



HARDMAN & CO.



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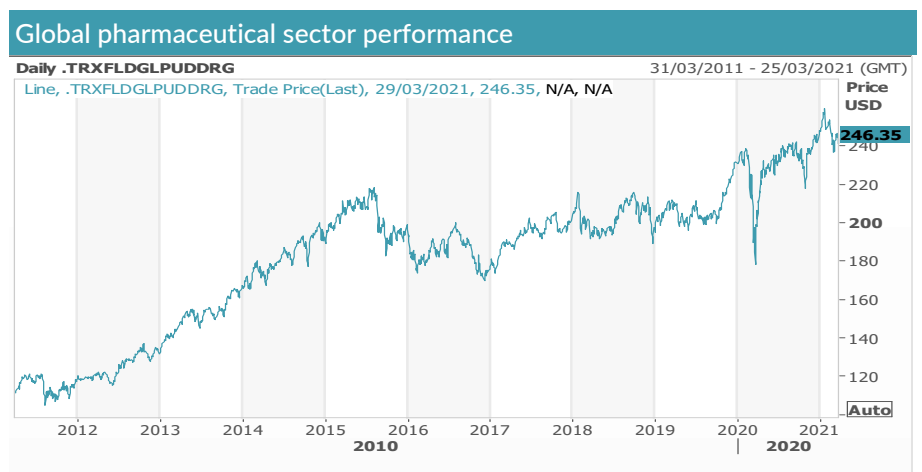
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GLOBAL PHARMACEUTICALS

2020 industry statistics

In the past few weeks, all the listed multi-national pharmaceutical companies have reported results for 2020, which has given us the opportunity to update our industry statistics and drug database. This report provides the first, snapshot publication of global and US rankings of the top 20 drug companies for 2020. Comparisons are made with historical data to show how different company strategies have evolved. In addition, summary analysis has been provided for the sales evolution of therapeutic biopharmaceutical drugs, which saw sales rise 5.6% to \$245bn, representing 26% of the market, driven by antibody-derived drugs.

- ▶ **Global market:** Hardman & Co estimates that the worldwide prescription drug market had underlying growth of 5.0%, reduced to 4.5% in USD terms, in 2020, to \$931bn, up from \$891bn in 2019. This is a little higher than the 3% growth rate that was reported in the annual reports of some drug companies.
- ▶ **US market:** The US market was an important driver of growth, rising 6.5% to \$376bn in 2020, from \$353bn in 2019, representing 40% of the global market. Despite the restrictions caused by the pandemic, the FDA had another productive year, approving 53 new chemical entities (NCEs).
- ▶ **Biopharmaceuticals:** The spend on drugs classified as biopharmaceuticals grew 5.6% to \$245bn in 2020, representing 26% of the global market. These drugs are getting more difficult to track, but, within this category, data on antibody-derived drugs is accurate, showing growth of 12.3% to \$154.7bn (\$137.7bn).
- ▶ **Best-selling drugs:** Humira (AbbVie) remains the biggest drug, with ex-factory sales approaching \$20bn (+3.5%). The top 10 drugs in the world had reported sales of \$94.0bn in 2020, growth of 10.3% and represented 10.1% of the entire market. On a cumulative basis, there are now seven drugs in the \$100bn club.
- ▶ **R&D investment:** The top 20 drug companies by sales re-invested 20.4% of Rx drug sales into new drug development, spending \$120bn out of the total spend of \$136bn by the 37 largest companies. The average R&D spend was \$5.4bn, ranging from \$10.4bn (Roche) to \$2.1bn (Astellas).



Source: Refinitiv

2020 drug industry statistics

Updating our industry database and generating first cut of global 2020 rankings...

Although the focus of Hardman & Co is predominantly on companies in the small- to mid-sized market capitalisation range, when writing research reports, it is important to position them relative to the industry in which they operate. Apart from two private companies (Boehringer Ingelheim and Servier), all the major global pharmaceutical companies have reported full-year results for 2020 in the past few weeks; therefore, we have taken the opportunity to update our industry database and generate the first cut of global rankings for 2020. Results from the Japanese companies, which mostly report results for a fiscal year ending in March, have been corrected for a December year-end by analysing the quarterly data. For an industry that requires a long investment cycle – it still takes, on average, 10 years from discovery to launch of a new drug – decisions made many years ago have important consequences on current financial results. Therefore, looking back at operational performance over 20 years reveals how different company strategies have panned out.

Our pharmaceutical database

...basing our analysis on annual accounts of ca.40 multi-national companies

Whatever the size of a company, it is imperative to outline the commercial market opportunity that the company's (often disruptive) technology is targeting. While such work requires significant research, it often constitutes only a very small part of the overall report. It does, however, have the advantage of providing us with a global commercial dataset that is reliable and independent of third-party input.

Pharmaceutical sales are defined as anything that requires a prescription (Rx), and specifically excludes over-the-counter (OTC) and consumer products. It is important to note that this does include generic drugs, biosimilars and vaccines, all of which require a prescription.

Our database of pharmaceutical companies and drugs goes back to 1985. All the data are based on net ex-factory sales reported by companies in their annual reports and stock exchange filings, and exclude all discounts and allowances, chargebacks, returns and government rebates, such as Medicaid and Medicare. All reported numbers are converted into USD at daily average exchange rates – available from the Bank of England website. These data, therefore, have been compiled consistently and with great care, so that direct comparisons among companies can be made.

We have based our analysis on the annual accounts of, currently, 37 multi-national companies (more than 100 companies, including all those that have been acquired or merged), which cover 73% of the global pharmaceutical market and 91% of the US drug market. Market-share statistics have been calculated from our provisional estimate for the global prescription drug market.

Data from the large Chinese companies is either inconsistent and/or difficult to find and is the only notable omission from our dataset. However, data from western companies operating in China and consolidated within accounts is included. The Chinese market is known to be one of the leading pharmaceutical markets worldwide and is viewed as a significant growth opportunity.

Impact of COVID-19

2020: year that science and technology better appreciated by stock markets

It is impossible to write an article on 2020, without mentioning the global pandemic. 2020 will probably go down in history as one of the most challenging years experienced during our lifetime, but it will also likely be chronicled as one of the best years for the recognition and appreciation of science. As we entered 2020, the COVID-19 pandemic was in its infancy. However, it rapidly evolved through the exponential rise in infections and mortality globally.

Life sciences responded to challenge of COVID-19 with rapid innovation, tenacity and resilience

Despite this, much has been achieved by the pharmaceutical industry during the past 12 months in the fight against COVID-19, and further achievements are anticipated during 2021. However, at the time of writing, while the rollout of vaccination programmes gathers pace and gives a reason to be optimistic, there are considerable concerns about the emergence yet another wave in Europe and the identification of new mutant versions of the virus. The only difference with a year ago is that testing and analysis is now well established but far from optimised.

One positive to emerge from the COVID-19 pandemic was the response of the life sciences sector on a global basis. This highlighted some of the tremendous technologies that existed within many life sciences companies around the world that were being under-appreciated. Many companies have stepped up to the challenges posed by the virus through rapid innovation to address the following areas:

- ▶ **Diagnosis:** The development of new diagnostic tests to identify either active virus (PCR tests) or previous exposure (antibody/affirmer tests). Now the challenge is to speed up the time to get results and to have point-of-care tests.
- ▶ **Vaccines:** The development and regulatory approval of COVID-19 vaccines within 12 months, in order to protect the population and prevent the spread of the virus, was unprecedented. Now the challenge is on logistics for manufacturing, distribution and vaccination.
- ▶ **Treatments:** In general, the development of specific drugs to treat patients infected with COVID-19 is at a much earlier stage. The strategy has generally been to identify potential drug treatments from existing drugs already approved for other indications.
- ▶ **Infection control:** Manufacture and distribution of disinfectants, soaps and cleaners that can be used for infection control, decontamination and hygiene, on both a personal and industrial scale.
- ▶ **Medical equipment:** Adaption of existing technologies for medical equipment that can be used to treat patients with COVID-19, such as ventilators, where global demand for intensive care units has soared.

We estimate 5.0% underlying growth for worldwide prescription drug market in 2020...

...reduced to 4.5% as reported in USD terms

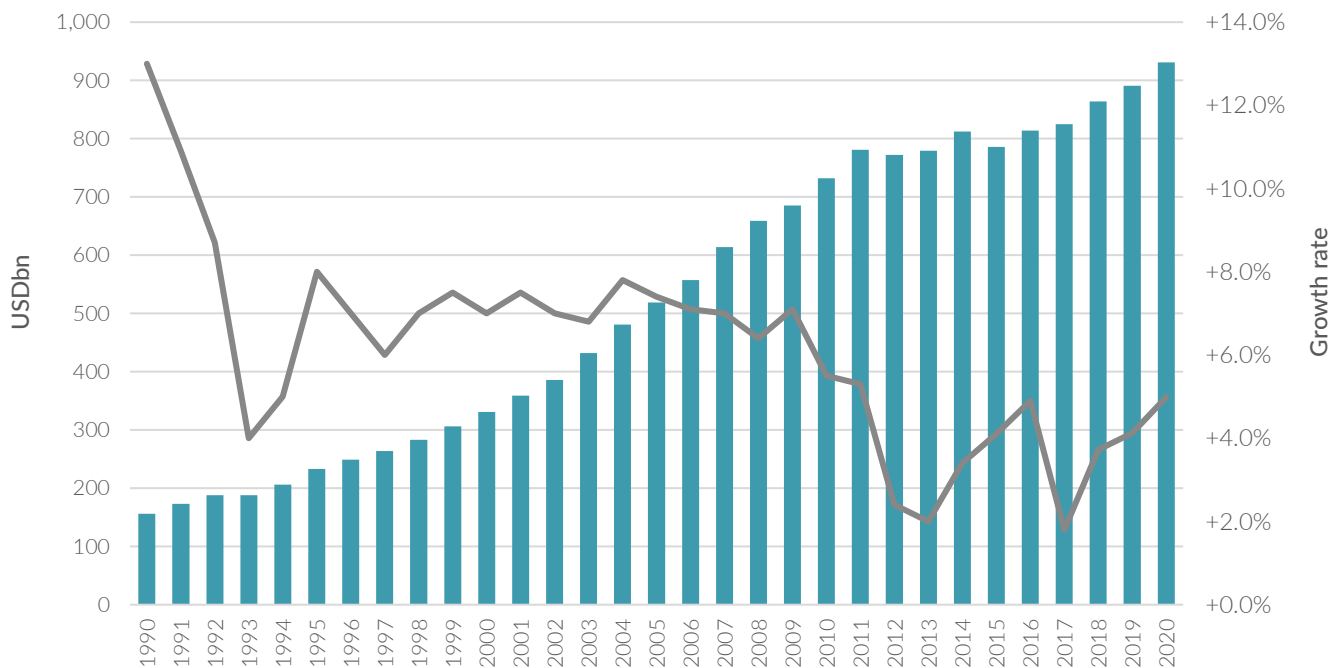
CAGR over the period 2010-20 was 2.43%

2020 global pharmaceutical market

Several annual reports published by drug companies in the past two months have cited a reduction to 3% growth for the global pharmaceutical industry in 2020 (source usually market research organisation IQVIA). This includes a modest currency loss (ca.0.5%) when figures are translated into USD. Based on the reported sales outcomes from 36 of the top 37 companies in the world, Hardman & Co estimates that the global Rx drug market had underlying growth of 5.0% in 2020, which translates into USD reported growth of 4.5% to \$931bn, from \$891bn, in 2019. This is higher than the IQVIA market research estimate. However, the IQVIA growth rate is based on the MAT to September 2020, which would not include the near \$1bn sales of bamlanivimab, Eli Lilly's drug for mild-to-moderate COVID-19, which received FDA emergency use authorisation (EUA) only in November.

Following a 10-year (2003-13) period in which the rate of growth of the drug industry was trending downwards, the past five years have been more volatile. The CAGR of the global pharmaceutical market was 2.58% (from 2013 to 2020) and 2.43% (from 2010 to 2020), lower than many industry commentators had predicted given the introduction of some high-profile, and high-priced, new drugs. The industry growth rate is always a fine balance between the pricing of disruptive and novel new drugs against the loss of patent protection/competition from cheaper generics, government-imposed price reductions, changes in prevalence of certain diseases and ability of payors to pay for the increased demand for medicines.

Global prescription drug market, 1990-2020



Source: Hardman & Co Life Sciences Research

US market is an important driver of global growth...

...rising 6.5% to \$376bn in 2020...

