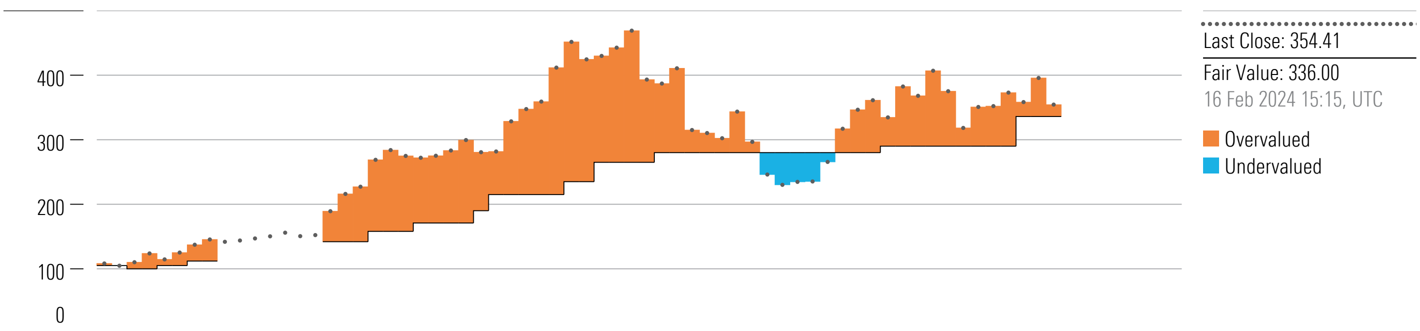
Morningstar Equity Analyst Report | Report as of 29 Apr 2024 23:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

West Pharmaceutical Services Inc WST ★★★ 29 Apr 2024 21:16, UTC

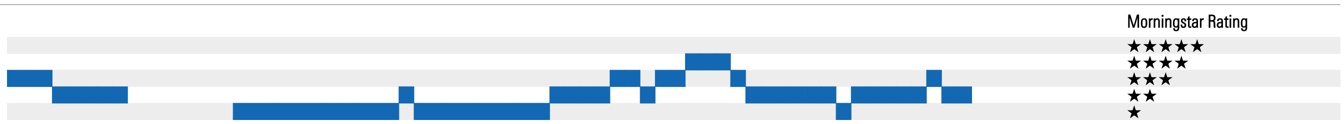
Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
354.41 USD 29 Apr 2024	336.00 USD 16 Feb 2024 15:15, UTC	1.05	26.25 USD Bil 26 Apr 2024	Wide	Mid Growth	Medium	Exemplary	3 Apr 2024 05:00, UTC

Price vs. Fair Value



	2019	2020	2021	2022	2023	YTD	
	—	1.66	1.77	0.84	1.21	1.05	Price/Fair Value
	53.97	88.89	65.79	-49.66	49.94	0.76	Total Return %

Morningstar Rating



Total Return % as of 29 Apr 2024. Last Close as of 29 Apr 2024. Fair Value as of 16 Feb 2024 15:15, UTC.

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The primary analyst covering this company does not own its stock.

[1]The ESG Risk Rating Assessment is a representation of Sustainalytics' ESG Risk Rating.

West Earnings: First-Quarter Revenue Slightly Better Than Expected; Maintaining Our Fair Value

Analyst Note Jay Lee, Senior Equity Analyst, 26 Apr 2024

Wide-moat West Pharmaceutical's first quarter was slightly better than we expected, with reported sales and organic sales down only 3% year on year instead of our forecast of a 6%-7% decline. At first glance, we are maintaining our fair value estimate of $336, and shares declined closer to our fair value after earnings. We continue to think the company's long-term story is attractive and has potential upside, depending on the impact that the GLP-1 obesity drug industry will have on West's long-term sales.

Reported net sales for the quarter were $695.4 million, and gross profit margins were 33.1%, or 4.8 percentage points lower than the same period last year. The company said that it is still being adversely affected by inventory destocking and adverse product mix. However, management reiterated its guidance of 2%-3% top-line growth and believes it will accelerate in the second half of the year and post strong results in the fourth quarter to close out the year. This cadence of recovery is consistent with its previous messaging and is also similar to other companies in the life sciences sector with adjacent business lines.

Although this year is likely to have lackluster growth, we maintain our view that the company can grow at high single digits over the next two decades. The core driver of this growth is the market for injectable drugs, which enjoys secular growth trends due to increasing use of biologic drugs. At this

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Sector	Industry
Healthcare	Medical Instruments & Supplies

Business Description

West Pharmaceutical Services is based in Pennsylvania, U.S., and is a key supplier to firms in the pharmaceutical, biotechnology, and generic drug industries. West sells elastomer-based packaging components (including stoppers, seals, and plungers), non-glass containment solutions, and auto-injectors for injectable drugs. The company reports in two segments: proprietary products (about 80% of total revenue) and contract-manufactured products (about 20% of total revenue). It generates approximately 55% of its revenue from international markets and 45% from the United States.

time, our assumption on the growth contribution from GLP-1 obesity drugs is conservative since the long-term impact to West from this class of drugs is unclear, but it is a potential source of upside to our expectations.

Business Strategy & Outlook Jay Lee, Senior Equity Analyst, 16 Feb 2024

West Pharmaceutical Services is the global market leader in primary packaging and delivery components for injectable therapeutics. Primary packaging has direct contact with the drug product and must be manufactured to ensure stability, purity, and sterility of the drug product in accordance with strict regulatory standards. Because of the mission-critical nature of these components, it is important for customers to trust the quality of manufacturing and design. Key product lines include elastomer components such as stoppers, seals, and plungers, Daikyo Crystal Zenith vials made out of polymer instead of glass, and auto-injectors. Injectables includes not only older modalities like small molecule drugs, insulin, and vaccines but also biologics and GLP-1 obesity drugs.

West maintains roughly 70% market share of elastomer components for injectable drugs, with the remaining 30% split between Switzerland's Datwyler and narrow-moat AptarGroup. Additionally, its polymer vials are important containment solutions for biologics, a significant part of the injectables market, because protein therapeutics are incompatible with glass.

West’s strong market share is backed by its reputation for quality and supply chain expertise and reinforced by the high cost of failure for injectable drug packaging, especially biologics. The firm’s scale and diversified supply chain are unparalleled. We believe West will be able to maintain strong market share in the injectables components market for the foreseeable future.

The main driver of the company’s long-term revenue outlook is the growth of the injectables market, which enjoys secular growth trends due to increasing use of biologics. GLP-1 drugs are also a potential source of upside, although the long-term revenue impact for West is not yet clear. Additionally, we think the company will continue to benefit from stricter regulations requiring higher-quality, lower particulate packaging, which is an incentive for customers to upgrade from standard primary components to West’s high value products, or HVP. We think this mix shift toward higher-margin products will gradually improve the firm’s profit margins.

