	38,825.7	40,179.6	41,589.4	43,057.6	43,794.5
Average Total Assets	99,799.0	95,604.5	90,543.5	90,641.4	93,184.8	95,732.9	97,072.8	97,029.3	96,931.4	97,411.0	97,474.3	97,026.1	95,650.6
Total Asset Turnover	**0.30**	**0.31**	**0.34**	**0.35**	**0.35**	**0.36**	**0.37**	**0.39**	**0.40**	**0.41**	**0.43**	**0.44**	**0.46**
Cost of Goods Sold	(8,357)	(8,246)	(8,260)	8,778	9,202	9,679	10,082	10,436	10,805	11,181	11,574	11,982	12,187
Average Industry	3,406	3,459	3,666	3,814	3,968	4,167	4,361	4,528	4,687	4,852	5,021	5,198	5,334
Inventory Turnover	**(2.45)**	**(2.38)**	**(2.25)**	**2.30**	**2.32**	**2.32**	**2.31**	**2.30**	**2.31**	**2.30**	**2.30**	**2.31**	**2.29**
Financial Leverage Ratios:													
Total Liabilities	49,400	40,571	39,482	40,871	43,577	45,007	45,441	44,514	45,461	46,468	47,550	48,709	49,561
Total Assets	99,816	91,393	89,694	91,589	94,781	96,685	97,461	96,598	97,265	97,557	97,392	96,661	94,641
Debt Ratio	**0.49**	**0.44**	**0.44**	**0.45**	**0.46**	**0.47**	**0.47**	**0.46**	**0.47**	**0.48**	**0.49**	**0.50**	**0.52**
Common Equity	29,551	28,127	26,532	25,253	24,037	22,878	21,776	20,727	19,728	18,777	17,872	17,011	16,191
Total Assets	99,816	91,393	89,694	91,589	94,781	96,685	97,461	96,598	97,265	97,557	97,392	96,661	94,641
Equity Ratio	**0.30**	**0.31**	**0.30**	**0.28**	**0.25**	**0.24**	**0.22**	**0.21**	**0.20**	**0.19**	**0.18**	**0.18**	**0.17**
Total Liabilities	49,400	40,571	39,482	40,871	43,577	45,007	45,441	44,514	45,461	46,468	47,550	48,709	49,561
Common Equity	29,551	28,127	26,532	25,253	24,037	22,878	21,776	20,727	19,728	18,777	17,872	17,011	16,191
Debt to Equity Ratio	**1.67**	**1.44**	**1.49**	**1.62**	**1.81**	**1.97**	**2.09**	**2.15**	**2.30**	**2.47**	**2.66**	**2.86**	**3.06**
Profitability Ratios:													
Net Income	4,028	3,104	4,631	4,836	5,162	5,553	5,893	6,155	6,435	6,714	7,001	7,295	7,384
Net Sales	29,710	29,953	30,557	31,542	33,068	34,781	36,230	37,501	38,826	40,180	41,589	43,058	43,794
Profit Margin	**13.56%**	**10.36%**	**15.16%**	**15.33%**	**15.61%**	**15.96%**	**16.27%**	**16.41%**	**16.57%**	**16.71%**	**16.83%**	**16.94%**	**16.86%**
Net Sales - Cost of Goods Sold	21,353	21,707	22,297	22,765	23,866	25,102	26,148	27,065	28,021	28,998	30,016	31,075	31,607
Net Sales	29,710	29,953	30,557	31,542	33,068	34,781	36,230	37,501	38,826	40,180	41,589	43,058	43,794
Gross Margin	**71.87%**	**72.47%**	**72.97%**	**72.17%**	**72.17%**	**72.17%**	**72.17%**	**72.17%**	**72.17%**	**72.17%**	**72.17%**	**72.17%**	**72.17%**
Operating Income	5,383	6,640	6,268	6,448	6,865	7,358	7,799	8,158	8,540	8,926	9,323	9,733	9,924
Sales	29,710	29,953	30,557	31,542	33,068	34,781	36,230	37,501	38,826	40,180	41,589	43,058	43,794
Operating Margin	**18.12%**	**22.17%**	**20.51%**	**20.44%**	**20.76%**	**21.15%**	**21.53%**	**21.75%**	**22.00%**	**22.21%**	**22.42%**	**22.61%**	**22.66%**
Payout Policy Ratios:													
Dividend	1.72	1.84	2.00	2.27	2.57	2.91	3.30	3.74	4.24	4.81	5.45	6.18	7.01
EPS	2.92	2.29	3.44	3.59	3.83	4.13	4.37	4.57	4.78	4.98	5.20	5.42	5.48
Dividend Payout Ratio (Dividend/EPS)	**58.90%**	**80.35%**	**58.14%**	**63.10%**	**67.01%**	**70.61%**	**75.48%**	**81.91%**	**88.82%**	**96.49%**	**104.90%**	**114.11%**	**127.79%**
Div + Repurchases	2,373.21	2,497.83	2,694.30	3,053.02	3,460.55	3,922.51	4,449.47	5,043.50	5,716.87	6,480.16	7,345.40	8,326.18	9,437.95
Net Income	4,028.00	3,104.00	4,631.00	4,836.36	5,161.65	5,552.77	5,893.03	6,155.18	6,434.53	6,714.21	7,001.06	7,295.48	7,384.38
Total Payout Ratio	**0.59**	**0.80**	**0.58**	**0.63**	**0.67**	**0.71**	**0.76**	**0.82**	**0.89**	**0.97**	**1.05**	**1.14**	**1.28**

