

Competition in Australia: Too little of a good thing?

Jim Minifie

Grattan Institute Support

Founding members



Australian Government



BHP

Endowment Supporters

The Myer Foundation
National Australia Bank
Susan McKinnon Foundation

Affiliate Partners

Google
Medibank Private

Senior Affiliates

Maddocks
PwC
McKinsey & Company
The Scanlon Foundation
Wesfarmers

Affiliates

Ashurst
Corrs
Deloitte
GE ANZ
Jemena
Urbis
Westpac

Grattan Institute Report No. 2017-12, December 2017

This report was written by Jim Minifie, Grattan Institute Productivity Growth Program Director, Cameron Chisholm, Senior Associate, and Lucy Percival, Associate.

We would like to thank the members of Grattan Institute's Productivity Growth Program Reference Group for their helpful comments, as well as numerous researchers and officials for their input.

The opinions in this report are those of the authors and do not necessarily represent the views of Grattan Institute's founding members, affiliates, individual board members reference group members or reviewers. Any remaining errors or omissions are the responsibility of the authors.

Grattan Institute is an independent think-tank focused on Australian public policy. Our work is independent, practical and rigorous. We aim to improve policy outcomes by engaging with both decision-makers and the community.

For further information on the Institute's programs, or to join our mailing list, please go to: <http://www.grattan.edu.au/>.

This report may be cited as: Jim Minifie, Cameron Chisholm, and Lucy Percival. (2017). *Competition in Australia: Too little of a good thing?*. Grattan Institute.

ISBN: 978-0-6482307-0-0

All material published or otherwise created by Grattan Institute is licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License

Overview

Competitive pressure is essential to good economic performance. But many are concerned that it is waning. They say large firms are dominating markets, pushing up prices and profits, squeezing suppliers, and slowing growth in wages and productivity. They point to the consolidation of old industries and the rise of new ones dominated by large firms.

Is competitive pressure in Australia weak? Is it waning? How costly to Australia is market power? This report assesses the evidence. It then proposes policies to increase competitive pressure.

Large firms are not unusually dominant in Australia given the size of its economy. They do not have an unusually large share of Australian output and employment. Some large Australian markets are highly concentrated, but few are much more concentrated than in other economies Australia's size. In a modern economy, firms in many sectors have economies of scale or network effects. That is why many sectors in Australia and elsewhere are dominated by a few large firms.

The market shares of Australia's large firms have not changed much lately, on average. Their revenues have not grown faster than GDP. A few large sectors (such as banking) have become more concentrated, while others (such as supermarkets) have become less concentrated. In a few sectors (such as media), once-mighty firms have been disrupted by new, online competitors. Other measures of competitive

pressure have not changed much either: the profitability of firms in Australia has not risen much since 2000 or become more dispersed.

But competition is not uniformly strong across the Australian economy. Firms earn relatively high profits in some sectors where scale economies are strong (including supermarkets, liquor retailing, mobile phone networks, and internet service provision), in some highly regulated sectors (including banking, health insurance, and gambling), and in some some natural-monopoly sectors where competition is inherently weak (including wired telecoms, electricity distribution and transmission, and some airports).

While profit rates suggest that there are pockets of weak competitive pressure, the economic losses are more difficult to assess because they depend on costs, not just profits. When there are just a few major firms, weak competitive pressure can permit costs to creep up, though their costs are usually still lower than those of smaller firms. Consumers probably benefit from larger firms' economies of scale.

What should policymakers do to intensify competitive pressure? Natural-monopoly regulators need to toughen regulation. Competition regulators should continue to focus on protecting competition and preventing the misuse of market power. Governments should seek to intensify competitive pressure by reducing entry barriers, including those imposed by regulation. And they should make it easier for consumers to switch between providers and control their own data.

Table of contents

Overview	3
1 Competitive pressure in the Australian economy	7
2 Is market power in Australia stronger than elsewhere?	13
3 Is market power in Australia growing?	19
4 Does market power boost profits in Australia?	28
5 Does weak competitive pressure cost Australian consumers?	38
6 Keeping the pressure on: what policy makers should do	43
A Supplementary charts	47

List of Figures

1.1	Much of the economy has low entry barriers, is trade-exposed, or is mostly publicly provided	8
1.2	Concentration is higher in sectors with barriers to entry	10
1.3	Many sectors with barriers to entry are concentrated	11
2.1	Most of Australia's large, scale-economy sectors are not unusually concentrated	13
2.2	Banking in Australia is not unusually concentrated	15
2.3	Supermarket retailing in Australia is concentrated	16
2.4	Mobile telecoms is concentrated in most economies	17
3.1	Revenues of large listed firms have not grown faster than revenues of smaller firms	20
3.2	Revenues of large listed firms have not grown faster than GDP	20
3.3	Concentration has fallen in supermarkets, and risen in banking	22
3.4	Concentration has changed little in insurance, and has fallen in petrol retailing	22
3.5	Profitability has not changed much	25
3.6	One measure of firm 'dynamism' has slowed	26
4.1	Profits are higher in sectors with barriers to entry	28
4.2	Super-normal profits are higher in sectors with barriers to entry	29
4.3	Sector returns are highly variable, especially behind barriers to entry	30
4.4	Sectors with barriers to entry earn more than \$16 billion in super-profits	33
4.5	Super profits fade about halfway in a decade	35
4.6	More than a third of the most profitable firms are still the most profitable ten years later	36
4.7	The market expects profits in high-barrier sectors to persist for longer	36
5.1	Mark-ups are higher in sectors with barriers to entry	38
5.2	Mark-ups vary strongly across sectors	39
5.3	The net economic cost of mark-ups is small	40
5.4	Larger firms have higher profit margins	41
5.5	Large supermarkets have higher profit margins	42
A.1	The biggest five banks serve over 80 per cent of the market in most OECD economies	47
A.2	Internet service provision is concentrated in most economies	47

A.3	Health insurance is frequently a concentrated sector	48
A.4	Insurance sectors are generally concentrated in all countries	48
A.5	Fuel wholesale and retail is also typically concentrated	49
A.6	More workers are employed in large firms in higher-income economies	49
A.7	Super-normal profits are relatively small across sectors with low barriers to entry	50

1 Competitive pressure in the Australian economy

Competitive pressure is key to good economic performance. It pushes prices towards costs. It moves resources to their best uses. It can push firms to come up with good ideas. But in recent years, many people around the world have become concerned that competition is not working as it should.

