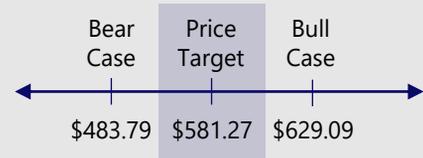


## RESEARCH REPORT

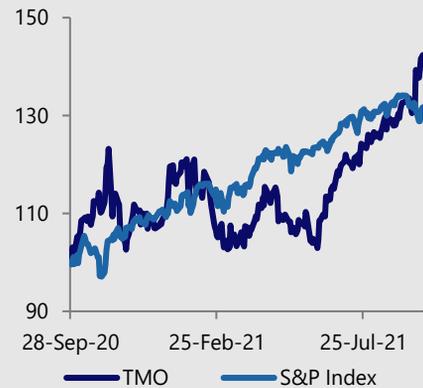
September 26, 2021

Stock Rating **HOLD**  
Price Target **USD \$581.27**  
Current Price **USD \$609.78**



Ticker	TMO
Market Cap (MM)	\$239,899
P/E LTM	28.2x
EV/EBITDA LTM	18.5x

### 52 Week Performance



### Healthcare

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## Thermo Fisher Scientific Fishing for Value

Thermo Fisher Scientific (NYSE: TMO) is a medical tools and services company that specializes in scientific instruments, consumables, and software services. TMO has several admirable qualities including being a strong one-stop-shop with a diverse array of segments and customers, a historically successful management team, and a strong innovation and R&D pipeline that allows TMO to be well-positioned against competitors.

While there are some risks regarding a decline in demand for COVID-19 tests and political / regulatory risk with further expansion in China, TMO has positioned itself well to be defensible against these risks, and maintain its position in its attractive industries. The team also maintains some concern about the shareholder value being delivered through acquisition.

When assessing TMO as a potential investment opportunity, we valued the four subsegments individually, with the comprehensive life science segment with a higher growth rate than the others. Although the fundamentals of the business are attractive, our valuation does not support entering this name right now. The Healthcare team rates TMO has a hold, but will continue to monitor the name for any significant changes.

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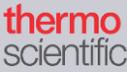
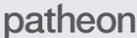
## Company Overview

Founded in 1956, Thermo Fisher Scientific Inc. (TMO) is a world leading medical tools and services company. The company specializes in the provision of scientific instruments, consumables and software services for over 400,000 customers across a wide variety of fields including pharmacy, biotechnology, clinical diagnostics, and institutional research.

The company's core mission is to support the needs of their customers by leveraging a global team of more than 90,000 industry professionals to drive innovation and develop critical solutions for each industry vertical it operates in. Most of the company's customer support is provided through the its core brand, Thermo Fisher Scientific, alongside a portfolio of supporting brands.

### EXHIBIT I

Thermo Fisher Collection of Brands

Brand	Focus
	Instruments, Equipment, Software, Services and Consumables
	Genomic Research
	Protein Biology, Molecular Biology and Cell Imaging and Analysis Products
	Laboratory Equipment, Chemicals, Supplies and Services
	Laboratory Services & Support Solutions
	Developing End-to-End Pharma Services & Clinical Trial Solutions

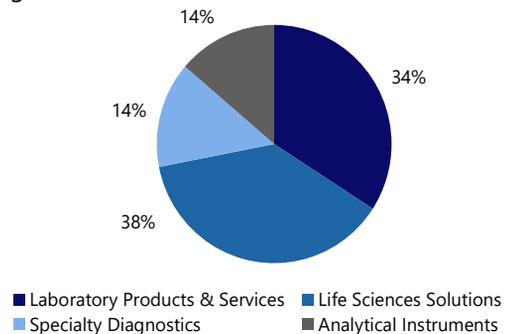
Source(s): Company Website

By generating around \$35B billion in revenue for FY 2020, TMO currently stands as a prominent player within global research, healthcare, industrial, and applied markets. Its operations can be segmented into four main segments:

- 1) Life Sciences Solutions** – genetic sciences, biosciences, bioproduction.
- 2) Analytical Instruments** – chromatography & mass spectrometry, electron microscopy, chemical analysis.
- 3) Specialty Diagnostics** – clinical diagnostics, immunodiagnostics, microbiology, transplant diagnostics, healthcare market channels.
- 4) Laboratory Products and Services** – lab equipment & consumables, laboratory chemicals, research & safety channels, pharma services.

### EXHIBIT II

Segmented 2020 Revenue Breakdown



Source(s): Company Filings

TMO's end-markets are also relatively fragmented with only two other companies being able to match its scale. Because of this, the company's wide range of customer touchpoints (technologically, geographically, and commercially) across all four of its core segments act as a robust competitive advantage over many of its smaller rivals.

## Thesis I: Diversified Operations Creating a One-Stop Shop

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### The Value in TMO's Diversified Operations

As was alluded to in the company overview, TMO operates in four distinct segments, and each of these segments have several respective subsegments. TMO's presence in a variety of markets benefits the company in several ways.

Firstly, because the segments are complementary to one another, this creates a "one-stop shop," effect, which enables TMO to derive both greater revenues and loyalty from their customers. For example, if a customer requires products from the life sciences, laboratory, and specialty diagnostics segments, they can easily obtain each of these products from TMO, rather than going to multiple other companies that each only specify in one segment.

Secondly, the company's diversified operations protect it from several risks. From the customer's perspective, while some require products from all TMO segments, the company also services those who only demand one or two segments. This leads to TMO developing a broad and diverse customer base, which protects the company from being overdependent on a handful of customers. Additionally, by operating in several segments, TMO is protected from macro-factors that may negatively impact one of its segments.

Finally, TMO benefits from operating in its distinct segments as they are all highly attractive markets in which the company is well-positioned. The rest of this thesis will be dedicated to diving deeper into each segment to develop a deeper understanding of what each group entails, why it is attractive, and how TMO is positioned within it.

### Life Sciences Solutions

TMO's Life Sciences Solutions segment generated \$12.2B in sales in 2020. The segment provides a broad portfolio of products that help their customers effectively conduct research, develop and produce ground-breaking medical solutions, and accurately diagnose disease. The segment serves the research,

bioproduction, and clinical markets. The Life Sciences segment consists of four key subsegments: Biosciences, Genetic Sciences, Clinical Next-Generation Sequencing (NGS), and Bioproduction.

The biosciences business includes instruments, reagents, and consumables that help customers in their discovery of new drugs and vaccines, their diagnoses of infection and disease, and in conducting biological and medical research. One of the business' largest offerings is products that are used for protein biology, molecular biology, sample preparation and cell imaging and analysis. This includes antibodies and products for protein modification, purification, detection, and analysis. The business also offers tools used for genetic engineering, quantification, amplification, and analysis along with gene editing tools, and gene synthesis products, and RNA isolation (which enables scientists to better understand cells and recognize changes that could lead to disease). Finally, the business also offers cell culture media, reagents, and plastics for preserving and growing mammalian cells; fluorescence-based technologies which help in the labeling of molecules for biological research and drug development; and protein analysis products.

The genetic sciences business uses a combination of instruments and reagents to develop genomic solutions that help their customers make important decisions related to clinical, research, healthcare, and applied markets. The business offers real-time PCR technology which is used to identify changes in genotyping, gene expression, and proteins on a gene-by-gene basis and for the identification of infections and disease. Another one of the group's offerings is capillary electrophoresis sequencing, which is a key technology used in DNA sequencing, forensic analysis, and fragment analysis. Finally, the subsegment also offers microarray technology, which is used in genotyping (which identifies small variations in genetic sequence with populations), gene expression (which allows cells to adapt to their changing environments), and reproductive health.

