The Biotech Growth Trust

Positioned for clinical success

Investment trusts

The Biotech Growth Trust (BIOG) invests worldwide in the innovative area of biotechnology, with the aim of achieving capital growth. Biotech has been one of the strongest-performing market sectors in recent years, but controversy over drug pricing in the US caused a sell-off in September, denting returns over shorter periods. BIOG's managers argue that truly innovative and effective new treatments will continue to have strong pricing power. The trust's investment approach is catalyst-driven, with specialist managers and analysts assessing the likelihood of clinical success and positioning the portfolio accordingly. This strategy has worked well in the long term but a small number of company-specific events has affected recent performance, and BIOG's discount is currently towards the wider end of historical ranges, with potential for rerating.

12 months ending	Share price (%)	NAV (%)	NASDAQ Biotech (%)	WORLD-DS Pharm & Bio (%)	FTSE World index (%)
30/11/11	15.4	23.1	16.3	9.9	(0.1)
30/11/12	57.2	42.2	33.9	21.1	12.0
30/11/13	49.9	58.8	58.7	32.7	22.5
30/11/14	62.1	45.6	42.4	28.2	13.7
30/11/15	1.8	12.6	14.8	6.4	2.6

Source: Thomson Datastream. Note: total return basis, sterling-adjusted.

Investment strategy: Focus on positive catalysts

BIOG's portfolio is managed by OrbiMed, a US-headquartered specialist healthcare investor with considerable experience in the sector: c 20% of the OrbiMed investment team is medically qualified or holds a PhD. Stocks are selected following intensive research, company meetings and visits. The managers combine their industry knowledge and scientific expertise with statistical analysis to anticipate future catalysts (for example, data releases or regulatory approvals) for potential and existing holdings. The portfolio is concentrated, with 34 holdings at 30 November and two-thirds of assets invested in the top 10 stocks.

Market outlook: Biotech fundamentals intact

Following a recent sell-off, valuations for biotech stocks look more reasonable compared with pharmaceutical companies and the wider US market. While favourable fundamentals underpin the sector, investors should be mindful of the potential for near-term volatility in the event of renewed concerns over drug pricing, and in the wider market as a result of geopolitical worries in the Middle East, a slowdown in China and concern over the timing and pace of US interest rate rises.

Valuation: Discount widens after sector wobble

At 14 December BIOG's shares traded at a 6.3% discount to NAV. This is higher than the one-, three- and five-year averages (4.6%, 3.8% and 4.4% respectively), and compares with a 12-month high of 10.9% seen in early May. With a spell of recent underperformance versus the NASDAQ Biotech index having dented BIOG's track record, there is scope for a rerating in the shares should the previous trend of above-benchmark returns be re-established.

15 December 2015

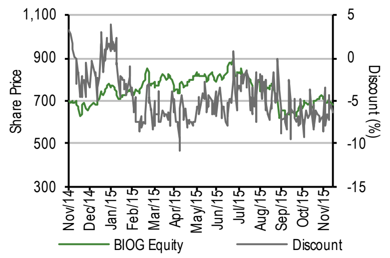
Price	**680.0p**
Market cap	**£418.1m**
AUM	**£522.1m**

NAV*	725.7p
Discount to NAV	6.3%

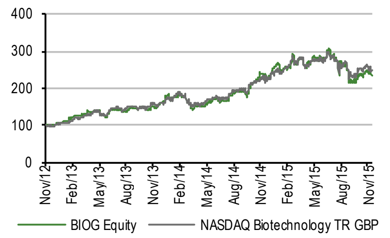
*Excluding and including income. Data at 14 December 2015.

Yield	0.0%
Ordinary shares in issue	61.5m
Code	BIOG
Primary exchange	LSE
AIC sector	SS: Biotech/Healthcare

Share price/discount performance



Three-year cumulative perf. graph



52-week high/low	895.0p	621.0p
NAV* high/low	927.1p	647.4p

*Including income.

