China / Hong Kong Company Guide

West Pharmaceutical Services Inc.

Bloomberg: WST US Equity | Reuters: WST.N

Refer to important disclosures at the end of this report

DBS Group Research . Equity 29 Jul 2022

BUY (Initiating Coverage)

Last Traded Price (28 Jul 2022):US$339.92(**NASDAQ :** 12,163)
Price Target 12-mth:US$449 (32.1% upside)

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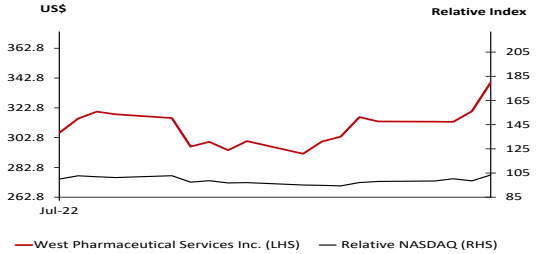
Price Relative



Forecasts and Valuation

FY Dec (US$m)	2021A	2022F	2023F	2024F
Turnover	2,832	2,977	3,185	3,543
EBITDA	878	937	917	980
Pre-tax Profit	749	808	788	850
Net Profit	662	667	651	702
Net Pft (Pre Ex) (core profit)	662	667	651	702
Net Profit Gth (Pre-ex) (%)	91.2	0.8	(2.5)	7.9
EPS (US$)	8.91	8.98	8.76	9.45
EPS Gth (%)	90.7	0.8	(2.5)	7.9
Diluted EPS (US$)	8.91	8.98	8.76	9.45
DPS (US$)	0.70	0.70	0.69	0.74
BV Per Share (US$)	31.44	39.72	47.79	56.51
PE (X)	38.2	37.9	38.8	36.0
P/Cash Flow (X)	43.2	30.9	45.2	32.0
P/Free CF (X)	76.4	44.8	82.8	47.1
EV/EBITDA (X)	28.2	25.8	26.1	23.9
Net Div Yield (%)	0.2	0.2	0.2	0.2
P/Book Value (X)	10.8	8.6	7.1	6.0
Net Debt/Equity (X)	CASH	CASH	CASH	CASH
ROAE(%)	31.6	25.2	20.0	18.1
Earnings Rev (%):		New	New	New
Consensus EPS (US$)		9.24	10.12	11.12
Other Broker Recs:		B:4	S:0	H:3

Source of all data on this page: Company, DBS Bank (Hong Kong) Limited ("DBS HK"), Thomson Reuters

Burgeoning biologics market drives demand for packaging

- Leading global elastomer maker with estimated market share of around 23%
- Elastomers are essential components to package biologics e.g. vial stoppers, syringe plungers
- No. of biologics approved in the US surged by 70% in 2017-21 vs 2012-16, translating into higher demand for biologic packaging
- Trading at FY22F PE of 38x which is 24% below its pre-covid high, with potential US regulatory changes as a catalyst, we initiate with BUY, TP US$449

Riding on the uptrend of biologics in the US. We estimate elastomers make up >50% of West Pharmaceutical's ("West") earnings. Elastomers are used as stoppers for vials, and plungers for syringes and cartridges, essential for packaging biologics. The US accounts for 2/3 of the global biologics market. The no. of biologics approved by the US FDA in 2017-21 was >70% more than during 2012-16, largely surpassing c.30% for chemical drugs. This leads to higher demand for packaging materials. We estimate West is the largest global elastomer producer with >23% market share, with 42% of 2021 sales from the US. West can leverage on the uptrend.

Regulatory tightening to re-rate the stock. The US Pharmacopoeia (USP), which sets standards for the US FDA, sets tests for components in injectable drug packaging. Previously, there were only 3 functionality tests specifically for vials. USP has now introduced 5 more product categories, and each has 3 to 5 tests. West can provide these testing services. The deadline to meet these new standards is 2025, so we believe the demand in 2023-24 will increase. Hence, sales growth of non-COVID or recurring revenue will accelerate from 10% in FY22F, to 15% p.a. in FY23F-24F.

Where we differ. Regulatory tightening as re-rating catalyst.

Valuation:

Our TP of HK$449 is based on 50x FY22F PE, pegged to the high-end PE in 2018-19 (pre-COVID19).

Key Risks to Our View:

Decline of drug sales due to economic downturn.

At A Glance

Issued Capital (m shrs)	74
Mkt Cap (US$m)	25,154
Major Shareholders (%)	
The Vanguard Group, Inc.	11.8
T. Rowe Price Associates, Inc.	8.6
BlackRock Institutional Trust Company	6.2
Free Float (%)	73.4
3m Avg. Daily Val. (US$m)	139.79

GICS Industry: Health Care / Pharmaceuticals, Biotechnology

ed- JS / sa- CS /AH

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Investment Summary

West designs and produces containment and delivery systems for injectable medical products. We estimate elastomers make up >50% of its earnings. Elastomers are used as stoppers for vials, and plungers for syringes and cartridges. They are essential components of biologics packaging. We recommend a BUY on West for the following reasons:

Riding on the uptrend of US biologics sector. The US accounts for two-thirds of the global biologics market. The number of biologics approved by the US FDA in the last 5 years was >70% more than the previous 5 years (66 in 2017-21 vs 38 in 2012-16), largely surpassing c.30% for chemical drugs. The number of biologics under development grew from 5,539 to 8,986 from Jan 2017 to Jan 2022 at a CAGR of 10.2%, way ahead of chemical drugs with a CAGR of 3.9%. Those increases will translate into higher demand for packaging materials such as elastomers. We estimate West is the largest elastomers producer globally with a market share of at least 23%, generating 42% of sales from the the US in 2021. West will be able to leverage on the uptrend.

Much lower price pressure, higher revenue certainty. Price cut is the largest risk for medical product manufacturers worldwide, but the risk for elastomers is much smaller because: a) the price pressure often comes from government or hospitals. West is selling elastomers to drug makers, not the government or hospitals; b) the cost of elastomer only makes up c.1% of medical products' ASP. We believe the drug makers do not have much incentive to reduce the cost of sourcing elastomers. Also, the quality of these elastomers must be high to ensure inertness to lower risk of reaction between the packaging and drug. When the US Food & Drug Administration (FDA) grants approval to launch an injectable medical product, it will also evaluate the quality of the elastomer. It takes time to identify a qualifed supplier. Thus, once a drug maker has selected an elastomer supplier, it rarely makes changes. This explains why West generates >90% of revenue from existing customers based on our estimates.

Tightening regulatory requirement by U.S. Pharmacopoeia is a re-rating catalyst. The US Pharmacopoeia (USP), which sets standards for US FDA, has tightened the regulatory requirement for pharma packaging materials and the new requirement will take effect in Dec 2025. Functionality tests for elastomeric components in injectable pharmaceutical packaging currently includes 3 tests specifically for vials. USP has now introduced 6 product categories, including major biologics packaging such as vials, syringes, and cartridges, with 3 to 5 tests for each. West can provide these testing services. Instead of incurring capital expenditure to establish its own testing capability, we believe West's customers will rely on West's analytical laboratory services (e.g. testing for extractables and leachables, particle analysis, container closure integrity, and performance and packaging systems). We estimate West's customers will gradually adjust their production arrangements to meet the new requirement in 2025. Procurement of laboratory services will gradually increase. Recurring or non-COVID19 revenue made up 95% and 84% of West's total revenue in 2020 and 2021. Thanks to laboratory services, we expect recurring revenue growth will accelerate from 10% in 2022 to 15% p.a. in 2023 and 2024. West's overall revenue growth can accelerate from 5% and 7% respectively in 2022F and 23F, to 11% in 2024F and maintain high single-digit growth thereafter.

Year-to-date, West's share price has dropped by 28% (-40% at trough), dragged by the overall healthcare sector correction. S&P's 500 Healthcare Index dropped by 6% year-to-date (-15% at the trough), thus West has underperformed the sector. This was likely due to:

a) 16% of West's revenue in 2021 was COVID-19-related. This is uncertain given that COVID-19 is largely contained.

b) The gross margin of S&P's 500 Healthcare Index constituent stocks such as Johnson & Johnson (JNJ US), Pfizer (PFE US), and Merck (MRK US) are all expected to rise despite drop in COVID19 sales due to launches of new drug pipelines. Gross margin of West is expected to decline slowly as it does not offer new pipelines with such high gross margins.