## Thesis I: Diversified Operations Creating a One-Stop Shop

The clinical NGS business delivers simple, efficient, and cost-effective NGS technology for a wide array of applications. This subsegment focuses on the application of NGS in oncology and companion diagnostics, including targeted sequencing solutions for research use.

The bioproduction business supports the manufacturers and developers of biological-based therapies and vaccines through its portfolio of industry-leading solutions focused on upstream cell culture, downstream purification, analytics for detecting impurities, and solutions across the biologics workflow. The subsegment's offerings include single-use bioproduction solutions that enable efficiency, production cell culture media solutions which are used to grow cells in controlled environments, chromatography products which deliver high-quality capacity and resolution for process-scale bio separations, rapid molecular products with superior accuracy, and scalable solutions for the manufacturing of cell therapy-based drugs.

### What Makes the Life Sciences Segment Attractive?

TMO's Life Sciences Solutions segment is responsible for a significant amount of TMO's revenue accounting for

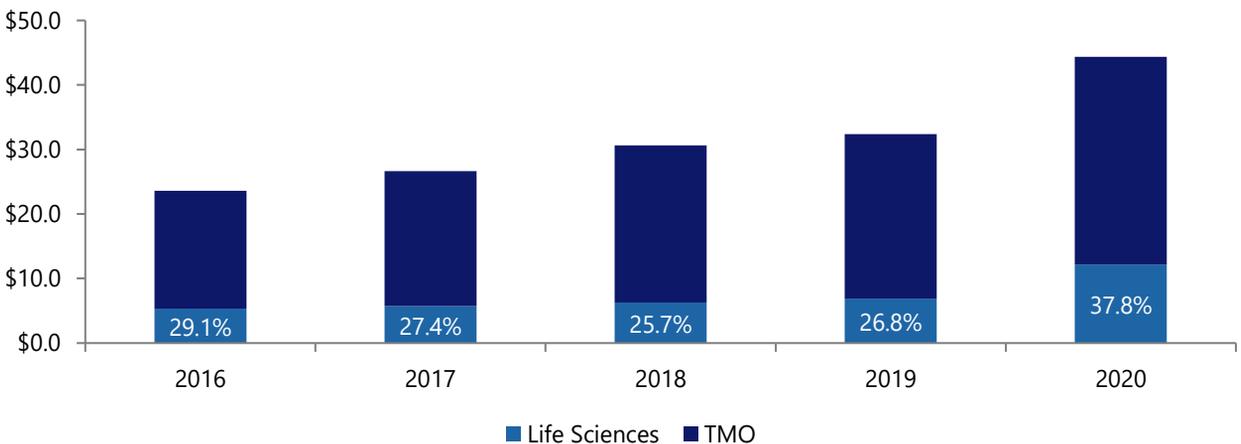
37.8% of the company's sales in 2020. This is a result of the segment's revenue growth in recent years, as seen in Exhibit III.

TMO's largest competitor in the Life Sciences segment is Danaher Corporation, a company that is similar in its business model, scale, and offerings. That said, TMO has recently been more aggressive regarding areas of opportunity within the industry. For instance, the company's growth from the COVID-19 pandemic was mainly experienced by the life sciences segment. This has led to TMO's revenue from the segment for 2020 beating Danaher's by a significant margin, when the two groups' revenues were previously quite similar.

One tailwind that the segment is experiencing is the shift toward antibody drugs. The reason for this shift is that these drugs have fewer adverse effects due to their specificity, which has allowed therapeutic antibodies to become the leading class of drugs developed in recent years. TMO offers thousands of primary and secondary antibodies, accessories, and custom services. The company is already well-established in an area of biosciences that is not only experiencing significant growth but is shifting toward becoming the standard.

### EXHIBIT III

Life Sciences Segment's and TMO's Annual Revenue (2016 – 2020), in \$B



## Thesis I: Diversified Operations Creating a One-Stop Shop

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### Analytical Instruments

Analytical Instruments is the smallest by revenue of the four segments, at \$5.1 billion in 2020. This segment is comprised of leading technologies that are used to solve a wide variety of analytical challenges. This segment provides offerings like instruments, consumables, software, and services that are used for different laboratory applications, and are used by customers in pharmaceuticals, biotechnology, academic, government, environmental, clinical laboratory, and other markets. The Analytical Instruments segment serves a diverse customer base, protecting TMO from being dependent on a few customers, and due to R&D costs, defensibility is strong. Analytical Instruments is an attractive segment that continues to grow. This segment is comprised of three main businesses: Chromatography & Mass Spectrometry, Chemical Analysis, and Materials & Structural Analysis.

### Chromatography & Mass Spectrometry

This segment is the analytical instrumentation for organic and inorganic sample analysis for applied technologies and life sciences research. These technologies are supported by database analytical tools, and TMO's Chromeleon chromatography data system software. This segment is impactful in addressing climate change by using mass spectrometers for environmental studies and monitoring pollution with gas chromatography.

*Chromatography* is the process of separating, identifying, and quantifying individual chemical components. Types of chromatography include liquid, ion, and gas chromatography, and elemental analysis spectrometers.

*Mass Spectrometry* consists of analyzing chemical compounds by forming charged ions that are analyzed according to mass-to-charge ratio. Life sciences mass spectrometers are used for quantitative analysis of chemicals in biological fluids, environmental samples and food, also used in pharmaceutical industry during drug discovery.

### Chemical Analysis

Technologies in this segment help to analyze composition of materials in industrial applications or to help ensure compliance of governmental regulations and safety standards.

*Materials and minerals instruments* facilitates production line process monitoring and control systems. This is used for quality assurance and to ensure safe operation in a mine manufacturing plant. Gauging systems are used to measure thickness, weight, coating, and more. End users include industries like food and beverage, pharmaceutical production, and packaging.

*Field safety instruments* include elemental analyzers, optical analyzers, and radiation detection instruments. Applications include quality assurance, identifying alloys in scrap metal, lead screening, and infrared technologies used by first responders.

*Environmental and process instruments* help customers comply with government regulations and industry safety standards (e.g., measuring ambient air, gas emissions, etc.).

### Materials & Structural Analysis

This segment is comprised of electron microscopy, molecular spectroscopy, and laboratory elemental analysis instruments and is used by customers in life sciences, materials sciences, and industrial markets to help develop discoveries.

*Electron microscopy* is characterization at the atomic scale with applications in semiconductor development, materials science research, and protein structure and function.

*Molecular spectroscopy* helps identify and analyze organic materials in pharma, biotech, polymer, chemical, and forensic sciences.

*Laboratory elemental analysis* instruments analyze bulk materials in metal, cement, and minerals.

## Thesis I: Diversified Operations Creating a One-Stop Shop

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### Laboratory Products & Services

This is TMO's second largest segment (making up around 35% of its 2020 annual revenue). This segment encompasses all the main tools and equipment needed for a laboratory and relies heavily on outsourcing a variety of customer services such as drug development, clinical trial logistics, and drug manufacturing for pharmaceutical and biotech companies. This helps TMO's customers focus on their core competencies in a more efficient and productive manner. There are four key businesses that make up this segment:

#### Laboratory Products

This offering mainly consists of basic laboratory equipment and consumables. This can be broken down into laboratory equipment technologies (i.e., temperature control products, preparation and preservation equipment, centrifugation products, etc.)

