

The economic contribution of private equity in Australia

The Australian Private
Equity and Venture Capital
Association Limited
(AVCAL)

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Glossary

ABS	Australian Bureau of Statistics
ADS	Australian Drilling Services
ANZSIC	Australian and New Zealand Standard Industrial Classification
ASX	Australian Stock Exchange
AVCAL	The Australian Private Equity and Venture Capital Association Limited
CAGR	Compound Annual Growth Rate
CAPEX	Capital Expenditure
CEO	Chief Executive Officer
CFO	Chief Financial Officer
COO	Chief Operating Officer
CSG	Coal Seam Gas
DAE	Deloitte Access Economics
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
EIU	Economist Intelligence Unit
EY	Ernst & Young
FTE	Full-time equivalent
FY	Financial Year
GDP	Gross Domestic Product
GFC	Global Financial Crisis
GICS	Global Industry Classification Standard
GOS	Gross Operating Surplus
ICT	Information and Communications Technology
IPO	Initial Public Offering
LBO	Leveraged Buyout
MBI	Management Buy-In
MBO	Management Buyout
PE	Private Equity
PTP	Public to Private
PWC	PricewaterhouseCoopers
R&D	Research and Development
RBA	Reserve Bank of Australia
ROA	Return on Assets
VC	Venture Capital

Executive Summary

The private equity (PE) business model is well established in Australia, as it is overseas. Above all, PE brings a high degree of flexibility and urgency to running firms that may not be possible under other ownership structures. While this can provide advantages for investors in PE firms, more flexible businesses can also be good for the broader economy, enabling innovation and building resilience in the face of change.

The proof of the benefits of the PE model lies in performance of the firms acquired and transformed by PE management. The Australian Bureau of Statistics (ABS) does not collect the data required to analyse the economic contribution of PE to Australia. The analysis in this report is based on survey data provided by members of The Australian Private Equity and Venture Capital Association Limited (AVCAL). The survey focuses on PE investee firms and the survey responses are representative of the population of PE investee firms.

PE investee firms in Australia turn over an estimated \$63.5 billion per year, contributing around \$58 billion in total value added and 512,000 full-time equivalent jobs to the economy.¹

If private equity investee firms were an industry in their own right, their revenue would exceed coal mining or the general insurance industry; and they would directly employ more people than the automotive industry or the banking industry.

The definition of PE investee firms used in this report adopts the ABS demarcation between VC and PE for convenience, including 'early expansion' investee firms in the former group. The ABS estimated there were 346 PE investee firms in Australia in FY2011 (compared with 529 VC investee firms), down from a peak of 420 in FY2008. PE managers provided information for 106 investee firms over the period FY2007 to FY2011 which is used in the private equity impact analysis in Section 4. We further narrow this down to a sample of 49 investee firms providing the 130 annual data points over the period FY2007 to FY2011 used in the economic contribution calculations in Section 5.

Estimates based on the survey indicated that the average PE investee firm in Australia:

- had annual turnover of \$195 million;
- paid \$42 million in wages, to 827 full-time equivalent (FTE) employees;
- generated \$34 million in EBITDA for investors; and
- contributed \$77 million in direct value added to the economy.

Under PE ownership, surveyed investee firms experienced revenue growth of 11% CAGR during the first 5 years. These firms also greatly expanded the size of their workforces, at an average rate of 28% a year over 5 years.

Combining these estimates with the ABS data for the number of investee firms indicates PE investee firms in Australia account for a substantial part of the economy, including:

- annual turnover of \$63.5 billion;
- direct value added by the firms of \$25 billion, plus flow-on effects to other firms in the economy contributing indirect value added of \$34 billion; and

¹ Annual average for FY2007 to FY2011

- providing 262,000 direct full-time equivalent (FTE) jobs and another 251,000 jobs indirectly in related firms.

Survey and ABS data show PE investors are involved in a wide range of industries, notably manufacturing & utilities, trade & accommodation and health and other services. PE is under-represented in primary industries and construction, where there can be long lead times before earnings start to flow.

PE investee firms play a particularly important role in facilitating change to enable industries and businesses to grow, especially in medium-sized firms.

Around two-thirds of PE investee firms could be classified as medium-sized based on their annual revenue of \$10 to \$200 million. Of the remaining firms, the majority were large, with annual revenue exceeding \$200 million. This weighting differs from listed firms, where large firms are the majority, and the broader economy, where small firms dominate.

Survey returns highlighted the extent to which PE management affected change. PE investment in firms lasts for around 4 years on average. PE majority ownership (>50% of equity) occurred in 70% of investee firms in the surveys. Also:

- new management was introduced in 90% of firms
- operating practices were changed in 85% of firms; and
- additional capital was injected in 70% of firms.

These findings highlight the role of private equity in transforming firms, including e.g.:

- the Easternwell Group, where private equity helped the amalgamation of six specialised mining services firm seeking to reach a critical mass;
- for Bis Industries, a provider of logistics to the resources sector, PE investors helped improve operational and capital efficiency;
- an MBO of 3m's Asia-Pacific pharmaceuticals resulted in private equity revitalising the business under the name of iNova Pharmaceuticals; and
- private equity helped turn around the fortunes of Lomb Scientific.

Respondents provided information on debt and assets for a small subset of firms in the sample that showed:

- the average return on assets (EBITDA divided by total assets) for the private equity investee firms was, on average, higher than for publicly-listed firms in the IBISWorld database; and
- the average debt to asset ratio for private equity investee firms fell from around 35% in FY2007 to 20% in FY2011, converging to the level of listed firms.

Conclusions

Survey data collected from AVCAL members indicate that, based on the average investee firm, private equity makes a substantial contribution to the Australian economy. Private equity investee firms tend to cluster in specific industry sectors and be of medium size. Under private equity management, the firms are transformed, experiencing increasing revenue and expanding their workforces.

Deloitte Access Economics

1 Background

1.1 Aim of the report

The Australian Private Equity and Venture Capital Association (AVCAL) seeks to promote a greater understanding of the importance of private equity (PE) to the Australian economy and to augment the body of evidence on the economic role of private equity, in particular the contribution of private equity investee firms to the economy.

There is a body of international evidence that illustrates the value of private equity to an economy. However, the evidence base for Australia is patchy and mostly predates the Global Financial Crisis (GFC), a period that raised questions about the resilience of the private equity model. Consequently, AVCAL commissioned Deloitte Access Economics (DAE) to develop a methodology for collecting relevant data and analysing it to improve the understanding of the role of private equity in the Australian economy. This report presents the key findings of these endeavours.

Presenting previously unavailable information on the activities of private equity investee firms – including estimates of their economic contribution in Australia and the role played by private equity management in transforming these firms – serves to shed new light on some of the tangible benefits of private equity.

1.2 Defining the scope of private equity

Private equity investment can take various forms. The private equity industry is defined here as the private funds that acquire and manage the investee firms only, although other models exist, e.g. involving superannuation funds and individual investors. Private equity and venture capital (VC) funds generally invest in companies that are considered to have high growth potential. Other investors, such as superannuation funds and individuals, also invest in these companies.

It can be argued that firms or industries that benefit from private equity capital investments, such as healthcare, manufacturing and communications, should also be included. Indeed, it is this broader definition that has more appeal in the context and process of defining the economic contribution of the sector and this report focuses on investee firms in Australia owned by private equity funds.

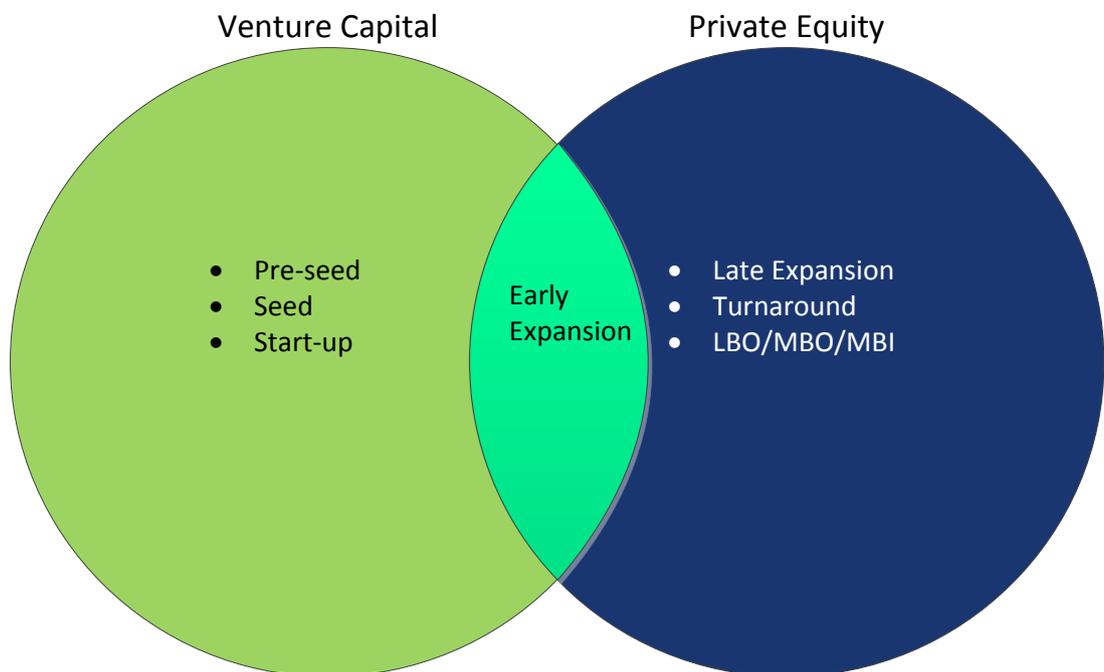
The Australian Bureau of Statistics (ABS) collects data about the activities of the private equity funds, including some incidental information about the firms the funds invest in (see ABS 5678.0 - *Venture Capital and Later Stage Private Equity, Australia*). The ABS categorises investee firms according to the stage of the private equity investment.

While VC usually invests in early stage firms and PE generally invests in growth/expansion and buyout stages, there are areas of overlap. (AVCAL 2011)

In the early stages of a venture capital fund's investment, the product is not yet in the market and the investee firm is not fully operational. The boundary between venture capital and the later stage investments that are the subject of this report on private equity is illustrated in Figure 1.1. The VC stages of investment are shaded green and the private equity stages are shaded blue. In this report, the ABS practice of counting investments in

the early stage of expansion as venture capital has been followed, although it may be difficult to distinguish where 'early expansion' ends and 'late expansion' begins in practice.

Figure 1.1: ABS investee firm stages



Source: ABS 5678.0

Consequently, this report deals only with later stage investments, comprising:

- late expansion;
 - typically, the firm's product is in the market and revenue is growing
- turnaround; and
 - a firm is a mature business requiring a turnaround
- LBO/MBO/MBI
 - mature business requiring new ownership, direction, consolidation or sale

The FY2011 ABS survey shows at the end of the 2010-11 financial year there were 875 firms which received private equity/venture capital funding, of which 534 firms were classed as venture capital investments and 341 were considered later-stage private equity investments.

1.3 Approach to quantifying the role of private equity

A wide range of companies in Australia have come under private equity ownership. Private equity ownership has proved to be especially valuable where firms face the need to expand or refocus their operations in what may be fluid economic and commercial conditions. These firms may have an opportunity to develop (e.g. based on a new technology) or need to restructure in a fundamental manner (and would find it more difficult to do so as, say, a listed entity.) Moreover, private equity funds are able to swiftly mobilise management expertise and capital and provide focus and urgency, which is especially useful if the window of opportunity to transform a firm is narrow.

Thus, private equity contributes by adding value to investee firms and providing additional flexibility to the way in which firms are managed. This results in improved productivity for investee firms, with flow-on impacts throughout the economy.

