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Dorset County Pension Fund

Investment report: Q4 2020



Executive summary

Portfolio performance summary

- **Q4 2020**
 - Benchmark returns over the quarter were **2.14% (+£6.8m)** due to a combination of a rise in inflation expectations at longer maturities, a fall in gilt yields, and a tightening of z-spreads (the difference between gilt and swap yields).
 - The portfolio outperformed the benchmark over the quarter, with relative performance of **+0.36% (+£1.2m)**

Portfolio position

- Your inflation hedge ratio (as a % of actuarial liabilities) was **32.4%** at the end December.
 - The portfolio leverage is **c.2.42x** as at 31 December 2020, which means it can withstand a c.1.0% fall in inflation expectations prior to the leverage exceeding c.3.5x
- **Since inception:**
 - Benchmark returns of **+7.5% pa (+£113.2m)** since inception as a result of falls in long-term interest rates
 - Discretionary positioning has added **+1.1% pa (+£21.0m)** to the Fund's portfolio return

Dorset County Pension Fund

Key metrics at 31 December 2020

Inflation hedge ratios

	30-Sep-20, £k	31-Dec-20, £k
Portfolio IE01	1,661.5	1,676.6
Benchmark IE01	1,666,4	1,676,7
Actuarial liability IE01*	5,178.3	5,175.3
Portfolio inflation hedge ratio*	32.1%	32.4%
Benchmark inflation hedge ratio*	32.2%	32.4%

- IE01: Sensitivity (in £ terms) to a 0.01% (basis point) increase in inflation.
- This table shows an estimate of the proportion of the Fund's actuarial liabilities that are hedged by the portfolio. This also shows the portfolio is very close to the benchmark in terms of its total inflation sensitivity.

Collateral adequacy testing

	Change in long-term inflation expectations					
	0.0%	-0.5%	-1.0%	-1.5%	-2.0%	-2.5%
Expected value of collateral (£m)	366.9	288.4	219.7	159.4	106.4	59.6
Leverage multiple	2.42	2.81	3.37	4.28	5.91	9.78

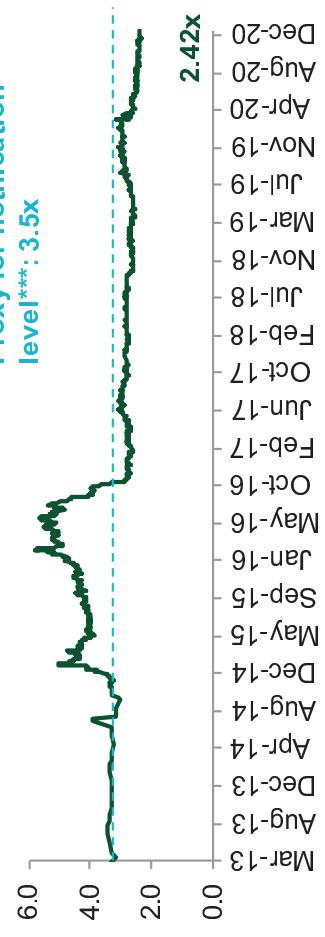
- The above table shows stress tests for long-term inflation rates. The Fund can support a >2.5% fall in long-term inflation expectations prior to running out of collateral to support the hedge.
- The exposure value of inflation-linked liabilities hedged was £887.2m at 31 December 2020.

Performance

	3 months %	1 year %	3 years % ann.	5 years % ann.	Since inception % ann.
Portfolio	2.50	1.83	-1.03	7.99	8.52
Benchmark	2.14	1.67	-1.97	5.61	7.47
Relative	0.36	0.15	0.93	2.37	1.06

