11th edition

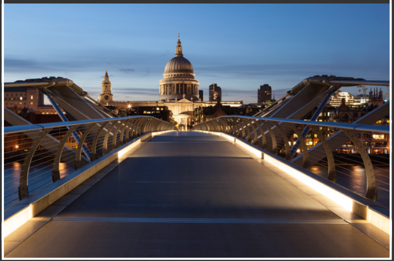
Annual report on the performance of portfolio companies

December 2018

Building a better working world

Contents

The report comprises four sections:



Foreword

This is the 11th annual report on the performance of portfolio companies, a group of large, private equity owned UK businesses that met defined criteria at the time of acquisition. Its publication is one of the steps adopted by the private equity industry following the publication of Guidelines by Sir David Walker to improve transparency and disclosure, under the oversight of the Private Equity Reporting Group (PERG).

This report addresses many questions that various stakeholders may have on the impact of private equity ownership on large UK businesses, by presenting facts and benchmarks to provide answers. The report is designed to be read stand-alone, summarising the accumulated data over the past 11 years of reporting; it also contains comparisons to last year's results and, for some measures, shows time series trends.

This year, the report covers 55 portfolio companies as at 31 December 2017 (2016: 52), as well as a further 88 portfolio companies that have been owned and exited since 2005. The findings are based on aggregated information provided on the portfolio companies by the private equity firms that own them – covering the entire period of private equity ownership. This year, 47 portfolio companies or 85% complied, in line with the compliance rate of 85% last year. On many measures of performance, the data on the current portfolio is combined with data from portfolio companies exited in 2016 and earlier, which provides over 100 data points, typically measuring performance over several years, and a compliance rate of 91%.

With a large number of portfolio companies, a high rate of compliance, and eleven years of information, this report provides comprehensive and detailed information on the effect of private equity ownership on many measures of performance of an independently determined group of large, UK businesses. The report comprises four sections:

- **Section 1: Objectives and fact base**
- **Section 2: Summary findings**
- **Section 3: Detailed findings**
- **Section 4: Basis of findings**

This report has been prepared by EY teams at the request of the British Private Equity and Venture Capital Association (BVCA) and the PERG. The BVCA has supported EY in the work, particularly by encouraging compliance amongst its members and non-members; the BVCA and the PERG have provided feedback throughout the process. As in prior years, we welcome comments and suggestions on this report to the contact details at the end of this report.

Yours faithfully
EY

Foreword

The UK has a relatively large financial sector compared with many other countries which means that we have to continue to work to understand exactly what implications this may have for the structure and performance of our economy. In this context, the annual report prepared by EY teams on the performance of portfolio companies for the BVCA provides an important insight into how private equity impacts many aspects of performance at large, UK businesses.

In terms of growth, the comparisons suggest that the private equity owned portfolio companies perform broadly in line with the benchmark set of public companies: revenue growth is slightly faster and profit growth comparable. The drivers of profit vary with portfolio companies growing employment slightly more slowly while increasing pay rates slightly faster but overall achieving similar performance in terms of change of overall employment cost. Portfolio companies appear to be more productive in their use of capital, having higher capital productivity which is set against a lower growth rate of operating capital employed.

Over 100 data points and several years to measure performance together give confidence in the results, although we should always be careful in drawing definitive conclusions. There is certainly no evidence of any adverse macroeconomic impact from private equity ownership of these large, UK businesses. It also seems reasonable to conclude that there is little difference in many measures of performance between portfolio companies and their comparators in public companies — other than in investment performance where the private equity owned portfolio companies generate far greater returns to investors from a mix of additional leverage and strategic outperformance. The differences in operations and capital deployment are interesting, especially given the concerns over productivity amongst UK policy-makers and it would be worth seeing if there are lessons with wider application.

Mark Gregory
Chief Economist, Ernst & Young LLP

1
Objectives and fact base

Objectives and fact base

What are the objectives of this report?

- The objective of this annual report is to present independently prepared information on key stakeholder questions, in order to inform the broader business, regulatory and public debate on the impact of private equity ownership on large, UK businesses.

Go to section >

What are the distinctive features of the private equity business model?

- The distinctive features of the private equity business model include controlling ownership of its portfolio company investments, the use of financial leverage, and its long term investing horizon.

Go to section >

What are the criteria used to identify portfolio companies, and how are they applied?

- Portfolio companies are identified at the time of their acquisition, based on criteria covering their size by market value, the scale of their UK activities, and the remit of their investors. The criteria and their application are independently determined by the PERG.

Go to section >

How robust is the data set used in this report?

- The aggregated data in this report covers 91% of the total population of portfolio companies. This year, compliance for the current portfolio companies was 47 of 55, or 85%.

Go to section >

What is the time period and coverage of the measures used to evaluate performance?

- The two main measures used in this report cover a) the entire period of private equity ownership of all the portfolio companies, i.e., from initial acquisition to latest date or exit, and b) the latest year on prior-year comparison of the current portfolio companies.

Go to section >

What performance measures are presented in this report and how do they interrelate?

- This report presents a range of performance measures to test the impact of private equity ownership on the portfolio companies – resources, productivity, trading, leverage and investor returns.

Go to section >

How accurate are the individual portfolio company submissions?

- The portfolio company submissions are drawn from key figures disclosed in published, independently audited, annual accounts.
- The data returned to EY teams is checked for completeness and iterated with the private equity firms as required.

Go to section >

What are the objectives of this report?

The objective of this annual report is to present independently prepared information on key stakeholder questions, in order to inform the broader business, regulatory and public debate on the impact of private equity ownership on large, UK businesses.

This study by EY teams reports on the performance of the large, UK businesses (the portfolio companies) owned by private equity (PE) investors that meet the criteria determined by the PERG. It forms part of the actions implemented by the PE industry to enhance transparency and disclosure as recommended in the Guidelines proposed by Sir David Walker in November 2007.

By aggregating information on the businesses that meet a defined set of criteria at the time of their acquisition, there is no selectivity or performance bias in the resulting data set. This is the most accurate way of understanding what happens to businesses under PE ownership.

Key questions of interest to the many stakeholders in the portfolio companies that are addressed in this report include:

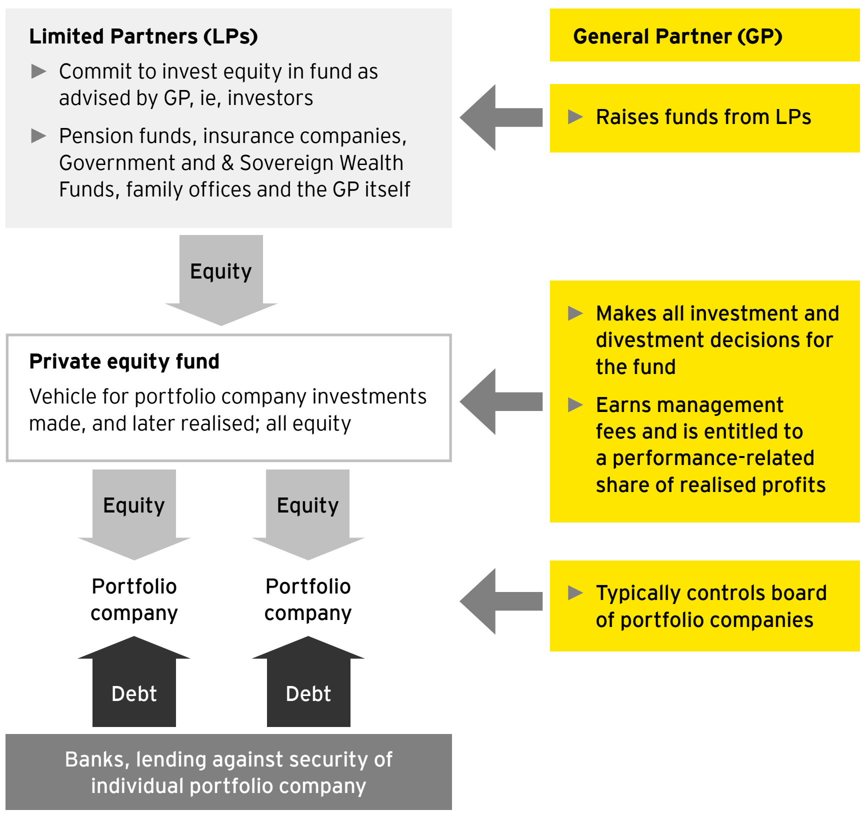
- Do portfolio companies create jobs?
- How is employee compensation affected by PE ownership, eg, pay and pension benefits?
- Do portfolio companies increase or decrease investment in capital expenditure, R&D and bolt-on acquisitions or partial disposals?
- What are the levels of financial leverage in the portfolio companies, and how do they change over time?
- How does labour and capital productivity change under PE ownership?
- Do companies grow during PE ownership?
- How do PE investors generate returns from their investments in the portfolio companies? How much is attributable to financial engineering, public stock market movement, and strategic and operational improvement?

The findings of this report constitute a unique source of information to inform the broader business, regulatory and public debate on the impact of PE ownership, by evidencing if and how its distinctive features (including investment selection, governance, incentives and financial leverage) affect the performance of large, UK businesses.

This is the 11th report covering performance data up to a latest date of March 2018. It is written to be read as a stand-alone report with comparisons to prior years' findings included for reference.

What are the distinctive features of the private equity business model?

The distinctive features of the private equity business model include ownership of its portfolio company investments, the use of financial leverage, and its long-term investing horizon.



Note: some PE-like investors (as defined by PERG) have a different business model

Distinctive features of the PE business model

Ownership of portfolio companies

- The PE fund typically acquires all or a majority of the equity in its portfolio companies giving it (as advised by the GP) control of the board, strategy, management and operations of the company.
- Most other financial investors (e.g., hedge funds and public equity funds) acquire minority shareholdings with no direct influence over management or strategy.

Use of financial leverage

- In acquiring portfolio companies third party debt is used and this is secured on the portfolio company itself, alongside equity provided by the PE fund.
- The leverage levels applied to portfolio company investments are typically higher than public company benchmarks.

Long term

- LPs make an investment commitment to a PE fund of c.10 years.
- Typically equity capital is invested for the for first 5 years and realised in the second 5 years.
- Typical investment horizon of 3-7 years per portfolio company investment (average in this study is 6 years).
- There are restrictions on withdrawing commitments from the fund, thereby allowing a long term investment period. This is in contrast to many other financial investors (e.g., hedge funds, public equity funds) who invest in publicly traded shares that have few restrictions on buying or selling.

What are the criteria used to identify portfolio companies, and how are they applied?

Portfolio companies are identified at the time of their acquisition, based on criteria covering their size by market value, the scale of their UK activities, and the remit of their investors. The criteria and their application are independently determined by the PERG.

- The criteria for identifying portfolio companies, and their application, are determined by the PERG (see privateequityreportinggroup.co.uk for details of composition and remit).
- A portfolio company, at the time of its acquisition, was:
  - "Acquired by one or more PE firms in a public to private transaction where the market capitalisation together with the premium for acquisition of control was in excess of £210 million, and either more than 50% of revenues were generated in the UK or UK employees totalled in excess of 1,000 full time equivalents"; or
  - "Acquired by one or more PE firms in a secondary or other non-market transaction where enterprise value at the time of the transaction is in excess of £350 million, and either more than 50% of revenues were generated in the UK or UK employees totalled in excess of 1,000 full time equivalents"; and where,
  - PE firms are those that manage or advise funds that own or control portfolio companies, or are deemed after consultation on individual cases by the PERG, to be PE-like in terms of their remit and operations.
- The companies, and their PE owners, that met the criteria were identified by the BVCA, and then approved by the PERG.
- As in prior years, the portfolio companies that volunteered to comply with the disclosure aspect of the Guidelines, but did not meet all of the criteria above at acquisition, are excluded from this report.

What are the criteria used to identify portfolio companies, and how are they applied?

Movements in the number of portfolio companies

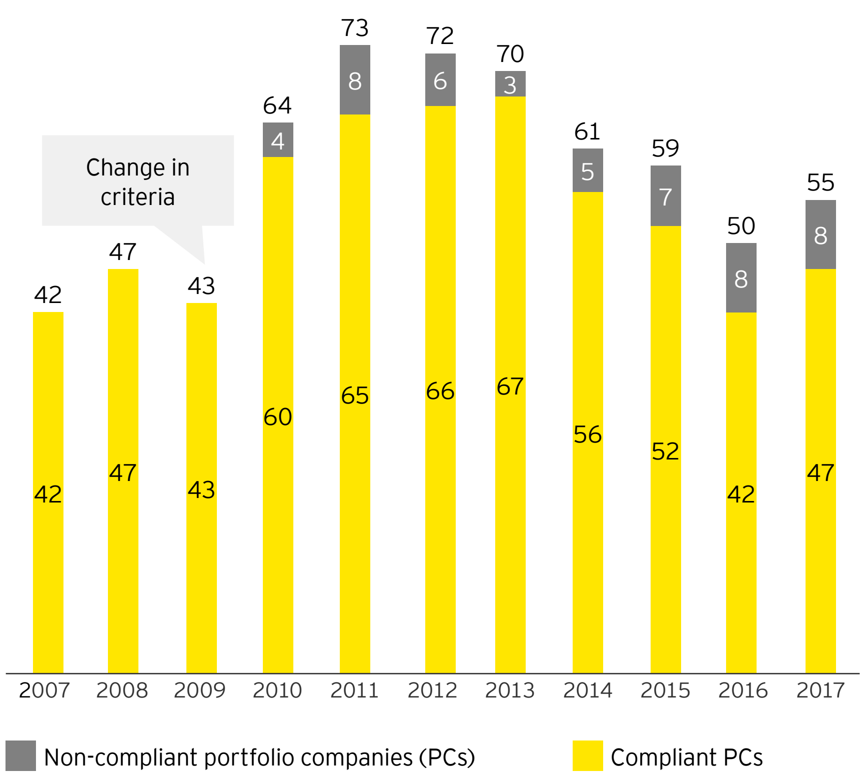
	Exits												
	2005-06	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	Total
At 1 January		**37**	**42**	**47**	**43**	**64**	**73**	**72**	**70**	**61**	**59**	**50**	
Portfolio companies introduced/excluded with changes in PERG criteria					12	4	-2	-2			-2		**10**
Acquisitions of portfolio companies		10	5		11	8	7	10	7	11	5	13	**87**
Exits of portfolio companies	-9	-5		-4	-2	-3	-6	-10	-16	-13	-12	-8	**-88**
Portfolio companies at 31 December		**42**	**47**	**43**	**64**	**73**	**72**	**70**	**61**	**59**	**50**	**55**	
Exits and re-entrants		1			1	1	3	5		1	3	3	**18**
Number of exits by IPO							1	3	8	5	2	0	**19**

- In 2010, the criteria used to determine the portfolio companies were changed by the PERG, by lowering the entry enterprise value threshold. This brought in a total of 17 new portfolio companies; 12 of whom would have been existing portfolio companies and 5 of whom were acquired in 2010. In 2012, the PERG decided that one PE-like investor entity that owned two portfolio companies had restructured in such a way that it was no longer PE-like. In 2013, the PERG decided that one portfolio company that had made significant disposals and was as a result well below the size criteria would be excluded from the population; a similar decision was taken for one portfolio company in 2016.
- In 2017, the PERG undertook a consultation process to establish which portfolio companies are "infrastructure" like and therefore should be excluded from the list of portfolio companies. This resulted in Thames Water and Affinity Water being excluded from the 2017 report onwards (after their exits from Macquarie and Infracapital respectively), Associated British Ports from the 2016 report onwards and Annington Homes from the 2013 report onwards.
- The effect of PE ownership on a business is evaluated from the date of acquisition to the date of exit. The date of exit is defined as the date of completion of a transfer of shares which means that the PE fund no longer has control, or, in the case of IPO onto a public stock market, the date of first trade.

How robust is the data set used in this report?

The aggregated data in this report covers 91% of the total population of portfolio companies. This year, compliance for the current portfolio companies was 47 of 55, or 85%.