...equating 40.4% of the global market

Our data suggest that the top 20 ranked drug companies had 64.6% of the world market in 2020, compared with 62.9% in 2019. Historically, the US market has been an important contributor of growth to the global outcome. Hardman & Co estimates that the rate of growth for the US prescription drug market in 2020 was somewhat higher than the underlying rate for the global market, increasing 6.5% to \$376bn, up from \$353bn in 2019, and representing 40.4% of the global market. Validation of this estimate is derived from the fact that US sales reported by the top 20 companies grew by a weighted average of 7.6% in 2020.

Challenging year in 2020, largely the consequence of the pandemic

2020 was a challenging year for the industry. On the one hand, it had to adapt rapidly to the challenges caused by the pandemic, which were numerous and included: working from home and/or changed working practices where this was not possible; the abandonment of all forms of travel for a period of time, which still lingers today; the reallocation of frontline healthcare resource; and the way that drugs are marketed to the medical profession to name just a few. On the other hand, COVID-19 provided an enormous opportunity in the prevention, diagnosis and treatment of the virus, which still appears to have a long way to go. Consequently, the outcome on the industry overall was difficult to predict.

Industry outcome for sales and profits was better than expected in 2020

However, published results from companies proved that doctors still treated non-COVID-19 patients, drugs reached patients when required, and the regulators were still able to assess new therapies despite changed working conditions and priorities. So, the overall outcome for the pharmaceutical industry in 2020 was, in general, better than expected.

Regarding 2021, many of the same challenges from the pandemic, together with some additional ones, such as logistics, remain. In addition, the industry faces the traditional challenges of political uncertainty, government and media attention on drug pricing and the rapidly rising number of generic and biosimilar approvals. Therefore, the outlook remains uncertain. However, we continue to believe that innovation will win out in the long term, as evidenced by strong sales growth in antibody-derived drugs (+12.3%), which, in part, explains the continued heavy investment in R&D.

Investment in R&D remains strong

- ▶ The total R&D spend on pharmaceuticals declared in the audited accounts of 37 drug companies was \$135.8bn in 2020, an increase of 7.2% compared with 2019. There is probably an unquantifiable additional 10%-15% (guesstimate only) being invested by small companies, biotech industry and research laboratories.
- ▶ Cumulative R&D spend by the top 20 companies was \$119.9bn (\$108.6bn) out of a total estimated spend of \$134.0bn by 30 companies, highlighting the enormous difference between the major companies and the smaller players.
- ▶ The average R&D spend of the top 20 companies was \$5.4bn in 2020 (\$5.7bn in 2019) – ranging from \$10.4bn (Roche) to \$2.1bn (Astellas).
- ▶ In 2020, the top 20 companies reinvested 20.4% of pharmaceutical sales into new drug development, compared with 19.5% in 2019.

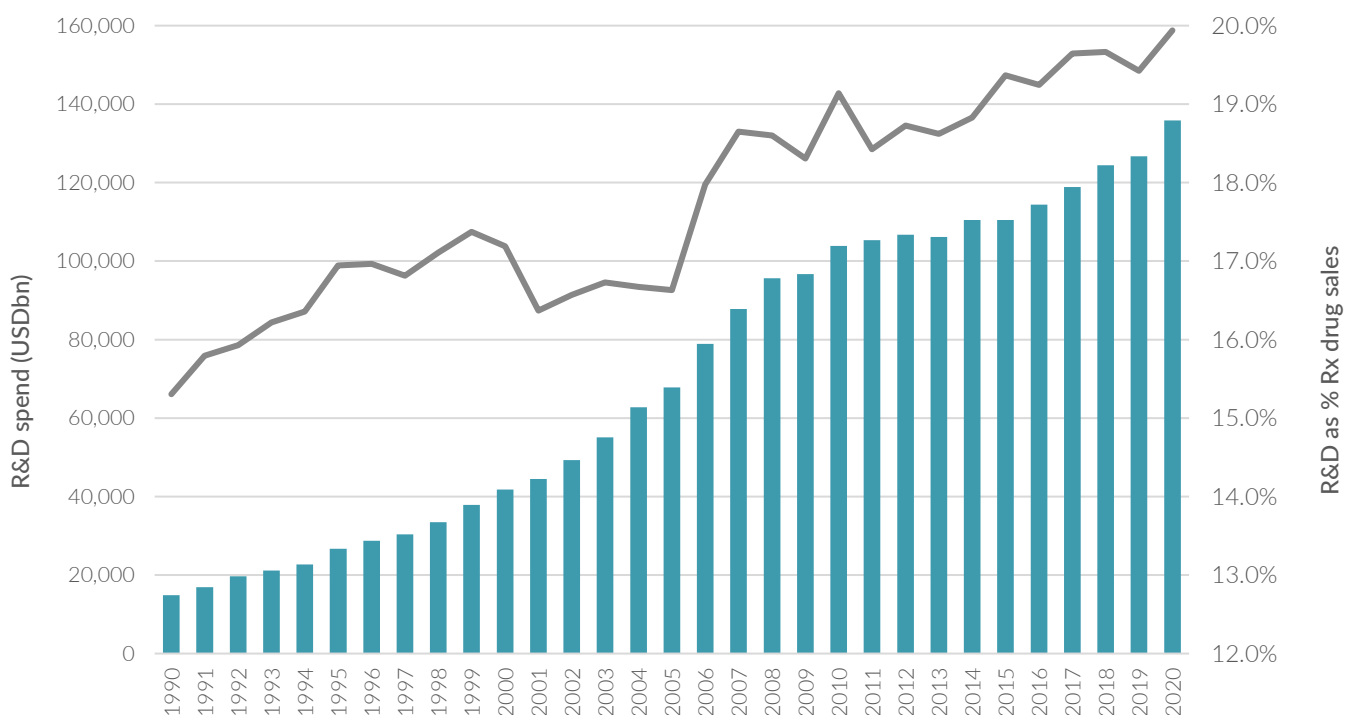
Despite COVID-19 restrictions, drug companies continued to invest heavily in R&D

Despite all the restrictions associated with COVID-19 that affected several aspects of clinical trials – ability to recruit patients, ability of trialists to attend hospitals/clinics, altered work practices within contract research organisations – pharmaceutical companies continued to run clinical trials and to invest heavily in their futures, as all managements can see that successful innovation pays off with handsome returns (see pages 11-13).

CAGR in R&D spend by the top 15 companies has been 1.6% over past decade

Over the past 10 years, the top 15 ranked companies have increased investment in R&D at a CAGR of 1.6%, from \$90.7bn (19.7% of pharma sales) to \$106.5bn (20.8%). In 2020, the highest relative spenders were Biogen (37.3% of sales), Bristol-Myers Squibb and Pfizer (both 25.8%) and Eli Lilly (24.8%), while the lowest spenders were AbbVie (14.3%), Takeda (15.5%) and Sanofi (15.9%). It should be noted that the 15 constituent companies that comprise the top 15 are different each year.

Pharmaceutical R&D investment, 1990-2020



Source: Hardman & Co Life Sciences Research

Company highlights

Overview

Unusually high level of significant changes in the ranking in 2020...

...mostly due to strategic M&A activity...

There have been a number of quite significant changes in the rankings of pharmaceutical companies by Rx drug sales in 2020 compared with 2019. While some of these have been driven by the performances of particular, usually new, drugs, others were the result of strategic decisions, such as M&A activity and divestments. Novartis regained the world #1 company position, albeit with a modestly reduced market share (5.23% from 5.32%) from Roche.

Global pharmaceutical industry – 2020 ranking vs. 2010

---- Rank ----		Company	Ticker	Rx sales CAGR	----- Market share -----		
2020	2010				2020	2010	Δ
1	2	Novartis	PFE	1.7%	5.23%	5.60%	-0.38%
2	6	Roche	ROG	2.9%	5.09%	4.85%	+0.24%
3	10	AbbVie	NOVN	8.7%	4.92%	2.72%	+2.20%
4	8	Johnson & Johnson	JNJ	7.4%	4.89%	3.06%	+1.84%
5	3	Merck & Co	MRK	0.4%	4.45%	5.44%	-0.99%
6	11	Bristol-Myers Squibb	SAN	7.8%	4.44%	2.66%	+1.78%
7	1	Pfizer	ABBV	-3.9%	3.92%	7.44%	-3.52%
8	4	Sanofi	GSK	-0.3%	3.88%	5.10%	-1.22%
9	5	GlaxoSmithKline	AMGN	-1.6%	3.32%	4.94%	-1.62%
10	13	Takeda	GILD	7.3%	3.13%	1.97%	+1.16%
11	7	AstraZeneca	BMJ	-2.2%	2.78%	4.43%	-1.65%
12	9	Eli Lilly	LLY	1.5%	2.64%	2.88%	-0.24%
13	6	Gilead Sciences	AZN	12.7%	2.62%	1.01%	+1.61%
14	12	Amgen	AMGN	5.2%	2.60%	2.00%	+0.60%
15	15	Bayer	BAYN	3.7%	2.11%	1.86%	+0.25%
16	17	Novo Nordisk	NOVO	6.0%	2.09%	1.48%	+0.61%
17	25	Viatis (Mylan+Upjohn)	VTRS	12.9%	1.95%	0.74%	+1.21%
18	16	Boehringer Ingelheim	-	2.8%	1.81%	1.76%	+0.06%
19	14	Teva	TEVA	-0.1%	1.50%	1.93%	-0.43%
20	19	Astellas	NOVN	0.9%	1.22%	1.42%	-0.20%
Global Rx market				+2.4%	64.58%	64.11%	+0.47%

Source: Hardman & Co Life Sciences Research

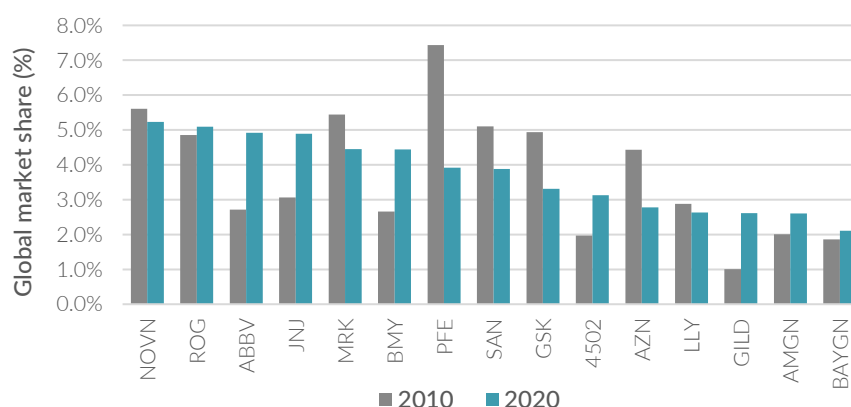
Risers in 2020 – increased market share

- **AbbVie (ABBV):** AbbVie can do little wrong at present. On the one hand, it has an enormous contribution from Humira (rheumatoid arthritis) despite the approval and introduction of five biosimilars. This is being supported by the successful recent launches of Imbruvica (lymphoma/leukaemia) and Skyrizi (plaque psoriasis). On the other hand, performance has been boosted by the acquisition of Allergan. Consequently, AbbVie moved from #7 to #3 in 2020, with a market share of 4.9% (3.7%).
- **Bristol-Myers Squibb (BMJ):** A solid underlying performance at BMJ was boosted by the full-year contribution from the acquisition of Celgene, which completed in November 2019. The ranking of BMJ increased from #10 in 2019 to #6 in 2020, with a market share of 4.4% (2.8%). In recent years, BMJ has seen the benefits of its early investment into antibody therapeutics.
- **Eli Lilly (LLY):** The improvement seen at LLY was solely due to organic growth, which saw it rise two places in the global ranking from #14 to #12, with 2.6% (2.5%) market share. However, a large percentage of its sales growth occurred following the FDA's decision to give EUA for bamlanivimab in November, which generated sales of \$871m in little over a month.

Fallers in 2020 – decreased market share

- **Pfizer (PFE):** The movement of PFE from the #3 ranked company in 2019 to #7 in 2020 was largely the result of its strategic decision to divest its legacy, mostly patent expired, drugs business and to merge it with the generics business of Mylan Labs, to form Viatris (ranked #17). This leaves PFE with a more focused branded portfolio. However, the outlook remains challenging as sales within this part of the portfolio were below market average in 2020. Offsetting this, PFE is expecting to make sales of ca.\$15bn on its COVID-19 vaccine.
- **Sanofi (SAN):** The product portfolio of SAN is starting to look a little old and tired, with only Dupixent (atopic dermatitis) making a significant contribution. Consequently, SAN fell from #6 to #8 in the global ranking, albeit one position was the result of being leap-frogged by BMJ, with 3.9% market share.

