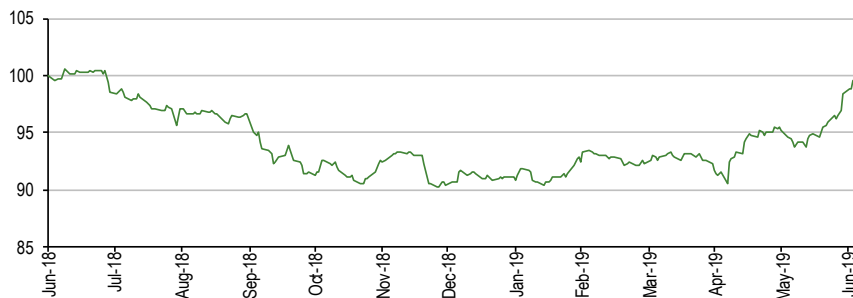


The Biotech Growth Trust

Bright start to 2019

The Biotech Growth Trust (BIOG) is managed by Geoff Hsu and Richard Klemm of OrbiMed Capital and aims to generate long-term capital growth from a diversified portfolio of global biotech equities. Investment performance has improved markedly in 2019, following a tough few years, and the managers retain their record of long-term outperformance versus the NASDAQ Biotechnology index. They remain very optimistic on the prospects for the global biotech sector, citing a favourable regulatory environment, a 'golden era of innovation' and an uptick in merger and acquisition activity, and believe that political noise in the run-up to the 2020 US presidential election will be manageable for the industry.

NAV outperforming the benchmark year to date – recovered from weak H218



Source: Refinitiv, Edison Investment Research

The market opportunity

Over the long term, biotech shares have delivered considerably higher total returns than global equities. Following some high-profile industry setbacks, investor sentiment towards the sector is currently weak. This may provide a good opportunity for long-term investors seeking exposure to a dynamic sector with strong fundamentals, including a historically high level of innovation.

Why consider investing in The Biotech Growth Trust?

- OrbiMed Capital is one of the largest, dedicated, specialist healthcare investment companies in the world, with a very experienced investment team.
- BIOG offers global exposure to the biotech industry across the market cap spectrum, including opportunities in China and other emerging markets.
- Recent improvement in investment performance and a positive long-term record versus the benchmark NASDAQ Biotechnology index.

Potential for discount to narrow

BIOG's current 6.6% share price discount to cum-income NAV is somewhat narrower than the 7.2% one-year average, but a little wider than the 6.3%, 6.0% and 5.3% average discounts over the last three, five and 10 years respectively. Investor sentiment towards the sector is poor; if this were to improve, there is potential for a narrower discount, and continued outperformance could also be a contributing factor. BIOG can gear up to 20% of NAV; at end-June 2019, net gearing was 6.2%. The trust does not pay a dividend.

Investment trusts Biotech equities

29 July 2019

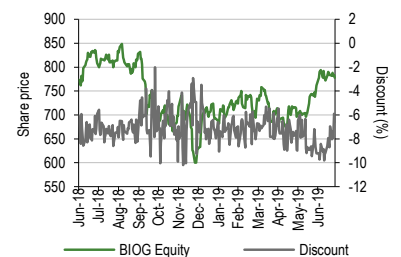
Price 778.0p
Market cap £367m
AUM £418m

NAV* 832.0p
Discount to NAV 6.5%
NAV** 833.2p
Discount to NAV 6.6%

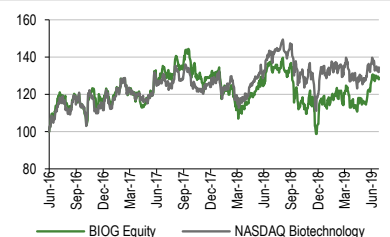
*Excluding income. **Including income. As at 25 July 2019.

Yield 0.0%
Ordinary shares in issue 47.2m
Code BIOG
Primary exchange LSE
AIC sector Biotechnology & Healthcare
Benchmark NASDAQ Biotechnology

Share price/discount performance



Three-year performance vs index



52-week high/low 849.0p 600.0p
NAV** high/low 908.3p 631.0p

**Including income.

Gearing

Gross* 6.2%
Net* 6.2%

*As at 30 June 2019.