Is competitive intensity too low in Australia, and is it declining? In which sectors do firms with market power earn high profits, and are those profits to the detriment of consumers? This report evaluates the evidence, and proposes policies that can help increase competitive pressure in Australia.

1.1 Long-standing Australian concerns about competition

Competition is even more important in Australia's remote and relatively small economy than in many other economies. Australia has long paid a 'remoteness penalty' of about 10 per cent of GDP. Small, remote economies have lower productivity because they cannot exploit economies of scale and specialisation while maintaining strong competitive pressure.¹

1.2 Renewed global concerns about competition

Around the world, many have expressed concern that competition is no longer working as it should. They worry about consolidation of traditional industries, and the rise of highly profitable tech giants. Market concentration rose in more than two-thirds of US sectors between 1997 and 2012. A third of US corporate revenue is now in

industries in which the top four firms' market share is between a third and two-thirds, up from a quarter in 1997.²

The rise of the tech giants has also prompted concerns about monopoly power. Much of their success is due to innovative products and services, and they have also intensified the competition facing firms in media, retail and other sectors. But their scale can also become an advantage in its own right: 'network effects' can help the firm that hosts the largest number of users, or controls the biggest data sets.³

A range of ills have been linked to the rise of market power. Some are concerned that powerful firms are pushing up prices or squeezing workers,⁴ contributing to a rise in income inequality,⁵ and holding back investment and innovation.⁶

Not all these concerns have been substantiated. For example, most sectors in the US are not so concentrated as to be of concern to competition regulators,⁷ and competition is one of many factors affecting consumer prices, wages, inequality, investment, and innovation. But while findings are still emerging, there is good evidence of some increase in market power in the US, and some evidence of its costs.

1. Dolman et al. (2007); and Battersby (2006).

2. The Economist (2016a). Much of the rise is the result of waves of mergers (Grullon et al. 2016, p. 9).
3. Ezrachi and Stucke (2016); The Economist (2016b); Foroohar (2017); and Sandbu (2017).
4. Autor et al. (2017).
5. Leigh and Triggs (2016).
6. The Economist (2016a); Gutiérrez and Philippon (2017); White House Council of Economic Advisers (2016); and Economic Innovation Group (2017).
7. Shapiro (2017).

Far less has been published about competition in Australia, however. This report assesses evidence on the level, trends and impact of market power on competition in Australia.

1.3 What shapes competition in Australia

This report analyses competition in the **non-tradeable**, privately-provided part of the Australian economy. Any analysis of competition in Australia has to start from an understanding of how firms compete.

Perhaps the most important factor is **economies of scale**: in some sectors, large firms have lower costs than small firms. Those sectors are often served by just a few firms. If scale economies are powerful enough, the market is served by a single firm, a **natural monopoly**.

Heavy regulation also shapes competition. It can add to the costs of doing business in a sector, particularly for smaller firms. It can also restrain competition between firms (for example, by limiting where rivals can locate or when they open), or limit the number of firms directly.

This report uses the term **‘barriers to entry’** for these competition-shaping factors. The term is not precise, though it is widely used.⁸ In sectors marked by such barriers, there may be fewer actual or potential competitors, or weaker competition.

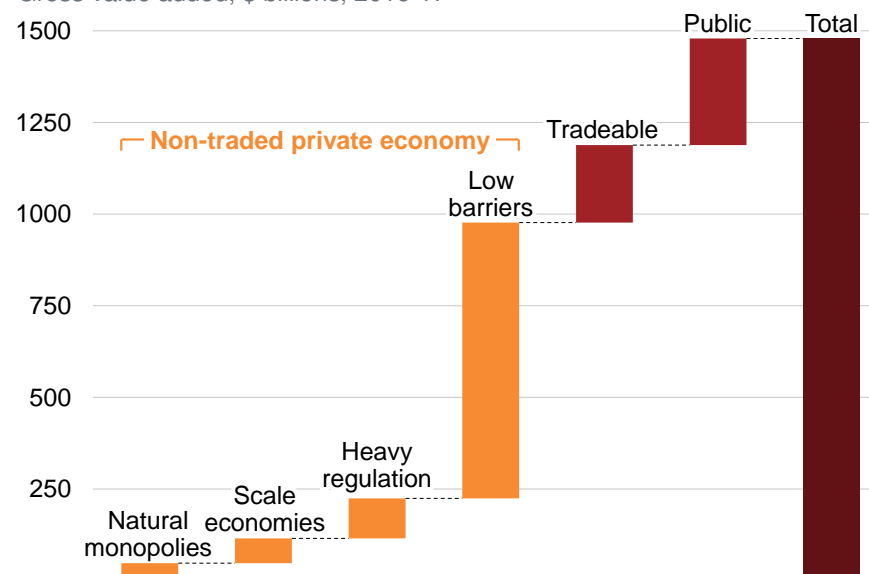
Sectors marked by such ‘barriers’ are quite a small part of the Australian economy (Figure 1.1). They produce about \$230 billion of gross value added, or about 15 per cent of the total. Of this:⁹

8. Demsetz (1982); Carlton (2005); and OECD (2007).

9. The allocation of sectors to groups is largely based on industry characterisations made by a commercial provider of industry data (IBISWorld 2017a; IBISWorld 2017b), supplemented by our own assessment of industry cost structures and regulation, and so is inherently subjective. Total gross value added (‘value added’, elsewhere in the report) excludes ownership of dwellings and is for 2016-17.

