

## Review of Private Markets Investments

### Executive Summary

This paper is addressed to the Officers and Pensions Committee (“Committee”) of the East Sussex Pension Fund (“the Fund”). It reviews the Fund’s private market investments and discusses the requirement for further commitments over the next year. The paper should not be released or otherwise disclosed to any third party except as required by law or regulatory obligation or without our prior written consent. We cannot be held liable for any loss incurred by a third party relying on this paper without such permission.

As at 30 September 2017, the Fund had the following allocation to private markets, through private equity and debt and infrastructure.

| Asset Class    | Manager               | 30/09/2017<br>£m | Actual Proportion<br>% | Target Proportion<br>% |
|----------------|-----------------------|------------------|------------------------|------------------------|
| Private Equity | Adams Street          | 98.2             | 2.9                    | 2.75                   |
|                | Harbourvest           | 91.7             | 2.7                    | 2.75                   |
| Infrastructure | M&G Infracapital      | 2.2              | 0.1                    | 1.0                    |
|                | UBS                   | 22.0             | 0.7                    | 1.0                    |
| Private Debt   | M&G UK Financing Fund | 1.5              | 0.0                    | 1.0                    |
|                | <b>TOTAL</b>          | <b>215.6</b>     | <b>6.4</b>             | <b>8.5</b>             |

As outlined in the Fund’s investment beliefs, the Committee believes that long term investing provides opportunities for enhancing returns. Given this, it is important for the Committee to maintain the Fund’s private markets programme and to continue allocations to regular vintage year funds.

Solutions for investing in private equity, infrastructure and private debt through the ACCESS Pool may not be available for a few years yet so the need for maintaining private market allocations remains for the Fund. Our recommendations in terms of increasing target allocations are:

- **Private equity** – maintain target allocation of 5.5% by continuing to commit to one or more private equity funds on an annual basis
- **Infrastructure** – increase the current 2% allocation to 4% with the Fund being open to potential further increases in the future.
- **Private debt** – increase the current 1% allocation to 3% and then to 4-5% over the longer term.

We recommend that these new investments be funded by reducing the Diversified Growth Fund (“DGF”) target allocation over time. We also acknowledge that it will take quite a period of time to achieve the full target allocations.

## Background

The Fund currently accesses private markets in three areas: infrastructure, private equity and private debt markets. As set out in the Fund's investment beliefs, there is a view that investors with long-term time horizons are typically less constrained by liquidity requirements and able to better withstand periods of price volatility. As a long term investor, the Fund may choose to gain additional compensation by investing in assets that are illiquid (e.g. property, infrastructure and private equity) or may be subject to higher levels of volatility (as a premium return is required for any such investments).

The strategy review earlier this year highlighted that, as the Fund matures, the Committee should look to increase its exposure to higher yielding assets. Also, in the current environment of relatively low expected returns where there is a risk of asset returns becoming more correlated with each other, we favour strategies that can provide attractive absolute returns through a strong and visible income stream. These are prevalent within the infrastructure and private debt asset classes, which lies behind our recommendation to increase the level of investment in the future.

This paper sets out our recommendations for maintaining the allocation to private equity and increasing over time the allocations to infrastructure and private debt.

## Private equity

The Fund established the private equity programme in 2003 and has been committing assets in a gradual way since then. Adams Street and HarbourVest were selected to manage the Fund's private equity investments in 2003 following an extensive search for suitable "gate keepers". Private equity investment, given its illiquid, long-term nature, dictates that the Fund will need to maintain a lengthy relationship with these managers requiring extensive due diligence at the outset. Both managers remain highly rated by our manager research team.

The Fund has an allocation of 5.5% to private equity in its strategic benchmark. As at 30 September 2017, the value invested in private equity amounted to 5.6% of total assets, broadly in line with the strategic benchmark allocation. The gradual investment cycles over which private equity funds tend to operate mean that any target allocation can only be maintained within a broad range.

The portfolio includes investments in 42 private equity funds, including the specialist allocation to the Cleantech sector via the HarbourVest Cleantech and Cleantech II funds.

## Commitments to date

The table overleaf provides a breakdown of the Fund's private equity portfolio. These figures are based on data collated each year for the Fund's accounts. As at 31 March 2017, the Fund had committed £396m to these funds (of which approximately £318m has been drawn and invested). The amounts committed to each fund were fixed in either US dollar or euro terms during the commitment phase of each fund. The committed amounts (and the net asset values) will therefore fluctuate with changes in exchange rates.