Analysts

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[Edison profile page](#)

**The Biotech Growth Trust is a
research client of Edison Investment
Research Limited**

Exhibit 1: Trust at a glance

Investment objective and fund background

The Biotech Growth Trust seeks capital appreciation through investing in the worldwide biotechnology industry. Performance is measured against its benchmark index, the NASDAQ Biotechnology index (sterling adjusted).

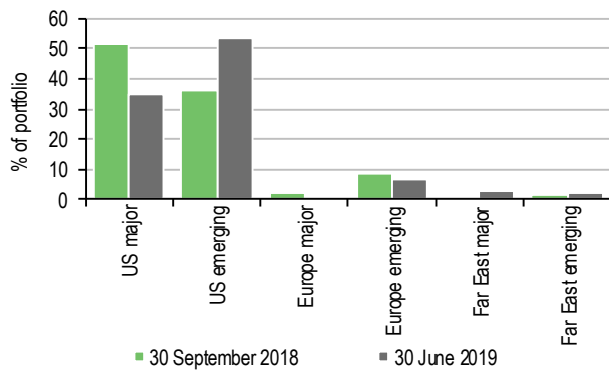
Recent developments

- 24 May 2019: Annual results for 12 months ending 31 March 2019. NAV TR +5.3% versus benchmark TR +13.0%. Share price TR +4.6%.
- 9 November 2018: Interim results for six months ending 30 September 2018. NAV TR +19.9% versus benchmark TR +22.9%. Share price TR +17.9%.
- 24 May 2018: Annual results for 12 months ending 31 March 2018. NAV TR -6.7% versus benchmark TR -2.2%. Share price TR -6.1%.
- 16 May 2018: Appointment of Geoff Hsu as non-independent director following the retirement of Sven Borho.

Forthcoming		Capital structure		Fund details	
AGM	July 2020	Ongoing charges	1.1%	Group	Frostrow Capital LLP
Interim results	November 2019	Net gearing	6.2%	Manager	OrbiMed Capital
Year end	31 March	Annual mgmt fee	See page 8	Address	25 Southampton Buildings, London, WC2A 1AL
Dividend paid	N/A	Performance fee	See page 8	Phone	+44 (0) 20 3008 4910
Launch date	June 1997	Trust life	Indefinite (subject to vote)	Website	www.biotechgt.com
Continuation vote	Every five years – next 2020	Loan facilities	See page 8		

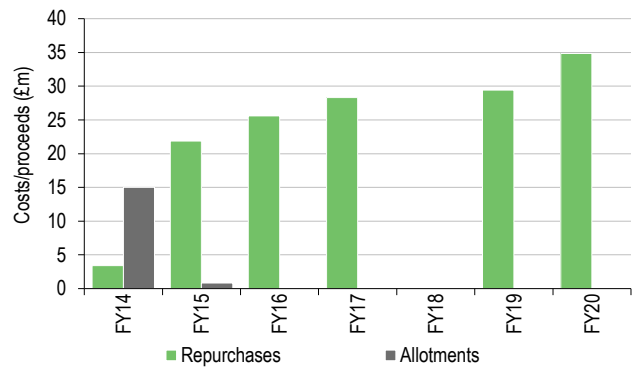
Portfolio sector exposure (adjusted for gearing)

Following an adjustment to the investment objective in October 2013, BIOG is no longer required to invest the majority of assets in companies with a market capitalisation below \$3bn at the time of acquisition.

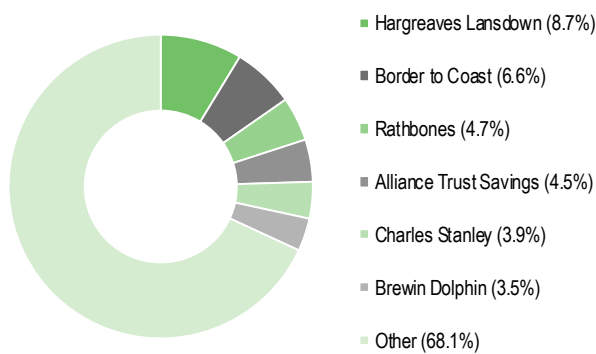


Share buyback policy and history (financial years)