Figure 1.1: Much of the economy has low entry barriers, is trade-exposed, or is mostly publicly provided

Gross value added, \$ billions, 2016-17



Notes: Gross value added is based on the National Accounts published by the ABS. Total gross value added differs from gross domestic product because it excludes ownership of dwellings (\$149 billion), and taxes less subsidies on production and imports (\$120 billion). Sector analysis elsewhere in this report uses data published by IBISWorld that omits about 15% of the non-traded private economy, most of which is in low-barrier sectors. There are also some sector-level discrepancies between IBISWorld and the National Accounts.

Source: Grattan analysis of IBISWorld (2017a) and ABS (2017a).

- The **natural-monopoly** sectors, where very strong scale economies typically result in a single large firm serving the market, contribute about \$50 billion in value added. These sectors are often regulated, either through direct controls on prices, or through rules obliging their operators to provide access to users.¹⁰
- The **scale-economy** sectors, where scale economies are strong enough that a few firms may have large market shares and earn high profits, contribute about \$70 billion in value added. These sectors are typically not highly regulated, but competition law regarding mergers, cartels and misuse of market power often shape how they operate.¹¹
- The **heavily regulated** sectors, where regulation constrains competition through outright limits, or by imposing costs that disadvantage small firms, contribute about \$110 billion in value added.

The rest of the economy is much larger, contributing about \$1250 billion in value added, or about 85 per cent of the total. It includes sectors that are less protected by barriers to entry, are exposed to trade, or that are dominated by non-profit or public provision:

- **Low barriers** sectors, where scale economies are smaller compared to the size of the market, and regulation constrains competition less strongly. These sectors contribute more than \$750 billion of value added.

10. Networks for electricity, gas and water supply, for fixed-line telecommunications, rail and road networks, and some ports and airports, are typically natural monopolies.

11. Scale economies may apply over a geographic area, as in retail businesses supported by a logistics hub, or over a network of customers and suppliers, as in internet platforms.

- **Tradeable** sectors, where firms face competition from abroad, so even a highly concentrated domestic market structure typically does not confer much market power. These sectors are out of scope for this report. They contribute about \$210 billion of value added.
- **Public** sectors, where much provision is by not-for-profit organisations or by government. These sectors are also out of scope for this report. They create about \$290 billion of value added.¹²

1.4 Sectors with barriers to entry are highly concentrated

Many sectors with barriers to entry are highly concentrated. The top four firms in those sectors supply more than half the market, on average (Figure 1.2 on the next page). They supply about 70 per cent of the market in sectors with strong economies of scale, and more than 60 per cent of the market in sectors with strong regulation. Firms in natural-monopoly sectors supply 100 per cent of their local markets by definition, though different firms may occupy the monopoly position in different locations. By contrast, the top four firms supply less than 20 per cent of the market in the much larger 'low barriers' group of sectors.

Figure 1.3 on page 11 shows the largest sectors by value added in each sector group, sorted by concentration. The largest **natural-monopoly** sectors are electricity distribution, wired telecom, rail freight transport, airports, and toll roads. Others include water transport terminals, electricity transmission, port operators, and pipeline transport.

While the local market share of the largest firms in these sectors is typically 100 per cent, there are a few sectors in which very large local markets have more than one player, such as container ports.

12. A number of reports have identified opportunities to introduce more choice and competition into these sectors (Harper et al. 2015; Productivity Commission 2017a). They are beyond the scope of this report.

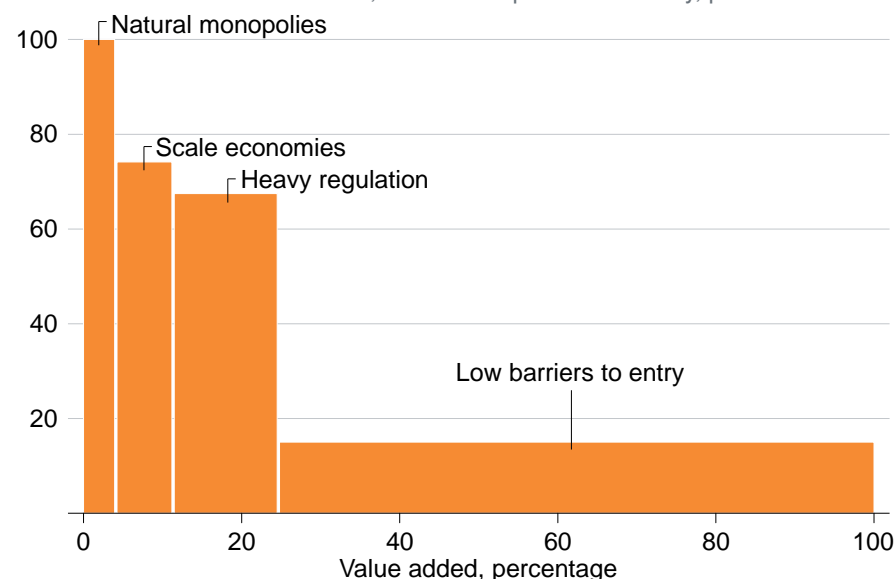
While not shown in Figure 1.3, natural-monopoly sectors are also highly concentrated at a national level.