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Weighted Average Cost of Capital (WACC) Estimation

Cost of Equity:		*ASSUMPTIONS:*
Risk-Free Rate	1.12%	*10-year treasury note 3/1/20*
Beta	0.85	*Average of 6m, YTD, 1 yr, 2 yr, 5y*
Equity Risk Premium	5.15%	*Henry Fund ERP*
Cost of Equity	**5.50%**	
Cost of Debt:		
Risk-Free Rate	1.12%	*10 year t-note*
Implied Default Premium	1.76%	*RF rate - Pre-Tax Cost of Debt*
Pre-Tax Cost of Debt	2.88%	*30 yr company bond yield*
Marginal Tax Rate	11%	
After-Tax Cost of Debt	**2.56%**	
Market Value of Common Equity:		**MV Weights**
Total Shares Outstanding	1,346	
Current Stock Price	$100.18	
MV of Equity	**134,882.35**	83.31%
Market Value of Debt:		
Short-Term Debt	838	
Long-Term Debt	25,525	
PV of Operating Leases	649	
MV of Total Debt	**27,012.41**	16.69%
	Estimated WACC	**5.01%**

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Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

Key Inputs:

CV Growth of NOPLAT	1.00%
CV Year ROIC	34.20%
WACC	5.01%
Cost of Equity	5.50%

Fiscal Years Ending Apr. 30	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
DCF Model:										
NOPLAT	5,948.73	6,366.06	6,824.71	7,201.89	7,529.48	7,863.03	8,197.71	8,540.49	8,892.04	9,043.47
Capital Expenditure	(247.16)	(238.73)	(236.08)	(218.79)	(246.83)	(111.91)	(64.85)	(21.31)	16.61	(14.75)
Free Cash Flow (FCF)	6,195.89	6,604.79	7,060.79	7,420.68	7,776.31	7,974.94	8,262.56	8,561.80	8,875.43	9,028.72
Continuing Value (CV)										218,862.08
PV of FCF	5,900.21	5,989.46	6,097.41	6,102.40	6,089.68	5,947.20	5,867.65	5,790.01	5,715.67	140,944.64

Value of Operating Assets:	194,444.34
Non-Operating Adjustments	
Excess Cash	**5,793.86**
Investments	**5,630.92**
Other Assets	**950.00**
Litgation Charges	**(119.00)**
Non-controlling interest	**(121.00)**
Other liabilities	**(781.41)**
Underfunded Pension Plan	**(1,100.00)**
PV of ESOP	**(768.46)**
PV of operating leases	**(649.11)**
Total Debt	**(26,363.60)**
Value of Equity	176,916.54
Shares Outstanding	1,346
Intrinsic Value of Last FYE	131.44
Implied Price as of Today	135.06

EP Model:	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Economic Profit (EP)	4,555.17	4,984.90	5,455.50	5,844.52	6,183.07	6,528.99	6,869.28	7,215.31	7,567.93	7,718.53
Continuing Value (CV)										192,422.63
PV of EP	4,337.80	4,520.48	4,711.16	4,806.24	4,842.01	4,868.91	4,878.21	4,879.43	4,873.66	123,917.94

Total PV of EP	166,635.83
Invested Capital (last FYE)	27,808.51
Value of Operating Assets:	194,444.34
Non-Operating Adjustments	
Excess Cash	**5,793.86**
Investments	**5,630.92**
Other Assets	**950.00**
Non-controlling interest	**(121.00)**
Litigation Charges	**(119.00)**
Other Liabilities	**(781.41)**
Underfunded Pension Plan	**(1,100.00)**
PV of ESOP	**(768.46)**
PV of operating leases	**(649.11)**
Total Debt	**(26,363.60)**
Value of Equity	176,916.54
Shares Outstanding	1,346.00
Intrinsic Value of Last FYE	131.44
Implied Price as of Today	135.06