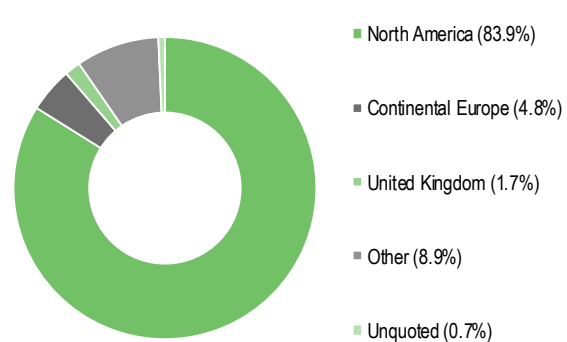
Renewed annually, the trust has authority to purchase up to 14.99% and allot up to 10% of issued share capital. There is a discount control mechanism in place with a target level of no more than a 6% discount to NAV.



Shareholder base (as at 30 June 2019)



Portfolio exposure by geography (as at 30 June 2019)



Top 10 holdings (as at 30 June 2019)

Company	Country	Sector	Portfolio weight %	
			30 June 2019	30 June 2018*
Vertex Pharmaceuticals	US	Major biotech	9.9	9.8
Sarepta Therapeutics	US	Emerging biotech	6.6	N/A
Neurocrine Biosciences	US	Emerging biotech	6.3	N/A
Alexion Pharmaceuticals	US	Major biotech	5.2	6.5
Gilead Sciences	US	Major biotech	5.0	3.9
Athenex	US	Emerging biotech	4.8	N/A
MeiraGTx	US	Emerging biotech	4.2	N/A
Illumina	US	Major biotech	4.1	5.2
Amgen	US	Major biotech	4.1	3.5
Deciphera Pharmaceuticals	US	Emerging biotech	3.8	3.3
Top 10 (% of holdings)			54.0	57.3

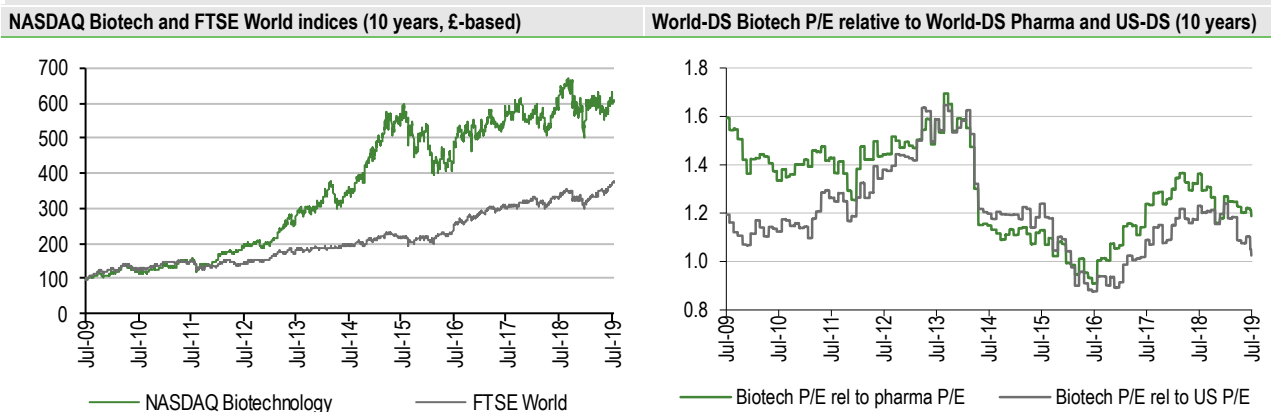
Source: The Biotech Growth Trust, Edison Investment Research, Bloomberg, Morningstar. Note: *N/A where not in end-June 2018 top 10.

Market outlook: Potential for improved sentiment

As shown in Exhibit 2 (left-hand side), over the last 10 years, biotech shares have significantly outperformed the global market, although biotech investors have suffered a bumpier ride. Also, the majority of the outperformance occurred in the first half of the decade, and over the last five years, the NASDAQ Biotechnology and FTSE World indices have generated similar total returns. Sentiment towards the biotech sector is somewhat subdued as there has been disappointing trial data from some of the biggest biotech players, and there are ongoing discussions about healthcare reform and drug pricing in the run-up to the 2020 US presidential election. However, there are important reasons to be optimistic about the prospects for the biotech sector: the regulatory backdrop remains extremely favourable (there were a record number of approvals for new molecular entities in the US in 2018); there is an exciting pipeline of new products in development with multi-billion dollar annual sales potential; demographic trends in both developed and emerging markets are very supportive for industry volume growth; and there appears to be an increased appetite for mergers and acquisitions (M&A – historically, this has been an important driver of the biotech sector’s performance).