- A 1.0% fall in inflation would take the Fund to c.3.5x leverage

Leverage (through time)**



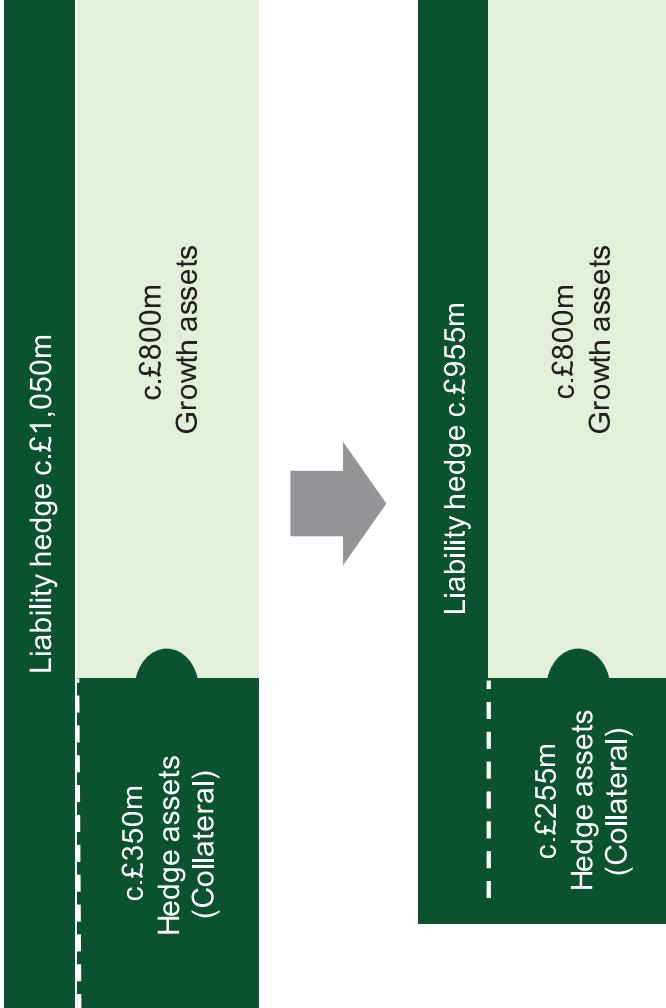
*Source: Barnett Waddingham, Estimate with Insight calculations. Actuarial liability data as at 30 September 2018. Actuarial liability IE01 is scaled based on the present value of the actuarial liabilities relative to the mandate cashflow value (see appendix for formula)

** Leverage = exposure value of inflation linked liabilities hedged / portfolio asset value. *** This is a proxy for the proposed notification level of Fund value/IE01<125.

What happens to leverage when inflation falls?

Example

£350m invested to hedge £1,050m of inflation-linked liabilities
Duration (average maturity) of 20 years
Leverage is 3.0x



Scenario: Inflation expectations falls by 0.5%

Liabilities fall by c.£95m on £1,050m hedge
Hedge assets fall in value by c.£95m
Amount in LDI funds is now only £255m, supporting a £955m hedge
Overall this increases leverage from 3.0x to 3.7x

For illustrative purposes only.

Dorset County Pension Fund

Valuation and exposure at 31 December 2020



Value £m	Interest rate sensitivity (PV01)		Inflation sensitivity (IE01)	
	£k	% of liabilities	£k	% of liabilities
Conventional gilts	-1.5	-33.3	5.7%	0.0
Index-linked gilts	550.7	-1,396.0	238.3%	1,362.0
Corporate bonds	5.2	-12.8	2.2%	12.5
Repurchase agreements	-1011.6	1.4	-0.2%	0.0
RPI Swaps	-14.9	20.2	-3.5%	302.1
Interest rate swaps	-100.4	819.7	-139.9%	0.0
Liquidity	18.4	0.0	0.0%	0.0
Futures	-0.2	18.2	-3.1%	0.0
High Grade ABS Fund	11.2	0.0	0.0%	0.0
Total return swap	0.0	0.0	0.0%	0.0
Total assets	366.9	-582.6	99.4%	1,676.6
Liability benchmark	323.0	-585.9	100.0%	1,676.7
Liability benchmark inflation only	887.2	-	-	1,676.7
Leverage	2.4x			

- The value of the liability benchmark reflects the Net Asset Value of the portfolio of gilts and swaps that are used as the benchmark for the liability hedging portfolio which was last updated on 3 March 2020.