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Dividend Discount Model (DDM) or Fundamental P/E Valuation Model

Fiscal Years Ending Apr. 30	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E	2029E
EPS	$ 3.59	$ 3.83	$ 4.13	$ 4.37	$ 4.57	$ 4.78	$ 4.98	$ 5.20	$ 5.42	$ 5.48
Key Assumptions										
CV growth of EPS	2.00%									
CV Year ROE	16.42%									
Cost of Equity	5.50%									
Future Cash Flows										
P/E Multiple (CV Year)										25.07
EPS (CV Year)										$ 5.48
Future Stock Price										$ 137.45
Dividends Per Share	2.27	2.57	2.91	3.30	3.74	4.24	4.81	5.45	6.18	7.01
Discounted Cash Flows	2.15	2.31	2.48	2.67	2.86	3.08	3.31	3.55	3.82	4.33
										$ 84.88
Intrinsic Value as of Last FYE	$ 111.09									
Implied Price as of Today	$ 114.28									

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Relative Valuation Models

Ticker	Company	Price	EPS 2020E	EPS 2021E	P/E 20	P/E 21	Est. 5yr EPS gr.	PEG 20	PEG 21
ABT	Abbot Laboratories	$77.03	$3.61	$4.01	21.34	19.21	11.1	1.93	1.73
EW	Edward Life Sciences	$204.84	$6.27	$6.95	32.67	29.47	11.9	2.75	2.48
BSX	Boston Scientific	$37.39	$1.77	$2.00	21.12	18.70	11.0	1.92	1.70
JNJ	Johnson and Johnson	$134.48	$9.06	$9.66	14.84	13.92	5.7	2.62	2.46
SYK	Stryker Corp	$198.40	$9.11	$9.95	21.78	19.94	10.1	2.16	1.98
				Average	**24.23**	**21.83**		**2.19**	**1.97**
MDT	Medtronic	$100.18	$3.59	$3.83	27.9	26.1	7.7	3.6	3.4

Implied Relative Value:

P/E (EPS20)	**$ 87.05**
P/E (EPS21)	**$ 83.71**
PEG (EPS20)	**$ 60.36**
PEG (EPS21)	**$ 58.06**

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Present Value of Operating Lease Obligations

Fiscal Years Ending Apr. 30	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
Year 1	112.0	196.0	180.0	215.0	234.0	216.0
Year 2	77.0	138.0	130.0	158.0	182.0	157.0
Year 3	45.0	93.0	90.0	110.0	133.0	103.0
Year 4	21.0	66.0	56.0	70.0	87.0	61.0
Year 5	13.0	43.0	33.0	41.0	43.0	34.0
Thereafter	23.0	88.0	55.0	52.0	74.0	81.0
Total Minimum Payments	291.0	624.0	544.0	646.0	753.0	652.0
Less: Cumulative Interest	18.8	48.3	39.0	45.0	54.7	48.2
PV of Minimum Payments	**272.2**	**575.7**	**505.0**	**601.0**	**698.3**	**603.8**
Implied Interest in Year 1 Payment	**7.2**	**7.8**	**16.6**	**14.5**	**17.3**	**20.1**
Pre-Tax Cost of Debt	2.88%	2.88%	2.88%	2.88%	2.88%	2.88%
Years Implied by Year 6 Payment	1.8	2.0	1.7	1.3	1.7	2.4
Expected Obligation in Year 6 & Beyond	13	43	33	41	43	34
Present Value of Lease Payments						
PV of Year 1	108.9	190.5	175.0	209.0	227.4	210.0
PV of Year 2	72.7	130.4	122.8	149.3	172.0	148.3
PV of Year 3	41.3	85.4	82.7	101.0	122.1	94.6
PV of Year 4	18.7	58.9	50.0	62.5	77.7	54.5
PV of Year 5	11.3	37.3	28.6	35.6	37.3	29.5
PV of 6 & beyond	19.2	73.1	46.0	43.7	61.8	67.0
Capitalized PV of Payments	272.2	575.7	505.0	601.0	698.3	603.8

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Effects of ESOP Exercise and Share Repurchases on Common Stock Account and Number of Shares Outstanding

Number of Options Outstanding (shares):	0.02
Average Time to Maturity (years):	4.81
Expected Annual Number of Options Exercised:	0.005
Current Average Strike Price:	$ 65.01
Cost of Equity:	5.50%
Current Stock Price:	$100.18