Gearing

Gross	13.0%
Net*	13.0%

*At 30 November 2015.

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Edison profile page

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

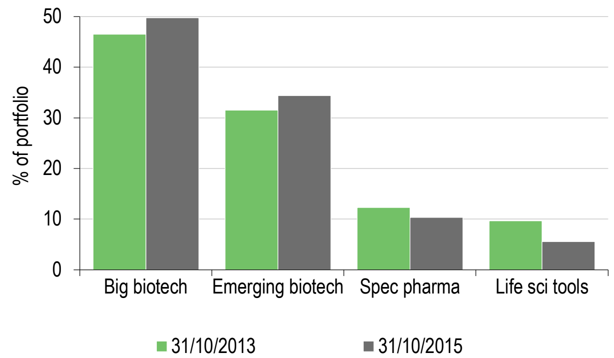
Exhibit 1: Trust at a glance

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).	■ 19 November 2015: Half-year results for the six months ended 30 September. NAV TR -18.6% compared with -13.6% for the NASDAQ Biotech index. Share price TR -19.3%. ■ 11 November: Lord Willetts announced as a new non-executive director.

Forthcoming		Capital structure		Fund details	
AGM	July 2015	Ongoing charges	1.2%	Group	Frostrow Capital LLP
Annual results	May 2015	Net gearing	9.0%	Manager	OrbiMed
Year end	31 March	Annual mgmt fee	See page 7	Address	25 Southampton Buildings, London, WC2A 1AL, UK
Dividend paid	N/A	Performance fee	See page 7	Phone	+44 (0)20 3008 4910
Launch date	June 1997	Trust life	Indefinite	Website	www.biotechgt.com

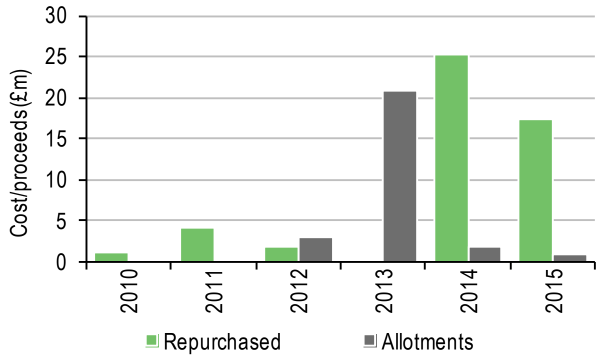
Sector exposures: change since 2013

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.

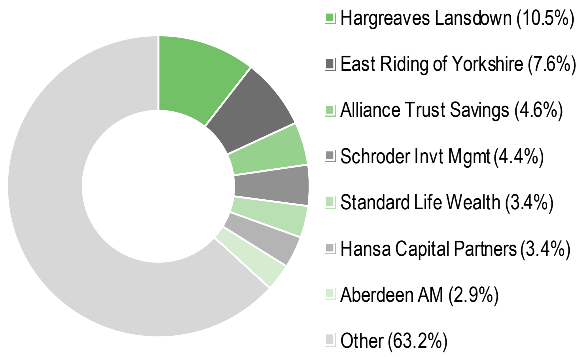


Share buyback policy and history

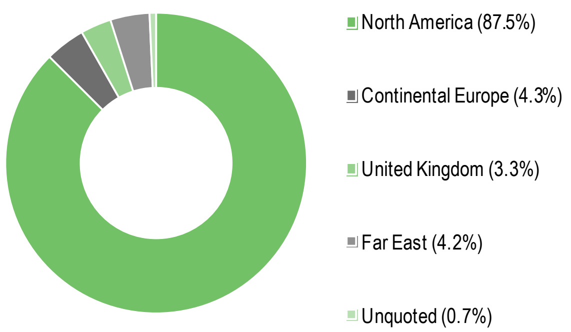
Renewed annually, the trust has authority to purchase up to 14.99% and allot up to 10% of issued share capital. There is a discount control mechanism in place with a target level of no more than a 6% discount to NAV.