Trading at 38x FY22F PE, the stock's valuation is below its pre-COVID highs of 50x (2018-19), as well as its 5-year average of 45x. In view of an uptrend in the US biologics industry and regulatory tightening as a catalyst, we recommend a BUY on West. Our TP of US$449 is based on 50x FY22F PE which is pegged to the high-end multiple during 2018-19. We benchmark the valuation to the 2018-19 period to set our TP given that:

a) this period was before the distortions caused by COVID19;

b) West experienced a fundamental change in 2018-19. In 2016-17, West's net margin ranged from 9.4-9.5%, and surged to 12-13% in 2018-19 and stayed above 13% thereafter thanks to repurposing of several production facilities to support growth of high-value proprietary products (packaging for biologics).

SWOT Analysis

Strengths	Weaknesses
• Leader in high-quality elastomers for biological drug containment and delivery systems with global market share of at least 23% • Integrated solutions including R&D and regulatory compliance for commercialisation • Highly collaborative approach resulting in high customer retention of >90% • Less cost pressure as increased raw material costs are generally passed along to customers through higher selling price	• High customer retention for peers manufacturing glass due to high switching costs and time delays due to regulatory filing amendments
Opportunities	**Threats**
• Growing biologics market where elastomers are essential components in packaging systems • The regulatory tightening by USP brings along increased demand for West's analytical laboratory services	• Improvements in drug efficacy will decrease dosage required for treatments • Advancements in R&D of elastomer peers

Source: DBS HK

Competitive Edge

Elastomers are essential components for biologics packaging. Most common packaging solutions for biologics are vials, syringes, and cartridges, which all require elastomeric components for closure functions such as stoppers and plungers. These elastomers must be of high-quality to ensure inertness to lower risk of reaction between the packaging and drug. Below is a summary of primary packaging materials that come into contact with a product (See table: "Primary packaging materials that come into contact with product"). There is ongoing debate on whether polymers or glass are more suitable as primary packaging containers for drugs, but elastomers is the standard for closures of containers.

West's elastomer components are coated with West FluroTec film, which serves as a barrier between the stopper and the drug product to reduce reactions between the two, reducing leaching and extraction. FluroTec also eliminates the need for silicone for lubrication.

Largest elastomeric market share

The size of the global injectable drugs market was estimated to be USD600bn in 2021. Syringes are the preferred primary packaging containers for injectable drugs, and usually cost 1% to 2% of its ASP. Therefore we estimate the global syringe market used for injectable drugs in 2021 was between USD6bn to USD12bn. West generated USD2.8bn in revenue in 2021, with main products being elastomers. Therefore, we estimate West's market share in the elastomers market was at least 23% in 2021.

Largest in elastomeric revenue

Out of the 24 companies with elastomers specified in the FDA drug master files (DMF), 11 have components related to West's products. Of these 11 companies, 7 are listed, and their pharmaceutical packaging segment contribution to 2021 revenues are less than 50% of West. (See table: "Listed companies with elastomers approved by US Food & Drugs Administration")

Primary packaging materials that come into contact with product

		Product contact						Leachables	
Component		Shaft	Shaft	Stopper/Plunger	Stopper/Plunger	Lubricant	Needle	Tungsten Process Residues	Metal Ion Colorant
Material		Glass	Polymer	Elastomer	Elastomer	Silicone	Steel		
Technical name		Borosilicate glass (Type 1)	Olefin Polymer	Halobutyl Rubber	Fluoroelastomer	Silicone Oil	Stainless Steel		
Product									
Vial	Polymer Vial		✓	✓	✓				
	Glass Vial	✓		✓	✓				
	Amber Vial	✓		✓	✓				✓
PFS	Polymer PFS		✓	✓	✓		✓		
	Glass PFS - Silicone lubricated	✓		✓	✓	✓	✓	✓	
	Glass PFS - Silicone-free	✓		✓	✓		✓	✓	
Cartrid	Polymer Cartridge		✓	✓	✓				
	Glass Cartridge	✓		✓	✓	✓			

Source: Narhi L.O., Chou D.K. et al. Stress Factors in Primary Packaging, Transportation and Handling of Protein Drug Products and Their Impact on Product Quality. Journal of Pharmaceutical Sciences 111 (2022) 887-902

Listed companies with elastomers approved by US Food & Drugs Administration

Company	Ticker	2021 Revenue (Usd mn)	Pharmaceutical packaging segment %	2021 Medical Segment revenue (Usd mn)
West Pharmaceutical Services Inc	WST US	2,832	100%	2,832
Aptar Group	ATR US	3,227	40%	1,285
Nipro Corp	8086 JP	4,405	24%	1,044
Shandong Pharmaceutical Glass Co Ltd	600529 CH	601	89%	533
Parker Hannifin Corp	PH US	14,348	3%	409
Hubei Huaqiang High Tech Co Ltd	688151 CH	198	70%	138
Jiangsu Hualan New Pharmaceutical Material Co Ltd	301093 CH	127	100%	127

Source: US FDA Drug Master Files

Polymeric primary packaging for biologics

West leads the pharmaceutical packaging market with its components made from polymers – not only elastomers used for stoppers and plungers for vials, syringes, and cartridges, but also hard polymers for syringes and cartridges. These polymers are targeted at the rapidly growing biologics market, which is directly driving demand for high-quality packaging materials. Biologic drugs, or biologics, are large-molecule products derived from living organisms, rather than chemical synthesis. Biosimilars are very similar versions of biologics whose patents have expired. Biologics and biosimilars are fragile and sensitive compared to chemical drugs, hence they pose a challenge to maintain their structural integrity and functional effectiveness not only throughout manufacturing and processing, but also when they come into contact with packaging materials during production, shipment, and storage.

Leader in polymeric packaging

Compared to glass vials, West's polymeric vials offer glass-like transparency, superior break resistance and lower risk of chemical interactions such as delamination and leaching. West's syringes and cartridges eliminate the need for silicone oil lubrication which is used in glass syringes and known to be 2x to 7x more likely to have protein aggregation.

Polymer vials – glass-like transparency, superior break resistance and lower risk of delamination and leaching

Vials are among the most common primary containers used for biologics, with stoppers as caps for closure. Vials are available in glass or polymer, but vials for drugs remain predominantly made from glass. However, the primary areas of concern for glass vials are glass delamination and leachables. These problems are much more common in glass than in polymers.

West holds a 49% interest in Daikyo Seiko, makers of Daikyo Crystal Zenith vials (CZ vials). CZ vials are made of high-quality cyclic olefin polymers, with glass-like transparency, and have superior break resistance and low risk of chemical interactions.

Delamination occurs only in glass and not polymers, where the top layers of a glass surface separate and flake off, often due to extensive flaming in the neck and bottom regions during manufacturing. This may lead to heterogeneous regions and potentially exposed silica layers which may contribute to drug interactions, causing the release of glass flakes. Delamination may cause protein degradation, leading to lower drug efficacy.

Leaching is the migration of unwanted particles from the packaging material to the drug. Glass has the potential to release alkali-based substances into biologics, particularly at high pH, with major leachables being silicon, boron, and sodium. Amber vials also have the risk of releasing metal ion colorants into the drug contained.

Polymer Pre-Filled Syringes – elimination of silicone oil lubricants, 2x to 7x less likely to have protein aggregation

Pre-filled syringes (PFS) are syringes that have been pre-filled with the drug. This has been gaining popularity as the preferred choice for protein-based therapeutics due to its convenience of allowing the drug to be used immediately.

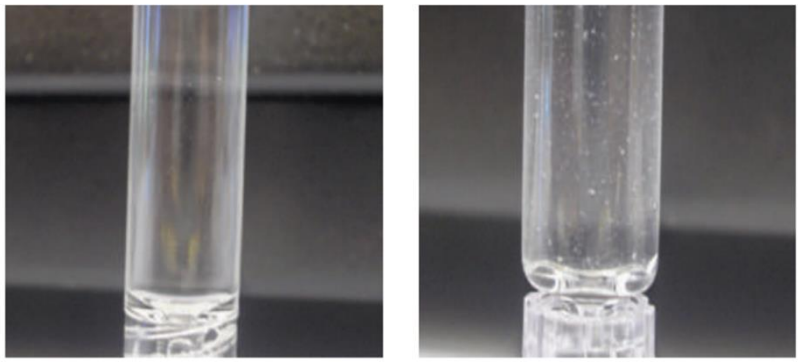
Silicone coated glass PFSs have been on the market for many years. Silicone oil is used as a lubricant coating on the interior of glass PFSs to improve plunger glide motion. However, silicone oil has been known to cause undesirable protein adsorption, where proteins from the biologic accumulate on the surface of the packaging material. This causes proteins to lose their normal folding state, and as a result affects drug efficacy. This aggregation may also result in severe allergic reactions in patients. Studies have shown syringes using silicone oil lubricants are 2 to 7x more likely to have protein aggregation. (See the pictures below: "Protein aggregation and adsorption on syringe surfaces after air shipping at 4 °C and agitation")

West's FluroTec-coated elastomer plungers eliminate the need for siliconization. The lamination features a carbon-fluoride structure which delays or even blocks chemical migration, and also smoothens the originally rough surface of rubber which decreases adsorption.