Number of portfolio companies on 31 December and compliance



- PE firms were requested to complete a data template for each of their portfolio companies, for the purposes of preparing this report. Individual portfolio company submissions were reviewed by EY teams and were accepted or rejected depending on their completeness.
- Compliance by portfolio companies has been above 90% in all bar four years, 2011, 2015, 2016 and 2017 at 89%, 88%, 85% and 85% respectively. In many measures of performance, data covers both current portfolio companies as well as those owned and exited. Of this group of 89 former portfolio companies, 14 relate to exits in the period 2005–07 that were not required to submit the full data template. Compliance of the rest is 70 out of 74 or 95%. Therefore on this measure of the current portfolio and exits (CP+exits), the total population is 129 and there is data reported on 117, a compliance rate of 91%.
- For returns attribution, which is only measured on exits, compliance is 81 out of 88 or 92%; all 8 exits in 2017 provided data.

How robust is the data set used in this report?

Portfolio companies (as at 31 December 2017)

Portfolio company	GP(s)
Advanced	**Vista Equity Partners**
Ambassador Theatre Group	Providence Equity, (Exponent Private Equity)
Anglian Water Group	3i, (Canadian Pension Plan Investment Board, Colonial First State Global Asset Management, IFM Investors)
Callcredit	GTCR
Calvin Capital [1]	KKR
Camelot	**Ontario Teachers' Pension Plan**
Care UK	Bridgepoint
Chime Communications	Providence Equity, (WPP)
Civica [3]	Partners Group
Clarion Events [1]	Blackstone
David Lloyd Clubs	TDR Capital
Domestic and General	CVC Capital Partners
Edinburgh Airport	Global Infrastructure Partners
ESP Utilities [1]	3i Infrastructure plc
Expro	Goldman Sachs, KKR, (Highbridge Capital Management, Park Square Capital, Arle Capital Partners)
Fat Face	Bridgepoint
Four Seasons Health Care	Terra Firma
Froneri	PAI Partners, (Nestle)

Portfolio company	GP(s)
Gatwick Airport	Global Infrastructure Partners, (Abu Dhabi Investment Authority, CalPERS, National Pension Scheme of Korea, Future Fund)
HC-One [4]	**Safanad, Formation Capital**
Infinis	3i Infrastructure plc
Keepmoat	TDR Capital, (Sun Capital)
LGC	KKR
London City Airport [2]	**OMERS Infrastructure, Ontario Teachers' Pension Plan (Alberta Investment Management Corporation, Wren House Infrastructure Management)**
Miller Homes [1]	Bridgepoint
Moto	CVC Capital Partners, (USS)
Motor Fuel Group	Clayton Dubilier & Rice
MRH	**Lone Star Funds**
MyDentist	The Carlyle Group, (Palamon Capital Partners)
NewDay [3]	CVC, Cinven
NGA Human Resources	Goldman Sachs, (Park Square Capital, KKR)

Portfolio companies in **bold** text are those GPs and portfolio companies that have not complied with reporting requirements for the 2017 study.

Notes: * indicates where the GP has provided an explanation for non-compliance
1. Company is new to population
2. Company has complied previously
3. Company is a re-entrant due to change of ownership
4. Company provided data after the deadline

How robust is the data set used in this report?

Portfolio companies (as at 31 December 2017)

Portfolio company	GP(s)
Northgate Public Services	Cinven
PA Consulting Group	The Carlyle Group
Parkdean Resorts* [3]	**Onex**
Pizza Express	Hony Capital
Premium Credit	Cinven
Pret a Manger	Bridgepoint
Prezzo	TPG
Punch Taverns [1]	**Patron Capital**
Pure Gym [1]	**Leonard Green & Partners**
QA Training [1]	CVC Capital Partners
RAC	CVC Capital Partners
Rubix [1]	Advent International
Sky Bet	CVC Capital Partners
Stonegate Pub Company	TDR
TES Global	TPG
The Vita Group	TPG
Trainline	KKR
Travelodge	Goldman Sachs (Golden Tree Asset Management, Avenue Capital Group)
Village Hotels	KSL Capital

Portfolio company	GP(s)
Viridian	iSquared Capital
Voyage Healthcare	Partners Group, (Duke Street, Tikehau)
Vue Cinemas	OMERS Private Equity (Alberta Investment Management Corporation)
Williams Lea Group [1]	Advent International
Zenith [1]	Bridgepoint

Portfolio companies in **bold** text are those GPs and portfolio companies that have not complied with reporting requirements for the 2017 study.

Notes: * indicates where the GP has provided an explanation for non-compliance
1. Company is new to population
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4. Company provided data after the deadline

How robust is the data set used in this report?

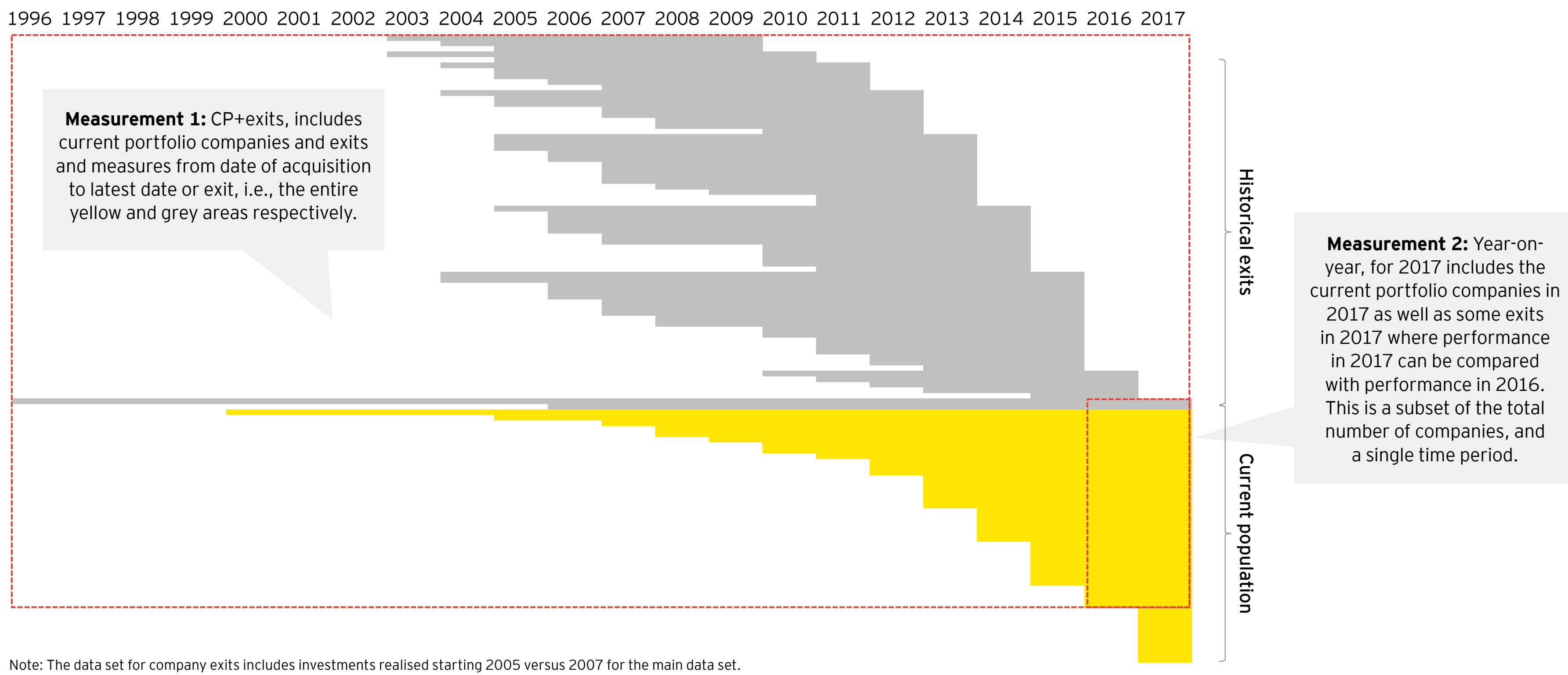
Exits of portfolio companies during 2017

Portfolio company	GP(s)
Affinity Water	Infracapital
Civica	OMERS PE
Host Europe Group	Cinven
National Car Parks	Macquarie Infrastructure and Real Assets
NewDay	Varde Group
Parkdean Holidays	Alchemy, Epiris
South Staffordshire Water	KKR
Thames Water	Macquarie Infrastructure and Real Assets

What is the time period and coverage of the measures used to evaluate performance?

The two main measures used in this report cover a) the entire period of private equity ownership of all the portfolio companies, i.e., from initial acquisition to latest date or exit; and b) the latest year on the prior-year comparison of the current portfolio companies.

Period of ownership of portfolio companies by PE investors



Note: The data set for company exits includes investments realised starting 2005 versus 2007 for the main data set.

What performance measures are presented in this report and how do they interrelate?

This report presents a range of performance measures to test the impact of private equity ownership on the portfolio companies – resources, productivity, trading, leverage and investor returns.

Overview of performance measures in this report

Change in resources		Plus change in productivity	Leads to changes in trading outcomes	Plus change in financial leverage	Leads to equity returns to investors (at exit)
Labour	**Capital**				
Employment ▶ Reported ▶ Organic (excluding M&A) Employment cost ▶ Average employment cost per head ▶ Pension provision ▶ Zero-hour contracts	Operating capital employed ▶ Tangible fixed assets ▶ Operating working capital ▶ Capital expenditure ▶ R&D M&A investment Dividends (as alternative use of cash to investment)	Labour productivity Capital productivity	Revenue ▶ Reported ▶ Organic (excluding M&A) Profit, defined as earnings before interest, tax, depreciation and amortisation (EBITDA) ▶ Reported ▶ Organic (excluding M&A)	Net debt	Returns attribution

How accurate are the individual portfolio company submissions?

The portfolio company submissions are drawn from key figures disclosed in the published, independently audited, annual accounts.

- The BVCA and EY teams contacted the PE firms in July 2018 and requested a standard data template to be completed for each portfolio company. For exits, the same data template was updated for the final year of PE ownership, as well as data required to complete the returns attribution analysis. While it is the responsibility of the PE firm to ensure compliance, in many cases the portfolio company submitted the information directly to EY teams.
- All of the portfolio companies have annual accounts which have been independently audited. Completion of the data template drew on information available in company accounts and further information that was prepared from portfolio company and PE firm sources. This data enabled analysis, inter alia, of the impact of acquisitions and disposals, and movements in pension liabilities and assets. The data template incorporates a number of in-built consistency and reconciliation checks, and also requires key figures to be reconciled to figures in the annual accounts.
- The data templates returned to EY teams were checked for completeness and iterated with the PE firms as required. EY teams undertook independent checks on a sample of the returns against published company accounts. This found no material discrepancies. Data gathering was completed in November 2018.

2 Summary findings

Questions and key findings

How long does private equity invest in the portfolio companies?

- The average timeframe of PE investment in the portfolio companies is 5.7 years, i.e., from initial acquisition to exit. The current portfolio companies have been owned for an average of 3.9 years.

Go to detailed finding >

Do portfolio companies create jobs?

- Reported employment under PE ownership has grown by 2.4% per annum. Underlying organic employment growth (removing the effects of bolt-on acquisitions and partial disposals) has grown by 1.3% per annum.
- Annual employment growth of the portfolio companies is in line with the private sector benchmark of 1.3% growth (organic), but below the public company benchmark of 3.7% growth (reported).
- Organic employment growth in the portfolio companies in the last year was below the long-term average and the private sector benchmark – on both measures employment growth has slowed since 2014-15.
- At a company level, there is a wide range of growth and decline in organic employment – reflecting many factors. The overall PE effect is best measured by the aggregate result.

Go to detailed finding >

How is employee compensation affected by private equity ownership: pay, terms, and pension benefits?

- Average employment cost per head in the portfolio companies has grown by 3.3% per annum under PE ownership.
- Average annual employee compensation growth under PE ownership is above the UK private sector benchmark, at 3.3% versus 2.5%.
- Year-on-year growth in average employment cost per head was 2% in 2017, below the long term trend but in line with the UK private sector benchmark of 1.9% over the same period.
- More than half of the jobs in the portfolio companies are for part time work with annual compensation less than £12,500, over double the proportion of the UK private sector. In part this is explained by a sector focus on healthcare and consumer services where there is a much higher mix of part time work.
- 8.6% of jobs in the portfolio companies are on zero-hours contracts, above the economy-wide benchmark of 5.5%; when the impact of the healthcare sector is removed, it falls to 6.0%.
- There have been a few restrictions on existing company defined benefit pension schemes under PE ownership. The aggregated value of liabilities of defined benefit schemes of current portfolio companies exceeds the value of assets; the average time to pay off the deficit is estimated as 6.4 years.

Go to detailed finding >

Questions and key findings

Do portfolio companies increase or decrease investment in capital expenditure, R&D and bolt-on acquisitions or disposals?

- Investment in operating capital employed at the portfolio companies has grown by 1.9% per annum.
- The portfolio companies have grown operating capital employed at a slower rate than public company benchmarks, at 1.9% per annum versus 3.1% per annum.
- Annual growth in operating capital employed was 0.3% in 2017, lower than the 4.3% growth in 2016.
- 47% of the current portfolio companies have made net bolt-on acquisitions while 7% have made net partial disposals, showing investment in bolt-on acquisitions ahead of partial disposals.
- Private equity investors, in aggregate, have used free cash flow and additional third-party debt to increase investment in the current portfolio companies.

Go to detailed finding >

How does labour and capital productivity change under private equity ownership?

- Labour and capital productivity have grown under PE ownership, by 1.1%–1.9% and 7.4% per annum respectively.
- Annual growth in labour productivity in the portfolio companies at between 1.1% and 1.9% is broadly in line with public company and economy-wide benchmarks.
- Gross value added (GVA) per employee of portfolio companies increased by 2.2% year-on-year versus 2016, and was in line with the UK private sector benchmark.
- Capital productivity growth in the portfolio companies exceeds public company benchmarks, by 7.4% versus 0.6% growth per annum.

Go to detailed finding >

Do private equity owned companies grow?

- Since acquisition, the portfolio companies have grown reported revenue at 6.5% per annum and profit at 4.2% per annum; organic revenue and profit growth have grown at 4.9% and 3.4% per annum respectively.
- Revenue and profit growth at the portfolio companies is broadly in line with public company benchmarks, slightly faster revenue growth and comparable profit growth, at 6.5% and 4.2% per annum respectively.
- The portfolio companies reported positive but slower organic profit growth in 2017, versus prior years.

Go to detailed finding >

Questions and key findings

What are the levels of financial leverage in portfolio companies?

- In aggregate, portfolio companies had an average leverage ratio of 6.2 debt to EBITDA at acquisition, and 5.7 at latest date or exit.
- Portfolio companies have much higher levels of financial leverage than public companies: 56% of portfolio companies have debt to EBITDA ratio above 5x, versus 15% of publicly listed companies.

Go to detailed finding >

How do private equity investors generate returns from their investments in the portfolio companies? How much is attributable to financial engineering, public stock market movement, and strategic and operational improvement?

- The equity return from portfolio company exits is 3.8x public company benchmark; over half of the additional return is due to PE strategic and operational improvement and the rest from additional financial leverage.
- While the results vary over time, the components of the gross return from PE strategic and operational improvement and additional financial leverage are greater than the equivalent public stock market return.