To capture the various dimensions of the contribution of private equity to the Australian economy, it was necessary to:

1. design a data collection tool in consultation with AVCAL to obtain data for the investee firms;
2. collect, validate and analyse the data returned by the survey, including making comparisons at industry level;
3. estimate the value added and employment generated by private equity investee firms, based on the data provided by the private equity managers, to calculate the economic contribution to Australia; and
4. use case studies to illustrate some of the benefits of private equity that are not easy to quantify.

1.4 Contents of the report

This report builds on a scoping report prepared for AVCAL by DAE, some of which is reproduced in the following chapters. For example, Chapter 2 summarises the methodology employed in this report that was developed during the scoping study, with additional material contained in Appendix A.

The data collection task is explained in Chapter 3. Much of the data required for the subsequent analysis were collected from a new survey of AVCAL members and are, therefore, unique. More detail is provided in Appendix C.

Key insights into the way the private equity management transforms investee firms are presented in Chapter 4. Additional information is in Appendix D.

The economic contribution of private equity firms to the Australian economy is the subject of Chapter 5. Estimates of the total contribution and relative contribution to selected industries are provided. Explanation of the calculations can be found in Appendix E.

The report concludes with a review of the key findings of the research project and recommendations for areas of further study that are likely to yield valuable insights into the impact of private equity on the Australian economy.

Figure 1.2: Easternwell Case Study

The initial Easternwell investment by the private equity firm, Ironbridge, involved bringing together three private, independent, specialist, and well-regarded drilling businesses to form a national drilling business called Australian Drilling Solutions (ADS). Each of these three original businesses had complimentary skill sets and resource exposures and, by putting them together, the private equity firm was able to create a national, diversified business.

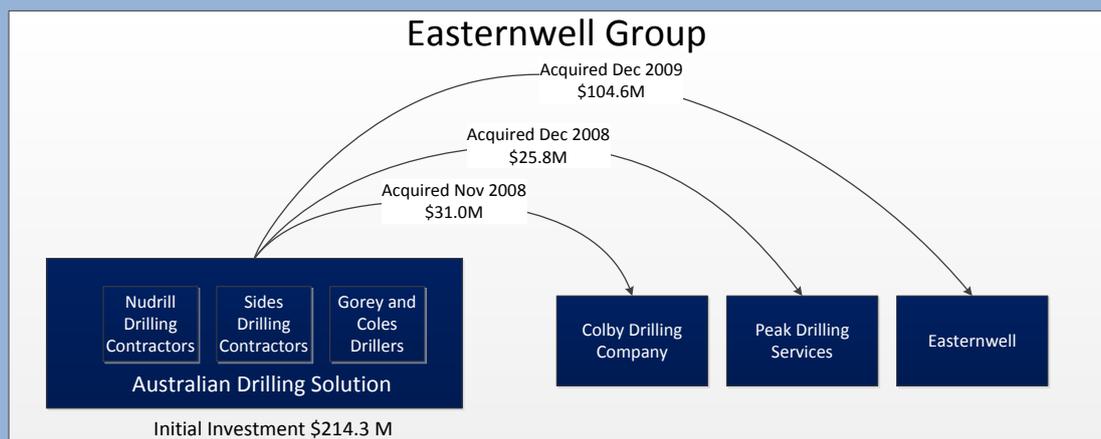
In late 2008, ADS acquired two more businesses in the iron ore drilling market, further enhancing the company's presence in that sector. In December 2009, Easternwell itself was acquired, further diversifying the group into coal seam gas (CSG) and well-servicing operations.

Through the course of 2010 the private equity firm set about integrating the Easternwell and ADS businesses to form the Easternwell Group, through the re-alignment of the business to focus on its two key end markets: Energy & Utilities and Minerals.

Ironbridge led additional investment in health and safety, aiming to create an industry-leading safety culture and practice. Significant investments were also made in new equipment, with over \$30 million of new capital expenditure to generate incremental earnings.

The wide geographic spread of the businesses brought together meant the private equity firm was also heavily involved in business planning. It worked together with management to put together five-year plans for each of the businesses, establish a national head office and a finance function with appropriate systems and reporting. Initially providing the interim CFO, Ironbridge then hired the initial group CEO and CFO, and executed and resourced the Group's roll-up acquisition strategy, looking at over 20 opportunities in the course of this investment, and settling six acquisitions (see Figure 1.3)

Figure 1.3: Easternwell Group



Source: Ironbridge

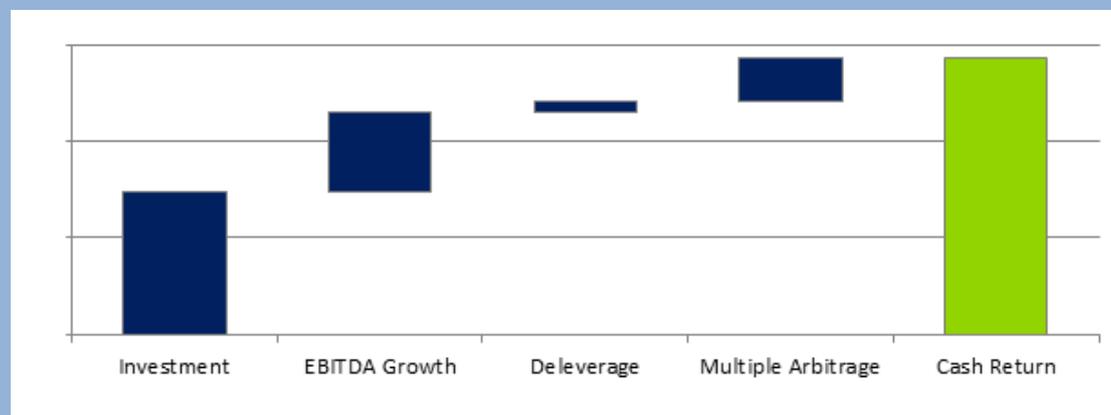
Each of the vendor Managing Directors remained within the Easternwell Group, continuing to run their businesses day-to-day. In order to align interests it was a condition that each vendor rolled a significant portion of their proceeds following acquisition into the Group. For the older vendors the involvement of private equity helped them establish a succession plan while, at the same time, also providing the necessary capital for further growth.

Throughout 2010, a number of unsolicited inbound inquiries to acquire either some or part of the Group were received from local and offshore parties. The private equity firm set out to run a dual-track trade sale/IPO in early 2011.

One of the parties that made an initial approach, Transfield Services, was keen to build a strong presence in the oil and gas market but wanted to avoid a competitive process. Shortly afterwards it entered into exclusive negotiations, eventually acquiring Easternwell in December 2010.

The private equity owners provided a disciplined acquisition strategy, ensuring that the newly created Easternwell Group was focused on production-related drilling, rather than exploration; and worked closely with management to find the right entry point into the CSG market. In addition, the private equity firm helped the company secure both expansion projects and complementary acquisitions. The drivers of the equity returns from the investment are in Chart 1.1.

Chart 1.1: Drivers of equity return for Easternwell Group



Source: Ironbridge

2 How private equity adds value

International evidence goes some way to supporting the argument that private equity's main contributions to the Australian economy are:

- the direct economic contribution, in value added and employment; and
- a critical role fostering innovation and flexibility for the whole economy

A review of literature relating to private equity reveals that international studies show that Private equity improves the performance of the economy and flexibility of management. However, there is a lack of comparable studies showing how private equity contributes to the broader economy in Australia. The challenge then is to find an approach that has been used abroad that lends itself to being replicated with Australian data.

2.1 International evidence

There have been many papers published on private equity, and numerous papers summarising the state of play of understanding the role of private equity and the impact it has on the economy. Generally, studies of performance and management of private equity firms are favourable towards private equity. For example:

- Bernstein et al. (2010) show industries where private equity funds have invested have significantly higher growth rates of production (+0.9% p.a.) and value added (+1.1% p.a.) than non-private equity industries;
- Bloom et al. (2009) find that private equity-owned firms have strong people management practices and even stronger operational management practices, compared to other firms.
- Wilson et al. (2011) examine private equity performance through the GFC in the UK, finding that private equity-backed buyouts show stronger performance than a matched sample of other private companies and listed firms.

However, studies of the impact of private equity on total employment, wages and transfers of wealth resulting from buyouts are more mixed. An informative discussion of the impact of private equity can be found in *Private Equity and Corporate Governance: Retrospect and Prospect* (Wright et al 2009), summarised in Table 2.1.

Table 2.1: Summary of evidence regarding private equity buyouts

Themes	Evidence
What are the short-term and medium-term performance gains from PE buyouts?	Short- to medium-term gains in accounting performance, efficiency (productivity and cost reductions), and entrepreneurial actions (e.g., new product and market development; patent citations and better use of R&D).
What is the role of active investors and other governance mechanisms?	Active, experienced, and specialised PE investors and management equity ownership especially important in generating performance gains.
Are there transfers of wealth to/from employees after PE buyouts?	Initial reduction in employment followed by subsequent increases in employment, especially in Management Buyouts (MBOs); wage effects less positive especially for Management Buy-ins (MBIs).
Are there transfers of wealth to/from shareholders after PE buyouts?	Debate about the role of insider information, but managers' perceived undervaluation important in recent public to private (PTP) buyouts.
Do gains persist from PE buyouts over time?	Accounting and market performance gains most notable over 3-5 years for most firms. IPOs are a special exit case, but performance differences with non-PE firms persist although at a declining rate. In the short term, the benefits appear clear to outgoing owners and to the new owners and management while in the longer term the benefits are less clear. While non-financial stakeholders argue that other stakeholders suffer in the short and long term, the evidence to support this view is at best mixed.
Does the national institutional context influence PE buyouts?	Most previous research conducted in the US and UK. Compared with these two governance environments elsewhere there are concerns over the sources of deals, less positive entrepreneurial attitudes to doing PE buyouts, less favourable infrastructure to do deals and availability of exit markets. More positive attitudes are emerging elsewhere, but at a variable rate.

Source: Wright et. al. (2009)

2.2 Australian evidence

Australian analysis of the impacts of private equity on businesses and economy-wide outcomes is limited and primarily qualitative and survey based. Despite gaps in the Australian evidence base, it is possible to ascertain a number of key themes which characterise the Australian studies. These themes are similar to those highlighted in international studies (see Appendix A).²

2.2.1 Australian examples of estimating private equity effects

Anecdotal analysis of the beneficial characteristics of private equity as a form of financing for business is discussed widely. For example, Parkinson (2007) noted that private equity investment assisted three firms, particularly through providing a higher level of financial

² Analysis of the impacts of venture capital, particularly on corporate governance of VC-backed companies in Australia, and the impacts of the Australian Governments Innovation Investment Fund are outside the scope of this study.

expertise and improved management styles. Jones (2007) discusses the benefits of private equity financing in assisting turnarounds, workouts and insolvencies, by increasing available capital and improving corporate structures.

Methodology

Surveys and case studies are a common means for distinguishing the effects of private equity in Australia. Utilised by Ernst & Young (EY), the Economist Intelligence Unit (EIU) and PricewaterhouseCoopers (PwC) Australia this type of analysis has been used to determine strengths of the private equity-style business model (EY, 2008), the impact of private equity on Australian business from the perspective of key executives (EIU, 2008) and the economic impact of private equity and venture capital in Australia (PwC, 2006).

A number of studies have outlined how private equity leads to better financial or other economic outcomes, including that private equity ownership and innovation are positively related. It is important to note that many of these studies were undertaken prior to the GFC. For example Ernst & Young (2008) notes that analysis of private equity firm exits was undertaken when the market in both Australia and globally was very strong which may have contributed to higher valuations. Similarly, the selection of investee companies by private equity managers may have contributed to the stronger innovation and R&D results of private equity firms relative to other firms. These factors need to be controlled for in any analysis of the effects of private equity.