Polymer Cartridges – elimination of silicone oil lubricants

Cartridges are generally designed for specific apparatus, such as pre-filled syringes and autoinjectors. Examples of cartridge uses are insulin cartridges in insulin pens. These cartridges need plungers to enclose the drug within the packaging, and like syringes, use silicone oil as lubricants when their primary packaging is made of glass. West's polymer cartridges eliminate the need for silicone oil.

Protein aggregation and adsorption on syringe surfaces after air shipping at 4 ºC and agitation



Left: Silicone oil free Daikyo Crystal Zenith syringe; Right: Siliconized glass syringe

Source: University of Kansas & West Pharmaceutical Services

Products of West Pharmaceutical Services

Top Left: Plunger and stoppers; Top Right: Cartridge with plunger; Bottom Left: Vials, Stoppers, Flip-Off Seals; Bottom Right: Pre-Filled Syringe

Source: Company

Growth Factors

Revenue drivers

Revenue drivers (Usd mn)	2022F	2023F	2024F	2025F	2026F	CAGR
By Market Group						
Biologics (Covid related)	367	184	92	46	23	-50%
Biologics (Non-covid related)	824	1,008	1,228	1,401	1,594	18%
Generics	530	609	700	756	817	11%
Pharma	721	800	885	919	952	7%
Contract-Manufactured Products	535	585	638	652	664	6%
Revenue	2,977	3,185	3,543	3,774	4,049	8%

Source: Company, DBS HK

West's revenue in 2022F-26F is expected to be driven by ramping-up of biologics packaging, led by the growing biologics market and demand for high-quality packaging materials. By Market Group, biologics are large molecule drugs. Generics are small molecule drugs whose patents have expired. Pharma are small molecule drugs still under patent protection. Contract-Manufactured Products are for manufacturing of customer-owned components and devices.

Potential customers of West are drug manufacturers with a growing focus on biologics. We estimate the size of the global biologics market size stood at USD337bn in 2021, growing to USD587bn in 2026. Among the segments, biologics (non-Covid related) is expected to deliver the strongest growth, driven by increased approvals for biologics, as well as regulatory tightening to accelerate the growth. The number of biologics approved by US FDA in recent 5 years was >70% more than the previous 5 years, largely surpassing that of chemical drugs with only c.30% more. The number of biologics under development has been increasing significantly over the past 5 years, from 5,539 to 8,986 from Jan 2017 to Jan 2022.

Biologics (Covid related) revenue CAGR in 2022-26F: -50%. With over 60% of the global population fully vaccinated against Covid-19, the pandemic is slowly turning into an endemic, and the number of Covid-19 vaccine rollouts is decreasing. We expect the demand for Covid-19 vaccines to decrease in the coming years and expect the potential revenue from yearly booster vaccinations to be minimal.

Biologics (non-Covid related) revenue CAGR in 2022F-26F: 18%. Revenue contribution from non-Covid related biologics grew from 23% to 30% from 2017 to 2021. This segment is expected to maintain this growth rate and show strongest growth among segments in tandem with the increase in approvals for biologics leading to rising demand for high-quality elastomers. West has increased its stake in Daikyo, a company manufacturing Crystal Zenith polymer for vials, syringes, and cartridges, from 25% to 49% in 2019. This demonstrates West's strategic focus on capturing the expansion in the biologics market, driven by the rise in biologics and biosimilars.

Generics revenue CAGR in 2022F-26F: 11%. With the increasing focus on injectables for patient self-administration, West benefits from its leading position to manufacture polymeric pre-filled syringes and cartridges. Global chemical drug market is expected to grow at a CAGR of 3% from 2019-24F. With West's generics segment growing at CAGR of 11% from 2018-21, it is expected to continue to outperform the industry.

Pharma revenue CAGR in 2022F-26F: 7%. The target customers of West in this segment are pharmaceutical companies attempting to develop alternative therapies for diseases. We expect this segment to grow at a slower rate than generics, due to many small molecule drugs with patents expiring. Historically, this segment expanded at a CAGR of 6% from 2018-21, which was slightly lower than historical trend due to Covid-19. Contribution to revenue has declined from 34% to 29% from 2018 to 2021. We expect the segment's revenue contribution to continue to fall due to West's focus on biologics, while still maintaining stable growth.

Contract-manufactured Products revenue CAGR in 2022F-26F: 6%. Contract-manufactured Products by market group refers to non-proprietary products manufactured by West. These products are integral parts of the drug product and are included as part of the regulatory filings required to approve drug product marketing and commercialisation, hence customer retention is high. Contribution to revenue of this segment had declined from 24% to 21% from 2018 to 2021. We expect this decline in revenue contribution to continue due to West's focus on biologics.

Critical Factors

Burgeoning biologics market will drive demand for high-quality packaging. Biologics is the largest contributor of top-selling pharmaceutical products globally, with >50% of the top 20 best-selling drugs in 2020 and 2021 being biologic drugs. The US accounts for two-thirds of the global biologics market. The number of biologics approved by the US FDA in the past 5 years was >70% higher than the previous 5 years, largely surpassing that of chemical drugs with c.30% more. The number of biologics under development has been increasing significantly over the past 5 years, from 5,539 to 8,986 from Jan 2017 to Jan 2022. The number of biosimilars approved by the FDA was on an uptrend until the Covid-19 pandemic. The top 3 therapy areas with highest global spending in the coming 5 years are expected to all be biologics, including oncologics, immunology, and antidiabetics. With the rising trend of biologics and biosimilars, there is a need for high-quality packaging to reduce the risk of drug interaction with packaging containment systems.

Top 20 best-selling drugs in 2020 & 2021

	2020	Biologic	2021	Biologic
1	Humira	Y	Comirnaty	Y
2	Keytruda	Y	Humira	Y
3	Revlimid		Spikevax	Y
4	Eliquis		Keytruda	Y
5	Imbruvica		Eliquis	
6	Eylea	Y	Revlimid	
7	Stelara	Y	Imbruvica	
8	Opdivo	Y	Stelara	Y
9	Biktarvy		Eylea	Y
10	Xarelto		Biktarvy	
11	Enbrel	Y	Opdivo	Y
12	Prevnar 13	Y	Xarelto	
13	Ibrance		REGEN-COV/Ronapreve	Y
14	Avastin	Y	Trulicity	Y
15	Trulicity	Y	Darzalex	Y
16	Ocrevus	Y	Trikafta/Kaftrio	
17	Rituxan	Y	Gardasil 9	Y
18	Xtandi		Dupixent	Y
19	Tagrisso		Veklury	Y
20	Remicade	Y	Ibrance	
	No. of biologics	12 / 20		13 / 20

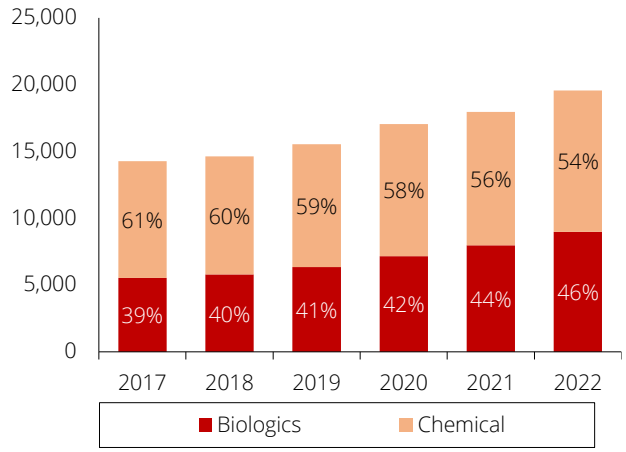
Source: Fierce Pharma, DBS HK

No. of chemical and biologic drugs approved by the FDA

	2007-2011	2012-2016	2017-2021
Biologic	23 (19%)	38 (22%)	66 (27%)
Chemical	95 (81%)	136 (78%)	178 (73%)
Total	118	174	244

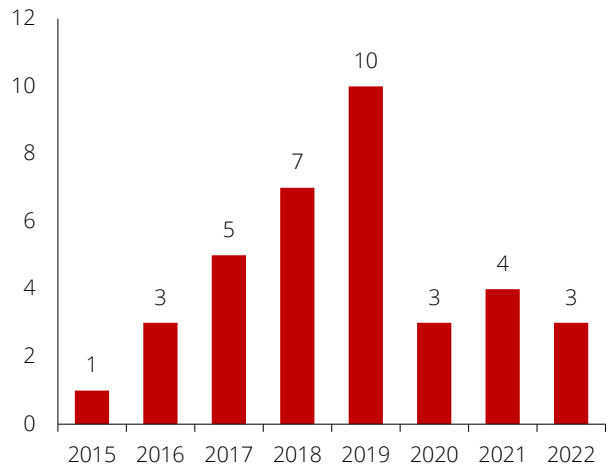
Source: de la Torre, B.G.; Albericio, F. The Pharmaceutical Industry in 2021. An Analysis of FDA Drug Approvals from the Perspective of Molecules. Molecules 2022, 27, 1075.