Go to detailed finding >

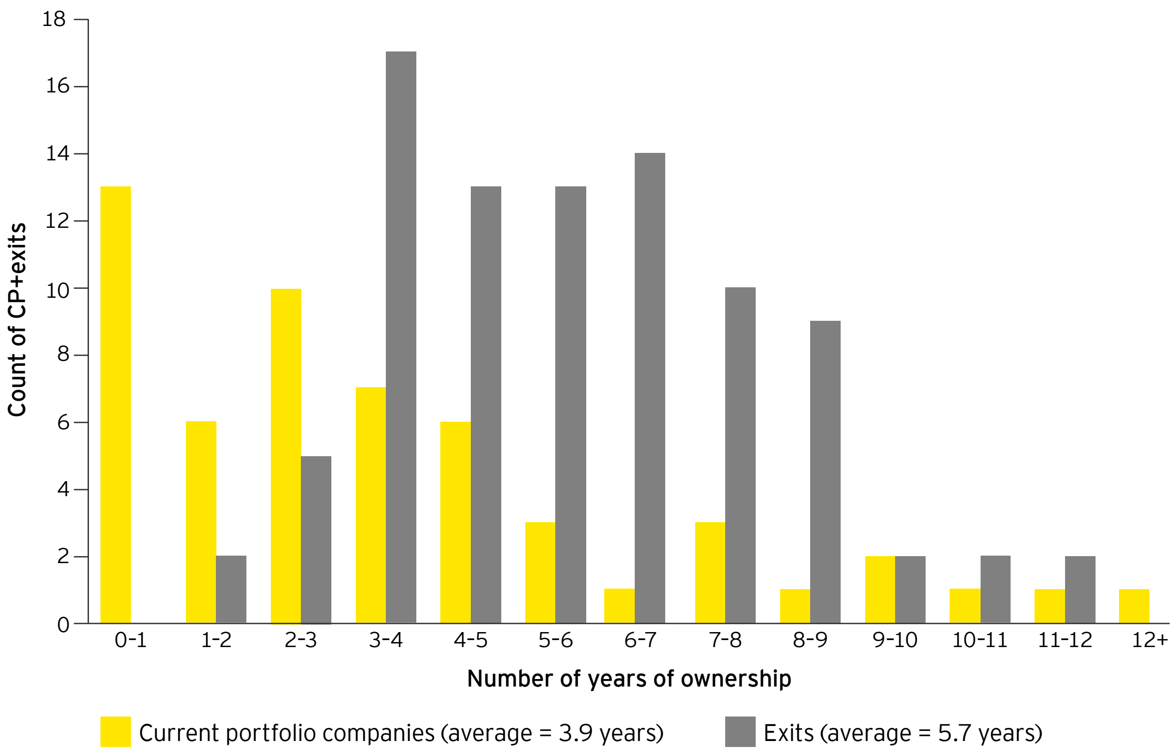
In aggregate, the portfolio companies under private equity ownership have shown positive growth in employment, investment, productivity, revenue, profits and returns to investors, and supported the high financial leverage. Private equity owners of the portfolio companies have invested more in bolt-on acquisitions that they have realised in partial disposals, that have added to the positive underlying organic trends. Compared with relevant public company and UK-wide private sector benchmarks, the performance of the portfolio companies on employment, investment, compensation and productivity growth is in-line or ahead of the comparators. The gross financial returns from the equity investments in the portfolio companies are 3-4 times greater than the public stock market benchmark – benefitting from both additional financial leverage as well as strategic and operational outperformance.

3 Detailed findings

How long does private equity invest in the portfolio companies?

The average timeframe of private equity investment in the portfolio companies is 5.7 years, i.e., from initial acquisition to exit. The current portfolio companies have been owned for an average of 3.9 years.

Distribution of years of ownership of portfolio companies



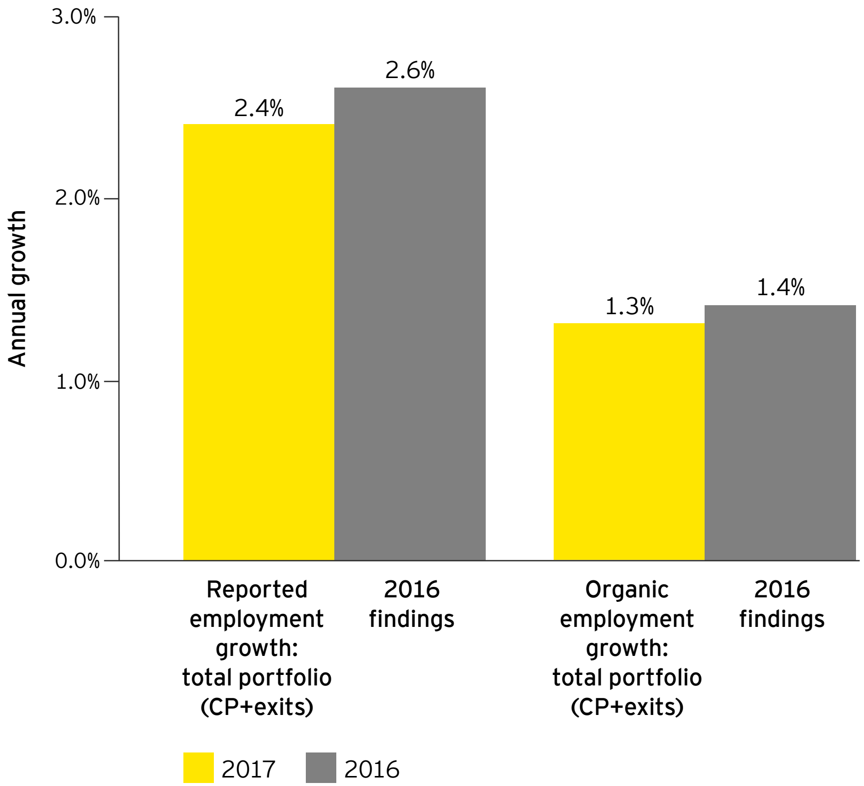
Note: The data set for portfolio company exits includes investments realised starting in 2005 versus 2007 for the main data set.

- The PE business model seeks to achieve an investment return to its investors (pension funds, insurance funds etc) by realising greater equity proceeds through the sale, and in dividends through ownership of portfolio companies, than its initial equity investment at the time of acquisition.
- The PE business model is long term:
  - For the 88 portfolio companies that have been exited since 2005, the average length of ownership is 5.7 years.
  - For the current group of 55 portfolio companies, the average length of PE ownership is 3.9 years at 31 December 2017.
- Looking at the profile of the historical exits as the best measure of the length of PE ownership, of the 88 exits, 92% were owned for more than three years, and 58% were owned for more than five years.

Do portfolio companies create jobs?

Reported employment under private equity ownership has grown by 2.4% per annum. Underlying organic employment growth (removing the effects of bolt-on acquisitions and partial disposals) has grown by 1.3% per annum.

Reported employment growth and organic employment growth



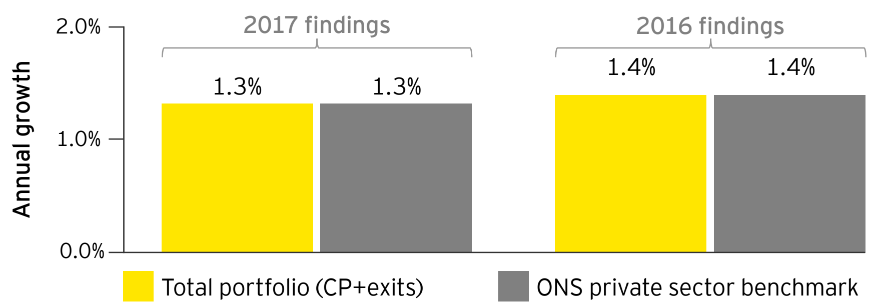
- At the time of acquisition by PE investors, portfolio companies had 536,000 jobs (including UK and international locations). On latest year end or date of exit, this same group of companies had increased the number of jobs to 655,000 (an additional 119,000 jobs). Annually, this amounts to a growth rate of 2.4%.
- Additional, private data has been obtained from each portfolio company to isolate the effect of bolt-on acquisitions and partial disposals that may distort reported employment trends. The underlying annual organic employment growth rate is 1.3% per annum or c.55% of total reported employment growth. Higher reported versus organic employment means that there were more jobs added by bolt-on acquisitions, than lost via partial disposals. Both growth rates are marginally lower than the findings published in last year's report.
- The table below analyses the growth rates by sector grouping, showing fastest growth rates in the consumer sector, and slowest growth rates in industrials.

Sector	Reported employment growth	Organic employment growth
Consumer	4.0%	2.4%
Industrials	-3.1%	-2.1%
Infrastructure	1.2%	1.5%
Healthcare	1.4%	0.7%
Other	3.0%	0.4%

Do portfolio companies create jobs?

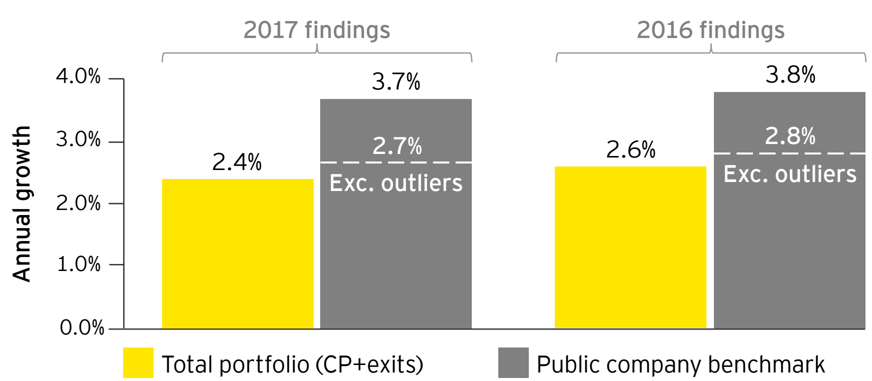
Annual employment growth at the portfolio companies is in line with the private sector benchmark of 1.3% (organic), but below the public company benchmark of 3.7% (reported).

Organic employment growth versus UK private sector benchmark



- Organic employment growth can be benchmarked to ONS statistics which report on economy wide employment trends for the UK private sector. Matching to compare relevant time periods, the 1.3% average annual organic employment growth rate of PE-owned companies is comparable to the UK private sector employment growth as a whole. This is consistent with prior-year findings.
- It should be noted that the private sector benchmark includes companies of all sizes. While the data sets are not readily comparable, the ONS research shows that large companies (defined as >250 employees) have achieved slower employment growth than the private sector overall. This suggests that on a more comparable basis the portfolio companies are performing ahead of the private sector benchmark.

Reported employment growth versus public company benchmark

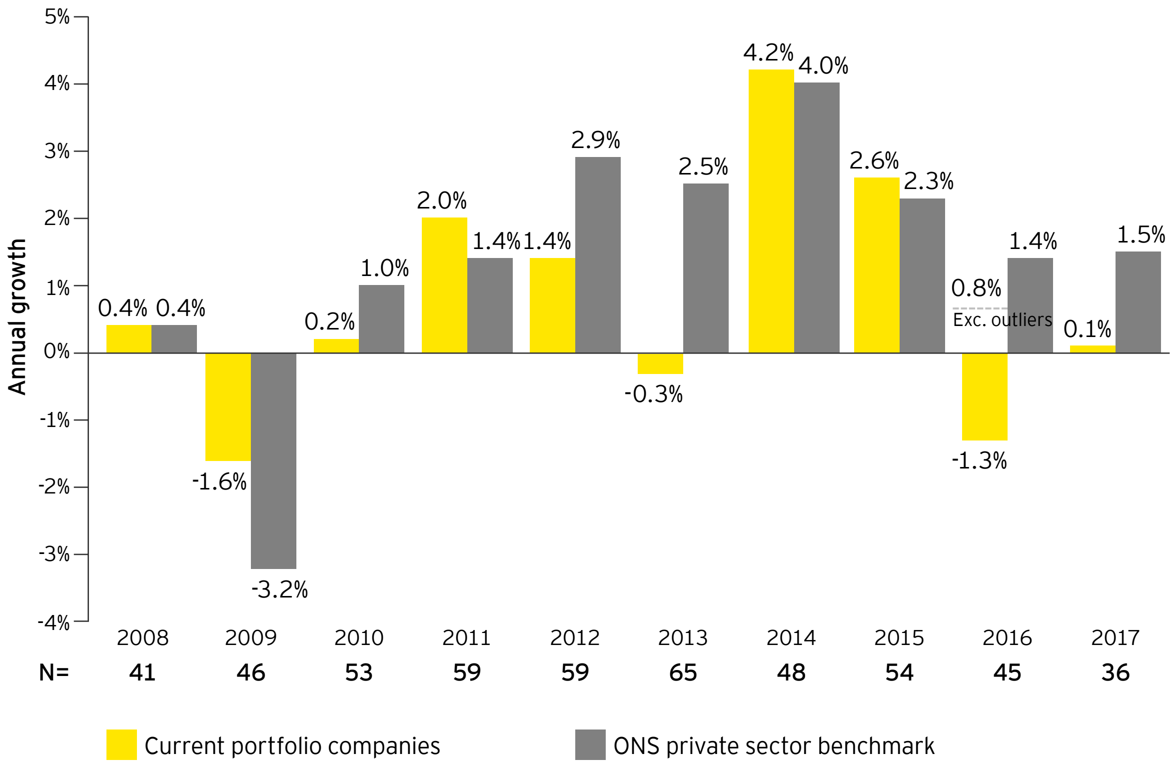


- Reported employment growth figures, as disclosed in annual reports by the portfolio companies and public companies, can also be compared, although these figures include the effects of bolt-on acquisitions and partial disposals.
- The reported employment growth of the portfolio companies of 2.4% per annum is below a size-, sector- and time-matched public company benchmark of 3.7% per annum. The benchmark is materially affected by one sector outlier, as in 2016; excluding this, the reported employment trends are broadly comparable.

Do portfolio companies create jobs?

Organic employment growth in the portfolio companies in the last year was below the average and the private sector benchmark — on both measures employment growth has slowed since 2014–15.

Organic employment growth, year-on-year versus UK private sector benchmark

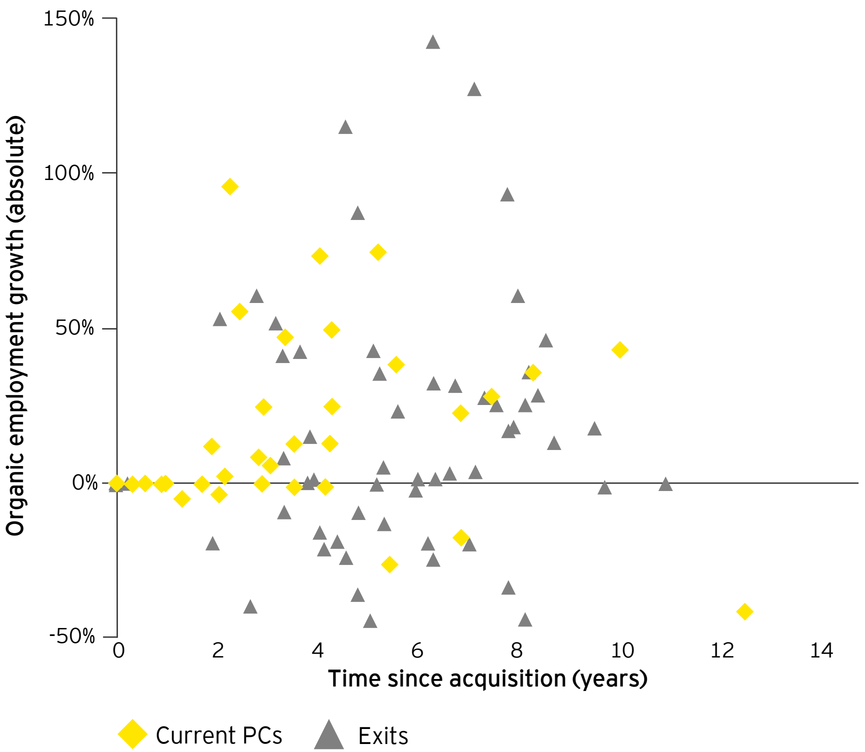


- Looking at the year-on-year trend in organic employment growth, 2017 saw a second year of negative/low growth in organic employment, well below the annual growth rates in 2014-15. Part of this is explained by outliers, where one or two results can affect the portfolio company figures.
- The ONS private sector benchmark growth was faster than that of the portfolio companies in 2017, as in 2016.

Do portfolio companies create jobs?

At a company level, there is a wide range of growth and decline in organic employment – reflecting many factors. The overall private equity effect is best measured by the aggregate result.

Organic employment growth by portfolio company over time



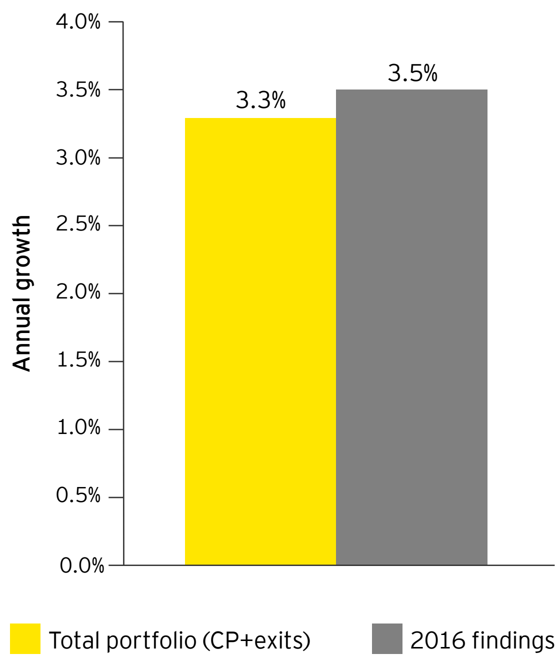
1. Axes have been capped to ease reading – chart excludes three portfolio companies whose results exceed these limits.
2. Absolute employment growth is measured as change in employment from the time of investment to exit or latest date, divided by employment at time of investment.