Evidence

Ernst & Young (2008) found that the impact of management and governance practices in private equity investee firms led to stronger financial performance. The study analysed 13 exits in the Australian market during 2007, and found that private equity increased EBITDA at 36% CAGR, which was nearly five times the CAGR for publicly listed companies. Jones (2007) noted that active assistance and governance, in the form of active partnership with existing management led to positive outcomes for firms facing insolvency. Results from the EIU (2007) survey also support the view that good governance leads to better outcomes, as many Australian executives felt that streamlined decision making was a key benefit of private equity ownership, with almost as many citing clarity of focus and objectives as positives of private equity ownership.

Almost three quarters of executives surveyed by the EIU (2007) believed that private equity was positive for Australian businesses as it compelled firms to become more efficient, and increase their productivity. This view applied not only to private equity firms themselves, but across all Australian firms. The PwC (2006) report noted that technological and R&D commercialisation is a primary benefit for private equity funded companies. Around three quarters of the companies surveyed launched a new product within the year preceding the survey in contrast to 27% prior to receiving private equity funding.

The key findings from the Australian studies are outlined in Table 2.2.

Table 2.2: Summary of findings and implications of Australian evidence

Themes	Findings and implications for future study
Management	Australian case study evidence of the role of management style and governance provides useful insights but warrants further analysis of samples representing the broader private equity industry. This will assist with understanding how the operational management practise effect firms outcomes and in particular the impacts of this for firm profitability.

Productivity	Australian evidence suggests productivity is important in improving private equity firm performance. Creating a proxy for productivity would assist with estimating the full effects of productivity on firm outcomes, and the flow on economic impact of this for the Australian economy.
Innovation and R&D	Australia evidence has outlined that private equity firms have a higher level of innovation and R&D outcomes. Quantitative analysis could determine the full extent of these impacts for individual firms and the economic impacts of this on the Australian economy.

Source: Various, including Parkinson (2007), Jones (2007), EY (2008), PwC (2006) and EIU (2007)

Figure 2.1: Bis Industries Case Study

Bis Industries is a provider of specialist logistics to the resources sector in Australia. It was purchased along with Cleanaway in 2006 by funds advised by a global investment firm, Kohlberg Kravis Roberts. With Australia being a resilient and growing economy, and with attractive opportunities in the resources sector, the private equity investors saw substantial potential and growth in Bis Cleanaway Ltd. The Cleanaway business was later sold and Bis Industries was consolidated into its current form.

From the beginning, Bis Industries' management team and the private equity investors worked to focus on organic growth through contracts with new customers and mine sites. They also sought to improve the performance of existing contracts and grow through the acquisition of other firms.

Bis Industries' management team invited the private equity investors to identify and implement operational improvements and capital efficiency. This work included developing a strategic sourcing capability and standardising equipment maintenance procedures across sites.

Taking truck maintenance as an example, the Bis Industries management team worked with the private equity team to develop, implement and track a standardised maintenance program. The focus of the program centred on effective planned and preventive truck maintenance to reduce down-time through equipment breakdowns. Through their joint efforts, truck reliability improved by almost 60%.

The private equity investors supported the building of the business by investing over A\$600 million to drive organic contract growth and make a number of acquisitions including Allied Plant Services in 2007 and the Gulf Group in 2010.

Throughout this growth, Bis Industries continued to build upon its safety program and with it 'Zero Harm', i.e. zero injuries, zero environmental and zero equipment damage. From FY2005 through FY2011, Bis has improved upon all the key safety metrics. These include measurements such as Total Recordable Injury Frequency Rate and the Lost Time Injury Frequency Rate.

In terms of environmental credentials, Bis Industries is focusing on fuel efficiency by decreasing idling time, improving driver efficiency, enhancing equipment usage and increasing load utilisation. This is designed to improve the company's environmental performance while also benefitting the bottom line.

Bis Industries now has more than 100 long-term contracts Australia-wide, and around 2,000 employees across six states and territories, up from 1,200 at the time of investment. Six years after the initial investment, Bis Industries and its management team continue to build new businesses while ensuring that existing operational initiatives generate sustainable results.

Source: Kohlberg Kravis Roberts

3 The survey of private equity investee firms

Private equity fund managers regularly provide a range of financial information about the firms they acquire to their investors. AVCAL collects these data and other information from its members. However, the range of data required to assess the economic performance of private equity investee firms has not been systematically recorded in Australia. Consequently, AVCAL's members were invited to participate in a new survey.

NB The relatively small sample size in the earlier half of the sample period should be taken into account when interpreting the results in this chapter.

3.1 The nature of the survey

AVCAL asked private equity managers to complete an electronic survey requesting information for each investee firm in their portfolios. The questions related to investments made since FY2000 for which at least three years of data are available.³ The private equity managers were encouraged to report the data for *all* eligible firms to guard against selection bias.

The information requested about the investee firms fell into three broad categories:

1. basic information about the investee company;
 - the length of the private equity fund involvement in the firm, i.e., when the stake in the firm was acquired and the duration of the private equity investment in the firm;
 - the ownership share acquired;
 - the industry in which the investee firm primarily operates;
2. changes made after acquisition by the private equity funds; and
 - changes to management, practices or capital structure;
3. financial information;
 - key operational data which includes revenue, wages and other costs, earnings and profit, employment, and total assets and net debt;
 - additional data on activities undertaken outside Australia, depreciation and amortisation, interest and financial costs, tax, research and development expenditure, capital expenditure and government subsidies (where applicable).

3.2 Survey responses

Responses were received from private equity managers responsible for around 70% of funds under management in Australia.

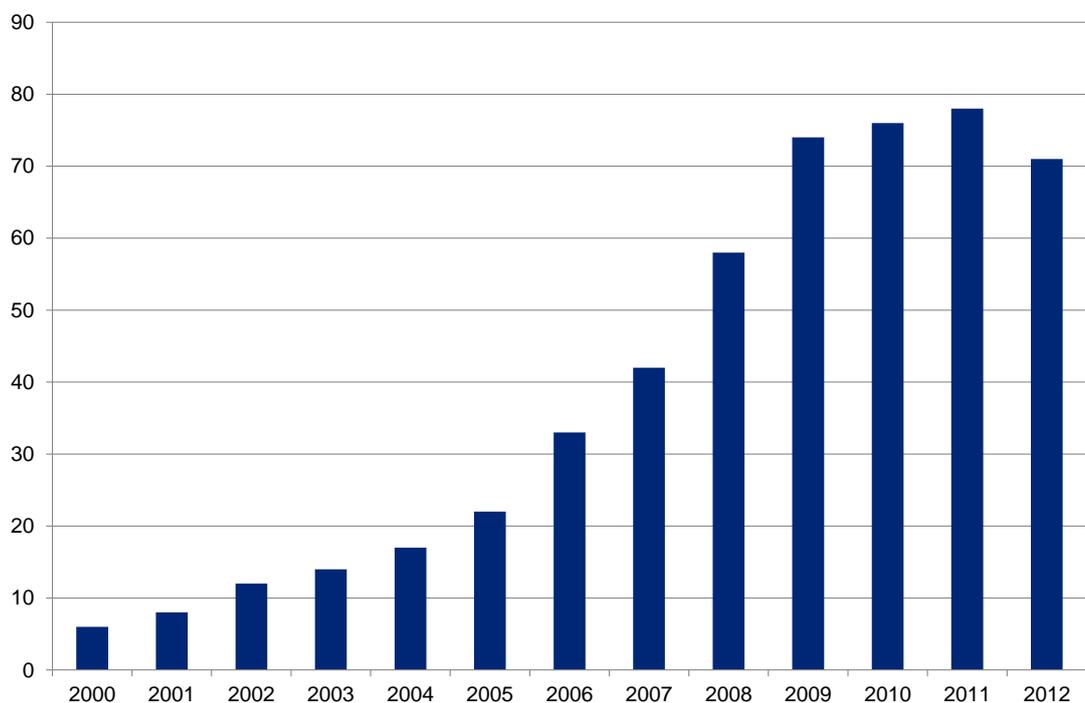
³ The investee firms were de-identified in the returns provided to DAE to ensure confidentiality.

3.2.1 Number of responses

Responses were received for 116 firms, reduced to 106 after adjusting for duplication and foreign-based investee firms.⁴ There was also a lot of variation in the number of individual firm responses across financial years and metrics. (Not all firms were active throughout the period FY2000 to FY2012, so a smaller sample of 49 firms that were all active in the same year was used to estimate private equity's economic contribution in Australia in Chapter 5.⁵)

The breakdown of the number of responses for each financial year is presented below in Chart 3.1. The richest data were for the years from FY2007 to FY2011, consequently much of the following analysis focuses on this five-year period. Reporting for FY2012 had not been completed when the survey was out in the field.

Chart 3.1: Number of firm responses, by year



Source: AVCAL, DAE

Additional information on the data requested and data-gathering tool used for reporting the data can be found in Appendix C and Appendix D.

⁴ Of the 116 firms, 2 firms were duplicated and 8 firms were based overseas. These were excluded, leaving 106 domestic investee firms in the initial sample.

⁵ The reference year chosen was FY2009, to maximise the sample size and to align the data with the most up to date ABS benchmarks.

3.2.2 Financial characteristics of private equity investee firms

Table 3.1 presents selected data from the sample of private equity investee firms.

Table 3.1: Financial Characteristics of private equity investee firms

Financial Year	Average Revenue (\$M)	Average EBITDA (\$M)	Average Employment (\$M)
2001	132	16	750
2002	239	23	1555
2003	224	27	1680
2004	331	41	357
2005	230	35	355
2006	201	20	557
2007	259	41	780
2008	225	37	970
2009	224	35	881
2010	184	31	874
2011	168	32	684

Source: DAE, AVCAL

Revenue

Broadly speaking, the revenue of the average private equity investee firm was larger before the GFC. The revenue of private equity investee firms averaged between \$130 million and \$330 million between FY2001 and FY2011 (Table 3.1). The apparent decline observed towards the end of the period reflects that private equity funds were investing in smaller firms, on average, during this period, while tougher economic conditions may also have crimped the revenue of funds' existing investments.

Firm size

Size is a factor that potentially can influence firm performance; e.g. large firms can take advantage of economies of scale that are not available to smaller firms. Private equity investee firms range in size from small firms to large enterprises; for example, in FY2009 the smallest firm in the sample had annual revenue of \$5 million and the largest turned over \$1.2 billion. Investee firms can be categorised into different sizes, based on annual revenue.^{6,7}

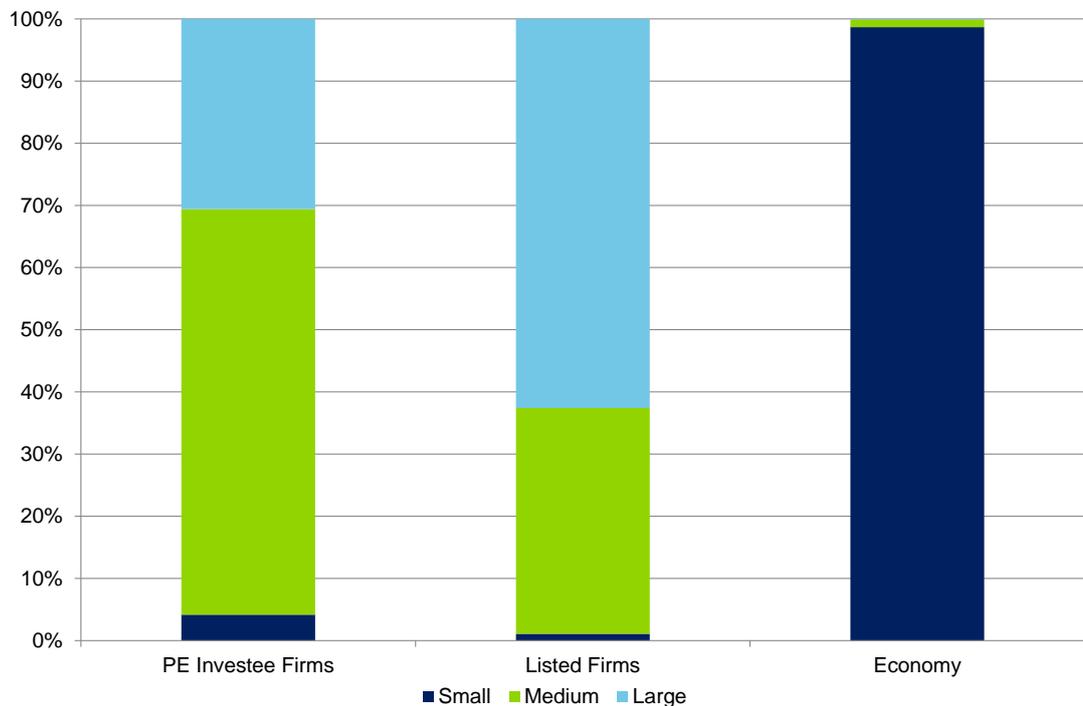
This report defines a small firm as one with annual revenue below \$10m, and a large firm as one with over \$200m in revenue; the remainder by default are classed as medium sized. Chart 3.2 shows the distribution of private equity investee firms by size, compared with firms listed on the ASX (from the IBISWorld database) and the totality of firms throughout the economy. More detailed information can be found in Appendix D.