Global ranking and market share, 2010-20 – winners and losers



Source: Hardman & Co Life Sciences Research

Upcoming changes

AstraZeneca/Alexion

During 4Q'20, AstraZeneca (AZN, ranked #11) announced its proposed acquisition of Alexion Pharma (#26) for \$39bn (based on share prices at close of business on 11 December 2020). Completion is expected during 4Q'21. A successful outcome would propel AZN to #9 globally and #14 in the US.

...with further consolidation set to cause more changes in the ranking in 2021

Pharmaceutical industry – evolution of global ranking, 2005-20

2005			2010		2015		2020	
#	Company	Share	Company	Share	Company	Share	Company	Share
1	Pfizer	8.33%	Pfizer	7.44%	Novartis	5.52%	Novartis	5.23%
2	GlaxoSmithKline	6.55%	Novartis	5.60%	Pfizer	5.47%	Roche	5.09%
3	Sanofi	6.54%	Merck & Co	5.44%	Roche	4.65%	AbbVie	4.92%
4	Novartis	4.81%	Sanofi	5.10%	Merck & Co	4.43%	Johnson & Johnson	4.89%
5	AstraZeneca	4.49%	GlaxoSmithKline	4.94%	Sanofi	4.38%	Merck & Co	4.45%
6	Merck & Co	4.47%	Roche	4.85%	Gilead Sciences	4.09%	Bristol-Myers Squibb	4.44%
7	Johnson & Johnson	4.30%	AstraZeneca	4.43%	Johnson & Johnson	4.00%	Pfizer	3.92%
8	Roche	4.22%	Johnson & Johnson	3.06%	GlaxoSmithKline	3.46%	Sanofi	3.88%
9	Bristol-Myers Squibb	2.94%	Eli Lilly	2.88%	AstraZeneca	3.01%	GlaxoSmithKline	3.32%
10	Abbott Labs	2.88%	Abbott Labs	2.72%	AbbVie	2.90%	Takeda	3.13%
11	Eli Lilly	2.77%	Bristol-Myers Squibb	2.66%	Amgen	2.66%	AstraZeneca	2.78%
12	Wyeth	2.53%	Amgen	2.00%	Teva	2.28%	Eli Lilly	2.64%
13	Amgen	2.32%	Takeda	1.97%	Eli Lilly	2.13%	Gilead Sciences	2.62%
14	Takeda	2.02%	Teva	1.93%	Bayer	2.10%	Amgen	2.60%
15	Boehringer Ingelheim	1.74%	Bayer	1.86%	Novo Nordisk	2.04%	Bayer	2.11%
		60.9%		56.9%		53.1%		56.0%

Source: Hardman & Co Life Sciences Research

The US market in 2020

US pharmaceutical market grew 6.5% in 2020 and represented 40.4% of global market

Hardman & Co estimates that the US pharmaceutical market grew 6.5% in 2020 to \$376bn (\$353bn) and represented 40.4% of the global market. The US rate of growth was higher than the global rate of growth, driven by the continuity in the high number of new drugs approved by the FDA, positive demographics and technology advances. In addition, specifically for 2020, there were many cases where patients were unable to attend hospitals/clinics because of COVID-19 restrictions, some surgeries and non-drug therapies (e.g. radiotherapy) were postponed. In such circumstances, these patients were prescribed suitable drug alternatives, in our opinion. This boosted the sales performance of certain drugs. Our data are derived from monitoring companies with sales in the US of more than \$1.0bn, which represents an estimated 92% of the market.

In 2020, Rx drug sales for the top 15 ranked companies grew just under the average, at 6.2%, when the M&A/demerger activity was taken into account, and represented 73.5% of the US market, as shown in the following table. Taking a longer-term view and interrogating the data over a 10-year period, these companies have seen their market share increase by 4.3 percentage points (ppts) over this period, with the likes of Gilead, Celgene and Novo Nordisk entering the ranking. However, it should be borne in mind that the composition of the top 15 companies is different in the two years being interrogated.

US pharmaceutical industry – 2020 ranking vs. 2010

---- Rank ----		Company	Ticker	Rx sales 10-year CAGR	----- Market share -----		
2020	2010				2020	2010	Δ
1	13	AbbVie	ABBV	+14.8%	9.27%	3.35%	+5.92%
2	6	Bristol-Myers Squibb	BMJ	+7.7%	7.07%	4.83%	+2.24%
3	7	Johnson & Johnson	JNJ	+7.5%	6.84%	4.80%	+2.05%
4	3	Roche	ROG	+6.4%	6.70%	5.17%	+1.53%
5	2	Merck & Co	MRK	+1.0%	4.90%	6.42%	-1.52%
6	17	Gilead Sciences	GILD	+15.7%	4.82%	1.62%	+3.21%
7	11	Amgen	AMGN	+4.8%	4.78%	4.31%	+0.47%
8	1	Pfizer	PFE	-2.5%	4.78%	8.87%	-4.09%
9	5	Novartis	NOVN	+2.2%	4.38%	5.09%	-0.71%
10	15	Takeda	4502	+10.3%	3.91%	2.11%	+1.80%
11	8	GlaxoSmithKline	GSK	+1.9%	3.81%	4.53%	-0.72%
12	9	Eli Lilly	LLY	+2.1%	3.78%	4.45%	-0.66%
13	7	Sanofi	SAN	+2.1%	3.76%	4.39%	-0.63%
14	18	Novo Nordisk	NOVO	+7.7%	2.35%	1.61%	+0.74%
15	4	AstraZeneca	AZN	-4.3%	2.30%	5.14%	-2.84%
US Rx market				+3.7%	73.5%	69.2%	+4.3ppts

Source: Hardman & Co Life Sciences Research

Company highlights

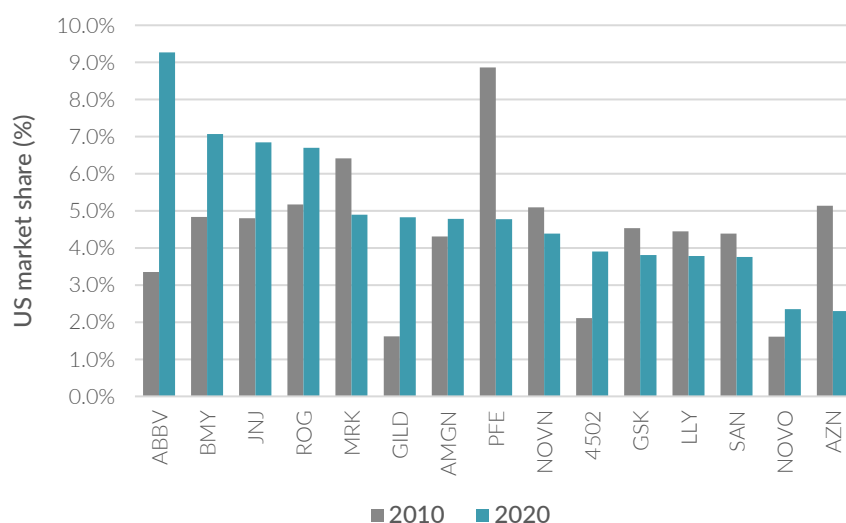
Risers

- **AbbVie (ABBV):** The company became the top-ranked drug company in the US in 2020, with a 9.3% market share. This was on the back of continued sales growth from its mAb therapies, boosted by the acquisition of Allergan. The company's CAGR in the past 10 years has been four times that of the market.
- **Bristol-Myers Squibb (BMJ):** Underlying sales growth from its own products was boosted by the acquired Celgene sales. This resulted in BMJ rising from #9 to #2 in the US ranking, with 7.1% market share.
- **Horizon (HZNP):** Further down the ranking, the rapid uptake of Tepezza (thyroid eye disease) resulted in HZNP rising from #36 to #28.

Fallers

- ▶ **Roche (ROG):** Generic competition for some of its stalwart oncology drugs, Rituxan, Herceptin and Avastin, could not be offset by growth of its other drugs, resulting in a 6% fall in sales. The impact of this was to knock Roche off its #1 position, falling to #4 with 6.7% market share.
- ▶ **Pfizer (PFE):** For the same reasons highlighted in the global commentary, the PFE's divestment of Upjohn and merging it with Mylan to form Viatrix (#19) saw it fall from #4 to #8 in the US ranking, with 4.8% market share. 2021 will be boosted by sales of COVID-19 vaccine.

US ranking and market share, 2010-20 – winners and losers



Source: Hardman & Co Life Sciences Research

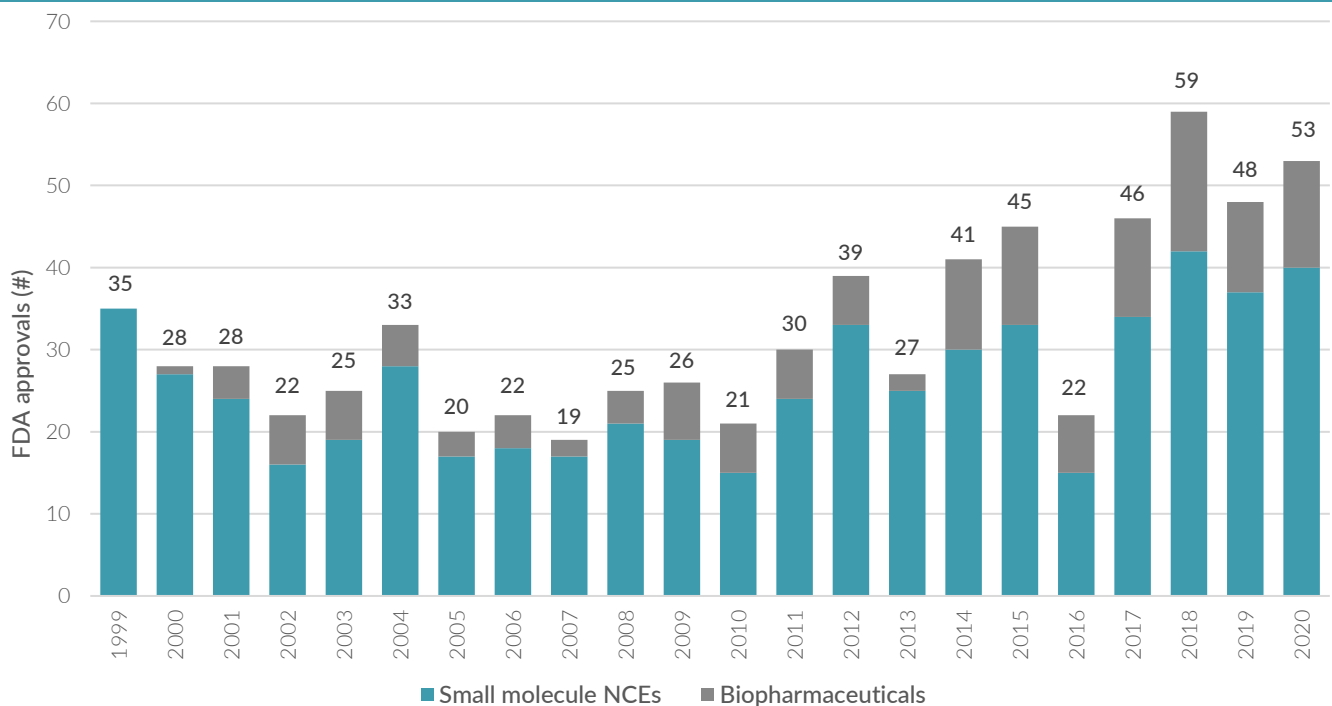
FDA approvals in 2020

A new record year for FDA activity

Despite the restrictions caused by the pandemic, 2020 proved to be another good year for FDA activity, with the approval of 53 NCEs. This is the second-highest total in the post-user fee era, easily surpassing the 48 approvals during 2019 and trailing only the 59 approvals in 2018. This achievement was even more remarkable when the six-month shutdown of the FDA inspection process is taken into consideration. In addition, a number of NDAs were issued with complete response letters (CRL), specifically because facility inspections could not be completed. Also, the FDA was unable to take action on a number of applications because it was unable to make inspections. This implies that there are a number of pent-up approvals in the system at the present time, which augurs well for 2021. The 20-year track record for new drug approvals by the FDA can be seen in the following chart.

- ▶ The approval of 53 NCEs represented an increase of 10% in 2020, continuing the generally positive trend since the low point in 2016.
- ▶ 40 (75%) were traditional small molecule NCEs and 13 (25%) were novel biopharmaceuticals/biologicals.
- ▶ In contrast, there were 755 approvals of generic drugs, down 10% from the record 832 approved in 2019. As a reminder, "user fees" for generic drugs (GDUFA) were introduced in 2013, and revised in 2017.
- ▶ Interestingly, there have been 410 NCEs approved by the FDA in the past 10 years. This averages out at just 1.14 new drug approvals per company p.a.

