



Closed-Ended Investments



Source: Refinitiv

Market data

EPIC/TKR	PIN
Price (p)	2,290
12m High (p)	2,330
12m Low (p)	1,960
Shares (m)	54.089
Mkt Cap (£m)	1,241
NAV p/sh (p)	2,848
Discount	20%
Market	Premium equity closed-ended inv. funds

Description

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

Company information

Chairman	Sir Laurie Magnus
Aud. Cte. Chr.	Ian Barby
Sen Ind. Dir.	Susannah Nicklin
Inv. Mgr.	Pantheon
Managers	Andrew Lebus/Helen Steers
Contact	Vicki Bradley
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Key shareholders, 31 May 2109

USS	8.15%
Old Mutual	7.03%
Esperides SA SICAV- SIF	5.75%
East Riding of Yorkshire	4.70%
APG Asset Mgt.	4.44%
Investec Wealth	4.37%
Private Syndicate pty	3.76%
Brewin Dolphin	3.45%

Diary

10 Sep	Institutional cap. mkt. day
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Analysts

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PANTHEON INTERNATIONAL PLC

11.9% average annual NAV growth since 1987

PIP (ticker PIN) invests in a diversified portfolio of private equity (PE) funds and directly in private companies. On average, it has beaten its benchmark index by ca.4.0% p.a. since inception in 1987, generating ca.1.5x the market's returns. This has been delivered by i) PE funds earning better returns than quoted companies, ii) PIP investing in the right parts of the PE market, iii) benefits from being in the Pantheon family, and iv) a structured fund selection process. PIP gives investors access to the whole PE market, with strong corporate governance. We believe the "real" NAV is above "book" NAV. There are risks (see below), but the discount makes the risk/reward anomalous, in our view.

- ▶ **Value-added:** PIP delivers market-beating returns because real value is added in the process. PE adds value through better operational performance, strategic flexibility and financial expertise. Through its whole-market, flexible mandate, PIP can select the best opportunities in this market, and it has proven skills in manager selection.
- ▶ **Investment neutrals:** We see no financial impact from the Woodford situation, but it is affecting sentiment. PIP's costs are a small part of investor returns. Due diligence and process make this a high-resource business but, despite this, returns post-costs have beaten market indices. Gearing and liquidity appear appropriate.
- ▶ **Valuation:** PIP currently trades at a 20% discount to NAV, despite its long-term outperformance. We outline why the "real" NAV is likely to be above the accounting value, making the discount higher than the public number. PIP re-invests returns for superior capital growth, and does not pay a dividend.
- ▶ **Risks:** Sentiment to the economic cycle is material (we note that PIP's NAV rose every year in the early 1990s' recession). Even though PIP has permanent capital and proven uplifts on exit, market sentiment to investments with illiquid and unquoted shares is adverse. Sentiment to the duration of the discount may also be an issue.
- ▶ **Investment summary:** PIP is in an attractive market, can pick the best part of that market and has competitive operational advantages. Its manager selection and portfolio structuring have added value. Corporate governance appears strong, and the "real" value of the assets is, we believe, above their accounting value. Investors are getting liquid access to the whole PE market. There are risks around the cycle, and illiquid and unquoted underlying assets, but comparing these with the historical returns makes the current discount an anomaly.

Financial summary and valuation

Year-end May (£'000s)	2017	2018	2019	2020E	2021E
Gains on investments	201,198	149,778	204,473	169,607	187,019
Investment income	17,436	15,504	13,222	14,496	15,984
Investment Manager's fee	-12,659	-15,020	-16,584	-21,710	-23,751
Other expenses	-1,783	-3,270	-573	-1,000	-1,000
Interest payable/similar expenses	-1,791	-1,950	-2,386	-2,386	-2,386
Return before taxation	204,790	131,947	194,918	152,008	169,866
NAV per share (p)	2,190	2,415	2,771	3,047	3,356
S/P discount to NAV	5%	-5%	-17%	-25%	-32%
Investments	1,224	1,275	1,450	1,598	1,765
Equity issued in year	-26	-3,546	-500	0	0

Source: Hardman & Co Research

Table of contents

IMPORTANT INFORMATION	3
Executive summary	5
Summary	7
Investment attractions	12
Long-term returns	12
PE adds value	13
Positioning in sweet-spot middle-market	17
Picking the right stage of investment	18
Portfolio vintage management adds value	19
Benefits from being part of Pantheon family	22
As a fund of funds, manager selection is key	23
Independent board/corporate governance	25
“Real” NAV is higher than accounting NAV	26
Liquid access to whole PE market	30
Other investment positives	30
Investment-neutral	31
Woodford and H2O funds read-across	31
Appropriate level of gearing through portfolio	32
Appropriate liquidity in PIP	33
Costs	36
Other issues	39
Investment risks	42
Sensitivity to turn in economic cycle	42
Shades of grey in the valuation	46
Unquoted assets/asset illiquidity	47
History of discount	47
Current portfolio	48
Valuation	50
Alternative approach	51
Triggers for a re-rating	51
Financials	52
Company matters	53
Glossary	57
Disclaimer	58

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- ▶ any trust of which any trustee is an 'restricted person';
- ▶ any agency or branch of a foreign entity located in 'restricted countries';
- ▶ any non-discretionary account or similar account (other than an estate or trust) held by a dealer or other fiduciary for the benefit or account of an 'restricted country';
- ▶ any discretionary account or similar account (other than an estate or trust) held by a dealer or other fiduciary organized, incorporated, or (if an individual) resident in 'restricted countries'; and
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Executive summary

PIP delivered ca.1.5x post-cost market returns since inception in 1987

PIP has delivered 11.9% average annual NAV growth since inception in 1987. This is a ca.4% annual outperformance compared with benchmark indices over this period and ca.1.5x the market level of returns after taking account of all costs. It has not come about by accident, but reflects:

Returns generated from being in attractive market, picking best bits of that market, being part of bigger Pantheon family, and a structured, proven manager selection process

- ▶ The PE process adds value, with multiple operational, strategic, financial, cultural and expertise levers to generate superior returns.
- ▶ In this attractive market, PIP's flexible, global mandate means it can exploit whichever sub-segments offer the most value. *Inter alia*, it actively manages the size of deals, the vintage and nature of investment, and the economic sector of the portfolio to optimise returns.
- ▶ Pantheon, the manager, controls risk tightly. While the mandate is flexible, the portfolio is hugely diversified, moderating extreme return volatility.
- ▶ Being part of the Pantheon family brings multiple benefits, including economies of scale, access to deals, a broad network of relationships, experience and expertise. It also brings strong corporate governance, with both the Pantheon/PIP relationship but also a visibly independent board.
- ▶ As a fund of funds, manager selection is key, and we outline below the sophisticated process and due diligence by which PIP's managers are chosen.

Accounting NAV likely to be conservative

We detail below why the accounting NAV is conservative, noting that there is no incentive for the PE fund managers (General Partner, GP) or PIP to inflate valuations, the checks and balances that are in place (including multiple reviews), the fact that the valuation ratings are in line with peers and, finally, that there has been a consistent uplift to book value on exit.

Gives investors liquid access to illiquid market, capital growth, controlled downside

PIP's model gives access to the entire illiquid PE market via highly liquid shares. Other investment attractions include: i) the capital growth story, with no tax leakage; ii) professional management of PE exposure; and iii) the KID (Key Information Document) stress-test shows lower downside risk than peers.

No financial read-across from Woodford, and appropriate gearing and liquidity

We see no financial read-across from the Woodford situation, although it could affect sentiment. The level of gearing in PIP, and in its funds and underlying companies appears appropriate. Liquidity is managed, and PIP has lower over-commitment than its peers. PE is a resource-intensive business, but this is more than compensated for by higher returns. PIP's costs are around one tenth of the returns earned by investors.

Business sensitive to economic cycle but still grew NAV every year through early 1990s' recession. NAV based off premium ratings for premium growth. Assets illiquid and unquoted but PIP unlikely to be forced seller.

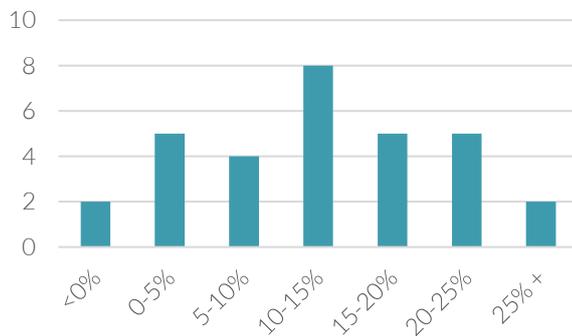
An economic downturn will affect the operating performance of underlying companies and PIP itself, is likely to reduce valuation ratings, and sentiment will be affected by perceived gearing. However, despite these challenges, PIP grew its NAV every year through the hard, early 1990s' recession. We note that the valuation rating on underlying companies is at a premium to the market (as are their revenue and EBITDA growth expectations) and the industry-accounting convention has elements that are unhelpful, and not timely. While PIP has illiquid, unquoted assets, its permanent capital and liquidity management mean it is unlikely to be a forced seller at distressed prices.

Discount anomalous with company-specific factors and historical performance

PIP is trading on a discount broadly similar to that of its peers, which does not reflect the company-specific factors identified above. It is also anomalous with superior returns generated over the long run. While there has been some volatility in the returns, in 58% of years since 1988, PIP has delivered a return of 10%-25%, and over three quarters of years have seen a performance in excess of 5%.

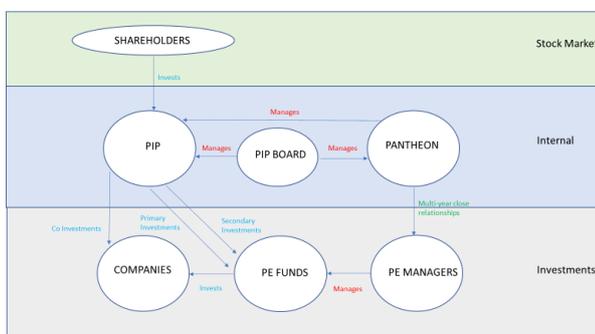
Pantheon International Plc

Number of years since 1988 that PIP has delivered NAV growth by level of annual return



- ▶ Average return since inception – post costs 11.9%
- ▶ In two years, delivered more than 30% (1993: 40%, with strong performance from secondaries bought at significant discounts, 2000: 48%, with exposure to venture, which boomed that year); delivered negative NAV in just two years (2009: -30% in financial crisis, 2002: -19% due to a reverse in the venture boom from two years earlier)
- ▶ Positive NAV growth in each year of early 1990s' recession
- ▶ In 58% of years since 1988, delivered return in the range of 10%-25%. Over three quarters of years in excess of 5%.

PIP's structure



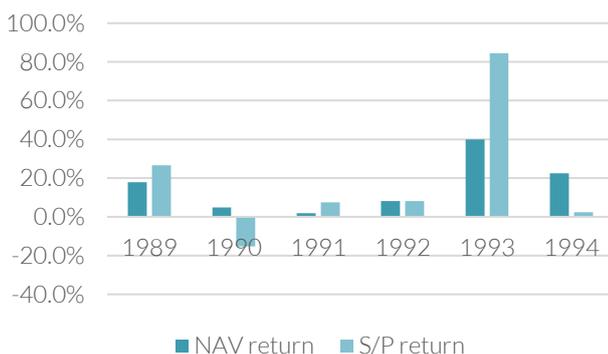
- ▶ PIP's investments managed by Pantheon, bringing benefits from economies of scale, proven long-term track record, huge network of connections to originate business and aid due diligence, and experience through all market conditions
- ▶ Three "pillars" of investment – primary (when new PE fund launched), secondary (taking over existing investors' positions), and third co-investing (i.e. directly owning the underlying company alongside a PE manager); all have different characteristics/risk profile

Valuation gains by investment stage (%)



- ▶ We believe investors can take great comfort from fact that accounting value is realistic; critically, no incentives (indeed, in some cases, disincentives) for PE manager to inflate ongoing valuation
- ▶ Underlying companies may be held in multiple funds, creating natural sense check on manager valuations
- ▶ EBITDA ratings in line with peers; while at premium to market, revenue and EBITDA growth also well ahead
- ▶ Premiums on exit reflect not just skill at achieving good realisation but also underlying conservative accounting

Recession fears may be more than in price – NAV rose every year through early 1990s' recession



- ▶ A recession will affect operating performance of underlying companies, PIP's own operating performance and valuation ratings
- ▶ In reasonably "hard" global recession (early 1990s taken as example), underlying companies still reported revenue and EBITDA growth; PIP's NAV rose every year in that period
- ▶ Worst-case annual share price fall over that period in line with current discount to NAV, so much of downside already built into price

Source: Company data, Hardman & Co Research

Summary

Investment positives

Outperformed benchmark indices by ca.4% p.a. since 1987. Most years delivering 10%-25% p.a. NAV growth.

PE adds value operationally, strategically and financially. It has more options, detailed due diligence, manager/shareholder alignment and businesses being managed for sale.

Market growth sustainable, rather than bubble of past

PIP's whole market mandate means it can pick best bits – currently middle-market

PIP invests in primary (new funds), secondary (established funds) and co-invests directly in companies – this flexibility adds value

Vintage management important

PIP has delivered ca.4% p.a. NAV and share price outperformance compared with benchmark indices since its inception in 1987. As noted, in 58% of years since 1988, the annual NAV growth has been in the range of 10%-25% – a consistency of performance that is welcome. Even in the early 1990s' recession, NAV grew every year (the only two years of falling NAV were in 2009 (the financial crisis) and 2002 (when a 2000 venture boom reversed)).

This outperformance has been driven partially by the fundamental financial outperformance that PE-backed companies deliver relative to quoted companies. PIP has identified a number of factors driving this, including: i) operational improvements; ii) less constraint on capital expenditure; iii) transforming strategy; iv) strengthening management; v) accretive mergers and acquisitions; vi) active management of capital structures (i.e. more financial gearing at lower cost); and vii) facilitating a high-value exit. In the section below, we provide factual evidence supporting these propositions.

In addition, we highlight that: i) PE-backed private companies can afford to focus on long-term performance; ii) the potential pool of available companies in which to invest is deeper and broader than the quoted markets; iii) many private company valuations are lower than those of listed companies, creating an arbitrage opportunity; iv) the PE process itself involves extensive due diligence, often with inside management information; v) managers' and shareholders' interests are closely aligned through common ownership all the way through the investment chain (i.e. underlying companies, GPs and PIP); and vi) a standard uplift for an acquisition in quoted markets is ca.25%-30%. The underlying companies in a PE portfolio are being prepared for just such corporate action, and an element of bid premium is therefore to be expected.

We examine the evidence that PE is approaching a cyclical peak, noting that growth this time around has been much more sustainable than that seen before the financial crisis. In particular, the growth rate of the PE market is half the level seen in the past, there is ca.25% more diversification by company numbers, and there is ca.20% less equity leverage. Additionally, PIP managers experienced the slowdown before the financial crisis and are more conservative in areas like balance sheet and over-commitment now. Finally, there is a much deeper secondary market.

A further factor driving outperformance is that PIP's flexible mandate means it can invest in the whole PE market and select which elements are likely to add the most value. The current portfolio has a bias to the middle-market, where i) there are fewer competitive pressures, ii) gearing is lower, iii) there are more options for value-enhancing acquisitions, iv) there are more potential economies of scale, and v) there is a wider range of exit options.

Having access to all stages of PE investments, and a flexible mandate to exploit them, is important to managing the portfolio. Primary deals give access to managers whose funds may not trade, and smaller niche funds are more likely to open up profitable co-investment opportunities, but create financial inflexibility and have longer paybacks. Secondary investments give quicker payback, and early fees will have been paid, incur material due diligence costs and may offer good entry pricing. While growing strongly, the market is still modest (ca.5% overall PE market). Co-investment opportunities are available only because of Pantheon's market presence, and they potentially add value, as there are typically very low or no fees associated with such investments. Recent returns at PIP from co-investments have been above-average.

Other aspects of portfolio management are important. These include managing the vintage, as older investments typically earn lower returns but generate cash. Newer

investments have lower cash generation, incur fees before income is generated, are a constraint on financial flexibility and have assets whose value can be increased by the PE techniques noted above. PIP actively manages the vintage of its book – most notably a one-off exercise segregating the returns from oldest (slowest-growing) assets into a separate Asset Linked Note (ALN), which was issued to a single shareholder in October 2017. The main, remaining portfolio should grow faster as a consequence of this segregation

Portfolio hugely diversified by name, geography and economic sector

We note that PIP has a hugely diversified portfolio by type of investment, geography stage, name concentration and economic sector. This diversification has been a considerable factor in delivering the distribution of returns, with over three quarters of years generating in excess of 5% NAV growth. Exposures are actively managed, and we note that increasing caution about the macroeconomic outlook saw exposure to the “consumer” sector fall significantly in FY’19.

Pantheon, as manager, has scale, expertise, market knowledge, contacts and track record

Being part of the Pantheon family adds further value, with i) economies of scale, including technology, risk control, market knowledge and information flows, ii) a team with huge experience, very importantly through multiple economic cycles, and iii) access to deals at all stages of investment. This has delivered a track record that has not only beaten market indices, but also is generally better than the company’s immediate fund of fund peers (especially over the long term) and better than average compared with direct-investing PE-quoted vehicles, while offering a lower risk profile.

Fund manager selection is key, and Pantheon’s approach is structured and not dependent on one individual

As a fund of funds, manager selection is key. We believe it is also important to understand how this has been achieved and, to do this, investors need to understand Pantheon’s investment process. We have detailed below why we believe it is tailored to the investment type and critically is process-driven, rather than single-individual-driven. The performance is driven by Pantheon’s competitive advantages and is not dependent on individuals, and so should prove more sustainable.

Robust corporate governance

In terms of good corporate governance, we note that the directors have appropriate market knowledge, experience of a range of economic conditions and clear independence from the manager. PIP’s independence from Pantheon is characterised by clear policies overseen by an independent board.

“Real” NAV above accounting NAV as evidenced by i) no incentive for PE managers to inflate performance, ii) spread of managers gives automatic sense check, iii) valuations of underlying businesses in line with peers, iv) using Pantheon’s experience, v) usual independent checks and balances

The focus on what is the “real” NAV has never been greater. Valuing private companies in public funds has always involved a degree of management judgement. Accordingly, we believe that investors should focus on i) there are no incentives – indeed maybe dis-incentives – for the PE managers who provide the valuations to inflate them, ii) the spread of managers gives a sense check, as the same underlying company may be held in multiple funds, iii) valuations relative to other PE houses are not over-stretching, iv) Pantheon’s experienced team has been through all trading conditions, and v) there are the usual independent checks and balances, including auditors.

Uplift on exit in FY’19 was 36% over book value a year before. We estimate average uplift is 10%-15% against book value at time of transaction

PIP’s realisations see an uplift on accounting book value, which, over the long term, we estimate at 10%-15% at the date of exit. The reported uplift on exit in FY’19 was 36% against the year before a comparison chosen as more recent valuations include an element of exit premium already. This average is the result of a range of outcomes, as the spread of exit realisation uplift/markdown is wide (nearly a third show realisations below book value a year before). We understand that this range of returns reflects areas like triaging underperforming elements of the venture portfolio to optimise the use of resources, and may be viewed as business as usual. There are no concentrations of businesses by geography or sector.

PIP gives liquid access to whole PE market

PIP's model gives access to the entire PE market, including funds that many investors cannot access directly. Its own shares are highly liquid, giving investors a good route into diversification in the illiquid underlying market. Other investment attractions include i) a capital growth story with no tax leakage, ii) professional management of PE exposure, and iii) KID stress-test shows lower downside risk than is the case for peers. We note correlations between this scenario and large discounts, although the methodology of the KID calculation is unwelcome by all in the investment company community.

No financial read-across from Woodford, but may affect sentiment

We see no financial read-across from the Woodford/H2O situations, as PIP has permanent capital, a visibly independent board, no asset contagion, minimal dependency on platform distribution, and good liquidity in its own stock. However, investor appetite for illiquid, unquoted investments may lessen, and market sentiment is hard to call.

Gearing and liquidity are appropriate and well managed

As with any PE fund of funds business, there are three layers of gearing to consider: i) the level of leverage in the underlying companies – in PIP's core small-to-medium buy-out space, there has been only a modest increase in gearing in the underlying companies over the past five years (current average ca.3.7x EBITDA); gearing for larger deals has increased significantly, with low-cost funding available, but covenants for the largest borrowers have moved in their favour, making a breach of covenants less likely; in the growth/venture portfolios, gearing is structurally lower than buy-out situations; ii) gearing in the funds – in terms of gearing at the fund level, PIP comments that this has typically been used moderately and is backed by undrawn investor commitments; iii) debt in PIP - PIP itself has had significant net cash balances for several years (end-May 2019: £143m, average end-May 2015-19: £145m), and it has not utilised its debt facility.