⁶ There are a range of measures used by central agencies to categorise firms by size, of which revenue is one. The RBA presents an informative discussion on the topic at [http://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/d291d673c4c5aab4ca257a330014dda2/\\$FILE/RBA%20Small%20Business%20An%20economic%20Overview%202012.pdf](http://www.abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/d291d673c4c5aab4ca257a330014dda2/$FILE/RBA%20Small%20Business%20An%20economic%20Overview%202012.pdf)

⁷ FY2009 used as the bench mark, due to the high number responses and the availability of detailed ABS firm level data for that year. Where data for FY2009 are not available, the revenue in the year closest to FY2009 is used as the benchmark.

This size distribution of firms is presented visually in Chart 3.2, clearly showing private equity investee firms and publicly-listed firms clustered in the medium and large categories, in stark contrast to the distribution across the broader economy.

Chart 3.2: Distribution of firms by revenue (FY2009)



Source: AVCAL, ABS 8165.0, IBISWorld

EBITDA

Private equity investee firms’ reported EBITDA per firm fell through the latter half of the sample period. Table 3.1 summarises average EBITDA of the private equity investee firms. The data indicate that private equity managers were investing in smaller firms, and they may also have been affected by the slowdown in the broader economy.

Employment

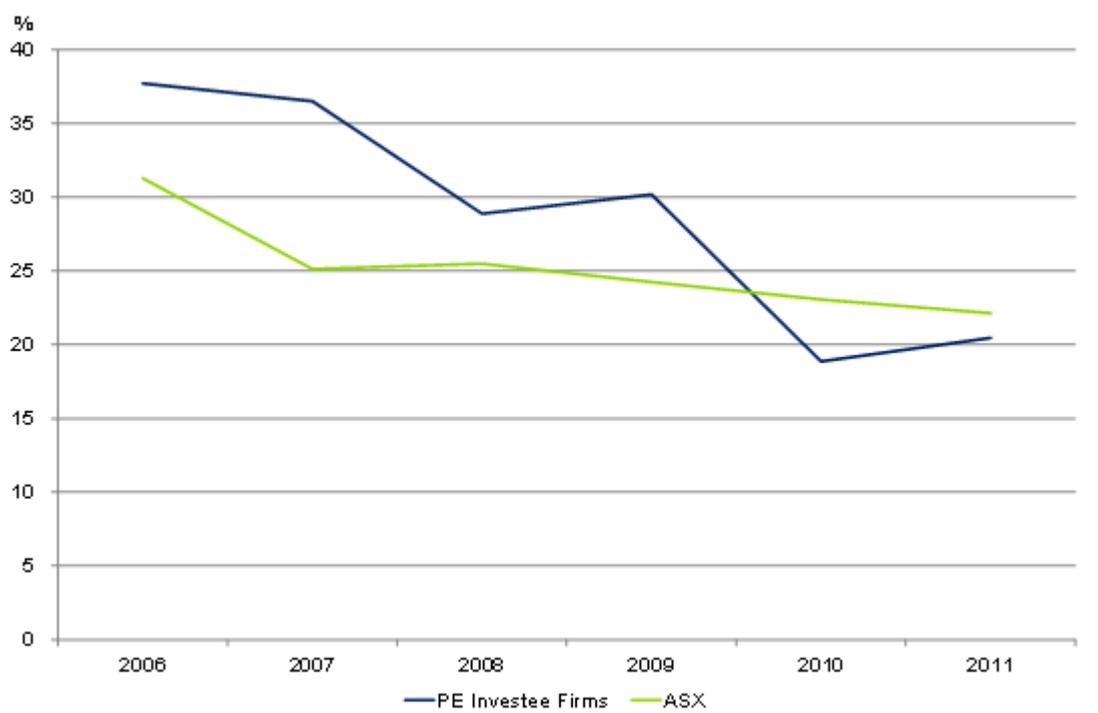
Table 3.1 also summarises average employment of the private equity investee firms in the sample. The average firm employed between 400 and 1,000 full-time equivalent staff in the latter half of the sample. This lends weight to the impression given by the revenue data: mid-sized companies are the favoured investments of the private equity funds.

Leverage and return on assets

Private equity firms are perceived to be highly leveraged. The *average* leverage in the sample was higher than for an industry-weighted average of listed firms in the middle of the last decade, but subsequently converged to the same level.⁸ For example, in FY2009 the average leverage was 30.2%, down from an average of 36.5% in FY2007 (see Chart 3.3).

⁸ The data presented goes to FY2011 since there were too few reports for FY2012 causing sharp deviation from the trend.

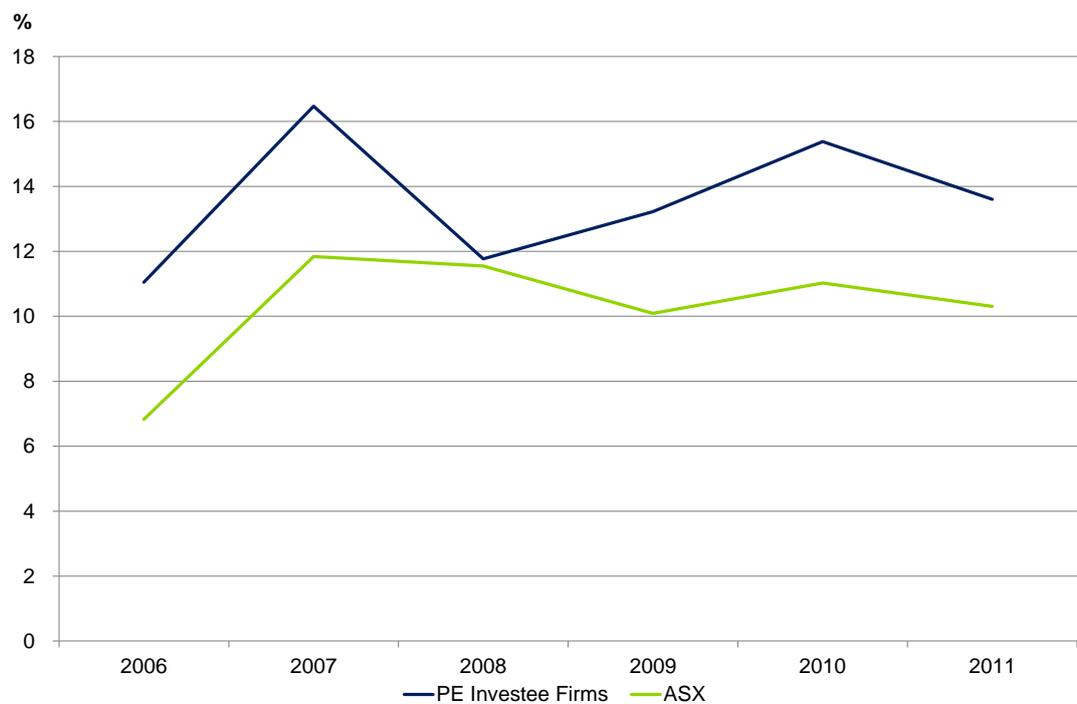
Chart 3.3: Average debt to asset ratio



Source: AVCAL, IBISWorld

The return on assets (ROA), measured by the ratio of EBITDA over total assets, generally was higher for the sample of private equity investee firms than for an average of listed firms (Chart 3.4).

Chart 3.4: Average return on assets



Source: AVCAL, IBISWorld

3.2.3 Industry representation

Private equity investee firms are more prevalent in some industries than others. In part, this reflects restrictions on many funds that prevent them from investing in, for example, mining (but not services to mining) or property development.

The ABS consolidates the 19 ANZSIC industry sectors into seven larger groups for private equity, to facilitate analysis (see Appendix C and ABS 5678.0 - *Venture Capital and Later Stage Private Equity, Australia*). In the AVCAL survey, the largest industry representations came from the Manufacturing & Utilities group and the Trade & Accommodation group. Over time, these two groups were well represented in the survey, although the Transport & Communications group and the Health & Other Services group have become more prominent in recent years. A breakdown of the investee firms into industry categories can be found in the Table 3.2.

Table 3.2: AVCAL and ABS later-stage private equity investees, by industry (five-year average)

Industry	AVCAL sample	ABS population
Agriculture and Mining	4.6%	5.9%
Manufacturing and Utilities	27.9%	29.1%
Construction	2.8%	2.8%
Trade and Accommodation	24.2%	19.4%
Transport and Communications	16.3%	10.1%
Finance and Property	7.7%	18.1%
Health and Other Services	16.6%	14.6%

Source: AVCAL and ABS

The private equity firms captured in the survey sample have an industry distribution that closely resembles the distribution of firms in the total private equity investee population as measured by the ABS – on this basis, it is considered a representative sample.

Figure 3.1: iNova Case Study

iNova Pharmaceuticals (iNova) is a business that was formed following the sale of the operations of 3M Pharmaceuticals in Australasia, Asia and Sub-Saharan Africa by 3M in late 2006. The business owned and marketed a range of prescription and over the counter medicines in therapeutic areas such as weight loss, cardiology, pain, respiratory, throat, and cough.

At the time two Australian private equity firms, Ironbridge and Archer Capital, identified the Asian business opportunity as an attractive one. Being familiar with the business and its management team, they knew that the business was now non-core to its current owner. They saw the opportunity to reinvigorate and invest in 3M Pharmaceuticals to turn it into a well-resourced, standalone regional pharmaceutical company.

Given the size of the potential transaction, the two local private equity firms joined forces in their efforts to secure this asset. Following a competitive sale process, they emerged as the new owners of the re-branded iNova in December 2006. Management invested alongside the two private equity firms and more than 20 senior managers became shareholders.

The strategy for growth and value creation for iNova was formed during due diligence and refined during the first year of ownership. The business had not had a growth mandate prior to private equity ownership.

One of the first steps by Archer Capital and Ironbridge was to change reporting lines, so as to create a co-ordinated regional pharmaceutical-focussed company with its head office located in Sydney.

They hired a very experienced COO to start a business development function and to create a product pipeline. A new CFO was also hired to set the business and its systems up as a standalone, scalable operation.

The size of the prescription sales force was doubled in the first 6 months of ownership - for a business previously operating under a headcount freeze, this was a game-changer for existing product sale growth. Further expansion of iNova's investment in its field sales force continued in subsequent years, and over time additional senior experienced management from the pharmaceutical sector was added.

Under private equity ownership, significant in-house operational expertise was also applied to projects, particularly around the company's supply chain. This delivered major efficiency gains. This project ultimately saw the production element of iNova's supply chain transitioned to third party contract manufacturers both in Australia and overseas.