The company also sells a wide range of water and laboratory products (i.e., electrodes, water purification systems) and laboratory plastic essentials (i.e., handheld and automated pipetting systems).

#### Laboratory Chemicals

The Laboratory Chemicals sub-segment encompasses a broad range of chemicals, solvents, and reagents supporting virtually all types of laboratory applications. Includes organic chemicals, essential laboratory chemicals, high-purity analytical reagents, new chemical building blocks, reactive intermediaries, and more.

#### Research and Safety Market Channel

Offerings are primarily catered for academic, pharmaceutical, biotechnology, government, and industrial customers. This channel encompasses a mix of products manufactured by both TMO or other third-party companies.

Sample products/services include controlled-environment supplies, protective equipment, firefighting, specialized product vaults, and warehouse management systems. TMO also possesses notable transportation capabilities alongside several third-party parcel carriers.

#### Pharma Services

Thermo Fisher offers a complete spectrum of drug development, manufacturing, and clinical trial services for a wide range of enterprise customers. This includes:

- (i) Drug Substance Services → development and manufacturing services for small molecule active pharmaceutical ingredients (APIs).
- (ii) Drug Product Service → manufacturing both small and large molecule products for customers.
- (iii) Clinical Trials Services → provides global services for companies engaged in clinical trials. Offerings include specialized packaging, labelling, and distribution for phase I through phase IV clinical trials.
- (iv) Viral Vector Services → provides a full range of viral vector development and manufacturing services for customers developing and commercializing gene and cell therapies.

#### Attractiveness of End-Market

TMO has a very strong position within the Laboratory Products & Services segment. Its main competitors include Bruker, Avantor, Bio-Rad, Agilent and Danaher. TMO's continued dominance within this space stems from their partnerships and relationships with subsidiaries all across the world, enabling them to boost their operational scale with a distribution network much larger than any of their peers. The absolute size of their laboratory products & equipment segment (\$12.2B in 2020 revenues), is much greater than some other industry players such as Danaher (\$2.6B in 2020 revenues).

## Thesis I: Diversified Operations Creating a One-Stop Shop

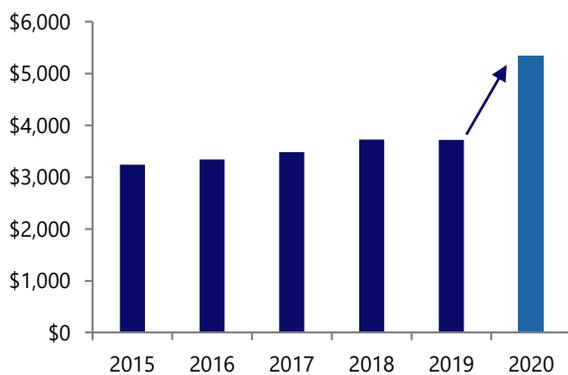
In addition, according to a report published by Allied Market Research, the Laboratory Equipment and Disposables Market is expected to grow at a CAGR of 5.7% from 2018 – 2025. Key drivers for growth in this market include technological advancements in laboratory equipment, increased investments in private and public healthcare, alongside greater healthcare infrastructure development within emerging economies. As all these drivers continue to gain momentum in a post-pandemic setting, Thermo Fisher's dominance within this market will position them favourably in the long run.

### Specialty Diagnostics

Specialty Diagnostics is one of TMO's smaller segments that account for approximately 15% of its 2020 annual revenue. This segment experienced a significant amount of growth over 2020 alone, strongly driven by an influx in testing & diagnostics demand attributable to the pandemic

#### EXHIBIT IV

Segmented 2020 Revenue Breakdown (\$M)



TMO's Specialty Diagnostics Segment offers a wide array of diagnostic test kits, reagents, instruments and other associated products – of which 90% are traditionally consumables. This segment is composed of five key businesses:

### Clinical Diagnostics

Includes a wide array of different liquid immunodiagnostic reagent kits, calibrators, and controls. The company's diagnostic test ranges can cover around 80 different methods including COVID-19 and drug abuse testing.

In addition to producing and distributing diagnostics tools, the company also sells and develops private label products for many in vitro diagnostic companies (those that conduct tests on samples that have been taken from the human body) through arrangements with large OEMs (original equipment manufacturers)

The company also aids laboratory testing through the provision of various quality controls and quality assurance software.

### ImmunoDiagnostics

ImmunoDiagnostics is a diagnostic methodology that relies on antigen-antibody reactions as a primary source of detection.

Offerings include developing, manufacturing, and marketing entire blood-test systems to support scientific developments within the ImmunoDiagnostics space. Can be used for monitoring allergy, asthma, and autoimmune diseases. Major products include ImmunoCAP and EliA for both allergy/asthma and autoimmunity tests, respectively.

### Microbiology

This sub-segment's core offerings include dehydrated and prepared culture media, consumables and instruments for detecting pathogens, quality-control products, rapid direct specimen tests, and other associated microbiology products.

Use cases for such products are very diverse, particularly within the food and pharmaceutical industries. Microbiology diagnostic tools help assure the safety and quality of both consumer and medical products.

## Thesis I: Diversified Operations Creating a One-Stop Shop

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### Transplant Diagnostics

Includes human leukocyte antigen (HLA) typing and testing for the organ transplant market. Thermo Fisher's diagnostic tests within this segment are often used by transplant centers for several functions including tissue typing (assessing compatibility of tissues from different sources), and detection of any anti-bodies present post-transplant (to assess the likelihood of transplant rejections). Products include many different lines of HLA, all type of NGS assays, and other multiplexing technologies.

### Healthcare Market Channel

*This sub-segment* encompasses a broad portfolio of consumables, diagnostic kits and reagents, equipment, and services/solutions for all types of clinical testing facilities (i.e., hospitals). This channel includes product content for more than 1.5 million products, and was developed by Thermo Fisher's own salesforce, in combination with several third-party service providers.

### Attractiveness of End-Market

COVID-19 had brought on several long-term implications for the global diagnostics market. The diagnostics industry has played a critical role in the world's recovery from the pandemic so far. Over the past year or so, TMO has managed to establish a worldwide leadership position in COVID-19 diagnostics testing, which continues to support hundreds of millions of people across the globe. The company's first-half COVID-19 response revenue has already reached \$4.7B.

Demand for faster and a greater volume of testing tools has continued to rise over the past year, creating added momentum for this rapidly growing market, even post-COVID. The company's activity levels in this segment has already neared pre-pandemic levels. The enhanced scale at which they have been operating has enabled them to ramp up their R&D processes across all segments, with diagnostics witnessing the most activity.

For example, the company's recent advancements within its in vitro diagnostics (IVD) sub-segment positions it well to consistently gain share in the diagnostics market overtime. According to McKinsey Research, the IVD market has traditionally been characterized with high technological and regulatory barriers to entry – making it a very high-margin industry (with molecular diagnostics as a major component).

With the spread of COVID-19 causing an explosion in demand for such forms of testing, demand for such tests are at risks of outstripping supply. This provides Thermo Fisher, a prominent player within this high barrier industry, with a unique and attractive market opportunity to capitalize on over the long-term.

## Thesis II: R&D Investments Driving Innovation and Future Growth

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### A Closer Look into TMO's R&D Investments

TMO has consistently invested significant amounts of capital into R&D. The company's industry-leading scale enables it to make larger investments than many of its peers. In 2020, TMO invested \$1.2B in R&D, which represented 3.7% of the company's revenues. As seen in Exhibit V, this investment is quite significant in comparison to the majority of TMO's peers.