PIP and its peers make commitments that are spread over many years. The entire commitment is more than the current cash balances/borrowing resources, as the existing business is hugely cash-generative and, over the life of the commitment, realisations may be expected to more than cover any outgoings by a comfortable margin. It is, however, a risk to over-commit, and we note that PIP is less over-committed than its peers.

On costs, PIP's fees are around one-tenth of returns; adjusting for mix, PIP's management fees are low compared with peers. PIP's challenging threshold for triggering payment of performance fees is unlikely to be breached in near term, and peer comparisons distorted by legal structure.

Costs are a feature on which some investors focus. We highlight the conclusion on page 18 of our report, *Investment companies understanding the deepest discounts*, published on 14 May 2019, which noted that, within the companies in that report, there is no statistical correlation between the discount to NAV and fees. Rather than bald cost numbers, we believe investors should focus on the following points: i) the fees relative to returns – PIP's own costs are around one-tenth of shareholder long-term returns; ii) which costs are being generated and why – PE is a cost-intensive business and not deploying resources would materially affect returns; iii) PIP's performance-related fee has a hurdle NAV of 3,455p (latest NAV 2,848p), and is unlikely to be triggered in the foreseeable future; iv) peer comparisons are hugely distorted by mix. The average cost of executing secondary investments is high because of the extensive due diligence required on multiple underlying companies, but this resource is more than compensated for by the returns achieved in this market. Co-investment is also a high-cost operation. Despite being significantly overweight in these above-average cost businesses, PIP's management fees are broadly in line with those of its peers. The mix of business would support PIP charging fees significantly above peers; and v) disclosure requirements are unhelpful to peer comparisons.

Other neutral factors include discount management, currency exposure and co-investor liquidity risk

Sentiment to economic cycle an issue, although PIP's NAV through early 1990s' recession rose every year

"Real" NAV is likely to be above accounting figure, but EBITDA multiple has been rising. There is an element of exit premium in the valuation and a reliance on third parties for data, and some valuations may be dated.

PIP's assets are illiquid and unquoted, although this is less of an issue, as probability of it ever being a forced seller is low

Other investment-neutral factors include: i) the discount can be helped by buy-backs, but PIP does not believe buy-backs in isolation are an effective discount management tool; PIP buys back shares for investment purposes, i.e. when the expected return from doing so is better than investing further in a portfolio, and this is indicative of the perceived business opportunity that PIP has not bought back shares, even when the discount has approached 20%; ii) there is some unhedged currency exposure, but this has not been a material factor over the medium/long term; and iii) there is a risk that another investor fails to meet a fund call. PIP advises that this is very rare and that the impact on its holdings, if any, has been minimal.

Investment risks

We believe one of the key investor concerns is how PE will perform in the event of an economic downturn. We note that, in the early 1990s' recession, PIP reported NAV accretion every year. Compared with the financial crisis, PIP is much more liquid and so much less likely to be a forced seller of assets at distressed prices. A downturn has a number of potential impacts, including: i) weaker operational performance in the underlying companies – despite this, we note that in 2009, revenue growth in the portfolio was significantly ahead of benchmark averages and the underlying companies still produced, on average, an increase of 7% in EBITDA – these rates were slower than before the crisis, but still showed positive growth performances; ii) it will impact PIP's own operational parameters – the distribution rate fell by three quarters (from 39% of the opening portfolio in FY'07 to 11% in FY'09/'10), and the call rate fell by nearly four-fifths (from 60% of outstanding calls in FY'07 to 16% in FY'10); iii) there is a higher risk of default where companies have more leverage. For PIP, we note that mid-market gearing levels are stable. In the larger buy-out space, higher leverage is partially offset by increased prevalence of cov-lite documentation, reducing the probability of default; iv) the EBITDA rating applied to underlying companies is likely to fall with market falls, reducing the NAV; and v) there are likely to be many more attractively-priced re-investment opportunities.

While we believe the "real" NAV is above the disclosed accounting levels for the reasons identified on pages 22 to 24 of this report, some aspects of the market-wide conventions are unhelpful to fully understanding the business. We also note: i) the EBITDA multiple has been rising and is now at its highest premium to the MSCI World Index comparator in recent years. We understand that mix is a significant factor and that PIP is relatively overweight in strongly-growing IT companies at a time when the market appetite for such stocks, and so their rating, has not only been high but has also been increasing (hence the relative re-rating against the market indices in recent years); ii) some of the current valuations include an element of exit premium, which could be deferred if market conditions worsen; iii) there is a reliance on third parties for valuations – these are independently checked, and the fund manager's conservatism is a key consideration when PIP invests, but this does create an extra risk; and iv) the valuations are typically delayed by a couple of months, as it takes this amount of time for the managers to collate all the information – this may lead to over- or under-statement relative to the current market rating.

PIP's assets are illiquid and unquoted. However, the key question is whether PIP is ever again going to be in a situation of a forced seller of assets. Investors can take comfort from i) the permanent structure of the closed-ended vehicle, ii) appropriate gearing and liquidity in the vehicles, and iii) a conservative over-commitment policy, with future undrawn commitments significantly covered by existing facilities – let alone future cash generation. We would characterise concerns about asset illiquidity and quoted status as driven by sentiment, rather than by fundamentals.

PIP generally traded at discount, but we note other companies have moved from discount to premium valuation.

Key portfolio conclusions: i) above-average IT and energy, below-average industrials; ii) relatively overweight growth and underweight buy-outs; iii) 60% in investment phase, in line with peers; iv) by some margin, greatest proportion of secondary (i.e. traded) positions; v) global exposure with limited Brexit risk; vi) greatest degree of diversification by name and manager.

Since inception, PIP has generally traded at a discount, but i) this is anomalous with the sustained NAV growth outperformance across a range of time scenarios and economic conditions, and ii) other companies that have traded at a discount for a sustained period have moved to trading at a premium. The downside risk of the discount widening significantly, even in a recession, would appear modest.

Current portfolio

In terms of its current portfolio positioning, the key conclusions that we draw from the table on page 43 of this report are:

- ▶ PIP has the highest overweight exposure relative to its peers: i) 24% to IT vs. peer average of 16%; ii) 9% to Energy vs. peer average of 2%; iii) 7% to Communications vs. peer average of 3%; iv) 12% to Financials vs. peer average of 9%. The key underweight sectors relative to peers are Industrials (9% vs. peer average of 18%) and others, which include areas such as Business Support and Leisure. *Prima facie*, this gives PIP a greater exposure to growth through IT, and management emphasises, as a theme, investing in companies that can disrupt markets. The relative sectoral exposure to a downturn appears mixed, with, for example, the overweight Financials increasing risk, and the underweight Industrials reducing it.
- ▶ Relative to the average of its peers, it is overweight in growth and special situations and underweight buy-outs (the latter still form the majority of PIP's portfolio – just less so than peers). In terms of peer comparisons, we note that HVPE's other assets are real assets and mezzanine exposure.
- ▶ The reported age profile between companies is diverse. Against the average of its peers, PIP has an older reported average book, especially from 2010 and earlier. PIP has 60% of its portfolio in what may be considered an investment phase (vintage 2015-19), exactly in line with its peers. It has 20% in a growth phase (vintage 2010-14), against its peers' ca.25%, and 20% in a mature phase (vintage pre-2010), against its peers' 15%.
- ▶ PIP has the highest proportion of secondary investments by some margin. It also has one of the highest proportions of co-investments/direct investments, with its exposure to primary investments well below-average. PIP's primary exposure is just over half that of its closest peer, HVPE.
- ▶ By geography, PIP and HVPE have very similar profiles, and both are global businesses. PIP's other peers are much more weighted to Europe/UK. We note that the Brexit risk for PIP is thus below-average.
- ▶ PIP has one of the most diversified portfolios, as measured by largest underlying company and manager exposure.

Valuation

In terms of valuation, we note that PIP is trading in line with most of its fund of fund peers, with a discount of 20%. This level appears anomalous with its record of delivering superior returns and the fact that its book value is likely to be conservative. Several comparable companies are at similar discounts, suggesting that there is a market concern about the sector as a whole and that little differentiation is being given for each company's unique characteristics. We have outlined above how, for example, PIP i) grew its NAV through the early 1990s' hard recession, ii) how its whole-market, flexible mandate adds value with its portfolio management, iii) the value added by being part of the Pantheon family, iv) its conservatism in accounting NAV, gearing and on over-commitment, and v) the strong corporate governance. There are risks, but these appear anomalous with the valuation, in our view.

Investment attractions

Long-term returns

Significant NAV and share price outperformance compared with benchmark indices. Since inception, beat has been ca.4% p.a.

The table below highlights the long-term performance of PIP's NAV and share price compared with both the FTSE All-Share and the MSCI World indices. The key conclusions we draw are:

- ▶ Since inception, the outperformance has been around 4% p.a. for both the NAV and share price compared with both indices, i.e. ca.1.5x the market's performance.
- ▶ PIP has outperformed the FTSE All-Share over every performance period.
- ▶ The NAV has either outperformed or at least been in line with the MSCI World Index over every performance period.
- ▶ The share price has shown more volatility than the NAV.

Annual performance (%) as at 31 July 2019

	NAV per share	Ord. share price	FTSE All-Share total return	MSCI World (£) total return
1 year	15.6	12.7	1.3	8.4
3 years (% p.a.)	14.7	16.9	8.3	13.0
5 years (% p.a.)	15.7	14.9	6.8	14.1
10 years (% p.a.)	13.9	20.8	9.6	13.6
Since 1987 inception (% p.a.)	11.9	11.6	7.9	8.1

Source: PIP website accessed 23/08/19, Hardman & Co Research

58% of years since 1988, performance has been 10%-25%. In early 1990s' recession, NAV grew every year. Only two years of falling NAV since inception.

The charts below dig deeper into the long-term trends. We highlight:

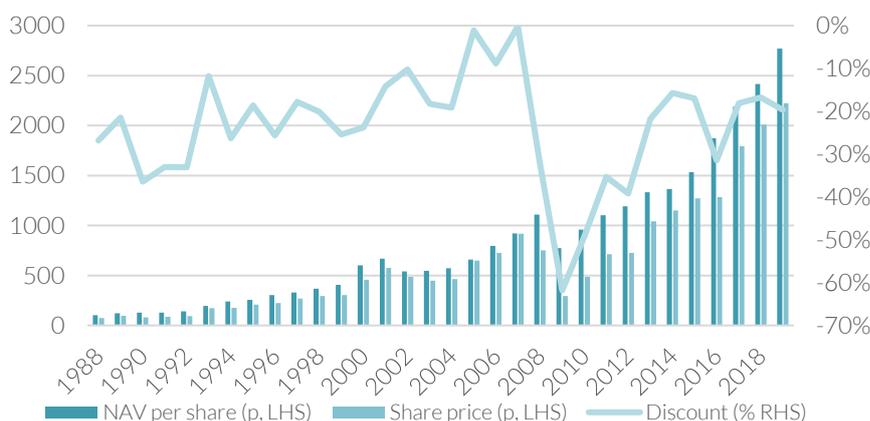
- ▶ In 58% of years since 1988, PIP has delivered a return of 10%-25%, and over three quarters of years have seen a performance in excess of 5%.
- ▶ The limited outliers include two years where PIP delivered more than 30% (1993: 40%, with recovery from recession, 2000: 48%, with venture boom). There were also two years that delivered negative NAV (2009: -30%, due to the financial crisis, 2002: -19%, due to a partial unwind of the 2000 venture boom).

Annual and rolling five-year NAV performance (%)



Source: PIP Report and Accounts, Hardman & Co Research,

Annual and rolling five-year NAV performance (left-hand graph, %),



Source: PIP Report and Accounts, Hardman & Co Research,

PE adds value

PE has multiple levers to add value

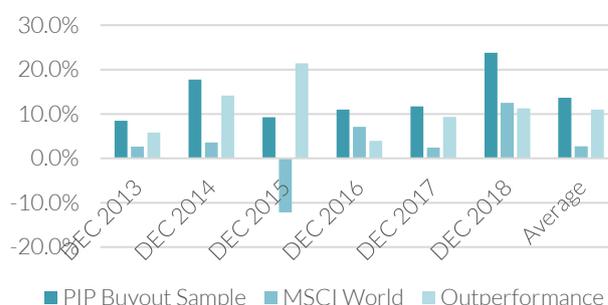
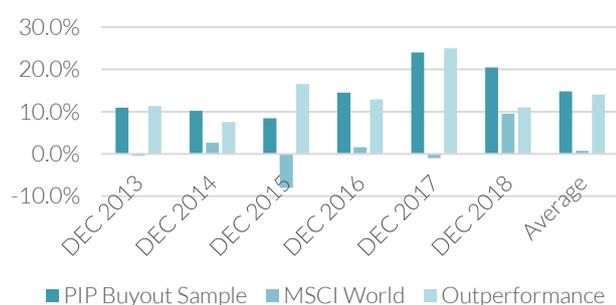
We believe the excellent long-term track record identified above reflects both the positive underlying market and the value added by Pantheon in that market. In its 2019 Report and Accounts, PIP identified a number of ways in which PE adds value.

Techniques used by PE managers to create value as identified by PIP	
Stage	Process
Operational improvements	Generating top-line growth and margin expansion by developing new products, geographical expansion, enhanced sales force effectiveness, process optimisation and the use of technology.
Capital expenditure	Providing the financial resources to support business growth objectives.
Transforming strategy	Increasing the market value of a company by adopting a new business model, repositioning a business within its sector, diversifying its markets and implementing a credible growth strategy.
Strengthening management	Making new hires and adding industry specialists who bring fresh perspectives and the expertise that can drive the business further forward. Membership of Board and Advisory Committees. Effective alignment of incentives.
Accretive mergers and acquisitions	Growing scale, increasing sales and operational capabilities, improving a company's position within an industry and releasing synergies to unlock growth. Target company sourcing, due diligence and integration.
Active management of capital structures	Determining the optimal debt/equity mix based on factors such as market conditions and cashflow profile. Using banking and debt relationships developed across the PE manager's platform.
Facilitating a high-value exit	Facilitating a high-value exit of the business through a competitive sales process. Well-timed exits optimise investment returns.

Source: PIP, Hardman & Co Research

PIP's underlying companies have faster revenue and EBITDA growth than benchmark indices' constituents

Evidence of operational improvements is given in the two charts below. These show that, on a sample covering nearly 60% of buy-out companies in the PIP portfolio, the revenue growth has exceeded the constituents in the MSCI World Index by 14% p.a. (2013-18). This has fed through to EBITDA growth of 11% in the PIP buy-out sample, over four times the MSCI World Index average. It should be noted that EBITDA growth changes with the vintage of investment (typically slow on an initial investment and then accelerating as operational performance kicks in) – so short-period, specific growth rates need to be treated with a degree of caution.

Revenue (left-hand graph) and EBITDA (right-hand graph) growth (%) for sample of buy-out companies in PIP portfolio against MSCI World constituents


Source: PIP 2019 Report and Accounts p.57, Hardman & Co Research,

Financial management ensures cheaper debt. Well-managed capital structure also enhances shareholder returns.

In the table below, we consider some theoretical scenarios showing the benefit of increased financial leverage. For simplicity, we have assumed an investment of £100, which is subsequently sold for £110. An investment fully funded by equity would see the equity rise by 10%. If it were half debt-funded, the equity would rise to 20%. If it were half-funded and half the debt were repaid during the PE period of ownership, the return would rise to 70%. If it were 90% debt-funded at the outset, the equity would double.

Theoretical increase in returns with financial leverage

Initial equity contribution (£)	Initial investment	Initial equity	Sale proceeds	Equity at sale	% equity gain
100% equity	100	100	110	110	10%
50% debt	100	50	110	60	20%
50% debt (half repaid)	100	50	110	85	70%
90% debt	100	10	110	20	100%

Source: Hardman & Co Research

PE not only increases amount of leverage but also reduces cost of funding

In terms of cost of funding, PE funds have more bargaining power with banks than the individual underlying companies, and so can negotiate cheaper finance. This is an ongoing process, and not just when a company is first acquired (as we identified in the turnover section of our report on RM Secured Direct Lending, *Predictable revenue streams generating high yield*, published on 5 June 2019). The techniques are not risk-free, and we discuss the impact of financial gearing on PIP specifically in the section below (see pages 28-29).

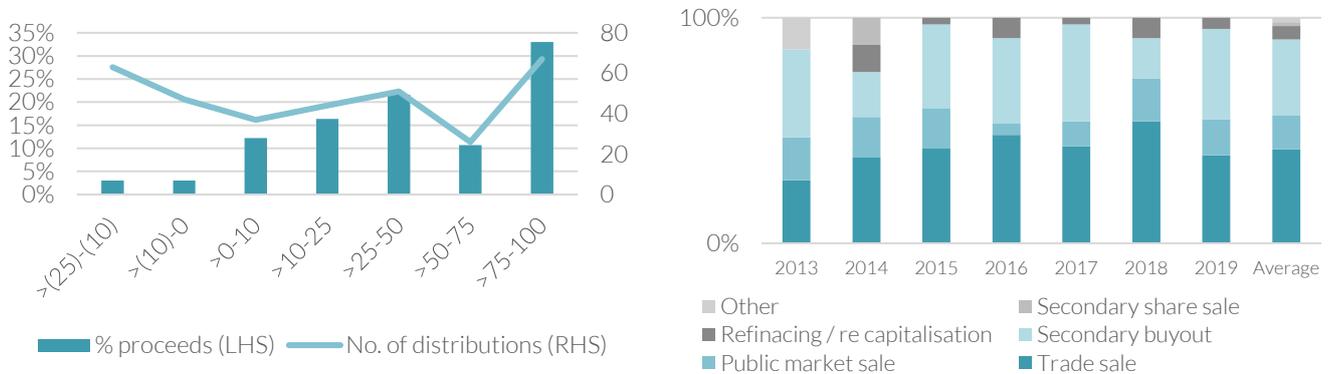
Managing exit adds value – Reported FY'19 exit uplift 36% on year before. Hardman & Co estimates 10%-15%, on average at date of sale

In the left-hand chart below, we consider the value added by effectively managing the exit. The 2019 Report and Accounts (page 45) shows the uplift on the valuation to 12 months prior to disposal. While some of the uplift in valuation is likely to come from business earnings growth in that period (in the year to end-December 2018, a sample of PIP's buy-out businesses reported 24% EBITDA growth, 12% in 2017 and 11% in 2016). If we strip out this growth, it implies that the uplift attributable to exit has consistently averaged ca.10%-15%.

GPs have multiple exit options

The right-hand chart shows the breakdown by type of exit. As can be seen, trade sales have been the single most important route (42%, on average, 2013-19), followed closely by a secondary buy-out (34%). IPOs have been a relatively modest 15%. We examine the sensitivity of each route to the economic cycle later (see page 38), but it is evident that PIP has invested in managers with expertise to exploit the full spectrum of exit routes.

FY'19 uplifts on exit realisations compared with book value a year before (% , left-hand graph) and mix of type of exits, 2013-19 (% , right-hand graph)



Source: PIP 2019 Report and Accounts, p57, Hardman & Co Research

Importance of each factor is company-specific. Key message is range of options to add value.

It is important to recognise that the importance of each of these value-added factors will vary with each PE opportunity. Some may be driven more by management changes, while others will be driven by access to more capital to facilitate consolidation.

In addition to the factors identified by PIP, we also believe that the following are relevant:

In addition to factors identified by PIP, we highlight i) focus on long term, ii) broader pool of investment opportunities, iii) private valuations lower than public ones, iv) extensive due diligence in PE process, v) manager/shareholder interest alignment, vi) PE businesses are being groomed for corporate action

- ▶ Compared with publicly-quoted companies, a PE-backed private company can afford to focus on long-term performance without the distraction of meeting short-term performance expectations. We believe the PE managers exert appropriate controls to ensure that there is oversight, and that this long-term focus does not become an excuse for short-term underperformance.
- ▶ The potential pool of available companies for PE companies to invest in is deeper and broader than the quoted market. Aberdeen Standard believes there are five times as many private company opportunities as listed ones.
- ▶ Many private company valuations are lower than listed ones, creating an arbitrage opportunity whereby PE companies can buy private companies and transform them over time into listed ones.
- ▶ The PE process itself involves extensive due diligence, often with inside management information. The depth of investigation is typically more than would be seen for most public companies – even though it requires significant resourcing (see section on costs later, on page 32 of this report).
- ▶ Managers' and shareholders' interests are more closely aligned through common ownership at all levels of the investment chain. This includes the underlying company managers, the GPs and PIP itself.
- ▶ We noted above that part of the PE manager skill is expertise in achieving a high-value sale. We believe that an incremental aspect to this is that the businesses are being actively managed with the expectation that there will be corporate action. By grooming such businesses for sale, there is inherent value creation. We note that, in the public markets, a sale would typically be at a premium of 25%-30% to the pre-sale price.