In terms of valuation, the Datastream global biotech index is currently trading on an 18.3x forward P/E multiple, which is broadly in line with its five- and 10-year historical averages. However, this does not tell the whole story; for example, some of the major US companies are extremely cheap versus the market and their own histories (in early 2019, Celgene was bid for by Bristol-Myers Squibb while trading on a single-digit P/E multiple). Given the favourable biotech industry fundamentals, including the potential for further M&A activity, global investors may wish to take advantage of the current depressed sentiment. A change in stance from generalist institutional investors could lead to meaningful share price appreciation in the sector.

Exhibit 2: Biotech index performance and valuation



Source: Refinitiv, Edison Investment Research. Note: Using Datastream biotech, pharmaceutical and US indices.

Fund profile: Global biotech exposure

BIOG was launched in June 1997 and is listed on the Main Market of the London Stock Exchange. Since May 2005, the fund has been managed by OrbiMed Capital, one of the world’s largest specialist healthcare investment managers with c \$13bn of assets under management. The firm has 80 investment professionals (25 of whom have PhD or medical degrees and 15 are former founders or CEOs of healthcare companies), investing in both public and private healthcare companies across the market cap spectrum.

The trust’s co-managers, Geoff Hsu and Richard Klemm, aim to generate long-term capital growth from a diversified portfolio of biotech shares and related securities. The fund is constructed without

reference to the make-up of the benchmark NASDAQ Biotechnology index (sterling-adjusted). Portfolio construction parameters state that at the time of investment, a maximum 15% of gross assets may be invested in a single stock; up to 10% is permitted in unquoted securities (excluding a maximum \$15m in private equity funds managed by OrbiMed); and swaps exposure is allowed up to 5% of gross assets. Gearing of up to 20% of net assets is permitted (typically in a range of 0% to 10%); at end-June 2019, net gearing was 6.2%.

Despite a tough period of relative performance in recent financial years, data from OrbiMed show that from its appointment in May 2005 until end-June 2019, BIOG has outperformed its benchmark and the UK market (NAV total return of +16.4% pa versus +15.2% pa for the NASDAQ Biotechnology index and +7.4% pa for the FTSE All-Share index).

The fund managers: Geoff Hsu and Richard Klemm

The managers' view: Fundamentals trump pricing rhetoric

Hsu remains very upbeat on the prospects for the global biotech industry (which is heavily biased towards the US), believing that positive industry fundamentals will outweigh political noise.

Politics – the manager believes that US drug pricing proposals are manageable for the biotech industry. In May 2018, president Trump announced a 'blueprint' for lowering drug prices that was essentially benign, and biotech shares rallied. Then in October 2018, there was a proposal for an international pricing index (IPI). However, this would require approval from a split Congress, which is seen as unlikely (the Democrats control the House of Representatives, while the Republicans control the Senate). More recently, a January 2019 proposal to reform the complicated US drug rebate system has been withdrawn. While there will be much rhetoric around drug pricing and healthcare reform ahead of the 2020 US presidential election, Hsu believes meaningful changes, including 'Medicare for All' (which he says is prohibitively expensive), are unlikely to happen.

Regulation – the US regulatory climate remains very favourable. In 2018, there was a record number of approvals of new molecular entities (59) by the Food and Drug Administration (FDA). President Trump favours this development, as more approvals lead to more competition, which in turn leads to lower drug pricing. The new FDA commissioner Ned Sharpless will continue his predecessor Scott Gottlieb's policies, whereby the time taken, the costs involved and the filing process for new drugs are all improved. Hsu notes that the cost of sequencing a complete genome has plummeted over the last decade from c \$3bn to c \$2k, allowing characterisation of cancer-causing gene mutations. He says there has been a paradigm shift at the FDA regarding the approval of new cancer drugs, and the regulatory body is now approving mutation-specific drugs with tissue-agnostic indications.

