Innovation and productivity: new evidence from businesses

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Unbroken economic growth delivers dividends

Australia has outpaced US in living standards growth over last 25 years, but not productivity


Source: Penn World Table 9.0 for labour productivity and GDP per capita. For hourly earnings, derived from national accounts and price indices. See Cully (forthcoming) for details.

Notes: Hourly earnings is compensation of employees per hour worked, deflated by CPI.
Australia still a long way from the global frontier

Australian productivity as a proportion of the United States, 1966–2014 (per cent)

After edging up in the 1990s, Australia’s productivity performance relative to the United States has plateaued.

The current gap is equal to 15 years, i.e. in 2014, Australia’s labour productivity level was the same as that of the United States in 1999.

Source: Penn World Table 9.0
Notes: Productivity is GDP per hour worked in constant 2011 $US
Thinking about productivity and the frontier

There are large and persistent productivity differences between businesses.

Different means to raise the national average:

- target growth of firms at the frontier
- raise across the board by promoting innovation
- assist under-performers to lift their performance
- enhance competition to drive out bad performers

Source: OECD, Future of Productivity, 2015
5 examples of new Australian evidence on business performance

1. Who innovates and what is the pay-off?

2. Who creates the most new jobs? And who destroys jobs?

3. Is investing in R&D good for you?

4. Is exporting good for you?

5. How important are ‘gazelles’?
Large businesses are more innovative

Percentage of innovation active firms by firm size, 2015–16

- 200 or more persons
- 20–199 persons
- 5–19 persons
- 0–4 persons

Per cent

Source: ABS cat. no. 8166.0 — Summary of IT Use and Innovation in Australian Business, 2015–16
A quick aside: replicate via the Industry Monitor

Published today: interactive data on industry, innovation, science, resources & business
Innovation improves business performance

Innovative firms perform better on sales, profit, employment and value-added. Those that innovate more frequently show markedly higher results.

**Sales growth and profit growth by frequency of innovation**

<table>
<thead>
<tr>
<th>Sales growth</th>
<th>Profit growth</th>
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</thead>
<tbody>
<tr>
<td>Non Innovator</td>
<td>-$935</td>
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<tr>
<td>Intermittent Innovator</td>
<td>$1,068</td>
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<tr>
<td>Regular Innovator</td>
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<td>Persistent Innovator</td>
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<td>$326</td>
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<td>$1,393</td>
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<td>$54,944</td>
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Source: Australian Innovation System Report 2016
Young SMEs drive job growth

From 2006 to 2011:

- 1.04 million full time equivalent (FTE) jobs were added to the economy
- Young SMEs (aged 0–5 years) added 1.12 million jobs to the economy

This period coincides with the Global Financial Crisis. Magnitudes would differ in other periods. OECD analysis confirms though that young SMEs are consistently the main contributors to job creation.

Levels of employment, job creation and job destruction by firm age and size, 2006–2011

Source: The employment dynamics of Australian entrepreneurship, Office of the Chief Economist Research Paper No. 4/2015
Increasing R&D intensity boosts turnover

Impact of R&D intensity on turnover growth

On average, increasing R&D intensity has a positive impact on turnover growth.

- Firms at the 90th percentile of the growth distribution benefit about 11 times more from increasing R&D intensity than the median firm.
- The analysis does not take into account spillover effects.
- Firms are likely to underinvest in R&D due to market failure – incomplete information and spillover effects. Due to this, there is a role for government intervention.

Source: forthcoming in Australian Innovation System Report 2017
Exporters out-perform non-exporters

Exporters

On average, exporters employ 24 per cent more workers and produce 40 per cent more relative to non-exporters.

Non-exporters

Full-time workers in exporting businesses are over 13 per cent more productive, and receive 11.5 per cent more in wages.

Exporters commit 7.6 per cent more in capital expenditure than non-exporters.

Source: Australian Industry Report 2016
High growth firms are the engine room of growth

High growth firms account for all new jobs and all growth in economic activity

The net contribution of businesses to economic and employment growth, by business age and average annualised growth class, 2004-05 to 2010-11

High growth businesses added $586 billion to the economy.
Nil or negative growth businesses took $397 billion from the economy
Over the period $440 billion was added to the economy.

High growth businesses created 2 million jobs.
Nil or negative growth businesses lost 2.4 million jobs.
Start-ups accounted for 1.2 million new jobs.
Over the period there were (net) 820,000 new jobs created.

Source: Australian Innovation System Report 2016
In summary

Australia’s productivity performance has plateaued relative to the frontier

There are large growth pay-offs to:
- Persistent innovators
- Increasing R&D intensity
- Competing in international markets

High growth firms account for over 100 per cent of all job creation and growth in economic activity. They account for around 12 per cent of employing businesses in Australia.

Policy settings should facilitate the entry and scale-up of high growth firms through:
- Effective financial markets that provide ready access to capital
- Innovation networks that promote collaboration with researchers
- A high quality skilled workforce, strong on STEM, design and interactive skills
- Competition law and regulation that does not favour incumbents over new entrants
Further information

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