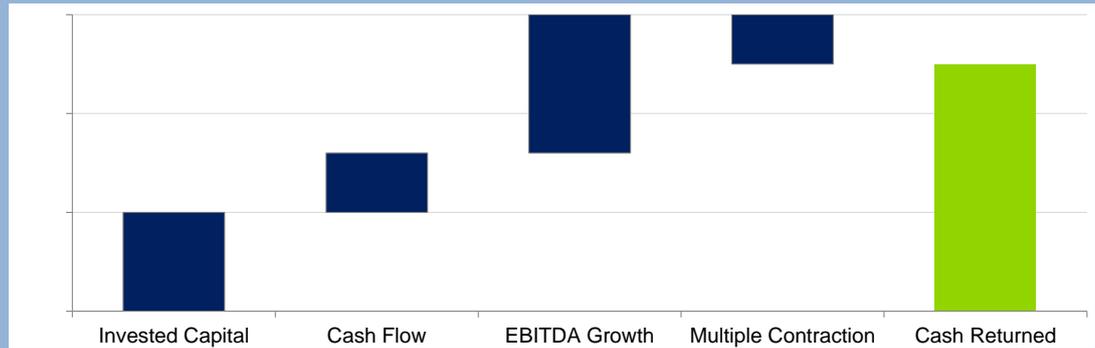
By 2011 iNova's earnings momentum was strong and the outlook into 2012 and beyond was very positive. Free cash flow had enabled the business to pay down the initial acquisition debt to less than 2x EBITDA. Management had driven the performance of the business very well and had continued both to launch new products with significant new investment and build further on the expanded sales force coverage. The business was on plan with its original earnings forecasts, notwithstanding the strong Australian dollar holding back earnings growth on iNova's export business.

Given all these factors, a decision to consider exit options was taken. While an IPO had always been perceived as an attractive option given the lack of genuine specialty pharmaceutical opportunities for investors on the ASX, the listed equity market was not reliable enough for an IPO exit strategy in 2011.

It was therefore decided that any exit strategy should focus on qualified trade buyers and other private equity buyers. Following the initiation of a sale process, Valeant Pharmaceuticals emerged as the leading bidder and acquired the business in December 2011.

During its five year period of ownership by private equity, iNova achieved strong earnings growth primarily driven by significant investment in new products and in sales and marketing (Chart 3.5). By the time of exit, the business had achieved a 60% increase in annual earnings since the initial private equity investment in 2006.

Chart 3.5: Drivers of equity return for iNova



Source: Ironbridge

4 The impact of private equity ownership

4.1 Ownership stake

Survey responses included information on the private equity share of ownership in investee firms by the fund. The initial private equity stake ranged from 15% to 100%, with an average of 66% and a median of 63%. Private equity interests held a stake of 50% or greater in over 70% of investee firms, but the portion of investee firms effectively controlled by private equity interests is higher than this, as indicated by responses to the management questions (see Table 4.1).⁹

The average length of ownership of the investee firms for those that have been disposed of is 48 months. For the firms which are still held by the private equity investors (as at 30 June 2012), the average holding period is slightly longer at 51 months.

The fact that private equity maintains their interest and exposure to the investee firms for four years on average indicates a substantial commitment to add value to the firm.

4.2 The ingredients of transformation

Respondents were asked about the way in which private equity investment had changed the way the investee firm operated. A summary of the responses is presented in Table 4.1.

Table 4.1: Summary of management questions

	Yes	No	No response
Did you introduce new managers?	79	13	14
Did you change operational practices?	83	9	14
Did you inject additional capital?	64	28	14

Source: AVCAL

In general, the private equity managers implemented a number of critical changes during their tenure. In particular, operational changes were made in 90% of the cases and in over 85% of the cases the private equity managers introduced new managers. In almost 70% of the cases the private equity firms injected new capital into the investee firm.

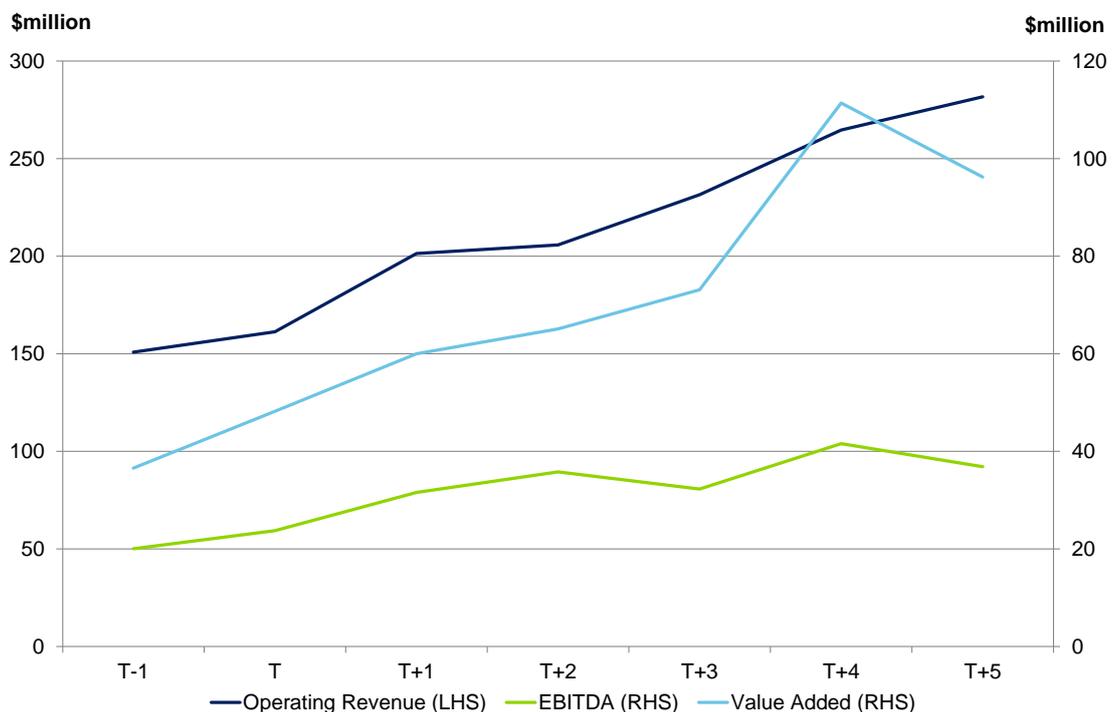
These results suggest that private equity interests had a significant influence on firm performance in the majority of cases. Moreover, the responses indicate that private equity investors add capital and expertise to help the firm grow, and bring a new focus and a sense of urgency to the task, by changing operational practices and management.

⁹ The total private equity stake also could be higher if more than one private equity fund invested in the firm. However, if there were any duplicate returns (e.g. same firm, different fund) only one would have been retained in the sample.

4.3 Growing the business

This section compares the performance of the investee firms immediately prior to and during private equity ownership. Chart 4.1 summarises the impact of private equity ownership on operating revenue, EBITDA and value added prior to and during private equity ownership. The chart shows that in the financial year prior to acquisition (period T-1), average operating revenue was \$151 million. Revenue rose slightly during the financial year in which private equity interests bought into the firm (T), increased sharply in the first full year of private equity investment (T+1) and continued to grow thereafter, reaching about \$282 million by the fifth year of ownership (T+5). The compound annual growth rate (CAGR) of revenue during a typical five-year period of private equity investment was 11.0%.

Chart 4.1: Impact of private equity on selected financial measures



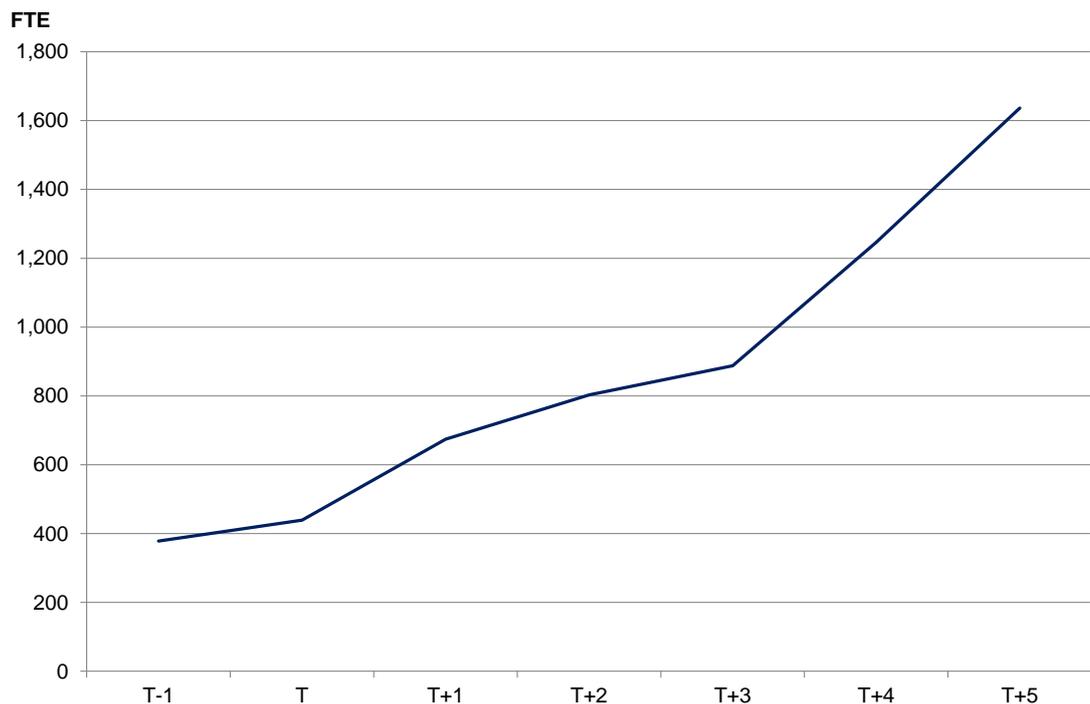
Source: DAE, AVCAL

Private equity investment was also associated with solid growth in profits, as measured by EBITDA. The average EBITDA prior to acquisition was \$20 million, growing to \$37 million after five years, at a CAGR of 10.7%.

The overall value added of the investee firms increased rapidly under private equity stewardship. For the average firm, value added (the sum of EBITDA and wages) was \$37 million prior to acquisition, rising to \$96 million after five years, at a CAGR of 17.5%. This indicates that the wages paid to employees of the investee firms generally experienced strong growth under private equity ownership.

Employment

The data indicates that private equity investment is a positive catalyst for job creation. Over a five-year ownership period, investee firms expanded their workforces at a CAGR of 27.6%. The average workforce per investee firm grew from 378 FTEs to 1,636 FTEs. This helps to explain the substantial increase observed in value added relative to EBITDA; as more people are employed, total wages also increase, thus boosting value added.

Chart 4.2: Impact of private equity on employment

Source: DAE, AVCAL

4.4 Industry performance

Of the sampled private equity investee firms, those in the Transport & Communications group and the Finance & Property group displayed particularly robust performance.

In the Transport & Communications group, average operating revenue grew at a CAGR of 14.9% and value added grew by 32.8% whilst under private equity management. In this category, Information Media & Telecommunications performed particularly well, with average operating revenue growing at a CAGR of 33.7%, EBITDA growing by 41.0% and value added growing by 32.8%.

In the Finance & Property group, average revenue grew by 24.0% and value added grew by 62.2% over five years of private equity management. In this category, Financial & Insurance Services displayed notably robust performance: average operating revenue grew at a CAGR of 26.5%; EBITDA grew by 26.5% and value added grew by 69.4% over the first five years of private equity management.

In terms of employment, the Finance & Property, the Health & Other Services and Trade & Accommodation categories displayed particularly robust performance. They recorded CAGRs of 38.7%, 32.4% and 28.7%. Particularly noteworthy was the Financial & Insurance Services industry and the Retail industry which grew at 50.5% and 45.9% CAGR respectively.

4.5 Assets and debt

For the sampled firms, their level of assets and of debt tended to rise initially. After which assets tends to grow to about \$250 million and net debt stabilises in the \$80-\$100 million range on average (Chart 4.3). This pattern is consistent with the notion that private equity managers initially borrow to cover the costs of restructuring and investing in, for example, new machinery and other assets with which to expand the firm.