Fiscal Years Ending Apr. 30	2020E	2021E	2022E	2023E	2024E
Increase in Shares Outstanding:	0.005	0.005	0.005	0.005	0.005
Average Strike Price:	$ 65.01	$ 65.01	$ 65.01	$ 65.01	$ 65.01
Increase in Common Stock Account:	**0.30**	**0.30**	**0.30**	**0.30**	**0.30**
Change in Treasury Stock	150	159	167	176	186
Expected Price of Repurchased Shares:	$ 100.18	$ 105.69	$ 111.51	$ 117.64	$ 124.12
Number of Shares Repurchased:	**1.50**	**1.50**	**1.50**	**1.50**	**1.50**
Shares Outstanding (beginning of the year)	1,346.00	1,346.00	1,346.01	1,346.01	1,346.01
Plus: Shares Issued Through ESOP	0.005	0.005	0.005	0.005	0.005
Less: Shares Repurchased in Treasury	0.0015	0.0015	0.0015	0.0015	0.0015
Shares Outstanding (end of the year)	**1,346**	**1,346**	**1,346**	**1,346**	**1,346**

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Valuation of Options Granted under ESOP

Current Stock Price	$100.18
Risk Free Rate	2.90%
Current Dividend Yield	2.25%
Annualized St. Dev. of Stock Returns	17.77%

Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted
Range 1	22	65.01	4.81	$ 34.93	$ 768
Total	22	$ 65.01	4.81	$ 44.35	**$ 768**

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Sensitivity Tables

BETA

	135.06	0.70	0.75	0.80	0.85	0.90	0.95	1.00
ERP	5.00%	168.09	157.33	147.77	139.07	131.56	124.62	118.31
	5.05%	166.51	155.82	146.34	137.71	130.26	123.37	117.12
	5.10%	164.94	154.34	144.94	136.38	128.98	122.15	115.95
	5.15%	163.41	152.89	143.56	135.06	127.73	120.95	114.80
	5.20%	161.90	151.46	142.20	133.77	126.49	119.77	113.67
	5.25%	160.42	150.06	140.87	132.50	125.28	118.62	112.56
	5.30%	158.96	148.68	139.56	131.26	124.09	117.48	111.47

CV ROIC

	135.06	27%	29%	31%	33.73%	35%	37%	40%
WACC	4.75%	144.73	145.04	145.31	145.62	145.75	145.94	146.19
	4.85%	140.53	140.83	141.09	141.39	141.52	141.70	141.94
	4.95%	136.54	136.83	137.08	137.38	137.50	137.67	137.90
	5.01%	134.24	134.53	134.77	135.06	135.18	135.35	135.58
	5.14%	129.50	129.77	130.01	130.28	130.40	130.56	130.78
	5.24%	126.05	126.31	126.54	126.81	126.92	127.08	127.28
	5.34%	122.75	123.01	123.23	123.49	123.60	123.75	123.95

Pre-Tax Cost of Debt

	135.06	2.50%	2.60%	2.75%	2.88%	3.00%	3.20%	3.40%
Marginal Tax Rate	10.60%	138.21	137.64	136.80	136.08	135.42	134.34	133.27
	10.80%	137.86	137.30	136.46	135.74	135.09	134.00	132.94
	11.00%	137.51	136.95	136.12	135.40	134.75	133.67	132.61
	11.20%	137.16	136.60	135.77	135.06	134.41	133.34	132.28
	11.40%	136.81	136.26	135.43	134.72	134.08	133.01	131.96
	11.60%	136.46	135.91	135.09	134.38	133.74	132.68	131.63
	11.80%	136.11	135.56	134.74	134.04	133.40	132.34	131.30

Risk-Free Rate

	135.06	0.90%	1%	1.10%	1.12%	1.25%	1.50%	1.75%
Beta	0.60	202.43	196.13	190.20	189.05	181.90	169.48	158.55
	0.65	186.93	181.50	176.35	175.36	169.13	158.24	148.59
	0.70	173.52	168.78	164.28	163.41	157.94	148.32	139.72
	0.75	161.80	157.63	153.66	152.89	148.04	139.48	131.78
	0.80	151.46	147.77	144.25	143.56	139.23	131.56	124.62
	0.85	142.29	138.99	135.84	135.22	131.34	124.42	118.13
	0.90	134.08	131.12	128.28	127.73	124.22	117.95	112.23
	0.95	126.70	124.03	121.46	120.95	117.78	112.07	106.84
	1.00	120.02	117.60	115.26	114.80	111.91	106.69	101.89
	1.10	108.41	106.39	104.43	104.05	101.61	97.20	93.11
	1.20	98.66	96.95	95.28	94.96	92.88	89.10	85.58