No. of drugs under development



Source: Pharmaprojects

No. of biosimilars approved by the FDA



Source: FDA – Approved Biosimilar Products

West benefits from tighter regulatory requirements. The United States Pharmacopoeia (USP) establishes standards for medicines which are enforced by the US FDA. USP Chapter <381> *Elastomeric components in injectable pharmaceutical product packaging/delivery systems* was amended in Dec 2020, where the functionality tests section will be omitted after 5 years (Dec 2025). This will be replaced by USP Chapter <382> *Elastomeric closure functionality in injectable pharmaceutical packaging/delivery*. This change would require drug manufacturers using elastomers in their product packaging to perform more specified tests to demonstrate the functional suitability of their products. USP Chapter <381> functionality tests include guidelines for vials only, including 3 tests for penetrability, fragmentation, and self-sealing capacity. New USP Chapter <382> functionality tests are more complete, addressing packaging/delivery systems including 1) Vials; 2) Needle-based injection system packages; 3) Dental cartridge packages and pen-injector packages; 4) Bottles; 5) Blow Fill Seal containers with plastic caps that have inserted elastomeric liners; 6) Plastic containers for intravenous injections. Each packaging product requires a set of 3 to 5 functionality tests to be done. Tests include penetrability, fragmentation, self-sealing capacity, plunger break force and plunger glide force, plunger seal integrity, tip cap and needle shield functionality tests, spike retention and sealability capacity. Hence under the new chapter, major packaging for biologics such as vials, syringes, and cartridges each have 3 to 5 tests to fulfill. A 5-year delayed implementation is allowed to give adequate time.

Elastomers are essential parts of pharmaceutical packaging products such as the plunger of syringes and stoppers of vials. West benefits from this regulatory tightening, as they have analytical laboratory services to help perform the necessary testing to provide assurance that the products are compliant with latest regulations. As the deadline draws closer and pressure from the Covid-19 pandemic eases, drug manufacturers will increasingly adhere to the new standards, growing more reliant on such services to ensure minimal capital expenditure and disruption to their products.

Functionality Tests of USP Chapter <381> vs <382>

Closure system	Functionality test		USP <381> Elastomeric components in injectable pharmaceutical product packaging/delivery systems	USP <382> Elastomeric closure functionality in injectable pharmaceutical packaging/delivery systems
Vials	Penetrability	Procedure	Fill 10 vials with water, secure with cap. Pierce the closure with the needle perpendicular to the surface	Fill 10 vials with water, secure with cap. Pierce the closure with the needle perpendicular to the surface at a constant insertion rate of 200mm/min.
		Pass requirement	Force for piercing is no greater than 10 N, error threshold 0.25N.	Force for piercing is no greater than 10 N, error threshold 0.25N.
	Fragmentation	Procedure	Fill 12 vials with water, secure with cap. Pierce the closure with a needle 4 times, piercing each time at a different site. Inject into each vial 1mL of water while removing 1 mL of air. Filter the liquid from all vials through a filter and count the rubber fragments on the filter surface.	Fill 12 vials with water, secure with cap. Pierce the closure with a needle 4 times, piercing each time at a different site. Inject into each vial 1mL of water while removing 1 mL of air. Filter the liquid from all vials through a filter and count the rubber fragments on the filter surface.
		Pass requirement	There are no more than 5 fragments visible	There are no more than 5 fragments visible
	Self-Sealing Capacity (Only for closures intended for multiple-dose containers.)	Procedure	Fill 10 vials with water, secure with cap. Pierce each closure 10 times, piercing each time at a different site. Immerse the 10 vials in methylene blue and reduce the external pressure by 27 kPa for 10 minutes. Then restore to atmospheric pressure and leave the vials immersed for 30 minutes.	Fill 30 containers with water, secure with cap. Pierce each closure according to most extreme intended-use directions.
		Pass requirement	None of the vials contain any trace of blue solution.	All test packages confrom to the maximum allowable leakage limit demanded of the product.

Source: United States Pharmacopoeia

Additional Functionality Tests of USP Chapter <382> (Continued)

Closure system	Functionality test		USP <382> Elastomeric closure functionality in injectable pharmaceutical packaging/delivery systems
Needle-based injection system packages	Fragmentation	Procedure	Selected containers such that the number of penetrations performed on each container is within product usage recommendations, and total punctures performed are not less than 100. After each puncture, pass the water through the lumen of the needle. Remove tested closure from bottle, and pour all bottle contents through particulate examination filter.
		Pass requirement	There are no more than 6 fragments visible
	Plunger break force and plunger glide force	Procedure	Fill 10 containers with water. Using a mechanical testing machine, select an elution speed slow enough to detect and measure the break force.
		Pass requirement	1) maximum plunger glide force must not be greater than plunger break force; 2) The difference between the maximum and minumum plunger glide force should not be indicative of barrel lubricaition inconsistencies.
	Plunger seal integrity	Procedure	Fill 10 containers with waterApply an axial force to the plunger to generate a pressure of 300 kPa and maintain the pressure for 30s.
		Pass requirement	No leakage past the plunger is visible.
	Tip cap and needle shield functionality tests	Procedure	Select 10 containers. Measure the force required to remove the closure.
		Pass requirement	1) Maximum observed removal force must not exceed the maximum force that allows for ease of access; 2) Minimum observed force is sufficient to ensure that the closure remains in place during the product lifecycle.
Dental cartridge packages and pen-injector packages	Fragmentation	Procedure	Fill 12 containers with water. Penetrate each test sample closure not less than 4 times, matching that of the intended product, at the same site of insertion. Remove tested closure from bottle, and pour all bottle contents through particulate examination filter.
		Pass requirement	There are no more than 5 fragments visible
	Self-Sealing Capacity	Procedure	Fill 30 containers with water, secure with cap. Pierce each closure according to most extreme intended-use directions.
		Pass requirement	All test packages confrom to the maximum allowable leakage limit demanded of the product.
	Plunger break force and plunger glide force	Procedure	Fill 10 containers with water. Using a mechanical testing machine, select an elution speed slow enough to detect and measure the break force.
		Pass requirement	1) maximum plunger glide force must not be greater than plunger break force; 2) The difference between the maximum and minumum plunger glide force should not be indicative of barrel lubricaition inconsistencies.
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		Pass requirement	No leakage past the plunger is visible.
	Tip cap and needle shield functionality tests	Procedure	Select 10 containers. Measure the force required to remove the closure.
		Pass requirement	1) Maximum observed removal force must not exceed the maximum force that allows for ease of access; 2) Minimum observed force is sufficient to ensure that the closure remains in place during the product lifecycle.

Source: United States Pharmacopoeia

Additional Functionality Tests of USP Chapter <382> (Continued)