The net asset value of drawn down and invested assets was approximately £190m at 31 March 2017, equivalent to 5.7% of the Fund. The Fund's private equity portfolio, after 14 years of investment, has reached the point where its holdings in the more mature funds are now in the 'distribution phase' of returning cash to investors. Table 1 shows this; the most mature funds are listed at the top of each section and are characterised by their higher percentage of capital drawn down (fourth column) and higher cash distributions (last column) relative to the initial commitment.

The more mature funds represent a significant proportion by value of the Fund's current exposure to private equity. To help counterbalance the expected reduction in exposure to these funds, the Fund has continued to commit to newer funds which are more immature and are yet to draw down the majority of commitments.

| Manager                               | Fund                               | Accounting valuations as at 31/03/2017 |  |  |   |  |         |
|---------------------------------------|------------------------------------|--|--|--|---|--|---------|
|                                       |                                    | Commitment<br>(millions)               | Outstanding<br>Commitment<br>(millions) <sup>(1)</sup> | Capital<br>Drawdown<br>(millions) <sup>(1)</sup> | Market Value<br>(millions) <sup>(2)</sup> | Cumulative<br>Distributions<br>(millions) <sup>(1)</sup> |         |
| Adams Street                          | 2003 Non US Fund                   | \$32.00                                | \$1.44   | \$30.560   | £4.84                                     | \$42.04  |         |
|                                       | 2005 Non US Fund                   | \$11.00                                | \$0.54   | \$10.456   | £3.28                                     | \$9.78   |         |
|                                       | 2007 Non US Fund                   | \$13.50                                | \$0.80   | \$12.697   | £6.82                                     | \$8.96   |         |
|                                       | 2008 Non US Fund                   | \$11.50                                | \$1.51   | \$9.988  | £6.99                                     | \$5.05   |         |
|                                       | 2009 Non US Developed Markets Fund | \$6.75                                 | \$1.22   | \$5.528  | £3.44                                     | \$2.55   |         |
|                                       | 2009 Non US Emerging Markets Fund  | \$1.50                                 | \$0.28   | \$1.223  | £1.16                                     | \$0.17   |         |
|                                       | 2010 Non US Developed Markets Fund | \$6.70                                 | \$1.29   | \$5.410  | £3.44                                     | \$2.30   |         |
|                                       | 2010 Non US Emerging Markets Fund  | \$1.70                                 | \$0.38   | \$1.324  | £1.26                                     | \$0.15   |         |
|                                       | 2011 Non US Developed Markets Fund | \$6.00                                 | \$1.52   | \$4.476  | £2.96                                     | \$1.60   |         |
|                                       | 2011 Non US Emerging Markets Fund  | \$1.50                                 | \$0.46   | \$1.040  | £1.01                                     | \$0.01   |         |
|                                       | 2013 Non US Developed Markets Fund | \$11.50                                | \$5.58   | \$5.923  | £4.48                                     | \$0.74   |         |
|                                       | 2013 Non US Emerging Markets Fund  | \$2.90                                 | \$1.16   | \$1.736  | £1.50                                     | \$0.00   |         |
|                                       | 2014 Global Fund                   | \$29.00                                | \$14.75  | \$14.254   | £10.89                                    | \$1.51   |         |
|                                       | HarbourVest                        | HIPEP 4 Europe                         | 9.00 €   | 0.32 €   | 8.685 €                                   | €0.99  | 13.92 € |
| HIPEP 5 Europe                        |                                    | 23.40 €                                | 1.17 €   | 22.230 €   | €7.43                                     | 25.49 €  |         |
| HIPEP 6 Europe                        |                                    | 22.00 €                                | 3.69 €   | 18.315 €   | €16.54                                    | 7.33 €   |         |
| HIPEP 7 Europe                        |                                    | \$18.50                                | \$11.98  | \$6.521  | €5.25                                     | \$0.40   |         |
| HIPEP 8                               |                                    | \$40.00                                | \$0.00   | \$0.000  | €0.00                                     | \$0.00   |         |
| <b>Sub-total non US</b>               |                                    |  |  |  | <b>£82.27</b>                             |  |         |
| Adams Street                          | 2003 US Fund                       | \$32.00                                | \$1.60   | \$30.400   | £7.27                                     | \$38.62  |         |
