The Biotech Growth Trust

Reasons to be optimistic

Investment trusts

The Biotech Growth Trust (BIOG) is managed by Geoff Hsu and Richard Klemm of OrbiMed Capital. They aim to generate long-term capital growth from a diversified portfolio of global biotech equities. The managers are very optimistic on the industry outlook, citing a more benign political environment, a high level of innovation, a favourable regulatory regime, and reasonable valuations. In addition, following US tax reform, they expect an acceleration in merger and acquisition activity, which has historically been an important driver of share prices within the biotech sector. The managers acknowledge that BIOG's performance in the last three financial years has been disappointing and they are looking to build on the trust's long-term record of outperformance versus the benchmark NASDAQ Biotechnology index.

12 months ending	Share price (%)	NAV (%)	NASDAQ Biotech (%)	World-DS Pharm & Bio (%)	FTSE World (%)
30/06/14	28.3	37.7	31.7	15.9	10.0
30/06/15	59.6	60.9	56.8	26.0	9.9
30/06/16	(23.0)	(21.4)	(17.7)	9.4	14.6
30/06/17	25.9	23.8	24.6	10.4	22.9
30/06/18	1.2	(0.1)	5.2	2.5	9.3

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

Investment strategy: Bottom-up stock selection

The managers and the team at OrbiMed undertake diligent fundamental research, which includes financial modelling, an assessment of research pipelines and identification of potential catalysts. Company and industry meetings are a key element of the research process. BIOG invests across the market cap spectrum from large-cap multinational companies with multi-billion dollar revenues through to promising early-stage companies. The majority of the trust's c 50 holdings are US companies, reflecting the country's dominance in the global biotech industry. Gearing of up to 20% of NAV is permitted (net gearing of 8.7% at end June-2018).

Market outlook: Potential for improved sentiment

The global biotech industry has been somewhat out of favour with investors following negative newsflow from large-cap Celgene. However, this may provide an opportunity for investors with a longer-term view. Fundamentals within the biotech industry are favourable, including the development of a number of innovative products with multi-billion dollar revenue potential and the likelihood of increased M&A. Both of these factors could lead to a revaluation of the sector.

Valuation: Discount wider than historical averages

The board aims to limit BIOG's discount to 6% in normal market conditions and has recently restarted share repurchases in response to a wider discount in recent months (Exhibit 1). The trust's current 8.5% share price discount to cum-income NAV is wider than the average discounts of the last one, three, five and 10 years (5.4%, 5.9%, 5.5% and 5.4% respectively).

30 July 2018

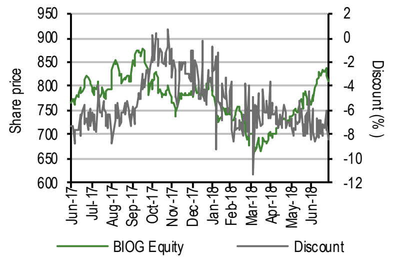
Price	**808.0p**
Market cap	**£447m**
AUM	**£520m**

NAV*	882.1p
Discount to NAV	8.4%
NAV**	883.2p
Discount to NAV	8.5%

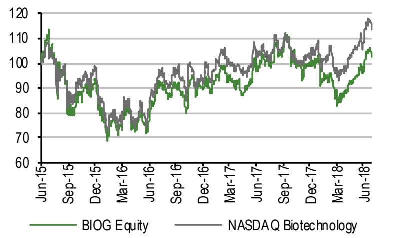
*Excluding income. **Including income. As at 26 July 2018.

Yield	0.0%
Ordinary shares in issue	55.3m
Code	BIOG
Primary exchange	LSE
AIC sector	SS: Biotechnology & Healthcare
Benchmark	NASDAQ Biotechnology

Share price/discount performance



Three-year performance vs index



52-week high/low	878.0p	650.0p
NAV** high/low	926.4p	705.4p

**Including income.

Gearing

Gross*	8.7%
Net*	8.7%

*As at 30 June 2018.