Chart 4.3: Impact of private equity on assets and net debt



Source: DAE, AVCAL

Figure 4.1: Lomb Scientific Case Study

Lomb Scientific (Lomb) was a major Sydney based supplier of laboratory consumables, chemicals and instrumentation to the scientific community. Lomb services scientific markets including healthcare, pathology and government throughout Australia and New Zealand and also into Asia.

Anacacia had been looking for companies in the fragmented scientific supplies market, and first visited Lomb in 2007 although the company was at that point in time not looking for a sale. Subsequent to that initial visit, Anacacia held several relationship-building meetings to establish the alignment of Lomb's need for capital and business expertise for management succession and acquisition integration.

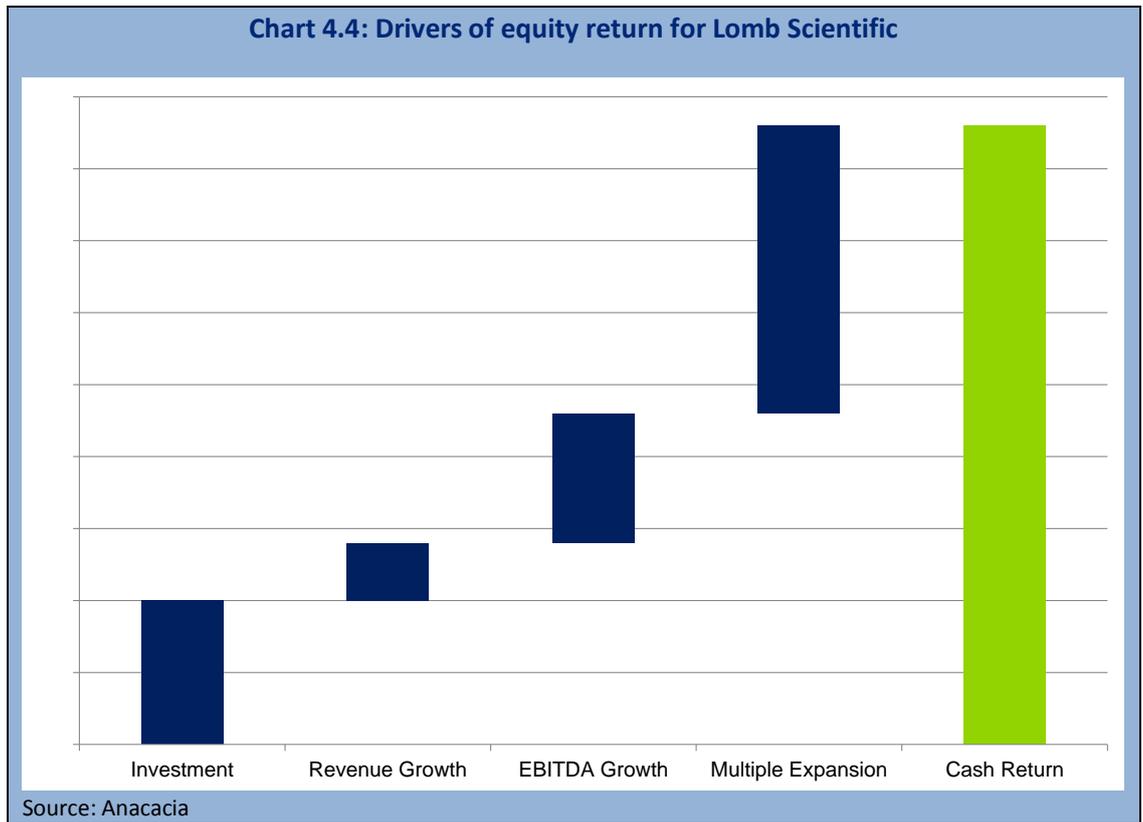
In April 2008 (just prior to the global financial crisis), Anacacia bought into Lomb alongside management and the family of the recently deceased founder. Anacacia took a 40% stake with its \$4 million investment into the company.

Anacacia focused on execution by the board and management. Its contribution included the integration of three recent acquisitions, increasing the focus on company-owned brands and further investments in pushing exports. The company invested further capital to upgrade the safety and operations of the recently acquired manufacturing facilities.

Anacacia introduced a new CEO with aligned interests to the other shareholders and the board. It also led an improvement programme which included enhancing governance processes, developing systems to manage significant price increases and a better alignment of costs to the revenues, as well as processes to integrate previous acquisitions and focussing the business on a specific brand strategy.

Under the management of the new CEO and with Anacacia's backing, the business saw a steady growth in revenue and earnings. Sales grew from \$28 million in 2007 to \$40 million in 2011. Earnings (EBITDA) grew by around 35% per annum and net debt (used for acquisitions) reduced considerably during the time of Anacacia's investment.

The quality and sustainability of the earnings and balance sheet were strong when the business was sold in December 2010 to Thermo Fisher Scientific. Anacacia made 4.3x its money for an internal rate of return of 80% per annum for its investors. A breakdown of the drivers of equity return is provided below in Chart 4.4.



5 The economic contribution of private equity in Australia

Private equity makes a substantial contribution to the Australian economy, through investee firms spread across a wide range of industries. This chapter calculates the size of this contribution based on value-added and employment data obtained from the survey of the private equity investee firms. The methodology to calculate the economic contribution is explained in Appendix E.

5.1 Estimating the economic contribution

The economic contribution of private equity is measured in terms of:

- **value added** which is the contribution to GDP, and includes wages paid to employees and the gross operating surplus generated including taxes less subsidies; and
- **employment** generated measured in full-time equivalent (FTE) jobs.

5.1.1 The sample firms

The economic contribution calculations were based on a representative sample of 49 investee firms, comprising all firms for which a complete set of data was provided in the period FY2007 to FY2011. The ABS records show the population of private equity investee firms between FY2007 and FY2011 varied between 346 and 420, with an average of 387.

Firms in the growth stage tend to be smaller than firms in the turnaround or buyout stages, so it is important to use a representative mix of firms by stage when estimating the size of the economic footprint of private equity. Table 5.1 shows the distribution of sample firms by stage of investment closely matches the distribution of the full population captured in the ABS survey, and hence looks to be a representative sample.

Table 5.1: Number of firms by investment stages (FY2007-11)

	Growth	Turnaround	Buyout
AVCAL survey (49 firms)	26	3	20
- Proportion of sample	53%	6%	41%
ABS survey (387 firms)	206	47	134
- Proportion of sample	53%	12%	35%

Source: ABS 5678.0 and AVCAL

The key assumptions in these calculations are: that the sample is broadly representative of the industry structure of all private equity investee firms; and private equity investors have a controlling interest in the firm. The analyses in Section 3.2.3 and Section 4.1 indicate that there is a reasonable basis to believe that the sample meets these assumptions.

Based on survey responses, in the five-year period ending in FY2011, post-acquisition the average private equity investee company had:

- annual turnover of around \$195 million;
- paid \$42 million in wages annually, to 832 full-time equivalent employees;
- generated \$34 million in EBITDA annually for investors; and
- contributed \$77 million annually in direct value added to the economy.

5.1.2 Direct value added and employment

Based on the average number of private equity investee firms in Australia (387), and the average firm's characteristics, the annual direct contribution of private equity to the Australian economy is estimated to be \$25.0 billion (Table 5.2). Private equity investee firms also provided an estimated 261,817 FTE jobs to the economy.

Table 5.2: Direct economic contribution

Wages (\$ million)	13,912
EBITDA (\$ million)	10,875
Direct value added (\$ million)	25,015
Direct employment (FTE jobs)	261,817

Source: AVCAL, Deloitte Access Economics.

Direct value added of \$25 billion is substantial. If private equity was an industry in its own right, average direct employment for the period under review (FY2007-2011) exceeds the automotive industry in Australia which employs 260,000 people and is more than all the banks in Australia which employ 196,000 people.¹⁰

The total revenue of private equity investee firms is estimated to be around \$63.5 billion, exceeding coal mining (Black and Brown Coal) which had an average turnover of \$55 billion and the general insurance industry which had an average turnover of \$54 billion during FY2007-11.

5.1.3 Indirect contribution

Private equity investee firms purchase goods and services from other firms. These 'other costs' reflect the expenses the firm incurs in running its business and assumes that these services provide business to other firms and thus generates economic activity. Consequently, other firms benefit from the economic activity of private equity investee firms; the value of this is the *indirect* contribution to the economy, (obtained by subtracting EBITDA and wages from revenue).

Different industries require different mixes of inputs; a manufacturer uses a combination of raw materials, labour and equipment to make goods, while the retailer across the street buys finished goods and will employ a markedly different mix of workforce skills and equipment. These difference need to be taken into account when estimating the flow-on effects.

Table 5.3 shows the average 'other costs' for firms in the AVCAL sample in each industry, the total number of firms in the ABS survey of private equity investee firms, and the total costs for the industry calculated as the product of these numbers. For example, the

¹⁰ Based on average annual employment for the period FY2007-011, sourced from the IBISWorld database. Note that the PE firms' employment refers to FTE, while the IBISWorld data refer to total employment.

average annual 'other costs' incurred by manufacturing and utilities firms in the AVCAL sample is \$59.3 million and there are 112 such firms, on average, in the ABS survey. Multiplying these together suggests private equity investee firms in manufacturing and utilities have total 'other costs' of around \$6.6 billion.

Table 5.3: Average 'other costs' and number of firms by industry (FY2007-11)

Industry	No of private equity investee firms	Other costs (\$million)	
		Average	Total
Agriculture and Mining	23	30.0	682.4
Manufacturing and Utilities	112	59.3	6,619.9
Construction	11	157.4	1,692.0
Trade and Accommodation	74	168.3	12,522.4
Transport and Communications	39	232.4	9,017.5
Finance and Property	70	40.4	2,810.3
Health and Other Services	56	105.2	5,912.0

Source: ABS 5678.0 and DAE Calculations

The indirect contribution for each industry is estimated by applying the industry multipliers from the ABS input-output tables to the costs for each industry and adding these up. The indirect contribution of private equity investee firms is estimated to be \$33.7 billion, supporting an additional 250,900 FTE workers (Table 5.4).

Table 5.4: Indirect economic contribution

Indirect Wages paid to employees (\$ million)	18,154
Indirect EBITDA (\$ million)	15,612
Indirect value added (\$ million)	33,767
Indirect employment (FTE jobs)	250,900

Source: AVCAL, Deloitte Access Economics.

5.1.4 Total economic contribution

The combination of the activity and employment generated directly by the investee firms and the flow-on effects to other businesses in the economy is summarised in Table 5.5.

Table 5.5: Total contribution of private equity investee firms

Wages paid to employees (\$ million)	32,066
EBITDA (\$ million)	26,487
Total value added (\$ million)	58,814
Total employment (FTE jobs)	512,717

Source: AVCAL, Deloitte Access Economics.

5.2 Additional contributions of private equity to the economy

The economic contribution presented in Section 5.1 provides an idea of the size of the footprint of private equity in Australia. There are elements of private equity management that are not captured in basic financial measures, that are difficult to measure, but clearly contribute to the firm and thus economy, captured under two broad headings

1) Company development; and

- In the case studies in this report, company development is a key theme. For example, in the case of Bis Industries, the private equity managers optimised the operations of their firms and ensured that they were also a 'green' firm.
- In the cases of Easternwell and iNova, the private equity managers introduced new systems to ensure that the firms became more efficient; systems that should continue to deliver efficiencies after the private equity investors had exited from the firms.

2) Staff development.

- The expertise of the private equity managers also extends beyond company development. In some of the case studies, the private equity managers emphasized safety. For example, Bis Industries continued to build upon its safety program and with it "Zero Harm", i.e. zero injuries, zero environmental and zero equipment damage. Lomb Scientific and Easternwell are other examples where safety systems were upgraded.
- In many of these investee firms, private equity managers also played a critical role attracting new senior management into the firm, e.g. iNova and Easternwell. In some cases, the senior management recruits remained with the firms after the private equity owners sold their interests.