In 2020, TMO focused the majority of its R&D spend on developing new technologies that would enable the company to offer innovative products to strengthen its positions in analytical instruments, biosciences, and bioproduction. Furthermore, significant amounts of R&D spend went toward improving the capabilities of past innovations, which enables the company to broaden these products' scopes and potentially prolong their life cycles. Examples of TMO improving past product innovations include the company extending their industry-leading Orbitrap platform with two new-generation mass spectrometers and launching new imaging filters for their cryo-electron microscopes.

### Management's Commitment to Innovation

Management's significant investments in R&D propel TMO's innovation forward, but the company does not stop there. TMO's management team has also taken several measures to enable innovation within the company. One example of this is the company's creation of its MyIdea platform. This platform is a crowd-sourced social innovation tool designed to enable TMO scientists and engineers to create, share, and collaborate on innovative ideas, globally. In 2020, over 1,000 potential innovations were submitted through the platform.

Furthermore, the company has established over 30 internal innovation grants, which are valued at over \$5M. These grants are awarded on an annual basis to TMO's R&D teams across the globe, through the Intensifying Innovation and Collaborative Research

Contract grant programs. The grants provide both funding and the necessary support to those who receive them. The purpose of the grants are to encourage creativity, collaboration, and innovation across the R&D team.

### A Deeper Dive into TMO's Recent Innovations

Management's commitment to innovation and significant R&D investments have been enabled TMO to achieve ground-breaking products and technologies. The company highlights 3 key segments in which their innovations fall under: Enabling Life Sciences, Enabling Diagnostics, and Enabling Material Science.

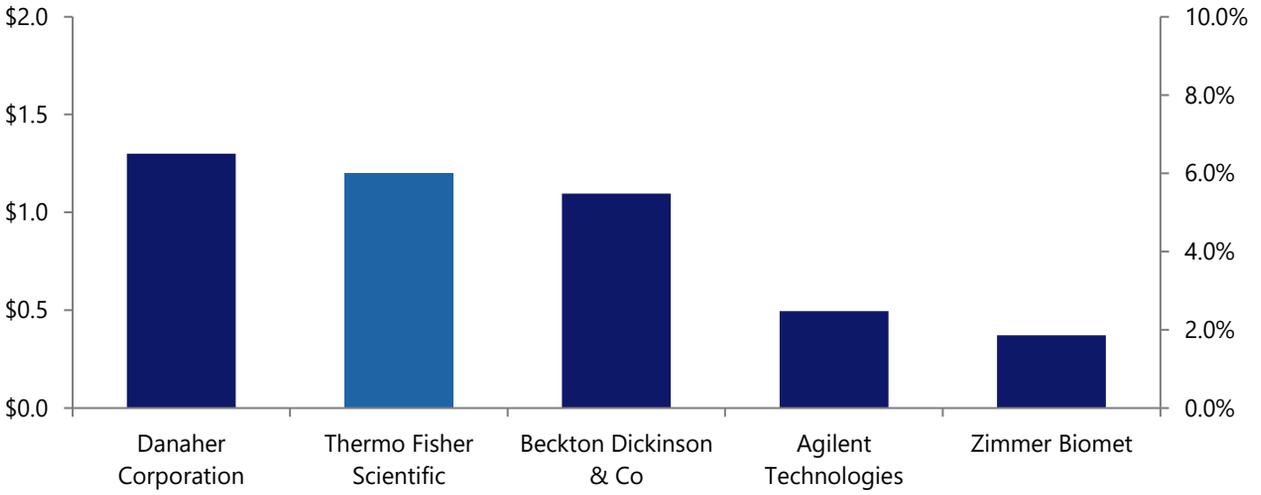
Recent innovations in the Life Sciences segment include the Orbitrap IQ-X Tribrid mass spectrometer and the HyPerforma DynaDrive Single-Use Bioreactor. The Orbitrap IQ-X Tribrid mass spectrometer leverages a unique depth of analysis and precision to advance small-molecule analysis, which helps in the discovery of novel drug targets. The HyPerforma DynaDrive Single-Use Bioreactors are innovative reactors with superior performance across large volumes, which helps TMO in scaling up bioprocessing.

The Diagnostics segment has seen two key recent innovations: the Next-Generation TaqPath COVID-19 2.0 Test and the Oncomine Comprehensive Assay Plus. The new COVID-19 test features an advanced design that tracks current and emerging variants, which results in more accurate diagnostics. The updated assays have the ability to profile over 500 unique genes for single and multiple gene biomarker insights.

Finally, the Material Science group's most recent innovation is its Spectra Ultra scanning TEM. The transmission electron microscope is used for the imaging of beam-sensitive materials, which can help in the automation of semiconductor process control. Exhibit VI provides an analysis of several of TMO's past key innovations.

**EXHIBIT V**

TMO'S R&D Investments Relative to its Peers' (2020), in B



Source(s): Company Filings

**EXHIBIT VI**

Other Key Innovations

Product/Technology	Description
Biomarker Assays	First FDA-approved biomarker assays for Sepsis, giving healthcare professionals access to life-saving information within 20 minutes
Blood-Based Allergy Test	First FDA-approved in vitro specific IgE allergy test, which gives clinicians professionals simultaneous results
Cryo-Electron Microscopy	Cryo-Electron Microscopy devices have sparked a new era within biochemistry and have changed the way scientific research is performed
PCR Amplification for Human DNA	TMO created the most widely-used PCR amplification kit for human DNA identification, which enables law enforcement agencies to solve major crimes
NGS Chemistries	Next-Generation Sequencing Technology that has revolutionized cancer diagnosis and treatment