Shareholder base (at 30 November 2015)



Distribution of portfolio (at 30 November 2015)



Top 10 holdings (at 30 November 2015)

			Portfolio weight %	
Company	**Country**	**Sector**	**30 November 2015**	**30 November 2014***
Amgen	US	Big Biotech	9.9	9.1
Biogen	US	Big Biotech	9.6	8.6
Incyte	US	Emerging Biotech	8.2	3.9
Regeneron Pharmaceuticals	US	Big Biotech	7.6	5
Gilead Sciences	US	Big Biotech	7.2	6.8
Alexion Pharmaceuticals	US	Big Biotech	7.0	5.2
Celgene	US	Big Biotech	5.9	9.4
Ono Pharmceutical	Japan	Big Biotech	4.2	N/A
Illumina	US	Big Biotech	3.9	5.3
Mylan	US	Big Biotech	3.4	N/A
Top 10 (% of portfolio)			**66.9**	**63.1**

Source: The Biotech Growth Trust, Edison Investment Research, Morningstar, Bloomberg. Note: *N/A where not in November 2014 top 10.

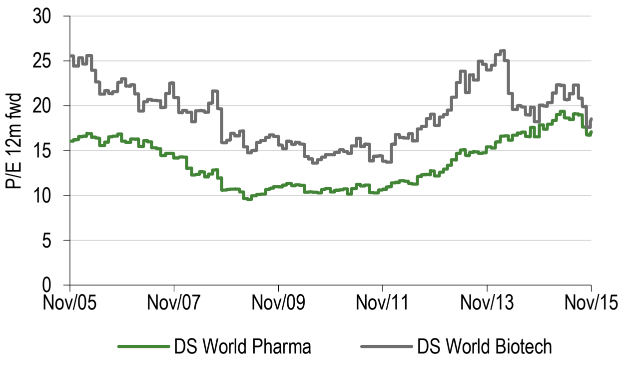
Market outlook: Valuations favourable after sell-off

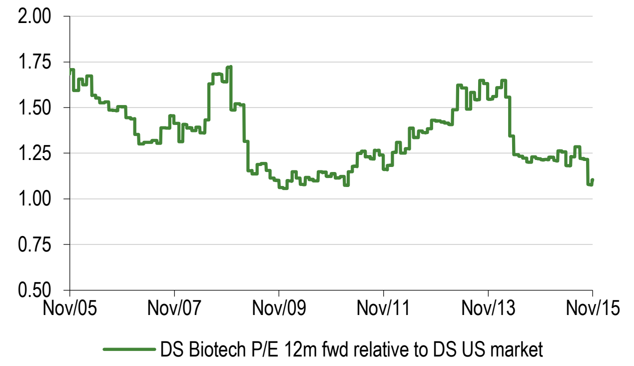
After a run of exceptionally strong performance beginning in late 2011, biotechnology stocks saw a reversal in late September 2015, sparked by political criticism in the US over pricing practices in the sector after the unlisted Turing Pharmaceuticals hiked the price of a 60-year-old anti-parasitic drug by 5,000%. The benchmark NASDAQ Biotech index fell by 8.7% in total return terms in the last week of September, though it has since recovered these losses.

Periodic sell-offs for the sector (in summer 2015 and April and July 2014) have seen investors focus not just on the pricing of drugs but the valuation of companies. However, as shown in Exhibit 2 below, P/E valuations for biotech and pharma firms have converged, and biotech valuations relative to the broad US market have also fallen to around the same average level. This suggests biotech stocks may represent better value than hitherto, underpinned by advances in medical understanding and the need to meet the healthcare expectations of ageing Western and developing market populations. With macro and geopolitical concerns causing ripples in the wider stock market, there may be further near-term volatility, although this may be to biotech investors' advantage (the sector outperformed world equities in the late August sell-off) if further pricing concerns can be avoided.