Closure system	Functionality test		USP <382> Elastomeric closure functionality in injectable pharmaceutical packaging/delivery systems
Bottles	Penetrability	Procedure	Fill 10 vials with water, secure with cap. Pierce the closure with the needle perpendicular to the surface at a constant insertion rate of 200mm/min.
		Pass requirement	Force for piercing is no greater than 80 N, average of all tests no greater than 75 N, error threshold 2N.
	Fragmentation	Procedure	Fill 10 containers with water. Penetrate each test sample closure once within the closure target area, shake bottle for a few seconds. Remove tested closure from bottle, and pour all bottle contents through particulate examination filter
		Pass requirement	There are no more than 20 fragments visible
	Self-Sealing Capacity	Procedure	Fill 30 containers with water, secure with cap. Pierce each closure according to most extreme intended-use directions.
		Pass requirement	All test packages confrom to the maximum allowable leakage limit demanded of the product.
	Spike retention and sealability capacity	Procedure	Fill 10 containers with water. Pierce the center of the closure target area, attach a mass of 0.5 (error threshold 0.025kg) to the spike for 4 hours.
		Pass requirement	1) all bottles were penetrated without closure pushed into bottle; 2) all spikes were retained in the closure; 3) no liquid leakage observed.
Blow Fill Seal containers with plastic caps that have inserted elastomeric liners	Penetrability	Procedure	Fill 10 vials with water, secure with cap. Pierce the closure with the needle perpendicular to the surface at a constant insertion rate of 200mm/min.
		Pass requirement	Force for piercing is no greater than 80 N, average of all tests no greater than 75 N, error threshold 2N.
	Fragmentation	Procedure	Fill 10 containers with water. Penetrate each test sample closure once within the closure target area, shake bottle for a few seconds. Remove tested closure from bottle, and pour all bottle contents through particulate examination filter
		Pass requirement	There are no more than 7 fragments visible
	Self-Sealing Capacity	Procedure	Fill 30 containers with water, secure with cap. Pierce each closure according to most extreme intended-use directions.
		Pass requirement	All test packages confrom to the maximum allowable leakage limit demanded of the product.
	Spike retention and sealability capacity	Procedure	1) Select 10 containers. Pierce the center of the closure target area until complete penetration is achieved. Withdraw the spike at speed of 200mm/min. 2) Fill 10 containers with water. Pierce the center of the closure target area until complete penetration is achieved. Position test sample with device end down. Hang a 1kg weight from the device for 4 hours.
		Pass requirement	1) Spike removal force is not less than 15N, error threshold 2N. 2) No leakage at insertion point, and insertion spike does not slide out of insertion point.
Plastic containers for intravenous injections	Penetrability	Procedure	Fill 10 vials with water, secure with cap. Pierce the closure with the needle perpendicular to the surface at a constant insertion rate of 500mm/min.
		Pass requirement	Force for piercing is no greater than 200 N, error threshold 2N.
	Self-Sealing Capacity	Procedure	Fill 30 containers with water, secure with cap. Pierce each closure according to most extreme intended-use directions.
		Pass requirement	All test packages confrom to the maximum allowable leakage limit demanded of the product.
	Spike retention and sealability capacity	Procedure	Fill 10 containers with water. Pierce the center of the closure target area until complete penetration is achieved. Leave for 5 hours. Place the infusion container between 2 plane-parallel plates and compress to achieve an internal pressure of 20kPa for 15s. Remove spike at speed of 100mm/min.
		Pass requirement	1) all containers have no leakage at insertion point; 2) no insertion part slides out from the insertion point; 3) removal force is not less than 15N, error threshold 2N.

Source: United States Pharmacopoeia

Key Risks

Improvements in drug efficacy may decrease dosing frequency. West's sales are largely dependent on the sales of drug products delivered by injection, and packaging of drug products. If drug products developed by customers have higher efficacy and therefore require less frequent dosing, West's sales and profitability could suffer.

Higher raw material cost. The company uses three basic raw materials for manufacturing of its products: elastomers, plastic, and aluminum. The prices of petroleum-based raw materials have recently been volatile, affecting the cost of synthetic elastomers and plastic. While the company generally attempts to pass along the higher costs to customers through higher selling prices, historically there has either been a time delay, or inability to increase prices due to competitive pressure.

Changes in regulation of drug products may increase competition. The regulations of West's devices and customers incorporating West's components has increased over time. If regulations are modified so as to reduce the information needed to prove equivalency of a change of one supplier's components to those made by another, it is likely that competitive pressure would increase and adversely affect the company's sales.

Competition against strong glass manufacturers. Competitors focusing on glass containment systems have dominated the market. If West is able to penetrate current users of glass with their Daikyo polymeric products, it would have to overcome high switching costs and regulatory filing amendments, which may result in West offering their products at a lower price to boost penetration. Also, advancements in R&D of glass containment systems such as silicone-free pre-filled syringes would bring along stronger competition.

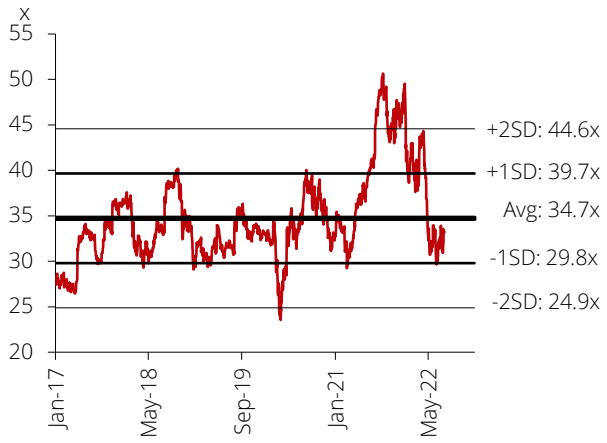
Valuation & Peers Comparison

Target price: US$449. Our TP of US$449 is based on 50x FY22F PE which is pegged to the high-end PE during 2018-19 to factor in:

a) the period before COVID19 where operations did not face disruptions from the pandemic;

b) fundamental changes that took place in 2018-19. In 2016-17, West's net margin ranged from 9.4-9.5%, and surged to 12-13% in 2018-19 and stayed above 13% thereafter thanks to repurposing of several production facilities to support of growth high-value proprietary products (packaging for biologics).

PE band chart



Source: Thomson Reuters, DBS HK

Peer comparison of companies involved in pharmaceutical packaging

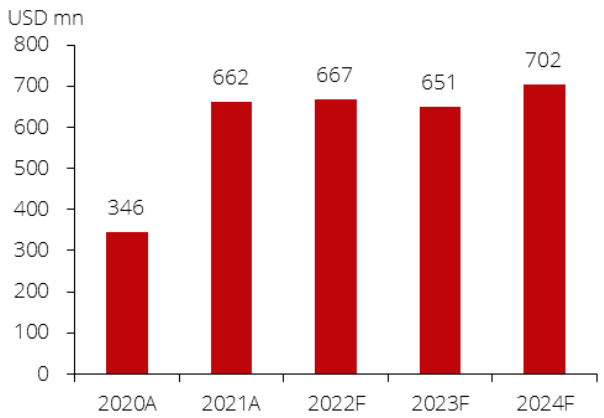
Company Name	Code	Currency	Price Local $	Mkt Cap US$m	Fiscal Yr	PE 22F x	PE 23F x	PS 22F x	PS 23F x	Yield 22F %	Yield 23F %	P/Bk 22F x	P/Bk 23F x	EV/ EBITDA 22F x	EV/ EBITDA 23F x	ROE 22F %	ROE 23F %
West Pharmaceutical	WST US	USD	339.9	25,180	Dec	37.2	34.4	8.4	7.9	0.21	0.23	9.5	7.6	25.7	23.5	26.5	22.9
Stevanato	STVN US	USD	16.89	4,992	Dec	33.1	32.0	5.2	4.8	0.32	0.36	5.6	4.9	18.9	17.2	17.4	16.2
Gerresheimer	GXI GR	EUR	57.9	1,855	Nov	12.4	10.8	1.1	1.0	2.3	2.58	1.7	1.6	8.8	7.7	13.3	14.9
Shandong Pharmaceutical Glass	600529 CH	RMB	26.21	2,382	Dec	22.4	18.6	3.6	3.2	1.3	1.5	3.1	2.7	14.0	11.6	13.8	14.7

Source: Company, Bloomberg Finance L.P., Thomson Reuters, DBS HK

Financials

Net Profit. We expect despite West's falling gross margins (22F/23F/24F: 41.5%/41.0%/39.0%), earnings are still growing (22F/23F/24F: 5%/7%/11%). This is due to decline in Covid-19 sales which lead to lower gross margins, while West's proprietary products segment experiences strong growth due to biologics, driving earnings. We expect Covid-19 related sales to start declining in 22F, and drastically decline from 23F onwards due to lower demand for large-scale vaccinations.

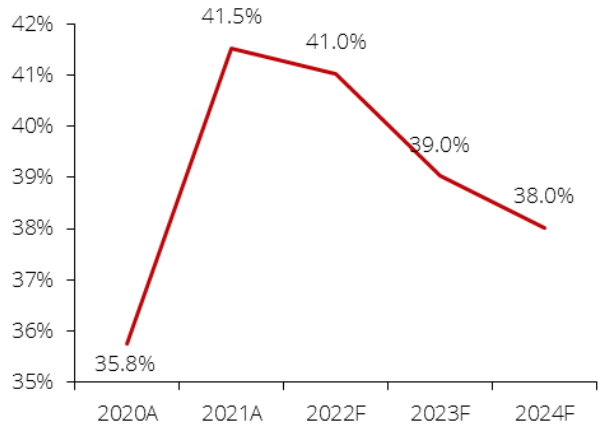
Net profit (USD mn)



Source: Company, DBS HK

Gross margin. Pre-Covid gross margins recorded growth of 0.5ppts from 2010-19. We believe 22F gross margin will fall 0.5ppts due to decline in Covid-related products, and drastically decline in 23F onwards, which will drag gross margins down until 26F.