The excellent returns can be seen in both PIP and its peers. HVPE reports 12.2% compound NAV growth in \$ terms from FY'09 to FY'19, and ICG Enterprise Trust has seen underlying portfolio growth (i.e. pre-expenses) in excess of 10% for 10 years. We note that the success of PE as an approach can be also be measured by the 4.2% CAGR

There is some evidence that PE is approaching cyclical peak, but growth rate is around half that seen before financial crisis, with ca.25% more diversification by company numbers and ca.20% less leverage. Additionally, the managers experienced the slowdown, and there is a much deeper secondary market.

PIP has bias to middle-market, where i) there are fewer competitive pressures, ii) gearing is lower, iii) there are more options for value-enhancing acquisitions, iv) there are more potential economies of scale, and v) there is a wider range of exit options

in the number of PE-backed North American and European companies over 2008-17, compared with a -3.8% CAGR in the number of publicly-quoted companies over the period.

Has PE peaked?

Some investors are concerned that the PE market has peaked. Such a view is supported by: i) PE deal volumes in 2018 were \$1.4tr, for the first time matching the 2007 highs; ii) pricing is similar to 2007 – valuations within the European buy-out market have coalesced at around 9.0x-10.0x EBITDA since 2008, with 2018 at the very top of this range, and valuations within North America have crept upwards in recent years, with 2018 averaging 10.6x EBITDA, albeit 4Q'18 was lower, at 10.3x EBITDA; iii) cov-lite debt is increasingly available; and iv) “dry powder” (committed PE funds that have yet to be deployed) keeps rising, and new entrants are coming into the market (McKinsey reported 9,000 PE firms in 2018, against 6,300 in 2013, and Standard Life Private Equity Trust reported that the capital raised for European and North American PE now represents around 3.9 years and 4.8 years of investment capacity, respectively, up from 2.8 years and 3.3 years at December 2015).

However, investors should also consider that: i) the private markets are considerably larger (some estimates double) than the size of 2007 – so the proportionate growth is that much less, and the “bubble” is less inflated; ii) the average PE deal size has been rising steadily, but is still ca.20% below the 2007 levels, with ca.25% more companies being invested in – the similar deal volumes to that year mask much greater investment company diversity; iii) average deals are less levered – while the valuations to EBITDA multiples are broadly similar, equity now accounts for half the valuation, whereas it was just over 40% in 2007 – and debt/EBITDA is ca.20% lower than in 2007; iv) disclosure is significantly enhanced; v) many market participants have been through the financial crisis – with the scars to prove it; and vi) the growth in the secondary markets provides liquidity for fund investments, which was simply not available in 2007. There are now more tools to manage portfolios than in the past.

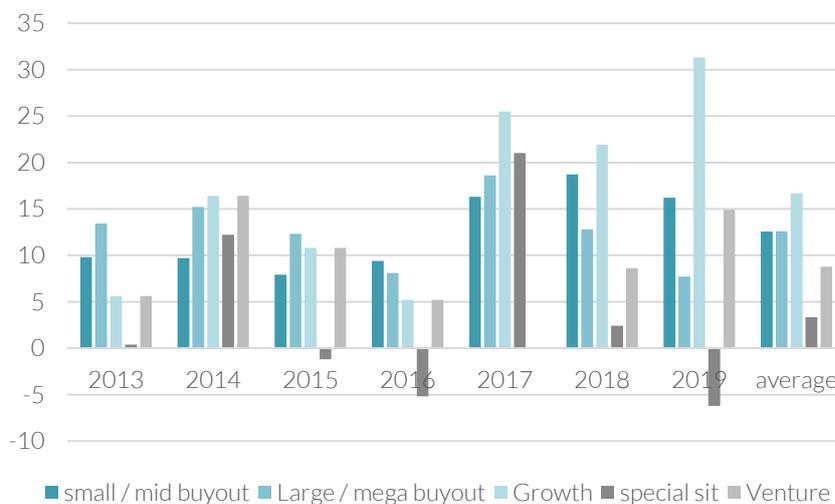
Positioning in sweet-spot middle-market

We detail PIP's portfolio on page 43. The current bias is towards the middle-market, rather than the largest buy-outs. This has a number of beneficial effects.

- ▶ Much of the dry powder (committed PE funds that have to be deployed) is in larger funds targeted at larger buy-outs. Competition in that space is the most intense, with the greatest upward pressure being seen on the prices having to be paid for new investments. In the middle-market, there is relatively less competition.
- ▶ As we note on page 29, there is typically higher EV/EBITDA gearing in the larger buy-outs (5.5x) compared with mid-sized deals (3.7x). Like-for-like, this introduces greater financial sensitivity to the economic cycle in larger deals.
- ▶ The potential to add value through in-fill tactical deals is less, given the potential competition issues from owning larger players. Generally speaking, moving the performance dial on a medium-sized business is easier than on a larger one.
- ▶ The range of potential exits is greater, as there are more potential buyers of such assets than, say, mega-buy-out deals.

As can be seen in the chart below, the gains on exit are variable but, over recent periods, small and middle-market buy-outs have generated larger gains than other stages of investments. These gains reflect historical investments, but bode well for the current focus.

Valuation gains by stage, FY'13 to FY'19 (%)



Source: PIP Report and Accounts, Hardman & Co Research,

Picking the right stage of investment

PIP’s flexible global mandate means it can make investments in all three investment stages. Each has specific opportunities and risks. By accessing all three, PIP is well positioned to exploit the best opportunities at any given time. The three pillars are as outlined below.

Primary deals give access to managers whose funds may not trade, and smaller niche funds are more likely to open up profitable co-investment opportunities but create financial inflexibility and have longer paybacks.

- ▶ Investing in PE through a primary commitment strategy (e.g. commitments to new PE funds) has a number of consequences, including i) increasing the proportion of immature assets in its portfolio, resulting in longer payback periods, ii) increasing undrawn commitments relative to its assets, which can reduce PIP’s financial flexibility or require higher levels of standby financing at a cost, iii) giving access to managers whose funds may not trade in the secondary markets and smaller niche funds, which may only be open to investors such as Pantheon; and iv) likely opening up profitable co-investment opportunities. On balance, the Board is de-emphasising primary commitments but is making targeted primary commitments for portfolio construction purposes, primarily in the US and Europe. The investment rationale for any new primary commitments is weighed against their effects on PIP’s financial flexibility.

- 2018 was another record year for buy-out fundraising in Europe, with \$74.9bn raised in the period, which was marginally up on the prior year (\$74.6bn). Conversely, North American fundraising was less successful, with \$136.7bn raised in 2018, down 31% on the prior year.

Secondary investments give quicker payback, and early fees will have been paid and may offer good entry pricing. While growing strongly, the market is still modest (ca.5% overall PE market).

- ▶ Secondary investments are purchases of existing interests in PE funds, which are typically acquired between three and six years after a fund’s inception, and when such funds are substantially invested. PIP benefits from secondaries because i) the fees and expenses in the first few years have been paid, ii) distributions from the fund will be returned over a shorter time period – this helps to reduce the drag to performance from young and immature funds, known as the “J-curve effect”, iii) in addition, secondary assets can sometimes be purchased at a discount, especially in cases where the seller has a need for liquidity, increasing the opportunity for outperformance. PIP advises that its typical secondary deal involves relatively younger assets, which are priced at around NAV. We explore this in some more detail in the section on picking the right manager on page 19, but one downside is the considerable due diligence that secondary investment

requires upfront. In essence, Pantheon has to review all the underlying investments on top of the manager’s skills, and this takes time and resource. This can be compounded in that not all secondary deals complete, and so a proportion of time spent does not ultimately lead to an investment. These costs are more than compensated for in returns, but this issue does create a different dynamic for PIP relative to peers.

- 2018 was a record year for the secondary market in terms of deal volume, with \$74bn of transactions completed. This represents a 28% increase on volumes transacted in 2017. Transactions over \$500m in size accounted for nearly 60% of the overall deal volume and, as a result, a high proportion of the market (around 70%) is concentrated in buyers managing vehicles with capital greater than \$4bn.¹
- Average market pricing in secondary transactions in 2018 declined modestly, from 93% of NAV in 2017 to around 92%. This reflects the continued supply of 2008 and older vintage funds, which generally have limited upside and therefore trade at higher discounts to NAV.

Co-investment opportunities are available only because of the Pantheon market presence, and they potentially add value as there are typically very low or no fees associated with such investments. Recent returns at PIP from co-investments have been above-average.

- ▶ PIP is entitled under Pantheon’s allocation policy to co-invest alongside Pantheon co-investment vehicles, directly into companies alongside Pantheon’s managers, benefiting from access to numerous global opportunities that it would not have capacity to complete alone. Such investments are by invitation only and reflect Pantheon’s high regard in the market. Performance is boosted, as there are typically very low or no fees associated with such investments. In FY’19, PIP saw 19.6% valuation gains from co-investments against 15.7% from primary investments and 8% from secondary investments (depressed by a decline in value of energy companies, which is a sector overweight in the secondary book). On page 12 of its [June 2019 presentation](#), Standard Life also noted the outperformance of co-invested funds over direct buy-out funds every vintage year over 2008-14.

Older investments typically lower returns but generate cash. Newer investments have lower cash generation, incur fees before income is generated, are a constraint on financial flexibility, and have assets whose value can be increased by the PE techniques noted above. Need to balance these factors.

Portfolio vintage management adds value

We detail the life cycle of a PE fund on page 30. The typical PE fund has a notional fund life of around 10 years, although most have one- or two-year extension clauses, and many have a final duration out to 15 years. Each fund’s strategy creates a unique vintage profile (and understanding this is a core competency for PIP). With that caveat, we note that PE managers are looking to crystallise value and, where this is taking a long time, it may be because the investment has not performed as well as hoped/planned. There are always exceptions, but, on average, the expected return from the older assets is lower than those realising assets within the initial 10-year horizon. On the flipside, early-stage investments typically have i) low realisations and cash generation, ii) fees earned by the manager, but little income generation, iii) more cash calls to come, and so representing a constraint on future financial flexibility, and iv) assets whose value can be increased by the PE techniques noted above. Balancing these factors is a key part of portfolio management and, as can be seen in the table below, PIP has been actively managing down the weighted average life of its funds for some years.

Weighted average life of funds in portfolio					
End financial year end	2015	2016	2017	2018	2019
Number of years	7.9	7.3	6.7	5.7	5.2

Source: PIP Report and Accounts, Hardman & Co Research

¹ Source: Standard Life Private Equity Trust 2019 interim Report and Accounts p16

PIP segregated most of its oldest assets by issuing an ALN

An important part of the vintage management process was the issue of a £200m unlisted ALN at the end of October 2017. One shareholder at the time received this separate security, which receives 75% of the distributions from a selected portfolio of older investments. It thus segregated most of the lower returns expected from these assets from the remaining younger portfolio on which PIP ordinary shareholders have claims. In accounting terms, £200m of NAV was stripped out from the company, matched by a new long-term liability. As receipts are received and distributed to the ALN holder, the liability reduces (end-May 2019: £2m in current liabilities and £92m in creditors due over one year). The liability is expected to mature by August 2027. We believe the ALN should be considered as a one-off “cleaning-up exercise”, which is unlikely to be repeated in the foreseeable future, and the portfolio vintage is now more balanced.

Diverse portfolio

Hugely diversified portfolio

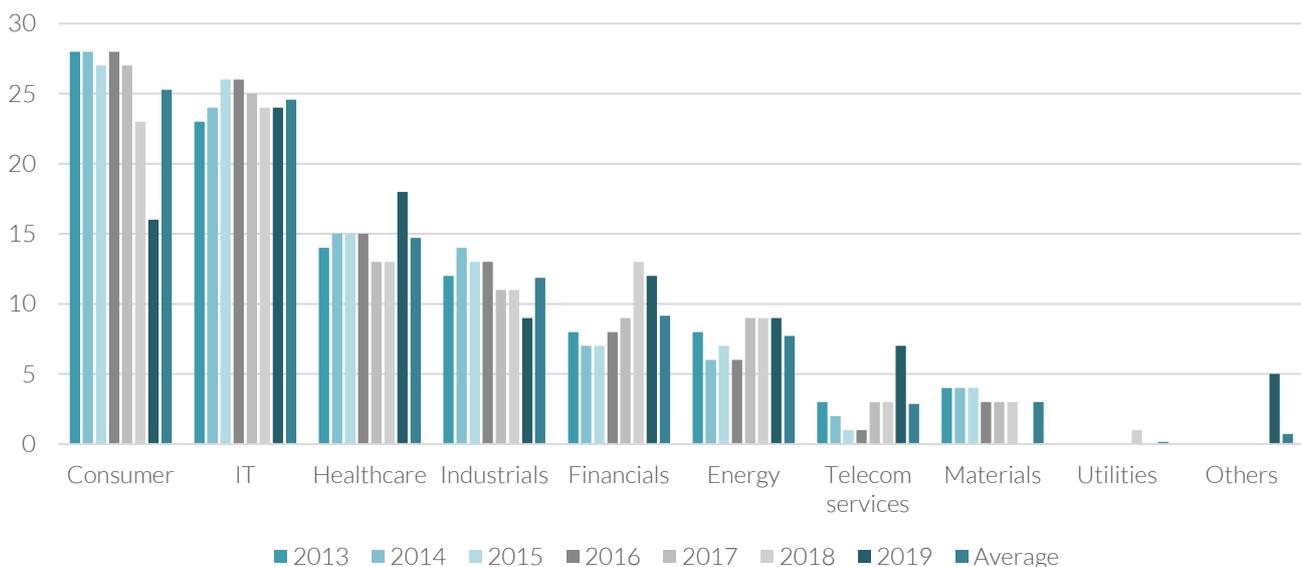
The charts below highlight how diverse the portfolio is by geography, stage and economic sector. By way of example, the UK represents just under 10% of exposures. We believe these charts also demonstrate i) the focus in the mid and small buy-out stage (39% of portfolio, with next largest stage 24%), and ii) the ability to manage the sector exposure, with consumer exposure down from 23% in 2018 to 16% in June 2019. 2% of this move was a market-industry re-classification, with a 4% residual reduction from management actions. Exit realisations during the last 12 months show that a significant proportion of these came from the consumer sector (44% for the six months to 30 November 2018 and 28% for the six months to 31 May 2019), while investment (particularly co-investment activity) in the sector was more muted relative to previous years

Geographical breakdown of PIP's portfolio, FY'14-'19 (% left-hand graph) and mix of stage FY'14-'19 (% right-hand graph)



Source: PIP Report and Accounts, p57, Hardman & Co Research

Sectoral exposure of underlying companies, FY'13 to FY'19 (%)



Source: PIP Report and Accounts, Hardman & Co Research. Note: 2019 comparison on one year before, while prior years show comparison with value six months ahead of sale; also, there was an industry re-classification in 2019, which saw media move from consumer discretionary into communications services (effect 2% above)

Benefits from being part of Pantheon family

Pantheon a major player in PE market, managing \$43.5bn

Pantheon has acted as manager to PIP since its inception in 1987. At end-2018, it managed ca \$43.5bn on behalf of over 550 institutional investors (PIP represents just 3% of total Pantheon funds). It is also one of the most experienced secondary managers in the market, having committed more than \$12.3bn across more than 366 transactions to secondaries since 1988. As at 1 July 2019, Pantheon had 295 staff, including 84 investment professionals (San Francisco 28, New York 4, London 43, Hong Kong 7, Bogotá 2).

Being part of the Pantheon family adds value, with economies of scale, a hugely experienced team and access to deals. This has delivered an NAV track record beating most comparable investments

Being part of the Pantheon family adds value, with i) economies of scale, including technology, risk control, market knowledge and information flows, ii) a team with huge experience – very importantly through multiple economic cycles, and iii) access to deals at all stages of investment. This has delivered an NAV track record that has beaten market indices, is generally better than immediate fund of fund peers (especially over the long term) and is also better-than-average compared with direct-investing, PE-quoted vehicles, while offering significantly greater diversification. Looking in more detail, we note:

Operational economies of scale

▶ Scale – since inception, Pantheon has invested in over 1,800 PE funds and has the scale to invest in the necessary technology to review an immense number of options. In addition to operational efficiencies, this scale also allows the creation of a highly diversified portfolio by geography, sector, individual exposure and GP (including individual and fund style).

Experienced team with broad network

▶ We detail the biographies of the key partners of Pantheon working in PIP in the *Company Matters* section of this report (see page 48). They not only went through the financial crisis but also worked through the early 1990s' recession. This depth of experience has established an immense personal network (extremely helpful to due diligence), as well as expertise working in both favourable and unfavourable market conditions. We note, though, that Pantheon is much more about structured process and procedure, and delivery from its platform, than a "star-manager" culture.

Origination

▶ Pantheon's management team, scale and long track record of being a constructive partner to the PE fund GPs (see PE market description on page 30) make it a welcome partner, for new fund launches (and so primary investment in new vehicles) and also for co-investment deals. We detail the value added in each stage of the investment process above, but we believe having the optionality from Pantheon over this access has a real value.

Track record

▶ We detailed on page 1 of this report the excellent long-term track record of delivering capital growth. The table below shows the performance over a range of periods for Pantheon, its immediate fund of fund peers and a broader PE group (we have taken the most recently disclosed NAVs, although investors should note that the dates are not entirely comparable). We have chosen NAV performance (rather than share price returns), as we believe this better shows the value added by a management free from market sentiment. The performances reflect a mix of strategies (e.g. Princess PE only moved to direct investing in 2010), but the messages we take are:

- The absolute performances indicate a broad spread of returns, both over time and between companies, but the overall message of >10% NAV accretion, post-costs, appears valid.
- PIP's performance beats three of its four immediate peers on a one-year, three-year, five-year and 10-years basis. Compared with the other peer, the

performance is more mixed (beating on some timescales, but not all). The risk appetite of that competitor, as measured by, say, its level of over-commitment (see page 31), would appear to be higher than that of PIP.

- PIP's performance is lower than the best-performing direct PE investors, although the latter have different concentration risks (e.g. HG is focused in a limited number of sectors and geographies). Compared with a range of direct investors, PIP's performance appears to be towards the higher end of the range. The KID disclosure (see section on page 26) indicates that most of these companies have a higher risk indicator and greater downside risk than PIP in the stress scenario.

In conclusion, PIP's performance is either better than that of its peers in absolute terms, or is likely to be so on a risk-adjusted basis.

Cumulative NAV performance: comparison with peers (%)					
	Date	1 year	3 years	5 years	10 years
Pantheon International	31/07/19	15.6	50.9	107.3	267.4
Fund of Funds					
BMO Private Equity Trust	31/03/19	13.3	42.1	73.9	n/d
HarbourVest (\$)	31/07/19	13.5	43.5	67.5	220.2
HarbourVest (£ equiv., Hardman & Co est.)		20.4	52.0	125.7	326.9
ICG Enterprise Trust	30/04/19	12.4	53.7	74.7	187.0
Standard Life Private Equity	31/07/19	8.8	44.3	88.4	n/d
Average (£ equiv.)		13.7	48.0	90.7	257
3i	31/03/19	19.8	82.8	132.8	n/d
HG Capital (May factsheet)	31/05/19	12.7	66.4	121.1	207.8
NB Private Equity Partners	30/06/19	11.2	47.3	112.5	259.7
Oakley Capital	31/12/18	16.0	47.0	n/d	172.0
Princess Private Equity Holding	30/06/19	10.6	38.8	86.4	165.1
Average		14.1	56.5	113.2	201.2

Source: Company websites, factsheets and presentations, Hardman & Co Research

As a fund of funds, manager selection is key

Over five years, PE funds have delivered huge range of performances – so important to understand PIP's process in choosing funds

The *McKinsey Global Private Markets Review 2019* (page 11) highlighted that the dispersion of performance was significant, with the five-year annual returns from US PE funds over 2013–18 ranging from ca.50% for the top performers to nearly a 30% loss for the worst. Interestingly, this report highlighted that the consistent outperformance by individual managers was much higher than by funds – and so having detailed, broad market knowledge and access are competitive advantages, as PIP can follow the manager, not just the fund. PIP's own website notes, "The spread of performance in private equity is much wider than in other asset classes and the selection of managers has a significant influence on PIP's investment performance." We believe it is also important to understand how this has been achieved and, to do that, investors need to understand Pantheon's investment process. We give a simplified description of this in the table below.