The largest sectors with **economies of scale** include supermarkets, wireless telecoms, domestic airlines, fuel retailing, and liquor retailing. Many of these sectors are highly concentrated. Smaller sectors in this group include diagnostic imaging, newspaper publishing, internet service provision, pathology services, passenger car rental, delivery services, ready-mixed concrete, internet publishing (which includes online platforms for job and house advertisements), and sports administrative services (which includes the Australian Football League).

The largest **heavily-regulated** sector, by far, is banking, with about \$65 billion in value added. Other large regulated sectors are residential aged care, general insurance, life insurance, taxi & limo transport, and pharmacies. Smaller sectors include casinos, health insurance, free-to-air TV, sports betting, and radio broadcasting. Many of these sectors are highly concentrated.

There are many large **low-barriers-to-entry** sectors. Few of them are concentrated (right chart, Figure 1.3).

Figure 1.2: Concentration is higher in sectors with barriers to entry
Four-firm revenue market share, non-traded private economy, per cent



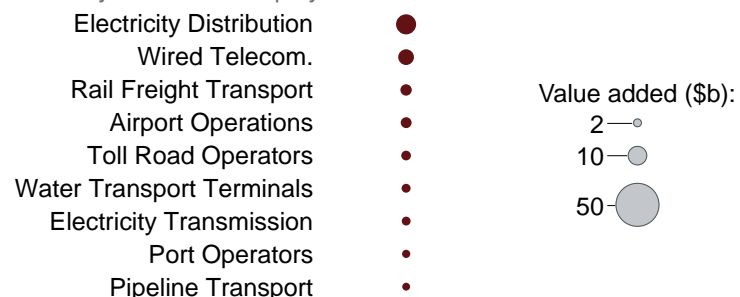
Notes: Natural-monopoly sectors are allocated 100 per cent market share; by definition, natural-monopoly firms have 100 per cent market share in their local markets. Value added excludes sectors with no data – most of these are likely to be low-barrier sectors with low levels of concentration.

Source: Grattan analysis of IBISWorld (2017a).

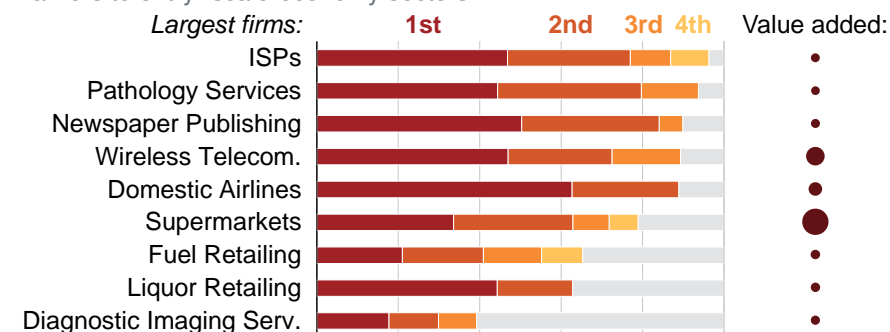
Figure 1.3: Many sectors with barriers to entry are concentrated

Largest sectors in the non-traded private economy by concentration

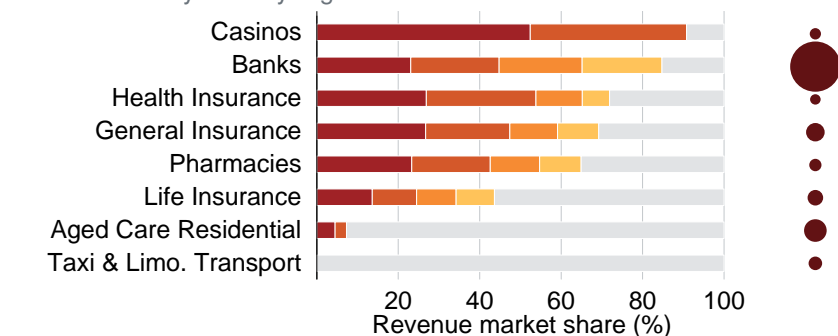
Barriers to entry: natural-monopoly sectors