|                                       | 2007 US Fund                       | \$11.50                                | \$0.62   | \$10.879   | £6.17                                     | \$10.32  |         |
|                                       | 2007 Direct Fund                   | \$2.00                                 | \$0.07   | \$1.931  | £1.00                                     | \$2.56   |         |
|                                       | 2008 US Fund                       | \$9.50                                 | \$0.88   | \$8.618  | £5.51                                     | \$7.87   |         |
|                                       | 2008 Direct Fund                   | \$2.00                                 | \$0.07   | \$1.927  | £1.25                                     | \$2.53   |         |
|                                       | 2009 US Fund                       | \$6.75                                 | \$1.09   | \$5.657  | £4.45                                     | \$2.90   |         |
|                                       | 2009 Direct Fund                   | \$0.75                                 | \$0.03   | \$0.722  | £0.42                                     | \$0.72   |         |
|                                       | 2010 US Fund                       | \$8.40                                 | \$1.82   | \$6.577  | £5.51                                     | \$2.84   |         |
|                                       | 2010 Direct Fund                   | \$3.40                                 | \$0.25   | \$3.152  | £1.75                                     | \$2.67   |         |
|                                       | 2011 Direct Fund                   | \$3.00                                 | \$0.35   | \$2.655  | £2.10                                     | \$1.91   |         |
|                                       | 2011 US Fund                       | \$7.50                                 | \$1.80   | \$5.700  | £4.75                                     | \$1.68   |         |
|                                       | 2013 US Fund                       | \$14.40                                | \$6.47   | \$7.934  | £6.36                                     | \$0.45   |         |
|                                       | Co-Investment Fund II              | \$4.00                                 | \$0.43   | \$3.572  | £1.67                                     | \$5.14   |         |
|                                       | HarbourVest                        | HarbourVest Partners VII - Buyout      | \$16.50  | \$0.91   | \$15.593                                  | £3.34  | \$21.40 |
|                                       |                                    | HarbourVest Partners VII - Mezzanine   | \$3.00   | \$0.18   | \$2.820                                   | £0.54  | \$3.25  |
|                                       |                                    | HarbourVest Partners VII - Venture     | \$8.50   | \$0.15   | \$8.351                                   | £2.76  | \$9.78  |
| HarbourVest Partners VIII - Buyout    |                                    | \$12.00                                | \$0.72   | \$11.280   | £4.74                                     | \$11.61  |         |
| HarbourVest Partners VIII - Mezzanine |                                    | \$1.90                                 | \$0.08   | \$1.824  | £0.52                                     | \$1.85   |         |
| HarbourVest Partners VIII - Venture   |                                    | \$4.60                                 | \$0.09   | \$4.508  | £2.70                                     | \$4.10   |         |
| HarbourVest Partners IX - Venture     |                                    | \$11.00                                | \$1.93   | \$9.075  | £7.82                                     | \$2.51   |         |
| HarbourVest Partners IX - Buyout      |                                    | \$22.00                                | \$8.75   | \$13.255   | £9.81                                     | \$4.56   |         |
| HarbourVest Partners IX - Credit Opps |                                    | \$3.50                                 | \$1.35   | \$2.153  | £1.45                                     | \$0.83   |         |
| HarbourVest CleanTech                 |                                    | \$23.00                                | \$0.98   | \$22.023   | £16.33                                    | \$1.39   |         |
| HarbourVest CleanTech II              |                                    | \$32.00                                | \$19.04  | \$12.960   | £9.53                                     | \$0.20   |         |
| <b>Sub-total United States</b>        |                                    |  |  |  |   | <b>£107.75</b>   |         |
| <b>Total</b>                          |                                    |  |  |  | <b>£190.03</b>                            |  |         |

### Further commitments

We propose that the Fund continues to commit to new private equity funds in order to maintain the target allocation of 5.5%. Both Adams Street and HarbourVest launch suitable funds on a regular basis.

### Adams Street

Adams Street have carried out forecasts under different scenarios as to the level of commitments which are likely to be required in order to maintain their target allocation of 2.75%. This modelling is shown in the Appendix. The manager has taken into account their expectations of the rate of draw down and distributions from all the current investments. Their current estimate is that commitments in the region of \$60m (£45m) will be required in 2018.