Simplified example of PIP investment process		
Stage	Process	Reasons for decline
Source and Screen	Preliminary review of fund information. Face-to-face meeting with manager. Review and discussion by investment team. Agreement on process and staffing.	GP franchise or governance. Investment strategy issues. Team depth and quality. Alignment of carried interest, fee structure and compensation & incentives.
Preliminary diligence	Review of fund due diligence information. Follow-on meetings with manager and team. Review and discussion by investment team. Advance notice given, and discussion with regional and global investment committees.	Portfolio performance issues. Questionable GP value-add. Fund legal structuring issues. Team capabilities or commitment levels. Unfavourable references. ESG or compliance concerns.
Detailed diligence	Assess and model company financials. Reference calls. Legal, compliance and ESG reviews. Conduct portfolio company meetings. Investment recommendation. Regional and global investment committee approval.	Portfolio performance issues. Questionable GP value-add. Fund legal structuring issues. Team capabilities or commitment levels. Unfavourable references. ESG or compliance concerns.
Commitment	Complete documentation process. Correspondence with GP	Legal issues or structuring issues.

Source: PIP, Hardman & Co Research

We believe investors need to look through the jargon to assess what is actually done in terms of fund and co-investment selection. Importantly, it is bespoke to the nature of investment and, at all times, has an eye on what is considered an acceptable portfolio allocation, as well as what is the right specific investment opportunity.

- ▶ When making primary investments, Pantheon maps the entire market (thousands of potential managers). Data for this are sourced across a range of inputs that have been built by Pantheon’s team over decades in the business. This pool is then screened by several metrics, including size (e.g. may be too small), organisational structure, past track record, etc. Pantheon takes the raw cashflow data, and has an independent unit within the firm that conducts detailed performance analysis to understand how a fund/manager has achieved its record. It considers, for example, geographical and sector mix, strategy and the extent to which the historical drivers will continue into the future. It also goes into an assessment of the approach and motivation of the key deal-makers, and attributes performance to them individually, as well as to the fund. This independently reviewed analysis is consistent across all of Pantheon’s operations, but it is only the start of the process. Taking these data, Pantheon will explore the outlook in face-to-face conversations with the fund managers. A key consideration here is the expertise and experience of the Pantheon team in asking the right question to truly understand the risk/reward outlook for each potential manager. The due diligence process may additionally, for example, talk to market participants, fellow potential investors, former employees, etc, to ensure that all the qualitative and quantitative information gives a fair view of the company. A further part of this process is also benchmarking across a range of potential comparators.
- ▶ The process with secondary investments is somewhat different, in that there are a number of potential starting points. Firstly, there may be a thematic idea – e.g. the UK market looks cheap because of Brexit or energy stocks having over-reacted to the risk of shale. From that idea, Pantheon, then “hunts” across its deep relationships to see if there are positions of interest that may be available for sale. Secondly, Pantheon’s position as a prominent investor in secondaries means it will be approached by potential sellers/brokers who are looking to dispose of interests for a range of reasons. Some may, for example, not want to hold the final positions in a fund approaching maturity. Others may want liquidity for other purposes. The common themes are that there is a willing seller, and Pantheon is approached because of its market position and known interest as a potential buyer. The process of investment then considers not only the GP (which is significantly addressed by Pantheon’s deep relationships with most of the GPs, anyway), but also the underlying investments, which are likely to be several and at various stages of evolution. This detailed examination is hugely resource-intensive and typically requires a rapid turnaround (with the associated burden of

costs). Additionally, there are multiple external costs (e.g. lawyers) and, as there is no certainty that deals will complete, judging when it is worth putting in this investment is a core competency. It is a skill in which new and small entrants to the secondary market simply do not have experience, and it is a major competitive advantage in this space for the Pantheon team.

- ▶ In terms of co-investments, part of the due diligence has already happened in that the opportunities arise only because of the close ongoing relationship built with general partners (ca.90% of co-investments are sourced from 100 core managers). Having long-term and deep relationships with the GPs is a core advantage for the Pantheon team. Additionally, each opportunity is considered on its own merits, with Pantheon conducting the detailed due diligence of a PE manager in its own right. It does not simply rely on the GP, but does all the detailed work itself.

The bottom line is, of course, performance – and we have already outlined PIP’s strong performance.

Independent board/corporate governance

Independent, experienced board

We detail the biographies of the board at the end of this report. We believe they demonstrate the key objectives investors should be looking for in a board, including

- ▶ relevant experience of PIP’s markets,
- ▶ current experience in comparable companies, from which PIP’s performance and controls can be effectively compared,
- ▶ experience of adverse market conditions, and
- ▶ independence from the fund manager – this applies to business dealings, but we also believe the PIP Board has the character that would challenge the manager when required.

Investors will note, from page 90 of the 2019 Report and Accounts, that the auditors i) test the effectiveness of PIP’s valuation controls, including its sampling of underlying companies, and ii) look at the accuracy of management assumptions and verify the sample underlying companies’ own accounts.

Corporate governance

Further consideration in good corporate governance includes the independence of risk, compliance and allocation functions within Pantheon. Management advises that:

- ▶ There is a rigorous allocation process that governs the allocation of investment opportunities across individual Pantheon clients, which is independently overseen by an Allocation Committee to ensure investments are allocated consistently and fairly to clients.
- ▶ PIP originates investments that are across the spectrum of primary, secondary and co-investments, whereas Pantheon’s other funds are typically focused on one of each of these investment types. As a result, it is difficult to compare returns between PIP and Pantheon’s other vehicles directly, but, for each investment type, returns are broadly comparable. There is no evidence that PIP has been advantaged or disadvantaged relative to other Pantheon funds.

Directors have appropriate market knowledge, experience of a range of economic conditions, and clear independence from the manager

PIP’s risk controls are independent function

- ▶ Pantheon’s risk management function is headed by the Chief Risk Officer, who reports to the Partnership Board and is a partner on the Risk Committee. The risk team is an independent function within Pantheon, with oversight of all risk management functions (including operational and investment risk).
- ▶ We understand that, twice a year, the PIP Board receives a transparent report of allocations across the group.
- ▶ Pantheon staff declare potential conflicts of interest and excuse themselves from any decision-making process.
- ▶ The PIP Board can attend the Pantheon Investor Advisor Committee, which convenes every six months and which also reviews potential conflicts of interest.

The total investments in Pantheon-run funds was £18m at end-May 2019 – ca.1% of the total PIP portfolio. We understand that these relate to historical positions, with no new commitments to Pantheon funds in over a decade.

“Real” NAV is higher than accounting NAV

“Real” NAV above book value, evidenced by – among other facts – i) no incentive for PE managers to inflate valuations, ii) spread of managers gives a sense check, iii) valuation ratings relative to other PE houses not over-stretching, iv) Pantheon’s overview of GP’s valuation by experienced team. We estimate average uplift is 10%-15% against value at time of transaction (FY’19 36% against book value year before).

Valuations come from PE managers who have no incentive to inflate them and positive incentives not to do so

PIP has detailed process in place to ensure valuations not inflated

The focus on what is the “real” NAV has never been greater. Valuing private companies in public funds has always involved a degree of management judgement. Accordingly, we believe that investors should focus on: i) there is no incentive for GPs to inflate their valuations – indeed, maybe disincentives; ii) the spread of managers gives a sense check, as the same underlying company may be held in multiple funds; iii) valuations relative to other PE houses are not over-stretching; iv) Pantheon’s experienced team has been through all trading conditions, and so can judge the appropriateness of valuations; v) there are the usual independent checks and balances, including auditors; and vi) PIP’s realisations see an uplift on accounting book value, which, over the long term, we estimate at 10%-15% at the date of exit (FY’19 36% against book value year before). In the normal course of trading, the realised value is thus above the book value.

No incentive to inflate valuations

The first critically important feature to note is that the valuation of the PE funds is provided by the GPs, and these valuations are then reviewed by Pantheon for reasonableness. This is important because it means the ongoing valuation is not driven by Pantheon (which could be incentivised to give a high valuation as it increases assets and so management fees), but *is* driven by the GPs, which are paid on commitments and realisations, not the ongoing accounting value of assets. There is no incentive for the people providing the valuation to inflate it. Indeed, in some jurisdictions, we understand there may be positive incentives to keep valuations low – e.g. where unrealised gains are subject to tax. Additionally, much of Pantheon’s business is about building deep, long-term relationships with GPs, and this could be destroyed if valuations were driven by short-term, unsustainable, inflated ratings.

It is Pantheon’s view that, as long as the GPs are applying fair valuation principles, then the GPs are in the best position to value the underlying portfolio companies. A key part of Pantheon’s initial operational due diligence on GPs is to ensure adherence to the fair valuation principles. Pantheon will then continually review, as part of its quarterly process, that the GP continues to follow the fair valuation guidelines. On this quarterly basis, Pantheon will receive the valuations from the GPs. Pantheon then carries out a number of checks on the valuations, including understanding key drivers of valuation movement. Pantheon will often have a dialogue with GPs to further understand movements, if required. Pantheon also places reliance on the annual audited accounts to further validate that GPs are applying fair valuation principles, and Pantheon will also review audit opinions to ensure they are not qualified in that respect. Pantheon has established a Valuation Committee to govern the valuation process; this

committee is made up of non-investment personnel; however, investment teams are invited to valuation committee meetings to provide comment on the GP valuations – this is a key part of Pantheon’s review and oversight of the GP valuations.

Multiple funds may hold same asset, giving sense check on manager’s valuations

Spread of managers gives a sense check

PIP has so many managers that it is not uncommon for the same underlying company to be held in multiple funds. Multiple holdings are monitored by Pantheon’s Valuation Committee, whose experience is that GPs can, and will, have different valuations of the same underlying company. This is not unexpected, or a cause for concern, given that valuation is not a precise science and that there are different techniques to value companies using different assumptions. Management reports that, generally, the differences are not material and usually align over time. For investors in PIP, the key issue is that these multiple valuations give comfort that any individual manager’s valuation approach is being sense-checked and independently reviewed.

Valuations relative to other PE houses not over-stretching

As can be seen in the table below, PIP’s valuations are broadly in line with those of its immediate peers. The portfolio mix (see page 43) must be borne in mind. PIP has, relative to its peers, a greater proportion of the book in IT/growth companies; both are sectors that currently attract higher-than-average ratings. In our discussions with various managers, we were cautioned that the specific nature of each investment was such that even making sector generalisations needed to be treated with a degree of caution. While we understand that it is common practice to use adjusted EBITDA when entering an investment, we also understand that common practice is to generally use unadjusted EBITDA when reporting for valuation purposes. As noted above, there is no benefit to the GPs in inflating or being opaque in their ongoing approach to valuation.

Some comparable valuation metrics with peer PE houses					
	PIP	BPET	HVPE	ICGT	SLPE
EV/EBITDA (x)	11.8	8.9	11.2	10.9	12.0

Source: Company reports, results presentations, Hardman and Co Research

Pantheon’s team has experience in reviewing GPs’ valuations. Again, for a long-term business like Pantheon, we see no incentive to inflate valuations.

Pantheon’s experienced team

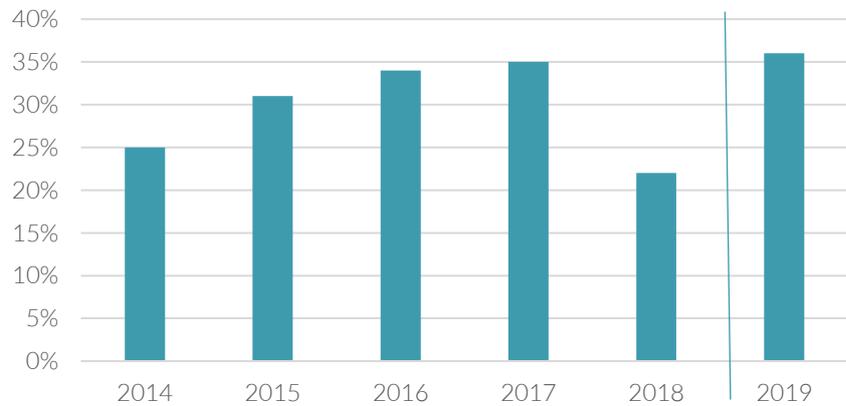
As noted above, Pantheon does not simply take GP valuations as automatically right. For investors, an important part of the confidence factor is that the results of the GPs’ assessments are reviewed by an experienced team, which have been through all economic conditions. From our discussions with management, it is clear that the culture is naturally conservative, and we would expect this culture to feed through to its review process. It is also clear that it appreciates the importance of investor confidence in the NAV and how credibility would be damaged by short-term, unsustainable pops in valuation.

PIP now discloses uplift against valuation a year before sale (FY’16 36%). Adjusting for growth, implied uplift in 2019 was ca.25%, with a long-run average uplift of 10%-15%

PIP’s realisations see uplift on investment book value

Historically, PIP disclosed the uplift on valuation six months prior to the sale (this changed in 2019 to one year, as it was felt that the valuations six months before were distorted by an element of the sale valuation being included). Assuming no rating change, we therefore need to adjust for EBITDA growth. Over the long term, we believe the exit-realisation has been on average 10-15% above the book valuation on that date (FY’19 36% against book value year before), giving some comfort that actual realisations are safely above accounting cost.

Survey of average uplift on exit realisations (%)



Source: PIP 2019 Report and Accounts, Hardman & Co Research. Note: 2019 comparison is on one year before, while 2014-18 shows comparison with value six months ahead of sale

The average uplift is just that: an average. The chart below looks at the distribution (by number) of exit realisations over the past six years (2014-18 consistent comparison with valuation six months ahead of exit, 2019 uplift compared with accounting book value 12 months before). Taking the six-month comparison years (i.e. 2014-18), we note:

- ▶ There is significant volatility with both losses and gains.
- ▶ On average, over a quarter saw an uplift of 0%-10%, and a sixth saw uplifts in the ranges of i) 10%-25%, ii) 25%-50% and iii) more than 50%.
- ▶ Nearly a quarter of realisations by number, and a tenth by value, saw an exit price below book value. PIP advises that these include the mark-downs of companies that are underperforming/failing, especially in the venture portfolio. Part of the GPs' skills in that space are "triaging" their book and taking early action on investments that are unlikely to deliver acceptable returns to focus resources on the opportunities that will. This naturally sees a number of small investments being marked down, so as to concentrate on the best return opportunities. Pantheon advises that there are no noticeable concentrations by sector, exit type, stage or vintage. It may be considered a normal cost of doing business, rather than a cause for concern.

Realisations below book include "triage" of venture books. It is good business practice to focus resource on operations most likely to deliver and so to cut probable underperformers.

Survey of average uplift on exit realisations (%)



Source: PIP Report and Accounts, Hardman & Co Research. Note: 2019 comparison on one year before, while prior years show comparison with value six months ahead of sale

We note that most of PIP's peers also report uplifts. For example, ICGT has reported uplifts against the most recent valuation of 35% FY'19, 40% FY'18, 24% FY'17, 22%

FY'16 and 35% FY'15 (average 33%). HVPE reports the average uplift over the past seven years at ca.40%.

Other considerations

PIP reports that realisations over recent years have averaged 3.1x cost, but this is a gross number before all the GP costs have been taken into account. It is not directly comparable with any accounting number in PIP's books.

While secondary activity is growing strongly, it is not yet sufficient to justify level 2 accounting. This reflects management conservatism that it has not even tried to adopt it.

We discussed with Pantheon whether the increasingly active secondary market would be sufficient grounds to uplift the accounting hierarchy from level 3 to level 2. The former, we believe, is perceived by investors as being more open to management influence than the latter, which is based off observable inputs (level 1 is actively traded market prices, which would not apply to PE). Secondary transactions and their impact on the valuation of fund interests are addressed in the IPEV Guidelines. The IPEV Guidelines state that a transaction price from an orderly secondary transaction should be considered as one component of the information used to determine the fair value and that any use of secondary transaction information requires significant judgement. Pantheon generally does not believe that the secondary market provides a comparable basis on which valuations of fund interests can be completed, for the reasons set out below:

- ▶ Pricing is driven by the return expectations of each counterparty.
- ▶ The cyclical nature of both the secondary and credit markets that has been illustrated by events in recent times. Depending on market conditions, there may be a significant disparity between the price expectations of both buyers and sellers, resulting in quite a wide bid/offer spread.
- ▶ When sales are completed at a steep discount to reported NAV, it is usually indicative of a distressed sale, reflecting the need for short-term liquidity and/or to avoid future commitments, rather than a reflection of the value of the underlying assets. Distressed sales do not represent orderly transactions and are not considered by Pantheon to be representative of fair value. An examination of the deal activity over the last number of years supports this view. During the midst of the credit crisis in late 2008, there was a large level of deal flow coming to the market, but with a very low level of deal completion, due to the disparity in the expectations of buyers and sellers. The bid/ask spread was later seen to narrow in 2009, with a corresponding increase in the level of deals completed. The dynamic conditions over this period demonstrate the variability of the secondary market and just how susceptible it is to market sentiment, which further evidences the unreliability of its pricing as a basis for valuation.
- ▶ Deals can be completed based on data that could be several quarters old at the time of completion.
- ▶ In any event, the lack of unequal market transparency involved in secondary deals is such that full pricing details of completed deals are rarely known, even by GPs for transactions in their own funds. PIP's broad market knowledge can give it an insight that a more focused GP does not have and, indeed, this is an important element to adding value in secondary markets.

PIP's model gives liquid access to the entire PE market, including funds that many investors cannot access directly. Its own shares are highly liquid, giving investors a good route into diversification in the illiquid underlying market.

Capital growth story

Management and administration of private equity funds can be complex

KID stress-test shows lower downside risk than peers. There are correlations between this scenario and large discounts, and we note that the methodology of its calculation is unwelcome by all in the market.

Liquid access to whole PE market

By buying shares in a listed PE company, the investor benefits from the liquidity of exchange trading. As PIP can choose to invest in any funds in the market, this means that its investors are getting liquid access to a diversified but illiquid underlying investment class. The key considerations are:

- ▶ Whole market access means that potentially high-return outlying funds can be chosen if they fit the portfolio construction.
- ▶ Investments can be made in new funds established by experienced managers setting up their own businesses, but without a track record as a legal entity. The McKinsey report highlighted that manager outperformance was actually more consistent than a firm's outperformance.
- ▶ Retail investors can get access to managers whose funds can only be funded by institutions.

Other investment positives

PIP does not pay a dividend and generates shareholder value by capital appreciation only. Given the historical returns generated, re-investing proceeds appears a good use of capital. We do not expect this to change. Looking forward, should taxation changes be such that income faces higher taxes, having an investment that generates only capital gains may be attractive to personal shareholders. Capital gains within an investment trust structure are retained within the vehicle, and are not taxed.

Listed vehicles handle cash management and administration of PE funds, which can be complex for a portfolio of Limited Partnership interests. All that listed PE investors need do is monitor the value of their shareholdings in the quoted vehicle itself.

We totally support the market's antipathy towards the KID disclosure and its value to understanding risk. Having said that, in our report, *Investment companies: understanding the deepest discounts*, published on 14 May 2019, we did identify a correlation between the KID stress-test scenario and companies with the biggest discounts. We recognise that this calculation is driven by historical movements but, given the correlation we identified, we believe that at least some investors do view it as indicative of prospective risk. On this basis, PIP is a below-average downside risk investment compared with immediate fund of fund peers.

KID investment scenarios for PIP and selected fund of fund peers (%)					
	PIP	BPET	HVPE	ICGT	SLPE
Stress-test downside	-36	-53	-37	-50	-33
Moderate scenario	13	13	20	10	10
Favourable	29	38	40	33	39
Risk indicator	3	4	3	4	4

Latest KIDS on website, Hardman and Co Research

Looking at some of the direct PE investors, both the stress-test scenario and risk indicator imply a higher-risk investment than PIP.

KID investment scenarios for range of direct investing PE companies (%)					
	HGT	JPEL	NBPE	OCI	PEY
Stress-test downside	-54	-29	-49	-51	-66
Moderate scenario	18	16	15	1	11
Favourable	44	29	37	19	36
Risk indicator	5	3	4	4	4

Latest KIDS on website, Hardman and Co Research

Investment-neutral

Woodford and H2O funds read-across

The well-publicised problems with Woodford Asset Management closing its flagship fund to withdrawals and Natixis's H2O funds (ca.30% outflows in a week) mean it is appropriate to consider what potential read-across there may be for PIP and, in particular, why it is different from these investment companies. In summary, we believe there is no financial read-across, that there may be a business opportunity gaining assets from open-ended funds, but that there may also be downside in terms of sentiment to illiquid investments.

No financial read-across

The key issues are:

No financial read-across, as PIP has permanent capital, a conservative NAV, a visibly independent board, no asset contagion and minimal dependency on platform distribution

- ▶ The permanent capital in closed-ended funds, significant current cash balances and limited potential debt gearing all mean that PIP will not be – and very importantly will not be perceived to be – a forced seller of assets at distressed prices.
- ▶ We discussed in the section above (see page 22) the “real” NAV and, in particular, noted the fact that PIP had consistently delivered actual realisations well above the accounting book value of its investments. Accordingly, we do not believe that concern on whether the NAV is “real” or not reads across to PIP.
- ▶ The Board of PIP (see *Appendix*) is experienced, well balanced and independent from the manager.
- ▶ The other issues arising from these situations also do not appear material. In particular, we note that i) there is no asset pricing contagion risk, as PIP's assets were not held by either Woodford or H2O, and ii) platform distribution had not been a material source of business, and any changes in rules there will not impact PIP.