Bulls Say Jay Lee, Senior Equity Analyst, 16 Feb 2024

- West’s top-line growth is likely to be buoyed by secular trends in injectable drugs, especially increasing use of biologic drugs.
- West is a potential beneficiary of the rapidly growing GLP-1 obesity drug market, which is an injectable drug, although the magnitude of long-term benefit to West is unclear at this time.
- Due to more stringent regulations and increased use of biologics, customers may be incentivized to

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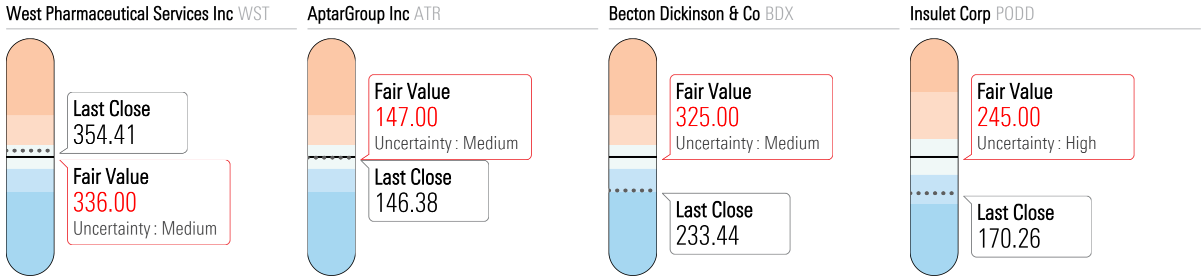
Competitors



	West Pharmaceutical Services Inc WST	AptarGroup Inc ATR	Becton Dickinson & Co BDX	Insulet Corp PODD
Economic Moat	Wide	Narrow	Narrow	Narrow
Currency	USD	USD	USD	USD
Fair Value	336.00 16 Feb 2024 15:15, UTC	147.00 9 Feb 2024 21:54, UTC	325.00 9 Aug 2023 13:42, UTC	245.00 26 Feb 2024 22:57, UTC
1-Star Price	453.60	198.45	438.75	379.75
5-Star Price	235.20	102.90	227.50	147.00
Assessment	Overvalued 28 Apr 2024	Fairly Valued 28 Apr 2024	Undervalued 28 Apr 2024	Undervalued 28 Apr 2024
Morningstar Rating	★★★29 Apr 2024 21:16, UTC	★★★29 Apr 2024 21:16, UTC	★★★★29 Apr 2024 21:16, UTC	★★★★29 Apr 2024 21:16, UTC
Analyst	Jay Lee, Senior Equity Analyst	Jay Lee, Senior Equity Analyst	Alex Morozov, Regional Director	Debbie S. Wang, Senior Equity Analyst
Capital Allocation	Exemplary	Standard	Standard	Exemplary
Price/Fair Value	1.05	1.00	0.72	0.69
Price/Sales	9.22	2.71	3.44	7.21
Price/Book	9.79	4.04	2.64	15.88
Price/Earning	47.55	30.76	53.11	56.53
Dividend Yield	0.22%	1.14%	1.61%	—
Market Cap	26.25 Bil	9.50 Bil	66.90 Bil	11.64 Bil
52-Week Range	310.42—415.73	111.63—148.51	229.40—287.32	125.82—335.91
Investment Style	Mid Growth	Small Core	Large Core	Mid Growth

switch from standard components to high value products, which improves West's profit margins.

Bears Say Jay Lee, Senior Equity Analyst, 16 Feb 2024

- Many of West's products and services could be insourced by customers, and a reversal of higher outsourcing could occur if customers decide they want more control over the supply chain.
- West has significant customer concentration, with its 10 largest customers accounting for over 40% of total sales.
- West has been investing large amounts into automation to improve production efficiency; the outcome of automation efforts is uncertain, and returns on these investments may be subpar.

Economic Moat Jay Lee, Senior Equity Analyst, 16 Feb 2024

West has carved out a wide economic moat in the field of drug packaging, containment, and delivery systems for injectable drugs. West has a proven track record backed by the quality and technology behind its products and services, and its drugmaker customers are incentivized to seek a reputable supplier like West to meet the high regulatory hurdles associated with drug packaging and delivery and reduce the risk of supply chain disruptions due to a recall or capacity constraints. Once West's components or solutions are part of a drug's supply chain, there are usually high switching costs since primary components, or parts that have direct contact with the drug substance, are specified in regulatory approvals and cannot be easily changed. Moreover, packaging and delivery are usually very low input costs for the total cost of production for a drug, especially compared with the high costs of supply chain disruption. West has demonstrated consistent and durable profitability that supports our view that it has a wide moat. We view the proprietary products segment as the firm's core business, as it contributes the majority of West's revenue and operating profit and is responsible for the whole company's moat. We do not see a moat in the contract manufacturing unit, which we estimate only contributes 10% or less of total operating profit.

West's proprietary products include elastomer packaging components such as stoppers, seals, and plungers for various injection systems. It also includes cyclic olefin polymer, or COP, containment solutions for glass-incompatible drugs and easy-to-use self-injection devices. Many of West's products are primary packaging components, including stoppers, syringe plungers, and vials, and have direct contact with the drug product. Seals, which are placed on top of stoppers to seal a vial, are secondary components. These mission-critical primary components are instrumental in the safe and uncontaminated delivery of the drug product, and West's brand and reputation for quality enables it to have approximately 70% market share of the injectable components market. Primary packaging components are also written into the drug application with the U.S. Food and Drug Administration and remain on file for the life of the product. This means West often remains the primary elastomer packaging provider for the entire time a drug remains on market, which may extend well beyond 10 years for many drugs. Pharmaceutical companies are unlikely to reopen the drug application with the FDA unless there are serious packaging concerns, considering that each component only costs a few cents and customers are likely to turn to West for future packaging needs. Moreover, West is also highly likely to be chosen as a vendor for generic versions of drugs going off-patent. Using the same packaging component reduces the regulatory burden for generic drug applications, and customers often choose to stay with a vendor that had success with the brand-name drug.

From a product category standpoint, over 70% of West's proprietary products sales come from high value product, or HVP, components and solutions, which are important contributors to the firm's wide economic moat. Services in its “value ladder” include Westar RS (“ready-to-sterilize”) washing, Westar RU (“ready-to-use”) steam sterilization, FluroTec barrier film coating, Envision automated inspections to minimize risk of rejected drug products, and its NovaPure line of premium components that have undergone the “full-package” of previously mentioned processes. Its HVP lineup also includes Daikyo Crystal Zenith COP vials for drugs that cannot be stored in glass, which is particularly important for its biologics business since many large molecule drugs are incompatible with glass.

Each rung on West's value ladder is a higher-margin service, and a shift to “full-package” premium components can increase margin up to the 70% range from the 20% range for only the component. West typically maintains core component pricing growth of 1%-2% to build strong relationships with customers and encourages them to upgrade to higher-margin HVP components and services. West's HVP sales have been experiencing tailwinds from Big Pharma customers moving up the value chain, with several recent upgrades to NovaPure, which offers the highest quality level and depth of service. These higher-quality services have significantly higher margin, and higher-value business tends to be sticky. Once customers decide to outsource these services and shed their associated resource cost, they may be less likely to build these capabilities back up in the future.

From an end-use standpoint, West has dominant market share in biologic drugs, and we expect it to benefit from the above-trend growth of biologic drugs, which has recently been in the double digits. West participated as a vendor in at least 90% of biologic drugs brought to market in 2019 in the U.S. and Europe, and the company reports that its sales for use in biologics drug contributes about 40%-50% of segment sales. Biologics are manufactured via aseptic processing and packaging where every step is controlled and monitored to maintain sterility, and drugmakers are incentivized to choose a vendor with a proven track record to reduce any chance of contamination that can cause serious supply chain issues. We expect it to maintain dominant share in biologics, as reputational expertise tends to be long-lasting, and we think the growth in biologics will help West to enjoy lower-than-historical customer acquisition costs for the foreseeable future.

