

# **MODELO FINANCIERO MEDTRONIC**

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MEDELLÍN  
2019**

# **MODELO FINANCIERO MEDTRONIC**

**Trabajo presentado como trabajo FINAL de la asignatura para optar a SEGUNDA TITULACION en la universidad de BRANDEIS**

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2018**

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**MEDTRONIC FINANCIAL MODEL**

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Master of finance in science

2019

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## **ABSTRACT**

Financial modeling is the process of building models of a real-world financial situation. This process is a mathematical model designed to represent the performance of a financial asset or portfolio of a business, project, or any other investment.

The financial modeling is an exercise in either asset pricing or corporate finance, of a quantitative nature. Its principal objective is translating a set of hypotheses about the behavior of markets or agents into numerical predictions. This term is also known as a general term that means different things to different users; this term can be related either to corporate finance applications or to quantitative finance applications. In this modeling we are going to analyze a company called Medtronic. This is a company with a strong competitive position and the exercise is about a Hold recommendation for Medtronic.

This report was originally made as the final project for FIN 217F - Corporate Financial Modeling course enrolled during fall 2018 in Brandeis University, it was homologated as part of the double degree process as the dissertation of the Master in Financial Management in EAFIT University.

## **JUSTIFICATION**

The importance of financial modeling relies on its capability to get better financial decisions within a firm. It is used for the purpose of future planning. This method is accomplished by simulating the impact of important variables where financial modeling allows for scenario preparation so that organization knows its course of action in various situations that may arise.

Financial modeling also plays an important role in capital budgeting. It also helps in determining the cost of capital. It provides a thorough analysis of debt/equity structure for this purpose, along with the returns expected by investors.

## **OBJECTIVES**

### General

Issue a hold recommendation for the study project.

### Specific

- To issue a company overview and the company key success drivers
- To issue the company risk factors
- To create a valuation model based in this information

## **PROBLEM STATEMENT**

Medtronic PLC (Medtronic) develops and manufactures therapeutic medical devices for chronic diseases and specialized surgical interventions. The company sells its products to healthcare institutions and physicians in more than 140 countries around the world. Sales in 2018 were US\$29.9 billion and the company assets worth US\$94.5 billion. Revenues in the U.S accounted for 53%, while 47% came from emerging markets and other developed countries.

The company has a diversified portfolio of products divided in four big segments: Cardiac and Vascular, Minimally Invasive Therapies, Restorative Therapies and Diabetes. Medtronic is the biggest player in the U.S. Medical Device Manufacturing industry, accounting for 40% of the market share. Its success has been based on high investment in R&D, which allows them to be in the technological frontier of biomedical developments, and strategic business management. While an increasingly growing market, the international expansion and technological competitive advantages are considered to be the company's main drivers, the political uncertainty that surrounds government initiatives like Medicare, tougher FDA regulations and potential product recalls are viewed as the key business risks.

Worldwide aging population is rising- with forecasts suggesting that by 2050 there will be more people aged +60 than people aged 10 to 24- and that is one of the main drivers of the industry, which is characterized by high concentration and high government regulations. Competition within the industry is intense and many merges and acquisitions have occurred in the last decades. When analyzing industry forces, the threat of new entrants is moderate to low; threat of substitutes is moderate, bargaining power of supplier is low, bargaining power of customers is moderate to high and rivalry is high.

A valuation based on the Discounted Free Cash Flow was conducted and the base-case scenario yield a stock price of \$93.04, which is very close to the closing price of US\$94.02 on Dec 1<sup>st</sup>, 2018. Best and Worst scenarios showed prices of US\$163.49 and US\$58.37. A Beta of 0.97 was derived using monthly market since 2008. Using CAPM model, the Cost of



Equity yield 8.38% and the After-Tax WACC yield 7.5%; while the long-term growth was assumed at 3%, according to industry forecasts. A Multiple Valuation was also done, with prices ranging from US\$84.72 to \$152.68.