PV01: change in present value resulting from a 0.01% upward shift in long-term interest rates

IE01: change in present value resulting from a 0.01% upward shift in long-term inflation expectations

Leverage = exposure value of inflation linked liabilities hedged / portfolio asset value

Performance

Performance summary

As at 31 December 2020

	3 months %	1 year %	3 years % p.a.	5 years % p.a.	Since inception % p.a.
Portfolio	2.50	1.83	-1.03	7.99	8.52
Benchmark	2.14	1.67	-1.97	5.61	7.47
Relative	0.36	0.15	0.93	2.37	1.06
	3 months £	1 year £	3 years cumulative £	5 years cumulative £	Since inception cumulative £
Portfolio	8,004,835	5,227,732	-15,787,840	85,444,119	134,231,314
Benchmark	6,777,676	4,246,422	-24,283,746	57,612,311	113,240,225
Relative	1,227,159	981,310	8,495,907	27,831,808	20,991,089

Data stated as at 31 December 2020. Performance is quoted gross of fees and in sterling terms. Inception date: 31 October 2012

Quarter 4 2020:

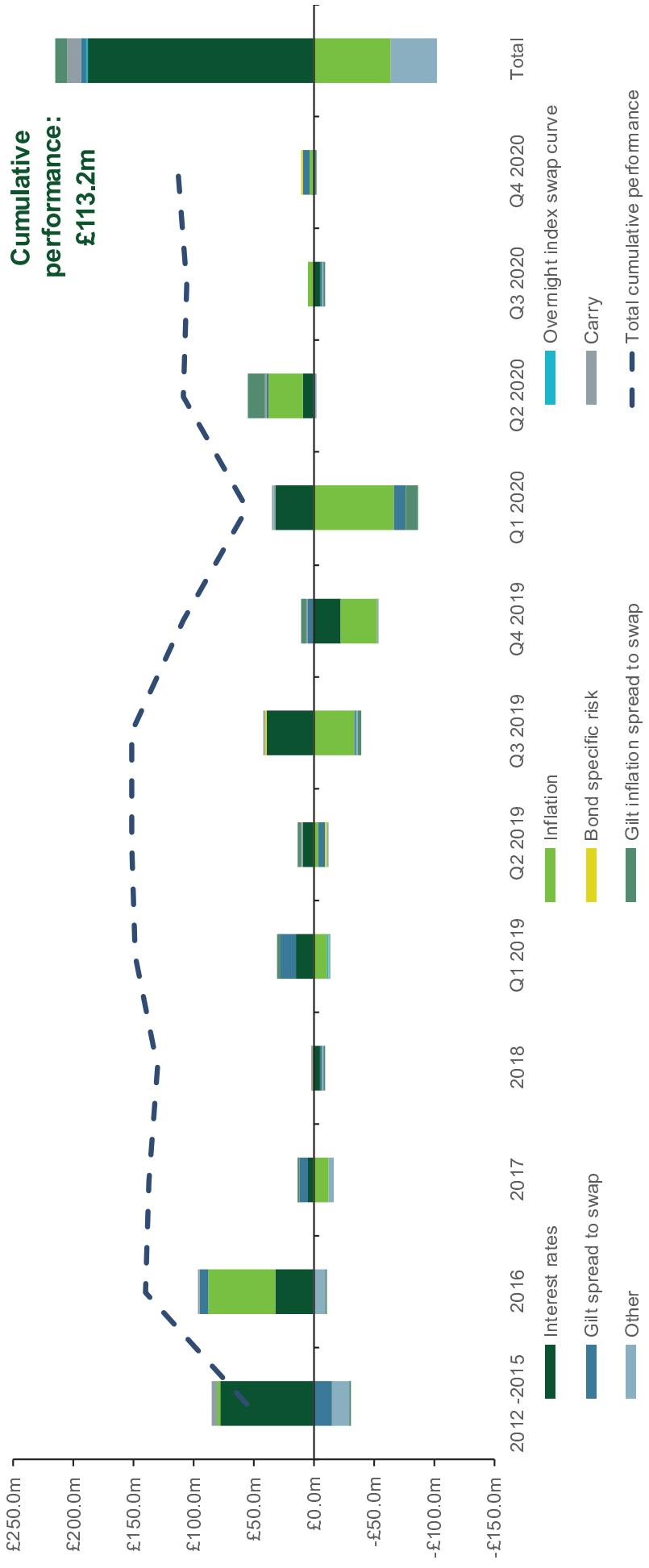
- Unleveraged return: if we adjust for the leverage in the portfolio, the benchmark return over the quarter was 0.77% as a proportion of the value of the inflation exposure hedged and the portfolio return was 0.91% on that basis.
- The Asset Benchmark Return (to compare to State Street) was 1.90% over the quarter.
- The benchmark performed positively over the quarter due to a combination of a rise in inflation expectations at longer maturities, a fall in gilt yields, and a tightening of z-spreads (the difference between gilt and swap yields).
- The portfolio outperformed the benchmark over the quarter, primarily as a result of the tightening of z-spreads (the difference between gilt and swap yields) as the portfolio is overweight to gilts versus swaps. Holdings in Network Rail and Insight's High Grade ABS also contributed positively to relative returns.