Barriers to entry: scale-economy sectors

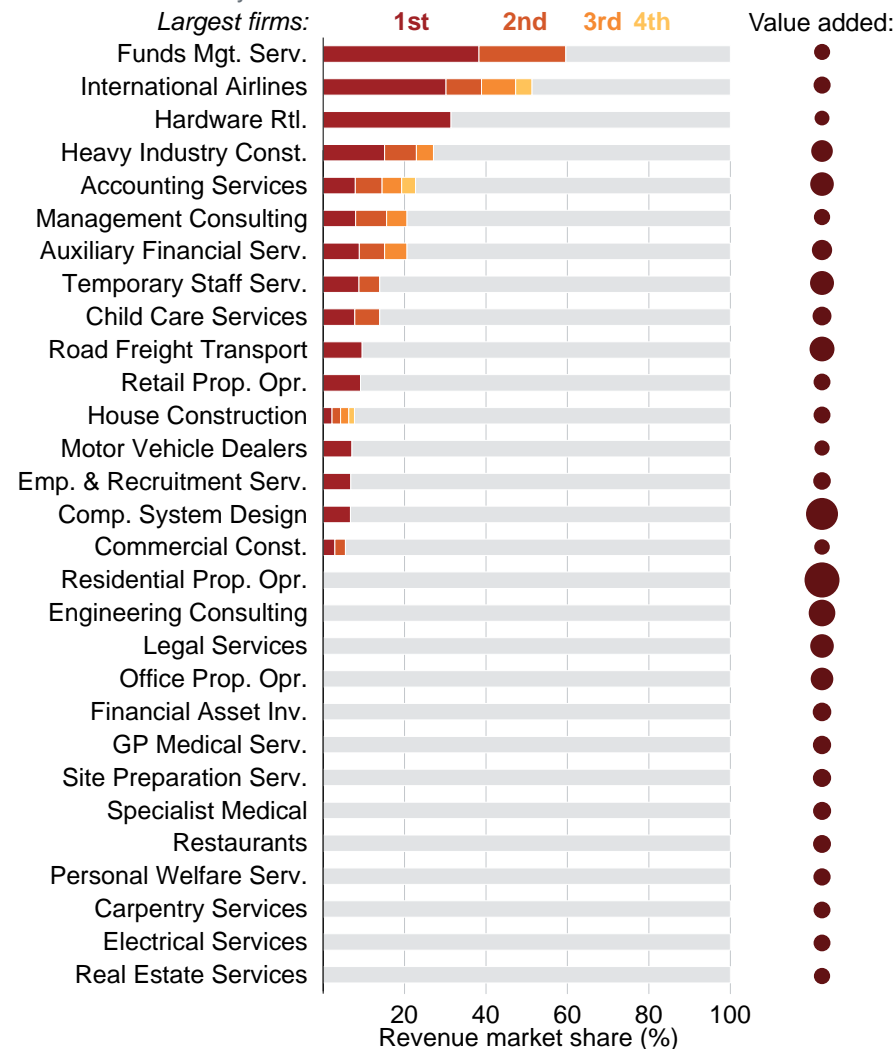


Barriers to entry: heavily-regulated sectors



Note: 'Largest firms' excludes those with less than 5% market share.

Low barriers to entry



Source: Grattan analysis of IBISWorld (2017a).

1.5 What this report does

This report evaluates the evidence on competitive pressure in Australia. Is competitive pressure too low? Is it declining? Do firms in concentrated markets or in sectors protected by barriers to entry earn higher profits? How large might the economic costs be?

Because the report looks right across the non-traded private economy, the level of detail is much lower than would be undertaken in a competition 'market study', which might focus on a single sector, or split it out into smaller markets.¹³

Chapter 2 compares market concentration in some large, concentrated Australian sectors with concentration in those sectors in other economies.

Chapter 3 assesses trends in concentration for some major sectors, as well as available data for others, and reviews other evidence on whether competitive pressure has weakened.

Chapter 4 examines how profitability is affected by market concentration and barriers to entry.

Chapter 5 then draws out possible implications for the overall economic costs of market power.

Chapter 6 makes recommendations for policy directions that will help to increase competitive pressure.

13. For example: ACCC (2017a) and ACCC (2017b).

2 Is market power in Australia stronger than elsewhere?

Australia is often said to be an economy dominated by duopolies and oligopolies.¹⁴ And there is concern that Australia has more highly concentrated industries than other countries.¹⁵

‘In every sector of the Australian economy we have an effective duopoly or oligopoly at work.’

– Macrobusiness (2013)

‘Girt by sea, Australia has proved a breeding ground for monopolies, or oligopolies . . . It’s hard to turn around without seeing the corporate logo of some oligopolist. No wonder we Australians so often feel like we’re getting ripped off, either paying more than we should in a truly competitive market or simply not getting the service that we deserve.’

– Jessica Irvine (2011)

This chapter compares the market shares of large firms in some large concentrated sectors in Australia to those in other economies. It finds that many of those sectors are concentrated elsewhere, but the supermarket sector is unusually concentrated in Australia.

2.1 Australia’s economy is concentrated, but not unusually so

Most large concentrated sectors are not more concentrated in Australia than they are in other high-income economies of a similar size.

Figure 2.1 compares concentration in the largest highly concentrated sectors in Australia by revenue: banking, supermarkets, mobile telecommunications, internet service provision, fuel wholesale and retail, and general, life and health insurance.¹⁶

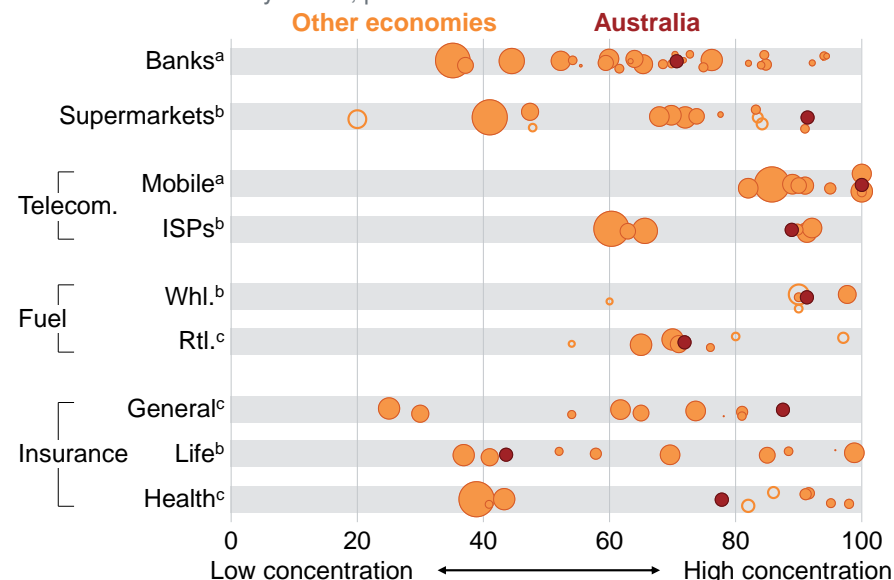
14. Macrobusiness (2017).

15. Ritter (2013).

16. These sectors are in the ‘scale-economies’ or ‘higher-regulation’ sector groups. Comparisons of natural-monopoly sectors are excluded, because they are uniformly highly concentrated, at the local level.