In our view, it would be very difficult for any single competitor to amass the scale, expertise, and brand power needed to effectively compete against West. The firm manufactures over 100 million components each day and over 40 billion components annually. Though sales have grown in each of the past four years, West has managed to reduce its facility footprint, taking the number of facilities to 25 from 29 in the last two years. We find it impressive that West can post strong growth numbers while operating more efficiently, partly due to automation initiatives and partly from overall cost consolidation.

West's contract manufacturing segment is lower margin and potentially replicable, so we do not think it has built an economic moat. This business produces insulin pens, auto-injectors, glucose monitors, and a variety of consumer goods. Contract manufacturing is a mix of design consulting and production outsourcing, and West helps customers minimize material costs and reduce design cycle times with assembly services such as packaging, product assembly, and labeling. West has carved a niche in injecting molding in healthcare products, which involves molding parts from liquefied materials. The contract manufacturing business also serves customers on the consumer side, though this customer base is mainly a holdover from the acquisition of contract manufacturing firm Tech Group. There is limited use of intellectual property in contract manufacturing and, as such, we think the business has the potential to be replicated by competitors within a 10-year time frame. We therefore don't see a moat in the contract business.

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Our wide economic moat rating on West Pharma is not materially affected by environmental, social, or governance issues.

Fair Value and Profit Drivers Jay Lee, Senior Equity Analyst, 16 Feb 2024
We have raised our fair value estimate on West Pharma to $336 from $290 due primarily to revised assumptions on long-term growth.

We think the company can achieve high-single-digit growth over the next two decades, given secular growth trends in injectable drugs, especially biologics. We also factor in a small amount of growth contribution from GLP-1 obesity drugs, which is a potential source of upside to our estimates. At this time, we think it is prudent to use conservative assumptions since the magnitude of long-term revenue contribution to West from this class of drugs is unclear.

Although we forecast headwinds to profit margins in 2024, from 2025 to 2027 we project a gradual increase in profit margins of about 100 basis points per year as customers switch from using standard packaging components to high value products, which can better satisfy the packaging requirements of biologic drugs or meet increasingly stringent regulations.

We use a 7.0% weighted cost of capital, which reflects our view that West benefits from a below-average level of systematic risk to equity and very low credit risk.

Risk and Uncertainty Jay Lee, Senior Equity Analyst, 16 Feb 2024
Our Morningstar Uncertainty Rating for West is Medium. While we do not see significant risks to the business in the longer term, we do see more uncertainty with our shorter-term and medium-term outlooks, given uncertainty in how much GLP-1 drugs could contribute to revenue growth.

West is exposed to material foreign-exchange risk, with over half of net sales from markets outside the United States. As an example of how this can affect business results, West posted sales growth of negative 1.5% in 2015; however, excluding currency effects, the firm had net sales of over 7% that year. A strengthening U.S. dollar can materially and adversely affect top-line results in the future.

We also see uncertainty about the regulatory environment. If regulatory requirements become less stringent, demand for West’s consulting-like services could decline, and larger customers could choose to produce more components in-house. Similarly, any significant changes to regulatory standards would open the door for new competitors if they could demonstrate expertise with new regulatory regimes. Given that West's larger customers could use their size in pricing negotiations, increased scrutiny of materials and production costs could put downward pressure on West's ability to increase price and lead to lower demand for higher-value higher-margin services like NovaPure. West has a moderate degree of customer concentration, with the 10 largest customers accounting for about 45% of sales.

Our Uncertainty Rating on West is not materially affected by environmental, social, or governance issues. While West produces over 100 million packaging components every day, and many of these components eventually become unrecyclable medical waste, there are few alternatives for drug delivery systems that don't require plastic packaging. Overall, we view the social benefit of West products in life-saving drug treatments and vaccines as an offset for the environmental impact of West packaging.

Capital Allocation Jay Lee, Senior Equity Analyst, 16 Feb 2024

West Pharmaceutical earns an Exemplary Capital Allocation Rating. The rating reflects our assessments of a sound balance sheet, exceptional investment strategy, and an appropriate level of shareholder distributions.

We think the company has a strong balance sheet. Over the past five years, it has had very low debt/equity ratios of below 0.2 times and healthy EBIT/interest expense ratios of over 30 times. We do not anticipate any issues with debt servicing.

In our opinion, West's investment decisions have been value-accretive, and we have a positive view of investment considerations. We expect capacity investments in its high value products to drive future growth. The higher-margin nature of these products is also likely to provide a lift to overall margin, which we think will contribute to rising returns on capital over the next five years. We like management's focus on developing customer relationships with lower-value services and then upgrading these customers to custom solutions and high-value products once relationships are established. This strategy requires long-term patience, which we think has paid off for the firm. We do not see underinvestment as an issue, further supporting our exceptional investment rating in our capital allocation framework.

We think West has made appropriate decisions related to shareholder distributions. The firm has maintained steady dividend growth over time and has historically paid dividends in a 20%-30% payout range. We expect the company to maintain a dividend payout ratio of about 13% through our five-year explicit forecast period. Considering the firm's consistent cash flow and somewhat limited internal investment opportunities, we have a positive view of the dividend policy. West initiated a share-repurchase program in 2016, and the firm spent $203 million on repurchases through 2022. We like that management has shown a willingness to pause stock repurchases when valuation gets extended. The company did not purchase any shares during the three months ended September 2020, which followed a period of significant price appreciation.

West is not highly acquisitive, and it has avoided the pitfall of diluting returns on capital with acquisitions outside of its core competency. The company has suggested opportunities in spaces around delivery devices, wearables, and hospital to home—areas that could have synergies with West's SmartDose portfolio. We would prefer West to remain focused on organic expansion and only acquire business lines that are closely tied to its core operations.

Analyst Notes Archive

West Pharmaceutical Earnings: 2024 Revenue Guidance Disappoints; Wide Moat Intact, Valuation Raised Jay Lee, Senior Equity Analyst, 16 Feb 2024

West's fourth-quarter earnings were in line with expectations, but 2024 guidance disappointed due to revenue growth forecasts that were about 6-7 percentage points lower than our expectations. However, we believe the headwinds that management highlighted are likely to be transitory. We have also reviewed our thoughts on the company and reaffirm our wide moat rating thanks to its very strong intangibles and switching costs. We have revised our fair value estimate upward to $336 per share from $290 primarily to reflect updated assumptions on long-term growth. After the recent selloff, we view shares as only slightly above our fair value and think the long-term story remains intact, despite the headwinds in 2024.

Net sales in the fourth quarter were $732 million, or 1.4% organic growth, which is in line with our forecast. Gross profit margin for the three months was 38%, which is 1 percentage point better than the same period last year. However, guidance for fiscal 2024 was disappointing at only 2%-3% top-line growth, which is 5-6 percentage points lower than the company's previous signaling and 6-7 percentage points lower than our previous expectation. This is driven by a confluence of factors, including continued decline in COVID-19 sales, delayed timing in additional high value products, or HVP, coming online, delayed timing of a major customer's upgrade to a higher HVP tier, and widespread inventory destocking.