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Edison profile page

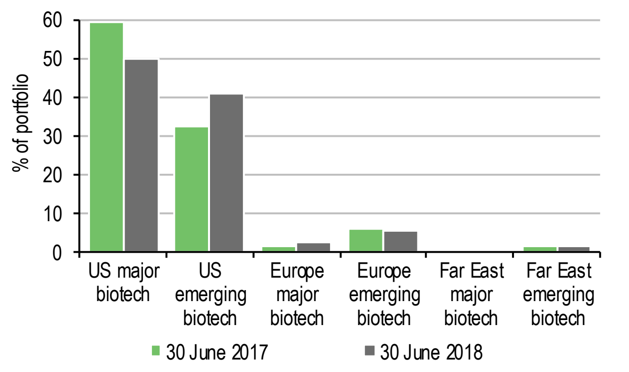
The Biotech Growth Trust is a research client of Edison Investment Research Limited

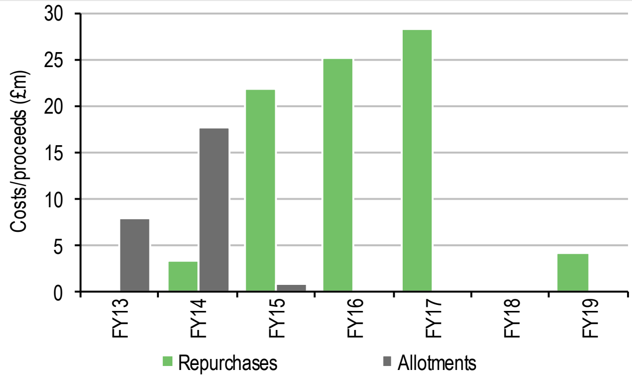
Exhibit 1: Trust at a glance

Investment objective and fund background	Recent developments
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).	■ 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. ■ 9 November 2017: Interim results for six months ending 30 September 2017. NAV TR +10.9% versus benchmark TR +6.6%. Share price TR +10.3%.

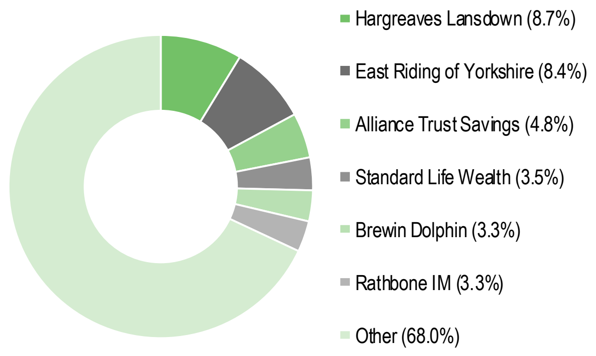
Forthcoming		Capital structure		Fund details	
AGM	July 2019	Ongoing charges	1.1%	Group	Frostrow Capital LLP
Interim results	November 2018	Net gearing	8.7%	Manager	OrbiMed Capital
Year end	31 March	Annual mgmt fee	See page 7	Address	25 Southampton Buildings,
Dividend paid	N/A	Performance fee	See page 7		London, WC2A 1AL
Launch date	June 1997	Trust life	Indefinite	Phone	+44 (0) 20 3008 4910
Continuation vote	Every five years – next 2020	Loan facilities	See page 7	Website	www.biotechgt.com

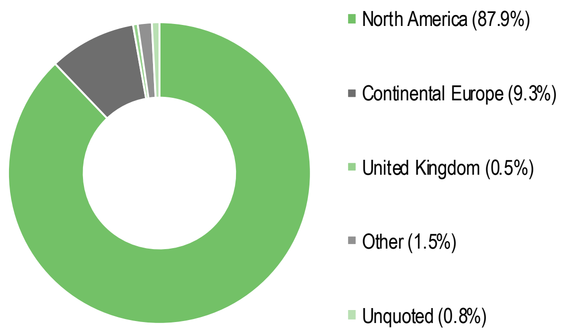
Portfolio sector exposure (adjusted for gearing)	Share buyback policy and history (financial years)
Following an adjustment to the investment objective in October 2013, BIOG is no longer required to invest the majority of assets in companies with a market capitalisation below $3bn at the time of acquisition.	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 2018)	Portfolio exposure by geography (as at 30 June 2018)





Top 10 holdings (as at 30 June 2018)