- At the individual portfolio company level, there is a wide range of outcomes in organic employment growth. Some portfolio companies show high levels of organic employment growth, whilst others show high levels of decline in employment. This range of individual portfolio company outcomes reflects many factors including market conditions, expansion or reduction in capacity, and focus on growth or productivity.
- The chart shows the total change in organic employment (growth or decline) under PE ownership, measured against length of ownership – with a wide dispersion of results.
- The aggregated effect (the correct way to assess for any systematic effect of PE ownership on the performance of the portfolio companies) is net growth in organic employment.

How is employee compensation affected by private equity ownership?

Average employment cost per head in the portfolio companies has grown by 3.3% per annum under private equity ownership.

Growth in average employment cost per head



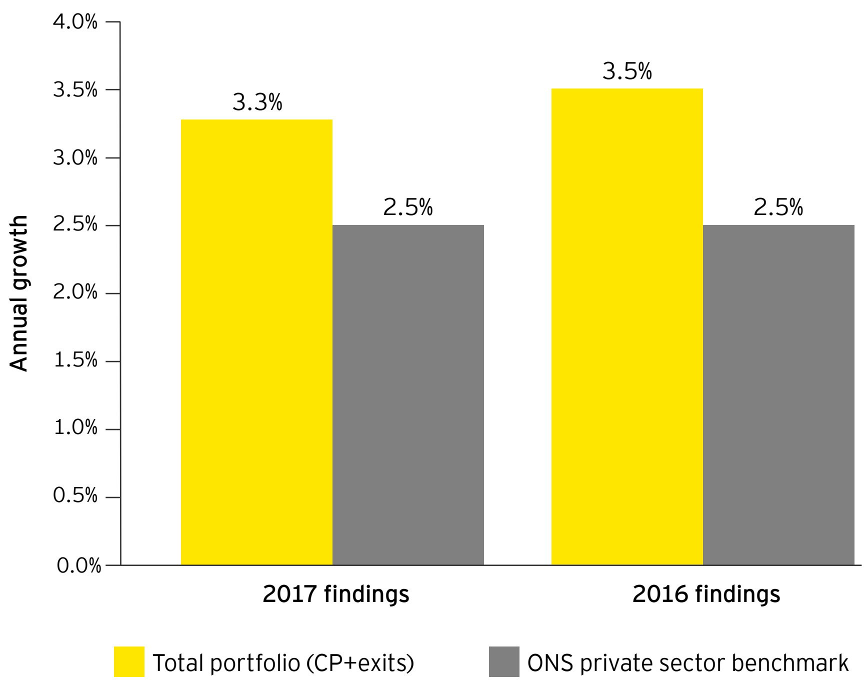
- This report uses average employment cost per head as the measure of employee compensation. It is noted that this metric will not equate exactly to like-for-like change in employee compensation, due to changes in the composition of companies, numbers of employees at differing pay levels and terms, changes in taxes, working hours, bonus schemes, overtime rates and annual base pay awards.
- The average employment cost per head has grown by 3.3% per annum under the entire period of PE ownership, slightly below the 2016 findings and slightly above the 2015 findings (not shown).
- Analysing the result across sectors, infrastructure and industrials have sown faster growth in average employment cost, whilst healthcare has shown the slowest.

Sector	Growth in average employment cost
Consumer	2.2%
Industrials	3.7%
Infrastructure	4.6%
Healthcare	0.7%
Other	2.6%

How is employee compensation affected by private equity ownership?

Average annual employee compensation growth under private equity ownership is above the UK private sector benchmark, at 3.3% versus 2.5% annual growth.

Growth in employment cost per head

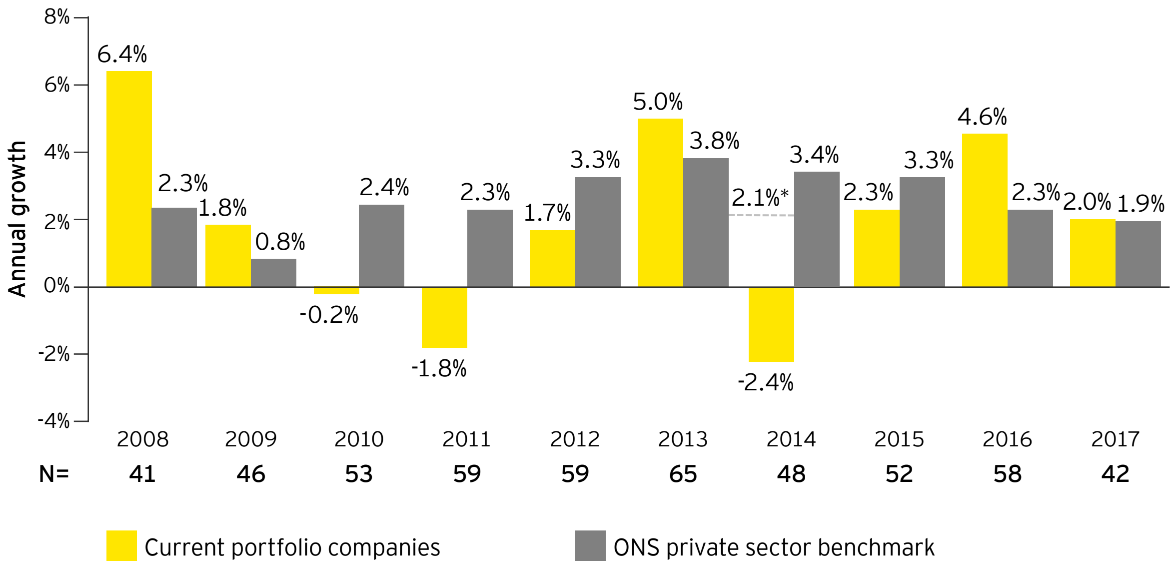


- Average annual employment cost per head growth of 3.3% in the PE-owned portfolio companies is ahead of the ONS private sector benchmark of 2.5% over comparable time periods.

How is employee compensation affected by private equity ownership?

Year-on-year growth in average employment cost per head was 2% in 2017, below the long term trend but in line with the UK private sector benchmark of 1.9% over the same period.

Year-on-year average employment cost per head growth



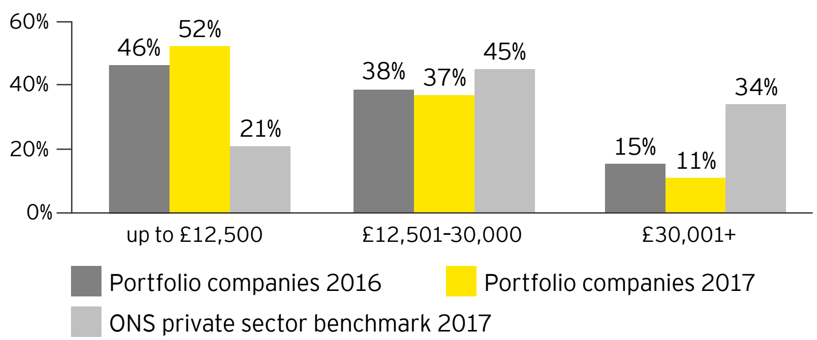
*2014 denotes year-on-year growth excluding two outliers.

- The year-on-year growth in average employment cost per head for the portfolio companies is variable, particularly when compared with the overall stable pattern of average compensation increases in the UK private sector as a whole since the downturn in 2009.
- Part of the variability in the portfolio company data is due to major changes taking place at one or more portfolio companies in a year that influence the overall result. Some of these are marked out as outliers in the chart.
- In 2017, average employment cost per head in the portfolio companies grew by 2%, in line with the ONS benchmark of 1.9%. This was after positive 4.6% growth in the prior year, which was well ahead of the ONS benchmark.

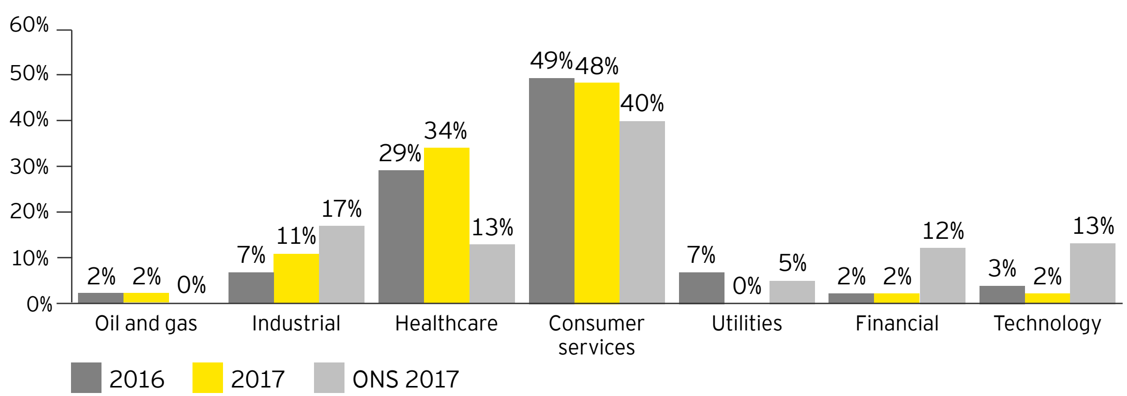
How is employee compensation affected by private equity ownership?

More than half of the jobs in the portfolio companies are for part-time work with annual compensation less than £12,500, over double the proportion of the UK private sector. In part this is explained by a sector focus on healthcare and consumer services where there is a much higher proportion of part-time work.

Percentage of portfolio company UK jobs by annual compensation band



Percentage of portfolio company UK jobs by sector

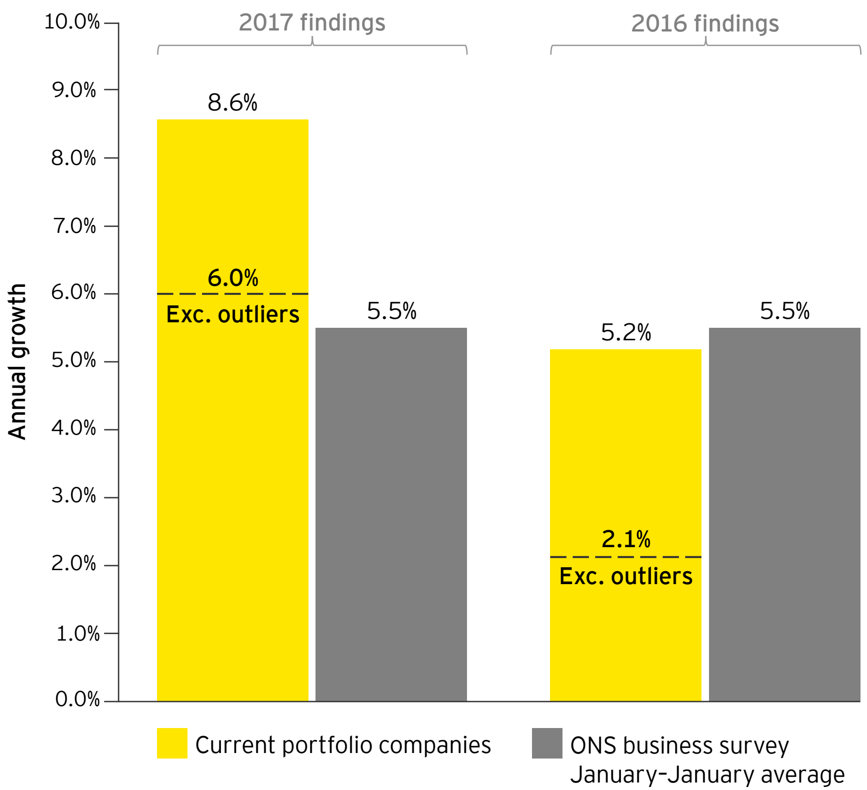


- Data on employment by annual compensation has been required from the portfolio companies since 2014, in order to further understand employment trends and practices.
- The portfolio companies have a high mix of part-time jobs earning less than £12,500 per annum, which increased slightly in 2017 and accounted for 52% of total jobs. This stands well above the UK private sector as a whole where 21% of jobs are in this compensation range.
- One reason for the large number of part-time jobs in the portfolio companies is the sector mix, with the portfolio companies over-represented in consumer services (e.g., restaurants) and healthcare (e.g., care homes) where there is a significant amount of part-time working: 84% of jobs in the portfolio companies are in these two sectors, versus 53% in the UK private sector.

How is employee compensation affected by private equity ownership?

8.6% of jobs in the portfolio companies are on zero-hour contracts, above the economy-wide benchmark of 5.5%; when the impact of the healthcare sector is removed, it falls to 6.0%.

Percentage of UK jobs under zero-hour contracts

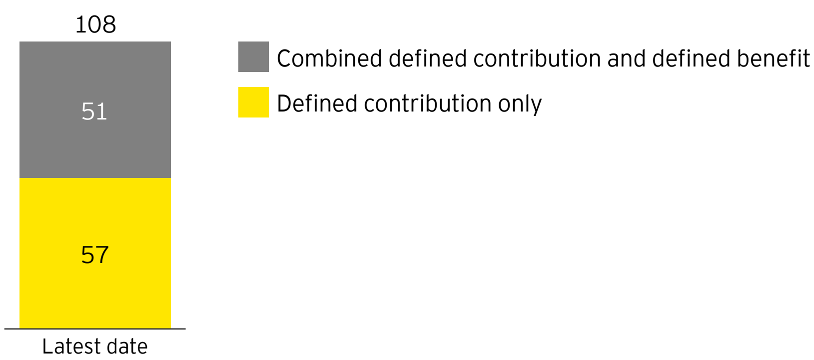


- In addition to data on employment by compensation band, since 2014 the portfolio companies have disclosed the number of jobs on zero-hour contracts.
- Across 43 portfolio companies in 2017, 8.6% of UK jobs were on zero-hour contracts. The increase in 2017 from 2016 is due in part to a change in mix of the portfolio companies, as well as increasing use of zero-hour contracts in those portfolio companies that reported in both periods.
- The 2017 result of 8.6% is above the national average based on data from ONS which shows that the proportion of all UK employees on zero-hour contracts is 5.5%.
- Within the portfolio companies there is a significant concentration of zero-hour contracts. The healthcare sector typically has a significant proportion of employees on zero-hour contracts, where this form of employment is more common. Excluding all five portfolio companies in that sector, the percentage of portfolio company employees on zero-hour contracts falls to 6.0% which is close to, albeit slightly above, the ONS benchmark.

How is employee compensation affected by private equity ownership?

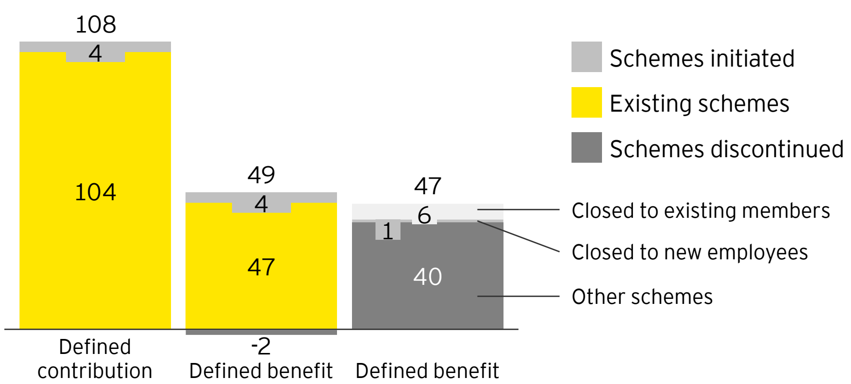
There have been a few restrictions on existing company defined benefit pension schemes under private equity ownership.

Distribution of companies by type of pension schemes (CP+exits)



- Out of the 110 portfolio companies that have provided pension information, 108 reported that they offer pension schemes to their employees (57 offer defined contribution (DC) schemes only, and 51 offer a combination of defined benefit (DB) and DC schemes) and two historical exits reported that they did not provide any pension scheme to their employees.
- The Pensions Regulator is responsible for reviewing pension arrangements including at the time of change in ownership. Eight of the 49 portfolio companies where a DB scheme was in place prior to acquisition sought approval from the regulator at the time of their investment.