Although the guidance is a negative surprise, we believe these headwinds are transitory and maintain our view that the company can grow in the high single digits over the long run. The core driver of this is the market for injectable drugs, which enjoys secular growth trends due to increasing use of biologic drugs. At this time, our assumption on the growth contribution from GLP-1 obesity drugs is conservative since the long-term impact to West from this class of drugs is unclear, although we recognize it as a potential source of upside.

West Pharmaceutical Earnings: Solid Top-Line Growth Continues; Weaker Demand Expected in Near Term Karen Andersen, CFA, Strategist, 26 Oct 2023

Wide-moat West Pharmaceutical reported third-quarter earnings in line with our expectations. Total organic net sales grew 5.7% year over year, signifying the wind-down of COVID-19-related sales declines. Base sales excluding COVID-19 products increased by over 20% organically year over year, but management trimmed net sales guidance for 2023 to reflect the potential impacts of customers' restocking trends in the fourth quarter. We are maintaining our $290 fair value estimate as our top-line forecast was lower than previous guidance. Shares dropped 11% after the earnings release but still look overvalued to us.

West Pharmaceutical's proprietary products segment recorded a year-over-year organic sales growth of 3.2%, led by high-value products and components. Proprietary products' gross margin declined by 20 basis points to 43.4%. We believe the recent actions of inventory management among customers will only be a short-term challenge. As West continues to ramp up production through 2024, the company will have more capacity to work with customers on new designs and packaging, solidifying its dominant market position supported by intangible assets and strong switching costs. We see strong pricing power across West's offerings as around two thirds of incremental sales in third-quarter 2023 compared with third-quarter 2022 come from sales price increases, offsetting unfavorable volume and mix.

The contract-manufacturer products segment grew by 17.4% year over year, mainly driven by drug-injection devices and diagnostic devices. For now, we don't think GLP-1-related self-injection sales would materially affect the long-term growth perspective, but we believe West's 70% market share in injectable primary packaging sets it up for a nice position to compete with other suppliers like narrow-moat Aptar. We welcome management's decision to orient two thirds of capital expenditure to growth, preparing for the potential recurring revenue opportunities in the injectables space.

West Pharmaceutical Earnings: Maintaining Valuation as Base Business Sees Solid Growth and Margins Karen Andersen, CFA, Strategist, 30 Jul 2023

West Pharmaceutical saw a 2.3% net sales decline in the second quarter, with a sharper decline in adjusted diluted EPS, but management slightly raised expectations for both measures for the full year. Our earnings forecast was already above the high end of prior guidance, so we are maintaining our $290 fair value estimate.

Overall, while West is now at the peak of its COVID-19-related headwinds, the firm’s base business is performing well, with midteens growth in proprietary products excluding COVID-19-related demand. With additional capacity for high-value products in proprietary products (approximately 75% of this segment’s sales), the firm should be able to meet demand increases from customers. The smaller segment of contract-manufactured products grew by 15.3% in the quarter, largely due to injection-related device components. Gross profit margins across the business fell by three percentage points as COVID-19-related sales fell, but this was partly offset by strong pricing power in the base business as well as efficiency improvements, which we think bodes well for the long term, once COVID comparisons end. We expect West to benefit both from continued ability to increase prices at a low-single-digit level as well as improved product mix that increasingly favors high-value products.

Life Science Toolmakers Help Ideas Become Drugs While Reinforcing Their Moats Julie Utterback, CFA, Senior Equity Analyst, 2 Jun 2023

Life science toolmakers that enable drug production operate attractive businesses for two major reasons that investors often find compelling. First, regulation of the drug manufacturing process creates highly durable switching costs for end users and long potential revenue streams for life science toolmakers. Second, life science firms often benefit from broad exposure to biopharmaceutical growth without taking on much product-specific risk.

Those two positive attributes caused us to lower our cost of equity assumptions on Agilent, Danaher, and Waters to a below average level of 7.5%, which is in line with its key peers in this space that we cover, such as Merck KGaA, the Sartorius companies, and Thermo Fisher. That change in our cost of equity assumption was the major reason why we just increased our fair value estimates on Agilent, Danaher, and Waters in the 10%-20% range in conjunction with our recent research on the drug production process.

The durability and diversity of these life science businesses often do not come cheap from a stock valuation standpoint, but after the pandemic boom years, life science financial results started resetting in late 2022, causing shares to drop from recent peaks to reasonable, if not deeply discounted, levels. Currently, we think shares are suffering from market myopia during the 2023 reset. However, as profit growth normalizes in late 2023 and beyond, shares may eventually reverse course from their largely negative trajectories since 2021, and we recognize some growth at a reasonable price opportunities for long-term investors in companies like Agilent, Illumina, Sartorius Stedim, and Waters.

West Pharmaceutical Earnings: Strong Organic Demand Shines as Pandemic Demand Winds Down

Karen Andersen, CFA, Strategist, 28 Apr 2023

Wide-moat West Pharmaceuticals posted solid first-quarter results despite a tough comparable quarter. Strong organic demand for non-COVID-19 injectable packaging kept pace with the loss in demand for vaccine packaging, and management gave a slight lift to its guidance. We expect to raise our fair value estimate by high-single digits after updating our model.

The firm posted net sales growth of 2.3% year over year largely driven by price increases, offset by a negative mix effect. The proprietary products segment posted flat net sales, with high value products declining by 2.3% year over year largely due to a reduction in vaccine-related revenue. The contract manufacturing segment posted double-digit net sales growth driven by injection-related device components, which we attribute to the rebound in healthcare utilization globally. The firm's supply chain is relatively well protected from shortages, so we do not expect a strong boost to revenue from supply normalization as in other device markets.

Adjusted operating profit declined by 23%, 340 basis points lower year over year. This decline was driven by an unfavorable mix with the loss of COVID-19-related sales, as well as higher costs in labor, raw materials, and overhead. This was partially offset by pricing. Due to the firm's market dominance, it is generally able to raise prices in response to rising input costs, though with some lag time due to contract length.

Looking ahead, management nudged its full year 2023 net sales guidance range up to $2.96-$2.99 billion and raised its adjusted EPS range to $7.50-7.65. This increase is based on a weaker outlook for COVID-19-related sales, which means the firm will reallocate resources to expedite the fulfillment of high-value orders.

West Pharmaceutical Delivers Solid Fourth-Quarter Results; Shares Appear Overvalued Karen Andersen, CFA, Strategist, 16 Feb 2023

Wide-moat West Pharmaceutical delivered solid fourth-quarter results, with full-year results in line with management's previously stated guidance. Sales declined in the quarter by 3%, and full-year sales growth for 2022 was 2% (organic net sales growth of 7.7%) year over year. While the company continues to face foreign exchange headwinds and inflationary pressure paired with a significant drop off from COVID-19-related sales, we are maintaining our $280 fair value estimate, and shares appear overvalued.

The sales decline in the quarter was due to volume, mix shift, and foreign exchange headwinds, moderately offset by price increases. By segment, proprietary products declined 4% year over year for the quarter. Revenue grew 3.9% (organic sales growth of 9.8%) year over year for the full year of 2022. High-value product components, or HVP, represent about 72% of this segment, with HVP sales flat year over year. This segment also saw a single-digit sales decline in biologics due to a reduction in COVID-19 vaccines and decent growth with the company's generics and pharma products. Contract manufacturing experienced 2% revenue growth in the quarter and full-year net sales declining 6.7% year over year (organic net sales declined 2%). Growth in the quarter was driven by increased sales of medical device products and demand increases from existing customers. Each segment experienced slight margin contraction year over year. However, West's operating margin remains stronger than in the prepandemic era, and while we expect a slight dip in margins in 2023, we project margin expansion into the high-20s by the end of our five-year explicit forecast.