			Portfolio weight %	
Company	**Country**	**Sector**	**30 June 2018**	**30 June 2017***
Biogen	US	Major biotech	10.3	11.8
Vertex Pharmaceuticals	US	Major biotech	9.8	8.2
Celgene	US	Major biotech	7.8	12.1
Alexion Pharmaceuticals	US	Major biotech	6.5	6.6
Illumina	US	Major biotech	5.2	3.7
Gilead Sciences	US	Major biotech	3.9	3.9
Aerie Pharmaceuticals	US	Emerging biotech	3.5	N/A
Amgen	US	Major biotech	3.5	5.6
Alnylam Pharmaceuticals	US	Emerging biotech	3.5	N/A
Deciphera Pharmaceuticals	US	Emerging biotech	3.3	N/A
Top 10			**57.3**	**68.9**

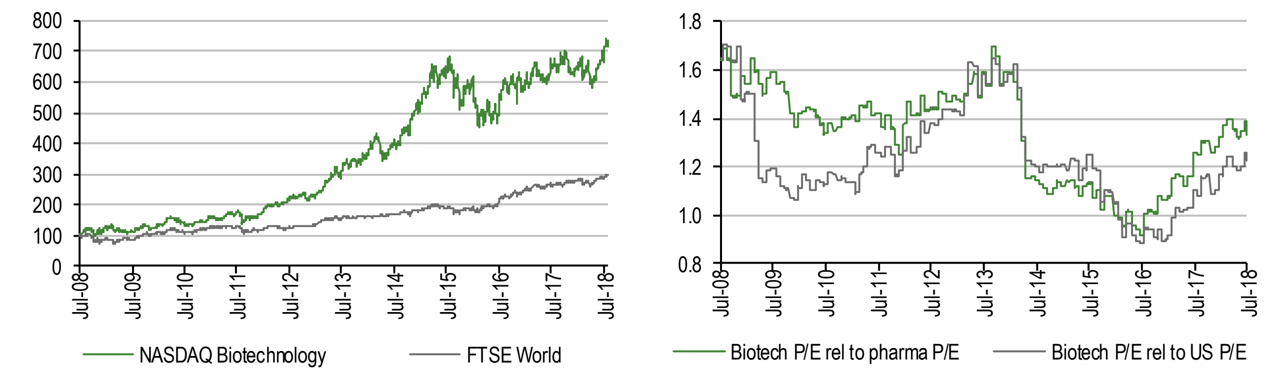
Source: The Biotech Growth Trust, Edison Investment Research, Morningstar. Note: *N/A where not in June 2017 top 10.

Market outlook: Attractive fundamentals and valuations

As shown in Exhibit 2 (LHS), investors have been rewarded by long-term investment in biotech stocks, although it is clear that the sector can undergo periods of meaningful volatility. The valuations of large-cap biotech stocks are reasonably attractive versus history, in part due to a dip in investor sentiment towards the sector due to negative newsflow from industry bellwether Celgene. For investors prepared to take a longer-term view, the biotech industry has a series of positive attributes: the political overhang due to the threat of enforced US drug pricing has diminished; the US regulatory environment is favourable in terms of reduced time and cost to bring products to market; novel therapeutic drugs are being developed that have multi-billion dollar revenue potential; and there is potential for higher levels of M&A now that US tax reform has been passed – this factor has historically been an important driver of returns in the biotech sector.

Exhibit 2: Biotech index performance and valuation

NASDAQ Biotech and FTSE World indices (10 years, £-based) | **World-DS Biotech P/E relative to World-DS Pharma and US-DS (10 years)**



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

Fund profile: Exposure to global biotech sector

BIOG was launched in June 1997 and since May 2005 has been managed by OrbiMed Capital, one of the largest dedicated healthcare investment management companies in the world, with c $14bn of assets under management. Managers Geoff Hsu and Richard Klemm aim to generate long-term capital growth via investment in biotech companies across the globe. The trust is benchmarked against the NASDAQ Biotech 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 NAV is permitted; at end June-2018, net gearing was 8.7%.

The trust has a long-term record of outperformance. From OrbiMed's appointment in May 2005 until end-FY18 (31 March), BIOG has generated NAV and share price total returns of 649.4% and 644.8% respectively, compared with the benchmark's 541.7% total return.

The fund managers: Geoff Hsu and Richard Klemm

The manager's view: Optimistic outlook for biotech sector

Hsu is very optimistic on the prospects for the global biotech sector. He points to positive industry fundamentals, which were evident in 2017 and have continued during 2018. The political overhang of potential enforced US drug pricing has receded; there have been a number of important medical and scientific advances; the regulatory environment remains favourable; valuations are attractive; and the manager expects M&A activity to accelerate following US tax reform.