Changes to pension schemes under PE ownership (CP+exits)

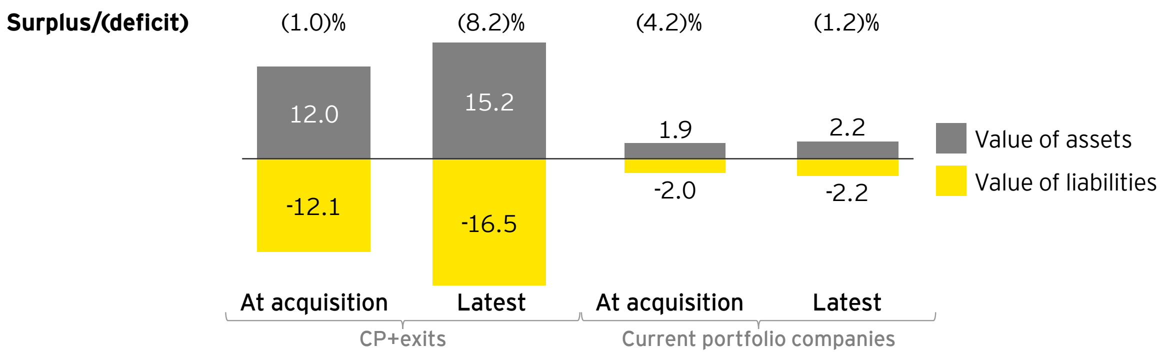


- Under PE ownership, there have been changes to portfolio company pension schemes:
  - At four portfolio companies, new DC schemes have been initiated. In the case of two portfolio companies this was in part due to the fact that there was only a DB scheme at the time of acquisition.
  - At four portfolio companies, new DB schemes have been initiated and two schemes have been closed.
  - In addition, six DB schemes were closed to accruals for existing members, and one for new members.

How is employee compensation affected by private equity ownership?

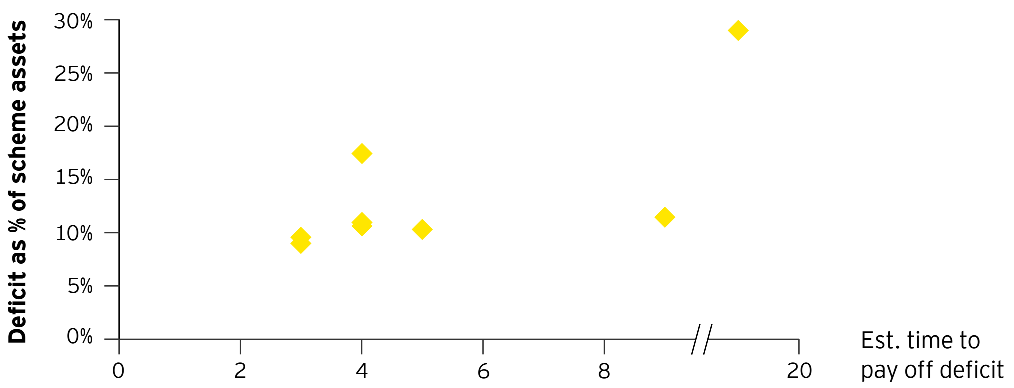
At latest date, the aggregated value of liabilities of defined benefit schemes of current portfolio companies exceeds the value of assets; the average time to pay off the deficit is estimated as 6.4 years.

Defined benefit pension schemes: liabilities/assets over time



- While the assets of defined benefit pension schemes have grown under the period of PE ownership, liabilities have grown faster resulting in an increase in the accounting deficit, i.e., liabilities in excess of assets.
- For the current portfolio companies, this effect is less pronounced where the pensions accounting deficit of (4.2)% at the time of acquisition has reduced to (1.2)% at latest date.

Defined benefit pension schemes: time to pay off deficit (current portfolio companies)

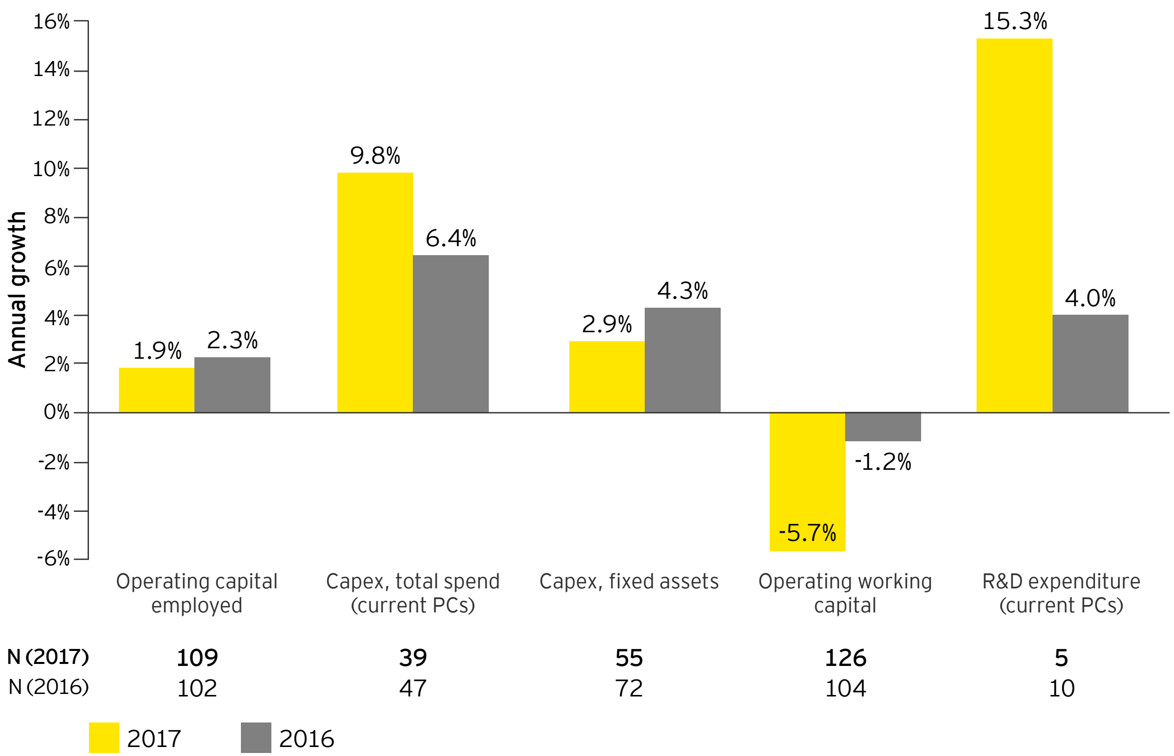


- Of the 17 current portfolio companies offering defined benefit pension schemes, 10 reported deficits:
  - Seven companies reported the estimated time to pay off the deficit, which on average is 6.4 years.
  - Three did not provide detail on estimated time to pay off the deficit, or reported that this was "under discussion."

Do portfolio companies increase or decrease investment?

Investment in operating capital employed at the portfolio companies has grown by 1.9% per annum.

Growth in measures of investment since acquisition*



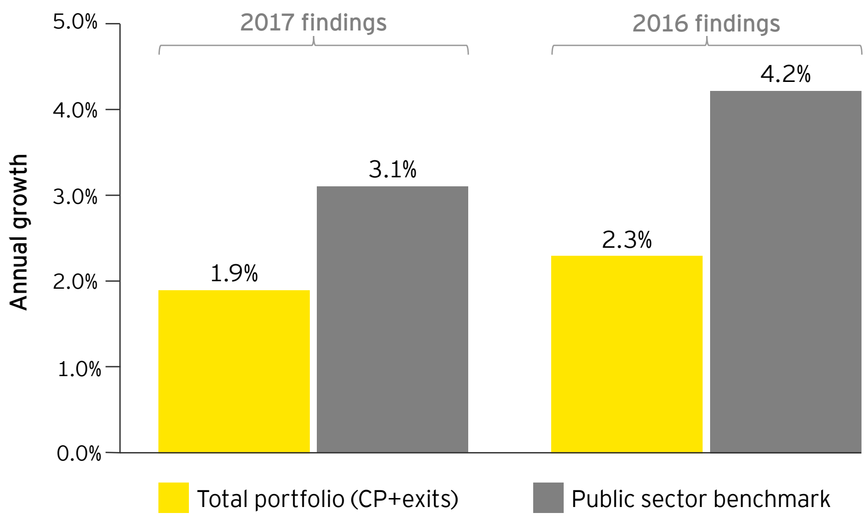
* The methodology for calculating the aggregated growth of operating working capital has been updated from last year's report.

- There has been growth in several measures of investment at the portfolio companies whilst under PE ownership.
- Operating capital employed has grown at an annual average rate of 1.9%. This measure comprises tangible fixed assets (property, plant and equipment) and operating working capital (stock, trade debtors and creditors). Total capital expenditure in current portfolio companies has grown by 9.8%. This includes investment in brands, intellectual property and other intangible assets, some of which relates to bolt-on acquisitions.
- The tangible fixed asset capital expenditure relates to investment in property, plant and equipment, and has grown at 2.9%. Operating working capital has decreased by 5.7% per annum.
- A minority of current portfolio companies measure expenditure on R&D, and several of those are in the industrials and technology sectors. For this group, total R&D expenditure grew by 15.3% per annum under PE ownership, though we note the small sample size.
- Compared with findings in 2016 growth in operating capital employed has slowed a little, in both fixed assets and working capital.

Do portfolio companies increase or decrease investment?

The portfolio companies have grown operating capital employed at a slower rate than public company benchmarks, at 1.9% per annum versus 3.1% per annum.

Growth in operating capital employed since acquisition

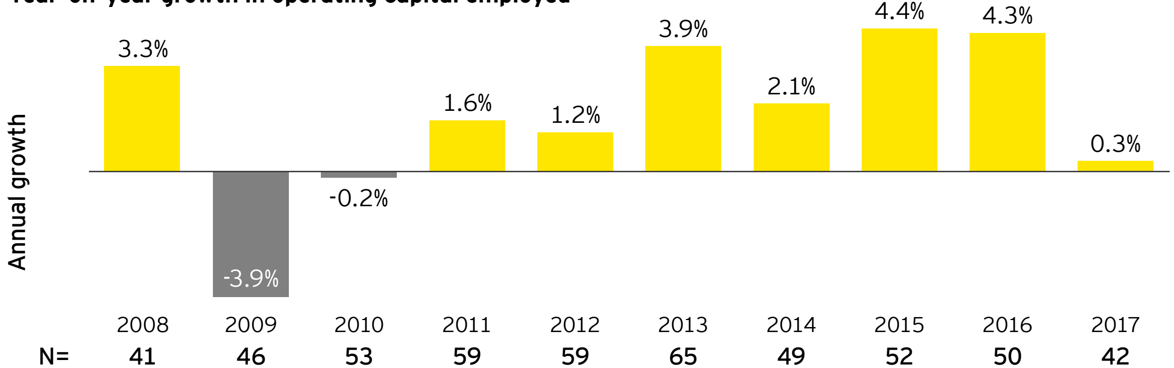


- The portfolio companies, in aggregate, have grown operating capital employed by 1.9% per annum during the entire period of PE ownership. In comparison, the public company benchmark (time and sector matched) shows higher growth in operating capital employed of 3.1% per annum.

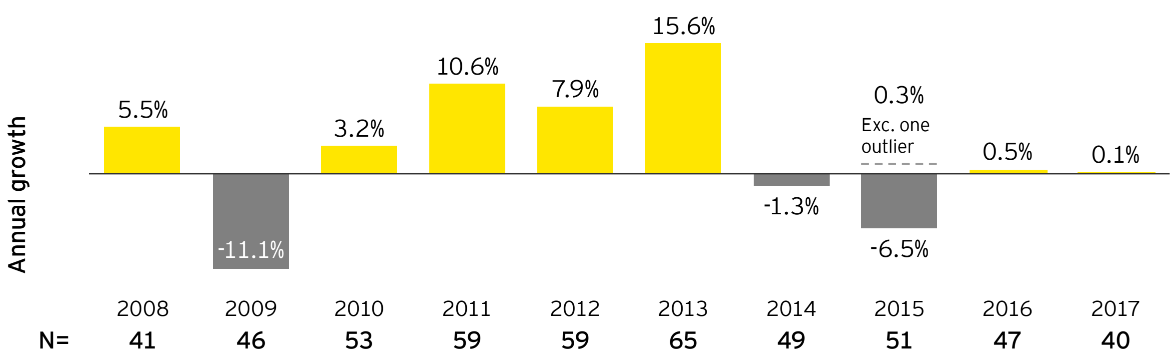
Do portfolio companies increase or decrease investment?

Annual growth in operating capital employed was 0.3% in 2017, lower than the 4.3% growth in 2016.

Year-on-year growth in operating capital employed



Year-on-year growth in capital expenditure on tangible assets

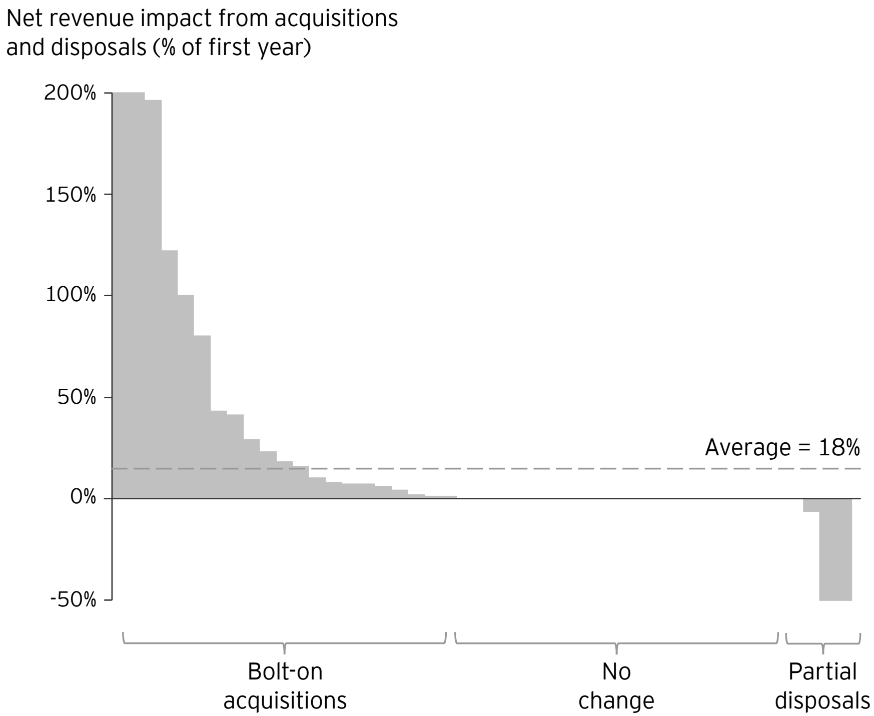


- Year-on-year growth in operating capital employed in 2017 was 0.3%, well below the growth rate in 2016.
- This is explained by slower growth in tangible assets, as in the second chart, as well as in working capital.

Do portfolio companies increase or decrease investment?

47% of the current portfolio companies have made net bolt-on acquisitions while 7% have made net partial disposals, showing investment in bolt-on acquisition ahead of partial disposals.

Revenue impact of bolt-on acquisitions and partial disposals, current portfolio companies



- In addition to investment in existing businesses there can be investment in bolt-on acquisitions, as well as release of funds through partial disposals. The chart shows an analysis of the relative significance of all bolt-on acquisitions and partial disposals by individual portfolio companies, by measuring the resulting net revenue growth or decline relative to the first year, or base figure.
- On a net basis, 21 of the 45 portfolio companies (47%) have grown revenue under PE ownership by investments in bolt-on acquisitions, while 3 portfolio companies (7%) have reduced revenue by partial disposals. The overall result is more investment in bolt-on acquisitions than release of funds from partial disposals. 21 portfolio companies (47%) have reported no M&A activity under their current PE owners.
- There are some portfolio companies where bolt-on acquisitions or partial disposals are material in size relative to the original portfolio company. In the current population, four portfolio companies have made acquisitions that have increased revenue by more than 100%, and two portfolio companies have disposed of more than than 25% of revenue.

Do portfolio companies increase or decrease investment?

Private equity investors, in aggregate, have used free cash flow and additional third party debt to increase investment in the current portfolio companies.