Science – Hsu explains that innovation drives value creation in the biotech sector, and notes that due to a 'golden era of innovation', the industry pipeline of late-stage products is fuller now than at any time in its history. He highlights a number of scientific developments, including protein correctors, cellular therapy, gene therapy, RNA therapies, and bispecific antibodies. These emerging platform technologies could generate multi-billion dollars in annual revenues. Hsu focuses on gene therapy as being one of the 'hottest areas' and a 'must-have' technology for the major pharma companies, evidenced by three recent acquisitions of gene therapy companies (AveXis by Novartis, Nightstar Therapeutics by Biogen and Spark Therapeutics by Roche). The manager notes that BIOG has positions in a variety of gene therapy companies, which make up around 25% of the portfolio, although not all are pure plays.

M&A – Hsu comments that M&A (for which he notes there is currently a large appetite) is also an important driver for biotech share prices. The manager says that competitive threats for legacy products are increasing, and large-cap biotech valuations are at historic lows. He highlights Bristol-

Myers Squibb's bid for biotech bellwether Celgene as illustrating that large-cap companies are vulnerable, and says there have been a number of smaller biotech firms bid for so far this year at hefty premiums, such as Roche's c \$5bn planned acquisition of Spark Therapeutics at a greater than 120% premium to its pre-bid share price.

Asset allocation

Investment process: Diligent fundamental research

Managers Hsu and Klemm aim to generate long-term capital growth from a diversified portfolio of biotech stocks. They are able to draw on the expertise of OrbiMed's well-resourced investment team and invest across the market cap spectrum in large-cap and emerging biotech companies, and promising early-stage businesses with novel therapeutic products (there are no minimum company size requirements). Companies considered for investment are subject to in-depth fundamental research, including financial modelling, an assessment of research pipelines and identification of potential catalysts. Meeting company managements is an important element of the research process, to facilitate an understanding of the development programmes and commercial potential of individual drugs. OrbiMed's investment team's clinical background means that it is well-placed to understand a product's potential. Stocks may be purchased ahead of anticipated positive clinical data, or if an early-stage company is approaching profitability, or a business is viewed as a potential takeover target. Reflecting the country's dominance in the global biotech industry, the majority of the fund is invested in US companies, although there is a meaningful exposure to other regions, including emerging markets. BIOG's positions are regularly reviewed to ensure that the original investment thesis still holds true.

Current portfolio positioning

There have been significant changes in the structure of BIOG's portfolio over the last six months (Exhibit 3), most notably the shift in US exposure between emerging (+16.9pp) and major biotech (-16.6pp), which includes the sale of Celgene following the bid by Bristol-Myers Squibb.

Sector	End-June 2019	End-September 2018	Change (pp)
US emerging biotech	53.4	36.5	16.9
US major biotech	34.8	51.5	(16.6)
Europe emerging biotech	7.0	8.3	(1.3)
Far East major biotech	2.5	0.0	2.5
Far East emerging biotech	2.3	1.7	0.5
Europe major biotech	0.0	2.0	(2.0)
Total	100.0	100.0	

Source: The Biotech Growth Trust, Edison Investment Research

As at end-June 2019, BIOG's top 10 positions made up 54.0% of the portfolio, which was a modest decrease in concentration compared with 57.3% a year earlier; six positions were common to both periods. The four new top 10 positions compared with end-June 2018 are all US emerging biotech companies: Sarepta Therapeutics (precision genetic medicine); Neurocrine Biosciences (focused on neurologically- and endocrine-based diseases and disorders); Athenex (innovative cancer therapies with a focus on the US and China); and MeiraGTx (gene therapy).

Hsu is particularly excited about BIOG's investment opportunities in China. He says the country is the second-largest global pharma market, with increased innovation being encouraged by the Chinese authorities. Approval standards for new products are now higher than in the past and there is expedited approval of innovative drugs. The Hong Kong stock exchange has also relaxed requirements, whereby early-stage biotech companies that are not yet revenue-generating can now list their shares. Hsu says that BIOG has participated in three recent Chinese initial public offerings

(CanSino Biologics, Hansoh Pharmaceutical Group and Shanghai Junshi Biosciences), all of which have performed well; he considers that OrbiMed is well positioned by having two public equity analysts working in the region.