Source(s): Company Website

## Thesis II: R&D Investments Driving Innovation and Future Growth

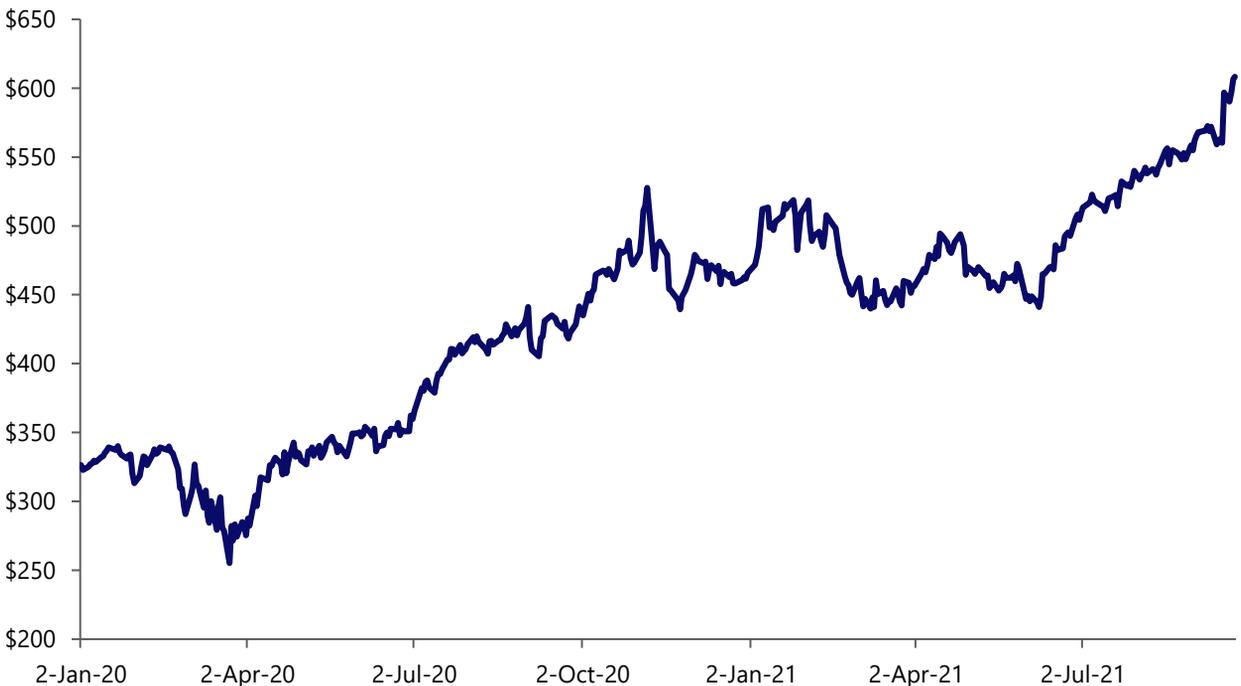
### Case Study: COVID-19 Response

TMO is clearly an industry-leader regarding R&D investments and, subsequently, innovation. This provides the company with a valuable advantage against its peers. An example of TMO being rewarded for its commitment to innovation is how the company benefitted from the COVID-19 pandemic. Due to the company's focus on R&D, TMO was able to quickly pivot to develop solutions that would be integral in combatting the pandemic. This agility served the company incredibly well. TMO started with the development of its Applied Biosystems TaqPath COVID-19 Combo Kit and soon expanded their COVID-19 related products significantly. TMO did this

through the development of solutions for high-throughput PCR-based testing and asymptomatic health surveillance. All these innovations enabled TMO to become the global leader in COVID-19 diagnostic testing. This enabled TMO to not only recover from the initial impact of the pandemic, but to see significant growth, as seen in Exhibit [ ]. TMO's response to the COVID-19 pandemic serves as evidence of the company's ability to use their innovation to drive future growth. As new issues affect the healthcare space at large, TMO is certainly well-positioned to leverage its robust R&D teams to develop ground-breaking solutions that can result in significant growth for the company.

### EXHIBIT VII

TMO Stock's Reaction to COVID-19 and its Subsequent Innovations



Source(s): Capital IQ

## Management Overview & Compensation

### Background on CEO and Chairman Marc N. Casper

Marc Casper has been the CEO of TMO since 2009 and has been a part of the organization pre-the flagship merger of Thermo Electric and Fisher Scientific in 2006, graduating to COO of the combined entity in 2008. Previous to joining TMO, Casper served in other senior leadership roles at clinical diagnostics and laboratory providers Kendro Laboratory Products and Dade Behring, Inc. Prior to entering the healthcare industry, Casper was a consultant at Bain and company, and an investor at Bain Capital.

Under Casper's leadership, TMO escaped a period of stagnant growth and has returned ~967%, far outpacing the ~324% that the S&P 500 has returned in the same time frame. He has also grown revenue over 190%, and profits per share over 500%.

### CEO Compensation Analysis

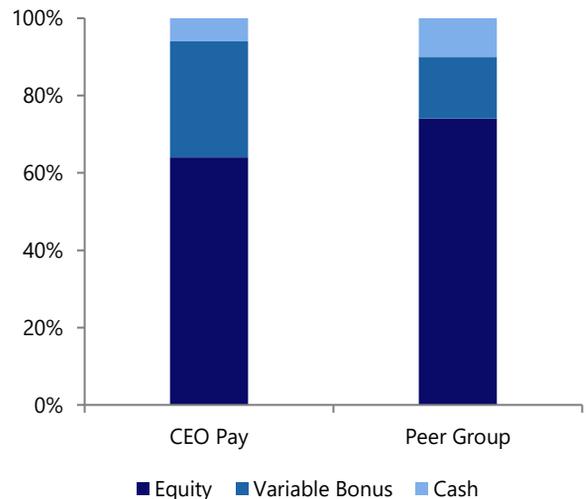
Casper's compensation is made up of a base salary, annual cash incentive bonus, and long-term incentives. The long-term incentives are composed of performance-based RSUs, time-based RSUs, and time-based stock options.

The company compares its executive compensation policies with a range of similarly-sized players in the healthcare space, including 3M, Biogen, and Gilead. The cash-based bonus is weighted at 70% for financial metrics including organic revenue growth, adjusted operating margin, adjusted net income, and free cash flow. The non-financial metrics are based on more subjective metrics such as customer allegiance, long-term positioning for revenue growth and margin expansion, employee satisfaction/diversity metrics, and the company's capital deployment strategy. The HC team has high confidence in this mix of performance metrics as they prioritize cash generation (FCF) given the ~\$1.4B the company plows into R&D annually, as well as a critical analysis of capital deployment, important given the company's aggressive M&A strategy.

Some of the key areas of focus for cash-based incentives re: capital deployment include successfully integrating completed acquisitions, maintaining a strong pipeline of M&A targets, and disciplined M&A activity throughout the year. Although the HC team is pleased at capital deployment being tied into performance bonuses, there is a level of concern given the lack of focus on merger quality/success, and more on quantity.

### EXHIBIT VIII

TMO Executive Compensation vs Peer Group



Source: Company Filings

## Management Overview & Compensation

### Performance Alignment With Payouts

In terms of long-term awards, Casper is compensated via a mix of 35% performance-based RSUs, 30% stock options, and 35% time-based stock options. The performance-based RSUs are based on the metrics of organic revenue growth and adjusted EPS. Stock options are 4-year ratable vesting options with a 7-year term, the time-based units vest over 3.5 years, and the performance-based over 3. Overall, the HC team is not convinced in the effectiveness of TMO's executive compensation packages. The low relative proportion of performance-based RSUs relative to simple stock options and time-based RSUs indicates an overemphasis on stock price performance and longevity as opposed to organic growth metrics. While the HC team appreciates the balance between organic growth and EPS in performance-based metrics to ensure both the R&D and M&A spending allocated by the CEO is evaluated, the lack of more cash flow metrics or ROIC to ensure capital is being deployed effectively is troublesome.

Overall, TMO's performance has been extremely strong in the past 5 years, with bonus payouts reflecting this, all being above target.

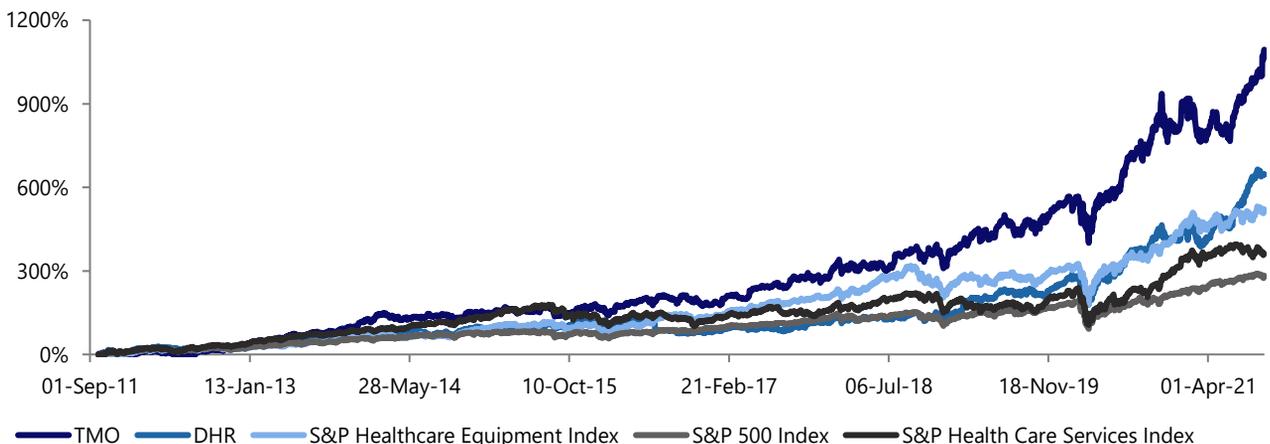
### EXHIBIT X

% Payout of Target, TMO vs. DHR

Year	TMO	DHR
2020	250%	184%
2019	135%	149%
2018	157%	143%
2017	153%	129%
2016	155%	141%
<b>Avg.</b>	<b>170%</b>	<b>149%</b>