FDA new drug approvals, 1999-2020



Source: FDA, Washington Analysis Group, Hardman & Co Life Sciences Research

- ▶ Notable approvals in 2020 included Veklury (remdesivir, Gilead Sciences (GILD)) for the treatment of COVID-19 requiring hospitalisation, which sold \$2.8bn in 2020. Tepezza (teprotumumab, Horizon) was approved in January 2020 and achieved sales of \$820m.
- ▶ Bamlanivimab is not included in the data, because it has received only EUA from the FDA at the current time.
- ▶ According to Washington Analysis Group (WAG), at the end of 2020, there were 44 (38 on 31 December 2019) NCEs pending approval. In addition, WAG has highlighted that there were 16 NCEs for which CRLs have been issued but are likely to be resubmitted in 2021. This situation has been exacerbated by the public shutdown caused by COVID-19.
- ▶ Over the past 10 years, the FDA has approved 410 NCEs. The cumulative industry R&D spend over the period 2008-18 (two-year offset while with regulators) has been \$1,097.4bn, giving an average cost of each approval of \$2,677m.

Top-selling drugs in 2020

- ▶ The biggest-selling drug in 2020 was, once again, Humira (AbbVie), with sales approaching \$20bn (+3.5%).
- ▶ The top 10 drugs in 2020 accounted for 10.1% of the world market – a modest increase compared with 2019.
- ▶ Biopharmaceuticals represented 26% of the world market in 2020, with sales of \$245bn, and growth of 5.6%.
- ▶ Within biopharmaceuticals, drugs derived from monoclonal antibodies (mAb) were the growth drivers, with 2020 sales of \$155bn, up 12%.
- ▶ The biggest-ever drug in history is now Humira, which has achieved cumulative ex-factory sales of \$172.1bn. In 2020, Humira overtook long-term #1, Lipitor, which has now achieved cumulative sales of \$161.9bn since launch.

Top 10 best sellers

Humira remains well in front...

...but Keytruda is putting up a good fight
and leading the chasing pack

In 2020, the top 10 best-selling drugs recorded ex-factory sales of \$94.0bn and represented 10.1% of the global pharmaceutical market. Humira (adalimumab, AbbVie), with reported sales of \$19.8bn and growth of 8.2% remains the #1 drug worldwide. Since it was launched 16 years ago, this drug has generated cumulative sales of \$172.1bn. Humira was the first “humanised” mAb to be approved by the FDA, and is indicated for the treatment of autoimmune diseases such as rheumatoid arthritis, Crohn’s disease and psoriasis. Although Humira has been way out in front for a number of years, strong sales growth of Keytruda (pembrolizumab, MRK) for advanced melanoma, has seen the gap closing in each of the past three years.

Global top 10 best-selling drugs in 2020

Rank	Drug	Primary indication	Marketer	Sales (\$m)	Growth
1	Humira	Arthritis	ABBV	19,832	3.5%
2	Keytruda	Advanced melanoma	MRK	14,380	29.7%
3	Revlimid	Multiple myeloma	BMJ	12,106	11.7%
4	Eliquis	Stroke/blood clots	BMJ	9,168	23.2%
5	Stelara	Psoriatic arthritis	JNJ	7,707	21.2%
6	Biktarvy	HIV	GILD	7,259	53.2%
7	Opdivo	NSCLC	BMJ	6,992	7.0%
8	Prevnam	Pneumococcal vaccine	PFE	5,850	0.1%
9	Ibrance	Metastatic breast cancer	PFE	5,392	8.7%
10	Avastin	Cancer	ROG	5,316	-25.3%
Total top 10				94,002	10.3%

Source: Hardman & Co Life Sciences Research

More details on our drug analysis will be available in our pending independent publication on the pharmaceutical industry.

Independent publication

This report represents a summary of our extensive pharmaceutical database. We are expecting to expand on some of the themes highlighted in this report and to add information about the weighted average industry cost bases, together with more in-depth assessment of specific therapy areas in an independent publication during the next month. This report will be available via the Hardman & Co website when it is published.

Current constituents of dataset

Companies currently analysed		
AbbVie	Gilead Sciences	Pfizer
Alexion Pharma	GlaxoSmithKline	Roche
Amgen	Hikma	Sanofi
Astellas	Horizon Ther.	Seagen
AstraZeneca	Jazz Pharma	Shionogi
Bausch Health (Valeant)	Johnson & Johnson	Sumitomo DaiNippon
Bayer	Lundbeck	Takeda
Biogen	Merck & Co	Teva
Boehringer Ingelheim	Merck KGaA	UCB
Bristol-Myers Squibb	Novartis	United Therapeutics
Daiichi-Sankyo	Novo Nordisk	Vertex
Eisai	Otsuka Holdings	Viatrix (Mylan + Upjohn)
Eli Lilly		

Source: Hardman & Co Life Sciences Research

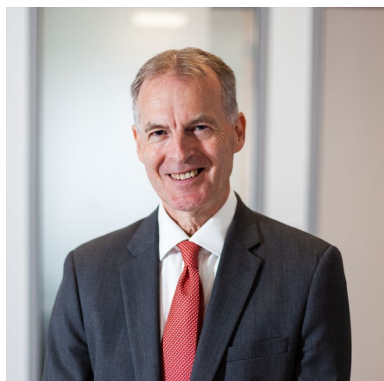
Companies analysed historically in dataset

Companies included in historical data		
Abbott Labs	Fisons	Schering
Actavis/Watson	Forest Labs	Schering-Plough
Actelion	Fujisawa	Schwarz Pharma
Akzo Nobel	Genentech	Serono
Allergan	Genzyme	Shire Pharma
Astra	Green Cross	SmithKline Beecham
Aventis	Hafslund Nycomed	Solvay
Banyu	Ivax	Sumitomo
Barr Labs.	Kyowa Hakko	Syntex
BASF-Boots	Marion Merrell Dow	Synthelabo
Baxalta (Baxter)	Meiji Seika	Taisho
Boehringer Mannheim	Mitsubishi Tanabe	Teijin
Boots	Monsanto	Upjohn
Celgene	Nycomed Altana (Takeda)	Warner-Lambert
Celltech	Ono	Wellcome
Chugai	Pharmacia Corp	Wyeth
Ciba	Rhone-Poulenc	Yamanouchi
Cyanamid	Roussel Uclaf	Yoshitomi
Daiichi	Sandoz	Zeneca

Source: Hardman & Co Life Sciences Research

About the author

Dr Martin Hall

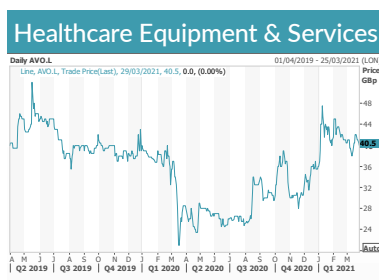


Martin started in the City as a pharmaceuticals and healthcare analyst in 1987, working at Morgan Grenfell and then UBS. He joined HSBC in 1992, where he became Head of Global Pharmaceutical/Healthcare Equity Research. In 2005, he set up as an independent Life Sciences Analyst and Corporate Broker under the umbrella of Eden Financial Limited. Martin is acknowledged for his thought-provoking and opinionated research. He has one of the most extensive global industry databases of pharmaceutical, healthcare and life science facts and figures, which are adapted for use in research reports. He joined Hardman & Co in June 2013.

Martin qualified as a pharmacist (B.Pharm.Hons) at the School of Pharmacy, University of London, and has a PhD in Neuropharmacology, also from the University of London. After two years of post-doctoral research under a Royal Society Fellowship at the Collège de France, Paris, he became leader in Biochemical Pharmacology at the Parke-Davis Research Centre in Cambridge (then part of Warner Lambert Corporation, now Pfizer). Martin is a member of the Royal Pharmaceutical Society of Great Britain.

Company research

- ▶ Priced at 25 March 2021 (unless otherwise stated)
- ▶ The following companies are clients of Hardman & Co.



Market data

EPIC/TKR	AVO
Price (p)	40.0
12m High (p)	47.5
12m Low (p)	21.0
Shares (m)	349.4
Mkt Cap (£m)	139.4
EV (£m)	191.6
Free Float*	55%
Market	AIM

*As defined by AIM Rule 26

Description

Advanced Oncotherapy (AVO) is developing next-generation proton therapy (PT) systems for use in cancer radiotherapy (RT). Standard radiation procedures have evolved over many years. PT delivers radiation via a beam of proton particles, rather than via a beam of photons used in conventional radiotherapy (X-rays).

Company information

Exec. Chairman	Michael Sinclair
CEO	Nicolas Serandour

+44 203 617 8728

www.avopl.com

Key shareholders

Liquid Harmony (Board)	13.0%
Other Board	7.7%
Nerano/Barrymore	8.8%
Celeste	8.2%
P. Glatz	4.5%
Lombard Odier	4.0%

Diary

2Q'21	2020 final results
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Analyst

Martin Hall	020 3692 7075
	mh@hardmanandco.com

ADVANCED ONCOTHERAPY

Good start to an exciting year

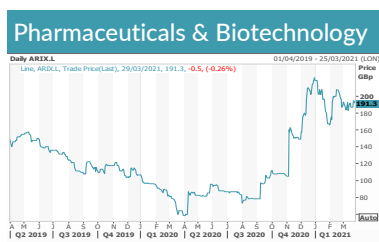
AVO's goal is to deliver an affordable and novel PT system, called LIGHT, based on state-of-the-art technology developed originally at the world-renowned CERN. Over the past two years, important technical milestones have significantly de-risked the project. Now, AVO is working on the verification and validation phase, prior to LIGHT being used on the first patients to support CE marking. In its recent technical update, the company highlighted progress made over the past three months towards a fully operational LIGHT system. This, coupled with an innovative business model, is attracting potential commercial partners.

- **Strategy:** AVO is developing a compact and modular PT system, which is affordable for the payor, financially attractive to the operator, and generating superior patient outcomes. AVO benefits from technology know-how developed by ADAM (CERN spin-off), and relies on a world-class supplier base.
- **Superiority of LIGHT:** Building on research conducted at the Mayo Clinic, which showed that resistant cancers are better killed by a combination of PT and damage repair inhibitors, AVO has demonstrated that optimised treatment plans delivered by LIGHT's precise proton beam can pave the way to more effective treatment of resistant cancers.
- **Exercise of warrants:** Since the beginning of the year, there have been three relatively small exercises of warrants, totalling 1.16m, at 25p. However, these represent an important additional source of new capital and have generated cash of £0.29m. Further warrants could be exercised during the year.
- **COVID-19:** Competitors IBA and Varian both reported an impact on equipment sales but big increases in the level of service activity during 2020. Also, their timelines for new projects have been rescheduled by 6-12 months. Consequently, the disruption seen by AVO was modest within the whole PT industry context.
- **Investment summary:** Every sign is pointing to the first LIGHT system coming to fruition in 2021. However, this should be the first of a pipeline of installations to satisfy the pent-up demand and bring down the cost of PT. The shares are starting to respond to the reducing risk and increasing prospect of a successful outcome but remain well below the NPV of the cashflows from all sources of income from AVO's business model (206p, 172p fully diluted).

Financial summary and valuation

Year-end Dec (£m)	2019	2020E	2021E	2022E	2023E	2024E
Sales	0.0	0.0	78.1	118.3	166.9	219.5
Gross profit	0.0	0.0	13.6	29.7	54.0	86.2
Administration costs	-19.0	-19.3	-19.9	-21.4	-22.4	-23.4
EBITDA	-18.6	-18.8	-11.3	1.3	20.4	46.9
Underlying EBIT	-20.7	-21.1	-15.2	-2.7	16.4	42.9
Statutory EBIT	-20.7	-21.6	-15.9	-1.0	20.4	49.4
Underlying PTP	-21.8	-22.7	-17.5	-5.5	13.5	40.0
Statutory PTP	-21.9	-23.2	-18.2	-3.9	17.5	46.5
Underlying EPS (p)	-9.8	-7.1	-4.4	-1.0	3.7	10.0
Net cash/(debt)	-43.3	-55.3	-61.8	-49.2	-47.2	-25.7
Equity issues	25.4	18.4	20.0	25.0	0.0	0.0
EV/EBITDA (x)	-9.8	-10.4	-17.8	149.0	9.2	3.5

Source: Hardman & Co Life Sciences Research



Source: Refinitiv

Market data

	ARIX
EPIC/TKR	192
Price (p)	222
12m High (p)	59
12m Low (p)	135.5
Shares (m)	260.1
Mkt Cap (£m)	228
NAV/share (p)	-16%
Premium/(discount) to NAV	71%
Free Float	UK
Country of listing	Main
Market	

Description

Arix Bioscience (ARIX) is a publicly listed biotechnology venture capital company. It provides an opportunity for all investors to participate in a balanced portfolio of diverse biotech innovation via a single stock. Since launch in 2016, the portfolio has seen one trade sale and five NASDAQ listings. ARIX offers a dynamic and modern approach to life sciences venture capital investing.