While there has been further discussion about US drug pricing in 2018, Hsu says the outcome is benign. President Trump spoke in May this year, highlighting an official blueprint for lowering drug prices, which included increased competition and lower out-of-pocket costs for patients. However, there was no mention of direct government negotiation of drug prices, as this would lead to withholding certain medicines. While there could be further comments from Trump, particularly given the upcoming midterm elections, the manager does not expect a dramatic change in the US drug pricing environment.

Hsu highlights the robust level of innovation within the biotech sector. There are many novel technologies and ground-breaking treatments being developed, including: a protein corrector (Vertex reported data for a triple-combination therapy for the treatment of cystic fibrosis); the approval of two CAR-T products from Novartis and Kite Pharma (now part of Gilead Sciences), a game-changing treatment for blood cancers; gene therapy (the first approval was in late 2017, for a rare eye disease); and RNA (ribonucleic acid) modification (Biogen's Spinraza was approved as the first-ever drug to treat spinal muscular atrophy). The manager believes there are numerous therapeutic classes that could each generate billions of dollars in revenues in coming years.

The US FDA (Food and Drug Administration) regulatory climate is very favourable. FDA commissioner Scott Gottlieb is reducing the time and costs involved to develop innovative products. In 2017, there were 46 new molecular entity approvals, which is the highest number this century, and close to the record 53 approvals in 1996. In addition, a record number of generic drug approvals in 2017 (1,027) has increased competition and kept drug prices in check. One of OrbiMed's key focuses is to assess the likely outcome of clinical trials. It believes there is a rich opportunity set, with many potential catalysts during the balance of 2018.

Given the biotech sector's positive fundamentals, despite negative newsflow from industry bellwether Celgene (see Performance), the manager is surprised that industry valuations have remained so low compared to history. On a forward P/E valuation basis, the five largest biotech stocks are trading at a meaningful discount to the S&P 500 index.

Hsu says that M&A has been a major driver of historical returns within the biotech sector. During 2017, activity was less than he would have expected due to uncertainty ahead of US tax reform. However, this was passed in December 2017, so the manager expects an acceleration in M&A. He notes that the top four biotech companies have all expressed an urgency to do deals, while their own low valuations may make themselves vulnerable to being acquired. Hsu comments that acquirers are willing to pay big premiums; for example AveXis was acquired by Novartis in May 2018 for c $9bn. This was a c 90% premium to AveXis's pre-bid value, despite it having just 30 patients in its trial for a product to treat spinal muscular atrophy.

Asset allocation

Investment process: Bottom-up stock selection

Managers Hsu and Klemm are able to draw on OrbiMed's well-resourced investment team to construct a diversified portfolio of global biotech stocks, aiming to generate long-term capital growth. Potential investee companies are subject to thorough fundamental research, which includes financial modelling, an assessment of research pipelines and identification of potential catalysts. Company meetings are an important element of the research process, to enable an understanding of the development programmes and commercial potential of individual drugs. Stocks may be purchased ahead of anticipated positive clinical data, if an early-stage company is approaching profitability, or if a business is viewed as a potential takeover target.

The managers invest across the capitalisation spectrum: large-cap biotech companies, with robust earnings growth and strong product pipelines that are trading on reasonable valuations; emerging biotech companies with newly launched products or in late-stage development; and promising early-stage companies with novel therapeutic products that have the potential to deliver positive clinical data. BIOG's positions are regularly reviewed to ensure that the original investment thesis still holds true.

Current portfolio positioning

At end-June 2018, BIOG's top 10 positions made up 57.3% of the portfolio, which was a notable decrease in concentration compared with 68.6% a year earlier. Seven positions in large-cap US biotech names were common to both periods, while the three newer top 10 positions are all emerging biotech companies:

- Aerie Pharmaceuticals, which focuses on first-in-class therapies for the treatment of patients with glaucoma and other eye diseases;
- Alnylam Pharmaceuticals, which is developing RNA interference (RNAi) technology into a new class of innovative medicines for the treatment of rare genetic, cardiometabolic and hepatic infectious diseases; and
- Deciphera Pharmaceuticals, which develops kinase-inhibitor treatments for various cancers.