### EXHIBIT IX

10-Year Shareholder Return of TMO vs. DHR & Indices



Source: Company Filings

## Management Overview & Compensation

As such, executives seem to be adequately rewarded for the success of the business. However, an area of concern is the relatively generous payouts that TMO pays their executives. Although TMO claims that executive target variable compensation is relatively in-line with the median peer group, they have paid more than comparable peers (Danaher).

Additionally, Danaher has performed in-line TMO in recent years, yet pay less as a % of their target bonus to their executives. Both companies use a similar peer group and median, which indicates TMO pays more for less performance.

With this being said, the HC team believes this concern is mitigated by the simple fact that executive retention is highly important- especially given the strong outperformance TMO has enjoyed since the appointment of Mr. Casper. Although they are ostensibly receiving less value for their executive compensation relative to DHR, we believe the retention of successful executives is in the shareholder's best interest.

As a result, the HC team believes that TMO does pay a premium relative to the median peer group. We believe this is due to the relatively short-term oriented nature of their executive compensation package. However, we believe this concern is mostly mitigated by the need to retain strong talent and the presiding of management over a period of success for the company.

### Insider Ownership Statistics

Insider ownership is not a material portion of TMO's ownership. CEO Marc J. Casper owns 280,215 shares, with all insiders owning <1%.

### Compensation Summary and Analysis

To summarize the HC team's compensation and management analysis, we are highly convicted in the leadership and competency of CEO Marc Casper.

However, we do harbour some concerns about the nature of the executive compensation plan. The plan is relatively in-line with median peers with respect to the mix of base/bonus/long-term compensation, the actual compensation trended highly towards short-term variable compensation, giving the HC team pause.

Additionally, the team reflected on the criteria allocated to evaluating capital deployment. The majority of the criteria evaluating this are related to maintaining pipelines and the volume of M&A deals consummated as opposed to the quality of said deals. As a result, the HC team has some reservation about the quality of criteria used to evaluate management.

Finally, the HC team was not entirely satisfied with the company's mix of long-term variable compensation. Unlike peers, only 35% of equity-based compensation was linked directly to performance. Additionally, the performance-based criteria was focused on organic growth and EPS, despite the company's strong focus on M&A. Given this focus, the HC team would have preferred to see metrics linked to ROIC or FCF in long-term performance metrics.

### EXHIBIT XI

Compensation Peer Group (Selected)



Source: Company Filings

## Capital Allocation

### Capital Allocation Priorities

TMO has a very robust capital deployment strategy that is the cornerstone of much of their business operations. Management targets 60-75% of all deployed capital to be towards M&A, and the remaining 25-40% to be deployed into returning capital to shareholders. The primary means of returning capital to shareholders is share buybacks, albeit paired with an increasing dividend over time.

One aspect of this strategy for which the HC team has reservations is the R&D-intensive nature of the business (~12.5% of revenues) paired with the heavy M&A strategy. Given this, the focus on share buybacks and dividends seem misplaced given the potential for more substantial returns through organic investment. However, given the tie-in of performance metrics to organic revenue growth, the HC team remains confident in management's ability to allocate capital.

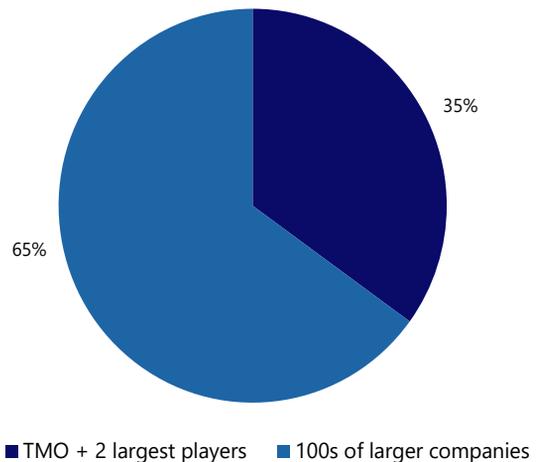
### M&A Strategy

Typically, acquisitive businesses go astray when they acquire companies outside of their competency or with frivolous links to their core business strategy. TMO avoids these pitfalls through disciplined selection criteria, only investing in companies that enhance customer offerings, strengthen strategic position, and create shareholder value. TMO also invests solely in companies in the field of life sciences research—specifically diagnostics, therapies, and lab productivity.

The business also focuses on acquiring companies in its fragmented industry, allowing for continuous consolidation and growth. One concern that the HC team has is that TMO is now significantly larger than most other players in its space. As a result, it needs to make continuously larger acquisitions to boost revenue in a meaningful manner. Since management's plans have not changed re: capital allocation, the HC team is wary of "mission creep" into forced, unnecessary acquisitions.

### EXHIBIT XII

Illustration of Industry Fragmentation



With this being said, over the past 10 years, the business has made several large acquisitions and still experienced rapid profit, revenue, and share price growth. Some notable acquisitions include the \$3.5B purchase of diagnostic testing provider Phadia, the \$1.3B purchase of cellular and genetic testing provider Affymetrix, and the \$1.7B acquisition of Brammer Bio, a viral vector manufacturer. Despite a large amount of acquisitions both by deal volume and quantity, the underlying business performance has not missed a beat. As a result, the HC team remains confident in management's ability to conduct wise M&A. However, we believe future M&A should be monitored to avoid such mission creep.

### ROIC Analysis

In general, TMO has produced a ROIC hovering around 7% for most of the time they have been in business. This lags behind peers Agilent and Danaher, and also is relatively in line with their cost of capital. As such, we are uncertain if the M&A strategy has been effective.

Source: Company Filings

## Capital Allocation

in creating value. Although acquisitions have made strategic sense, the lack of realization of synergies paints a picture of management incentivized to pursue M&A without fully considering shareholder value.

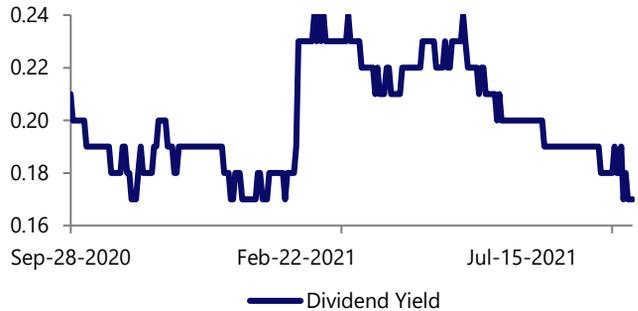
### Other Methods of Returning Capital/Conclusion

TMO recently authorized a \$3B share repurchase program to return capital to shareholders. Additionally, TMO offers an annual dividend, yielding ~0.2%. The new share repurchase program replaces the existing one announced in 2019, which authorized \$2.5B in repurchases.