Management provided 2023 full-year revenue guidance of $2.94 billion to $2.96 billion, lower than our projected $3 billion. This guidance includes a $303 million year-over-year decline in COVID-19-related sales.

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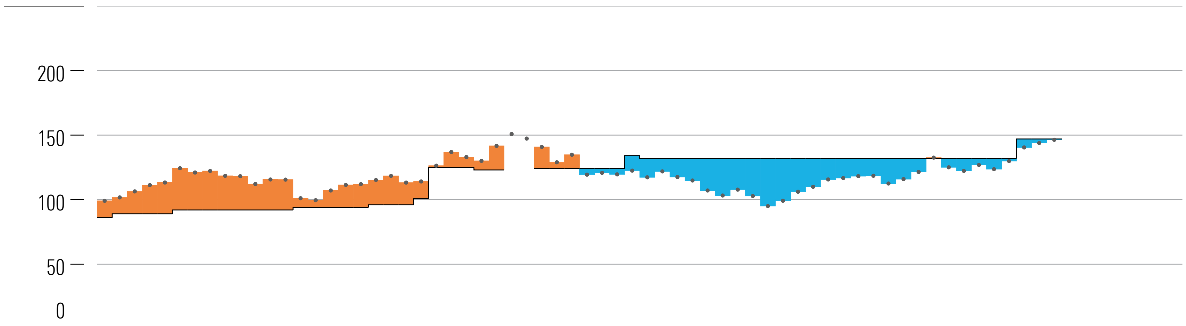
Competitors Price vs. Fair Value

AptarGroup Inc ATR

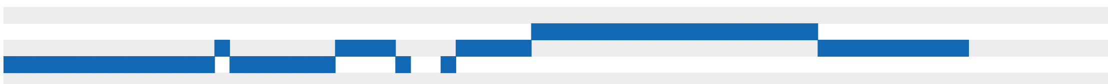


Fair Value: 147.00
9 Feb 2024 21:54, UTC

Last Close: 146.38
Overvalued
Undervalued

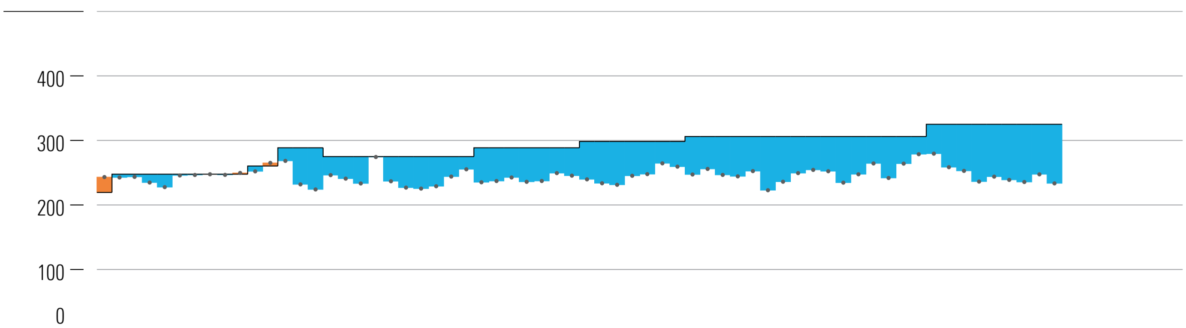
	2019	2020	2021	2022	2023	YTD	
	1.26	1.10	0.91	0.83	0.94	1.00	Price/Fair Value
	24.42	19.64	-9.43	-8.96	13.84	19.07	Total Return %

Morningstar Rating



Total Return % as of 29 Apr 2024. Last Close as of 29 Apr 2024. Fair Value as of 9 Feb 2024 21:54, UTC.

Becton Dickinson & Co BDX



Fair Value: 325.00
9 Aug 2023 13:42, UTC

Last Close: 233.44
Overvalued
Undervalued

	2019	2020	2021	2022	2023	YTD	
	1.02	0.89	0.82	0.83	0.75	0.72	Price/Fair Value
	22.08	-6.82	1.85	3.91	-2.67	-3.87	Total Return %

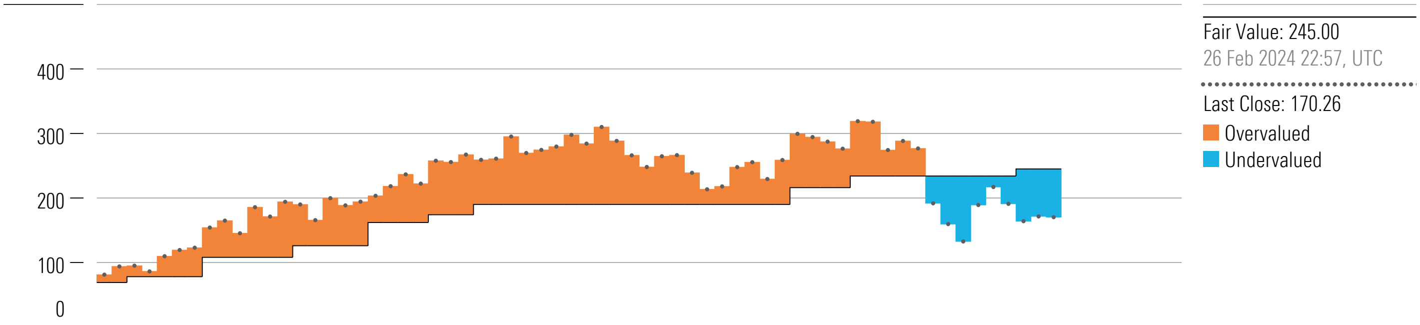
Morningstar Rating

Total Return % as of 29 Apr 2024. Last Close as of 29 Apr 2024. Fair Value as of 9 Aug 2023 13:42, UTC.

Morningstar Equity Analyst Report | Report as of 29 Apr 2024 23:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC.

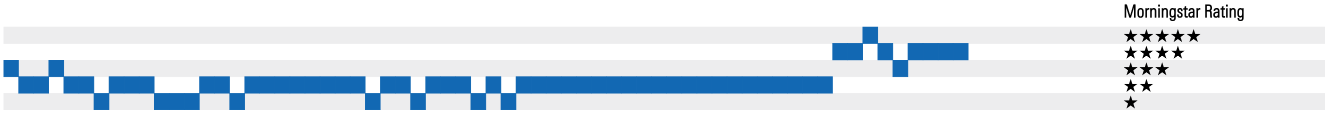
West Pharmaceutical Services Inc WST ★★★ 29 Apr 2024 21:16, UTC

Insulet Corp PODD



	2019	2020	2021	2022	2023	YTD	
	1.59	1.47	1.40	1.36	0.93	0.69	Price/Fair Value
	115.83	49.32	4.08	10.64	-26.30	-21.53	Total Return %

Morningstar Rating



Total Return % as of 29 Apr 2024. Last Close as of 29 Apr 2024. Fair Value as of 26 Feb 2024 22:57, UTC.