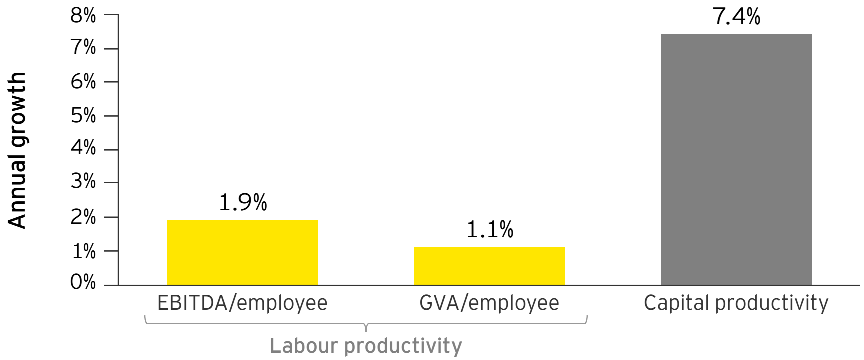
	Net debt (£bn)	Net debt/ EBITDA
Net debt at acquisition	13.7	6.2
Operating cash flow post tax and interest payments, pre capex	(2.2)	
Net funds to equity investors	1.7	
Capital expenditure (organic plus bolt-on acquisitions net of disposals)	9.5	
Increase/(decrease) in net debt	9.0	
Net debt at latest date	22.7	6.7

- Analysing the cash flows of the portfolio companies allows scrutiny of the sources and uses of funds during the period of PE ownership.
- Since acquisition, the current portfolio companies have generated £2.2bn of free cash flow, i.e., after most investing, financing and tax payments. These funds could have been returned to investors by paying dividends, or by paying off third party debt. While there have been payments to equity investors totalling £1.7bn, this has been more than offset by an aggregate £9.5bn additional investment.
- To fund this investment in the portfolio companies, third party debt has increased, by a net £9.0bn. As net debt has grown slightly faster than profit (or EBITDA), the leverage ratio of net debt to EBITDA has increased from 6.2 at acquisition to 6.7 at latest date.

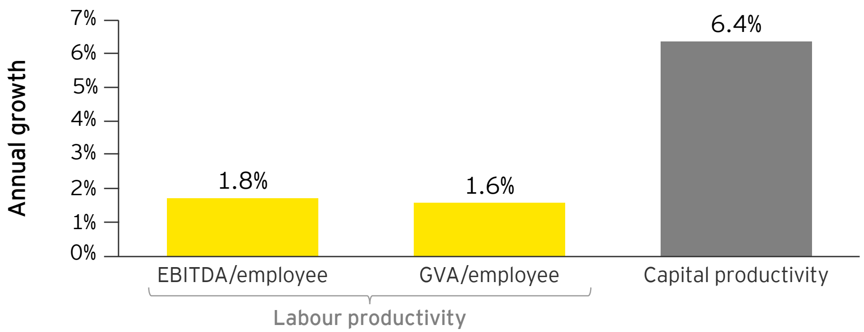
How does productivity change under private equity ownership?

Labour and capital productivity have grown under private equity ownership, by 1.1%–1.9% and 7.4% per annum respectively.

Growth in labour productivity and capital productivity since acquisition (CP+exits, 2017)



Growth in labour productivity and capital productivity since acquisition (CP+exits, 2016)



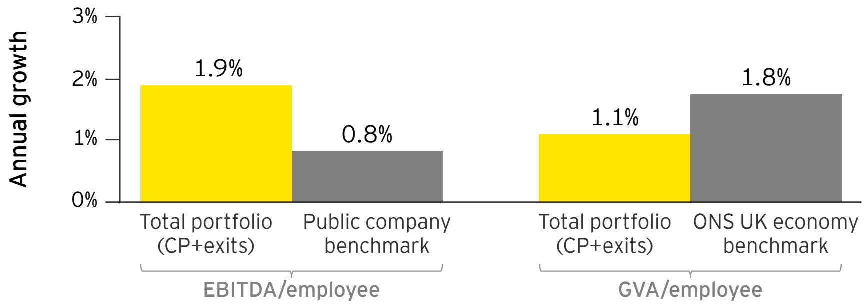
- Economic impact is a function of both changes in productivity and growth in resources. To assess the performance of the portfolio companies on labour productivity, two measures have been analysed:
  1. Profit (or EBITDA) per employee, which can be benchmarked to public companies. On this measure, the portfolio companies have grown labour productivity by 1.9% per annum.
  2. Gross Value Added (GVA) per employee, which is preferred by economists and can be benchmarked to the UK private sector. On this measure, the portfolio companies have grown labour productivity by 1.1% per annum.
- Capital productivity is measured as revenue over operating capital employed. The portfolio companies have grown capital productivity by 7.4% per annum.
- Compared with 2016 findings, labour productivity measured by GVA/employee has declined a little, whilst capital productivity has improved.
- Analysing the 2017 result by sector, consumer is above average in labour and productivity growth, healthcare around average and other sectors are below the average.

Sector	Growth in GVA/ employee	Growth in capital productivity
Consumer	1.2%	28.7%
Industrials	-3.4%	0.0%
Infrastructure	0.1%	0.3%
Healthcare	0.9%	5.3%
Other	-2.5%	1.7%

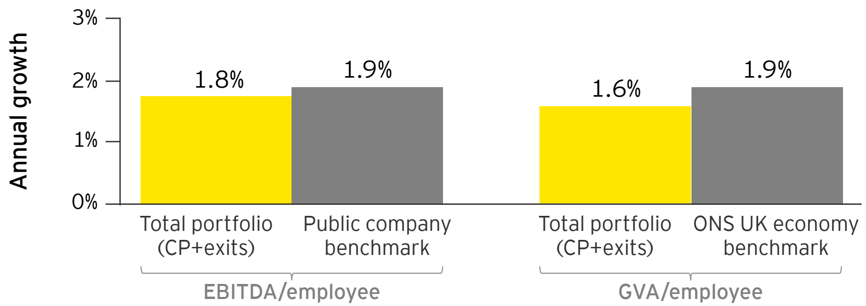
How does productivity change under private equity ownership?

Annual growth in labour productivity in the portfolio companies at between 1.1% and 1.9% is broadly in line with public company and economy-wide benchmarks.

Growth in EBITDA per employee and GVA per employee since acquisition (2017)



Growth in EBITDA per employee and GVA per employee since acquisition (2016)

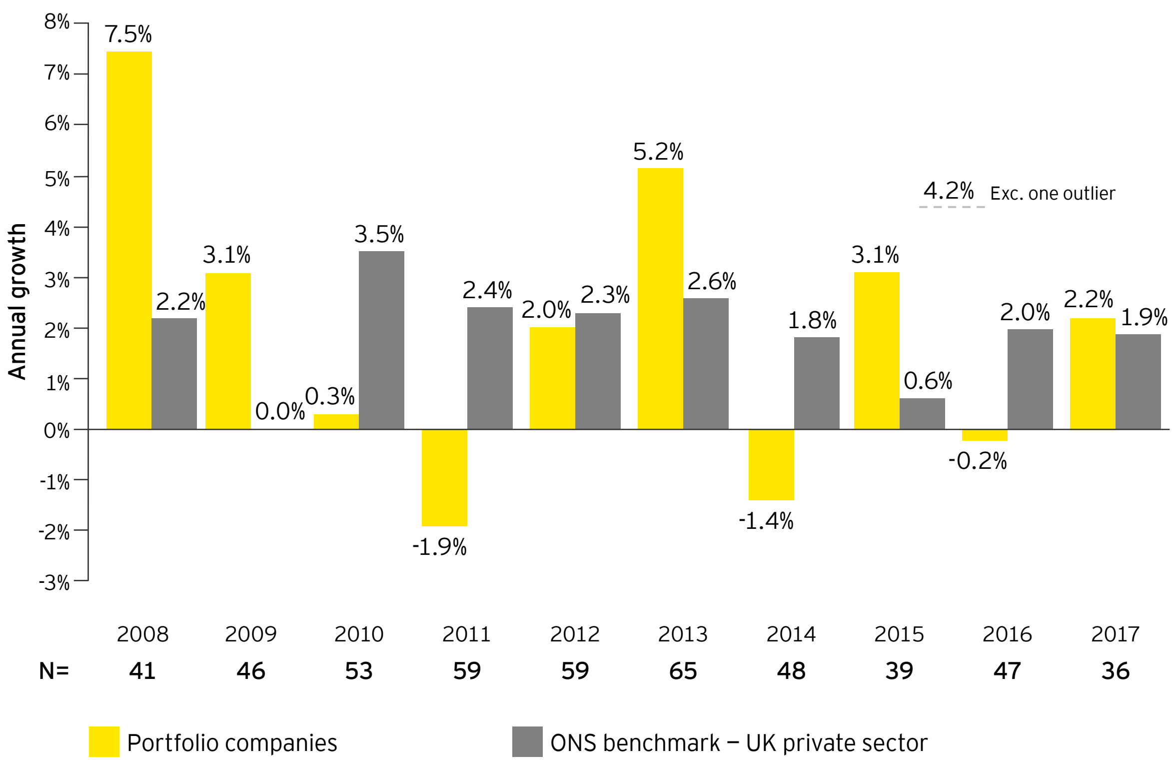


- On a profit per head metric, the portfolio companies have seen slightly faster growth in labour productivity compared with the public company benchmark.
- GVA per employee has grown at a slightly lower rate than the UK economy.
- 2017 findings are broadly comparable with the prior year.

How does productivity change under private equity ownership?

GVA per employee of portfolio companies increased by 2.2% year-on-year versus 2016, and was in line with the UK private sector benchmark.

Year-on-year growth in GVA per employee, portfolio companies versus private sector benchmark

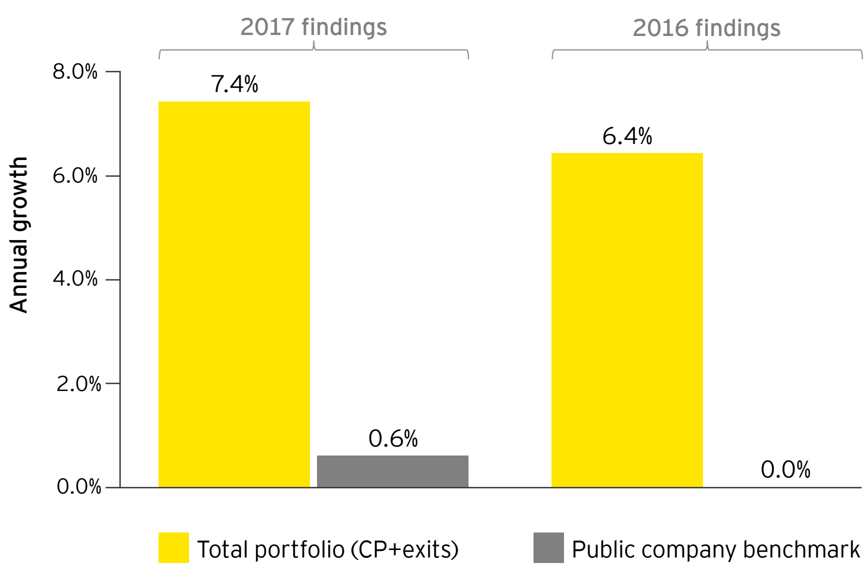


- As with other measures in this report, the year-on-year growth in GVA per employee varies in the portfolio companies, versus a more consistent trend in the UK private sector benchmark.
- The 2017 result for growth in labour productivity was in part a consequence of slower employment growth and similar employment cost growth – relative to ONS private sector benchmarks.

How does productivity change under private equity ownership?

Capital productivity growth in the portfolio companies exceeds public company benchmarks, by 7.4% versus 0.6% growth per annum.

Growth in capital productivity since acquisition

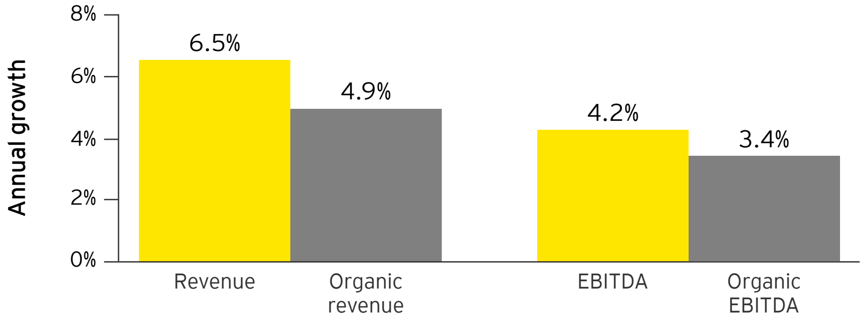


- There is no economy-wide data reported on capital productivity; hence capital productivity growth in the portfolio companies is compared with the public company benchmark. This shows that the portfolio companies have grown capital productivity faster, by 7.4% per annum versus 0.6% per annum.
- Given that the absolute growth in capital employed is small relative to the initial amount, it seems most likely that the portfolio companies have been more effective in generating revenue growth from existing investments compared with the public company benchmark. Public companies have grown capital employed faster and have not diluted capital productivity – but neither has it improved.

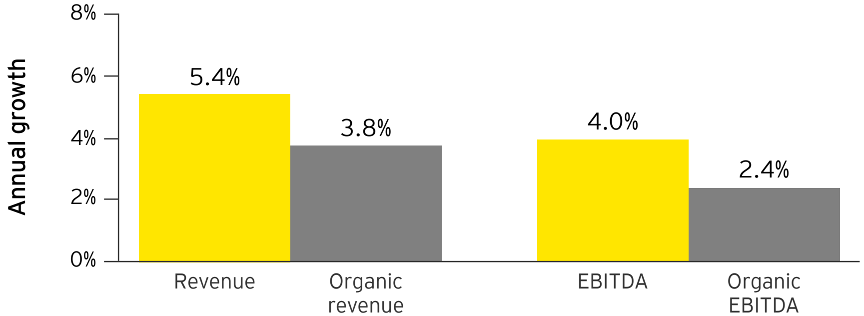
Do private equity owned companies grow?

Since acquisition, the portfolio companies have grown reported revenue at 6.5% per annum and profit at 4.2% per annum; organic revenue and profit growth have grown at 4.9% and 3.4% per annum respectively.

Reported and organic revenue and EBITDA growth since acquisition (CP+exits, 2017)



Reported and organic revenue and EBITDA growth since acquisition (CP+exits, 2016)



- Reported revenue and profit (EBITDA) annual growth over the entire period of private ownership to date is, on average, 6.5% for revenue and 4.2% for profit.
- Organic revenue and profit annual growth rates (excluding the effect of bolt on acquisitions and partial disposals) are 4.9% and 3.4% respectively. As with other measures, there is variation by sector, with consumer and infrastructure showing the fastest organic revenue and profit growth rates, and industrials the slowest.