Overall, the HC team does acknowledge the benefits of share repurchasing and a steady dividend for shareholders. However, given the lack of compelling ROIC on M&A, which is management's first priority when allocating capital, we would have preferred to see more focus on finding organic growth opportunities. Given the high % of compensation linked to share price performance, the HC team is slightly concerned about management's ability to grow their business organically and stay disciplined when allocating capital.

### EXHIBIT XIV

Dividend Yield

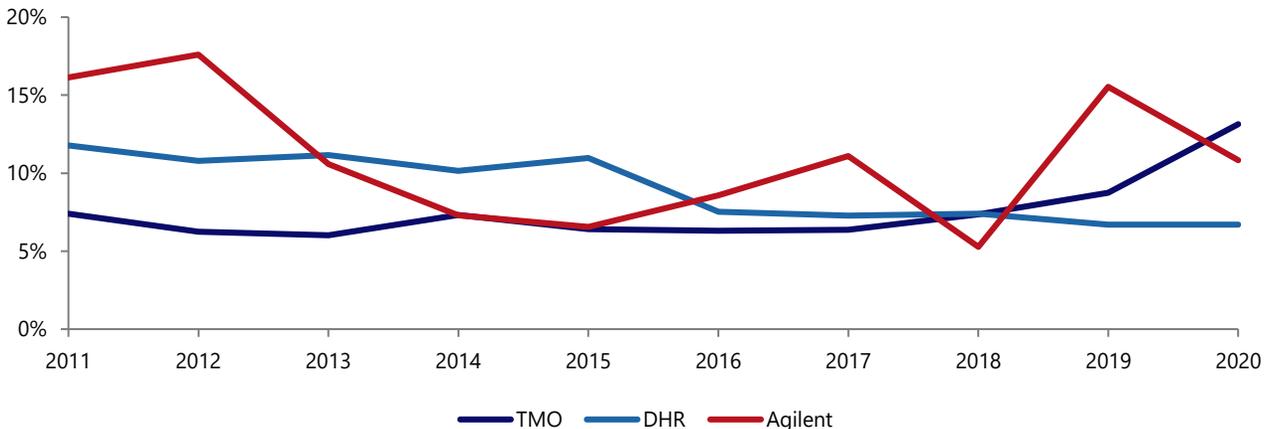


### Conclusion

Overall, the HC team sees the value in TMO's M&A strategy. However, the lack of compelling returns on invested capital paired with high levels of capital return to shareholders give us pause that management is unable to find compelling investment opportunities for the business to grow organically. Ultimately, as the cheques to acquire businesses grow larger, we are uncertain that ROIC will improve meaningfully and are thus not confident in management's ability to allocate capital moving forward.

### EXHIBIT XIII

Historical ROIC Comparison



Source: Morningstar, S&P Capital IQ

## Risks and Mitigations

### Decline in Demand for COVID-19 Tests

As vaccines roll out, there is potential for COVID-19 test demand to decrease worldwide. In late July, TMO cut 2021 COVID-19 test sales forecast by \$900 million due to lower demand as vaccination rates increased. Originally, TMO expected COVID-19 testing revenue to be \$5.8 billion in 2021, however changed the expectation to \$4.9 billion. While companies like TMO benefitted from strong demand for COVID-19 tests during the pandemic, rising vaccination rates can lead to a decline in demand for tests.

*Mitigation:* TMO is positioning itself where the downside risk is low and that results of its non-COVID-19 business is strong. Overall, 2021 revenue forecast increased by \$300 million to \$35.90 billion due to performance of TMO's normal activities rather than the COVID-19 response work. Also, due to the Delta variant, some schools and employers are reinstating COVID-19 testing programs. Furthermore, recently, TMO won a \$192.5 million contract from the U.S. Department of Defense to expand production of a device used in diagnostic tests including COVID-19 diagnostic tests.

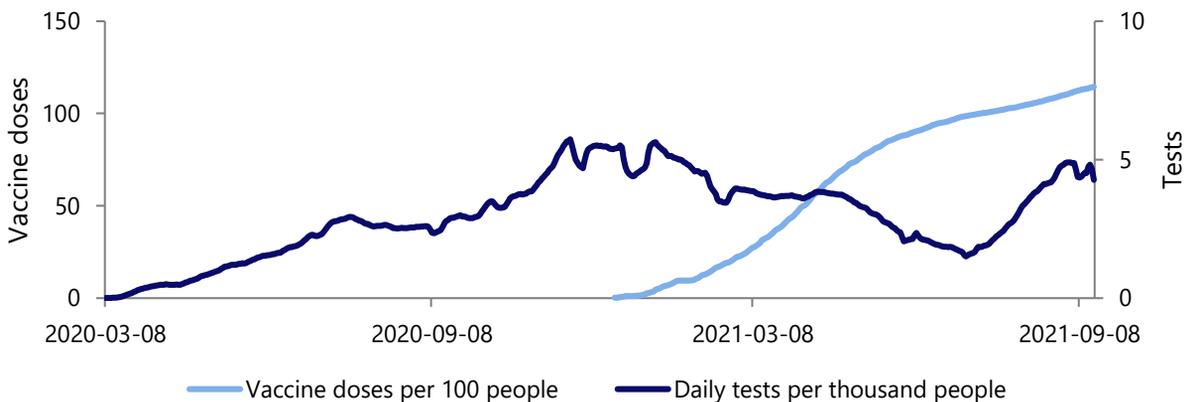
### Political / Regulatory Risks

TMO has recently furthered their operations in China, and with any foreign expansion, there comes regulatory risk. Recently, TMO supplied BioParks with life sciences research offerings, constructed a Single Use Technology Factory in Suzhou, and formed a joint venture with Innoforce and established biologics production facility. Additional political risks include misalignment of values; in 2019, TMO sold equipment for genetic surveillance of minority groups, and had to stop selling the equipment to customers in China. Misalignment of values could make the China expansion challenging.

*Mitigation:* While the regulation in different countries does pose risks, TMO China has been operating for a couple decades, and therefore the probability of something disastrous happening is low. Also, forming a joint venture with Innoforce, a China-based company, the local company will know and can follow regulatory guidelines for biologics and sterile drug development and manufacturing. Also, China-based customers would mitigate the risk as there are limited alternatives and TMO is operating a joint venture.

### EXHIBIT XV

U.S. Daily COVID-19 tests per thousand people vs Vaccine doses administered per 100 people



Source: Our World in Data; Note: Some days without data were filled in for continuity. Also, each individual dose is counted (# of doses per 100 can be greater than 100)

## Valuation

Blending the perpetuity growth method (70%) and exit multiple method (30%), the calculated share price for TMO is \$581.27, resulting in a 4.7% loss from the current price.

TMO was valued in four segments: Life Sciences, Laboratory Products, Analytical Instruments and Specialty Diagnostics. Due to more substantial research outcomes, international growth initiatives and existing market leadership, TMO's comprehensive Life Sciences segment was projected at 7% to 9% growth, slightly above the market. In contrast, other segments grew at 4% to 6%, in line with long-term averages as R&D progresses regularly.