It is unclear what, if any, liquidity constraints may be applied to institutional investors' holdings of publicly-quoted shares. Anecdotally, we have heard that some managers (especially multi-asset managers) are facing restrictions from their compliance departments based off the liquidity of their holdings. In the past, simply being quoted was enough to be counted as liquid but, post Woodford, this is now open to question, and there may be additional regulatory requirements on the degree of liquidity, as is seen in the US. We believe the market will focus on exchange-traded volumes, where we note that, for PIP, the recent annual turnover has been around 20%-26% of the current market capitalisation and averaged over 1m shares per month. With its largest holders at around 4m shares, we do not believe that PIP is likely to be affected materially by any share price trading liquidity issue. It is also somewhat better positioned than HVPE (18%-20% value traded to market capitalisation) and SLPE (18%-22%).

Turnover on LSE					
%	PIP	BPET	HVPE	ICGT	SLPE
Current market capitalisation	1,239	270	1,369	597	553
Value traded year to June 2019	274	40	256	144	97
Value traded 2018	305	n/a	240	135	98
Value traded 2017	241	n/a	261	122	120

Source LSE, Hardman and Co Research

Finally, as noted above, increasing compliance issues with regard to the liquidity of quoted holdings in the UK could present a constraint on appetite for new issues, and thus PE managers' exit options. We note that, on average, market sales have been just 15% of PIP's exits and the UK is only a small part of the portfolio. With only 1%-2% of potential exits affected and, even then, only a risk that some investors may be constrained in the size of their participation, we do not see this as a concern for PIP.

May see a shift towards closed-ended vehicles

Once the dust has settled and any new regulations are in place, the benefit of being a long-established, closed-ended investment company are likely to be visible. We believe sentiment may lead to a preference for such structures and PIP is thus well positioned to benefit from any such move.

However, investor appetite for illiquid, unquoted investments may lessen, and market sentiment may be hard to call

We see two downsides from the Woodford situation: firstly, investor appetite for illiquid investments may wane, and clearly all PE investment companies will be impacted by this; secondly, market sentiment can be hard to predict. The August 2007 stopping of withdrawals from two BNP Paribas hedge funds is seen by many as a significant event foretelling the lack of trust between financial institutions and the subsequent financial crisis.

Appropriate level of gearing through portfolio

Gearing needs to be considered at three levels: i) underlying companies – in core middle-market space, gearing broadly stable over five years; ii) fund investments; and iii) PIP itself – currently running with significant cash

As with any PE fund of funds business, there are three layers of gearing to consider: i) gearing in the underlying companies, ii) gearing in the funds, and iii) gearing in PIP itself. In PIP's core small to medium buy-out space, there has been only a modest increase in gearing in the underlying companies over the past five years. Gearing for larger deals has increased significantly, with low-cost funding available. In the growth/venture portfolios, gearing is structurally lower than buy-out situations. In terms of gearing at the fund level, PIP comments that this has typically been used moderately and is backed by undrawn investor commitments. For many years, PIP itself has had significant net cash balances (end-May 2019: £143m, average end-May 2015-19: £145m), and it has not utilised its debt facility. The latter is primarily in place as a precautionary measure, as the business model of PE fund of funds is to have many years of potential calls committed upfront.

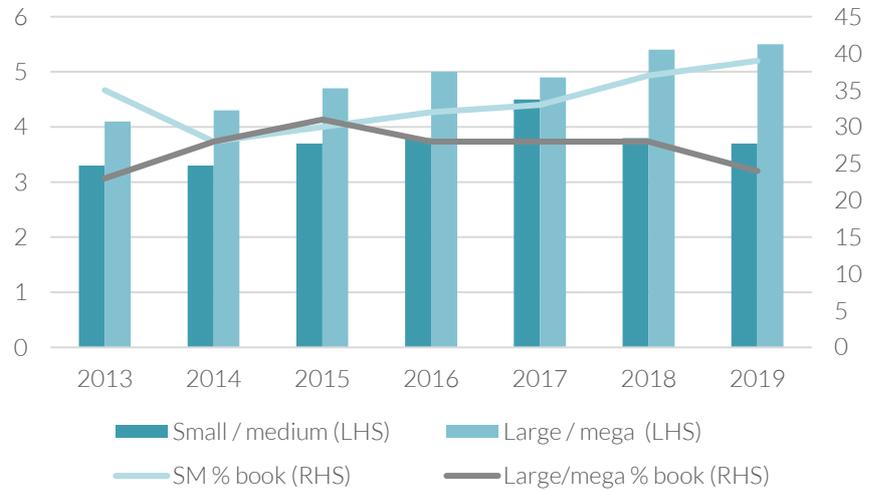
Buy-out gearing in middle market stable; been increasing for large/mega deals

Gearing in underlying companies

For some years, PIP has provided sample data on the average EV/EBITDA gearing in its buy-out investments. The growth and ventures businesses are typically completely ungeared – so buy-outs are the key areas of sensitivity. As can be seen in the chart below:

- ▶ The level of gearing in small and medium buy-outs has fallen over the past two years, and is only around 10% higher than it was in 2013/14.
- ▶ In contrast, the level of gearing in large/mega buy-outs has been on a steadily increasing path, and is now a third higher than in 2013/14.
- ▶ We note the market commentary that equity has represented an increasing proportion of PE deals and that the equity gearing is now lower than at pre-financial crisis levels.

Debt multiples for sample of small/medium and large/mega buy-out companies in PIP portfolio (x, LHS) and proportion of portfolio of that type (% , RHS)



Source: PIP Report and Accounts, Hardman & Co Research

Documentation makes breaches in covenants less likely

It should be noted that cov-lite documentation has been an increasing feature of mainstream corporate lending, especially with the adoption of “adjusted EBITDA” and weaker asset sale covenants. One market participant informed us that the enforceability of debt covenants today is weaker than in 2007. We believe that this lowers the probability of default (as covenants are less likely to be triggered), although lenders are likely to see an increased loss in the event of default. For PE investors, the lower probability of default means that default and absolute loss situations are likely to reduce in number.

Gearing in the fund investments

Looking at the gearing in the funds, this has typically been used moderately and is backed by undrawn investor commitments. We note that, by way of comparison, HVPE reports that facilities in its funds are capped at 20%-30% of uncalled commitments from Limited Partners (LPs) and that its look through exposure was \$273m (vs. portfolio of \$1.76bn).

Run with significant cash balances for many years

Gearing in PIP itself

As noted, for many years, PIP has had significant net cash balances (end-May 2019: £143m, average end-May 2015-19: £145m), and it has not utilised its debt facility. The gearing in the fund is thus zero. As we discuss in the section on liquidity below, if there were no cash receipts, and all the calls were made, the level of debt to NAV would still be only 25% at the PIP level. We note that the principal covenant in the debt facility limits PIP’s maximum gearing (excluding the ALN) to 34% of the gross asset value (again excluding the ALN).

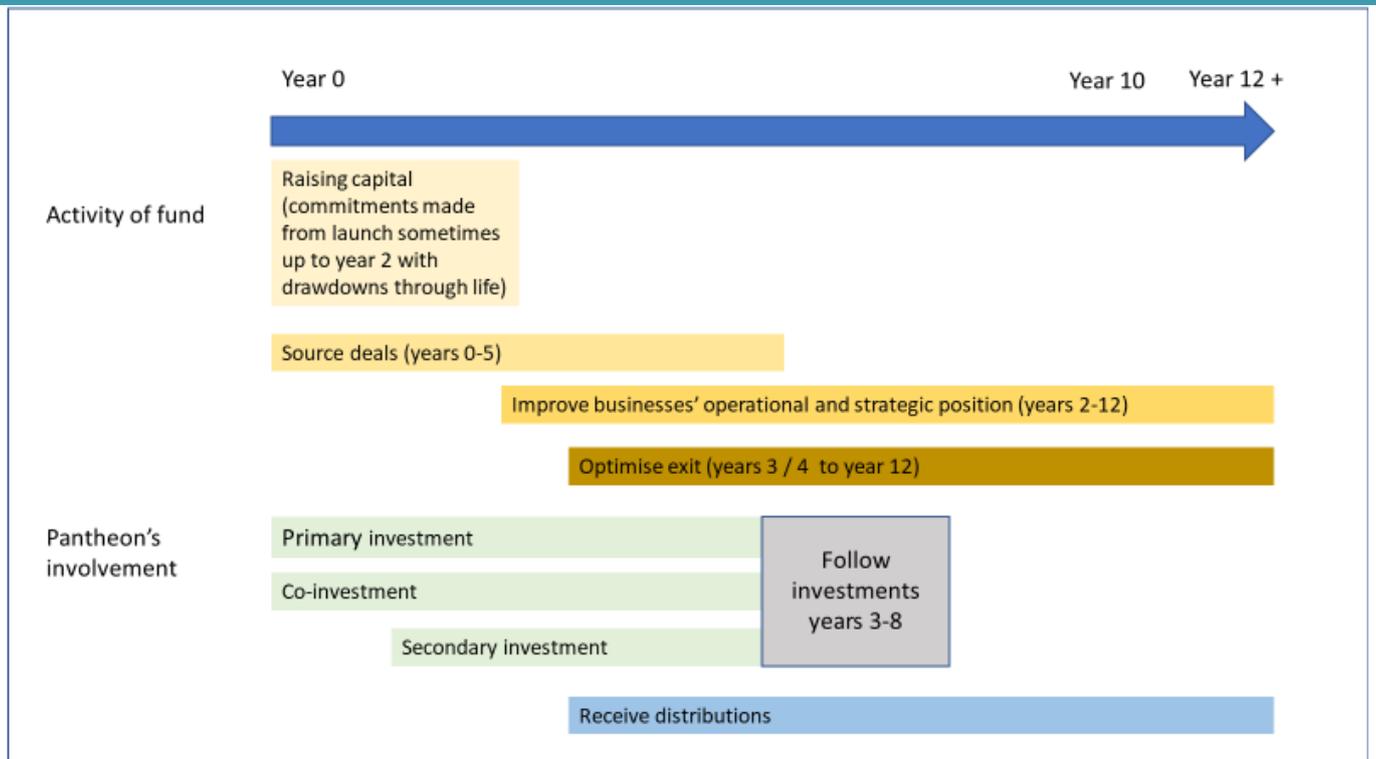
Gearing limited to 30% and may be expected to be short-term in nature

PIP’s policy is that borrowing may not, at any time, exceed 100% of its NAV. Typically, it does not expect its gearing to exceed 30% of gross assets.

Appropriate liquidity in PIP

To understand the liquidity profile for PIP, one must first understand the life cycle of the underlying PE funds. In particular, there is a requirement for PIP to commit to making investments over the long term, with the actual cash not called upon for several years after the commitment is made.

Theoretical timeline for a PE fund



Source: Hardman & Co Research

PE firms, known in industry parlance as GPs, initially raise committed money from institutional investors such as PIP, pension funds, insurance companies and family offices. Initially, the capital is only a commitment, it is only drawn down (or "called") as it is required, and this process starts before the fund is actually launched. Indeed, PIP advises that it may signal an interest up to a year ahead of the fund launch. GPs also invest their own money into the funds they manage. This is to ensure they have 'skin in the game', i.e. their interests are aligned with that of their LPs. The raising commitments for PIP is usually concluded within 3-6 months reflecting the quality of its partners.

Can take many years to deploy funds

The monies are put into a fund structured as an LP and managed by the GP, and the capital is used to invest in companies, for either a minority or majority equity stake. It can take many years after the funding line has been committed before it is fully drawn down as, typically, PE funds are investing through the five- to six-year investment period. Indeed, after companies have been acquired, it is very common for there to be further capital injections (say to fund acquisitions or investments). Such follow-on investments can be substantial and for much of the life of the fund. The line to which PIP has initially committed may not actually be needed for several years, and is likely to be substantially drawn in years two to five, but it may not be fully drawn in this period.

As noted earlier, while PE funds have a notional life span of 10 years, most have one- or two-year extensions in the documentation, and many have an actual life stretching out as far as 15 years. Money is returned to investors as investments are realised, and this may start as early as year three, although more substantial returns are not usually made for several years. By the end of life of the fund, they will have had to return all the investors' original money, plus any additional returns made. It is the institutional investors in the funds – known as LPs – who first receive any returns generated by a fund. It is only when these returns pass a certain point, known as the "hurdle rate", that the GPs receive any performance-related/carried interest.

PIP and peers make commitments that are spread over many years. Upfront, they are more than cash/borrowing resources, but expected cashflows over the years should more than cover the over-commitment.

Over-commitment

PIP employs a policy of over-commitment, which means that it usually commits more than its available uninvested assets to future investments. This policy reflects the fact that such commitments can be met from anticipated realisations, with borrowings and capital raisings only necessary in the unlikely event that such cashflows do not materialise. The table below examines the recent history of over-commitment and its relationships to distributions and calls. It can be seen that: i) total undrawn commitments have been steadily rising – the increase in FY'19 (£81m) was broadly in line with the average over 2015-18 (£69m); ii) cash balances at end-FY'19 were in line with FY'15 and, at £141m, were 1.3x the level of FY'19 calls; iii) the credit lines have continued to increase and remain undrawn; iv) as a percentage of distributions received (both gross and net of calls), the over-commitment has been rising steadily since 2015 – management advises that, given where we are in the economic cycle, there is no appetite to increase further the proportion of undrawn commitments relative to NAV (40% maximum), and PIP keeps a close eye on its undrawn coverage ratio to ensure that no new commitments would take it beyond the 33% minimum threshold; v) the over-commitment as a percentage of NAV remains modest, at 13% of NAV – if borrowed against in full, this and the existing facility would still be only 25% of NAV and within the Board's acceptable level of gearing; and vi) approximately 20% of outstanding commitments relate to funds outside their investment period, and thus are unlikely to be called – with the longer life cycle than a directly investing PE company, the degree of over-commitment can be above an industry average.

Breakdown of components of over-commitment for PIP, FY'15-FY'19 (£m)					
Year-end May	2015	2016	2017	2018	2019
Distributions (£m)	238	252	293	280	277
As % opening PE assets (%)	29	29	30	26	24
Calls (£m)	40	62	82	86	107
As % undrawn commitments	23	22	20	21	24
New commitments (£m)	238	346	291	256	341
Secondary	116	173	129	107	105
Primary	71	93	94	87	160
Co-investments	51	79	67	62	76
New commitments drawn at time of purchase (£m)	121	192	151	139	165
Total undrawn commitments (£m)	256	382	445	440	521
Change in year	80	126	73	-5	81
Cash	138	116	167	146	141
Undrawn credit line	96	113	165	163	175
Available funding	234	229	332	309	323
Over-commitment	12	153	113	131	198
As % distribution less calls	11	81	54	68	116
As % last year's gross distributions	9	61	39	47	71
As % NAV	2	13	8	10	13

Source: PIP Report and Accounts, Hardman and Co Research

PIP less over-committed than peers

Over-commitment is a sensible policy for a range of reasons. It ensures that an element of future business is known about upfront, generating better visibility of probable earnings. It is a more sophisticated approach to cash management reducing the drag on earnings of holding excess cash. From the PE funds' perspective, it gives them more certainty of funding, allowing them to commit to deals. We believe over-commitment is an industry-standard approach, and we give some peer information in the table below. Investors will note that the degree of over-commitment at PIP is lower than peer averages, whether measured by distributions (reflective of cash in), distributions less calls (net cash in/out) or NAV.

Breakdown of components of over-commitment for PIP and peers (£m)

Year to	PIP year to May'19	BPET	HVPE year to Jan'19 (\$)	ICGT year to Jan'19	SLPE 6mths to Mar'19
Distributions (£m)	277	83	307	153	49.5
As % opening PE assets (%)	24	31	21	27	16*
Calls (£m)	107	72	396	158	36.4
As % undrawn commitments	24	58	32	49	20*
New commitments (£m)	341	n/d	730	185	99
Secondary	105	n/d	0	n/d	0
Primary	160	n/d	730	n/d	94
Co-Investments	76	n/d	0	n/d	5
New commitments drawn at time of purchase (£m)	165	n/d	n/d	n/d	n/d
Total undrawn commitments (£m)	521	131	1,563	411	420
Change in period	81	7	326	80	50
Cash	141	-5	157	61	51
Undrawn credit line	182	65	600	150	80
Available Funding	323	65	757	211	133
Over-commitment	198	66	806	200	287
As % last year's gross distributions	71	79	262	131	290
As % distribution less calls	116	600	n/m	n/m	1095
As % NAV	13	25	41	29	44**

Source: Company Report and Accounts, Hardman & Co Research; *annualised, **company basis 39%.

Cost of liquidity

Undrawn commitment fee modest

We note that, even though PIP has not used its funding lines, there is a cost to them. There was an upfront cost of £1.575m (in the accounts amortised over four years) and an undrawn commitment fee of 0.94% on the £175m facility agreed in June 2018. Relative to the overall size of the portfolio, the cost is modest, and it is comparable with peers (e.g. HarbourVest has a \$600m credit facility with a 95bp undrawn fee).

Costs

On costs: PIPs fees are around one-tenth of returns; adjusting for mix, PIP's managements fees are low compared with peers; PIP's challenging threshold for triggering payment of performance fees is unlikely to be breached in the near term; peer comparisons distorted by legal structure

Some investors focus on fees and costs. We highlight the conclusion on page 18 of our report, *Investment Companies: Understanding the deepest discounts*, published on 14 May 2019, which noted that, within the companies in that report, there was no statistical correlation between the discount to NAV and fees. Investors should focus on:

- ▶ Relative to PIP's strong return performance (11.9% post-costs since inception), the management fee is ca.10% of returns. For PIP specifically, this is payment for its expertise, market knowledge, manager selection and portfolio management. These costs reflect the scale of the managers, technology and data sourcing, and the resource required to understand how each manager and potential investment works. In many ways, these are similar to any equity manager, and the level is approximately the same (ca.1%).
- ▶ What costs are being generated and why? We note, in PIP's case, that the average cost incurred by the manager is high because of the extensive due diligence on multiple underlying companies, and the legal processes and rapid responses often required on secondary investments (see section on fund manager selection above). This resource is more than compensated for by the returns achieved in the secondary market, and the process is actually a competitive advantage over smaller, newer secondary market participants. Co-investment is also a costly enterprise – sourcing deals from GPs requires an investment in time and shoe leather. Due diligence and analysis have to be done rapidly and in depth, and then there are legal and compliance costs in the closing exercise. Co-investment also

provides greater returns – so the cost is justified. PIP benefits from Pantheon's scale, since these costs (for secondaries and co-investment diligence) are split between all Pantheon clients that participate in a deal.

- ▶ PIP's performance-related fee has a hurdle NAV of 3,455p, increasing 10% p.a. (latest NAV 2,848p), and is unlikely to be triggered in the foreseeable future;
- ▶ Peer comparisons are distorted by mix. While PIP's management charges are broadly in line with peers, arguably, the mix of business would support PIP charging fees significantly above those of its peers. On a mix-adjusted basis, PIP is good value, in our view.

Reported management fee		Comment
PIP	Pantheon is entitled to a monthly management fee at an annual rate of i) 1.5% on the value of PIP's investment assets up to £150m and ii) 1% on the value of such assets in excess of £150m. In addition, Pantheon is entitled to a monthly commitment fee of 0.5% p.a. on the aggregate amount committed (but unpaid) in respect of investments, up to a maximum amount equal to the total value of PIP's investment assets. The value of investments in, and outstanding commitments to, investment funds managed or advised by the Pantheon Group are excluded in calculating the monthly management fee and the commitment fee.	
BPET	Throughout the year, the Manager was entitled to a basic management fee payable quarterly in arrears, of 0.9% p.a. of the relevant assets of the company (2017: 0.9%). For the purposes of the basic management fees, the 'relevant' assets are the net assets, plus the amount of any long-term borrowings undertaken for the purpose of investment, but excluding the value of any investment in any fund that is managed by the Manager or an associate of the Manager.	
HVPE	HarbourVest does not directly charge HVPE management fees or performance fees, other than with respect to parallel investments. However, as an investor in the HarbourVest funds, HVPE is charged the same management fees and is subject to the same performance allocations as other investors in such HarbourVest funds. HVPE pays management fees to HarbourVest with respect to the funds in which it invests, and also for the secondary co-investment in Conversus made alongside the HarbourVest funds. The total of all management fees in the 12 months to 31 January 2019 was equivalent to 0.83% of average NAV.	
ICGT	The investment management fee payable under this agreement is calculated as 1.4% of the investment portfolio and 0.5% of outstanding commitments to funds in their investment periods – in both cases excluding the funds managed directly by ICG and by Graphite Capital. For the ICG managed funds, the annual management charge is between 1.3% and 1.5% of original commitments for funds in their investment period, and between 0.8% and 1.5% of unrealised cost for funds where their investment period has ended. For the Graphite managed funds, the annual management charge is 2% of original commitments for funds in their investment period, and between 0.75% and 2% for funds where their investment period has ended.	
SLPE	SLPE pays SL Capital Partners a quarterly fee, equal to 0.95% p.a. of the company's NAV at the end of the relevant quarter. No fee is payable on any investments in any investment trust, collective investment scheme or any other company or fund managed, operated or advised by the Manager, or any other subsidiary of Standard Life Aberdeen plc where there is an entitlement to a fee on that investment.	