Figure 2.1: Most of Australia’s large, scale-economy sectors are not unusually concentrated

Concentration ratios by sector, per cent



Notes: Bubbles typically represent OECD economies or large US state economies. Bubble size represents population. a: 3-firm; b: 4-firm; c: 5-firm. Unshaded bubbles mean that fewer firms are represented.

Sources: See Figure 2.2, Figure 2.3, Figure 2.4, Figure A.2, Figure A.3, Figure A.4, and Figure A.5.

These sectors are quite highly concentrated in most high-income economies. They also tend to be less concentrated in large economies than in small ones, when measured at the national level. Concentration in most of these large sectors is not much different in Australia than other economies:

- **Banking:** the three-firm market share in Australia is about 70 per cent, which is in the middle of the range for high-income economies. The five-firm share is at the high end of the range for economies of a comparable size.
- **Supermarkets:** the four-firm market share in Australia is around 90 per cent. This is high compared to other high-income countries.
- **Mobile telecommunications:** the three-firm market share in Australia is 100 per cent. High-income countries tend to have only three or four networks, and their three-firm market shares typically exceed 80 per cent.
- **Internet service providers (ISPs):** the four-firm market share in Australia is 89 per cent. This is similar to France, the UK and the Netherlands, but much higher than the US, Japan and Canada, where the combined market share of the four-largest ISPs is about 60 per cent.
- **Fuel wholesale and retail:** in Australia the four-firm fuel wholesaling market share is 91 per cent, and the five-firm fuel retailing market share is 72 per cent. Neither differs much from the market shares in other high-income economies.
- **General insurance:** the five-firm market share in Australia is almost 90 per cent. This is high compared to most other high-income economies, which range from 25 per cent to 81 per cent.
- **Life insurance:** the four-firm market share in Australia is 44 per cent. This is low compared to other high-income economies, which range from about 40 per cent to almost 100 per cent.
- **Health insurance:** the five-firm market share in Australia is 78 per cent. This is slightly lower than other similar-sized countries, such as the Netherlands, and US states, such as Texas, but much higher than the US as a whole, and Germany.

The following sections cover in more detail three of the largest concentrated sectors with barriers to entry: banks, supermarkets, and mobile telecoms.

2.1.1 Banking in Australia is about as concentrated as it is in other economies of similar size

Competition in banking is of concern to many Australians. While the Murray Financial System Inquiry concluded that ‘on balance, the banking sector is competitive’, it recommended that competition across the financial system be monitored. The Government has recently asked the Productivity Commission to review competition in the financial system, including in investment, business and personal banking.¹⁷ The ACCC’s view, by contrast, is that ‘the current oligopoly structure is not vigorously competitive and has not been for some time’.¹⁸

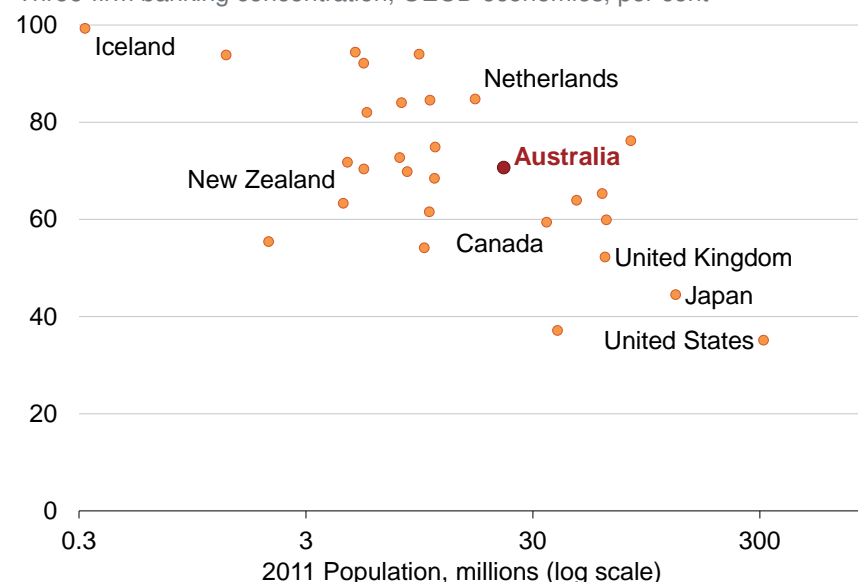
Banking in Australia is not much more concentrated than it is in other high-income economies of about the same size. The market share of the biggest 3 banks is about 70 per cent. That share exceeds 60 per cent in more than two-thirds of OECD countries (Figure 2.2). The market share of the biggest 5 banks is a bit higher than other economies about Australia’s size (Figure A.1 on page 47)

The Reserve Bank of Australia recently concluded that ‘[t]he concentration of the banking system in Australia is not unique internationally but it is at the high end’.¹⁹

The banking sector in economies larger than Australia, such as the US, the UK, France and Japan, tend to be less concentrated, when measured at the national level. Low concentration at the national level in the US is in part the legacy of regulations that once limited multi-state banking. Banking market concentration in the US is much higher when measured at the state level.²⁰

Figure 2.2: Banking in Australia is not unusually concentrated

Three-firm banking concentration, OECD economies, per cent



Note: Assets of three largest banks as a share of assets of all commercial banks, 2007-2011 average.

Source: Grattan analysis of World Bank (2017) and OECD (2017a).

17. Productivity Commission (2017b) and Australian Treasury (2014).

18. ACCC (2017c).

19. Bullock (2017).

20. FDIC (2017), Neely (1994) and Sherter (2009).

2.1.2 Supermarket retailing in Australia is relatively concentrated

Many Australians are concerned about concentration and market power in supermarket retailing. Concentration in supermarket retailing is higher in Australia than in other high-income economies (Figure 2.3).