The anecdotal evidence presented lends some support to the international findings presented in Chapter 2; that private equity-owned firms bring strong people management practices and operational management practices. The legacy of these practices is likely to remain after private equity investors exit from the firms.

Conclusion

This study breaks new ground in Australia by using, for the first time, comprehensive data that can be used to estimate the economic contribution of private equity investee firms. Moreover, the survey provides a platform that can be built on to allow more detailed analysis of private equity investee firms and more robust conclusions about the impact of private equity in Australia in the future.

Based on the sample, private equity investee firms make a noteworthy contribution to the economy. Private equity investee firms are present in many sectors of the economy, although they tend to cluster in a few sectors, such as manufacturing, retail trade, ICT and health care. Private equity ownership results in growth in both revenue and employment.

The economic contribution of the private equity investee firms is substantial; these firms directly employ as many as 262,000 FTE workers and generate an estimated \$63.5 billion of revenue each year. In terms of employment, private equity investee firms compare favourably with the automobile industry; and their total revenue exceeds that of the coal industry.

The key challenge for showing the extent of private equity's impact on productivity lies in making comparisons with the alternative; i.e. what would have happened if the private equity owners had not altered the company's trajectory. However, the survey did demonstrate that private equity ownership had profound effects on investee firms, in most cases resulting in changes to the management team and operating practices and injections of capital. Indeed, shedding more light on these aspects of private equity's input is likely to reveal a lot more about its contribution to the economy.

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Appendix A: Literature review – additional material

International examples of estimating private equity effects

Private equity ownership of firms is heterogeneous in nature, affecting firms via multiple channels. In *Do private equity owned firms have better management practices?* Bloom et al (2009) distilled the range of views of how private equity improves firms' performance to:

1. more effective financing improving profitability, without affecting real performance such as productivity of business units;
2. by raising productivity, through more efficient allocation of labour and capital, including shedding; and
3. introducing new managers and practices to improve management.

Raising productivity

Conceptually, it is not easy to disentangle the effects of 2) and 3), although particular studies do come at the problem from different angles. An example of perspective 2) can be found in *Private equity, industry performance and cyclicalities*, where Bernstein et al (2010) show industries where private equity funds have invested have significantly higher growth rates of production (+0.9% p.a.) and value added (+1.1% p.a.) than non-private equity industries – i.e., they are more productive. They use information on production (gross output), value added, labour costs, number of employees, gross capital formation (net asset purchases) and consumption of fixed capital (depreciation) – to estimate private equity performance across 20 countries and 26 industries.

Flexibility of management

Bloom et al (2009) concern themselves with the latter view, using a survey tool developed to look at management practices in detail. They find that private equity-owned firms have strong people management practices and even stronger operational management practices, compared with other firms. Moreover, they find that private equity investors actively target firms where management practices can be improved.

The information gathered by Bloom et al (2009) provides a lot of detail on private equity firms' management practices. However, due to the detailed nature of the survey questions, their approach is one that could not be swiftly replicated in Australia and is better suited to a longer-term plan.

More effective financing

In *Private equity portfolio company performance through the recession* Wilson et al (2011) examine private equity performance through the GFC and recession in the UK, finding that private equity-backed buyouts show stronger performance than a matched sample of other private companies and listed firms. The study used information obtained from company accounts on sales, employment, value added, profits, leverage, working capital and profitability. Additional data on operational risk and regulatory compliance were also used to control for non-financial characteristics of firms.

This provides an insight into 1); given that private equity firms' use of leverage would have put them under additional pressure during the study period, these results suggest that private equity firms' performance is due to more than just the use of leverage.

Appendix B: Methodology – additional material

Private equity involvement can occur at any stage of the lifecycle of the firm. Typically, these stages can be categorised as:

- venture capital, where the investee firm has a concept/product but may not be profitable or even have reliable revenues;
- expansion, which could be early expansion or late, in this category the firm is established and is seeking capital to expand the activities of the firm;
- late, which occurs when the firm is well established and the market in which they have a presence is mature.

The scope of this studies focus on the expansion and late stages.

In this study, a survey was used to estimate the economic contribution of the private equity firms. A total of 116 responses were received, 2 of which were duplicates and 8 were foreign firms, leaving a sample size of 106.

Of the 106 firms in the survey, 74 firms reported EBITDA, wages and/or FTE, and 49 firms reported EBITDA, wages and FTE. To ensure the economic contribution calculation is accurate all the calculations presented in the main text is based upon the sub-sample of 49 firms. That is all the firms which supplied all the required data to calculate a direct economic contribution number.

Of the 49 investee firms, they were then categorised into industries according to the 19 ANZSIC industry division codes. The survey initially also specified GICS as possible categorisation method, thus some concordances were matched according to their economic activities.

Given the sample size, in many of these industries the number of observation was either negligible or nil. Thus the industries were combined using the same categories that the ABS used for their survey of the private equity firms. This resulted in 7 industry groups as mentioned in the main text.

Industry concordance

The industry codes that we use are ANZSIC 2006. Table B.1 provides the concordance of the industry (division) letters to title of the industry.

Table B.1: ANZSIC 2006

Industry (Division) Code	Title
A	Agriculture, Forestry and Fishing
B	Mining
C	Manufacturing
D	Electricity, Gas, Water and Waste Services
E	Construction
F	Wholesale Trade
G	Retail Trade
H	Accommodation and Food Services
I	Transport, Postal and Warehousing
J	Information Media and Telecommunications
K	Financial and Insurance Services
L	Rental, Hiring and Real Estate Services
M	Professional, Scientific and Technical Services
N	Administrative and Support Services
O	Public Administration and Safety
P	Education and Training
Q	Health Care and Social Assistance
R	Arts and Recreation Services
S	Other Services

Source: ABS 1292.0

The survey also had an option to specify a GICS code instead of ANZSIC. The concordance of those codes is provided below:

Table B.2: Concordance of GICS to ANZSIC Codes

ANZSIC Code	GICS Code
Manufacturing	Beverages
Retail trade	Consumer Discretionary
Manufacturing	Consumer Durables & Apparels
Manufacturing	Consumer staples
Other Services	Diversified Consumer Services
Financial and Insurance Services	Diversified Financial Services
Manufacturing	Electrical Equipment
Electricity, gas, water and waste services	Energy
Financial and Insurance Services	Financials excluding (A-REITs)
Manufacturing	Food, Beverages, Tobacco
Health Care and Social Assistance	Health Care
Information Media and Telecommunications	Information Technology
Manufacturing	Industrials
Information Media and Telecommunications	IT Services
Mining	Metals and Mining
Retail trade	Retailing
Information Media and Telecommunications	Telecommunications Services
Other Services	-

Source: ABS 5678.0

Data from IBISWorld uses ANZSIC 1993 to classify their firms. Accordingly to standardise the industry categories to ANZSIC 2006, the following concordance was used (see Table B.3)

Table B.3: Concordance of ANZSIC 1993 to ANZSIC 2006

ANZSIC 1993 Industry Code	Title (ANZSIC 1993)	Concordance to ANZSIC 2006
A	Agriculture, Forestry and Fishing	A
B	Mining	B
C	Manufacturing	C
D	Electricity, Gas and Water Supply	D
E	Construction	E
F	Wholesale Trade	F
G	Retail Trade	G
H	Accommodation, Cafes and Restaurants	H
I	Transport and Storage	I
J	Communication Services	J
K	Finance and Insurance	K
L	Property and Business Services	L
M	Government Administration and Defence	O
N	Education	P
O	Health and Community Services	Q
P	Cultural and Recreational Services	R
Q	Personal and other services	S

Source: ABS 1292.0

Due to the relatively small sample in each of these industries this report also merges the 19 industries in 7 industries as suggested by ABS 5678.0. The concordance is shown Table B.3

Table B.4: Concordance to ANZSIC Codes

ABS Category	Assumed ANZSIC Concordance
Agriculture and Mining	A,B
Manufacturing and Utilities	C,D
Construction	E
Trade and Accommodation	F, G, H
Transport and Communications	I, J
Finance and Property	K, L
Health and Other Services	Q, S

Source: ABS 5678.0

This report also decomposes the sample by revenue to proxy the size of the firm. The purpose of this decomposition is to provide an impression of how representative the sample is compared with the economy and the publicly listed firms. This decomposition was done for FY2009 since this was the final year where the ABS provided a comprehensive revenue decomposition for the firms in the economy. Revenue is the proxy since it was widely reported by the private equity investee firms.

ASX data and calculation

The data for the listed companies were derived from the IBISWorld database. The database contained complete financial data for over 650 companies; the companies were classified according to ANZSIC 1993. The concordance reported in Table B.3 was used to ensure that the data of the listed firm was comparable with the private equity sample (which used ANZSIC 2006). The reporting period was for a financial year.

In calculating the debt to assets ratio of a listed firm “interest bearing debt” was used as the relevant measure of debt and total assets as the measure of asset. This ratio was calculated for each firm for each financial year. An average ratio is then obtained by averaging the ratio for all the companies.

In calculating the debt to assets ratio of a listed firm “interest bearing debt” was used as the relevant measure of debt and total assets as the measure of asset. This ratio was calculated for each firm for each financial year. An average ratio is then obtained by averaging the ratio for all the companies for each financial year.

In calculating the returns on assets of a listed firm EBITDA was used as the relevant measure of returns to asset, this was to ensure that the data is comparable to that of the private equity sample. This ratio was calculated for each firm for each financial year. An average ratio is then obtained by averaging the ratio over for all the companies for each financial year.

Appendix C: Data collection

Table C.1: Data collection tool definitions

DATA REQUESTED	DEFINITIONS
General information	
Name of investee company	Full company name of investee company
Financial year end date	End of investee company financial year
Acquisition date	Date of acquisition of interest in investee company
Final exit date	Date of final exit from investee company
Ownership share acquired	The share of equity held by the investor, or investors (measured as a percentage of total equity) at acquisition date
Industry	GICS or ANZSIC classification Primary activity of investee company, e.g. retail trade
Mandatory data for reporting periods	
Number of months of data	If data are for a period of less than 12 months of financial year, indicate the number of months included
Total employment	Number of employees, in Australia and overseas, excluding self-employed and unpaid family members working in the business (measured as full-time equivalent)
Operating revenue	Value of sales for the reporting period
Operating costs	
Wages	<i>Labour costs, which comprise wages and salaries of employees of the investee firm, paid by employers, as well as other remuneration benefits.</i>
Other costs	<i>Non-labour costs</i>
Net debt	Level of debt <i>less</i> cash and cash equivalents at the end of the reporting period
Total assets	Level of assets at the end of the reporting period
EBITDA	Earnings before interest, tax and depreciation allowance for reporting period
EBT	Earnings before tax
Profit	Total revenue <i>less</i> operating costs, depreciation, interest and tax
Optional data for reporting periods	
Employment outside Australia	Number of employees, excluding self-employed and unpaid family members working in the business (measured as full-time equivalent), employed outside of Australia
Wages outside of Australia	Labour costs, which comprise wages and salaries of employees of the investee firm, paid by employers, as well as other remuneration benefits to employees outside of Australia.
Depreciation & amortisation	The loss in value of assets (physical and non-physical) over time
Net interest	The cost of servicing (interest-burdened) liabilities <i>less</i> revenues generated by interest-bearing assets
Other financial	Value of other non-operational expenses for the reporting period,

costs	such as fees and charges on loans
Tax	Government financial charges and levies on taxpayers
R&D expenditure	Expenditure on research and development
Capital expenditure	Investment in plant, equipment etc
Government subsidies	Total Government subsidies over the reporting period