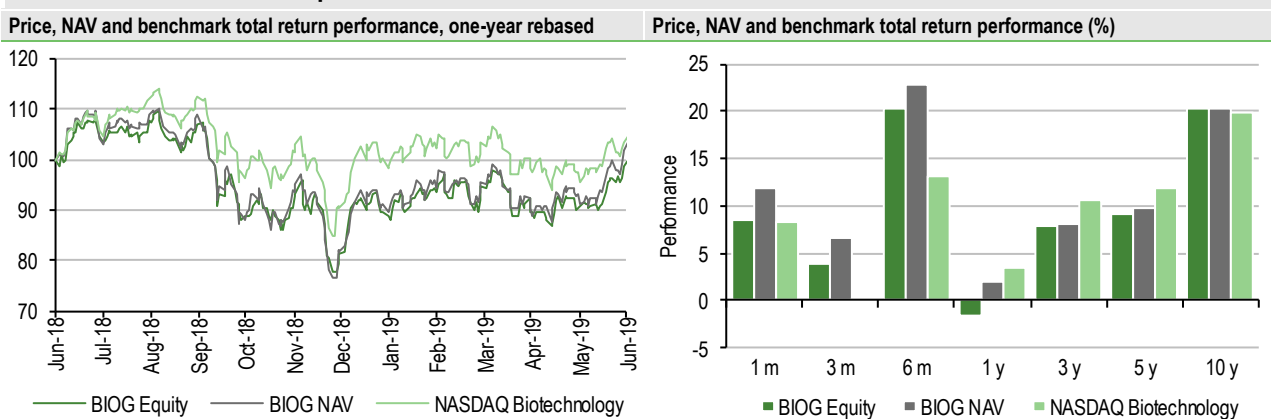
Performance: Recovering from weak H218

12 months ending	Share price (%)	NAV (%)	NASDAQ Biotech (%)	World-DS Pharm & Bio (%)	FTSE World (%)
30/06/15	59.6	61.0	56.8	26.0	9.9
30/06/16	(23.0)	(21.4)	(17.7)	9.4	14.6
30/06/17	25.9	24.0	24.6	10.4	22.9
30/06/18	1.2	(0.1)	5.2	2.5	9.3
30/06/19	(1.6)	1.9	3.5	12.0	10.4

Source: Refinitiv. Note: All % on a total return basis in pounds sterling.

In FY19 (ending 31 March), BIOG's NAV and share price total returns of +5.3% and +4.6% lagged the benchmark's +13.0% total return. During the financial year, commercial emerging biotech companies underperformed due to fears about increased competition, concerns about a reduction in revenue potential, and a lack of M&A. BIOG was also underweight non-therapeutic companies such as life science tools and contract research organisations (CROs), which both performed relatively well due to their lack of exposure to drug pricing concerns. Positive contributors to BIOG's performance in FY19 included Vertex Pharmaceuticals (which strengthened its dominant position in the treatment of cystic fibrosis); Illumina (accelerating sales of its gene-sequencing consumables); and Alexion Pharmaceuticals (good sales of its Soliris drug for paroxysmal nocturnal haemoglobinuria, and a strong launch for its product to treat myasthenia gravis). Detractors from performance included DBV Technologies, which withdrew its marketing application of a patch to prevent peanut allergies, and Puma Biotechnology and Clovis Oncology, whose new cancer drug launches fell short of consensus expectations.

Exhibit 5: Investment trust performance to 30 June 2019



Source: Refinitiv, Edison Investment Research. Note: Three-, five- and 10-year performance figures annualised.

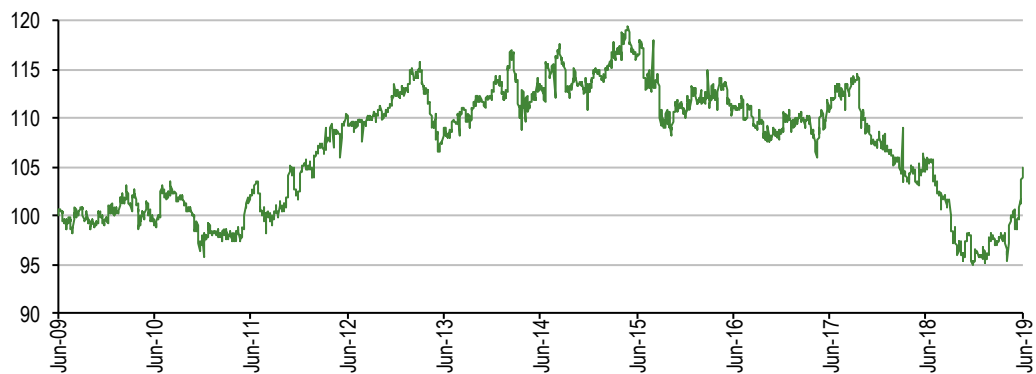
Exhibit 6 highlights BIOG's relative returns. A particularly strong period of performance over the last six months has made a positive impact on the trust's longer-term track record, and it has outperformed the benchmark in both NAV and share price terms over the last 10 years. Although there is further work required to improve the one-, three- and five-year numbers, Hsu is confident that over time, BIOG can recapture its historical record of outperformance versus the NASDAQ Biotechnology index over both the medium and the long term. The trust has meaningfully outpaced the performance of global healthcare stocks, world equities and particularly UK shares over the last decade, and has also outperformed the FTSE All-Share index over the last five years.