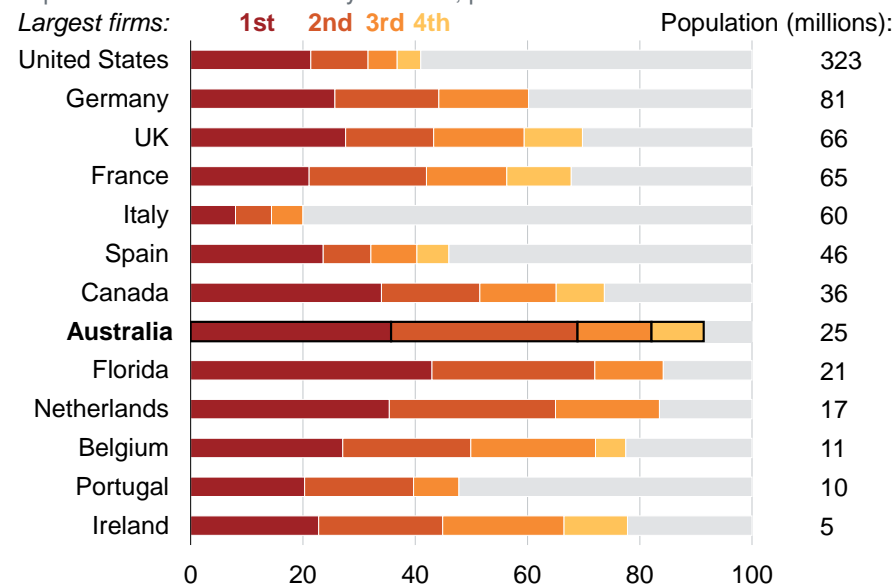
The four largest supermarket chains have around 90 per cent of the market in Australia, and nearly 70 per cent is concentrated in just two firms, Coles (owned by Wesfarmers) and Woolworths. This is much higher than in large, high-income countries such as the US, the UK, France and Germany, where the four-firm market share is 70 per cent or less. Italy and Spain are even less concentrated.

Australia's supermarket concentration is not very different from that in the Netherlands, an economy not much smaller than Australia's. Concentration in the supermarket sector tends to be lower in larger economies when measured at the national level, but may be just as high as Australia's at the state level. Florida and Texas have populations similar to Australia. The market shares of the largest supermarket chains there are similar to the share of Coles and Woolworths in Australia.²¹

Nevertheless, market concentration in Australian supermarkets is clearly higher than in many economies of comparable size.

Figure 2.3: Supermarket retailing in Australia is concentrated

Top four-firm market shares by revenue, per cent



Note: Sorted by population. Fourth firm data unavailable for Italy, Florida, the Netherlands, and Portugal.

Source: Grattan analysis of Statista (2017a), Lööf (2011), Statista (2013a), Pinckaers and Smith (2012), Dutch News (2017), Roy Morgan Australia (2017), UFCW (2010), Statista (2017b), Statista (2013b), Statista (2017c), Statista (2017d) and Peterson (2017).

21. Florida's Publix has 43 per cent market share across the state, and Texas's H-E-B has up to 48 per cent market share in some Texan cities, Trigaux (2015) and O'Donnell (2016).

2.1.3 Mobile telecoms is concentrated in most economies

Australia's mobile telecommunications market concentration has been a source of concern. Voice and data contracts in Australia tend to be more expensive than in the US, perhaps due to relatively weak competitive pressure.²²

The mobile telecoms market is highly concentrated, but it does not seem to be more concentrated in Australia than in other economies. Most European countries have either three or four mobile network operators (MNOs). Australia has three: Telstra, Optus, and Vodafone.²³ The sector tends to be concentrated in most countries, regardless of their size (Figure 2.4), unlike banking and supermarkets.²⁴

2.1.4 Some smaller sectors may be more concentrated in Australia than elsewhere

Figure 2.1 on page 13 shows that internet service provision, insurance, and fuel retailing and wholesaling are not more concentrated in Australia than other economies of about Australia's size. More detailed cross-country analysis for these sectors is included in Appendix A, and their trends in concentration are covered in Chapter 3.

It is beyond the scope of this report to compare every industry in Australia to similar industries in a range of other high-income economies. But Australia does have several other concentrated industries that are worth noting.

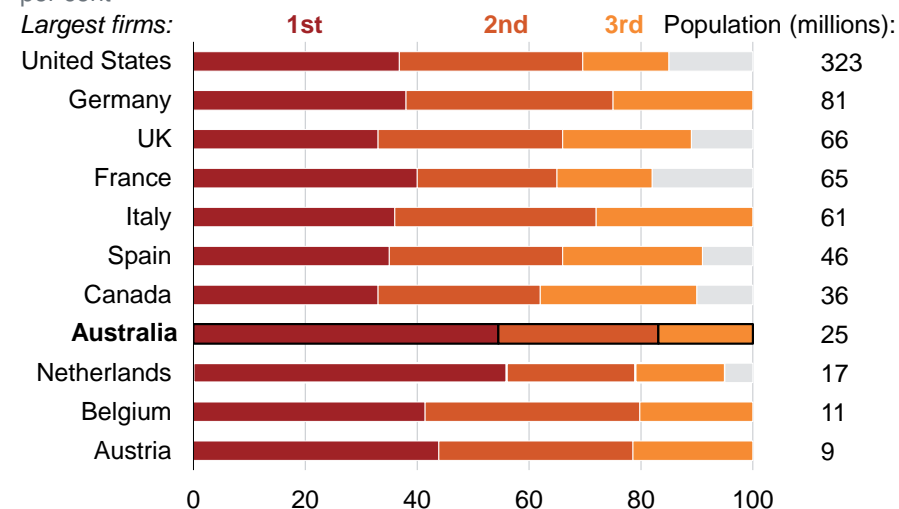
22. Law (2017) and Hatch (2016).