Exhibit 2: Healthcare sector valuations

World-DS Pharma, and World-DS biotech, P/Es over 10 years | World-DS Biotech P/E relative to US-DS P/E over 10 years





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

Fund profile: Established specialist in biotech sector

The Biotech Growth Trust (BIOG) began life in 1997 as Finsbury Life Sciences. Its portfolio has been managed since May 2005 by specialist healthcare investor OrbiMed, and it took on its current name (after a period known as Finsbury Emerging Biotechnology) in July 2007. Geoff Hsu and Richard Klemm manage the investment portfolio from OrbiMed's New York head office, while UK-based Frostrow Capital acts as the alternative investment fund manager (AIFM) and also provides company secretarial, administration and marketing services.

BIOG seeks to achieve capital growth by investing in biotechnology companies worldwide. The majority of such companies are based in the US and this is reflected in the portfolio, with nearly 90% of assets invested in US companies. Around half the portfolio is held in large firms ($3bn+), with the remainder in a mix of smaller biotech firms and those focused on areas such as life science tools and speciality pharmaceuticals. Broad investment limits cap the size of individual holdings at a maximum of 15% of assets at the time of acquisition, while up to 10% of assets can be held in unquoted companies, and a maximum of $15m in private equity funds managed by OrbiMed. OrbiMed is one of the world's largest healthcare investors, with c $15bn of assets under management in a range of mandates. The firm has offices globally and employs more than 100 investment professionals, many of them with scientific and medical backgrounds.

The fund managers: Geoff Hsu and Richard Klemm

The manager's view: Fundamentals strong despite sell-off

BIOG's strategy has had a difficult few months, with some poor data and regulatory developments having an impact on several portfolio stocks (see Performance, below). However, portfolio manager Geoff Hsu points to the long-term success of BIOG's catalyst-driven approach and says there are several catalysts expected in 2016 that could provide a boost. The recent sell-off gave the team the opportunity to add to favoured names, many of which have rebounded since the end of September. With investors seeking to reduce binary risk, Hsu says some companies with near-term data readouts (such as Dynavax, with Phase III data due in calendar Q116) looked particularly good value.

With biotech having performed so strongly (albeit with some volatility) in recent years, investors may question whether the sector can continue to deliver. While Hsu says there have been pockets of overvaluation among smaller stocks, particularly before the September sell-off, he views large-cap biotech valuations as reasonable both in absolute terms and relative to big pharmaceutical stocks and the wider US market. "On a 2016 basis large-cap biotech is on a 14x P/E and we think earnings growth will be c 15%; a valuation of 1x growth is not unreasonable at all," he says.

However, the manager cautions that the days of a rising tide lifting all boats in the sector may be numbered, with more differentiation in performance between those companies that have truly valuable assets and those that may not. This also ties in to the debate on drug pricing, which sparked the September sell-off. "Companies that are truly innovating, with drugs that have new mechanisms of action, show meaningful benefits and are truly superior to what is already available will still be able to command premium prices," says Hsu, adding that he believes the companies in the BIOG portfolio are delivering innovation to the sector.

Hsu says the recent controversy over drug pricing is nothing new, and echoes the sector sell-off in April 2014 following a congressman's letter that criticised the high cost of Gilead's game-changing hepatitis C treatment Sovaldi. "We expect things to recover as the fundamentals are intact," he says. "Innovation is strong, there are significant pipeline developments, the catalyst flow is good, the regulatory environment is generally favourable regarding approvals, and M&A is robust."

Asset allocation

Investment process: Focus on clinical catalysts

BIOG's portfolio has been managed since 2005 by OrbiMed, a specialist healthcare investor with a 20-year track record. Investment managers Geoff Hsu and Richard Klemm are part of a 100-strong team, more than 20 of whom (including Klemm) have medical degrees and/or PhDs. OrbiMed focuses on stock selection based on intensive research, financial modelling, company meetings and an assessment of research pipelines and likely catalysts. BIOG's managers use statistical analysis as well as their industry knowledge to build an understanding of future catalysts such as product approvals or the release of clinical trial data, which can often have a profound impact on stock prices. Unlike some investors who may seek to avoid the binary risk inherent in these catalysts, BIOG's approach is to position itself in companies where it assesses there is a high likelihood of success, usually c 12 months before newsflow is expected.