The following Adams Street funds are available for investment within the next year.

| Fund                       | Description   | Timing  | Comments   |
|----------------------------|---|---|--|
| Global Fund 2018           | Adams St's flagship fund of funds ('FoF') including all sub-strategies.                                       | There is always a Global Fund open throughout the year.<br>2017 Global Fund closed in late November 2017.<br>2018 Global Fund will open in December 2017. | <b>This is equivalent to the core US / Non-US strategy that the Fund has invested in historically with Adams Street.</b> |
| US Small Market Buyout II  | FoF focused on US Small buyouts and co-investments  | Launches mid 2018   | Specialist sub-strategy.   |
| Venture Innovation Fund II | FoF focused on venture capital and opportunistic secondaries.   | Launches November 2017  | Specialist sub-strategy.   |
| Venture/ Growth Fund VII   | Direct fund focused on venture/ growth equity investments in IT and healthcare.                               | Launches late 2018  | Specialist sub-strategy.   |
| Co-Investment Fund VI      | Direct fund investing directly in companies in buyout and growth equity deals.                                | Fund has just launched. Likely open through 2018.   | This is equivalent to the Co-Investment Fund II the Fund is invested in.   |
| Private Credit Fund        | Direct fund focused on diversified US mid-market sponsored transactions. Shorter time frame than other funds. | Final close in April 2018   | We may consider separately in relation to any allocation to private debt.  |
| GSF 6 Secondaries Fund 6   | Direct secondary transactions.  | Final close in late March 2018  | Specialist sub-strategy  |

**Our preference is to continue investing in the manager's core Global programme rather than begin investing in more specialist funds. Under ACCESS, a more diversified and specialist private equity programme may be more feasible.**

## HarbourVest

HarbourVest has also provided similar analysis based on the Fund maintaining the target allocation of 2.75%. The analysis is shown in the Appendix.

Their current estimate is that commitments in the region of \$50m (£38m) will be required in 2018.

The following HarbourVest funds are available for investment within the next year.

| Fund                 | Description  | Timing                                      | Comments  |
|----------------------|--|---|---|
| Fund XI              | US focused. 80% primary investments with the balance secondary and direct co-investments.                    | Closes early 2019.                          | <b>This is the manager's core US fund.</b>  |
| HIPEP VIII           | 50% Europe, 35% Asia, 15% ROW. 80% primary investments with the balance secondary and direct co-investments. | Launched September 2016. Closes early 2018. | <b>This is the manager's core non-US fund. The Fund committed to this fund in early 2017.</b> |
| Co-Investment Fund V | Global, diversified direct co-investment portfolio.  | Launches early 2018.                        | Specialist fund   |
| Mezz Income Fund II  | Diversified portfolio of mezzanine co-investments primarily in US based small to mid-markets companies.      | Launches early 2018.                        | Specialist fund   |
| Real Assets IV       | Global secondaries in real assets (energy, infrastructure agriculture, timber).                              | December 2018                               | Separate strategy for alternative assets.   |
| Global Fund 2018     | 60% US, 30% Europe, 10% Asia. 50% primary, 35% secondary, 15% directs.                                       | December 2017                               | Global fund   |

Our preference at this stage is to focus on the two core vehicles as previously – Fund XI (US) and HIPEP VIII (non-US). Again, the ability to broaden the private equity exposure through more specialist funds might be pursued within asset pooling.

Earlier this year, the Fund made a commitment to the HIPEP VIII fund. **We recommend that commitments in 2018 are made to Fund XI.**

## Infrastructure

The Fund's infrastructure investment programme was established in early 2008. Infrastructure funds typically operate in much the same way as a private equity fund in that any target exposure can only be achieved gradually. The Fund's infrastructure portfolio is much simpler than for the Fund's private equity - it consists of allocations to two funds; the M&G Infracapital Fund and the UBS International Infrastructure Fund. As at 30 September 2017, the infrastructure portfolio formed 0.7% of the Fund's assets, underweight to the Fund's target of 2%.

Unlike with private equity, the Fund has not appointed managers to provide a regular supply of eligible funds. Both investments are in direct funds (i.e. they own underlying infrastructure assets rather than operating on a fund-of-funds basis). The M&G fund has been realising assets and returning cash to investors and, as a result,

the remaining investment is valued at only £2.2m. The UBS fund is also quite mature and will also be distributing cash to investors.