Morningstar Equity Analyst Report | Report as of 29 Apr 2024 23:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 14 of 22

West Pharmaceutical Services Inc WST ★★★ 29 Apr 2024 21:16, UTC

Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
354.41 USD 29 Apr 2024	336.00 USD 16 Feb 2024 15:15, UTC	1.05	26.25 USD Bil 26 Apr 2024	Wide	Mid Growth	Medium	Exemplary	3 Apr 2024 05:00, UTC

Morningstar Historical Summary

Financials as of 31 Mar 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
Revenue (USD Mil)	1,421	1,400	1,509	1,599	1,717	1,840	2,147	2,832	2,887	2,950	695	2,929
Revenue Growth %	3.9	-1.5	7.8	6.0	7.4	7.1	16.7	31.9	2.0	2.2	-3.0	1.6
EBITDA (USD Mil)	276	220	289	327	354	404	519	879	808	844	165	817
EBITDA Margin %	19.4	15.7	19.1	20.4	20.6	21.9	24.2	31.1	28.0	28.6	23.7	27.9
Operating Income (USD Mil)	181	178	225	228	242	299	419	760	761	707	126	665
Operating Margin %	12.7	12.7	14.9	14.2	14.1	16.2	19.5	26.9	26.4	24.0	18.1	22.7
Net Income (USD Mil)	127	96	144	151	207	242	346	662	586	593	115	569
Net Margin %	8.9	6.8	9.5	9.4	12.0	13.1	16.1	23.4	20.3	20.1	16.6	19.4
Diluted Shares Outstanding (Mil)	73	74	75	75	75	75	76	76	76	75	74	75
Diluted Earnings Per Share (USD)	1.75	1.30	1.91	1.99	2.74	3.21	4.57	8.67	7.73	7.88	1.55	7.58
Dividends Per Share (USD)	0.41	0.45	0.49	0.53	0.57	0.61	0.65	0.69	0.73	0.77	0.20	0.78

Valuation as of 28 Mar 2024

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Price/Sales	2.7	3.2	4.3	4.8	4.3	6.3	10.5	13.3	6.2	9.1	10.1	10.1
Price/Earnings	32.5	46.9	45.9	39.5	47.8	49.3	68.5	58.1	28.5	47.4	50.3	50.3
Price/Cash Flow	18.8	23.3	29.3	29.5	24.9	33.9	49.8	62.1	27.5	34.6	38.3	38.3
Dividend Yield %	0.77	0.75	0.58	0.54	0.58	0.41	0.23	0.15	0.31	0.22	0.2	0.2
Price/Book	3.9	4.4	5.4	5.5	5.4	7.5	12.2	15.8	7.1	9.0	10.0	10.0
EV/EBITDA	14.1	20.0	21.6	22.3	20.2	27.3	40.0	39.2	21.0	30.2	0.0	0.0

Operating Performance / Profitability as of 31 Mar 2024

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD	TTM
ROA %	7.6	5.7	8.4	8.4	10.8	11.2	13.5	21.7	16.9	15.9	3.1	15.5
ROE %	13.6	9.7	13.4	12.6	15.5	16.3	20.2	31.6	23.3	21.3	4.2	20.8
ROIC %	10.6	8.1	11.1	11.0	13.8	14.1	17.2	27.6	20.8	18.7	3.6	18.1
Asset Turnover	0.9	0.8	0.9	0.9	0.9	0.9	0.8	0.9	0.8	0.8	0.2	0.8

Financial Leverage

Fiscal Year, ends 31 Dec	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Recent Qtr	TTM
Debt/Capital %	24.4	18.3	16.8	13.3	12.3	16.8	14.5	10.4	10.0	5.2	5.5	—
Equity/Assets %	57.3	60.4	65.1	68.7	70.6	67.2	66.4	70.5	74.2	75.2	74.4	—
Total Debt/EBITDA	1.2	1.4	0.8	0.6	0.6	0.8	0.6	0.4	0.4	0.4	1.9	—
EBITDA/Interest Expense	16.7	15.6	35.6	41.9	42.1	47.5	63.3	107.2	102.3	93.8	102.9	97.3

Morningstar Analyst Historical/Forecast Summary as of 22 Mar 2024

Financials

Fiscal Year, ends 31 Dec 2022	2021	2022	Estimates 2023	2024	2025
Revenue (USD Mil)	2,832	2,887	2,950	3,012	3,241
Revenue Growth %	31.9	2.0	2.2	2.1	7.6
EBITDA (USD Mil)	872	867	819	837	925
EBITDA Margin %	30.8	30.0	27.8	27.8	28.5
Operating Income (USD Mil)	760	761	707	730	813
Operating Margin %	26.9	26.4	24.0	24.2	25.1
Net Income (USD Mil)	655	650	609	575	658
Net Margin %	23.1	22.5	20.6	19.1	20.3
Diluted Shares Outstanding (Mil)	76	76	75	75	75
Diluted Earnings Per Share(USD)	8.59	8.58	8.08	7.63	8.74
Dividends Per Share(USD)	0.67	0.71	0.79	0.78	1.05

Forward Valuation

	2021	2022	Estimates 2023	2024	2025
Price/Sales	6.2	9.0	8.8	8.6	8.0
Price/Earnings	54.6	27.4	43.9	46.4	40.6
Price/Cash Flow	—	—	—	—	—
Dividend Yield %	0.1	0.3	0.2	0.2	0.3
Price/Book	15.3	6.6	8.3	7.1	6.2
EV/EBITDA	19.5	29.4	31.2	30.5	27.6

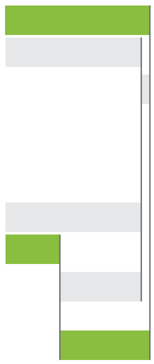
Morningstar Equity Analyst Report | Report as of 29 Apr 2024 23:39, UTC | Reporting Currency: USD | Trading Currency: USD | Exchange: NEW YORK STOCK EXCHANGE, INC. Page 15 of 22

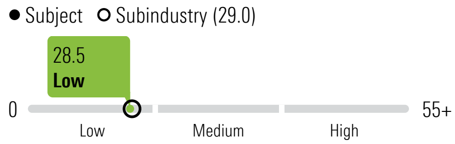
West Pharmaceutical Services Inc WST ★★★ 29 Apr 2024 21:16, UTC

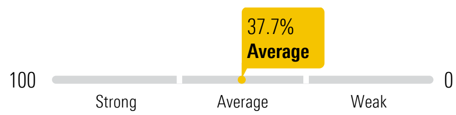
Last Price	Fair Value Estimate	Price/FVE	Market Cap	Economic Moat™	Equity Style Box	Uncertainty	Capital Allocation	ESG Risk Rating Assessment[1]
354.41 USD 29 Apr 2024	336.00 USD 16 Feb 2024 15:15, UTC	1.05	26.25 USD Bil 26 Apr 2024	Wide	Mid Growth	Medium	Exemplary	3 Apr 2024 05:00, UTC

ESG Risk Rating Breakdown

Exposure		
Company Exposure[1]	28.5	
– Manageable Risk	26.8	
Unmanageable Risk[2]	**1.6**	
Management		
Manageable Risk	26.8	
– Managed Risk[3]	10.1	
Management Gap[4]	**16.7**	
Overall Unmanaged Risk	**18.3**	







- Exposure represents a company's vulnerability to ESG risks driven by their business model
- Exposure is assessed at the Subindustry level and then specified at the company level
- Scoring ranges from 0-55+ with categories of low, medium, and high-risk exposure

- Management measures a company's ability to manage ESG risks through its commitments and actions
- Management assesses a company's efficiency on ESG programs, practices, and policies
- Management score ranges from 0-100% showing how much manageable risk a company is managing

ESG Risk Rating

ESG Risk Ratings measure the degree to which a company's value is impacted by environmental, social, and governance risks, by evaluating the company's ability to manage the ESG risks it faces.