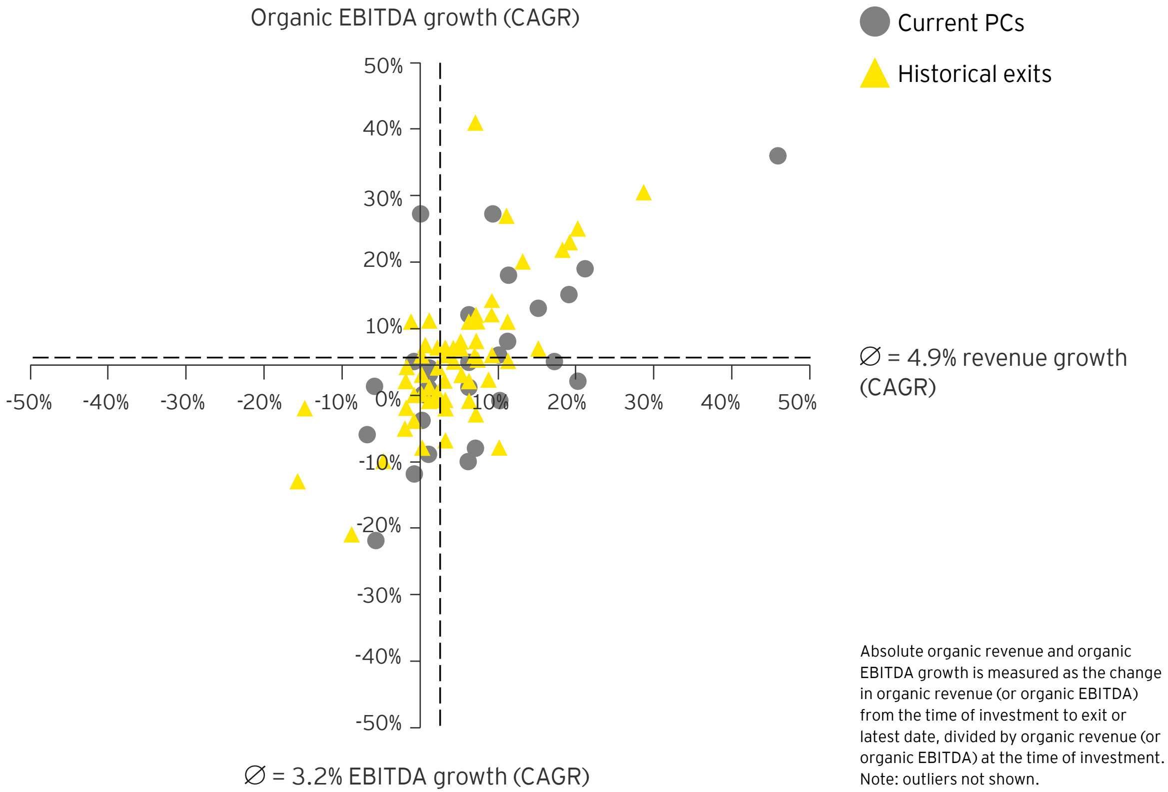
Sector	Organic revenue growth	Organic EBITDA growth
Consumer	5.2%	6.0%
Industrials	-0.1%	0.5%
Infrastructure	7.9%	4.8%
Healthcare	2.3%	1.0%
Other	5.0%	1.4%

- 2017 results are slightly ahead of 2016 on all of these measures.

Do private equity owned companies grow?

At the individual portfolio company level, there is a wide range of performance in organic revenue and EBITDA growth.

Organic revenue and EBITDA growth by portfolio company since acquisition



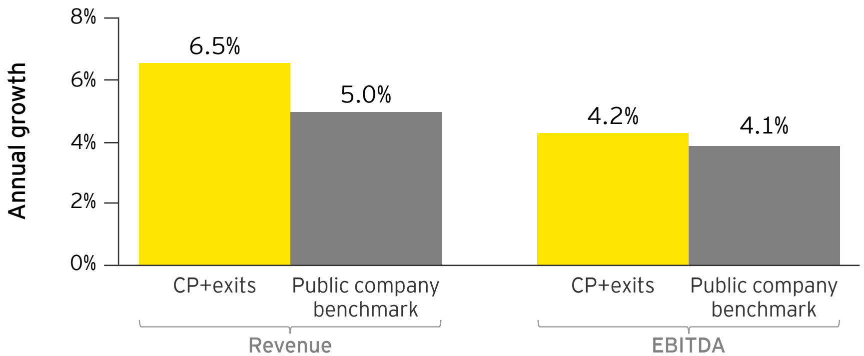
Absolute organic revenue and organic EBITDA growth is measured as the change in organic revenue (or organic EBITDA) from the time of investment to exit or latest date, divided by organic revenue (or organic EBITDA) at the time of investment.
Note: outliers not shown.

- The chart shows the data points of organic revenue and EBITDA growth for each of the current portfolio companies and historical exits, measured as the CAGR from acquisition to latest date or exit. This shows a wide range of outcomes around the average results, similar to the earlier analysis of organic employment growth by portfolio company.
- Individual portfolio company performance is affected by many factors, external and internal to the business. Not all portfolio companies grow under PE ownership, but some grow very fast. The findings in this report combine all the data to test aggregated results, and to compare them with private and public sector benchmarks.

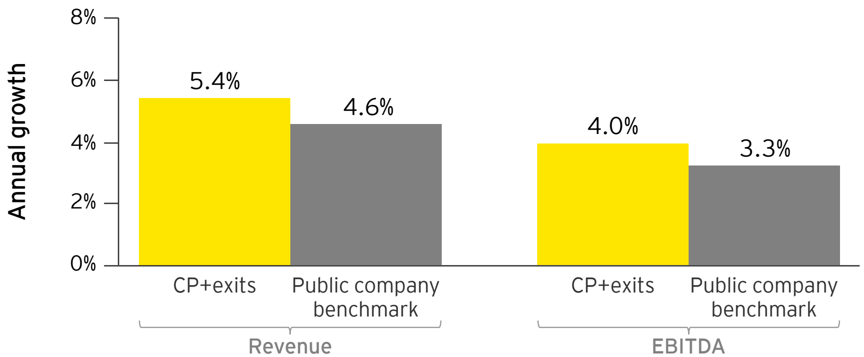
Do private equity owned companies grow?

Revenue and profit growth of the portfolio companies is broadly in line with public company benchmarks, slightly faster revenue growth and comparable profit growth, at 6.5% and 4.2% per annum respectively.

Revenue and EBITDA growth since acquisition (2017)



Revenue and EBITDA growth since acquisition (2016)

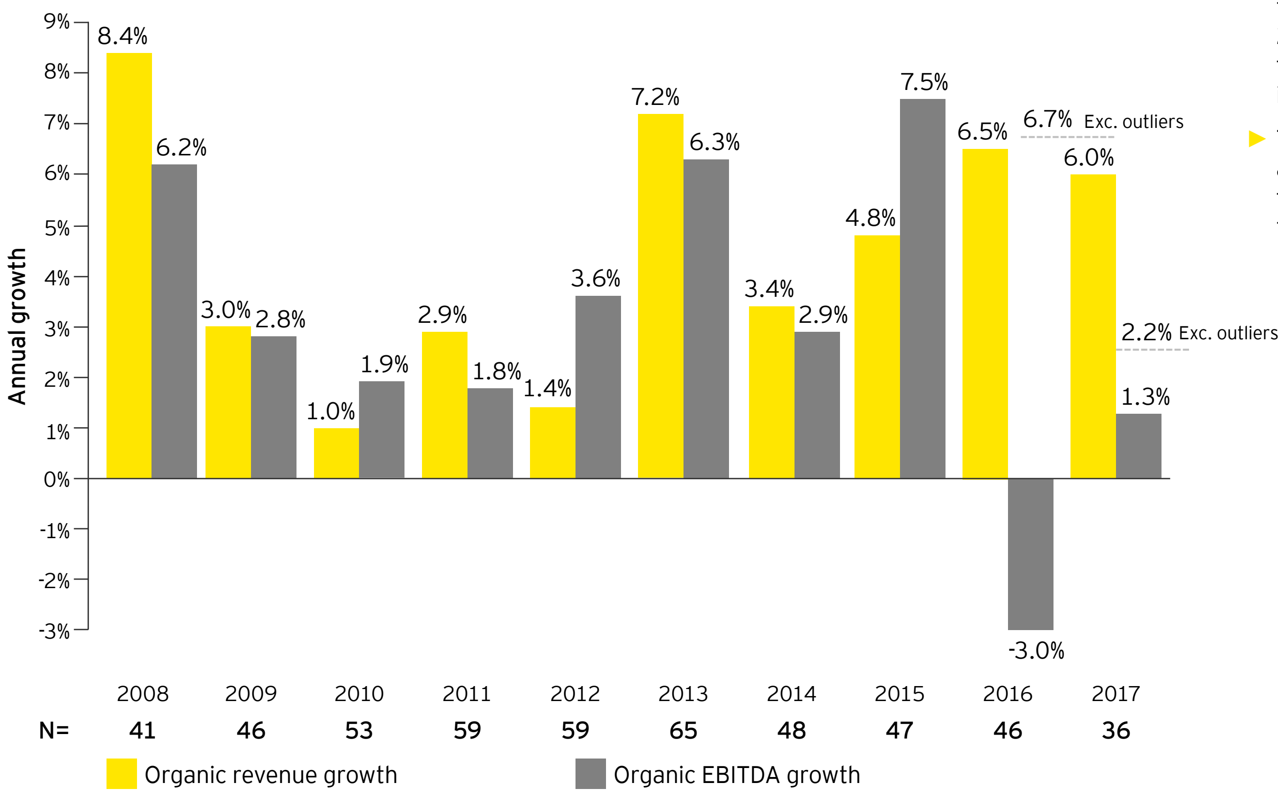


- Reported revenue and profit (EBITDA) performance of the portfolio companies is slightly above or in line with the public company benchmark.
- In terms of drivers of revenue growth, the portfolio companies have shown more growth in capital productivity than growth in operating capital employed, including acquisitions. For public companies, the reverse is true.
- In terms of drivers of reported EBITDA growth, portfolio companies show broadly similar trends in employment and labour productivity to the public company benchmark.

Do private equity owned companies grow?

The portfolio companies reported positive but slower organic profit growth in 2017 versus prior years.

Year-on-year organic revenue and EBITDA growth

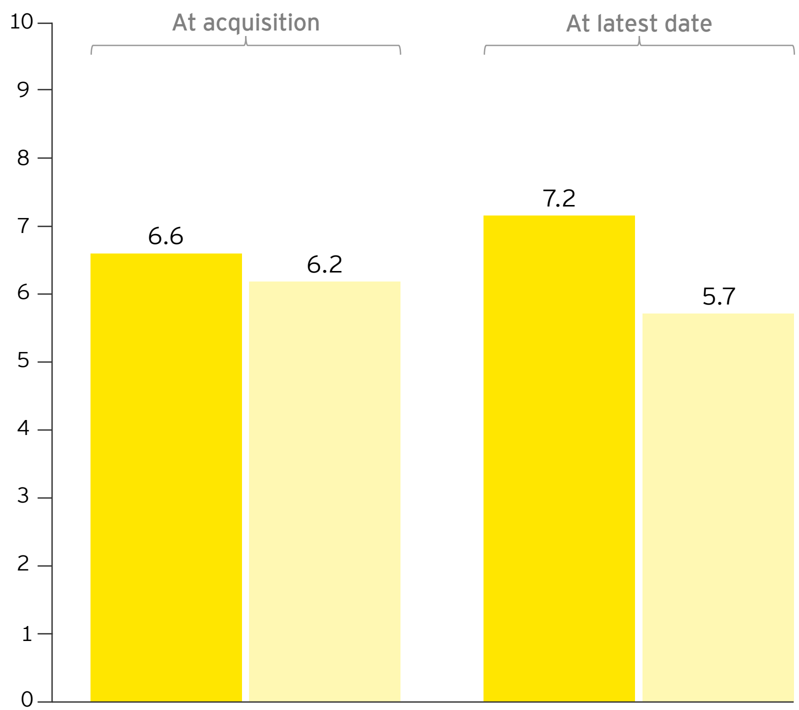


- 2017 was a year of strong organic growth for portfolio companies with 6% revenue and 2.2% profit growth (adjusting for one outlier); the aggregate average shows a year-on-year increase of 1.3%.
- The year-on-year growth in organic revenue and EBITDA shows a variable pattern, reflecting the broader economy trend, company-specific factors and change in portfolio sector mix.

What are the levels of financial leverage in the portfolio companies?

All portfolio companies had an average leverage ratio of 6.2 debt to EBITDA at acquisition and 5.7 at latest date or exit.

Debt to EBITDA ratio (at acquisition and latest date)



- One measure of financial leverage is the ratio of debt to EBITDA; this differs from net debt to EBITDA, as it excludes company cash balances.
- Across the total portfolio, the leverage ratio averaged 6.2x at the time of initial investment by the PE owners and 5.7x at latest date or exit, indicating that debt has grown but at a slightly lower rate to growth in profit. By sector, leverage has reduced under PE ownership in all sectors except infrastructure, where it has risen from 5.3 to 8.7.

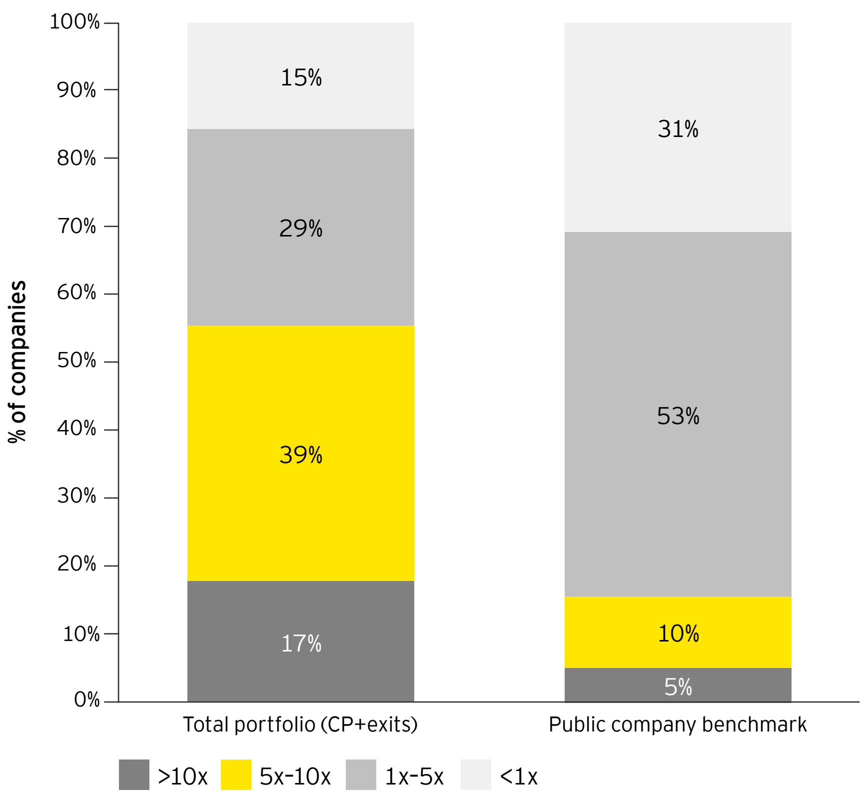
Sector (CP+exits)	Debt to EBITDA at acquisition	Debt to EBITDA at latest date/exit
Consumer	6.0	3.9
Industrials	6.5	4.8
Infrastructure	5.3	8.7
Healthcare	4.7	4.1
Other	6.6	5.4

- The current portfolio companies show a slight increase in leverage under PE ownership.

What are the levels of financial leverage in the portfolio companies?

Portfolio companies have much higher levels of financial leverage than public companies: 56% of portfolio companies have debt to EBITDA ratio above 5x, versus 15% of publicly listed companies.

Comparison of financial leverage (debt to EBITDA ratio)

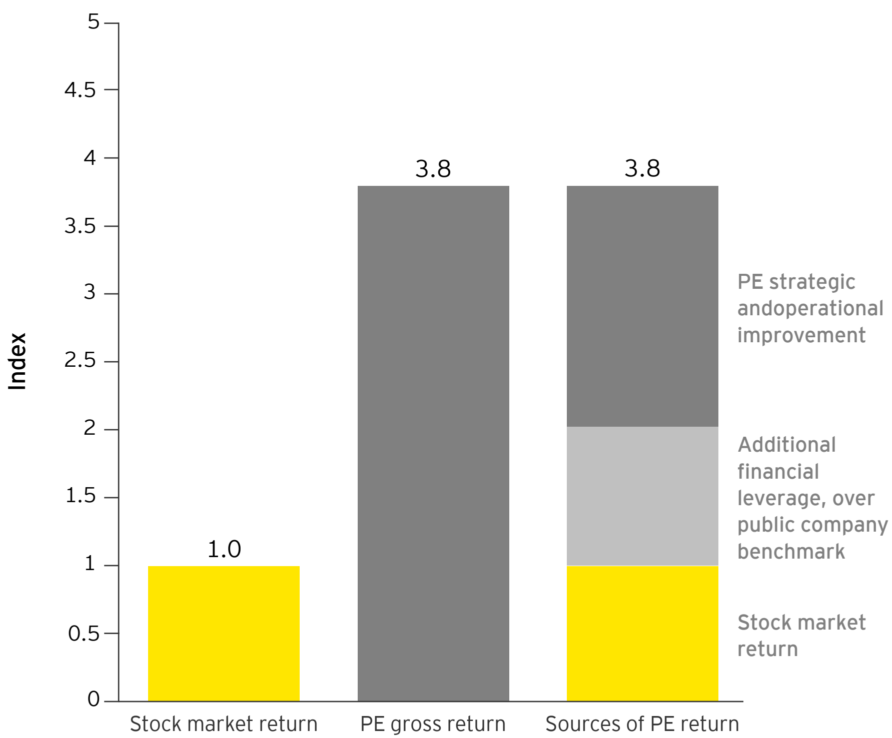


- One distinctive feature of the PE business model is that it typically uses greater financial leverage than most public companies. More debt and less equity at the time of investment increases the effect of change in enterprise value at exit on equity return, both up and down.
- On the metric of debt to EBITDA, the portfolio companies (CP+exits) averaged 5.7x compared with the public company benchmark of 2.0x, showing higher levels of financial leverage in the portfolio companies. While 56% portfolio companies have leverage ratios above 5x, this is true for only 15% of companies in the public company benchmark.
- It is noted that, unlike public companies, increased financial leverage may not be a long-term feature of the portfolio companies, i.e., after the investment period of the PE investor the financial leverage may change reflecting the capital structure of the new owners.