The trust's geographic breakdown has seen modest changes over the 12 months to the end of June (Exhibit 3), with a higher Continental European weighting (+3.8pp) and lower exposure to North America (-3.7pp). However, the US continues to make up the lion's share of BIOG's portfolio, reflecting its dominance within the global biotech sector.

Exhibit 3: Portfolio geographic exposure (%)

Region/country	End-June 2018	End-June 2017	Change (pp)
North America	87.9	91.6	(3.7)
Continental Europe	9.3	5.5	3.8
United Kingdom	0.5	1.6	(1.1)
Other	1.5	0.7	0.8
Unquoted	0.8	0.6	0.2
Total	**100.0**	**100.0**	

Source: The Biotech Growth Trust, Edison Investment Research

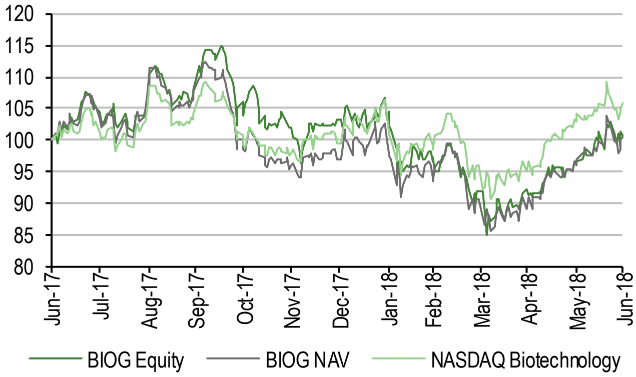
Performance: Working to recoup underperformance

In FY18, BIOG's NAV and share price total returns of -6.7% and -6.1% respectively trailed the benchmark's -2.2% total return. Absolute returns were hampered by a c 12% appreciation of sterling during the period. The top three performing stocks were Vertex Pharmaceuticals, Juno Therapeutics and BeiGene. Vertex Pharmaceuticals had positive trial data for its triple-combination regimens for the treatment of cystic fibrosis, as well as strong momentum in its products that have already been approved for the disease: Orkambi, Kalydeco and Symdeco. Juno Therapeutics was acquired by Celgene for a significant premium, to take control of Juno's cell therapy cancer treatment. BeiGene announced a collaboration with Celgene, which is developing novel cancer treatments. However, Celgene itself was the largest detractor to investment performance. It had disappointing Phase III trial data for GED-0301 for the treatment of Crohn's disease; a negative regulatory update for its ozanimod multiple sclerosis product; and the company lowered its 2020 sales guidance.

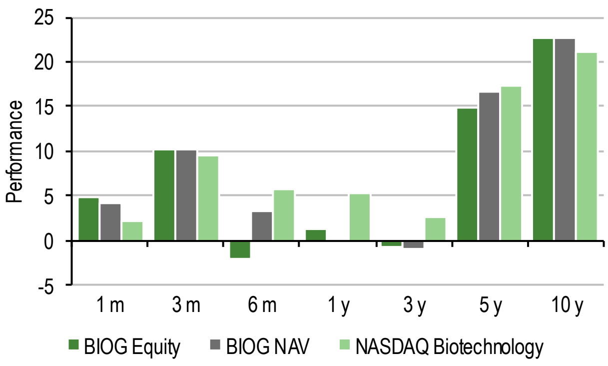
Hsu comments that FY18 was very frustrating. H118 performance was strong and BIOG's 10.9% NAV total return was meaningfully ahead of the benchmark's 6.6% total return. Given the alleviation of political concerns, such as a lack of regulation of US drug prices and failure to repeal and replace the Affordable Care Act (Obamacare), the manager expected significant investor inflows into the biotech sector, which, for liquidity reasons, would have favoured large-cap rather than emerging biotech companies. Hence, BIOG had an overweight exposure to the larger biotech names during the financial year. Unfortunately, the negative news from Celgene, which at the time was the trust's second-largest position (and a c 5pp overweight exposure versus the benchmark), had an adverse effect on BIOG's performance and also led to negative investor sentiment towards large-cap biotech stocks in general. Hsu says that the news from Celgene would have been difficult to predict.