1. A company's Exposure to material ESG issues 2. Unmanageable Risk refers to risks that are inherent to a particular business model that cannot be managed by programs or initiatives 3. Managed Risk = Manageable Risk multiplied by a Management score of 37.7% 4. Management Gap assesses risks that are not managed, but are considered manageable 5. ESG Risk Rating Assessment = Overall Unmanaged Risk = Management Gap plus Unmanageable Risk

ESG Risk Rating Assessment[5]

ESG Risk Rating is of Apr 03, 2024. Highest Controversy Level is as of Apr 08, 2024. Sustainalytics Subindustry: Medical Supplies. Sustainalytics provides Morningstar with company ESG ratings and metrics on a monthly basis and as such, the ratings in Morningstar may not necessarily reflect current Sustainalytics' scores for the company. For the most up to date rating and more information, please visit: sustainalytics.com/esg-ratings/.

Peer Analysis 03 Apr 2024

Peers are selected from the company's Sustainalytics-defined Subindustry and are displayed based on the closest market cap values

Company Name	Exposure			Management			ESG Risk Rating		
West Pharmaceutical Services Inc	28.5 | Low	0	55+	37.7 | Average	100	0	18.3 | Low	0	40+
Becton Dickinson & Co	47.6 | Medium	0	55+	54.3 | Strong	100	0	23.8 | Medium	0	40+
AptarGroup Inc	29.8 | Low	0	55+	63.9 | Strong	100	0	12.3 | Low	0	40+
Tennant Co	49.9 | Medium	0	55+	55.8 | Strong	100	0	23.2 | Medium	0	40+
Insulet Corp	49.0 | Medium	0	55+	57.3 | Strong	100	0	23.1 | Medium	0	40+

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Appendix
Historical Morningstar Rating

West Pharmaceutical Services Inc WST 29 Apr 2024 21:16, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	—	—	—	★★	★★	★★★	★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★	★★	★★	★★	★	★★	★★	★★	★★	★★	★★	★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★★	★★★★	★★★★	★★★	★★★	★★	★★★	★★★	★★	★★	★★	★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★	★	★	★	★	★	★	★	★	★★	★	★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★	★	★	★	★	★	★	★	★	—	—	—
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
—	—	—	—	★★	★★	★★	★★	★★	★★★	★★★	★★★

AptarGroup Inc ATR 29 Apr 2024 21:16, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	—	—	—	★★★	★★★	★★★	★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★	★★★	★★★	★★★	★★★	★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★★	★★★	★★★	★★★	★★★	★★★	★★	—	—	★★	★★★	★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★	★★★	★★	★★	★★	★★	★★	★★	★★	★★★	★★	★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★

Becton Dickinson & Co BDX 29 Apr 2024 21:16, UTC

Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	—	—	—	★★★★	★★★★	★★★★	★★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★★	★★★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★★★	★★★★	★★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★	★★★★	★★★★	★★★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★	★★★

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Dec 2024	Nov 2024	Oct 2024	Sep 2024	Aug 2024	Jul 2024	Jun 2024	May 2024	Apr 2024	Mar 2024	Feb 2024	Jan 2024
—	—	—	—	—	—	—	—	★★★★	★★★★	★★★★	★★★★
Dec 2023	Nov 2023	Oct 2023	Sep 2023	Aug 2023	Jul 2023	Jun 2023	May 2023	Apr 2023	Mar 2023	Feb 2023	Jan 2023
★★★	★★★★	★★★★★	★★★★	★★★★	★★	★★	★★	★★	★★	★★	★★
Dec 2022	Nov 2022	Oct 2022	Sep 2022	Aug 2022	Jul 2022	Jun 2022	May 2022	Apr 2022	Mar 2022	Feb 2022	Jan 2022
★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★	★★
Dec 2021	Nov 2021	Oct 2021	Sep 2021	Aug 2021	Jul 2021	Jun 2021	May 2021	Apr 2021	Mar 2021	Feb 2021	Jan 2021
★★	★★	★	★★	★	★★	★★	★★	★	★★	★★	★
Dec 2020	Nov 2020	Oct 2020	Sep 2020	Aug 2020	Jul 2020	Jun 2020	May 2020	Apr 2020	Mar 2020	Feb 2020	Jan 2020
★★	★★	★★	★★	★★	★★	★★	★★	★	★★	★★	★
Dec 2019	Nov 2019	Oct 2019	Sep 2019	Aug 2019	Jul 2019	Jun 2019	May 2019	Apr 2019	Mar 2019	Feb 2019	Jan 2019
★	★	★★	★★	★★	★	★★	★★	★★★	★★	★★	★★★

Research Methodology for Valuing Companies

Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, indepth competitive advantage analysis, and a variety of other analytical tools to augment this process. Moreover, we think analyzing valuation through discounted cash flows presents a better lens for viewing cyclical companies, high-growth firms, businesses with finite lives (e.g., mines), or companies expected to generate negative earnings over the next few years. That said, we don't dismiss multiples altogether but rather use them as supporting cross-checks for our DCF-based fair value estimates. We also acknowledge that DCF models offer their own challenges (including a potential proliferation of estimated inputs and the possibility that the method may miss shortterm market-price movements), but we believe these negatives are mitigated by deep analysis and our longterm approach.

Morningstar's equity research group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at a discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk adjusted discount to their fair values, whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate and (4) the current market price. This process ultimately culminates in our singlepoint star rating.

1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define economic profits as returns on invested capital (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats: intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality, no-moat companies will see their normalized returns gravitate toward the firm's cost of capital more quickly than companies with moats.

When considering a company's moat, we also assess whether there is a substantial threat of value destruction, stemming from risks related to ESG, industry disruption, financial health, or other idiosyncratic issues. In this context, a risk is considered potentially value destructive if its occurrence would eliminate a firm's economic profit on a cumulative or midcycle basis. If we deem the probability of occurrence sufficiently high, we would not characterize the company as possessing an economic moat.

2. Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in workingcapital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes (EBI) and the net new investment (NNI) to derive our annual free cash flow forecast.

Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital (RONIC), and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until a perpetuity value is calculated. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

Stage III: Perpetuity

Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

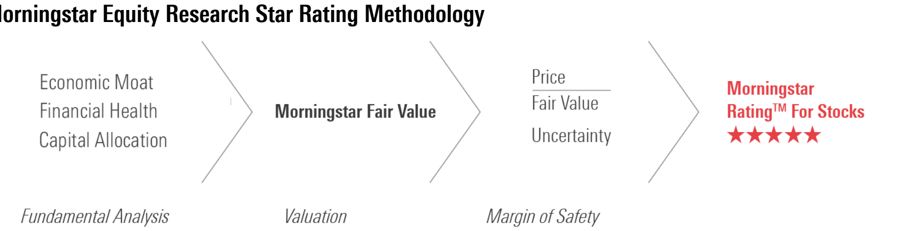
Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term, market-value weights.