Based on the company strong competitive position, the risk factors and the results from the valuation model, we issue a Hold recommendation for Medtronic. The company is stable, has proven to have successful business strategies and its main end-users (population aged 60 or more) are forecasted to keep growing. We believe it will have stable free cash flows in the future, nonetheless, there are many regulations and uncertain political factors that may affect the company growth, which is already in a mature life-cycle with moderate growth perspective.

## 1. Company Overview

Medtronic (MTD) is one of the largest medical device company in the world. Founded in 1949 as a medical equipment repair shop, it is currently a \$94.5 billion biomedical engineering company and has operations in 370 locations and 160 countries. In January 2015, the Company acquired the rival brand Covidien, resulting in an increase of their market, which is now 40% in the U.S. market.

MDT develops and manufactures therapeutic medical devices for the treatment of chronic diseases, high risk surgical interventions and pain relief. At the end of fiscal year 2018, it recorded revenues of US\$30 Billion derived from four segments: Cardiac and Vascular group (11.4B), Minimally Invasive Therapies group (8.7B), Restorative Therapies group (7.7B) and Diabetes group (2.1B).

## 2. Company's Key Success Drivers

Serving an increasingly growing market

According to the United Nations, “population ageing is becoming one of the most significant social transformations of the twenty-first century”, projecting that by 2050, there will be more

people aged +60 years than people aged 10-24 years. Due to this phenomenon, the statistic related with the prevalent diseases- 53% related with obesity, cardiac and diabetes- and chronic diseases have an upward trend (Evaluate MedTech, 2018). This translates into more visit to healthcare institutions, increasing the number of medical procedures and domestic care, in which Medtronic has a predominant role. Medtronic has high recognition, a wide portfolio of products with more than 46,000 registered patents and constant innovations to attend the future demand of the market.

#### Big Data competitive advantage

Monitoring diseases and forecasting health events to be able to link patients' medical devices with measurable outputs is a top priority for Medtronic in order to improve their technologies and feed their databases for research purposes. The success of this strategy relies in the demand of a new generation of patients that want to be empowered of their own health and value more than ever before the availability of real-life data.

#### International expansion

Cardiac and Vascular and Minimal Invasive Therapies segments combined account for a 67% of the Company's revenue and its growth is mostly driven by emerging economies, due to the increasing population and economic growth in those markets, which rises the willingness of governments and citizens to spend in healthcare. Those factors were recognized by MDT and become part of their strategy more than a decade years ago and nowadays foreign sales account for more than 40.0% of the company's total revenue (Curran, 2018).

#### Minimal invasive robots booming

Minimally invasive procedures have become the gold standard for an increasingly number of surgical procedures and more consumers are now demanding this kind of surgeries over the traditional ones. This market is expected to grow, globally, at an average of 8% annually from 2018 to 2025 (BIS Research, 2018). Medtronic fully entered the market of Minimal Invasive devices in late 2014 and by 2018 they already had 27.6% of the global market share, mainly due to its heavy investment in R&D, which allows them to outpace their competitors in developing new technologies within this segment.

### **3. Company's Risk Factors**

#### FDA requirements

It takes several months to obtain FDA approval to launch a new device. U.S. regulations are getting tougher and approval time can now be longer and more costly for some devices that are in the technology frontier. This can represent a thread not only because investment in R&D might take longer to start generating revenues, but also because it opens a window for competitors to get deeper knowledge of Medtronic's new developments before they get to the market, which gives them more time to set a strategy and even start developing similar products to compete with.

#### Product recall

During the past year Medtronic had more than 5 product recalls, which negatively impacted their sales in fiscal year ended in 2018. It is unlikely that Medtronic can always be in total compliance with FDA, especially because many of their products' features will be known after field trials and consumer experiences and feedback. Any future recall might hurt the Company's reputation and revenues and will also imply extra expenditure in R&D.

#### Government regulation and political uncertainty

The uncertainty that surrounds the U.S. Healthcare reform is probably the number one concern for Medtronic at the moment. As of today, population's access to medical assistance in the U.S. depends highly on government-funded initiatives such as Medicare and Medicaid. A decrease in healthcare public expenditure will directly affect the number of devices sold to hospital and individuals, which are Medtronic main customers in the local market.