It is anticipated that the way in which funds access infrastructure investments will change once asset pooling is implemented. In the meantime, we propose increasing the target allocation to infrastructure to 4%, with further increases possible after pooling

#### Further commitments

We propose that the Committee aim to top up their allocations to their existing managers, UBS and M&G, when opportunities are available. M&G have just started fund-raising for a new fund, whilst UBS are due to launch an infrastructure fund in the first half of 2018. We are comfortable with credentials of both managers and their new funds (subject to further due diligence on fund specifics). These will help the Fund get closer to the 2% strategic target.

Unfortunately, it will take some considerable time for these new funds to draw down on any commitments made at the start of their fund-raising period. We are also suggesting that the Fund increases its strategic allocation to infrastructure, as part of the direction of travel towards more yield-driven asset classes. As an initial move, we are recommending a target allocation of 4% of Fund assets.

In order to achieve this, it would be necessary to seek funds where it is possible to get money invested more quickly, such as funds that have been fund-raising already for some time and are already making investments. We have highlighted some funds which would meet this requirement below and could provide more detailed research papers if the Committee wish to go down this route. There may be implications for the open-ended funds from the pooling process. The other funds are focusing on secondary investments – buying existing portfolios from other investors.

| Manager          | Fund                                  | Description   | Timescales  |
|------------------|---------------------------------------|---|---|
| JP Morgan        | Infrastructure Investments Fund (IIF) | Open-ended.   | Expected drawdown period of 3 - 6 months  |
| IFM              | Global Infrastructure Fund (GIF)      | Open-ended.   | Expected drawdown period of 12 – 18 months  |
| Stafford Capital | Infrastructure Secondaries Fund       | Global fund of secondaries strategy. Would be complementary to other closed and open-ended strategies | Expecting to have final close in March 2018   |
| Pantheon         | Infrastructure Fund                   | Global fund of secondaries strategy. Would be complementary to other closed and open-ended strategies | A further close before the year end and a final close is expected at some point in 2018 |

### Private Debt

The Fund's investment in M&G's UK Financing Fund makes up 0.04% of the Fund's assets as at 30 September 2017 against a target allocation of 1%. This fund has been gradually maturing and distributing capital to its investors.

Investments in private debt work in a similar way to the Fund's other private market investments. Capital is committed to a fund and then drawn down over a period of time (when loans are made to companies). Draw down tends to be much quicker (12-18 months) than for private equity and infrastructure. A high level of income flows back to the Fund as interest payments are made on the loans and capital is repaid in full at the end, with the fund being subsequently wound up. In order to maintain a target allocation, commitments need to be made to new funds on a regular basis.

Our current expected returns exceed those available from traded bonds of equivalent credit quality and come close to our long term expected returns from equities (circa 6% p.a.). The returns are delivered primarily through a relatively predictable income stream. This makes us to be strongly supportive of the Fund increasing its target allocation to this asset class.

### Further commitments

As mentioned above, the M&G Financing fund is now in run-off. We continue to view M&G favourably for this asset class and propose that the Fund commit to another of M&G's private debt funds, the Debt Solutions Fund ("DSF") which is a European direct lending fund. The fund predominantly invests in loans to small and medium-sized enterprises (SMEs) across Europe. This differs slightly to the UK Financing Fund which concentrated more on senior debt in the UK alone. We are comfortable with the strategy of the DSF and with how M&G as a team manage their private debts funds.

The capacity of new private debt funds tends to be limited as the managers are usually keen to invest the capital over a reasonably short period of time. In order to start establishing a higher target allocation to this asset class, this could require commitments of up to £100m. A commitment of this size is unlikely to be possible to the DSF fund (and arguably would be too large a commitment to a single fund). There are other managers raising similar funds at the moment and M&G also have alternative funds with varying risk / return characteristics, all falling within the broad term of private debt. We can provide further recommendations on how to implement a programme following discussions with the Committee.

### Implementation

In order to fund the proposed increments to the infrastructure and private debt target allocations, we would propose gradually reducing the absolute return fund target allocation (which currently stands at 20% split equally between Ruffer and Newton).

### Next steps

In this paper, we have made recommendations for the Committee in order to maintain or increase the target allocations to private markets.

### Private equity

- Maintain the current allocation of 5.5% by continuing to commit to the Fund's current managers, HarbourVest or Adams Street, in 2018.

### Infrastructure

- Aim to increase the target allocation from 2% to 4% in the short term with a view to increasing this further post pooling.