Company information

Exec. Chairman	Naseem Amin
MD	Christian Schetter
COO	Robert Lyne
Finance Director	Marcus Karia

+44 20 7290 1050

www.arixbioscience.com

Key shareholders

Directors	0.1%
Acacia Research	19.1%
Fosun	8.2%
Ruffer	6.1%
Takeda Ventures	5.5%

Diary

Apr'21	Listed company 1Q results
23 Apr	Strategic review
Jun'21	AGM

Analyst

Martin Hall	020 3692 7075
	mh@hardmanandco.com

ARIX BIOSCIENCE

More active portfolio management

ARIX is a listed global VC company that presents an opportunity for institutional and retail investors to participate in the high risk-return profile of early-stage biotech investing. ARIX minimises risk through a combination of an expert investment team and portfolio diversification. During 2020, the management team set itself some ambitious targets for the next three years, which would see the NAV double to ca.£500m. 2020 saw a 62% increase in NAV, boosted by the trade sale of VelosBio to Merck & Co. 2021 has started well with Aura completing an \$80m funding round, more active portfolio management and details of a share buyback programme.

- **Strategy:** ARIX sources opportunities from an established network and a strong scientific reputation. The portfolio is diversified by therapeutic area, treatment modality, stage of discovery/development and geography to balance the risk-reward profile. Value is realised when ARIX successfully exits its investments.
- **Aura:** Portfolio company, Aura (5.8% of 2020 gross portfolio), has announced the closing of an oversubscribed \$80m funding round led by Surveyor and Matrix (same as Velos crossover). ARIX invested \$1.8m/£1.3m in the round and revalued its holding (now 5.6%) in the company to \$16.2m/£11.6m.
- **Share buyback:** ARIX has shareholder authority to buy back up to 10% of its shares, a maximum of 13,555,185. On 22 March 2021, ARIX formally started this £25m programme, which will run until 22 December 2021. The aim is to optimise the use of the capital and to take advantage of the discount to NAV that the shares have historically been trading on.
- **Strategic review:** In 2020, ARIX implemented a number of changes to reduce operating costs. Moreover, it committed to a programme of stronger corporate governance and an expansion in its investment team both in the UK and US to take advantage of the strong pipeline of new opportunities. To this end, it has announced a strategic review of the board, resourcing and remuneration, with the aim of completing it by 23 April for inclusion in the 2021 AGM notice.
- **Investment summary:** 2020 was transformational, with significant activity in its portfolio companies and a refocused management team that has made great strides in the development of a track record through more active management of the portfolio. This has continued into 2021 with a number of realisations since the period-end. Proceeds from VelosBio have left the company in a strong position to support the current portfolio and to invest in new opportunities.

Financial summary and valuation

Year-end Dec (£m)	2017	2018	2019	2020	2021E	2022E
Change in FV of investments	5.5	51.2	-58.6	147.2	*-14.0	-
Forex impact on investments	-	-	-3.8	-11.9	*-1.0	-
Administrative expenses	-11.0	-11.7	-9.7	-7.8	-5.8	-6.0
Operating profit/(loss)	-7.2	37.5	-74.4	128.0	-20.6	-5.8
Profit/(loss) before tax	-7.7	38.2	-75.6	126.3	-18.8	-4.0
Underlying EPS (p)	-9.5	27.2	-53.6	96.8	-14.4	-3.1
Net cash/(debt)	74.9	91.2	53.7	174.1	179.6	175.4
Equity issues	105.1	83.5	0.0	0.0	0.0	0.0
NAV/share (p)	152.3	200.4	149.2	242.0	229.4	-

*Based on share prices and forex at close of business on 25 March 2021

Source: Hardman & Co Life Sciences Research

Daily BSE SENSEX

Line: BSE SENSEX Trade Price(Last), 26/03/2021, 169.4, +1.4, (+0.83%)

27/03/2019 - 25/03/2021 12.0M

Price
BSE SENSEX

175
170
165
160
155
150
145
140
135
130
125
120

Mar 19 Jun 19 Sep 19 Dec 19 Mar 20 Jun 20 Sep 20 Dec 20 Mar 21

Market data

EPIC/TKR	BBGI
Price (p)	168
12m High (p)	179
12m Low (p)	139
Shares (m)	665
Mkt Cap (£m)	1,117
EV (£m)	1,097
Country of listing	UK
Market	FTSE-250 member of LSE

BBGI Global Infrastructure (BBGI) has a 50-strong investment portfolio, mainly in the transport, health, justice and education sectors. The UK and Canada are its key markets.

Joint CEO	Duncan Ball
Joint CEO	Frank Schramm
Chairman	Sarah Whitney
CFO	Michael Denny

Key shareholders

M&G plc	9.42%
Schroders	8.96%
Newton Investment Management	8.46%
Investec Wealth & Investment	5.01%
Smith & Williamson	5.00%
Quilter PLC	5.00%

30 Apr	AGM
30 Jun	Half-year-end
31 Dec	Full-year-end

Nigel Hawkins 020 3693 7075
nh@hardmanandco.com

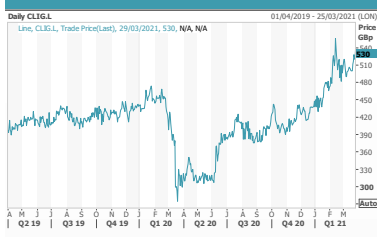
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BBGI is a diversified social infrastructure investment company, registered in Luxembourg, and a FTSE-250 constituent. Its portfolio consists of long-term essential infrastructure investments, which have delivered stable cashflows and progressive dividend growth. It focuses on enhancing the value of its investments, which are globally diversified within highly rated, investment-grade countries. Most of its investments are via Public, Private Partnerships (PPPs) or derivatives thereof. Virtually all its investments are availability-based, and supported by government-backed revenues.

- ▶ **Background:** Central to BBGI's business are its 50 essential, social infrastructure investments ranging from bridges in North America to a hospital facility in Australia. Crucially, BBGI's equity investment portfolio comprises low-risk and public sector-financed, availability-based infrastructure investments.
- ▶ **Operations:** BBGI's main operating jurisdictions are in North America, specifically Canada, and in the UK. Revenues from virtually all of BBGI's investments are based on their availability, and not on the level of demand for them.
- ▶ **Performance:** BBGI has built up a very successful track record since its IPO in 2011, with total shareholder returns averaging 11% p.a. It has consistently traded at a premium to its NAV. In its recent full-year results for 2020, the company confirmed a 7.18p per share dividend.

Given the regulatory restrictions on distributed research on this company, the monthly book entry for BBGI can be accessed on our website [Hardman and Co Research](#). Our *initiation report* on BBGI was published on 14 December 2020.

Financials



Pharmaceuticals & Biotechnology



Source: Refinitiv

Market data

EPIC/TKR	DNL
Price (p)	88.5
12m High (p)	97.0
12m Low (p)	21.0
Shares (m)	138.3
Mkt Cap (£m)	122.4
EV (£m)	102.1
Free Float*	66%
Country of listing	UK
Market	AIM

*As defined by AIM Rule 26

Description

Diurnal Group (Diurnal) is a European, UK-headquartered, specialty pharma company targeting patient needs in chronic, potentially life-threatening, endocrine (hormonal) diseases. Alkindi has been approved by both EU and US regulators. Chronocort completed the largest and only Phase III trial in CAH, and is awaiting final marketing approval from EU before launch.

Company information

CEO	Martin Whitaker
CFO	Richard Bungay
Chairman (interim)	Sam Williams
	+44 29 2068 2069
	www.diurnal.co.uk

Key shareholders

Directors	2.4%
IP Group	31.9%
Finance Wales	8.3%
Polar Capital	7.2%
Amati VCT	6.9%
Chelverton AM	5.8%

Diary

2Q'21	Efmody EU approval
2Q'21	Submission of DITEST IND
3Q'21	Start DITEST NDA programme

Analyst

Martin Hall	020 3693 7075
	mh@hardmanandco.com

DIURNAL GROUP

EMA recommends approval of Efmody®

Diurnal is a commercial-stage specialty pharmaceutical company focused on diseases of the endocrine system. Its drugs target conditions where medical need is currently unmet, with the long-term aim of building an "Adrenal Franchise". Alkindi® is being rolled out by Diurnal throughout Europe and has been launched in the US by its commercial partner, Eton Pharmaceuticals (ETON). The European regulator has recommended Chronocort, to be marketed as Efmody, for approval with full marketing authorisation expected from the EU during 2Q'21. Efmody will use the same infrastructure as Alkindi but addresses markets ca.10x greater.

- **Strategy:** Diurnal's near-term goal is to create a valuable "Adrenal Franchise" that can treat patients with chronic cortisol deficiency diseases from birth and for the rest of their lives. The long-term vision, once Alkindi and Chronocort are established, is to expand the product offering to other endocrine conditions.
- **Efmody:** Chronocort, to be marketed as Efmody, was recommended for approval by the EMA for the treatment of congenital adrenal hyperplasia (CAH) in patients aged 12 years and over. The European Commission is expected to grant market approval in June 2021, allowing first sales in fiscal 2022.
- **Market opportunity:** Apart from being Diurnal's second drug, Efmody addresses much larger patient populations than Alkindi, providing a market opportunity potentially as high as \$2.1bn in Europe alone. However, the initial approval will be for CAH, which will be extended to include adrenal insufficiency over time.
- **Launch:** Along with its interim results, Diurnal indicated that it had already commenced some market access activities in its target European territories, with the first commercial launch anticipated in 3Q'21. The company intends to mirror its Alkindi strategy by commercialising Efmody itself in core EU markets.
- **Investment summary:** There are generally two key value inflection points for drug companies, significant clinical trial outcomes and the generation of sales. Paediatric use of Alkindi is likely to be followed by transfer onto Efmody as the infant moves into adulthood, creating a life-long franchise. This augurs well for Diurnal in both the short term and the long term. Until formally approved by the EC, we will leave our risk-adjusted NPV at 214p.

Financial summary and valuation

Year-end Jun (£m)	2018	2019	2020	2021E	2022E	2023E
Sales	0.07	1.04	2.39	3.92	12.37	24.09
SG&A	-6.21	-5.83	-6.20	-7.70	-9.61	-12.17
R&D	-10.02	-8.69	-4.63	-6.50	-8.50	-2.50
EBITDA	-16.97	-14.51	-6.01	-10.33	-9.62	2.93
Underlying EBIT	-16.98	-14.53	-6.02	-10.34	-9.63	2.92
Statutory EBIT	-16.98	-14.53	-5.39	-8.93	-9.63	2.92
Underlying PBT	-17.11	-14.40	-5.91	-10.22	-9.56	2.94
Statutory PBT	-16.91	-14.40	-5.28	-8.82	-9.56	2.94
Underlying EPS (p)	-27.16	-14.54	-4.93	-6.41	-5.31	2.60
Statutory EPS (p)	-26.78	-19.70	-4.28	-5.36	-5.31	2.17
Net (debt)/cash	17.28	9.15	15.43	14.87	5.59	5.39
Equity issues	13.40	5.53	11.20	9.79	0.00	0.00

Source: Hardman & Co Life Sciences Research

Support Services



Source: Refinitiv

Market data

	FLTAL
EPIC/TKR	
Price (p)	115
12m High (p)	160
12m Low (p)	42
Shares (m)	29
Mkt Cap (£m)	33
EV (£m)	31
Free Float*	33%
Country of listing	UK
Market	AIM

*As defined by AIM Rule 26

Description

Filta Group (Filta) provides cooking oil filtration, fryer and drain management services in North America, the UK and Europe to commercial kitchens.

Company information

CEO	Jason Sayers
CFO	Brian Hogan
Chairman	Tim Worledge
	+44 1788 550100
	www.filtapl.com

Key shareholders

Directors	66.4%
Gresham House	16.5%
Cannacord Genuity	3.7%

Diary

Sep'21	Interim results
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Analyst

Jason Streets	020 3693 7075
	js@hardmanandco.com

FILTA GROUP

Upbeat outlook

Filta Group (Filta) announced that it had remained EBITDA-positive in 2020, despite most of its customers closing for part of the period and revenue falling by a third. Net debt fell to £0.5m. The US reopening is accelerating, while the UK is due to follow in April. Filta has used the period to reduce costs and improve its business model. We expect it to emerge as an even better business as COVID-19 is tamed. Our forecasts are reinstated: we see 2021 EBITDA similar to 2018, and we estimate a record £4.5m for 2022.