Exhibit 4: Investment trust performance to 30 June 2018

Price, NAV and benchmark total return performance, one-year rebased



Price, NAV and benchmark total return performance (%)



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

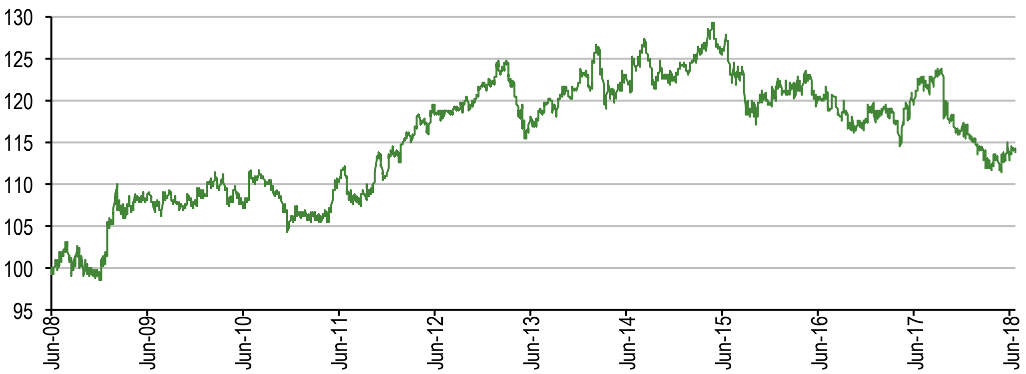
BIOG's relative returns are shown in Exhibit 5. It has outperformed the NASDAQ Biotechnology index benchmark over 10 years in both NAV and share price terms, while lagging over one, three and five years. To give a broader perspective, BIOG has outperformed global and UK equities over both five and 10 years; its relative outperformance is particularly marked over the last decade.

Exhibit 5: 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	2.6	0.7	(7.3)	(3.8)	(9.1)	(9.9)	15.2
NAV relative to NASDAQ Biotechnology	2.0	0.6	(2.4)	(5.0)	(9.9)	(3.3)	13.8
Price relative to World-DS Pharm & Bio	3.3	3.1	(4.0)	(1.3)	(20.8)	11.1	91.8
NAV relative to World-DS Pharm & Bio	2.6	3.1	1.1	(2.6)	(21.5)	19.2	89.5
Price relative to FTSE World	4.4	2.9	(4.3)	(7.5)	(36.3)	7.9	172.5
NAV relative to FTSE World	3.8	2.9	0.8	(8.6)	(36.9)	15.8	169.3
Price relative to FTSE All-Share	5.1	1.0	(3.7)	(7.2)	(25.5)	31.4	268.4
NAV relative to FTSE All-Share	4.4	0.9	1.5	(8.3)	(26.2)	41.1	264.0

Source: Thomson Datastream, Edison Investment Research. Note: Data to end-June 2018. Geometric calculation.

Exhibit 6: NAV total return performance relative to benchmark over 10 years



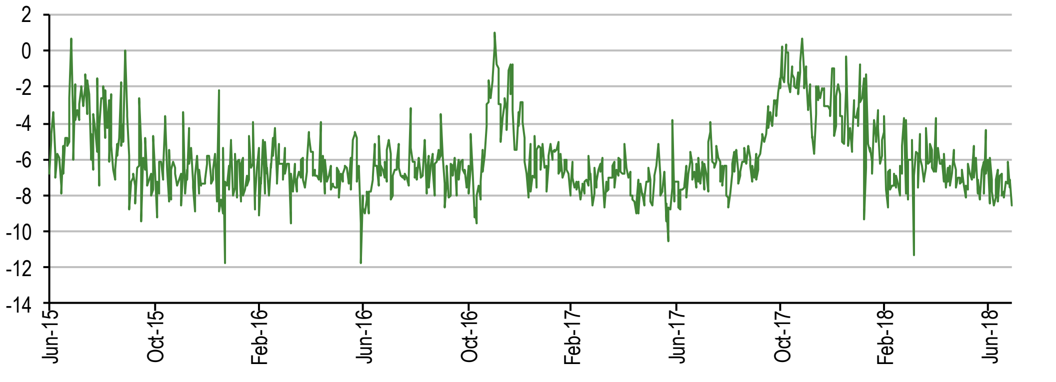
Source: Thomson Datastream, Edison Investment Research

Discount: Recent widening of the discount

The board aims to limit BIOG's discount to 6% in normal market conditions. Renewed annually, it has authority to purchase up to 14.99% and allot up to 10% of issued share capital.