- The Fund's current managers have funds which are only at the early stages of fund-raising. In the meantime, the Committee should consider additional managers / funds in order to get 'money in the ground' more quickly. We can provide a more detailed paper on the available funds.

#### **Private debt**

- Aim to increase target allocation from 1% to 3% - by committing in the short term to M&G's Debt Solutions Fund (DSF) and also additional commitments as required.

We look forward to discussing this paper with the Committee at the next meeting on 27 November.

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November 2017

For and on behalf of Hymans Robertson LLP

## Appendix – Projections for private equity programmes

### Adams Street

Scenario 1 – subscription of \$60m to the 2018 Global Fund plus annual commitments to the Global Fund

| Year | USD Millions        |                    |                            |               |            |              |           | PE Weight | ✓ |
|------|---------------------|--------------------|----------------------------|---------------|------------|--------------|-----------|-----------|---|
|      | Annual Subscription | Subscription Draws | Subscription Distributions | Net Cash Flow | Ending NAV | Program Size | PE Weight |           |   |
| 2017 | 20.00               | \$16.3             | \$27.6                     | \$11.3        | \$130.0    | \$4,556.5    | 2.85%     | ✓         |   |
| 2018 | 60.00               | \$18.7             | \$42.2                     | \$23.5        | \$129.8    | \$4,761.5    | 2.73%     | ✓         |   |
| 2019 | 40.00               | \$23.9             | \$42.8                     | \$18.9        | \$128.5    | \$4,975.8    | 2.58%     | ✓         |   |
| 2020 | 40.00               | \$26.7             | \$42.7                     | \$16.1        | \$130.7    | \$5,199.7    | 2.51%     | ✓         |   |
| 2021 | 30.00               | \$31.2             | \$42.6                     | \$11.4        | \$138.8    | \$5,433.7    | 2.55%     | ✓         |   |
| 2022 | 30.00               | \$38.6             | \$42.7                     | \$4.1         | \$155.8    | \$5,678.2    | 2.74%     | ✓         |   |
| 2023 | 40.00               | \$34.5             | \$48.0                     | \$13.5        | \$165.9    | \$5,933.8    | 2.80%     | ✓         |   |
| 2024 | 40.00               | \$36.0             | \$51.6                     | \$15.6        | \$175.7    | \$6,200.8    | 2.83%     | ✓         |   |
| 2025 | 40.00               | \$35.6             | \$55.5                     | \$19.9        | \$182.7    | \$6,479.8    | 2.82%     | ✓         |   |
| 2026 | 50.00               | \$36.7             | \$58.5                     | \$21.8        | \$189.0    | \$6,771.4    | 2.79%     | ✓         |   |
| 2027 | 50.00               | \$40.7             | \$60.5                     | \$19.8        | \$198.4    | \$7,076.1    | 2.80%     | ✓         |   |
| 2028 | 50.00               | \$42.8             | \$63.1                     | \$20.4        | \$208.5    | \$7,394.5    | 2.82%     | ✓         |   |
| 2029 | 50.00               | \$44.5             | \$66.2                     | \$21.8        | \$218.6    | \$7,727.3    | 2.83%     | ✓         |   |
| 2030 | 50.00               | \$47.6             | \$69.6                     | \$21.9        | \$230.0    | \$8,075.0    | 2.85%     | ✓         |   |

NAV weight between 2.65% - 2.85%

Scenario 2 – subscription of \$30m to the 2018 Global Fund and \$30m to Co-Investment Fund IV plus annual commitments to the Global Fund only