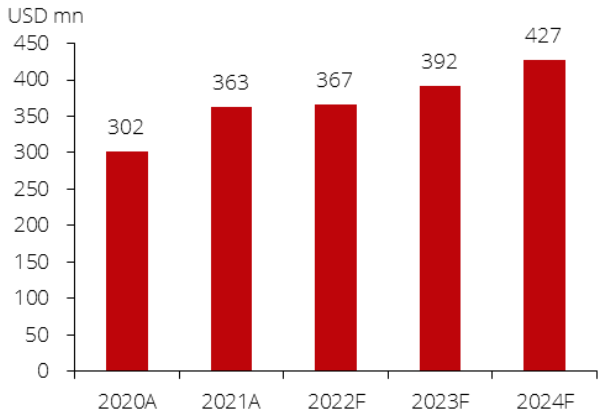
Gross margin %



Source: Company, DBS HK

Selling, general & administrative expenses. We expect selling, general & administrative expenses to increase gradually due to increased volume from existing customers and new customers, hence requiring more manpower. We expect selling, general & administrative expenses as a % of sales to decrease by 0.5% in 22F due to matured distribution channels, and slowly decrease by 0.25% p.a. thereafter, in line with the company's performance during 2010-19.

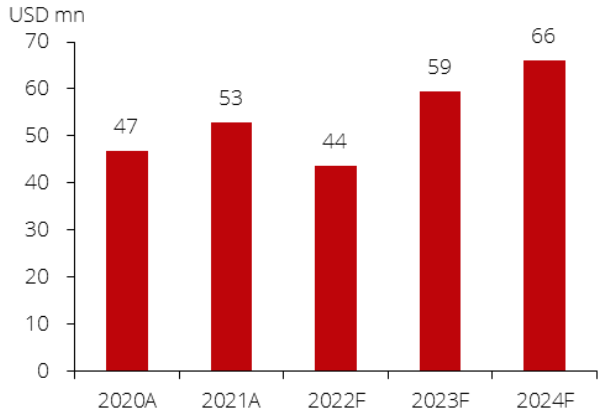
Selling, general & administrative expenses (USD mn)



Source: Company, DBS HK

R&D expenses. We expect R&D expenses to stabilise and increase at a slower rate due to maturity of West's product lines. We expect R&D expenses as a % of sales to remain at the range similar to 2010-19. A reduction in R&D is expected in 22F to minimise loss following decreased Covid-19 sales.

R&D expenses (USD mn)

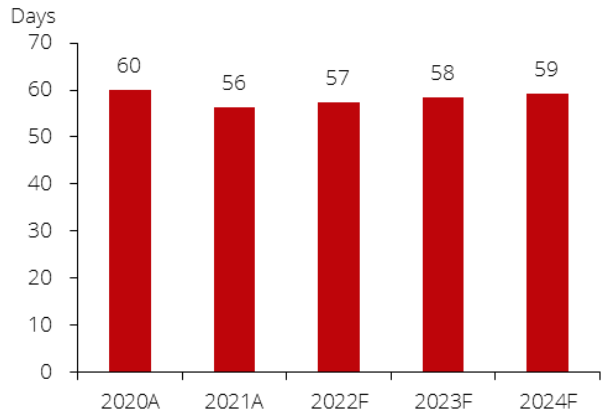


Source: Company, DBS HK

Accounts receivable. We expect a slight drop in 2022F due to growth moderating for Covid-related sales. West's accounts receivable turnover days had fluctuated between 52 to 60 days in the past 5 years. This may be due to growth in clients with established payment records.

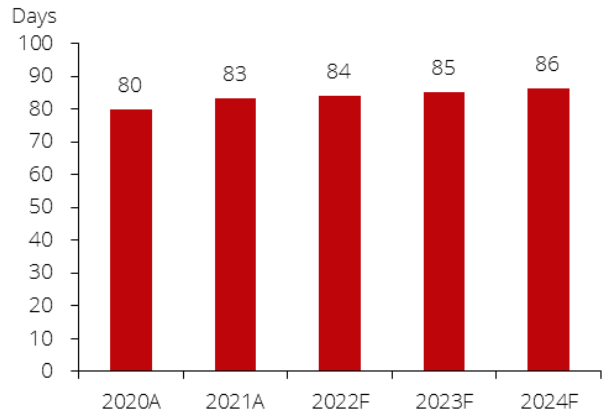
Inventory turnover days. West's inventory turnover days had fluctuated between 73 to 83 days in the past 5 years, with an upward trend of around 1 day p.a. in the past 10 years. This is believed to be due to rising raw material costs.

Accounts receivable days



Source: Company, DBS HK

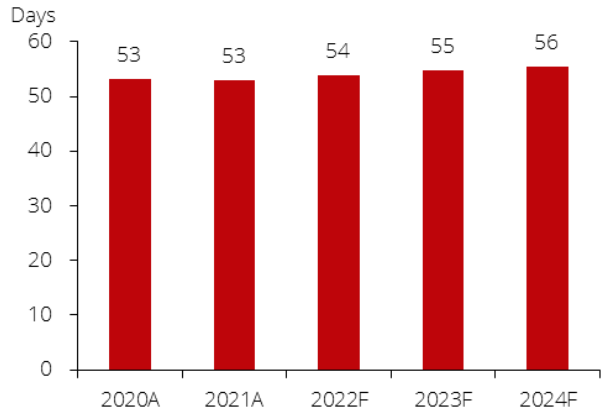
Inventory turnover days



Source: Company, DBS HK

Accounts payable. West's accounts payable turnover days was around 48 to 53 days in the past 5 years, with an upward trend of around 0.8 days p.a. in the past 10 years. This may be due to a strategy to pass along increased accounts receivable days to ensure adequate cash flow.

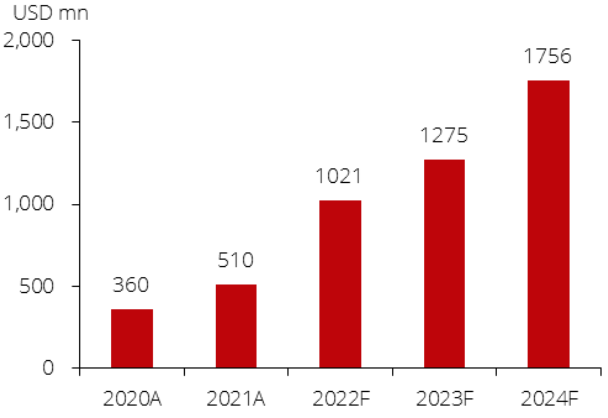
Accounts payable days



Source: Company, DBS HK

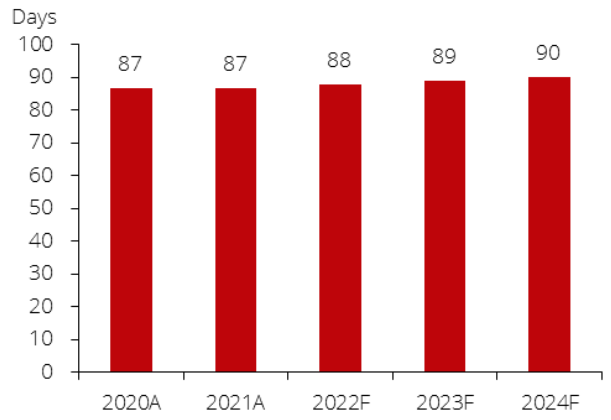
Cash & bank balances. As of Dec 2021, West had net cash of USD510mn. West's cash conversion cycle has been trending up from 78 to 88 days in the past 5 years.

Net cash (USD mn)



Source: Company, DBS HK

Cash conversion cycle (days)



Source: Company, DBS HK

Environment, Social & Governance (ESG)

Environmental. West strives to be stewards of a sustainable future by factoring environmental considerations into every aspect of its business, and targets reductions in areas such as CO_2 emissions, waste and increased recycling, as well as energy and water usage. West was recognised by a number of organisations throughout 2021 and named as one of Barron's Top 100 Most Sustainable Companies.

Social responsibility. West received a Silver Stevie Award for Corporate Social Responsibility. Some charitable highlights from 2021 include Food Drive donations increasing by 50% compared to 2020, and more than USD2.5m in corporate and foundation charitable giving.

Governance. The company commits to their core value of Leadership in Quality, which ensures they never compromise on quality. This includes excellence in manufacturing, scientific, and technical expertise. The company continued to focus on reducing Cost of Poor Quality (COPQ), a key metric in monitoring process quality.

Company Background

Established in 1923, West Pharmaceutical Services, Inc. ("West") focuses on design and production of containment and delivery systems for injectable drugs and healthcare products. West serves its customers through two segments: Proprietary Products and Contract-Manufactured Products.

The Proprietary Products segment offers proprietary packaging, containment and drug delivery products, along with analytical lab services and other integrated services and solutions. This segment's product portfolio includes stoppers and seals for injectable packaging systems, syringe and cartridge components, as well as administration systems to enhance the safe delivery of drugs. This segment also includes drug containment solutions, including Crystal Zenith, a cyclic olefin polymer, in the form of vials, syringes and cartridges. These products can provide high-quality solutions to glass incompatibility issues.