BIOG holds a concentrated portfolio, with 34 holdings at 30 November. The holdings are a blend of large biotech companies with established products, compelling valuations and strong earnings growth potential; mid-sized stocks with promising pipelines and near-term catalysts expected; and earlier-stage companies with encouraging preclinical or early clinical trial data.

Positions may also be taken in the expectation of M&A activity; in the first half of BIOG's current financial year (H116), three of the top five positive contributors to performance (Synageva, Anacor and Receptos) were bid targets that saw significant price appreciation. The managers note that M&A provides a valuation floor for portfolio companies: with larger biotech firms and big pharma keen to pick up promising assets, there may be a queue of acquirers for smaller firms if there is any material decrease in share prices. BIOG may also invest in unquoted companies, either directly or through OrbiMed-managed private equity funds.

In line with its catalyst-focused approach, BIOG's holdings are constantly reassessed and may be sold where there is a material change in the investment case. A recent example of this is Esperion Therapeutic, which had been expected to benefit from the FDA's predisposition to approving LDL cholesterol-lowering compounds. Statins have proved a major success in lowering 'bad' cholesterol and reducing adverse cardiac outcomes, but are not well tolerated by all patients, so Esperion and others have been developing non-statin compounds that reduce cholesterol. However, recent studies have shown that LDL cholesterol reduction alone is not necessarily a predictor of reduced cardiovascular risk (statins also have an anti-inflammatory effect, which may be more significant in this regard), and the FDA has indicated that it may require specific cardiovascular outcomes studies before it will approve new cholesterol-lowering treatments.

Current portfolio positioning

At 30 November 2015 BIOG had 34 holdings, with the top 10 names making up 66.9% of the portfolio. This is a smaller and more focused stock list than the UK-listed peer group. Geographically, 87.5% of the portfolio is invested in the US, with 7.6% in Europe (including the UK), 4.2% in Japan and 0.7% in an unquoted fund investing in the Far East. (All figures adjusted for gearing).

The portfolio is broadly split between major biotech companies, at 58.1% of the portfolio, but numbering only 10 holdings, and emerging biotech, at 41.9% of the portfolio spread between 23 stocks and the Far East fund (figures at 30 October). There is a wide range of clinical focuses, from cancer and multiple sclerosis, to less widespread but devastating diseases such as cystic fibrosis, and age-related conditions such as macular degeneration and Alzheimer's. Some 16.8% of the portfolio has important data due before mid-2016.

Manager Hsu says top holding Biogen is now priced at a level where expectations have been reset, following disappointing sales data for MS treatment Tecfidera on the back of safety concerns (see Performance, below). Extra vigilance towards the small number of patients with severe lymphopenia should improve the safety profile, while cautious financial guidance increases the possibility of upside surprise. In addition, Biogen has promising pipeline candidates including anti-LINGO, an MS treatment with a different mechanism of action from Tecfidera, and an Alzheimer's asset due to report preliminary data in calendar Q116.