Two additional variables that are key to TMO's performance were COVID and M&A. In 2020, TMO realized \$6.6B in COVID response revenue and is set to gain another \$6.7B in 2021, with \$4.9B being testing revenues. Acknowledging that demand is relatively declining for testing, the model partially removes that benefit in 2022 and eliminates it in 2023, leading to slower growth in those years. The second variable is M&A, which is core to TMO's growth strategy. However, given the unpredictability of TMO's deals and uncertain conviction in management, no credit was given for future acquisitions. However, the completed PPD deal, forecasted to add \$6B revenue in 2022, was factored in. Margin improvement has been slow and steady; as such, the model assumes a 40bps margin gain annually, which is on the lower threshold of management expectations.

The difficulty in determining TMO's price comes from its acquisitions, which fluctuates heavily. To account for this upside, the Team took an above-average terminal growth rate of 2.5%. Moreover, 30% of the share price was blended with the exit multiple method – TMO's peers, although not entirely comparable, follow a similar acquisition strategy.

Currently, TMO trades at around ~\$610. Keeping the 7% WACC, the market valuation implies an 8% to 9% organic growth rate and 50bps margin improvement

to 2026. This is overly optimistic considering TMO's 20%+ growth only began during COVID, and historically, growth has ranged from 4% to 15%, with acquisitions included. The stock price has increased 30% YTD and 122% since the onset of COVID. Although the Team has conviction in the company's market leadership in its segments, the valuation is too expensive. Therefore, HC will continue tracking TMO's acquisition strategy to assess management's capital allocation and see if an opportunity presents itself to enter at an attractive value.

### EXHIBIT XVI

Terminal Growth Valuation	
Discount Rate	7.0%
Terminal Growth Rate	2.5%
PV Unlevered FCF	44,099
PV Terminal Value	175,227
<b>Enterprise Value</b>	<b>219,327</b>
(-) Debt	(18,791)
(+) Cash	7,023
<b>Equity Value</b>	<b>207,559</b>
Shares Outstanding	393
<b>Implied Share Price</b>	<b>\$527.60</b>
Current Share Price	\$609.78
<b>Implied Return / (Loss)</b>	<b>(13.5%)</b>

Blended Valuation		
Terminal Growth	70%	\$527.60
Exit Multiple	30%	\$706.49
<b>Implied Share Price</b>		<b>\$581.27</b>
Current Share Price		\$609.78
<b>Implied Return / (Loss)</b>		<b>(4.7%)</b>

## Valuation

### EXHIBIT XVII

#### Thermo Fisher Scientific

(\$ in millions)	2021E	2022E	2023E	2024E	2025E	2026E
<b>Revenues</b>						
Life Sciences Solutions	14,165	10,916	11,081	12,078	13,165	14,350
Laboratory Products and Services	14,244	15,099	16,005	16,965	17,983	19,062
Analytical Instruments	5,870	6,163	6,471	6,795	7,135	7,491
Specialty Diagnostics	4,933	5,179	5,438	5,710	5,996	6,296
Other	(3,315)	2,353	2,349	2,329	2,292	2,236
<b>Consolidated Revenues</b>	<b>35,897</b>	<b>39,711</b>	<b>41,345</b>	<b>43,878</b>	<b>46,572</b>	<b>49,435</b>
% YoY Growth	11.4%	10.6%	4.1%	6.1%	6.1%	6.1%
Cost of Revenues	(17,805)	(21,444)	(22,326)	(23,255)	(24,683)	(25,706)
<b>Gross Profit</b>	<b>18,092</b>	<b>18,267</b>	<b>19,018</b>	<b>20,623</b>	<b>21,889</b>	<b>23,729</b>
Gross Margin	50.4%	46.0%	46.0%	47.0%	47.0%	48.0%
SG&A	(7,069)	(7,545)	(7,690)	(7,986)	(8,290)	(8,602)
R&D	(1,332)	(1,588)	(1,654)	(1,755)	(1,863)	(1,977)
Other	(300)	(397)	(413)	(439)	(466)	(494)
<b>EBIT</b>	<b>9,391</b>	<b>8,736</b>	<b>9,261</b>	<b>10,443</b>	<b>11,270</b>	<b>12,655</b>
EBIT Margin	26.2%	22.0%	22.4%	23.8%	24.2%	25.6%
(-) Taxes	(1,315)	(1,136)	(1,204)	(1,358)	(1,465)	(1,645)
<b>NOPAT</b>	<b>8,077</b>	<b>7,601</b>	<b>8,057</b>	<b>9,085</b>	<b>9,805</b>	<b>11,010</b>
(+) D&A	2,872	3,177	3,308	3,510	3,726	3,955
(-) Capital Expenditures	(2,513)	(2,581)	(2,894)	(3,071)	(3,260)	(3,460)
(+/-) Change in NWC	(352)	(458)	(196)	(304)	(323)	(344)
<b>Unlevered FCF</b>	<b>8,084</b>	<b>7,739</b>	<b>8,275</b>	<b>9,220</b>	<b>9,948</b>	<b>11,161</b>

### EXHIBIT XVIII

		Terminal Growth Rate				
		1.0%	1.5%	2.0%	2.5%	3.0%
WACC	6.5%	\$452.25	\$491.10	\$538.59	\$597.95	\$674.27
	6.8%	\$430.91	\$465.93	\$508.33	\$560.70	\$627.04
	7.0%	\$411.36	\$443.06	\$481.10	<b>\$527.60</b>	\$585.72
	7.3%	\$393.38	\$422.19	\$456.48	\$497.99	\$549.28
	7.5%	\$376.79	\$403.06	\$434.10	\$471.35	\$516.89

		Exit Multiple				
		20.5x	21.0x	21.5x	22.0x	22.5x
WACC	6.5%	\$694.52	\$709.45	\$724.38	\$739.31	\$754.24
	6.8%	\$685.89	\$700.63	\$715.37	\$730.11	\$744.85
	7.0%	\$677.39	\$691.94	<b>\$706.49</b>	\$721.05	\$735.60
	7.3%	\$669.02	\$683.38	\$697.75	\$712.12	\$726.48
	7.5%	\$660.77	\$674.95	\$689.13	\$703.32	\$717.50

## Valuation

### EXHIBIT XIX

#### Multiples Analysis

Company Name	Market Cap (Millions)	Enterprise Value (Millions)	EV/EBITDA		EV/EBIT		LTM EBITDA Margin	EV/Sales
			LTM	2021E	LTM	2021E		
Danaher Corporation	\$294,085.94	\$315,015.69	28.2x	25.8x	36.4x	32.9x	33.8%	11.8x
Becton, Dickinson and Company	\$92,304.19	\$110,785.14	15.2x	17.0x	24.4x	20.5x	29.6%	5.6x
Illumina, Inc.	\$80,604.61	\$78,256.09	nmf	nmf	nmf	nmf	21.3%	19.7x
Agilent Technologies, Inc.	\$66,252.86	\$68,304.33	33.2x	29.3x	40.9x	31.1x	26.9%	11.1x
Zimmer Biomet Holdings, Inc.	\$40,093.61	\$48,762.94	16.4x	13.7x	29.3x	16.8x	30.5%	6.2x
Mean	\$114,668.24		23.2x	21.5x	32.8x	25.3x	28.4%	10.9x
Median	\$80,604.61		22.3x	21.4x	32.8x	25.8x	29.6%	11.1x
Thermo Fisher Scientific Inc.	\$304,544.56	\$319,483.68	19.4x	24.5x	23.8x	26.9x	34.8%	8.4x

Source(s):: S&P Capital IQ

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