| Year | USD Millions        |                    |                            |               |            |              |           | PE Weight | ✓ |
|------|---------------------|--------------------|----------------------------|---------------|------------|--------------|-----------|-----------|---|
|      | Annual Subscription | Subscription Draws | Subscription Distributions | Net Cash Flow | Ending NAV | Program Size | PE Weight |           |   |
| 2017 | 20.00               | \$16.3             | \$27.6                     | \$11.3        | \$130.0    | \$4,556.5    | 2.85%     | ✓         |   |
| 2018 | 60.00               | \$23.2             | \$41.7                     | \$18.5        | \$134.5    | \$4,761.5    | 2.82%     | ✓         |   |
| 2019 | 40.00               | \$26.8             | \$42.7                     | \$15.9        | \$136.2    | \$4,975.8    | 2.74%     | ✓         |   |
| 2020 | 40.00               | \$27.2             | \$44.0                     | \$16.8        | \$138.9    | \$5,199.7    | 2.67%     | ✓         |   |
| 2021 | 30.00               | \$31.3             | \$45.4                     | \$14.1        | \$146.1    | \$5,433.7    | 2.69%     | ✓         |   |
| 2022 | 30.00               | \$33.1             | \$46.6                     | \$13.5        | \$155.6    | \$5,678.2    | 2.74%     | ✓         |   |
| 2023 | 40.00               | \$34.5             | \$50.0                     | \$15.5        | \$164.5    | \$5,933.8    | 2.77%     | ✓         |   |
| 2024 | 40.00               | \$36.0             | \$52.9                     | \$16.9        | \$173.3    | \$6,200.8    | 2.80%     | ✓         |   |
| 2025 | 40.00               | \$34.5             | \$56.1                     | \$21.6        | \$178.4    | \$6,479.8    | 2.75%     | ✓         |   |
| 2026 | 50.00               | \$36.2             | \$58.5                     | \$22.4        | \$183.6    | \$6,771.4    | 2.71%     | ✓         |   |
| 2027 | 50.00               | \$40.4             | \$60.1                     | \$19.7        | \$192.5    | \$7,076.1    | 2.72%     | ✓         |   |
| 2028 | 50.00               | \$42.6             | \$62.6                     | \$20.0        | \$202.4    | \$7,394.5    | 2.74%     | ✓         |   |
| 2029 | 50.00               | \$44.4             | \$65.5                     | \$21.1        | \$212.7    | \$7,727.3    | 2.75%     | ✓         |   |
| 2030 | 50.00               | \$47.5             | \$66.5                     | \$18.9        | \$226.6    | \$8,075.0    | 2.81%     | ✓         |   |

NAV weight between 2.65% - 2.85%

### Harbourvest

| Years Ending                        | 2018    | 2019    | 2020    | 2021    | 2022    | 2023    | 2024    | 2025    | 2026    | 2027    |
|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <b>NAV</b>                          |         |         |         |         |         |         |         |         |         |         |
| Total AUM                           | \$3,922 | \$4,079 | \$4,242 | \$4,412 | \$4,586 | \$4,772 | \$4,962 | \$5,161 | \$5,367 | \$5,582 |
| Existing HarbourVest NAV            | \$82    | \$84    | \$89    | \$98    | \$108   | \$119   | \$131   | \$141   | \$148   | \$156   |
| Total Private Equity NAV            | \$82    | \$84    | \$89    | \$98    | \$108   | \$119   | \$131   | \$141   | \$148   | \$156   |
| <b>Commitments</b>                  |         |         |         |         |         |         |         |         |         |         |
| Commitments                         | \$50    | \$0     | \$50    | \$50    | \$0     | \$50    | \$50    | \$0     | \$50    | \$0     |
| Cumulative Commitments              | \$304   | \$304   | \$354   | \$404   | \$404   | \$454   | \$504   | \$504   | \$554   | \$554   |
| <b>Capital Calls</b>                |         |         |         |         |         |         |         |         |         |         |
| Existing Investments                | -\$16   | -\$17   | -\$22   | -\$25   | -\$27   | -\$30   | -\$31   | -\$32   | -\$34   | -\$32   |
| Total Capital Calls                 | -\$16   | -\$17   | -\$22   | -\$25   | -\$27   | -\$30   | -\$31   | -\$32   | -\$34   | -\$32   |
| <b>Distributions</b>                |         |         |         |         |         |         |         |         |         |         |
| Existing Investments                | \$26    | \$26    | \$28    | \$28    | \$32    | \$35    | \$36    | \$41    | \$46    | \$46    |
| Total Distributions                 | \$26    | \$26    | \$28    | \$28    | \$32    | \$35    | \$36    | \$41    | \$46    | \$46    |
| Net PE Cash Flows                   | \$9     | \$9     | \$7     | \$3     | \$4     | \$5     | \$5     | \$9     | \$12    | \$14    |
| Total PE Invested as % of Total AUM | 2.1%    | 2.1%    | 2.1%    | 2.2%    | 2.3%    | 2.5%    | 2.6%    | 2.7%    | 2.8%    | 2.8%    |
| PE +/- Target Allocation            | -0.7%   | -0.7%   | -0.7%   | -0.5%   | -0.4%   | -0.3%   | -0.1%   | 0.0%    | 0.0%    | 0.1%    |