Source: Company Report and Accounts, Hardman and Co Research

Performance fee		Comment
PIP	The performance fee payable in respect of each such calculation period is 5% of the amount by which the NAV at the end of such period exceeds 110% of the applicable "high-water mark", i.e., the NAV at the end of the previous calculation period in respect of which a performance fee was payable, compounded annually at 10% for each subsequent completed calculation period up to the start of the calculation period for which the fee is being calculated. For the calculation year ended 31 May 2019, the notional performance fee hurdle is an NAV per share of 3,454.52p.	
BPET	The performance fee will be equal to 7.5% of the annualised increase in the NAV per Ordinary Share (calculated using the internal rate of return per Ordinary Share) over that period, multiplied by the time-weighted average number of Ordinary Shares in issue (excluding any shares held in treasury) during that period, provided that such performance fee will be reduced to such an amount as may be necessary to ensure that i) both the performance hurdle and the high water mark would still be satisfied if calculated based on the NAV per Ordinary Share at the end of that period after accruing for the performance fee, and ii) the aggregate basic management and performance fees do not exceed 2% p.a. of the company's NAV. The performance period is the 36-month period ending on 31 December in the year in respect of which the performance fee may be payable.	
HVPE	The Manager is also entitled to the annual performance fee if the internal rate of return per Ordinary Share over the relevant performance period (based on the NAVs per Ordinary Share at the beginning and end of that period, before accruing for any performance fee, and the dividends paid and other distributions made per Ordinary Share during that period) exceeds 8% p.a. (the "performance hurdle"). The performance fee is also subject to a "high water mark", such that the aggregate of the NAV per Ordinary Share at the end of the relevant performance period, before accruing for any performance fee, and the dividends paid and other distributions made per Ordinary Share since 31 December 2017 (the end of the last period in respect of which a performance fee was paid) must exceed the audited diluted NAV of 357.23p per Ordinary Share as at 31 December 2017 (the NAV per Ordinary Share (fully-diluted) at the end of the last period in respect of which a performance fee was paid, after accruing for that performance fee).	
ICGT	In the year to January 2019, HarbourVest charged performance fees of 0.87% (2019: 1.14%). If co-investment has generated at least an 8% p.a. compound return in cash to the company (the "Threshold"), the co-investors are entitled to receive 10% of the company's total gains from that investment, out of future cash receipts from the investment or, very rarely, <i>in specie</i> on the flotation of underlying portfolio companies. For investments made before 24 May 2007, if the threshold is not achieved, the co-investors do not recover their contribution. For investments made after 24 May 2007, the co-investors recover their contribution at the same rate as the company recovers the cost of its investment.	

Source: Company Report and Accounts, Hardman and Co Research

Disclosure requirements are unhelpful to peer comparisons. Among the immediate peers, the outlier is HVPE. The fees and carry charged by the underlying GPs to the HVPE funds are not included in its total expense ratio, as shown in the KID. This is for two reasons. Firstly, the definition applied for the KID only takes in the investment company, plus one level down. As HVPE invests in HarbourVest funds, which, in turn, invest in the PE funds, the second layer of costs is not included. As HVPE does not need the data for regulatory disclosure purposes, we also understand that the granularity and timeliness of inputs from underlying managers may not be appropriate for KID reporting. Accordingly, we have excluded HVPE from the table below.

KID disclosure of costs for PIP and selected peers (%)				
%	PIP	BPET	ICGT	SLPE
Transaction costs	0.08	0.08	0.13	0.03
Other ongoing costs	4.14	3.18	3.28	5.50
Carried interest/performance fees	0.0	0.67	2.68	0
Impact on return in year	4.22	3.93	6.09	5.53

Source: Latest KIDS on website, Hardman and Co Research

Investors should note that, as a matter of detail, the fees charged by the GPs to investee companies are typically offset in whole against management fees. PIP reviews them at the time of the initial commitment to ensure that they are market-competitive.

We revert to our original and key observation that investors should focus on what they are getting for costs, and not on costs alone. PIP has consistently delivered returns above quoted markets after all the costs have been taken into account.

Other issues

Discount management

Principles

There are a number of tools that can be used to manage the discount. Many companies have policies that allow them to buy back shares if the discount is above a certain level for a specified time. Others use intermittent tender offers. We believe the key considerations are as follows.

- ▶ On the upside:
 - It creates a buyer for the shares. The immediate effect of a large tender offer may be more effective in removing potentially bulky sellers. If future offers are expected, it may also mean that such sellers do not continually drip shares into the market. Where there are likely to be a larger number of small-sized sellers, an ongoing programme may be more effective.
 - The liquidity provided by buy-backs may encourage buyers, as it provides them with an exit route without disrupting the market price.
 - It may be perceived as putting a cap on the discount, which the market might then close itself.
 - It is “fairer” to all shareholders. A seller may arise for specific reasons (such as death, divorce or liquidity calls) and, by keeping the discount tightly controlled, such sellers do not lose out to discount variability.
 - Where the discount is large, the returns on the cash used in the buy-back may be above the levels targeted in the investment company.

Discount can be helped by buy-backs, but this can create liquidity issues, worsen expense ratios and send mixed messages re growth prospects. PIP does not view buy-backs alone as an effective discount control mechanism

- ▶ On the downside:
 - It could create liquidity problems.
 - The capital can be better deployed in the fund.
 - By shrinking the business, it worsens the total expense ratio, and increases leverage where there is debt.
 - It sends a very mixed message, to investors especially, if the company later comes back to the market for further equity funding.
 - It can also send a very mixed message to staff. We note that, in its results call, JZCP, when announcing a buy-back and debt repayment plans, very clearly outlined why it would not be shrinking the business by still originating assets but placing them in a different vehicle. Given the scale of PIP relative to Pantheon's other businesses, any shrinkage in assets is unlikely to affect, for example, staff morale.
 - An active buy-back programme may reduce the likely return of capital by way of dividends, and thus benefit capital investors over income investors.

PIP buys back shares when the expected return from doing so is better than investing further in a portfolio

PIP's approach

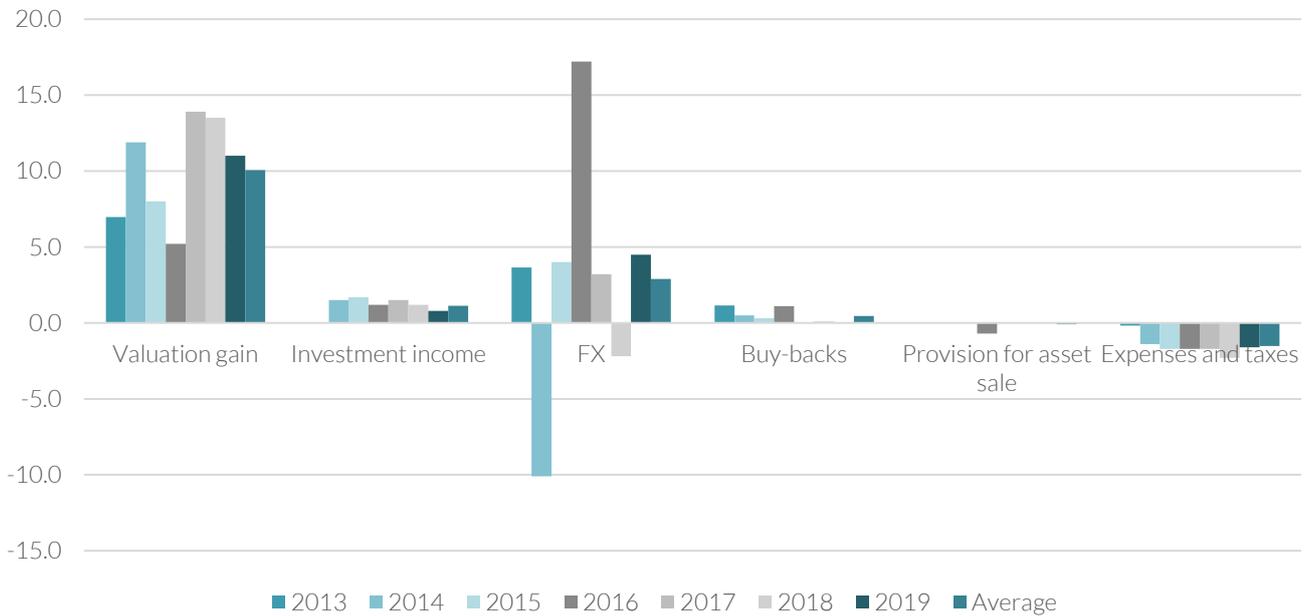
PIP has the authority to buy back shares and, on an intermittent basis, has done so. However, it does not believe that buy-backs alone are an effective discount control mechanism. Apart from the impact on the shares, it introduces an additional level of complexity in cash management for a vehicle investing in illiquid assets. This view has been formed from the company's direct experience, as well as its perceived impact on other companies. To PIP, buy-backs are an option for investment. If the returns from buying its own shares offer better prospective returns than investing in the portfolio, then a share buy-back may be viewed as an attractive option. This is a separate decision from using buy-backs to manage the discount, and it is clear, from current inactivity, that management believes it can achieve better returns by investing in its portfolio than in its own shares. We note that, in 2012, PIP bought back 6% of its shares at an average discount of close to 40% and, in aggregate, it has bought back 16% of its shares since it started the programme in 2011.

Performance breakdown

The chart below breaks down the NAV growth into its constituent elements. Of most note:

- ▶ The average investment performance over this period was +10.1%, with a further 1.1% from investment income before any currency effects.
- ▶ Against this, 11.2% constant currency performance expenses and taxes averaged 1.5%, i.e. 86.5% of returns dropped down to shareholders.
- ▶ FX has been volatile but, over this period, it added an average 2.9% p.a. As the chart below shows, there can be a forex effect on NAV (this was particularly beneficial when sterling fell post the Brexit vote in 2016). Management reviews the cost of hedging against expected long-term trends, bearing in mind that there may be margin calls with exchange rate movements, which introduce further complexity in managing cash for a fund invested in illiquid assets. The borrowing facility is multi-currency, which provides a potential element of hedge.

Annual contribution to NAV growth (%)



Source: Hardman & Co Research

Risk that another investor fails to meet a fund call

Another investor fails to meet fund calls

The nature of PE funds is that they seek commitments from investors to fund future investments, and this is then drawn down over time. This introduces the risk that another investor is unable/unwilling to meet a commitment at a future time, with the consequent effect on the fund liquidity and valuation. PIP manages this risk by i) investing in what it believes to be high-quality funds alongside experienced institutional PE investors, and ii) benefiting from co-investments (obviously 100% funded) and secondary investments, with 50% of 2019 new commitments having been funded at the time of acquisition.

Pantheon advises that there are penalties for investors who do not fund calls, which initially start with interest penalties but can extend to the forfeiture of interests. The non-funding of calls is rare, and, if it does happen, would typically not materially impact other investors' holdings.

Investment risks

Sensitivity to turn in economic cycle

NAV grew every year in early 1990s' recession. Economic cycle affects operational performance of underlying companies, and PIP is affected by greater leverage and reduced valuation ratings. On upside, cov-lite reduces risk of default being triggered (especially at larger end of market), underlying company EBITDA grew through financial crisis, and re-investment opportunities arise.

We believe one of the key investor concerns is how PE will perform in the event of an economic downturn. We note that, in the early 1990s' recession, PIP reported NAV accretion every year. Compared with the financial crisis, PIP is now much more liquid and so much less likely to be a forced seller of assets at distressed prices.

A downturn has several potential impacts, including: i) weaker operational performance in the underlying companies – we note that, in 2009, revenue growth was significantly ahead of benchmark averages and the underlying companies still produced, on average, an 7% increase in EBITDA – these rates were slower than pre-crisis, but still positive growth performances; ii) it will impact PIP's own operational parameters – the distribution rate fell by three quarters (from 39% of opening portfolio in FY'07 to 11% in FY'09/10), and the call rate nearly halved (from 37% of outstanding calls in FY'07 to 16% in FY'10); iii) there is a higher risk of default where companies have more leverage. For PIP, we note that mid-market gearing levels are stable – in the larger buy-out space, higher leverage is partially offset by increased cov-lite documentation, reducing the probability of default; iv) the EBITDA rating applied to underlying companies is likely to fall with market falls, reducing the NAV; v) there are likely to be many more attractively priced re-investment opportunities.

As may be expected, Pantheon employs a rigorous set of internal stress-tests of the portfolio, reviewing multiple scenarios to ensure an appropriate management of the portfolio in the event of a downturn, while at the same time positioning the portfolio to maximise capital growth. Pantheon also pursues a holistic approach in the due diligence of a manager, reviewing a host of quantitative and qualitative measures that provide a well-researched view of the prospects for a manager's next fund. These help Pantheon assess how well placed the manager is to generate consistent returns through the cycle.

Actual performance during shock periods

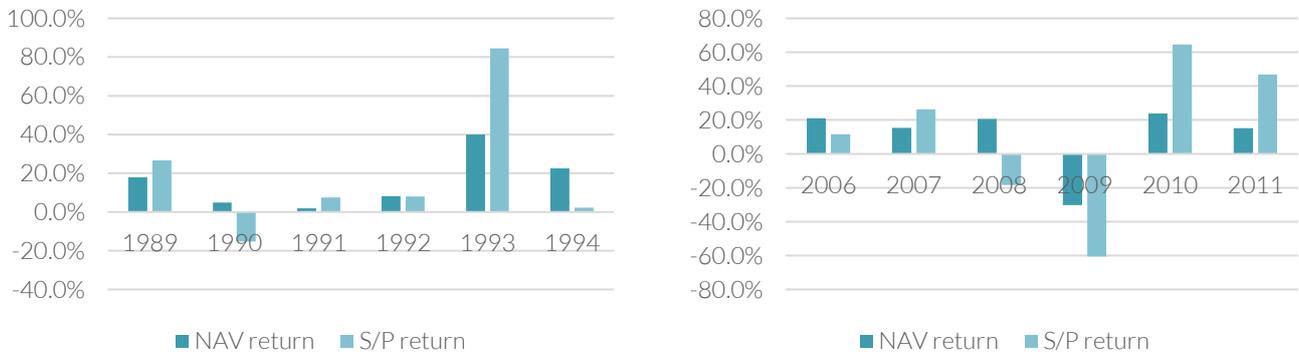
The charts below detail the performance of PIP through a recession and in the financial crisis. We note:

- ▶ In the early 1990s' recession, PIP still reported NAV accretion every year.
- ▶ The share price reacted more adversely, with the discount to NAV increasing from 27% to 36% in May 1990. The rise in the discount anticipated economic events and did not lag them. Arguably, much of this has already happened with PIP today.
- ▶ In the financial crisis, the share price anticipated events, and in the year to end-May 2009, it saw double the fall of the NAV. The recovery, though, was equally sharp, with the share price rising from 295p in May 2009 to 714p in May 2011.
- ▶ Net assets decreased by £222m (31%) to £514m during the 12 months to 30 June 2009. The main moving parts were: i) reported reductions in valuations by GPs and listed securities of £220m – we believe this fall in valuation was driven by rating changes (i.e. market movements) and falling earnings expectations as, given the more modest distribution levels, it is likely that a lower exit premium was not as large a factor in the valuation of the remaining companies; ii) an additional £80m was due to realised losses on disposals of assets, and £10m was a provision relating to expected losses on unclosed sales with signed agreements (PIP took action to sell certain fund interests to improve its liquidity and ensure it was in a position to finance all its outstanding commitments for the foreseeable future);

NAV annual accretion through early 1990s' recession but share price over-reaction saw discount rise to 36%

Sharp drop in NAV in financial crisis, driven by underlying businesses delivering slower (but still positive) operational performance and lower ratings

and iii) these portfolio losses were partially offset by £106m of a net foreign exchange gain.

Annual NAV and share price performance (%) in early 1990s' recession (left-hand graph) and financial crisis (right-hand)


Source: PIP Report and accounts, Hardman & Co Research

Risk profile of portfolio has some similarities to pre-crisis but, critically, liquidity is much better and over-commitment level is much reduced. PIP is unlikely, therefore, to be forced seller of assets.

Risk profile different from pre-financial crisis

In 2009, the portfolio was diversified by geography (US 60%, Europe 31%, Asia and ROW 9%), stage composition (small/mid buy-outs 34%, large buy-outs 20%, venture 35%, special situations 6%, others 5%) and maturity. There was a different sectoral split, with IT now 25% against 17% then, communications now 3% against 10%, and consumer now 25% against 18% (the disclosure means we cannot compare the level of financials or industrials). In our view, and taking these metrics in the round, the portfolio today has similar sensitivity to a downturn as it did in 2009.

What is very different is that outstanding commitments in June 2008 were £641m (£528m in 2007), and PIP had drawn down £70m of its £150m facility (i.e. debt headroom of £80m). It had just £9m cash and a committed stand-by arrangement to issue redeemable shares to institutions of £150m. Total commitments of £641m were thus 2.7x its funding facilities of £239m, nearly double the current level of over-commitment of 1.6x. As a consequence, in 2019, PIP sold down positions in order to meet commitments, and incurred realised losses. The management team that experienced these losses remains in charge, and the business is being run much more conservatively today. It is improbable that PIP will be driven into being a forced seller of assets again. Part of Pantheon's issues in the crisis were related to it taking pre-emptive and material action to support its own liquidity. The current portfolio structure now has more conservatism embedded in advance of the downturn, thus reducing the chances of it being a forced seller of assets in due course.

Impact on operational performance of underlying businesses

We note from page 27 of the *2013 PIP Report and Accounts* that the actual revenue and EBITDA growth for the sample PIP portfolio reported showed a better performance than either the FTSE All-Share or MSCI World indices in each calendar year from 2009 through 2012. In 2009, there was still (very modest) revenue growth, and EBITDA grew by ca.7% (against double-digit falls in the latter for the indices). Coming out of the crisis, there was further outperformance every year. We believe this is evidence of the resilience of the portfolio approach adopted by Pantheon.

We note that Pantheon's performance is supported by academic research. In a piece called *Private equity firms show resilience in a downturn*, Stanford scholar Shai Bernstein noted, in September 2017, "the decline in investment for private equity-backed firms was significantly smaller than the comparable firms. Specifically, we found that in the years leading to the crisis, both the private equity-backed firms and the control group

2009 revenue performance was significantly ahead of benchmark averages and the underlying companies produced, on average, ca.7% EBITDA growth

Stanford academics highlighted outperformance by PE in downturn

Reasons given include long-term horizon and dry powder capital built ahead of downturn

followed a very similar trend in terms of investments. But this trend diverged in 2008, at the onset of the financial crisis, when the decline in investment among private equity-backed firms was much smaller. Moreover, we found that private equity-backed firms increased their assets more rapidly relative to the control group, and also enhanced their market share during the crisis.”

The reasons given were “I think there were a couple of reasons that allowed private equity-backed companies to gain better access to financing resources, and, as a consequence, invest more and grow more rapidly relative to their peers. First, the longer time horizon of the private equity firms’ funds (average fund life is 10 years) allowed the private equity investors to support their portfolio companies during the crisis. Moreover, the private equity firms themselves still had capital available to deploy – capital they had raised before the crisis. Consistent with this notion, we indeed found that private equity firms with more “dry powder,” or non-deployed capital, at the onset of the crisis were more able to alleviate financing constraints of their portfolio companies during the crisis.”

Academics from Leeds/Nottingham universities reached similar conclusion, with PE-backed companies showing stronger performance than quoted companies

Similarly, in a 2011 piece called *Private Equity Portfolio Company Performance Through The Recession*, academics from Leeds and Nottingham universities noted “Private equity-backed buyouts show a stronger economic performance in the period before and during the recent recession than a matched sample of private companies and listed companies. Private equity-backed buyouts show a higher return on assets, sufficient ability to cover the interest payments on their debt and higher gross margin in the recession period than before it. Growth in value added and profit is stronger than for listed companies during the recession period. Growth in turnover and employment remains positive for the PE-backed buyout sample. The results imply almost 14% higher productivity and 5% higher return on assets (ROA) during the recession than matched private companies and listed companies.”