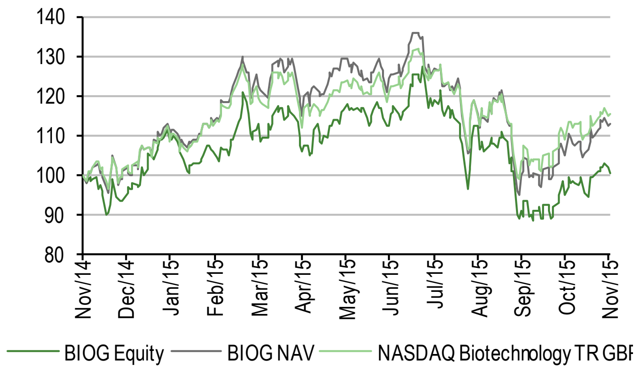
Immuno-oncology is a fast-developing area that is seeing many biotech companies partnering with big pharmaceutical firms to develop combination therapies. Portfolio companies in this area include Incyte, Advaxis, Ono Pharmaceutical, Innate Pharmaceutical, Amgen and Infinity Pharmaceuticals, between them c 25% of the portfolio. Ono has entered the top 10 through a combination of strong performance and an increase in the holding following a recent trip to Japan by one of the BIOG team. Ono's Opdivo cancer treatment, for which it has a partnership with Bristol-Myers Squibb, has shown encouraging results in combination with Incyte's Yervoy for cancers such as melanoma and lung cancer. Hsu adds that some smaller biotech firms with immunotherapy assets may be taken over by larger biotech or pharmaceutical firms if their drugs work best in a combination.

One area where the trust is not currently focused is novel antibiotics; portfolio holding Cempra was sold after a period of strong performance and there are no catalysts expected for the sector in the near term. Hsu says the team will reassess its view as data releases approach.

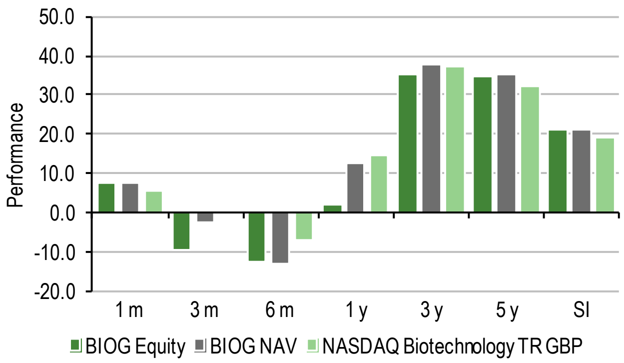
Performance: Recovering from recent setbacks

Exhibit 3: Investment trust performance to 30 November 2015

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 SI performance figures annualised. SI = since OrbiMed managed (19 May 2005).

Exhibit 4: Share price and NAV total return performance, relative to benchmarks (%), to 30 November 2015

	One month	Three months	Six months	One year	Three years	Five years	OrbiMed*
Price relative to NASDAQ Biotechnology	2.0	(9.4)	(5.8)	(11.3)	(4.7)	11.0	19.5
NAV relative to NASDAQ Biotechnology	2.0	(2.5)	(6.6)	(1.9)	0.4	12.8	21.3
Price relative to World-DS Pharm & Bio	5.6	(9.8)	(8.4)	(4.4)	36.5	86.0	120.5
NAV relative to World-DS Pharm & Bio	5.6	(3.0)	(9.1)	5.8	43.9	89.1	123.8
Price relative to FTSE World index	5.3	(14.2)	(9.6)	(0.8)	73.0	180.5	218.2
NAV relative to FTSE World index	5.3	(7.7)	(10.3)	9.8	82.3	185.2	223.1
Price relative to FTSE All Share index	6.8	(11.6)	(6.5)	1.1	95.8	208.7	272.2
NAV relative to FTSE All Share index	6.8	(4.9)	(7.2)	11.9	106.3	213.8	277.9

Source: Thomson Datastream, Edison Investment Research. Note: *OrbiMed measurement period is from 19 May 2005 when OrbiMed Capital was appointed BIOG's manager. Geometric calculation.

BIOG's strong long-term record has been dented by recent portfolio underperformance and a widening discount to NAV. Negative three- and six-month NAV and share price total returns are attributable to a combination of the market sell-off in September, stock specific events in H116 and a historically high level of gearing. Having been hurt by the gearing as the market fell on concerns over political pressure regarding drug pricing in the US, the managers took the decision to maintain the borrowing, based on the view that the sell-off was headline-driven rather than fundamentally based. This helped BIOG to outperform as the market bounced back in October and November.