Exhibit 6: Share price and NAV total return performance, relative to indices (%)

	One month	Three months	Six months	One year	Three years	Five years	10 years
Price relative to NASDAQ Biotechnology	0.3	3.7	6.5	(4.9)	(7.5)	(12.0)	3.0
NAV relative to NASDAQ Biotechnology	3.3	6.6	8.6	(1.6)	(6.9)	(8.8)	3.6
Price relative to World-DS Pharm & Bio	3.0	1.8	12.0	(12.1)	(1.1)	(11.8)	50.5
NAV relative to World-DS Pharm & Bio	6.2	4.7	14.2	(9.0)	(0.5)	(8.6)	51.4
Price relative to FTSE World	2.8	(2.5)	3.1	(10.9)	(15.5)	(17.5)	72.8
NAV relative to FTSE World	6.0	0.2	5.2	(7.7)	(14.9)	(14.5)	73.9
Price relative to FTSE All-Share	4.7	0.5	6.6	(2.1)	(3.1)	13.5	135.8
NAV relative to FTSE All-Share	7.9	3.3	8.6	1.3	(2.5)	17.6	137.2

Source: Refinitiv, Edison Investment Research. Note: Data to end-June 2019. Geometric calculation.

Exhibit 7: NAV total return performance relative to benchmark over 10 years

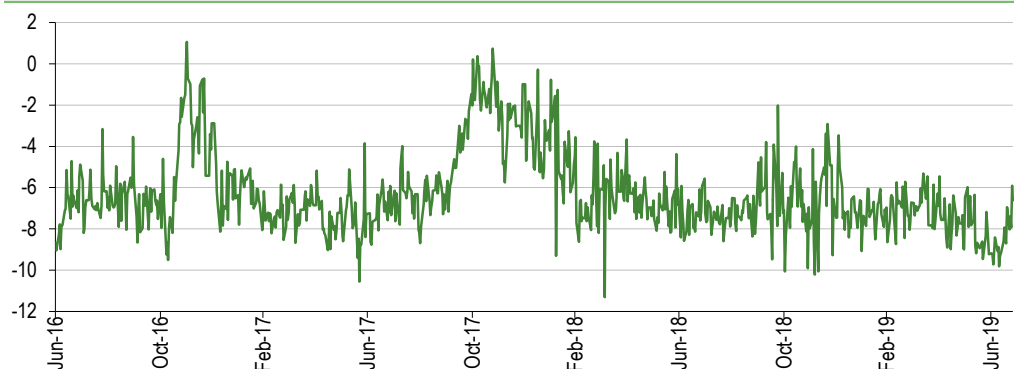


Source: Refinitiv, Edison Investment Research

Discount: Actively managing the discount

Over the last three years, BIOG has generally traded at a discount to NAV; although there have been a few brief periods when it traded at a premium (Exhibit 8). The trust's current 6.6% share price discount to cum-income NAV is towards the wider end of the 5.3% to 7.2% range of average discounts over the last one, three, five and 10 years. There is scope for BIOG's discount to narrow if there is better investor sentiment towards the sector, or if the trust's relative performance continues to improve.

Exhibit 8: Share price premium/discount to NAV (including income) over three years (%)



Source: Refinitiv, Edison Investment Research

The board actively manages the discount, aiming for a maximum 6% in normal market conditions. During FY19, c 3.9m shares (c 7% of the share base) were repurchased at a cost of c £24m. As highlighted in Exhibit 1, the pace of share buybacks has accelerated during the current financial year; so far in FY20, a further c 4.8m shares (c 9% of the share base) have been repurchased at a cost of c £35m.