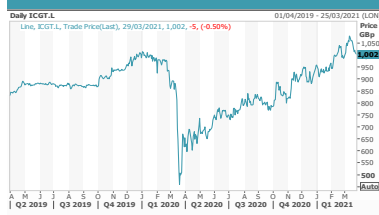
- **Trading update:** Revenue was down by a third, and adjusted EBITDA came in at around £1m. The company ended the year with net debt of just £0.5m, showing the effectiveness of its cash management in a very tricky period. Overheads were reduced by £1.4m, and efficiency gains were made throughout the business.
- **2021 outlook:** The US has been better than the UK, which has been better than Europe (only 3% of business). We are forecasting a 22% pickup in revenue for 2021, followed by 30% in 2022. We estimate a 44% gross margin in both years, and expect the overhead proportion to drop sharply as sales pick up. There were six franchise sales in the US in 2020, and there remains strong interest.
- **Valuation:** Our DCF-derived valuation delivers a central value of £45m, or 156p per share, and equates to a 10x 2022E EBITDA multiple.
- **Risks:** The clear risk for Filta is that COVID-19 returns aggressively and its customers are unable to stay open or reopen. In the UK-owned operations, the business is heavily weighted towards 20 large operations that are well positioned to survive. Its balance sheet is relatively strong, with cash balances and low net debt.
- **Investment summary:** Filta is an attractive business, in our view, combining the capital-light franchise model in North America and Europe with company-owned operations in the UK. As businesses continue to reopen, the focus on cleanliness, efficiency and environmental friendliness is unlikely to be abated. This is a business that has not sat idly by while its customers were shut; it has improved efficiency across the operations that will drive profitability this year and next.

Financial summary and valuation

Year-end Dec (£000)	2017	2018	2019E	2020E	2021E	2022E
Revenue	11,547	14,213	24,923	16,400	20,000	26,000
EBITDA	2,116	2,642	3,163	958	2,553	4,430
Underlying EBIT	2,059	1,941	1,504	(592)	1,070	2,970
Reported EBIT	1,699	1,782	1,208	(642)	1,070	2,970
Underlying PTP	1,968	1,900	1,233	(872)	820	2,770
Statutory PTP	1,608	1,742	936	(922)	820	2,770
Underlying EPS (p)	5.05	5.39	2.40	-3.34	2.21	7.46
Statutory EPS (p)	3.85	4.88	1.39	-3.51	2.21	7.46
Net (debt)/cash	2,992	2,040	(2,094)	(500)	231	2,231
Shares issued (m)	27	29	29	29	29	29
P/E (x)	22.8	21.3	47.9	-34.4	52.1	15.4
EV/EBITDA (x)	13.4	11.8	11.2	35.4	13.0	7.1

Source: Hardman & Co Research

Closed-Ended Investment Funds



Source: Refinitiv

Market data

EPIC/TKR	ICGT
Price (p)	1,005
12m High (p)	1,100
12m Low (p)	576
Shares (m)	68.88
Mkt Cap (£m)	691
NAV p/sh (p) Oct adj.	1,273
disc. to NAV	21%
Market Premium equity closed-ended inv. funds (UK)	

Description

ICGT Enterprise Trust (ICGT) is a listed private equity (PE) investor providing shareholders with access to a portfolio of European and US investments in profitable, cash-generative unquoted companies. It invests in companies managed by ICG and other leading PE managers, directly and through funds. It strikes a balance between concentration and diversification, risk and reward.

Company information

Chair	Jane Tufnell
Audit Cte. Chr.	Alastair Bruce
NED	Lucinda Riches
	Sandra Pajarola
	Gerhard Fusenig
	David Warnock
Inv. Mgr.	Oliver Gardey,
	Colm Walsh
Contact	James Caddy
	+44 20 3545 2000
	www.icg-enterprise.co.uk

Key shareholders

Mattioli Woods	3.0%
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Diary

End-Apr'21	FY results to Jan'21
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Analyst

Mark Thomas	020 3693 7075
	mt@hardmanandco.com

ICG ENTERPRISE TRUST PLC

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ICGT provides shareholders with access to the long-term returns generated by investing in private companies, with the benefit of the daily liquidity of an LSE quote. ICG Enterprise listed on the London Stock Exchange in 1981.

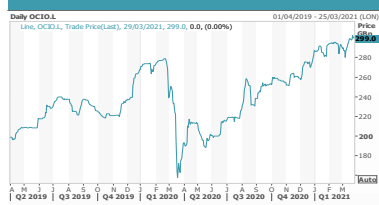
ICGT targets businesses that benefit from long-term structural trends, rather than relying on cyclical economic growth. It is able to do this, in particular in its high-conviction investments, by selecting co-investments and secondaries that exhibit defensive growth characteristics. ICGT also backs PE managers that share its investment philosophy, to ensure that its stated "defensive growth" strategy is also prevalent in its fund portfolio.

ICGT is externally managed by Intermediate Capital Group (ICG), a leading global alternative asset manager, with €47bn of assets under management (AUM) across 22 strategies. ICG focuses on providing capital to help companies grow. It develops long-term relationships with its business partners to deliver value for shareholders, clients and employees. It invests across the capital structure, with an objective of generating income and consistently high returns, while protecting against investment downside. ICG has more than 400 employees, based in offices in 14 countries around the world.

Given the regulatory restrictions on distributing research on this company, the monthly book entry for ICGT can be accessed through our website, [Hardman and Co Research](#). Our initiation report, [Outperformance through every stage of cycle](#), published on 6 July 2020, our 8 September report, [Defensive growth: explaining downside resilience](#), and our 22 February 2021 note, [ICG's steps to value-adding portfolio construction](#), can be found on the same site. You can also access a [webinar](#) hosted by Hardman & Co after the 7 October 2020 results.

ICGT gave a [3Q update](#) on 4 February 2021, reporting its NAV as 1,243p and a [portfolio update](#) on 8 February, which added a further 29.5p. On [1 March 2021](#), ICGT advised of a new €200m revolving credit facility (replacing the previous €176m line).

Closed-Ended Investment Funds



Source: Refinitiv

Market data

EPIC/TKR	OCI
Price (p)	301
12m High (p)	305
12m Low (p)	173
Shares (m)	180.6
Mkt Cap (£m)	544
NAV p/sh (p)	403
Disc. to NAV	25%
Market (UK)	Main Market SFS

Description

Oakley Capital Investments (OCI) has generated market-beating returns from its concentrated, three-sector-focused portfolio of private equity (PE) investments via Oakley Capital (Oakley) PE funds. Oakley has a proven model for sourcing investments, and an excellent track record of identifying resilient value opportunities and delivering superior returns.

Company information

Chairman	Caroline Foulger
Ind. NED	R Lightowler, F Beck
NED	P Dubens, S Porter
Inv. Mgrs.	Oakley Capital
Contact	Steven Tredget
	investorrelations@oakleycapital.com

Key shareholders

Asset Value Investors	14%
Peter Dubens	10%
Sarasin & City of London	7%
IM	
Barwon	6%
Lombard Odier & Fidelity	5%
Jon Wood & family	4%
Hawksmoor	3%

Diary

18 May	Capital Markets day
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Analyst

Mark Thomas	020 3693 7075
	mt@hardmanandco.com

OAKLEY CAPITAL INVESTMENTS LTD

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OCI is invested in the Oakley Capital Funds, which are Europe-focused PE funds that aim to build portfolios of high-growth, medium-sized companies, primarily in the Technology, Consumer and Education sectors. In the past, OCI has also selectively taken direct equity stakes in Oakley Capital (the investment adviser) portfolio companies and, on occasion, invested in the debt of portfolio companies.

OCI is a listed, liquid vehicle that aims to provide capital growth and dividends to its investors, supported by the proceeds it receives from realisations of assets by the Oakley Funds and interest payments received from debt investments.

OCI's NAV has grown steadily in the past five years, with a CAGR NAV total return per share of 16% (as at 31 December 2020). Performance has been driven by the performance of the Oakley Funds. Funds II and III, which reflect the current investment approach have returned an average gross IRR of 37% and 51%, and net IRR of 29% and 45%, respectively (as at 31 December 2020).

Founded in 2002, Oakley Capital is a Europe-focused PE firm. It states "Oakley's entrepreneurial heritage allows it to partner with strong management teams and become their preferred partner", and it "seeks out complex deals outside intermediated auctions" and "targets companies with sustainable structural growth dynamics and opportunity for M&A".

Given the regulatory restrictions on distributing research on this company, the monthly book entry for OCI can be accessed through our website, [Hardman and Co Research](#). Our initiation report, *When it rains gold, put out the bucket*, published on 1 September 2020, our 3 December 2020 note, *NAV: conservative, robust and with growth upside*, and our note *2020 results: sustained and sustainable NAV growth* published on 22 March 2021 can be found on the same site.

OCI issued detailed results for the year ending December 2020 on 11 March 2021.

Real Estate



Source: Refinitiv

Market data

EPIC/TKR	PCA
Price (p)*	225
12m High (p)	345
12m Low (p)	172
Shares (m)	45.9
Mkt Cap (£m)	103.2
EV (£m)	212.0
Country of listing	UK
Market	Main, LSE

*Priced on 23 March 2021

Description

Palace Capital (PCA) is a real estate investor, diversified by sector (office, industrial) and location, excluding London and with minimal exposure to retail. There is an emphasis on city-centre locations. Development assets comprise 18.7% of assets.

Company information

Chairman	Stanley Davis
CEO	Neil Sinclair
CFO	Stephen Silvester
Exec. Dir.	Richard Starr

+44 20 3301 8330

www.palacecapitalplc.com

Key shareholders

AXA	7.7%
Mitton	7.4%
J.O. Hambro	7.3%
Stanley Davis (Chairman)	3.6%

Diary

Mid-Apr'21	Trading update
Jun'21	Final results
Jul'21	AGM

Analyst

Mike Foster 020 3693 7075
mf@hardmanandco.com

PALACE CAPITAL

Trading update due shortly

PCA has been progressing the residential development at Hudson Quarter, York, and its momentum through 2020 has been strong. Half the portfolio is regional offices and, although London is the bellwether, we see regional properties as better value and better placed. Central London investment in 2020 was £9.3bn (£12.5bn long-term average), which is very resilient. There was a 4Q'20 mini-boom in investment inflows to this market (as reported by JLL). £4.9bn was traded in 4Q'20 central London offices, 34% above the 10-year average. Investment is a forward-looking indicator, and it is unsurprising that London's liquid, global market should be the initial conduit.

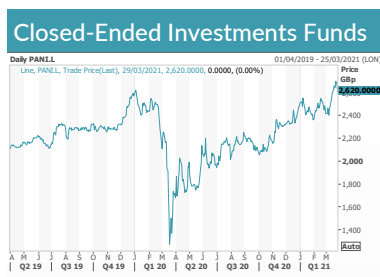
- **Strategic position:** PCA's assets include the large York residential development and other small asset management opportunities that will enhance the company's NAV on top of market trends. It is important to note that PCA's leisure assets have long leases and exited 2020 well positioned after hard work through the year.
- **Robust outcome:** PCA's office and other assets (retail park and industrial), ex leisure, paid 96% of rent due by end-December. Like many in the sector, PCA cut its dividend payout in 2020, but we have previously outlined our view that 2020 has been exited with a visible path towards dividends returning to all-time highs.
- **Valuation:** We have compared regional UK REITs, and PCA shares stand on a modest discount to this cheaply valued sector. This is on the basis of trend-line analysis comparing EPRA EPS price/earnings against the five-year asset returns. With the York site maturing to profit, this return is highly likely to rise.
- **Risks and upside:** Many assets have short lease lengths, so we understand some investor "wait and see" attitudes on new rental agreements, but there is upside when voids reduce. Leisure leases are ca.20 years, and the damage from weak or defunct tenants has been mercifully constrained.
- **Investment case:** The portfolio net initial yields are 5.9%, and this includes the impact of voids, the significant nil-income development assets and other costs. So, for example, the contracted income of the offices segment is 7.0% of its valuation inherent in the NAV. There is plenty of reversionary upside and cash-profit generation to go for, even in an ongoing difficult office market background.