The Contract-Manufactured Products segment serves as a fully integrated business focusing on the design, manufacture, and automated assembly of complex devices, primarily for pharmaceutical, diagnostic, and medical device customers. West manufactures customer-owned components and devices used in surgical, diagnostic, ophthalmic, injectable, and other drug delivery systems.

West's customers include leading biologic, generic, pharmaceutical, diagnostic, and medical device companies in the world.

Key company information

Business	Pharmaceutical Packaging	
2021 R&D costs	Usd52.8m	
Year of establishment	1923	
Auditor	PricewaterhouseCoopers	
Major shareholders	11.8%	- The Vanguard Group, Inc.
	8.6%	- T. Rowe Price Associates, Inc.
	6.2%	- BlackRock Institutional Trust Company, N.A.
	4.6%	- State Street Global Advisors (US)
	3.7%	- Franklin Advisers, Inc.
Headquarters	Exton, Pennsylvania, USA	
Production plants	USA, Brazil, Denmark, England, France, Germany, Ireland, Serbia, China, India, Singapore	
Number of staff	Total	10,065
	Global Operations	8,354
	Sales and Marketing	503
	Corporate	503
	Digital & Technology (D&T)	403
	Research & Development	302

Source: Company, DBS HK

Management & Strategy

Key Management Team

Name	Age	Title	Previous Experience
Mr. Eric M. Green	52	President, Chief Executive Officer	• Mr. Green served as Chief Executive Officer since April 2015 and President since December 2015. • Prior to joining West, he was Executive Vice President and President of the Research Markets business unit at Sigma-Aldrich Corporation from 2013 to 2015.
Mr. Bernard J. Birkett	53	Senior Vice President, Chief Financial Officer	• Mr Birkett served as Senior Vice President and Chief Financial Officer since June 2018, as well as Treasurer from June 2018 to December 2019, and Principal Accounting Officer from October 2019 to April 2020. • Prior to joining West, he spent more than 20 years at Merit Medical Systems, Inc, where he served in global leadership roles such as Chief Financial Officer.
Mr. Silji Abraham	50	Senior Vice President, Chief Technology Officer	• Mr Abraham served as Senior Vice President, Chief Technology Officer since December 2020. • Senior Vice President, Chief Digital and Transformation Officer from February 2018 to December 2020. • Prior to joining West, he served as Executive Vice President and Chief Information Officer of MilliporeSigma, a subsidiary of Merck.
Mr. David A. Montecalvo	56	Senior Vice President, Chief Operations and Supply Chain Officer	• Mr. Montecalvo served as Senior Vice President, Chief Operations and Supply Chain Officer since February 2019. • Prior to joining West, he served at Medtronic as Vice President, Contract Manufacturing Operations, for the company's Restorative Therapies Group.
Ms. Annette F. Favorite	57	Senior Vice President, Chief Human Resources Officer	• Ms. Favorite served as Senior Vice President and Chief Human Resources Officer since October 2015. • Prior to joining West, she spent more than 25 years at IBM Corporation in strategic and global human resources roles, including Vice President, Global Talent Management.
Ms. Kimberly Banks MacKay	56	Senior Vice President, General Counsel and Corporate Secretary	• Ms. MacKay served as Senior Vice President, General Counsel and Corporate Secretary since December 2020. • Prior to joining West, she served as Senior Vice President, General Counsel and Corporate Secretary at the Segal Group in New York from April 2019 to November 2020. • She also served for over 15 years in a variety of Legal leadership roles for Novartis, including Head of U.S. Legal for Novartis Business Service.
Dr. Quintin J. Lai	55	Vice President, Strategy and Investor Relations	• Dr. Lai served as Vice President, Strategy and Investor Relations since January 2016. • Prior to joining West, he was Vice President of Investor Relations and Corporate Strategy at Sigma-Aldrich Corporation from 2012 to 2015.
Mr. Chad R. Winters	43	Vice President, Chief Accounting Officer and Corporate Controller	• Mr. Winters served as Vice President, Chief Accounting Officer and Corporate Controller since May 2020. • Prior to joining West, he served as Senior Vice President of Finance & Accounting and Controller of Amneal Pharmaceuticals, Inc.

Source: Company, DBS HK

Balance Sheet:

As of Dec 2021, West had net cash of USD510mn, with dividend payout ratio of 8%. With a current ratio of 2.9x and quick ratio of 2.3x, balance sheet remains healthy.

Share Price Drivers:

1) Burgeoning biologics market will drive demand for high-quality packaging; 2) Increased regulatory requirements.

Key Risks:

1) Improvements in drug efficacy could decrease dosing frequency;
2) Higher raw material prices;
3) Changes in regulation of drug products may increase competition;
4) Competition against strong glass manufacturers.

Environmental, Social, Governance:

Environmental. West targets reductions in areas such as CO2 emissions, waste and increased recycling, as well as energy and water usage, and was recognised by a number of organisations throughout 2021 and named as one of Barron's Top 100 Most Sustainable Companies.

Social responsibility. West received a Silver Stevie Award for Corporate Social Responsibility. Some charitable highlights from 2021 include Food Drive donations increasing by 50% compared to 2020, and more than Usd2.5m in corporate and foundation charitable giving.

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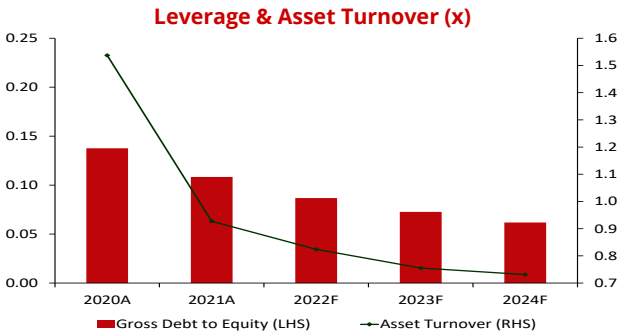

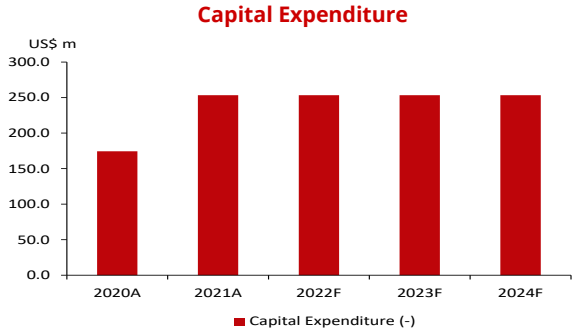

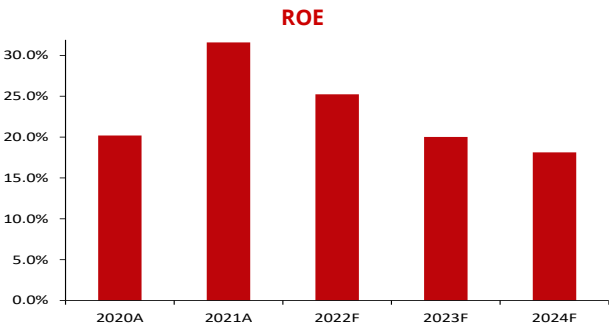

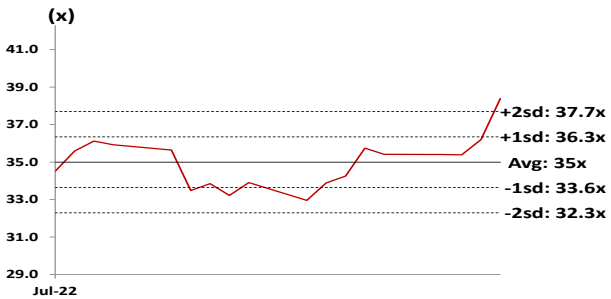

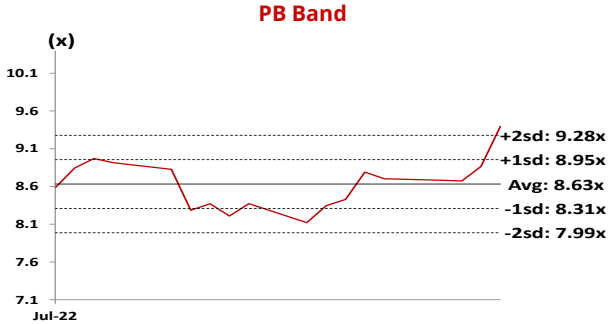

Source: Company, DBS HK

Key Assumptions

FY Dec	2020A	2021A	2022F	2023F	2024F
Gross margin %	35.8	41.5	41.0	39.0	38.0
Sales & distribution expenses (Usd m)	302.0	362.8	366.6	392.1	427.4
Admin expenses (Usd m)	0.0	0.0	0.0	0.0	0.0
R&D expenses (Usd m)	46.9	52.8	43.6	59.4	66.1