Similarly, trade reforms and foreign government regulations are also a concern because they can set entry barriers to new interesting markets, thus disturbing Medtronic's expansion strategy in the international landscape.

#### **4. Industry Dynamics**

The overall industry is in a moderate growing stage due to the aging baby boomer's population and the progressive need of replacing technologies in health care system services. The forecasted annualized long-term growth rate of the industry is 3% (Curran, 2018). Competition within the industry is intense and small companies can have a hard time to survive, which has led to many merges and acquisitions in the last decade. It is expected that this trend will continue, as big players gain more capacity to absorb smaller ones.

The increased demand of biomedical developments, the use of Artificial Intelligence and fast manufacture technology will allow to modify cost structures across the industry and expand the size of the at-home healthcare market. Equipment for cardiovascular, neurological and obesity related diseases are expected to lead the growth of the industry since these are the chronic diseases that are more rapidly rising not only in the U.S., but in the world (World Health Organization, 2018).

#### Porter's Five Forces Analysis

According to the medical device industry characteristics, Porter's five forces categorization is as follow:

##### Threat of new entrants: Moderate to low

This industry has high profits margins and this increase its attractiveness. Nevertheless, due to high competition, high concentration, heavy regulation and high expenditures (12% of revenue in R&D), competitors interested in entering this market will find a challenging environment with a fast rate of technological change, high cost of development and really expensive unexpected claims.

##### Threat of substitutes: Moderate

As technology rapidly evolves, there are now more medical developments, especially surgical procedures, which eliminates the need to permanently use other types of devices. Similarly, pharmaceutical medicine is constantly evolving, generating drugs that can prevent not only the use of a device but the alternative surgery as well. All these factors become

substitutes over time, this is why the substitutes producers are not limited to the ones that coexist in the health care manufacturers companies, hospitals and medical research are also an important part of substitute's designers.

#### Bargaining Power of Supplier: Low

Due to the use of generic parts and self-development materials, the supplier's power is low. Companies do not rely just in one producer because there are several companies with similar raw material. At the same time, globalization has led to a low-cost policy in raw material suppliers.

#### Bargaining Power of Customers: Moderate to High

Few decades ago, customers did not have a big power in this industry supply chain. However, there are now more alternatives and more brands to choose from and generic products became available for some devices, factors that have given customers a higher bargaining power.

#### Competitive Rivalry: High

Competition in this industry is extremely high since a product needs to comply with many factors to be successful: reliability, clinical outcomes, doctors' perceptions, patients' experiences and affordability. As government and healthcare providers push for price concessions, price has become more important and the competition is now tougher.

### **5. Company Financial Performance**

In mid-2017 the Company divested three of its units: Patient Care, Deep Vein Thrombosis, and Nutritional Insufficiency. This led to a decrease in reported sales of the Minimally Invasive Therapies segment of 12%, as sales from the divested units used to be recorded under this segment. Even though this hurt its financial performance for the last fiscal year, the Company believes that new acquisitions will more than offset this downturn in the long-run. On the other hand, in 2018 Medtronic acquired three smaller companies: Nutrino, Mazor Robotics and Vision Sense, these acquisition will not prove its worth until be completely integrated in Medtronic.

For fiscal year 2018, net sales in the U.S. were down by 5%, which was partially offset by an increase of 6% in developed markets outside the U.S. and 12% in emerging markets, generating a total net sales growth of 0.8%. From 2015 to 2016, revenues increased by 19%, 42% and 4%, respectively. Sales in 2015 were particularly high due to the acquisition of Covidien.

The current EBIT ratio is 22.2%, more than double of the industry average (9.72%). Similarly, the Net Profit margin in 2018 was 12.3%, almost three times higher than its peer's average of 5.71% (Mercer Capital, 2017).

From 2015 to 2018, Return on Assets and Return on Equity have gone from 2.3% to 3.9% and 5.0% to 6.8%, respectively, which indicates an increase in capital utilization.