Capital structure and fees

BIOG is a conventional investment trust with one class of share; there are currently 47.2m ordinary shares in issue. The trust may gear up to 20% of NAV (net gearing of 6.2% at end-June 2019) via a loan facility with J.P. Morgan Securities priced at 45bp above the US Federal Funds rate.

OrbiMed is paid an annual management fee of 0.65% of BIOG's NAV, and Frostrow Capital (the trust's Alternative Investment Fund Manager) receives an annual fee of 0.3% of the trust's market cap, plus a fixed fee of £60k pa. A performance fee of 16.5% of outperformance versus the benchmark is payable, split 15.0pp and 1.5pp between OrbiMed and Frostrow respectively; none was paid in FY19. Ongoing charges have held steady at 1.1% for the past three financial years.

BIOG is subject to a continuation vote every five years; the next is due at the 2020 AGM.

Dividend policy and record

BIOG has a focus on capital growth rather than income, and a large proportion of the trust's investments are in early-stage companies, which invest for future growth rather than returning cash to shareholders. In FY19, BIOG generated a modest 1.0p per share revenue return (9% lower than 1.1p per share in FY18), and its revenue deficit reduced from £1.3m to £0.8m. Once again, no dividend was declared for the financial year; the last distribution paid was 0.2p per share in 2001.

Peer group comparison

Exhibit 9 shows the members of the AIC Biotechnology & Healthcare sector along with two Switzerland-listed funds (BB Biotech and HBM Healthcare Investments). BIOG's NAV total return ranks third out of five funds over 10 years, closely in line with the mean. However, due to underperformance in recent years, the trust is some way below average over the other periods shown. BIOG has the second-largest discount in the selected peer group, its ongoing charge is in slightly below the mean and, in common with four other peers, a performance fee is payable. The trust's level of gearing is above average and, unlike the peers – some of which pay distributions out of capital – BIOG does not pay a dividend.

Exhibit 9: Biotech and healthcare investment companies, as at 26 July 2019*

% unless stated	Market cap £m	NAV TR 1 year	NAV TR 3 year	NAV TR 5 year	NAV TR 10 year	Discount (ex-par)	Ongoing charge	Perf. fee	Net gearing	Dividend yield
Biotech Growth Trust	367.8	(7.7)	12.0	55.9	489.0	(7.3)	1.1	Yes	106	0.0
BB Biotech	2,879.3	(1.7)	27.3	134.6	658.1	12.9	1.3	No	103	4.6
BB Healthcare	545.8	(0.1)				0.6	1.3	No	113	3.5
HBM Healthcare Investments	1,090.1	20.0	63.6	158.0	498.1	(6.5)	1.4	Yes	100	4.0
International Biotechnology Trust	242.5	(2.8)	21.7	99.3	392.9	(0.2)	1.4	Yes	105	4.3
Polar Capital Global Healthcare	273.4	6.7	22.2	67.7		(7.5)	1.1	Yes	104	0.9
Syncona	1,700.1	13.5	88.2	108.0		18.3	1.0	No	100	0.9
Worldwide Healthcare Trust	1,466.5	(2.5)	26.0	102.7	412.8	1.2	0.9	Yes	102	1.0
Average	1,070.7	3.2	37.3	103.7	490.2	1.4	1.2		104	2.4
Trust rank in sector (eight funds)	6	8	7	7	3	7	4=		2	8

Source: Morningstar, Edison Investment Research. Note: *Sterling performance to 25 July 2019 based on ex-par NAV. TR = total return. Net gearing is total assets less cash and equivalents as a percentage of net assets.

The board

There are six directors on BIOG's board, five of whom are independent. Chairman Andrew Joy joined the board in March 2012 and assumed his current role in July 2016. The other four independent directors and their years of appointment are: Professor Dame Kay Davies (2012),

Steven Bates and the Rt Hon Lord Willetts (2015) and Julia Le Blan (2016). The non-independent director is Geoff Hsu, one of BIOG's co-managers. He was appointed in May 2018, following the retirement of Sven Borho, another partner at OrbiMed, who was appointed as a director of BIOG's stablemate Worldwide Healthcare Trust. Hsu waived his FY19 BIOG director's fees.

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