Benchmark performance attribution

As at 31 December 2020



Over Q4, the benchmark rose in value due to a combination of a rise in inflation expectations at longer maturities, a fall in gilt yields, and a tightening of z-spreads (the difference between gilt and swap yields)



Dorset County Pension Fund

Benchmark performance attribution to 31 December 2020

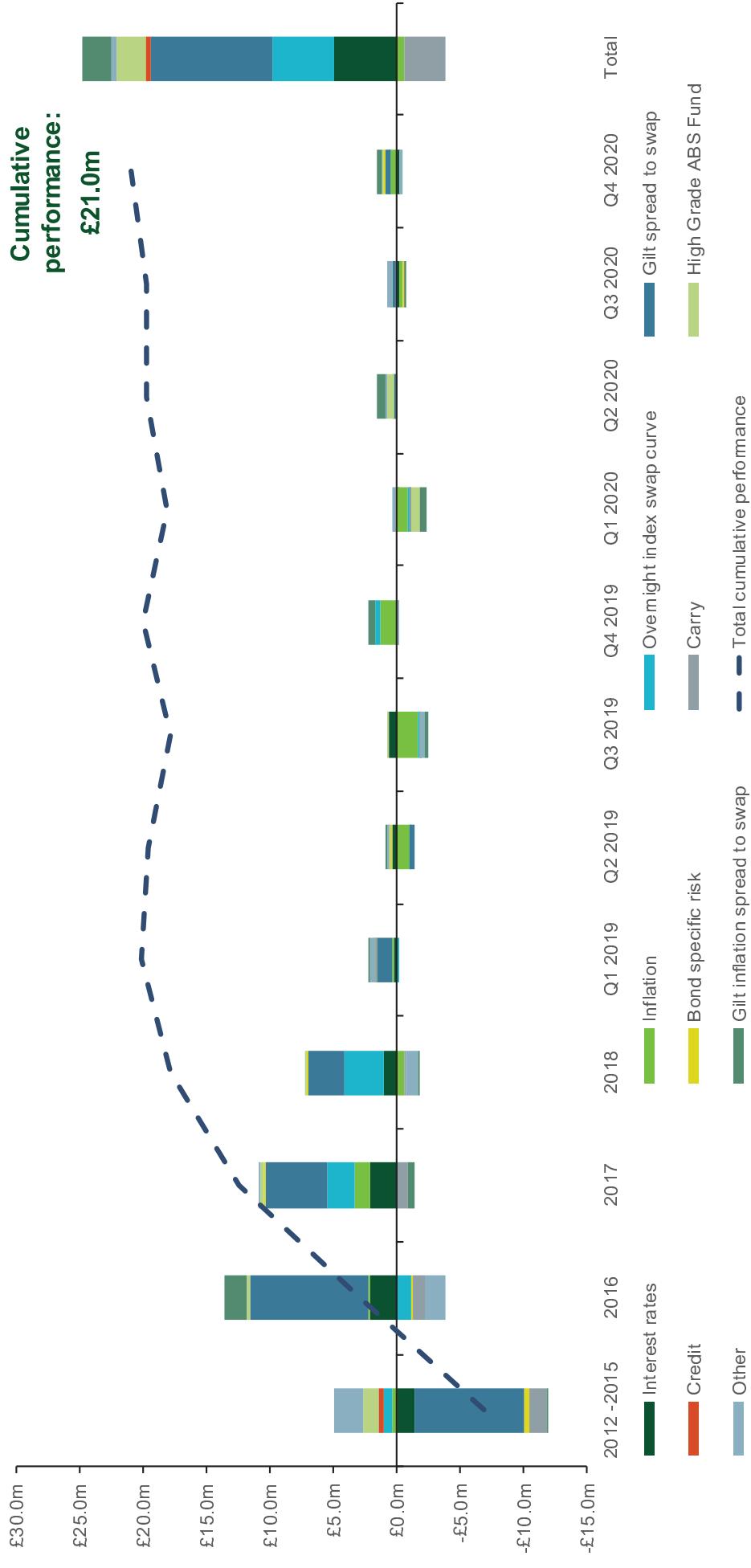


	2012 -2015	2016	2017	2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Total
Interest rates	78.1	32.3	5.2	-5.1	14.8	9.5	39.7	-22.8	32.5	8.5	-5.0	1.2	189.0
Inflation	2.2	55.7	-12.2	-0.7	-11.4	-4.1	-33.8	-29.7	-67.3	29.4	5.5	1.8	-64.5
Overnight index swap curve	0.0	0.0	0.0	0.8	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Gilt spread to swap	-15.2	7.6	6.6	-0.1	12.8	-6.0	-2.0	5.4	-9.8	1.9	-1.7	5.7	5.2
Gilt inflation spread to swap	-0.3	-0.5	0.7	-0.8	2.0	3.8	-2.4	4.4	-9.9	15.1	-0.2	-0.8	11.0
Bond specific risk	-0.3	0.0	0.0	0.0	-0.1	-0.2	0.3	-0.1	-0.1	0.1	-0.1	0.2	-0.1
Carry	5.5	0.5	0.5	1.5	0.6	0.7	0.5	0.5	0.3	0.0	-0.1	-0.1	10.3
Other	-14.3	-10.0	-4.3	-2.8	-0.2	-0.6	-1.4	-1.3	0.8	-1.8	-0.8	-1.2	-38.0
Total	55.6	85.4	-3.5	-7.2	18.1	3.1	0.9	-43.5	-53.5	53.3	-2.3	6.8	113.2