How do private equity investors generate returns from their investments in the portfolio companies?

The equity return from portfolio company exits is 3.8x the public company benchmark; over half of the additional return is due to private equity strategic and operational improvement, and the rest is from additional financial leverage.

Gross equity return and sources of return, portfolio company exits 2005-17

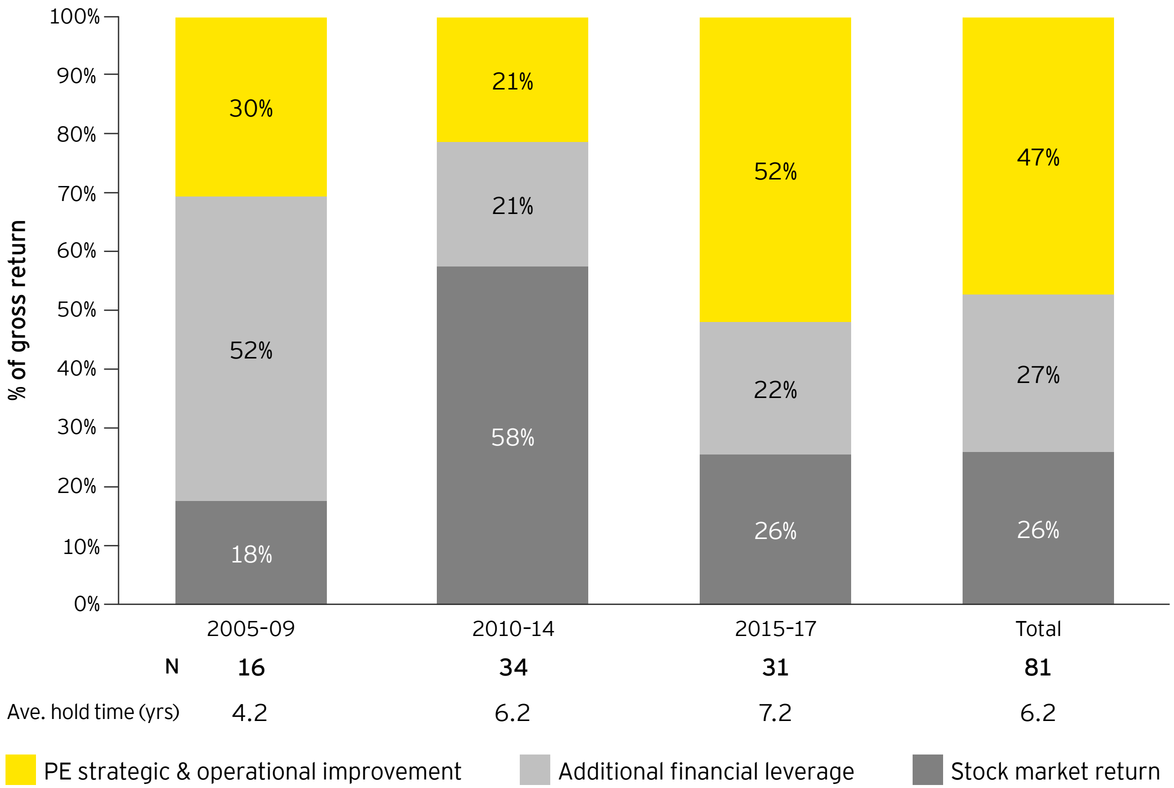


- The portfolio companies owned and exited by their PE owners achieved an aggregate gross equity investment return significantly in excess of benchmarked public companies, by a factor of 3.8x (compared with the equity return from investment in public companies matched by sector and over the same timeframe as each portfolio company investment).
- For public and PE, the measure of gross return is before the fees and charges incurred by investors, that are higher in PE than in public equity.
- The source of the PE return over and above public company return comprises the amount attributable to additional financial leverage and PE strategic and operational improvement. While additional leverage generates a material contribution to the equity return, there is a larger amount of the investment return that relates to the strategic and operational improvement of the portfolio companies during PE ownership, i.e., over and above that achieved by the public companies in the same sector and timeframe.

How do private equity investors generate returns from their investments in the portfolio companies?

While the results vary over time, the components of the gross return from private equity strategic and operational improvement and additional financial leverage are greater than the equivalent public stock market return.

Returns attribution, portfolio company exits 2005-17



- Analysing the sources of PE returns over time, here expressed by year of exit of the portfolio companies, shows some variation but also a consistent element of PE strategic and operational improvement.
- Within the equity return due to additional leverage, it is noted that a part of this is due to the estimated tax shield benefit, i.e., as interest on third party debt is tax deductible the annual cost of additional debt is partially offset by a reduction in corporation tax payable versus equity financing. Over the timeframe of the PE investment, this annual improvement in cash flow from lower tax payments accrues to equity holders; in aggregate it is estimated to be a small part of the equity gain from additional leverage.

4
Basis of findings

Basis of findings

How is the portfolio company data aggregated?

- The findings in this report are aggregated across all portfolio company data points, to give insights into the systematic effects of private equity ownership of the portfolio companies.

Go to section >

Is the profile of the portfolio companies skewed by sector or size?

- The portfolio companies are skewed towards the consumer services and healthcare sectors, accounting for 78% of employment versus 39% in the UK private sector as a whole; the portfolio companies are smaller than the public companies that make up the public company benchmark used in this report.
- There is variation by sector across many of the performance measures in this report. Consumer and infrastructure sectors tend to perform above the other sector groupings, whilst industrials tends to perform the worst.

Go to section >

How are the benchmarks derived and calculated?

- The benchmarks used in this report are compiled from published information, matched by sector and timeframe to individual portfolio companies, and aggregated using the same methodology as portfolio company results.

Go to section >

What is the returns attribution methodology?

- The returns attribution methodology separates out the effects of additional financial leverage and public stock market performance to test for evidence of outperformance by private equity investments in the portfolio companies.

Go to section >

How is the portfolio company data aggregated?

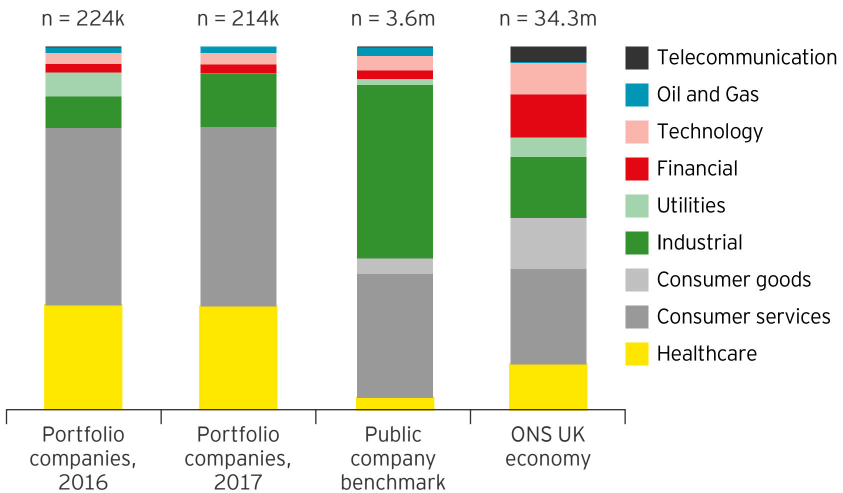
The findings in this report are aggregated across all portfolio company data points, to give insights into the systematic effects of private equity ownership of the portfolio companies.

- The most accurate way of assessing the effect of PE ownership on the portfolio companies is to aggregate all of the data to present a single, overall result. Given the independent control of portfolio company selection criteria by the PERG, the size of the population and the high degree of compliance, these aggregated findings provide insight into several key questions asked about the effect of PE ownership on large UK businesses.
- Aggregating the data across all of the portfolio company data points avoids the bias that originates from selective use of either the best or the worst on any measure — which may be correct individually but is not the right basis of a generalised view on the effect of PE ownership.
- There are two main average growth measures used in the report:
  - **CP+exits:** this measures the change from acquisition to the latest date, or exit. As a result it measures performance over the longest time period possible of PE ownership and includes the largest number of data points.
  - **Year-on-year:** this measures the change in the current year from the prior year for current portfolio companies.
  - It should be noted that for the CP+exits measure, there is a calculation of average growth rates over different time periods across the portfolio companies which creates some inherent inaccuracy. To avoid any significant distortion, the calculated average growth rate is tested against the simple check of percentage total change in factor/average length of holding period.
- Many growth measures including revenue, profit, organic employment, capital expenditure and cash flow, require a comparison of full current year to full prior year to avoid the error inherent in annualising partial year figures. This means that there is a delay from the time of acquisition by PE investors to when these year-on-year results can be incorporated in the analysis.
- In all findings, the figures presented include all the data points from the portfolio companies, except in specific situations where it is not possible to include individual companies, e.g., not provided in data template or a negative starting figure on growth rates, where this is noted on the chart. In some measures in some years, the calculated average is affected by the performance of one or two portfolio companies. In a few instances, this is deemed to distort the overall result, in which case the actual result is presented unchanged and a separate bar or line added to show the result if the outlier(s) is excluded.
- Average growth rates, a frequent performance measure in this report, are weighted averages in order to best measure economic impact, e.g., employment growth rates are weighted on number of employees at acquisition. If numerical averages are used, this is noted.

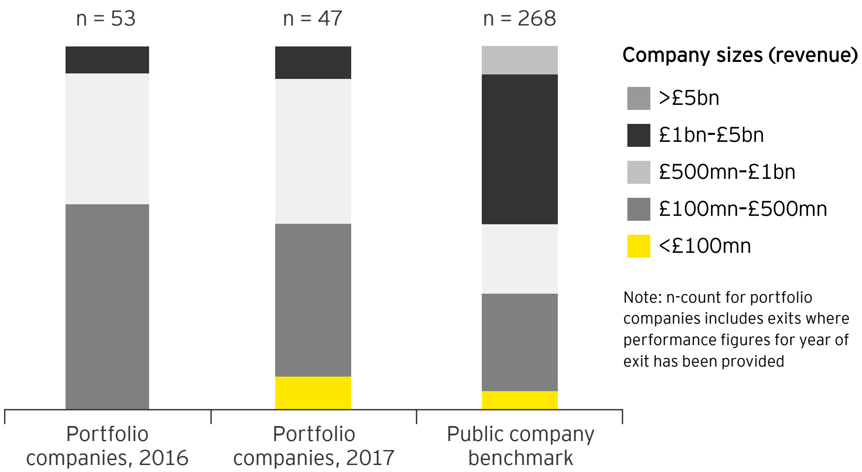
Is the profile of the portfolio companies skewed by sector or size?

The portfolio companies are skewed towards the consumer services and healthcare sectors, accounting for 78% of employment versus 39% in the UK private sector as a whole; the portfolio companies are smaller than the public companies that make up the public company benchmark used in this report.

Industry sector mix by employment: portfolio companies, public company benchmark and UK economy



Company size mix by number of companies: portfolio companies and public company benchmark



- The portfolio companies are active across a wide range of industry sectors, the mix of which has changed as the composition of the portfolio companies evolves.
- Of the current portfolio companies, 78% of employment is in the consumer services and healthcare sectors, compared with 39% in the UK economy. Conversely, portfolio company employment in the industrials sector is 14% of the total, compared with 17% for the UK economy as a whole.
- The public company benchmark group has been selected on size set at the largest and smallest deal sizes in the entire portfolio company group (CP+exits) from all companies listed on the London market.
- Within this range, the population of portfolio companies are smaller in terms of revenue size, with a large share of companies below £500m in annual revenues and relatively few above £1bn.

How are the benchmarks derived and calculated?

The benchmarks used in this report are compiled from published information, then matched by sector and timeframe to individual portfolio companies, and aggregated using the same methodology as aggregating portfolio company results.

Sector	Current portfolio companies	Companies in public company benchmark
Consumer services	19	70
Healthcare	5	18
Utilities	5	6
Consumer goods	0	23
Industrials	10	88
Technology	3	29
Financial	4	20
Oil & gas	1	11
Telecoms	0	3
Total	**47**	**268**

Public company benchmark

- There are no readily available benchmarks on company performance to compare to the portfolio companies. Public company benchmarks are prepared as follows:
  - All 635 primary listed companies on the London Stock Exchange (LSE) at 31 December 2017.
  - Excluded on basis of no sector overlap: 255 in basic materials and equity investment trusts, OEICs and other financial or non-comparable sector entities (e.g., real estate investment & services, real estate investment trusts, banks, equity and non-equity Investment Instruments), 31 companies with market capitalisation less than £210m, the size threshold for take-privates in the PERG criteria, 25 companies with market capitalisation greater than £11bn (the market capitalisation of the largest portfolio company over the period of this study).
  - This results in 268 public companies in the benchmark group, with a sector composition as shown in the table.
- Public company data is sourced from Capital IQ and aggregated at the sector level to produce sector benchmarks for each measure over time. Sector benchmarks are matched to individual portfolio companies, by sector and also over the same timeframe. The overall public company benchmark result is then aggregated in the same way as for the portfolio companies, e.g., using the same weighting factors.

UK private sector benchmark

- For the UK private sector benchmarks, data is sourced from ONS reports. Time periods are matched for each portfolio company and the result is aggregated – again in the same way as for the portfolio companies, e.g., using the same weighting factors.

What is the returns attribution methodology?

The returns attribution methodology separates out the effects of additional financial leverage and public stock market performance to test for evidence of outperformance by private equity investments in the portfolio companies.

- One of the most common measures of investment return used by PE investors is equity multiple, i.e., equity realised divided by equity invested, before all fund level fees and charges. This data, that is not typically disclosed, is provided on the portfolio company data templates.
- To analyse the sources of any investment return, the "returns attribution" calculation analyses the gross equity multiple and attributes any equity gain (or loss) to three components:
  - Additional leverage: the effect on the equity multiple of the additional financial leverage PE firms place on a company above the average public company sector levels. To calculate this effect, the capital structure of each investment is adjusted to match the average financial leverage levels of public company sector benchmarks; typically, this reduces the amount of debt and increases the amount of equity thereby reducing the equity return. The adjusted capital structure also takes into account interest savings over the holding period as well as the changes in net debt that took place during ownership; any leveraged dividends received by equity investors are moved to the date of exit, and the exit capital structure adjusted for dividends. The difference between the original investment equity multiple and the adjusted equity multiple is the effect of additional leverage.
  - Public stock market returns: the effect on the equity multiple of underlying gain in the sector which an investor could have achieved by investing in public stock markets. This effect is calculated by determining the total shareholder return (TSR) earned in the public company benchmark sector over the same timeframe as the PE investment. Both measures of equity return capture sector earnings growth, valuation multiple changes and dividend payments.

    The public stock market return TSR is converted into an equivalent equity multiple figure and then compared with the investment return after the adjustment for additional leverage, i.e., when both public and PE have the same capital structure.
  - PE strategic and operational improvement: this is the component of the equity multiple that is not explained by additional leverage, or public stock market returns so it captures all the incremental effects of PE ownership versus public company benchmark performance, i.e., in earnings growth, valuation multiple change and dividends. The component of the equity multiple for PE strategic and operational improvement is calculated by subtracting the market return from the equity multiple adjusted for additional leverage.
- Consistent with other analyses in this report, the benchmarks and calculations are applied at the individual portfolio company level and then aggregated to produce the overall findings presented in this report.
- It should be noted that there is no standard methodology for the returns attribution calculation. The methodology in this report has been discussed with the PERG and the Global Capital Committee of the BVCA, and their comments incorporated.

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