Financial summary and valuation

Year-end Mar (£m)	2019	2020	2021E	2022E	2023E
Net income*	16.43	18.76	14.40	14.10	15.30
Finance cost	-3.74	-4.34	-3.60	-3.40	-3.30
Declared profit	6.43	-9.07	-1.84	12.20	8.00
EPRA PBT (adj. pre-reval'n.)	8.61	10.14	6.80	6.70	8.00
EPS reported (diluted, p)	11.26	-11.85	-4.01	26.58	17.43
EPRA EPS (p)**	16.54	30.24	14.81	14.60	17.43
DPS (p)	19.00	12.00	10.00	11.00	13.00
Net cash/(debt)	-96.50	-105.90	-113.20	-81.60	-80.70
Dividend yield	8.4%	5.3%	4.4%	4.8%	5.8%
Price/EPRA NAV (x)	0.55	0.60	0.65	0.61	0.60
EPRA NAV (p)	406.60	372.50	348.60	367.40	376.00
LTV	33.85%	37.41%	40.26%	31.60%	31.00%

*Post direct costs, **Diluted, pre share-based payments

Source: Hardman & Co Research



Source: Refinitiv

Market data

EPIC/TKR	PIP
Price (p)	2,610
12m High (p)	2,710
12m Low (p)	1,530
Shares (m)	54,089
Mkt Cap (£m)	1,412
NAV p/sh (p)*	3,154.9
Discount to NAV*	17%
Market	Premium equity closed-ended investment funds (UK)

*Manager valuations: Dec 56%, Sep 42%, Jun 1%, new investments 1%

Description

The investment objective of Pantheon International Plc (PIP) is to maximise capital growth by investing in a diversified portfolio of private equity (PE) assets and directly in private companies.

Company information

Chairman	Sir Laurie Magnus
Aud. Cte. Chr.	David Melvin
Sen. Ind. Dir.	Susannah Nicklin
Inv. Mgr.	Pantheon
Manager	Helen Steers
Contact	Vicki Bradley
	+44 20 3356 1800
	www.piplc.com

Key shareholders

Quilter	9.40%
USS	8.15%
Esperides SA Sicav-SIF	5.75%
APG Asset Mgt.	4.44%
Investec Wealth	4.37%
East Riding of Yorkshire CI	3.99%
Private Syndicate Pty	3.76%
Brewin Dolphin	3.45%

Diary

Mid-Apr'21	March NAV
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Analyst

Mark Thomas	020 3693 7075
	mt@hardmanandco.com

PANTHEON INTERNATIONAL

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PIP is an investment trust that invests in a diversified portfolio of PE assets managed by third-party managers across the world. PIP is the longest-established PE fund-of-funds on the London Stock Exchange, and has outperformed the FTSE All-Share and MSCI World indices since its inception in 1987.

PIP is managed by Pantheon, one of the world's foremost PE specialists. Founded in 1982, with assets under management (AUM) of \$58.4bn (as at 30 September 2020), and a team of 104 investment professionals globally (total staff of 359 as at 31 December 2020), Pantheon is a recognised investment leader, with a strong track record of investing in PE funds over various market cycles in both the primary and secondary markets, as well as co-investments. As at 31 December 2020, it had more than 470 advisory board seats.

PIP actively manages risk by the careful selection and purchase of high-quality PE assets in a diversified and balanced portfolio, across different investment stages and vintages, and by investing in carefully selected funds operating in different regions of the world.

Given the regulatory restrictions on distributing research on this company, the monthly book entry for Pantheon can be accessed through our website, [Hardman and Co Research](http://HardmanandCoResearch.com). Our *initiation report*, published on 6 September 2019, and our reports, i) *History of value added to portfolio by holding Pantheon*, published on 26 November 2019, ii) *2020 interim results consistency in delivery*, published on 2 March 2020, iii) *Positioned for sustained growth*, published on 14 August 2020, an annual review, iv) *Returns, resilience and responsibility*, published on 9 October 2020, v) *The real costs of public vs. PE ownership*, published on 14 January 2021, and vi) *Just look at PIP's underlying company resilience* published on 10 March 2021 can be found on the same site.

Pantheon issued its detailed *results* (to end-November) on 25 February 2021.

[illegible]

EPIC/TKR	PXC
Price (p)	37.00
12m High (p)	64.70
12m Low (p)	5.00
FD shares (m)	126.68
Mkt Cap (£m)	46.87
EV (£m)	29.85
Free Float*	72.7%
Country of listing	UK
Market	AIM

Paul Mylchreest 020 3693 7075
pm@hardmanandco.com

Financial summary and valuation: Scenario 1 – Empire only						
Year-end Dec (\$m)	2018	2019	2020E	2021E	2022E	2023E
Sales	0	0	0	0	0	90.460
Underlying EBIT	-1.654	-1.105	-1.188	-1.221	-1.255	47.727
Reported EBIT	-1.654	-1.105	-1.188	-1.221	-1.255	47.727
Underlying PTP	-1.652	-1.128	-1.265	-1.259	-2.870	45.072
Statutory PTP	-1.652	-1.128	-1.265	-1.259	-2.870	45.072
FD underlying EPS (p)	-5.82	-2.76	-2.17	-1.21	-2.43	30.43
FD statutory EPS (p)	-5.82	-2.76	-2.17	-1.21	-2.43	30.43
Net (debt)/cash	0.113	-0.589	-0.588	11.207	-36.133	2.172
No. shares EPS calc. (m)	28.12	40.86	57.55	103.65	118.22	128.93
P/E (x)	n/a	n/a	n/a	n/a	n/a	1.7
Dividend yield	n/a	n/a	n/a	n/a	n/a	n/a
FCF yield	n/a	n/a	n/a	n/a	n/a	105.7%

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Diversified Financial Services



Source: Refinitiv

Market data

EPIC/TKR	RECI
Price (p)	134.25
12m High (p)	147.5
12m Low (p)	94.4
Shares (m)	229.3
Mkt Cap (£m)	308
NAV p/sh (p)	151.8
Disc. to NAV	12%
Dividend yield	8.9%
Market	Premium equity closed-
(UK)	ended inv. funds

Description

Real Estate Credit Investments (RECI) is a closed-ended investment company that aims to deliver a stable quarterly dividend via a levered exposure to real estate credit investments, primarily in the UK and France.

Company information

Chairman	Bob Cowdell
NED	Susie Farnon
NED	John Hallam
NED	Graham Harrison
NED	Colleen McHugh
Inv. Mgr.	Cheyne Capital
Main contact	Richard Lang
	+44 207 968 7328

www.recreditinvest.com

Key shareholders

Close Bros	8.55%
AXA SA	8.50%
Premier Miton	8.09%
Bank Leumi	7.82%
Fidelity	7.59%
Canaccord Genuity Group	7.36%
Smith and Williamson	6.84%

Diary

Mid-Apr'21	Mar factsheet
28 Apr	Hardman & Co webinar

Analysts

Mark Thomas	020 3693 7075
	mt@hardmanandco.com
Mike Foster	020 3693 7075
	mf@hardmanandco.com

REAL ESTATE CREDIT INVESTMENTS

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RECI is a closed-ended investment company. To achieve its investment objective, the company invests, and will continue to invest, in real estate credit secured by commercial or residential properties in Western Europe, focusing primarily on the UK and France.

Investments may take different forms but are likely to be:

- ▶ Secured real estate loans, debentures or any other forms of debt instruments (together "Secured Debt"). Secured real estate loans are typically secured by mortgages over the property or charges over the shares of the property-owning vehicle. Individual secured debt investments will have a weighted average life (WAL) profile ranging from six months to 15 years. Investments in secured debt will also be directly or indirectly secured by one or more commercial or residential properties, and will not exceed an LTV of 85% at the time of investment.
- ▶ Listed debt securities and securitised tranches of real estate-related debt securities – for example, residential mortgage-backed securities and commercial mortgage-backed securities (together "MBS"). For the avoidance of doubt, this does not include equity residual positions in MBS.
- ▶ Other direct or indirect opportunities, including equity participations in real estate, except that no more than 20% of the total assets will be invested in positions with an LTV in excess of 85% or in equity positions that are uncollateralised. On specific transactions, the company may be granted equity positions as part of its loan terms. These positions will come as part of the company's overall return on its investments, and may or may not provide extra profit to the company, depending on market conditions and the performance of the loan. These positions are deemed collateralised equity positions. All other equity positions are deemed uncollateralised equity positions.

RECI is externally managed by Cheyne Capital Management (UK) LLP, a UK investment manager authorised and regulated by the FCA. As at 31 December 2020, Cheyne had 157 employees, of which 32 were in the Real Estate Team, and AUM of \$8.7bn, of which \$3.7bn was managed by the Real Estate Team. Cheyne invests across the capital structure – from the senior debt to the equity positions. It has expertise in the structuring, execution and management of securitisation transactions, involving a broad range of assets, including portfolios comprised of traditional asset classes, such as commercial and residential mortgages, as well as mortgage-backed securities and the management of commercial real estate portfolios, focused on Europe and the UK.

RECI gave a detailed [market update](#) and presentation on 27 January 2021.

Given the regulatory restrictions on distributing research on this company, the monthly book entry for RECI can be accessed through our website, [Hardman and Co Research](#). Our initiation report, published on 28 August 2019, and our notes, [Delivering on its promises](#) (17 December 2019), [Getting a balanced view on outlook](#) (21 May 2020), [Improving returns on new opportunities](#) (14 September 2020), and [Portfolio repayments fund enhanced return pipeline](#) (18 January 2021) can be found on the same site.

Pharmaceuticals & Biotechnology



Source: Refinitiv

Market data

EPIC/TKR	STX
Price (p)	34.0
12m High (p)	164.0
12m Low (p)	30.0
Shares (m)	215.8
Mkt Cap (£m)	73.4
EV (£m)	44.8
Free Float*	72%
Country of listing	UK
Market	AIM

*As defined by AIM Rule 26

Description

Shield Therapeutics (STX) is a de-risked pharmaceutical company with a lead product, Feraccru/Accrufer, approved in Europe and the US for the treatment of iron deficiency (ID) in adults. Sales are made, currently, by distribution and commercialisation partners in return for royalties and sales milestones.

Company information

CEO	Tim Watts
CFO	Hans Peter Rudolf
Chairman	Hans Peter Hasler
	+44 191 511 8500
	www.shieldtherapeutics.com

Key shareholders

Directors	2.3%
W. Health	25.9%
MaRu/AOP	8.9%
Jupiter AM	5.9%
Universities SS	2.4%

Diary

May'21	2020 final results
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Analyst

Martin Hall	020 3692 7075
	mh@hardmanandco.com

SHIELD THERAPEUTICS

Going it alone

STX is a commercial-stage company delivering specialty products that address patients' unmet medical needs, with an initial focus on treating iron deficiency (ID). Feraccru®/Accrufer® has been approved by the regulators in both Europe and the US. After considering licence opportunities in the US, the board has decided to commercialise Accrufer alone and raised the necessary funding to achieve this through a £29.2m Placing and Open Offer. Experienced commercial consultants in the US will now move to employees and STX has appointed a new CFO. Launch is expected in 2Q'21 and the company is forecast to become profitable in 2022.

- **Strategy:** Until now, STX's strategy has been to out-license commercialisation rights to partners with appropriate expertise in target markets, which has been successful in Europe and China. However, in the US, STX has decided to sell Accrufer itself, thereby retaining a greater share of the profits for shareholders.
- **Fundraise:** STX has raised £29.2m gross new capital through an oversubscribed Placing and Open Offer of shares at 30p. Initially, it had been expected to fund the US launch through a blend of equity and specialist debt, but the latter proved to be too expensive and more detrimental to shareholders than dilution.
- **Forecasts:** Our forecasts have been updated to incorporate the US Accrufer sales model published in January 2021. Launch is expected to take place towards the end of 2Q'21. Even on conservative assumptions, sales are expected to reach \$100m in year three, such is the size of the opportunity.
- **Execution risk:** US launch plans have been drawn up and will now be executed by the experienced consultants that STX has been using, who will now become FTEs. While execution risks remain, Accrufer is really well positioned in the pandemic environment to offer a genuine alternative to intravenous infusions.
- **Investment summary:** The STX-led launch for Accrufer was always the best option, in our opinion. Although the fundraise was dilutive for shareholders, they were all invited to participate. The period of uncertainty, coupled with the anticipation of a large share issue, caused the shares to underperform. However, we expect a rapid recovery once Accrufer is launched into a generally receptive market. The US cashflows alone are worth 163p per share despite the dilution.

Financial summary and valuation

Year-end Dec (£m)	2018	2019	2020E	2021E	2022E	2023E
Gross revenues	11.88	0.72	9.40	9.80	36.90	84.90
Product sales	0.86	0.62	0.70	9.80	36.90	84.90
R&D	-4.30	-2.50	-2.50	-3.00	-3.00	-1.00
Other income	11.03	0.10	8.69	0.00	0.00	0.00
EBITDA	-2.47	-6.41	0.21	-17.67	2.04	42.62
Underlying EBIT	-3.26	-9.04	-2.33	-20.21	-0.50	40.09
Underlying PBT	-3.26	-9.07	-1.85	-19.86	-0.35	40.38
Statutory PBT	-5.16	-9.07	-1.85	-19.86	-0.35	40.38
Underlying EPS (p)	0.09	-7.52	-0.81	-9.88	-0.49	14.81
Statutory EPS (p)	-1.55	-7.52	-0.81	-9.88	-0.49	14.81
Net (debt)/cash	9.63	4.12	3.55	12.84	11.05	49.28
Equity issues	0.00	0.03	0.00	29.20	0.00	0.00

Source: Hardman & Co Life Sciences Research

Daily SCELU 25/03/2019 - 23/03/2021 0.00

Line: SCELU, Trade Price(Last), 24/03/2021, 76.0, +1.0, (+1.33%)

The chart displays the daily price of SCELU. The y-axis represents the price, ranging from 15 to 80. The x-axis shows time in quarters from Q2 2019 to Q1 2021. The price remains relatively stable until late 2020, after which it shows a significant upward trend, ending at 76.0 in early 2021.