3. Uncertainty Around That Fair Value Estimate

Morningstar's Uncertainty Rating is designed to capture the range of potential outcomes for a company's intrinsic value. This rating is used to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating is aimed at identifying the confidence we should have in assigning a fair value estimate for a given stock.

Our Uncertainty Rating is meant to take into account anything that can increase the potential dispersion of future outcomes for the intrinsic value of a company, and any-

Morningstar Equity Research Star Rating Methodology



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thing that can affect our ability to accurately predict these outcomes. The rating begins with a suggested rating produced by a quantitative process based on the trailing 12-month standard deviation of daily stock returns. An analyst overlay is then applied, with analysts using the suggested rating, historical rating data, and their own knowledge of the company to inform them as they make the final Uncertainty Rating decision. Ultimately, the rating decision rests with the analyst. Analysts take into account many characteristics when making their final decision, including cyclical factors, operational and financial factors such as leverage, company-specific events, ESG risks, and anything else that might increase the potential dispersion of future outcomes and our ability to estimate those outcomes.

Our recommended margin of safety—the discount to fair value demanded before we'd recommend buying or selling the stock—widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the potential dispersion of outcomes, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the Uncertainty Rating provides guidance in portfolio construction based on risk tolerance.

Our Uncertainty Ratings are: Low, Medium, High, Very High, and Extreme.

	Margin of Safety	
Qualitative Analysis Uncertainty Ratings	★★★★★Rating	★Rating
Low	20% Discount	25% Premium
Medium	30% Discount	35% Premium
High	40% Discount	55% Premium
Very High	50% Discount	75% Premium
Extreme	75% Discount	300% Premium

Our uncertainty rating is based on the interquartile range, or the middle 50% of potential outcomes, covering the 25th percentile–75th percentile. This means that when a stock hits 5 stars, we expect there is a 75% chance that the intrinsic value of that stock lies above the current market price. Similarly, when a stock hits 1 star, we expect there is a 75% chance that the intrinsic value of that stock lies below the current market price.

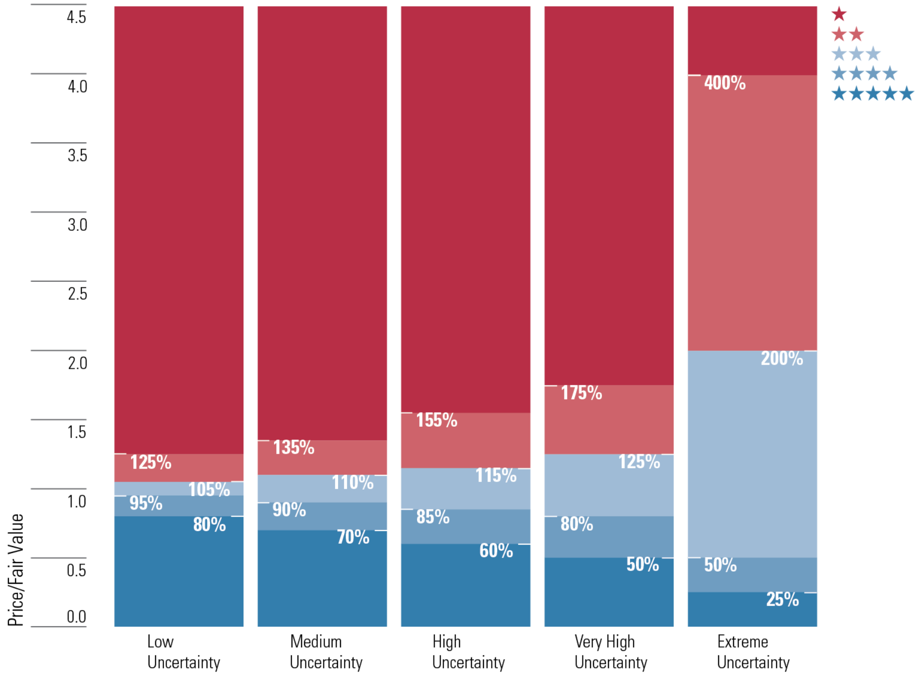
4. Market Price

The market prices used in this analysis and noted in the report come from exchange on which the stock is listed which we believe is a reliable source.

For more details about our methodology, please go to https://shareholders.morningstar.com

Morningstar Star Rating for Stocks

Morningstar Equity Research Star Rating Methodology



Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open. Our analysts keep close tabs on the companies they follow, and, based on thorough and ongoing analysis, raise or lower their fair value estimates as warranted.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market's valuation. When there are many 5-star stocks, the stock market as a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true the market price will converge on our fair value estimate over time generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk adjusted return is highly likely over a multiyear time frame. Scenario analysis developed by our analysts indicates that the current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

★★★★ We believe appreciation beyond a fair risk-adjusted return is likely.

★★★ Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

★★ We believe investors are likely to receive a less than fair risk-adjusted return.

★ Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. Scenario analysis by our analysts indicates that the market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

Other Definitions

Last Price: Price of the stock as of the close of the market of the last trading day before date of the report.

Capital Allocation Rating: Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider compan-

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ies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

Capital Allocation (or Stewardship) analysis published prior to Dec. 9, 2020, was determined using a different process. Beyond investment strategy, financial leverage, and dividend and share buyback policies, analysts also considered execution, compensation, related party transactions, and accounting practices in the rating.

Capital Allocation Rating: Our Capital Allocation (or Stewardship) Rating represents our assessment of the quality of management's capital allocation, with particular emphasis on the firm's balance sheet, investments, and shareholder distributions. Analysts consider companies' investment strategy and valuation, balance sheet management, and dividend and share buyback policies. Corporate governance factors are only considered if they are likely to materially impact shareholder value, though either the balance sheet, investment, or shareholder distributions. Analysts assign one of three ratings: "Exemplary", "Standard", or "Poor". Analysts judge Capital Allocation from an equity holder's perspective. Ratings are determined on a forward looking and absolute basis. The Standard rating is most common as most managers will exhibit neither exceptionally strong nor poor capital allocation.

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Sustainalytics ESG Risk Rating Assessment: The ESG Risk Rating Assessment is provided by Sustainalytics; a Morningstar company.

Sustainalytics' ESG Risk Ratings measure the degree to which company's economic value at risk is driven by environment, social and governance (ESG) factors.

Sustainalytics analyzes over 1,300 data points to assess a company's exposure to and management of ESG risks. In other words, ESG Risk Ratings measures a company's unmanaged ESG Risks represented as a quantitative score. Unmanaged Risk is measured on an open-ended scale starting at zero (no risk) with lower scores representing less unmanaged risk and, for 95% of cases, the unmanaged ESG Risk score is below 50.

Based on their quantitative scores, companies are grouped into one of five Risk Categories (negligible, low, medium, high, severe). These risk categories are absolute, meaning that a 'high risk' assessment reflects a comparable degree of unmanaged ESG risk across all subindustries covered.

The ESG Risk Rating Assessment is a visual representation of Sustainalytics ESG Risk Categories on a 1 to 5 scale. Companies with Negligible Risk = 5 Globes, Low Risk = 4, Medium Risk = 3 Globes, High Risk = 2 Globes, Severe Risk = 1 Globe. For more information, please visit sustainalytics.com/esg-ratings/

Ratings should not be used as the sole basis in evaluating a company or security. Ratings involve unknown risks and uncertainties which may cause our expectations not to occur or to differ significantly from what was expected and should not be considered an offer or solicitation to buy or sell a security.

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