Total cumulative performance	55.6	141.0	137.5	130.4	148.4	151.5	152.5	109.0	55.5	108.8	106.5	113.2	-

Relative performance attribution

As at 31 December 2020

The portfolio outperformed the benchmark over the quarter



Dorset County Pension Fund

Relative performance attribution to 31 December 2020



	2012 -2015	2016	2017	2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Total
Interest rates	-1.4	2.1	2.2	1.1	0.3	0.4	0.6	0.0	0.0	0.0	-0.2	-0.1	4.9
Inflation	0.4	0.2	1.2	-0.6	0.1	-0.9	-1.7	1.3	-0.8	0.1	-0.3	0.5	-0.5
Overnight index swap curve	0.6	-1.1	2.1	3.2	0.0	0.0	-0.1	0.3	-0.1	0.0	0.0	0.0	4.9
Gilt spread to swap	-8.7	9.3	4.9	2.8	1.2	-0.5	0.0	-0.1	-0.1	0.1	0.3	0.4	9.6
Gilt inflation spread to swap	-0.1	1.8	-0.5	-0.1	0.2	0.2	-0.2	0.6	-0.5	0.7	-0.3	0.5	2.2
Credit	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Bond specific risk	-0.4	0.0	0.1	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Carry	-1.2	-1.0	-0.8	-0.1	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	-3.2
High Grade ABS Fund	1.2	0.3	0.4	0.0	0.1	0.1	0.0	0.1	-0.6	0.5	0.1	0.1	2.3
Other	2.3	-1.6	0.1	-1.0	0.3	0.2	-0.3	-0.1	0.3	0.1	0.4	-0.2	0.4
Total	-6.8	9.7	9.6	5.4	2.2	-0.5	-1.8	2.1	-1.9	1.6	0.0	1.2	21.0
Total cumulative performance	-6.8	2.9	12.5	17.9	20.1	19.7	17.9	20.0	18.1	19.7	19.8	21.0	-