The company has had an almost constant capital structure of 50% debt in the last five years, with an investment grade. Standards & Poor's rated the Medtronic's long-term debt as A (stable) and Moody's as A3; these rating has maintained average interest rates on long-term debt at around 4%. It is also important to mention that the Company's Interest Coverage ratio is more than 800%, which puts Medtronic in a very good financial position in comparison to its competitors.

## **6. Valuation Model**

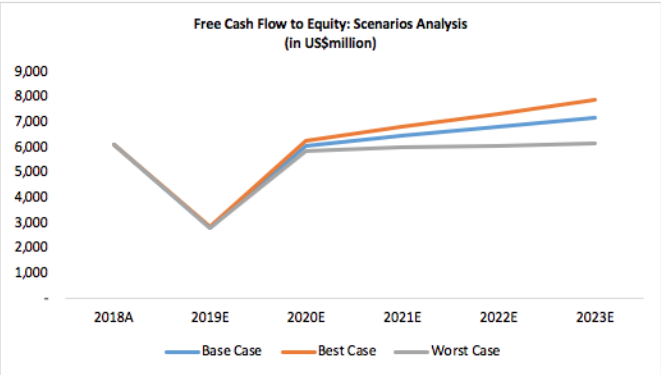
We decided to use a top-bottom methodology, using industry research information for approximation and benchmark for assumptions of segments growth, litigation process provisions, research and developments and capital expenditures. Historical data was also useful to understand the non-core business expenses and other investments behaviors. Company information (10-K) and fiscal year 2019 guidance were used in order to build employees benefit, debt repayment and future investments schedules.

The Beta of the Company was calculating using monthly returns from 2008-2018, the market risk premium was assumed to be 5.68% (Damodaran, 2018) and the 10-year U.S. Treasury Bond yield of 2.89% was used as the risk free rate. Using the CAPM, Cost of Equity yield 8.38% and for the Cost of Debt it was used the weighted average effective rate on outstanding bonds (4.02%). With a corporate tax of 21%, the Weighted Average Cost of Capital yield 7.5%. Long-term growth rate for the base line scenario was assumed to be 3%, in accordance with industry performance and industry expected future growth rates (Curran, 2018).

**7. Results**

The valuation base in DCF model gave a share price of US\$93.04 in the base-case scenario, US\$163.49 in the best-case scenario and US\$58.37 under the worst-case. Additionally, the valuation by comparable yield US\$82.0 (price-to earnings), US\$94.30 (price-to-sales), US\$125.75 (EV/EBITDA) and US\$148.51 (EBIT/EBITDA). It is noticed that the DCF base-line price was very close to the price-to-sales result. As of Dec 1<sup>st</sup>, 2018, Medtronic’s stock price closed at \$94.2.

A sensitivity analysis was also conducting, with different combinations of WACC and long-term growth rates, yielding prices from US\$47.4 to US\$185.5. The key factors used in the scenario valuation were: a) growth rate for each segment, b) cost of capital and c) terminal value growth rate. We obtained the following variation in the free cash flow to equity:



## **8. Recommendation**

Based on the company strong competitive position within the local and global market, the risk factors analyzed in previous sections and the results from the valuation model, we issue a Hold recommendation for Medtronic PLC. The company is strong, have proven to have successful business strategies and its main end-users (population aged 60 or more) are forecasted to keep growing up to a point that they will double young and adolescents by 2050.

We believe Medtronic will have stable free cash flows in the future, nonetheless, there are many regulations and uncertain political factors that may affect the company growth. Additionally, Medtronic is already in a mature life-cycle and the industry is expected to grow at a moderate 3% in the long run. These are the main reasons we are not giving a solid Buy recommendation.



## CONCLUSIONS

- One of the applications of financial modeling may be business valuation that is deciding the fair value for a business.
- Other applications of financial modeling is organization's decision making and scenario preparation.
- Financial modeling is used by organizations for future planning their long term goals according to different situations that may arise.
- Capital budgeting -financial modeling helps companies determine allotting resources for major expenditure or investment etc. Purpose – increasing the value for the firm.

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