Having experienced a narrowing trend in the discount during 2017, since the latter part of that year, BIOG's discount has once again widened. This may be due to weaker investor sentiment towards the biotech sector in general. The trust's current 8.5% share price discount to cum-income NAV compares with the range over the last 12 months of a 0.7% premium to an 11.3% discount, and is wider than the average discounts of the last one, three, five and 10 years, which are in a narrow range of 5.4% to 5.9%. During FY18, BIOG traded at an average discount of 5.4% and no shares were repurchased during the period, although 0.5m have been bought back since the year end.

Exhibit 7: Share price premium/discount to NAV (including income) over three years (%)



Source: Thomson Datastream, Edison Investment Research

Capital structure and fees

BIOG is a conventional investment trust with one class of share – there are currently 55.3m ordinary shares outstanding. Gearing of up to 20% of net assets is permitted, facilitated via a loan with J.P. Morgan Securities, which is priced at 45bp above the US Federal Funds Open rate. At end-June, net gearing was 8.7%.

Manager OrbiMed is paid an annual fee of 0.65% pa. Frostrow Capital is BIOG's Alternative Investment Fund Manager (AIFM), and receives a fee of 0.3% of market cap per annum, plus a fixed fee of £60k. A performance fee of 16.5% of outperformance versus the benchmark is payable, with OrbiMed entitled to 15.0pp and Frostrow to 1.5pp. No performance fee was paid in FY18. During this period, BIOG's ongoing charge was 1.1%, which was in line with FY17.

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. As a result, BIOG does not generally pay a dividend (the last distribution paid was 0.2p per share in 2001). In FY18, the revenue income was 1.1p per share, which was c 30% lower than 1.6p per share in FY17, partially as a result of sterling appreciation over the period. The income was transferred to reserves, reducing the revenue deficit from £1.93m to £1.33m.

Peer group comparison

Exhibit 8 shows the members of the AIC Sector Specialist: Biotechnology & Healthcare sector along with two Switzerland-listed funds (BB Biotech and HBM Healthcare). BIOG's NAV total returns are below average over one, three and five years, although the trust ranks first out of five funds over 10 years. BIOG is currently trading on one of widest discounts in the selected peer group, where the average is skewed by Syncona's very large premium. The trust's ongoing charge is below average, and, in common with the majority of the selected funds, a performance fee is payable. BIOG's level of gearing is above average, and it is the only trust in the group that does not offer a dividend.

Exhibit 8: Biotech and healthcare investment companies, as at 26 July 2018*

% 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	455.1	3.4	3.8	111.4	650.5	(7.7)	1.1	Yes	108	0.0
BB Biotech	2,927.9	0.4	8.8	161.3	587.2	9.1	1.3	No	103	4.8
BB Healthcare	364.6	20.0				(0.3)	1.3	No	103	2.8
HBM Healthcare Investments	947.7	19.2	61.8	194.8	283.9	(10.3)	1.5	Yes	100	3.4
International Biotechnology	248.6	6.9	12.7	130.3	400.2	(2.2)	1.4	Yes	100	4.1
Polar Capital Global Healthcare	259.6	9.8	26.8	73.4		(7.8)	1.0	Yes	100	0.9
Syncona	1,676.1	16.9	35.3	54.8		55.1	1.0	No	100	0.9
Worldwide Healthcare Trust	1,406.6	12.9	38.4	150.9	503.1	0.5	0.9	Yes	110	0.6
Average	**1,035.8**	**11.2**	**26.8**	**125.3**	**485.0**	**4.6**	**1.2**		**103**	**2.2**
Trust rank in sector (8 trusts)	**5**	**7**	**7**	**5**	**1**	**6**	**5**		**2**	**8**

Source: Morningstar, Edison Investment Research. Note: *Performance to 25 July 2018. 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. The chairman is Andrew Joy, who was appointed as a director in March 2012 and assumed his current role in July 2016. Professor Dame Kay Davies was appointed in March 2012, Steven Bates in July 2015, the Rt Hon Lord Willetts in November 2015 and Julia Le Blan in July 2016. The newest member of the board is one of BIOG's managers, Geoff Hsu, who was appointed in May 2018 following the retirement of another of OrbiMed's partners, Sven Borho. Hsu is considered to be a non-independent director.