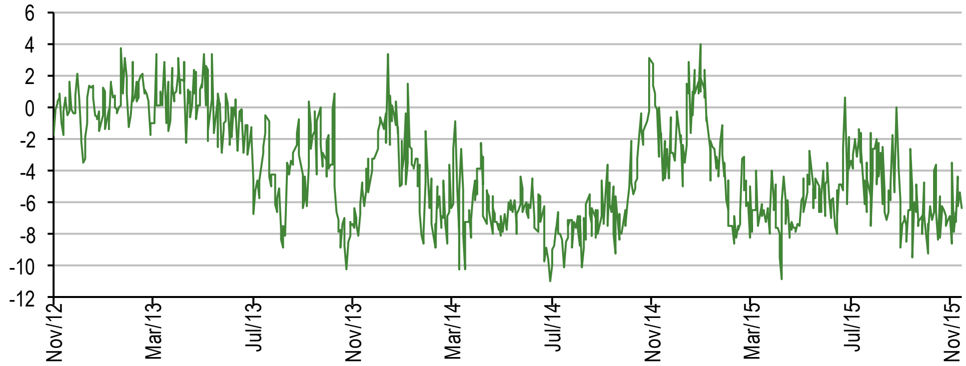
Portfolio underperformance in H116 (to 30 September) came as several large holdings produced disappointments. Top holding Biogen fell as safety concerns over its flagship MS treatment Tecfidera affected sales. Data-related disappointments hit Esperion and Puma, while Fluidigm had problems meeting sales targets after over-aggressive expansion. Together the top five detractors from performance in H116 had a negative NAV impact of 103p per share (compared with a positive contribution of 51.9p per share from the five best-performing stocks over the period).

BIOG's catalyst-driven approach means that performance may be more volatile around data releases compared with funds that may seek to avoid binary risks. However, the managers feel that OrbiMed's life science focus is key in this regard, with holdings assessed from a clinical as well as a financial standpoint. The trust's longer-term outperformance record (Exhibit 4) suggests a degree of success in anticipating the outcome of data releases. Of the five main detractors from performance in H116, four are still held, with the managers hopeful of positive news for Biogen's Alzheimer's pipeline, while a recent update on Puma's neratinib breast cancer candidate is seen as positive by the team. Esperion has been sold after FDA guidance called into question the benefits of non-statin LDL cholesterol reduction treatments (see Investment process, above).

Discount: Wider than average but narrower than peers

At 14 December BIOG's shares traded at a 6.3% discount to net asset value. This is wider than the averages over one, three and five years (4.6%, 3.8% and 4.4% respectively), probably reflecting short-term underperformance from the BIOG portfolio as well as a more challenging period for biotech stocks in general. A discount control policy aims to keep the discount on average below 6%; so far in 2015, 2.3m shares have been bought back at a cost of £17.4m. The board will also issue shares to manage a premium; at the start of 2015 110,000 shares were allotted, raising £842,000. While BIOG's discount is towards the higher end of its three-year range (as seen in Exhibit 5), it remains narrower than those of its peers (Exhibit 6).

Exhibit 5: Discount/premium over three years



Source: Thomson Datastream, Edison Investment Research. Note: NAV with debt at fair value.

Capital structure and fees

BIOG is a conventional investment trust with one class of share. There were 61.5m ordinary shares in issue at 14 December, with none held in treasury following the board's decision in July to cancel the existing treasury shares as well as cancelling any shares bought back to manage the discount. The trust uses gearing via an overdraft facility with JPMorgan Chase. During FY15 the borrowing limit was raised twice, first from 10% to 15% and then from 15% to 20%, to afford the manager more flexibility in making investment decisions. Net gearing at 30 November stood at 13.0%.

Portfolio manager OrbiMed receives an annual fee of 0.65% of NAV, while Frostrow Capital, which acts as alternative investment fund manager (AIFM) and provides company secretarial, marketing and administration services, is paid 0.3% of market capitalisation plus £60,000. A performance fee structure is in place to reward cumulative outperformance of the NASDAQ Biotech index: OrbiMed receives a fee of 15% of outperformance while Frostrow is paid 1.5%. Fees are crystallised quarterly but only paid if outperformance is maintained. No performance fee was paid for FY15 and £1.85m accrued at the year end was written back in H116 as a result of underperformance.