Source: Company, DBS HK

Segmental Breakdown (US$ m)

FY Dec	2020A	2021A	2022F	2023F	2024F
Revenues (US$ m)					
Proprietary Products	1,649	2,317	2,303	2,464	2,742
Contract-Manufactured Products	499	515	675	722	803
Intersegmental sales elimination	0	0	(1)	(1)	(1)
Total	2,147	2,832	2,977	3,185	3,543
Gross profit (US$ m)					
Proprietary Products	682	1,094	945	962	1,042
Contract-Manufactured Products	86	84	277	282	305
Intersegmental sales elimination	0	(2)	0	0	0
Total	768	1,176	1,221	1,243	1,347
Gross profit Margins (%)					
Proprietary Products	41.4	47.2	41.0	39.0	38.0
Contract-Manufactured Products	17.2	16.3	41.0	39.0	38.0
Intersegmental sales elimination	0.0	0.0	0.0	0.0	0.0
Total	35.8	41.5	41.0	39.0	38.0

Source: Company, DBS HK

Income Statement (US$ m)

FY Dec	2020A	2021A	2022F	2023F	2024F
Revenue	2,147	2,832	2,977	3,185	3,543
Cost of Goods Sold	(1,379)	(1,656)	(1,756)	(1,942)	(2,196)
Gross Profit	**768**	**1,176**	**1,221**	**1,243**	**1,347**
Other Opng (Exp)/Inc	(361)	(424)	(410)	(452)	(493)
Operating Profit	**407**	**752**	**811**	**791**	**854**
Other Non Opg (Exp)/Inc	1	4	4	4	4
Associates & JV Inc	0	0	0	0	0
Net Interest (Exp)/Inc	(7)	(7)	(7)	(7)	(7)
Dividend Income	0	0	0	0	0
Exceptional Gain/(Loss)	0	0	0	0	0
Pre-tax Profit	**401**	**749**	**808**	**788**	**850**
Tax	(73)	(107)	(176)	(172)	(186)
Minority Interest	17	20	36	35	37
Preference Dividend	0	0	0	0	0
Net Profit	**346**	**662**	**667**	**651**	**702**
Net Profit before Except.	346	662	667	651	702
EBITDA	517	878	937	917	980
Growth					
Revenue Gth (%)	N/A	31.9	5.1	7.0	11.3
EBITDA Gth (%)	N/A	69.8	6.7	(2.1)	6.8
Opg Profit Gth (%)	N/A	84.9	7.8	(2.4)	7.9
Net Profit Gth (%)	N/A	91.2	0.8	(2.5)	7.9
Margins & Ratio					
Gross Margins (%)	35.8	41.5	41.0	39.0	38.0
Opg Profit Margin (%)	19.0	26.6	27.2	24.8	24.1
Net Profit Margin (%)	16.1	23.4	22.4	20.4	19.8
ROAE (%)	20.2	31.6	25.2	20.0	18.1
ROA (%)	24.8	21.7	18.5	15.4	14.5
ROCE (%)	29.1	25.5	20.8	17.1	15.8
Div Payout Ratio (%)	14.1	7.8	7.8	7.8	7.8
Net Interest Cover (x)	59.8	104.5	112.7	109.9	118.6

Source: Company, DBS HK

Interim Income Statement (US$ m)

FY Dec	1H2020	2H2020	1H2021	2H2021	1H2022
Revenue	1,019	1,128	1,394	1,437	1,491
Cost of Goods Sold	(657)	(723)	(807)	(849)	(885)
Gross Profit	**362**	**406**	**587**	**589**	**606**
Other Oper. (Exp)/Inc	(171)	(178)	(199)	(217)	(194)
Operating Profit	**191**	**228**	**388**	**372**	**412**
Other Non Opg (Exp)/Inc	0	1	1	3	6
Associates & JV Inc	0	0	0	0	0
Net Interest (Exp)/Inc	(3)	(4)	(4)	(4)	(3)
Exceptional Gain/(Loss)	0	0	0	0	0
Pre-tax Profit	**189**	**225**	**386**	**371**	**415**
Tax	(31)	(42)	(61)	(46)	(65)
Minority Interest	8	9	14	7	13
Net Profit	**166**	**193**	**339**	**331**	**362**
Net profit bef Except.	166	193	339	331	362
Growth					
Revenue Gth (%)	N/A	N/A	36.9	27.4	7.0
Opg Profit Gth (%)	N/A	N/A	103.1	63.3	6.2
Net Profit Gth (%)	N/A	N/A	104.5	71.9	7.0
Margins					
Gross Margins (%)	35.5	36.0	42.1	41.0	40.6
Opg Profit Margins (%)	18.8	20.2	27.8	25.9	27.6
Net Profit Margins (%)	16.2	17.1	24.3	23.0	24.3

Source: Company, DBS HK

Balance Sheet (US$ m)

FY Dec	2020A	2021A	2022F	2023F	2024F
Net Fixed Assets	943	1,058	1,194	1,331	1,467
Invts in Associates & JVs	215	208	208	208	208
Other LT Assets	262	307	301	296	290
Cash & ST Invts	616	763	1,274	1,528	2,009
Inventory	321	378	375	475	507
Debtors	385	489	447	573	578
Other Current Assets	52	112	112	112	112
Total Assets	2,794	3,314	3,911	4,522	5,171
ST Debt	2	44	44	44	44
Creditors	213	232	250	296	335
Other Current Liab	288	318	318	318	318
LT Debt	253	209	209	209	209
Other LT Liabilities	183	176	176	176	176
Shareholder's Equity	1,855	2,335	2,950	3,550	4,197
Minority Interests	0	0	(36)	(70)	(108)
Total Cap. & Liab.	2,794	3,314	3,911	4,522	5,171
Non-Cash Wkg. Capital	257	430	366	546	544
Net Cash/(Debt)	360	510	1,021	1,275	1,756
Debtors Turn (avg days)	59.9	56.3	57.4	58.4	59.3
Creditors Turn (avg days)	53.2	53.0	53.9	54.8	55.5
Inventory Turn (avg days)	80.0	83.3	84.2	85.2	86.4
Asset Turnover (x)	1.5	0.9	0.8	0.8	0.7
Current Ratio (x)	2.7	2.9	3.6	4.1	4.6
Quick Ratio (x)	2.0	2.1	2.8	3.2	3.7
Net Debt/Equity (X)	CASH	CASH	CASH	CASH	CASH
Net Debt/Equity ex MI (X)	CASH	CASH	CASH	CASH	CASH
Capex to Debt (%)	68.3	100.2	100.2	100.2	100.2
Z-Score (X)	NA	NA	NA	NA	NA

Source: Company, DBS HK

Cash Flow Statement (US$ m)

FY Dec	2020A	2021A	2022F	2023F	2024F
Pre-Tax Profit	401	749	808	788	850
Dep. & Amort.	109	122	122	122	122
Tax Paid	(73)	(107)	(176)	(172)	(186)
Assoc. & JV Inc/(loss)	0	0	0	0	0
(Pft)/ Loss on disposal of FAs	0	0	0	0	0
Chg in Wkg.Cap.	(95)	(142)	64	(180)	2
Other Operating CF	130	(38)	0	0	0
Net Operating CF	473	584	817	558	789
Capital Exp.(net)	(174)	(253)	(253)	(253)	(253)
Other Invts.(net)	0	(2)	(7)	(7)	(7)
Invts in Assoc. & JV	(22)	7	0	0	0
Div from Assoc & JV	0	0	0	0	0
Other Investing CF	17	(5)	0	0	0
Net Investing CF	(180)	(253)	(261)	(261)	(261)
Div Paid	(46)	(49)	(52)	(52)	(51)
Chg in Gross Debt	(2)	(2)	0	0	0
Capital Issues	0	0	0	0	0
Other Financing CF	(89)	(117)	7	8	3
Net Financing CF	(137)	(168)	(45)	(44)	(48)
Currency Adjustments	21	(16)	0	0	0
Chg in Cash	176	147	512	254	481
Opg CFPS (US$)	7.66	9.77	10.15	9.94	10.60
Free CFPS (US$)	4.02	4.45	7.59	4.10	7.21

Source: Company, DBS HK

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BUY (>15% total return over the next 12 months for small caps, >10% for large caps)

HOLD (-10% to +15% total return over the next 12 months for small caps, -10% to +10% for large caps)

FULLY VALUED (negative total return, i.e., > -10% over the next 12 months)

SELL (negative total return of > -20% over the next 3 months, with identifiable share price catalysts within this time frame)

**Share price appreciation + dividends*

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