Table C.2: Screenshot of data tool

PRIVATE EQUITY SURVEY														
Mandatory inputs	Optional inputs		Calculations											
Name of investee company														
FY end date	20/09	eg 30/06												
Acquisition date	30/06/2008	dd/mm/yyyy												
Strategy fully implemented	30/06/2009	dd/mm/yyyy												
Final exit date	30/08/2015	dd/mm/yyyy												
Industry	<Please select>													
Ownership share acquired	100%													
Management strategy	<Please select> Did you introduce new managers to the firm? <Please select> Did you change operational practices at the firm? <Please select> Did you inject additional capital into the firm to help it expand operations (e.g. in addition to buying out previous owners)?													
Data requirements	Optional	Optional	Mandatory	Mandatory	Optional	Optional	Optional	Optional	Optional	Optional	Mandatory	Optional	Optional	Optional
	Year	Year	Pre-acquisition Year	Year of acquisition	Under PE management									
Number of months of data	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Employment														
Total	FTE													
Employment outside of Australia	FTE													
Revenue and costs														
Operating revenue	\$ million													
Operating costs														
Total wages	\$ million													
Wages outside of Australia	\$ million													
Other	\$ million													
Non-operating revenue														
Government subsidies	\$ million													
Other	\$ million													
EBITDA														
Depreciation and amortisation	\$ million													
Other financial costs	\$ million													
Net interest	\$ million													
Earnings before tax	\$ million													
Tax	\$ million													
Profit	\$ million													
Net debt	\$ million													
Total assets	\$ million													
R&D expenditure	\$ million													
Capital expenditure	\$ million													
Summary information														
Debt / Asset ratio	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Turnover / FTE ratio	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Average wage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Appendix D: Survey data summary – additional material

There was a wide variance in the number of responses to key variables, such as earnings and wages (both integral components of value added), for example:

- in FY2009, EBITDA was reported for 67 of 74 firms. Information on employees proved to be more elusive; data on the number of employees and wages paid were provided for 50 firms and 42 firms, respectively; and
- hence, value added (wages + EBITDA) could be calculated for 42 firms from the data provided for FY2009; compared to just 13 firms in FY2006 and 19 firms in FY2012.

Table D.1: Distribution of firms by size of revenue (FY2009)

	Small (<\$10m)	Medium (\$10-\$200m)	Large (>\$200m)	Sample size
PE investee firms	3.9%	61.6%	34.6%	78
Economy wide	98.7%	1.2%	0.1%	2,007,276
Publicly listed	1.1%	36.3%	62.6%	644

Source: AVCAL, IBISWorld, ABS 8165.0

Table D.2: Revenue, Wages data for investee firms

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Revenue	Total	0.7	2.4	2.9	4.7	5.7	8.4	7.8	10.4	13.8	14.6	11.5	9.8	4.5
	Sample Size	6.0	11.0	12.0	16.0	20.0	34.0	37.0	55.0	73.0	71.0	67.0	60.0	26.0
	Average	0.1	0.2	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	High	301.9	680.3	720.3	1,151.6	1,229.7	1,268.5	1,037.6	1,117.2	1,172.3	1,155.9	1,134.2	1,229.2	801.7
	Low	5.0	10.7	13.6	13.9	10.8	13.0	5.9	5.3	5.2	4.6	3.7	7.9	8.6
	Coefficient of Variation	1,092.5	912.4	797.9	977.5	1,106.3	1,197.1	1,074.5	1,206.2	1,197.5	1,165.5	1,154.2	1,277.4	945.5
	Median	69.3	189.4	199.1	255.1	159.4	151.0	168.8	94.6	78.2	104.6	106.8	90.9	144.3
Wages	Total	40.2	208.5	233.4	62.9	176.1	238.8	505.1	719.8	1,369.3	1,683.6	1,409.3	1,431.8	598.3
	Sample Size	2.0	4.0	5.0	4.0	3.0	5.0	13.0	26.0	43.0	42.0	37.0	39.0	19.0
	Average	20.1	52.1	46.7	15.7	58.7	47.8	38.9	27.7	31.8	40.1	38.1	36.7	31.5
	High	39.6	136.5	157.1	46.0	166.5	168.5	169.2	176.7	183.5	192.3	203.3	210.6	96.0
	Low	0.6	4.8	3.5	3.7	4.7	5.2	1.5	0.8	0.8	2.5	1.2	1.6	1.9
	Coefficient of Variation	1.4	1.1	1.4	1.3	1.6	1.4	1.2	1.5	1.2	1.1	1.1	1.1	0.7
	Median	20.1	33.6	26.0	6.6	4.8	21.5	18.1	9.9	16.2	23.3	23.2	24.2	25.3

Source: AVCAL (Note that the figure are in millions of dollars and percentage terms). Coefficient of variation is the standard deviation divided by the average.

Table D.3: EBITDA and Value Added for Investee Firms

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Value Added	Total	78.3	309.0	340.6	92.3	12.3	43.8	999.9	1326.4	2296.9	2712.9	2464.3	2602.1	1082.8
	Sample Size	2.0	4.0	4.0	2.0	1.0	3.0	13.0	25.0	40.0	40.0	37.0	39.0	19.0
	Average	39.1	77.2	85.2	46.1	12.3	14.6	76.9	53.1	57.4	67.8	66.6	66.7	57.0
	High	77.3	187.1	216.2	86.2	12.3	21.0	416.1	515.0	519.3	426.3	505.2	584.6	143.8
	Low	1.0	6.0	6.4	6.1	12.3	8.3	9.8	3.0	3.0	1.6	3.1	2.4	4.3
	Coefficient of Variation	1.4	1.0	1.1	1.2		0.4	1.5	2.0	1.6	1.2	1.4	1.5	0.8
	Median	39.1	58.0	59.0	46.1	12.3	14.5	24.2	17.9	29.1	39.8	39.9	42.6	45.4
EBITDA	Total	60.5	202.3	273.4	516.4	640.3	854.8	1,057.9	1,609.4	1,899.6	2,048.1	1,949.7	2,033.8	602.3
	Sample Size	5.0	10.0	12.0	16.0	18.0	30.0	37.0	51.0	69.0	67.0	65.0	63.0	23.0
	Average	12.1	20.2	22.8	32.3	35.6	28.5	28.6	31.6	27.5	30.6	30.0	32.3	26.2
	High	37.7	50.6	59.1	134.0	147.9	165.9	246.9	338.3	335.8	234.0	301.9	374.0	88.4
	Low	-0.1	1.2	2.2	2.4	3.7	-0.5	-12.9	-1.9	-21.0	-3.1	-7.1	-7.4	-4.0
	Coefficient of Variation	1.3	0.7	0.7	1.0	1.1	1.4	1.6	1.8	1.7	1.2	1.5	1.7	1.0
	Median	4.5	19.6	22.7	23.4	20.2	18.4	13.0	12.2	14.1	19.1	16.2	11.4	17.5

Source: AVCAL (Note that the figure are in millions of dollars and percentage terms). Coefficient of variation is the standard deviation divided by the average.

Table D.4: Debt/Asset Ratio and EBITDA/Asset data for Private Equity Investee Firms

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Debt/Asset Ratio	Average	24.1	45.1	50.7	45.8	51.3	30.9	37.7	36.5	28.9	30.2	18.9	20.5	42.9
	Sample Size	3.0	5.0	6.0	7.0	7.0	12.0	15.0	23.0	36.0	37.0	36.0	35.0	19.0
	High	50.2	71.2	82.2	88.4	108.8	111.5	95.1	87.3	180.2	259.0	80.2	57.0	233.3
	Low	-4.9	20.3	29.6	16.2	28.1	-85.1	-78.9	-68.6	-55.5	-57.9	-61.0	-46.5	-50.8
	Coefficient of Variation	1.1	0.4	0.4	0.5	0.6	1.6	1.0	1.0	1.5	1.8	1.5	1.1	1.2
	Median	27.0	45.6	44.6	41.0	34.2	33.6	44.4	44.6	33.5	30.2	21.1	22.9	40.0
EBITDA/Assets	Average	8.6	11.9	16.4	17.7	22.9	17.3	11.0	16.5	11.8	18.3	15.4	13.6	21.9
	Sample Size	3.0	5.0	6.0	7.0	8.0	12.0	17.0	24.0	36.0	38.0	39.0	37.0	18.0
	High	19.1	17.2	20.8	26.0	46.5	44.2	22.1	58.7	45.3	215.7	47.3	72.2	200.0
	Low	-1.6	3.8	8.3	9.5	7.1	-8.3	-28.7	-12.3	-32.5	-17.4	-4.6	-12.4	-3.2
	Coefficient of Variation	1.2	0.4	0.3	0.4	0.6	0.9	1.1	0.9	1.2	2.0	0.7	1.0	2.1
	Median	8.3	13.3	17.5	18.5	21.1	16.7	14.6	12.1	10.3	11.4	13.1	11.6	14.0

Source: AVCAL (Note that the figure are in millions of dollars and percentage terms). Coefficient of variation is the standard deviation divided by the average.

Table D.5: Number of Private Equity Investee Firms by Industry

	Agriculture and Mining	Manufacturing and Utilities	Construction	Trade and Accommodation	Transport and Communications	Finance and Property	Health and Other Services
2006	27	80	4	82	32	61	40
2007	21	107	8	80	42	74	49
2008	21	131	9	84	43	73	59
2009		114		82	38	69	64
2010	26	105	11	66	42	65	63
2011	23	101	15	60	29	67	46

Source: ABS 5678.0

Table D.6: Distribution of Investee Firms by Revenue

	0-\$25k	\$25k-\$50k	\$50k-\$75k	\$75k-\$100k	\$100k-\$150k	\$150k-\$200k	\$200k-\$500k	\$500k-\$1m	\$1m-\$2m	\$2m-\$5m	\$5m-\$10m	\$10m-\$20m	\$20m-\$50m	\$50m-\$200m	\$200m+
Private Equity Firms	0	0	0	0	0	0	0	0	0	1	2	6	12	30	27
Proportion of total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	2.6%	7.7%	15.4%	38.5%	34.6%
Total Economy	353,260	243,193	186,857	167,014	201,480	138,468	365,986	170,250	101,934	70,090	25,424	13,092	7,781	4,648	1,934
Proportion of total	17.2%	11.9%	9.1%	8.1%	9.8%	6.7%	17.8%	8.3%	5.0%	3.4%	1.2%	0.6%	0.4%	0.2%	0.1%
ASX Firms	5	0	0	0	0	0	0	0	1	0	1	3	15	216	403
Proportion of total	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%	0.5%	2.3%	33.5%	62.6%

Source: AVCAL, IBISWorld, ABS 8165.0

Appendix E: Economic contribution methodology

Economic contribution of private equity

Economic contribution studies are intended to quantify measures such as value added and employment associated with a particular industry or firm, in a historical reference year. The value added and employment generated are measures of the economic contribution by a firm or industry. The estimate of the economic contribution of the industry or firm in a given year generally is not used for direct comparison with other firms or industries; time-series or multiple year data are needed for comparisons, to reduce the risk of unrepresentative data distorting the analysis.

Value added is the value of output (goods and services) generated by the entity's primary factors of production (labour and capital) as measured by the income to those factors of production. Value added is calculated as the sum of labour income, capital income (also known as gross operating surplus) and net taxes on production.

In practice, it is possible to calculate value added by adding:

- **Labour income:** number of FTEs x average wage rate; and
 - Industry-average wage rates from the ABS can be applied; however, it is always preferable to use firm-specific data, since the structure of the typical firm may differ from the actual structure of the firm under study.
- **Capital income:** measured as the earnings before interest, tax, depreciation and amortisation (EBITDA).
- **Tax on production** less subsidies provided for production: taxes are counted in EBITDA, so tax data is not necessary to calculate the economic contribution if EBITDA and wages (or FTEs) is supplied. If tax data is available, it may be useful to show how much tax private equity firms contribute.
- **Employment** is measured by the number of full-time equivalent workers, including management, at a company. Employment may fluctuate over the course of a year; typically, the headcount is done on the last day of the financial year.

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