Dividend policy and record

Because of its focus on biotechnology companies, which may be at an early stage of product development and tend to reinvest any profits for future growth, BIOG has not historically paid a dividend (the last was 0.2p per share in 2001). For the six months ended 30 September 2015 the net revenue return (after expenses) was £343,000 or 0.5p per share. This was transferred to reserves, resulting in a 9.3% reduction in the trust's revenue deficit.

Peer group comparison

BIOG is a member of the AIC's specialist Biotech & Healthcare sector, which includes two biotech-focused investment trusts and two generalist healthcare funds. Exhibit 6 below also shows the Switzerland-listed BB Biotech. BIOG's long-term outperformance record can be seen in its NAV total returns, where it ranks second to BB Biotech over three and five years and first over 10 years. The more challenging recent period has seen it drop to fourth out of five over one year, and risk-adjusted performance as measured by the Sharpe ratio is also below the peer group average over one and three years. Ongoing charges are broadly average, while the level of gearing is above average. BIOG's discount to NAV is the smallest of the biotech specialists. In common with UK listed peer International Biotechnology Trust, BIOG does not pay a dividend, reflecting the capital growth focus of its investments. BB Biotech's 'yield' comes from capital distributions rather than portfolio income.

Exhibit 6: Biotech and healthcare investment trusts, as at 3 December 2015

% unless stated	Market cap £m	TR one year	TR three year	TR five year	TR ten year	Ongoing charge	Perf. fee	Discount (-) /Premium	Net gearing	Yield	Sharpe NAV 1 year	Sharpe NAV 3 years
Biotech Growth Trust	**445.5**	**7.7**	**153.4**	**334.4**	**514.0**	**1.2**	**Yes**	**-5.2**	**113.0**	**0.0**	**0.5**	**1.4**
BB Biotech AG	2253.7	25.7	244.7	385.7	--	1.1	No	-20.2	100.0	4.9	0.9	1.7
International Biotechnology Trust	210.3	19.0	144.3	241.3	370.1	1.7	Yes	-9.8	100.0	0.0	1.0	1.5
Polar Capital Glbl Healthcare	213.0	4.0	59.5	108.1	--	1.1	Yes	-0.8	100.0	2.1	0.3	1.5
Worldwide Healthcare	870.5	11.7	126.7	185.3	299.8	1.0	Yes	-7.3	110.0	0.7	0.7	1.8
Sector weighted average		**19.1**	**193.6**	**313.9**	**372.0**	**1.1**		**-14.1**	**103.6**	**3.6**	**0.8**	**1.7**
BIOG rank in sector	**3**	**4**	**2**	**2**	**1**	**5**		**2**	**1**	**4**	**4**	**5**

Source: Morningstar, Edison Investment Research. Note: TR=total return. Sharpe ratio is a measure of risk-adjusted return. The ratios shown are calculated by Morningstar for the past 12- and 36-month periods by dividing a fund's annualised excess returns over the risk-free rate by its annualised standard deviation. Net gearing is total assets less cash and equivalents as a percentage of shareholders' funds. BB Biotech is Switzerland-listed and not part of the AIC peer group.

The board

BIOG currently has seven directors, six of them independent of the manager. The chairman, the Rt. Hon the Lord Waldegrave of North Hill, has been on the board since 1998; he has signalled he will retire from the board in 2016. Peter Keen has been a director since 1997, while Professor Dame Kay Davies and Andrew Joy (who will succeed Lord Waldegrave as chairman) were appointed in 2012. Two new independent directors, Steve Bates and the Rt. Hon the Lord Willetts, have been appointed in 2015, while OrbiMed founding partner Sven Borho has served on the board since 2006. The directors have backgrounds in investment management, life sciences and politics.

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