It is, of course, impossible to predict what would happen to the operational performance in a downturn from here. As noted above, PE businesses can be run for the long term, allowing greater preparation for, and appropriate responses to, short-term economic conditions. Pantheon advises that a key part of its due diligence process is assessing how a manager performed in previous downturns. In practice, this means reviewing a host of quantitative and qualitative measures that provide a well-researched view of the prospects for a manager’s next fund. These help PIP assess how well-placed the manager is to generate consistent returns through the cycle.

Distribution rate fell by three quarters (from 39% in FY’07 to 11% in FY’09/10) and the call rate by nearly half (from 37% in FY’07 to 16% in FY’10).

Impact on operational management of PIP

An economic downturn also feeds through to the operational dynamics of the fund. The realisation by type of exit from 2013-19 averaged 42% from trade sale, 34% from secondary buy-out and 15% by IPO. Each is likely to be impacted in a downturn to varying degrees. The net result is that there are likely to be materially lower distributions, as fewer businesses are exited and the rating on sale is lower. Calls are also likely to reduce, meaning that future investment returns are impacted. We use the period 2007-12 to illustrate the effects (noting that some fund positions were additionally sold for liquidity purposes over this period). We believe the percentage lines below best show the trend. As can be seen, the distribution rate fell by three quarters (from 39% of opening PE assets in FY’07 to 11% in FY’09/10) and the call rate by nearly half (from 37% of opening commitments in FY’07 to 16% in FY’10). This scenario is clearly an extreme, but it is indicative of the trends that may be expected in a downturn.

Some key operational performance statistics over the financial crisis period

June	2007	2008	2009	2010	2011	2012
Distributions (£ms)	147	133	86	73	165	139
As % opening PE assets	39	25	11	11	22	17
Number of distributions	n/d	n/d	n/d	300+	400+	800+
Calls (£ms)	135	185	157	67	84	54
As % opening commitments	37	35	24	16	25	22
Outstanding commitments (£ms)	528	641	411	331	243	199

Source: Report and Accounts, Hardman and Co Research

The impact on exit values is likely to be negative, not only because earnings and ratings are lower but also because the exit options themselves are likely to be constrained. The availability of finance for trade purchasers (typically 40% of exits) may be less. Investor appetite for IPOs (ca.15% exits) is likely to be weaker, as is the ca.35% of exits that are driven by secondary buy-outs. The exact degree to which each of these factors will worsen will vary with market conditions (although secondary may be less than the others, given that it is primarily dry powder), but it is probable that all three will be worse.

Impact from gearing

One feature of PE is that it usually increases financial gearing, replacing equity with debt. In some cases, this leverage reduces over time, with the improved operational performance of the business. In others, e.g. those with roll-up acquisition strategies, the gearing may increase over time. This increased debt servicing places an incremental strain on businesses, which compounds any sensitivity to the cycle.

Looking at PIP specifically, we note the modest gearing in the core mid-market buy-out part of the portfolio. Cov-lite documentation has the greatest impact in the larger deal space – so incremental gearing there is partially offset by a lower probability that covenants will be breached.

Impact on valuation metrics

PIP started disclosing a sample weighted average PE for its portfolio in 2009, at which stage its book was on a lower average multiple than the FTSE All-Share. At the end of 2010/11, it still traded at a discount to the MSCI World Index. These relative valuations may be considered in relation to the significant rating premium currently applied to the book.

Some valuation multiples over the financial crisis period

December	2009	2010	2011	2012
Sample weighted average PIP	9.5	9.5	9.4	9.1
FTSE All-Share	10.6	9.8	8.2	9.3
MSCI World	n/a	11.1	10.1	8.9

Source: Report and Accounts, Hardman and Co Research

Upside opportunities

PIP is a long-term investor. The dislocation associated with an economic downturn is likely, over time, to see more opportunities for new investment at more attractive pricing multiples. We note that the NAV per share increase in FY'16 and FY'017 were 22% and 17%, respectively, well above the long-run 11.9% average and reflecting significant returns on investment made in the financial crisis.

Mid-market gearing stable. In larger buy-out space, higher leverage partially offset by cov-lite documentation reducing probability of default.

Ratings likely to be lower

Re-investment opportunities likely to be material

Shades of grey in the valuation

Shades of grey include i) premium rating to benchmark having been valued at discount in 2017 ii) exit premia in some valuations, iii) reliance on third parties, and iv) that valuations may be somewhat dated

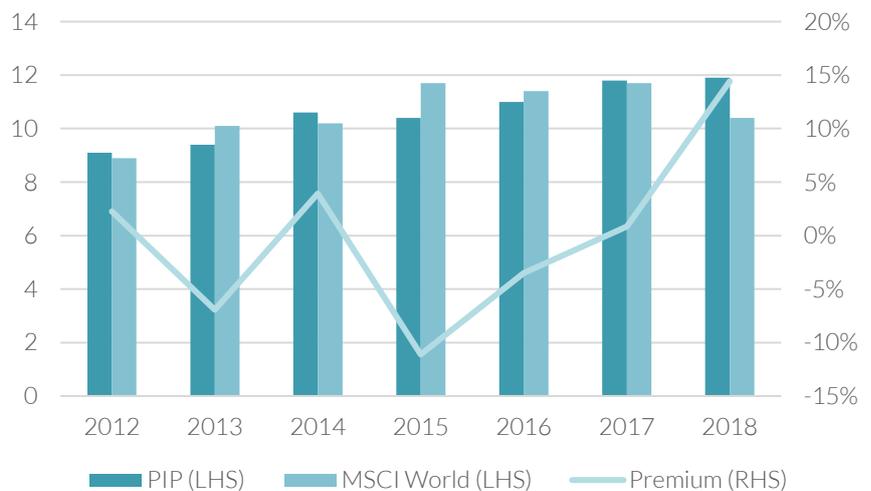
While we believe the “real” NAV is above the disclosed accounting levels for the reasons identified on pages 22 to 24 of this report, there are always shades of grey when it comes to accounting. We note: i) the EBITDA multiple has been rising and is now at its highest premium to the MSCI World Index comparator in recent years; ii) some of the current valuations include an element of exit premium, which could be deferred if market conditions worsen; iii) there is a reliance on third parties for valuations – while these are independently checked and the fund manager’s conservatism is a key consideration when PIP invests, this creates an extra risk; and iv) the valuations are typically delayed by two to three months, as it takes this amount of time for the managers to collate all the information. This may lead to over- or under-statement relative to the current market rating.

FY’19 sample rating was at 15% premium to MSCI World Index, having traded at discount as recently as 2016

EBITDA multiple used in NAV has been rising

PIP discloses the calendar year-end Enterprise Value to EBITDA multiple for a sample of its businesses. At end-2018, the average multiple was 11.9. As can be seen in the chart below, this is stable on 2018 but, relative to the MSCI World Index level of 10.4, it is now at its highest premium in recent years, having traded at a discount as recently as 2016. As discussed previously, this is likely to reflect mix effects, with, for example, PIP being overweight in more highly-rated sectors such as IT and growth.

Enterprise value to EBITDA for sample of PIP companies and MSCI World (x both LHS) and % premium valuation at which PIP is trading (RHS) as at end-December



Source: Report and Accounts, Hardman & Co Research

Some companies include exit premia

Current valuations include an element of exit premium

We note that management chose to disclose the uplift on exit by comparing the actual sale price against the book value 12 months before, because latter valuations could be distorted by including an element of exit premium. The current NAV thus includes a small element of exit premium, which may or may not be realised in the near future.

Reliance on third-party valuation, with independent checks thereof

Reliance on third parties for base valuation

PIP is reliant on third-party managers for their valuation of the assets in each fund. This takes an element of valuation outside the company's control. PIP observes that "the valuations are reviewed periodically for reasonableness". In practice, this means that the risk is managed in multiple ways, including i) manager selection based off the Pantheon team's decades of experience and broad network in the market, ii) independent sample checks by Pantheon itself but also by external auditors, iii) multiple holders of the same underlying company allow a sense-check of valuations.

Valuations have slight time lag => could under- or over-value compared with current market ratings

Timing

The information from the managers is not always synchronised with PIP's own reporting, and thus some valuations will always be historical. We understand that the vast majority of GPs provide valuations on a quarterly basis. PIP's experience is that the valuations are sent out between 45 and 60 days after a calendar quarter-end, although this timing can increase up to 80 days for the 4Q valuations. There is also a risk that upside or downside may be missed (in a rising equity market, the relative rating may be below current market levels, and *vice versa* in a falling market).

Investors can take comfort from i) the permanent structure of the closed-ended vehicle, ii) appropriate gearing and liquidity, and iii) conservative commitment policy being sentiment-driven rather than fundamentally-driven

Unquoted assets/asset illiquidity

We believe investors will usually give greater reliance on the NAV for businesses where its value is determined by liquid market prices over prices that rely on observable inputs or modelling assumptions. This is precisely why the accountants developed their valuation hierarchy, and we note that 99.96% of PIP's assets are accounted for on a level 3 basis, i.e. there are no liquid market prices or observable inputs. As we identified above, PIP has a long track record, which indicates that its NAV is conservative and that the "real" NAV is above the level reported. We therefore classify such concerns as being driven by sentiment, rather than fundamentals.

We also note the concern that PIP's assets may be illiquid, and it is undeniable that there is not an open liquid market for most of them. However, investors should note that, even in the depths of the financial crisis, PIP was able to sell down exposures, albeit at a cost. Since then, the secondary market has been transformed, with trades in 2018 of \$74bn, nearly 50x the total size of the PIP portfolio. As we noted above, the average discount to NAV in the secondary market is currently just under 10%, but this is driven significantly by mix, with the secondary market having a greater percentage of lower-yielding, older assets than the PIP portfolio as a whole. In current conditions, it may be expected that the loss on disposal for most of the portfolio would be modest, if any.

The key question therefore becomes whether PIP is ever again going to be in a situation of a forced seller of assets. Investors can take comfort from i) the permanent structure of the closed-ended vehicle, ii) appropriate gearing and liquidity in the vehicles, and iii) a conservative over-commitment policy, with future undrawn commitments significantly covered by existing facilities, let alone future cash generation. Again, we would characterise concerns about asset illiquidity as being driven by sentiment, rather than fundamentals.

History of discount

However, overcoming the sentiment that "it's always been at discount and always will be" can be a significant challenge. PIP has normally traded at discount but i) it is not justified by fundamentals, and ii) other companies that have traded at a discount for a sustained period have moved to premiums, as we identified on page 9 of our report, *Investment Companies. Understanding the deepest discounts*, published on 14 May 2019. The downside risk of the discount widening significantly, even in a recession, would appear modest.

Current portfolio

The table below gives a summary of PIP's portfolio and its closest peers.

Portfolio summary						
	PIP	BPET	HVPE**	ICGT	SLPE	MSCI World
Sector (%)						
IT	24	n/d	23	12	14	16
Healthcare	18	n/d	14	21	16	12
Consumer	16	n/d	15	13	34*	19
Financials	12	n/d	10	6	10	16
Industrial	9	n/d	14	21	21	11
Energy	9	n/d	6	0	1	6
Communication	7	n/d	4	0	4	8
Others	5	n/d	14	27		11
Stage						
Small/mid buy-out	39	Total)	Total)	52	Total)	
Large/mega buy-out	24	50)	58)	45	98)	
Growth	20	3	32			
Special situations	12					
Venture / other	5	47	10	3	2	
Vintage						
2018 and later	14	14	6	24	17	
2017	13	22	9	20	14	
2016	16	14	16	18	18	
2015	17	8	15	9	15	
2014	6	9	9	12	13	
2013	4	8	12	9)	
2012	5	8	7	3)	
2011	4	6	7	1	More)	
2010	1	3	2	2	than)	
2009	2	0	1	1	5 yrs)	
2008	7	4	3	0	23)	
2007	7	3	6	2)	
2006 and earlier	4	2	7	0)	
Type						
Primary	27	n/d	45	79	85	
Secondary	40	n/d	31	5	13	
Co-investment direct	33	39	24	16	1	
Geography						
USA/North America	55	16	57	27	13	
Europe	26	82	20	69	84	
o/w UK		47	3	31	14	
Asia and EM	12	1	15	n/d	n/d	
Global/ROW	7	1	8	4.5	3	
Largest exposures						
Single underlying company	2.7	3.3	1.5	3.4	6.1	
Top 5 companies	7.5	14.4	6.1	14.1	10.2	
Single manager	6.2	n/d	n/d	ICG 21	6.1	
Top 5 managers	19.6	n/d	Ca 7.5	n/d	26.9	

Source: Factsheets - PIP July, SLPE June, BPET May, HVPE July, ICGT April, MSCI World April from HVPE, Hardman & Co Research.

*includes consumer services and goods, **vintage year by initial investment in underlying portfolio companies

Pantheon International Plc

Key portfolio conclusions: i) above-average IT and energy, below-average industrials; ii) relatively overweight growth and underweight buy-out; iii) 60% in investment phase, in line with peers; iv) by some margin, greatest proportion of secondary (i.e. traded) positions; v) global exposure with limited Brexit risk; vi) greatest degree of diversification by name and manager

In terms of its current portfolio positioning, the key conclusions that we draw from the table are:

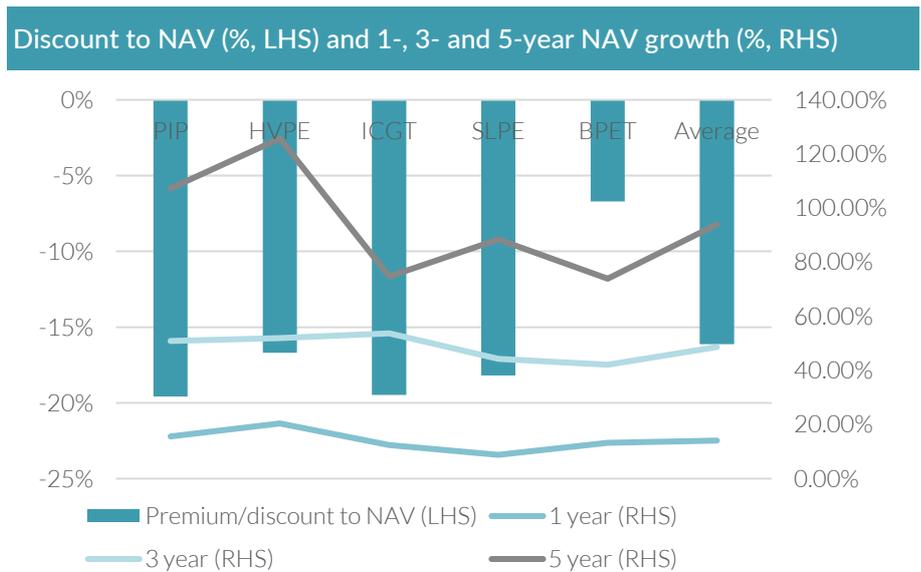
- ▶ PIP has the highest overweight exposure relative to its peers: i) 24% to IT vs. peer average of 16%; ii) 9% to Energy vs. peer average of 2%; iii) 7% to Communications vs. peer average of 3%; and iv) 12% to Financials vs. peer average of 9%. The key underweight sector relative to peers are Industrials (9% vs. peer average of 18%) and others, which include areas such as Business Support and Leisure. *Prima facie*, this gives PIP a greater exposure to growth through IT, and management emphasises, as a theme, investing in companies that can disrupt markets. The relative sectoral exposure to a downturn appears mixed, with, for example, the overweight Financials increasing risk, while the underweight Industrials reduces it.
- ▶ Relative to the average of its peers, it is overweight in growth and special situations and underweight buy-outs. Real assets and mezzanine investment exposure are included within HVPE's other assets.
- ▶ The reported age profile between companies is diverse. Against the average of peers, PIP has an older average book, especially from 2010 and earlier. PIP has 60% of the portfolio in what may be considered an investment phase (vintage 2015-19), exactly in line with its peers. It has 20% in a growth phase (vintage 2010-14), against its peers at ca.25%, and it has 20% in the mature phase (vintage pre-2010) against its peers' 15%.
- ▶ PIP has the highest proportion of secondary investments by some margin. It also has one of the highest proportions of co-investments/direct investments, with its exposure to primary investments well below-average. PIP's primary exposure is just over half that of its closest peer, HVPE.
- ▶ By geography, PIP and HVPE have very similar profiles and are global businesses. The other peers are much more weighted to Europe/UK. We note that the Brexit risk for PIP is thus below-average.
- ▶ PIP has one of the most diversified portfolios, as measured by largest underlying company and manager exposure.

Valuation

Most fund of fund peers at similar discounts, despite differing risk/reward profiles. Given factors outlined throughout this report, PIP's discount, in both absolute and relative terms, appears anomalous

One of the more noticeable features of the discounts for fund of fund PE investment companies is the remarkable consistency between all the companies. *Prima facie*, it appears that the market has a broad concern with the whole sector, and is not differentiating for the different risk/rewards for each company. The most obvious factors would be: i) sensitivity to the cycle (PIP's NAV rose every year through the early 1990s' hard recession and focus on the relatively lowly-geared small/ mid buy-out space); ii) lack of confidence in illiquid and unquoted assets (PIP is structured to avoid being a forced seller, and has lower over-commitments than its peers); iii) lack of confidence that the NAV is a realistic reflection of the underlying companies – discussed in detail above; and iv) fees (PIP at lower end of range of peers). Taking an absolute rather than relative rating perspective, it appears anomalous that a company with a 30-plus-year track record of consistent outperformance over most periods would trade at a discount to NAV.

The chart below shows the discount for PIP and peers, along with the track record over one, three and five years. Despite beating average peers' NAV growth over each of these timescales, PIP's discount is marginally larger.



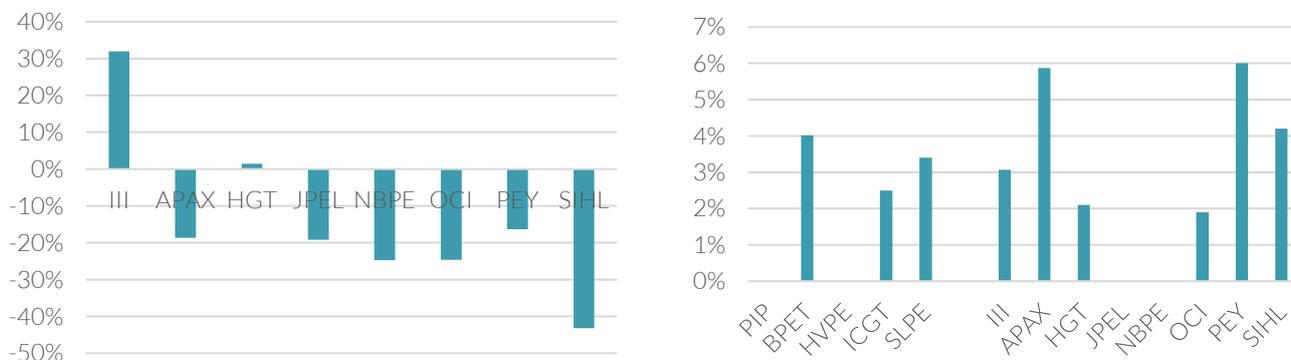
Source: Latest company factsheets on websites, Hardman & Co Research

There is an obvious anomaly in the relative valuation shown above. BPET's discount is 42% of the peer fund of funds, despite the NAV growth shown above. We note, on page 22 of this report, that BPET's implied EV/EBITDA rating is significantly lower than that of its peers, and this may give investors confidence in its NAV. BMO also advises that, in its view, the high dividend yield (4%), continuity of management and the relatively tight register of supportive shareholders (largest shareholder 27%) differentiate it from its competitors. In our discussions with PIP, we believe that, while the dividend may appeal to some investors, the alternative of deploying the capital for high returns means we do not expect a dividend in the foreseeable future.

The charts below show: i) the premium/discount ratings of a broader range of peers – among the direct investors, HG is on a very small discount, but it is a fund very focused on IT, with the opportunities and risks that presents, and 3i trades at a significant premium, but its business model is very different, including its asset management business, as well as the balance sheet business; and ii) the yield for the entire group. As can be noted, the discounts on JPEL and PEY are similar, despite very different yields.

While yields may be a factor in valuation, they do not appear, in isolation, to be the driving factor.

Premium/discount comparison with broader range of PE peers (% , left-hand graph) and yield (% , right-hand graph)



Source: Latest factsheets, priced at 5 September 2019

GGM model would indicate PIP should trade on multiple of book

Alternative approach

As an investment company, it is a standard practice to consider the discount/premium to NAV. However, if Pantheon were a specialist lender or a trading business, we would consider the Gordon Growth Model (GGM), which focuses on sustainable returns, cost of equity and growth. A business that delivers returns above cost of capital should trade at a premium to book value, as it is adding value for shareholders. A growing company delivering returns above cost of capital would be at a larger multiple than a company that were not growing.