EPIC/TKR	SCE
Price (p)*	73
12m High (p)	79
12m Low (p)	13
Shares (m)	195
Mkt Cap (£m)	142.3
EV (£m)	118.0
Free Float**	86%
Country of listing	UK
Market	AIM

Mike Foster 020 3693 7075
mf@hardmanandco.com

► **Investment case:** This large market is 97%-supplied by one, highly profitable player. Single supply was a most anomalous position for an auto OEM market; now SCE also supplies. Thus, the OEM 8 order, while a true “game changer”, simply fitted into the broader expansion of the market, and also of SCE in the market. From 2021, SCE has a much broader, fast-growing customer base.

Year-end May*/ December** (£m)	FY19*	7-month 19E**	FY20E**	FY21E**	FY22E**
Sales	1.00	1.45	2.00	7.30	12.50
EBITDA	-2.63	-1.41	-2.15	0.05	3.10
EBITA	-2.97	-1.70	-2.55	-0.85	1.80
PBT	-2.98	-1.76	-2.67	-1.00	1.55
PAT	-2.06	-1.32	-2.07	-0.40	2.15
EPS (adjusted, p)	-1.64	-0.97	-1.42	-0.21	1.10
Shareholders' funds	6.96	5.62	5.70	24.30	26.45
Net (debt)/cash	1.60	0.65	0.75	8.05	2.00
P/E (x)	loss	loss	loss	loss	66.4
EV/sales (x)	n/a	n/a	56.0	16.2	9.4
EV/EBITDA (x)	loss	loss	loss	n/a	38.1
DPS (p)	nil	nil	nil	nil	nil

*May year-end; **Change of year-end to December
Source: Hardman & Co Research

Pharmaceuticals & Biotechnology



Source: Refinitiv

Market data

EPIC/TKR	TRX
Price (p)	0.65
12m High (p)	1.22
12m Low (p)	0.25
Shares (m)	7,033
Mkt Cap (£m)	45.7
EV (£m)	34.7
Free Float*	50%
Country of listing	UK
Market	AIM

*As defined by AIM Rule 26

Description

Tissue Regenix (TRX) is a pioneering international medical device company focused on the development of regenerative products based on its two platform technologies, dCELL and BioRinse. These decellularisation technologies remove DNA, cells and other material from animal/human tissue and bone, leaving scaffolds that can be used to repair diseased or worn-out body parts. Its products have multiple applications.

Company information

CEO	Daniel Lee
CFO	David Cocke
Chairman	Jonathan Glenn
	+44 330 430 3052
	www.tissuregenix.com

Key shareholders

Directors	0.6%
Lombard Odier	14.9%
IP Group	13.7%
R.Griffiths	10.1%
Premier Miton	10.1%
Harwood Capital	6.9%

Diary

Apr'21	2020 results
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Analyst

Martin Hall	020 3693 7075
	mh@hardmanandco.com

TISSUE REGENIX

Phase 1 of capacity expansion on schedule

TRX is focused on the development and commercialisation of two proprietary decellularisation technologies for repair of soft tissue (dCELL) and bone (BioRinse). It has a broad portfolio of approved regenerative medicine products for the biosurgery, orthopaedics and dental markets. 2020 was a transition year, with the company securing the necessary funding to invest in capacity expansion at its US facilities in order to service demand for its products. The first phase is nearing completion, which will leave TRX well positioned when there is recovery in elective surgeries following the latest COVID-19 lockdowns and drive growth from 2H'21.

- **Strategy:** TRX is building an international regenerative medicine business around its proprietary technology platforms, underpinned by compelling clinical outcomes. Production capability is being expanded to fulfil underlying demand, extend its global distribution network via strategic partnerships and to drive sales growth.
- **2020 results:** TRX is likely to report fiscal 2020 results during April. Headline numbers were released in a recent trading statement, with underlying sales flat at £12.8m. Growth in the Orthopaedics and Dental division was a successful 13%, offsetting a decline in DermaPure sales (-20%) due to postponed surgeries.
- **Capacity expansion:** In March, TRX announced that the initial part of Phase 1 of its manufacturing expansion programme had been completed. This involved the relocation and tripling of its frozen tissue storage, freeing up the existing area for conversion into additional clean rooms. Completion is due in 1H'21.
- **Outlook:** Addition of the new 21,000 sq. ft. facility adjacent to the existing site, coupled with a strengthened board and management, provides TRX with greater flexibility and the opportunity to grow. Despite the pandemic, TRX is seeing demand to justify the investment in capacity, which augurs well for the future.
- **Investment summary:** TRX has a strong portfolio of innovative regenerative products with regulatory approval in both the US and the EU. Realignment of the commercial strategy to maximise sales potential through strategic and distribution partnerships has been successful, resulting in increased underlying demand for its products. Completion of Phase 1 of the capacity expansion programme remains on track, which is expected to be the catalyst to drive future sales growth.

Financial summary and valuation

Year-end Dec (£m)	2017	2018	2019	2020E
Sales	5.23	11.62	13.03	12.80
EBITDA	-9.01	-7.09	-6.13	-3.86
Underlying EBIT	-9.72	-8.27	-7.18	-4.70
Reported EBIT	-10.82	-8.69	-7.20	-4.80
Underlying PBT	-9.67	-8.46	-7.64	-4.89
Statutory PBT	-10.77	-8.88	-7.66	-4.99
Underlying EPS (p)	-0.90	-0.67	-0.60	-0.10
Statutory EPS (p)	-1.02	-0.70	-0.61	-0.10
Net cash/(debt)	16.42	7.82	0.09	7.08
Equity issues	40.25	0.00	0.00	14.60
P/E (x)	-	-	-	-
EV/sales (x)	9.4	4.2	3.8	3.8

Source: Hardman & Co Life Sciences Research

[illegible]

Market data

EPIC/TKR	VTA.NA, VTA.LN, VTAS LN
Price (€)	6.06/6.10/525p
12m High (€)	6.10/6.20/538p
12m Low (€)	3.28/3.05/300p
NAV p/sh (Feb) (€)	7.00
Discount to NAV	13%
Shares (m)	36.6
Mkt Cap (€m)	223
2020 div. yield	8.6%
Free Float	70%
Market (NL/UK)	AEX, LSE

Volta Finance (Volta) is a closed-ended, limited liability investment company with a diversified investment strategy across structured finance assets (primarily CLOs). It aims to provide a stable stream of income through quarterly dividends.

Ind. Chairman	Paul Meader
Ind. Non-Executive Directors	Graham Harrison Stephen Le Page Paul Varotsis
Fund Managers	Serge Demay
AXA IM Paris	A Martin-Min François Touati
Co. Sec. /Administrator	BNP Paribas Securities Services SCA, Guernsey Branch
BNP: +44 1481 750853 www.voltafinance.com	

Axa Group	30%
BNP WM	16%
Deutsche	6%
Citibank	6%

Mid-Apr'21	Mar estimated NAV
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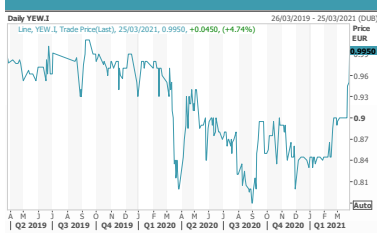
Mark Thomas 020 3693 7075
mt@hardmanandco.com

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Given the regulatory restrictions on distributing research on this company, the monthly book entry for Volta Finance can be accessed through our website, [Hardman & Co Research](#). Our [initiation report](#), published on 5 September 2018, can be found on the same site, as can our notes, i) [Investment opportunities at this point of the cycle](#) (14 January 2019), ii) [9%+ yield in uncertain times](#) (7 October 2019), iii) [Follow the money](#) (3 February 2020), iv) the manager's [March 2019](#) and [June 2019](#) presentations, v) [Q&A with Hardman analyst](#) (12 May 2020), vi) [Value added by active portfolio management](#) (15 September 2020), and vii) [Volta's seven yield uplifts](#) (11 January 2021), as well as links to our Directors Talk interviews on the company.

Volta's latest monthly commentary covered the monthly performance for February 2021 (+1.0%).

Real Estate



Source: Refinitiv
Priced on 24 March 2021

Market data

EPIC/TKR	YEW
Price (€)	0.94
12m High (€)	1.02
12m Low (€)	0.88
Shares (m)	111.6
Mkt Cap (€m)	104.8
EV (€m)	132.3
Free float*	96%
Country of listing	Ireland
Market	AIM, Euronext

Description

This REIT invests in the Republic of Ireland (RoI) to provide stable, long-term rising income with scope for capital appreciation. Assets are predominantly offices outside Dublin CBD and regionally. It also invests in high-specification industrial assets in sought-after locations and estates.

Company information

Chairman	Barry O'Dowd
CEO	Jonathan Laredo
CFO	Charles Peach
	+353 1 485 3950
	www.ygreit.com

Key shareholders

Directors/management	4.0%
Royal London	20.6%
Invesco	10.6%
AIB	6.6%
OVMS	4.9%

Diary

May'21	AGM
Aug'21	Interim results

Analyst

Mike Foster	020 3693 7075
	mf@hardmanandco.com

YEW GROVE

NAV rise validates an excellent strategy

Yew Grove invests in office and industrial assets in the Republic of Ireland (RoI). RoI GDP grew 3.4% in 2020, with 18.2% gross value added from multinational input. Yew Grove's largest tenant segment is Life Sciences (35%), which benefits from Foreign Direct Investment (FDI) and, across the board, this macroeconomic attractiveness is being captured by the company. In the past four quarters, Yew Grove has achieved an average 99% rent paid on time. The valuation on its offices rose 1.9% in 2020 and industrial assets by 5.5%. Two rent rises achieved 24% and 25% uplifts. Further reversion potential is evident for both offices and industrials.

- **Resources for growth:** In 2019, Yew Grove raised €35.8m equity, and it purchased €50.3m investment assets through 2019 to February 2020. It continues to deploy from debt finance (in part via a targeted forward-funding together with an existing asset).
- **Pipeline:** Management has deep, specialist market knowledge. There is significant potential on top of a shorter-term €150m acquisition pipeline of office and, to a lesser degree, industrial assets. Over 50% of tenants are FDI. The reversionary yield is 9.0%.
- **Valuation:** To the COVID-19 low point of June, accounting returns amounting to 3.1% p.a. since the 2018 IPO are above the average REIT. 2H'20 achieved 10.6% annualised returns (51% of that as income). As the portfolio grows and reversions accrue, the scope for DPS growth is clear and secure.
- **Risks:** Central costs have been flat through the portfolio growth from the IPO, but (halved) costs still equate to 2.2% of the portfolio value. The REIT is ready to scale further, and dividend payout growth would benefit from greater size. Offices are seen as facing uncertainty, but voids have been filled and rents raised.
- **Investment case:** High-quality office assets in locations attractive to both FDI/government employers and employees represent value for money. The industrial assets are located well. The premium investment returns, underpinned by above-market yields, should prove more reliable in all potential market conditions.

Financial summary and valuation

Year-end Dec (€m)	2018	2019	2020	2021E	2022E
Rental income, net*	2.6	9.4	10.7	11.2	12.1
Finance costs	0.0	-0.7	-1.8	-1.4	-1.6
EPRA operating profit	0.8	6.4	7.6	7.2	9.0
Declared profit	2.4	5.1	7.0	7.9	11.1
EPS reported (c)	4.1	6.2	6.3	7.1	9.7
EPRA EPS (dil., post LTIP, c)	1.4	7.0	5.5	5.2	6.6
DPS (c)	1.00	6.80	5.15	5.15	6.10
Net cash/(debt)	-1.0	-5.8	-27.5	-38.5	-39.9
Dividend yield	1.1%	7.2%	5.5%	5.5%	6.5%
Price/EPRA NAV (x)	0.94	0.95	0.93	0.90	0.87
EPRA NAV per share (c)	100.2	98.4	100.0	104.1	107.8
EPRA NTA per share (c)	100.2	98.5	100.0	104.1	107.8

*Post direct costs

Source: Hardman & Co Research

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