There is always, then, a debate about what are sustainable returns, cost of equity and growth. In the current, low-long-term interest rate environment, we would argue that a track record of 11.9% NAV returns since 1987 is indicative of a business generating returns safely above cost of capital, and thus one that should trade well above book.

Key triggers for a re-rating include continued performance, better market understanding of the risk and rewards in the model and more comfort that the impact on NAV of any economic downside scenario will not be as adverse as feared

Triggers for a re-rating

We noted earlier in this report that PIP and, indeed, its peers have traded at discounts to NAV for a considerable time. While investors have been rewarded by market-beating strong NAV growth driving the share price, it is also worth noting that there are a number of potential triggers that could deliver incremental returns by closing the 20% discount. These include:

- ▶ Market concerns about illiquid/unquoted stocks moderating as the Woodford effect becomes more historical. We do not believe this issue will go away quickly – not least as there may be regulatory changes to fund holdings of illiquid assets. However, we do expect a steady moderation in its intensity from here.
- ▶ We stated that the discount appears anomalous. In this case, one key consideration will be communication. We note that PIP has become increasingly active in its investor engagement, *inter alia* paying for sponsored research and hosting a capital markets day to better inform the market.
- ▶ Delivery of strong performance, in line with historic experience, through an economic downturn.

Financials

Profit and loss (£m)									
Year-end May	2019			2020E			2021E		
	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
Gains on investments at FV through P/L		204,473	204,473		169,607	169,607		187,019	187,019
ALN losses on Fin. Liab. at FV through P/L	-1,229	-8,815	-10,044	-1,000	-6,000	-7,000	-1,000	-5,000	-6,000
Currency (losses)/gains on cash & debt		6,810	6,810	0	0	0	0	0	0
Investment income	13,222		13,222	14,496	0	14,496	15,984	0	15,984
Investment Manager's fee	-16,584		-16,584	-18,555		-21,710	-23,751		-23,751
Other expenses	-5	-568	-573	-250	-750	-1,000	-250	-750	-1,000
Return before finance costs and taxation	-4,596	201,900	197,304	-5,309	162,857	154,394	-9,017	181,269	172,252
Interest payable and similar expenses	-2,386		-2,386	-2,386	0	-2,386	-2,386	0	-2,386
Return on ordinary activities before taxation	-6,982	201,900	194,918	-7,695	162,857	152,008	-11,403	181,269	169,866
Taxation	-2,594		-2,594	-2,594		-2,594	-2,594		-2,594
Return on ordinary activities after tax	-9,576	201,900	192,324	-10,289	162,857	149,414	-13,997	181,269	167,272

Source: PIP Report and Accounts, Hardman & Co Research

Balance sheet (£m)							
Financial year	2015	2016	2017	2018	2019	2020E	2021E
Investments at fair value through P/L	862,029	1,071,876	1,224,142	1,274,737	1,449,634	1,598,449	1,764,676
Current assets							
Debtors	1,805	3,654	1,661	3,891	3,222	3,222	3,222
Cash and cash equivalents	137,483	115,522	167,252	162,292	142,773	128,372	114,417
Total assets	1,001,317	1,191,052	1,393,055	1,440,920	1,595,629	1,730,043	1,882,315
Current liabilities							
Creditors	1,253	3,938	5,522	19,046	4,682	4,682	4,682
Long-term liabilities							
Asset Linked Loan (ALN)				115,110	92,359	77,359	62,359
Net assets	1,000,064	1,187,114	1,387,533	1,306,764	1,498,588	1,648,002	1,815,274
NAV per share (p)	1,532	1,874	2,190	2,415	2,771	3,047	3,356

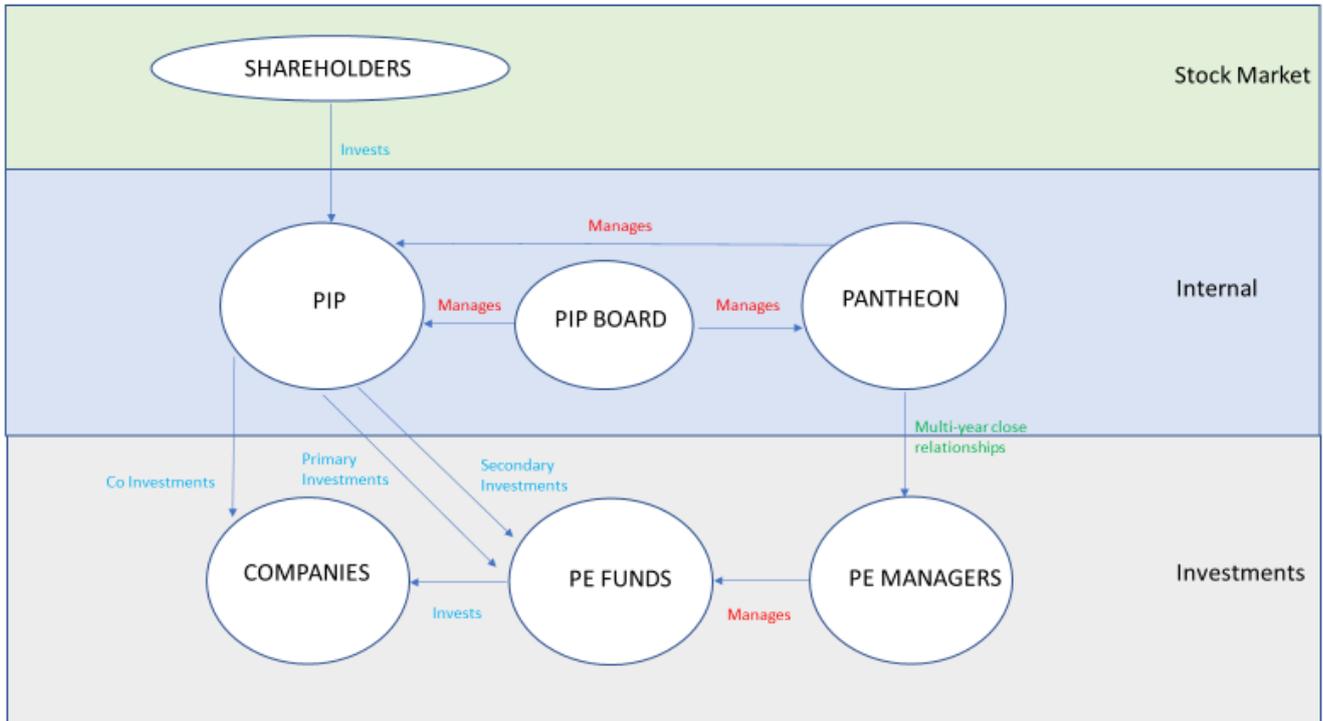
Source: PIP Report and Accounts, Hardman & Co Research

Cashflow (£m)							
Financial year	2015	2016	2017	2018	2019	2020E	2021E
Investment income received	14,855	11,664	17,105	13,619	12,818	14,496	15,984
Deposits and other income	60	159	343	830	1,359	1,000	1,000
Investment management fees paid	-9,876	-11,011	-12,506	-14,969	-16,401	-21,710	-23,751
Other fees/cash payments	-1,727	-2,155	-1,867	-6,309	-17	0	0
Withholding tax deducted	-1,437	-1,985	-4,257	-10,483	-3,407	-2,594	-2,594
Net cash inflow/(outflow) from operating activities	1,875	-3,328	-1,182	-17,312	-5,648	-8,807	-9,361
Cashflow from investing activities							
Purchase of investments	-171,799	-263,203	-251,181	-254,426	-285,326	-347,643	-385,875
Disposals of investments	225,971	244,540	303,131	351,335	313,330	367,643	405,875
Net cash outflow from investing activities	54,172	-18,663	51,950	96,909	28,004	20,000	20,000
Cashflows from financing activities							
ALN repayments	0	0	0	-77,152	-44,909	-22,000	-21,000
Share buy-backs	-6,872	0	0	-3,546	-500	0	0
Redeemable share buy-backs	-4,389	-22,022	-26	0	0	0	0
Loan commitment and arrangement fees paid	-1,953	-992	-1,378	-1,577	-3,286	-3,594	-3,594
Finance costs paid for deferred payment transaction	0	0	-182	0	0	0	0
Net cash inflow from financing activities	-13,214	-23,014	-1,586	-82,275	-48,695	-25,594	-24,594
Net increase in cash and cash equivalents	42,833	-45,005	49,182	-2,678	-26,339	-14,401	-13,955
Opening cash and cash equivalents	88,346	137,483	115,522	167,252	162,292	142,773	128,372
FX effects	6,304	23,044	2,548	-2,282	6,820	0	0
Closing cash and cash equivalents	137,483	115,522	167,252	162,292	142,773	128,372	114,417

Source: PIP Report and Accounts, Hardman & Co Research

Company matters

Schematic of PIP's organisational structure



Source: Hardman & Co Research

Board of Directors

Sir Laurie Magnus – Non-executive Chairman

Born September 1955. Appointed to the Board on 22nd November 2011. Appointed as Chairman on 23rd November 2016. Sir Laurie Magnus is a senior adviser at Evercore Partners, the US-listed corporate finance advisory business. He has over 35 years of investment banking experience, primarily in corporate finance, initially at Samuel Montagu & Co Limited (subsequently HSBC Investment Bank) and then successively at Phoenix Securities, Donaldson Lufkin & Jenrette, Credit Suisse First Boston and Lexicon Partners (latterly as Chairman before it merged with Evercore in 2011). He is currently a Director of JP Morgan Multi-Asset Trust plc and Non-Executive Director of Fidelity Japanese Values plc and Aggregated Micropower Holdings plc. He is a former Non-Executive Director of the Cayenne Trust plc. He is Chairman of The Historic Buildings and Monuments Commission for England (“Historic England”), Chairman of Windsor Leadership Trust, and a trustee of the English Heritage Trust and All Churches Trust.

Ian Barby – Audit Committee Chairman

Born January 1945. Appointed to the Board on 28th April 2005. Ian Barby practised as a barrister before joining Warburg Investment Management Ltd as a Director and becoming a Vice Chairman of Mercury Asset Management plc. He was latterly a Managing Director of Merrill Lynch Investment Management with responsibility for its investment trust division. Ian is currently Non-Executive Chairman of both Invesco Perpetual UK Smaller Companies PLC and Schroders Income Growth Fund plc. He is also a Director of Ecofin Global Utilities and Infrastructure Trust plc.

Susannah Nicklin – Senior Independent Director

Born February 1969. Appointed to the Board on 22nd November 2011. Ms Nicklin is an investment and financial services professional with 25 years of experience in executive roles at Goldman Sachs and Alliance Bernstein in the US, Australia and the UK. She has also worked in the social impact PE sector with Bridges Ventures and the Global Impact Investing Network. Susannah is a Senior Independent Director of City of London Investment Group PLC, Non-Executive Director of Amati VCT 2, a Non-Executive Director of The North American Income Trust plc and a Director of Baronsmead Venture Trust plc. She is a CFA charterholder and member of STEP.

John Burgess – Non-Executive Director

Born June 1950. Appointed to the Board on 23rd November 2016. John Burgess has over 20 years' experience within PE, following 8 years with the Boston Consulting Group in Paris and London, where he became a Partner. Subsequently, he held senior roles with F&C Ventures Ltd and Candover Investments plc before co-founding BC Partners (formerly Baring Capital Investors Ltd) in 1986 where he was a Managing Partner until 2005. While at BC Partners, he held directorships of a variety of companies across the UK and Continental Europe. Since 2005, he has remained actively involved in PE as well as increasing his investment interests in the public markets. Mr Burgess is a Governor of The Royal Academy of Music and was a Director of the Business Growth Fund Plc.

David Melvin – Non-Executive Director

Born July 1960. Appointed to the Board on 23rd February 2015 David Melvin is an investment and financial services professional with almost 30 years' experience in investment banking and PE. He is currently a Senior Adviser at Cenkos Securities plc, a UK-listed institutional stockbroking firm, and a Senior Adviser of CITIC CLSA, a CITIC Securities Company. Up to 2014, David was a Partner at TDR Capital, a European PE firm, where he was also a Member of the Investment Committee and Head of Investor Relations. Prior to that, he spent 24 years at Merrill Lynch, where he held a number of leadership positions, including Global Co-Head of Financial Sponsors and Chairman of EMEA Financial Sponsors and Leverage Finance. He is a qualified Chartered Accountant.

John Singer – Non-Executive Director

Born May 1951. Appointed to the Board on 23rd November 2016. John Singer is an investment and financial services professional including over 30 years' experience in PE. Until 2015, Mr Singer spent over 20 years with Advent International plc where he was co-founder and member of the Global Executive Committee and, until 2012, Chairman of their European operations. He remained a Special Partner until 2015. Prior to that, he was Managing Director of Granville Europe plc, where he founded and managed one of the first pan-European PE funds. In addition, he was Chairman of the European Venture Capital Association (EVCA) and chaired their annual symposia for several years. Mr Singer is involved with several organisations within the arts and education sectors; he is a Trustee of The National Gallery, London and Honorary Fellow, and on the Development Committee of Trinity College, Oxford.

Mary Ann Sieghart – Non-Executive Director

On 7th August 2019 PIP announced the appointment of Mary Ann Sieghart as a Non-Executive Director of the Company and a member of the Audit Committee, Management Engagement Committee and Nomination Committee with effect from 30 October 2019. Mary Ann Sieghart is a Non-Executive Director of The Merchants Trust plc and was, until recently, Senior Independent Director of The Henderson Smaller Companies Investment Trust plc. She is Chair of the Social Market Foundation think tank, and a trustee of the Kennedy Memorial Trust, among other voluntary posts. Mary Ann is a political journalist and broadcaster and was formerly Assistant Editor of

The Times, a Lex Columnist at the Financial Times and City Editor of Today. She has spent the academic year 2018-19 as a Visiting Fellow of All Souls College, Oxford.

Rhoddy Swire – Non-Executive Director

Born March 1951. Appointed to the Board on 7th August 1987 Rhoddy Swire is Pantheon's founder and has been a director of Pantheon International Plc since its listing in 1987. In 1981, Rhoddy joined GT Management Ltd to oversee and manage unquoted investments, and subsequently led the buy-out from GT Management Ltd to form Pantheon. Until 12th October 2011 he was a director of Pantheon Ventures Limited, a parent undertaking of Pantheon Ventures (UK) LLP, and is a Director of a number of Pantheon funds. He is Chairman of Music Marketing Services Limited, the Hereford Cathedral Perpetual Trust and Director of Lewmar Marine plc. He is a former Director of Ceravision Limited, The China Navigation Company Limited and Lindsell Train Investment Trust PLC.

Key investment managers

We have outlined above how PIP delivers its strategy through process, infrastructure and a broad market knowledge and database. It is not dependent on star managers but rather on the whole investment process. We believe this is important to delivering long-term sustained returns. Noting that caveat, the key Pantheon managers involved in PIP are:

Andrew Lebus – PIP and Secondary Investment Partner

Joined 1994; 33 years of PE experience. Andrew is a senior member of Pantheon's investment team. He is responsible for managing the activities of PIP and is a member of the Asia Regional and Secondary Investment Committees. Andrew, who spent eight years in Hong Kong managing Pantheon's Asian investment programme, also participates in determining Asian investment strategy and overseeing the selection and monitoring of investments. Prior to joining Pantheon, Andrew worked in corporate finance, with special emphasis on the PE market, at Credit Lyonnais Securities, and its affiliate Castleforth. Andrew is based in London.

Helen Steers – PIP and European Primary Investment Partner

Joined 2004; 29 years of PE experience. Helen is Head of Pantheon's European Investment Team. She chairs the European Investment Committee and is a member of the International Investment Committee and the Co-investment Committee. Prior to joining Pantheon, Helen held senior positions at Russell Investments in Paris and at the Caisse de dépôt et placement du Québec in Montréal. Helen was a member of the Council (Board) of the British Private Equity and Venture Capital Association (BVCA) from 2016-2019, and the Chair for 2018. She has also been a Board member of Invest Europe and is a co-founder of Level 20. Helen is based in London.

Investment policy restrictions

PIP has a number of restrictions to ensure diversification. These include:

- ▶ "that no holding in a company will represent more than 15% by value of the Company's investments at the time of investment;
- ▶ the aggregate of all the amounts invested by the Company in (including commitments to or in respect of) funds managed by a single management group may not, in consequence of any such investment being made, form more than 20% of the aggregate of the most recently determined gross asset value of the Company and the Company's aggregate outstanding commitments in respect of investments at the time such investment is made;

- ▶ the Company will invest no more than 15% of its total assets in other UK-listed closed-ended investment funds (including UK-listed investment trusts).”

PIP may invest in funds and other vehicles established and managed or advised by Pantheon or any Pantheon affiliate. In determining the diversification of its portfolio and applying the manager diversification requirement referred to above, the Company looks through vehicles established and managed or advised by Pantheon or any Pantheon affiliate.

The Company may invest in PE funds, unquoted companies or special purpose or investment holding vehicles which are geared by loan facilities that rank ahead of the Company’s investment. The Company does not adopt restrictions on the extent to which it is exposed to gearing in funds or companies in which it invests.”

Glossary

PIP provides a detailed glossary of terms and alternative measures on pages 127-130 of its *2019 Report and Accounts*. We provide a shortened summary below.

Glossary	
Asset Linked Note ("ALN")	Unlisted, subordinated note due to mature in August 2027, the repayment and the performance of which are linked to a reference portfolio consisting of older vintage funds. The holder of the ALN has rights to receive ca.75% of net cashflows arising from the reference portfolio prior to the repayment of any outstanding balance in August 2027.
Buyout funds	Funds that acquire controlling interests in companies with a view towards later selling those companies or taking them public.
Carried interest	Portion of realised investment gains payable to the GP as a profit share.
Co-investment	Direct shareholding in a company by invitation alongside a private equity fund.
Commitment	The amount of capital that each LP agrees to contribute to the fund when and as called by the GP.
Debt multiple	Ratio of net debt to EBITDA.
Dry powder	Funds committed and available for investment that are not yet invested.
General partner ("GP")	The entity managing a private equity fund that has been established as a limited partnership, also commonly referred to as the private equity fund manager.
Investment period	Period, typically five years, during which the GP is permitted to make new investments.
J-Curve	Refers to the tendency of private equity funds to experience capital outflows and negative returns in early years, and cashflow distributions and investment gains in later years as portfolio companies mature and are exited.
Limited partner ("LP")	Institutions or individuals who commit capital to a private equity fund established as a limited partnership. LPs are generally protected from legal actions and any losses beyond their original commitment to the fund.
Portfolio investment return	Total movement in the valuation of the underlying funds and companies comprising the portfolio, expressed as a percentage of opening portfolio value. Foreign exchange effects and other expenses are excluded from the calculation. The figure excludes returns attributable to the ALN.
Primaries	Commitments made to private equity funds at the time such funds are formed.
Private equity	Privately negotiated investments typically made in non-public companies.
Reference portfolio	As defined under the terms of the ALN, a subset of PIP's private equity portfolio assets, substantially comprising the company's oldest funds (2006 and earlier vintages).
Secondaries	Purchase of existing private equity fund or company interests and commitments from an investor seeking liquidity in such funds or companies.
Undrawn/ outstanding commitments	Undrawn portion of total commitment.
Uplift on exit	Increase in value received upon exit realisation of an investment relative to its carrying value prior to realisation.
Valuation multiple	Multiple of earnings (typically EBITDA or net income) or revenue applied in valuing a business enterprise.
Venture capital	Investment in early and development-stage companies, often used to finance technological product and market development.
Vintage	The year in which a private equity fund makes its first investment.
Weighted average fund age	Average fund age for the portfolio is weighted by the funds' respective closing net asset values. Fund age refers to the year in which a fund makes its first call or, in the case of a co-investment, the year in which the co-investment was made.

Source: *Company Report and Accounts, Hardman and Co Research*

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Some professional investors, who are subject to the new MiFID II rules from 3rd January, may be unclear about the status of Hardman & Co research and, specifically, whether it can be accepted without a commercial arrangement. Hardman & Co's research is paid for by the companies, legal entities and issuers about which we write and, as such, falls within the scope of 'minor non-monetary benefits', as defined in the Markets in Financial Instruments Directive II.

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The fact that Hardman & Co is commissioned to write the research is disclosed in the disclaimer, and the research is widely available.

The full detail is on page 26 of the full directive, which can be accessed here: <http://ec.europa.eu/finance/docs/level-2-measures/mifid-delegated-regulation-2016-2031.pdf>

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