23. In other economies, independent mobile virtual network operators (MVNOs) have up to a 20 per cent share of retail subscriptions. MVNOs purchase telecommunications services wholesale from MNOs. In Australia MVNOs have a 10 per cent market share of retail mobile subscriptions (ACMA 2016; Roer 2015).

24. Internet service provision is also highly concentrated in many economies. The four largest internet service providers have around 90 per cent of customers in Australia, the UK, France, and the Netherlands.

Figure 2.4: Mobile telecoms is concentrated in most economies

Top three-firm market shares by number of subscriptions in network operators, per cent



Note: Sorted by population. Excludes resellers and mobile virtual network operators.

Source: Grattan analysis of FCC (2017), Davies (2017), CRTC (2017) and ACMA (2016).

Print and broadcast media are more highly concentrated in Australia than in other countries. Newspapers, commercial television, and radio are controlled by a small number of players. The recent relaxation of media ownership restrictions is likely to increase concentration across these markets, though probably not within each one. However, traditional media face fierce competition from online media, as the profitability analysis in Chapter 4 shows.²⁵

Liquor retailing in Australia, like fuel retailing, is highly concentrated and increasingly linked to the major supermarkets. Woolworths and Wesfarmers (owner of Coles) have a combined 63 per cent market share. Liquor retailing is less concentrated in the UK, where supermarkets also have about two-thirds of market share, but there are more supermarket companies.²⁶

Domestic aviation in Australia is a duopoly between Qantas (with subsidiary Jetstar), and Virgin (which owns a controlling stake in Tiger Airways). Domestic aviation in other countries, at least at city-pair or airport-pair level, can also be highly concentrated.²⁷

Internet platforms for jobs, real estate, and car sales advertising are dominated by one or two large firms. The cost of hosting additional searches or advertisements is low, and the value to advertisers and users of participating on a platform increases as more join it. These ‘network effects’ can provide strong competitive advantage, though a seemingly dominant firm can also rapidly lose its position.²⁸ These forces operate in Australia much as they do in other markets.

25. Dwyer (2016).

26. IAS (2016).

27. GAO (2014). Major routes in the US, however, may have more providers than the busiest routes in Australia. The Los Angeles – New York route, for example, is served by five airlines that each have material market share, and the Los Angeles – Chicago route is served by three airlines (Analysis of the US Bureau of Transportation Statistics 2017).

28. Charney (2015), Dean and Fraser (2015), Graham (2017) and IBISWorld (2017a).

The range of other sectors that are highly concentrated is often cited as evidence that Australia’s economy is unusually concentrated overall.²⁹ Other sectors that are concentrated in Australia include stevedoring and port services, rail freight, stock exchanges, cardboard manufacturing, diagnostic imaging, and pathology services. We have not examined whether these sectors are more highly concentrated in Australia than elsewhere.

2.2 Large firms do not employ an unusually large proportion of Australians

Large firms play a larger role in high-income economies than they do in low-income economies (Figure A.6 on page 49), perhaps reflecting a greater share in activity and employment of sectors where economies of scale are important. Australia’s large-firm share of employment is not unusual among economies of comparable incomes.

2.3 Summing up

If Australia has a concentration problem, it is shared with many other OECD countries. Most of Australia’s large concentrated sectors are about as concentrated as they are in other economies of Australia’s size. A few sectors, including supermarkets and general insurance, are more concentrated than many peers. Life insurance and health insurance appear to be less concentrated.

Chapter 3 explores whether competitive pressure is waning in Australia.

29. Macrobusiness (2017).

3 Is market power in Australia growing?

There is considerable concern in Australia that concentration is rising. Some believe that mergers and acquisitions are concentrating market power in just a handful of large firms. Others believe that the largest firms are growing faster than their smaller competitors, or that smaller competitors are finding it less viable to challenge industry incumbents.³⁰

Regulators and politicians appear to believe market concentration in Australia has increased.

‘The rise of large corporations in the Australian economy has been substantial. Indeed it seems we have outpaced the US.’

– Rod Sims (2016a), ACCC Chair

‘[There seems to be a] general trend [to greater concentration, and] it seems likely that [it has] played a part in the steady rise in inequality.’

– Andrew Leigh (2016), Shadow Assistant Federal Treasurer

But there is no evidence that competitive pressure in Australia has systematically deteriorated.

Australia’s largest firms have held a steady revenue-share of the economy for more than 20 years. Over the past 20 years the average profitability of firms, and of highly profitable firms, has not changed much.

And there is not much to suggest that major concentrated markets have become more concentrated, on average. A few major sectors have become more concentrated, including banks and (earlier in the 2000s) insurers. Some major sectors have become less concentrated, such as supermarkets and fuel retailing, though they both remain highly

concentrated, and the major supermarkets are now also major fuel retailers.

3.1 The biggest listed firms in the non-traded sector are not a larger share of the ASX or the economy

The fortunes of individual listed firms wax and wane over the years, but the revenue of large ASX-listed firms has not grown faster than the revenue of smaller listed firms (Figure 3.1 on the following page).

Neither has the revenue of Australia’s largest non-mining firms changed much compared to GDP, as seen in Figure 3.2 on the next page. Combined, the revenues of the largest 100 publicly traded Australian firms outside the mining sector have equalled about 30-to-40 per cent of GDP since 1994.³¹

In contrast, in the US the revenue of the Fortune 100 has risen relative to GDP and to the Fortune 500. Mergers and acquisitions, and organic growth (for example, the emergence of large tech firms such as Facebook, Amazon, Google and Apple), have both played a role.³²

3.2 Competitive pressure in many large, concentrated sectors has not waned

Competitive pressure within large, concentrated sectors appears to have changed little over the past 10 years, although publicly available

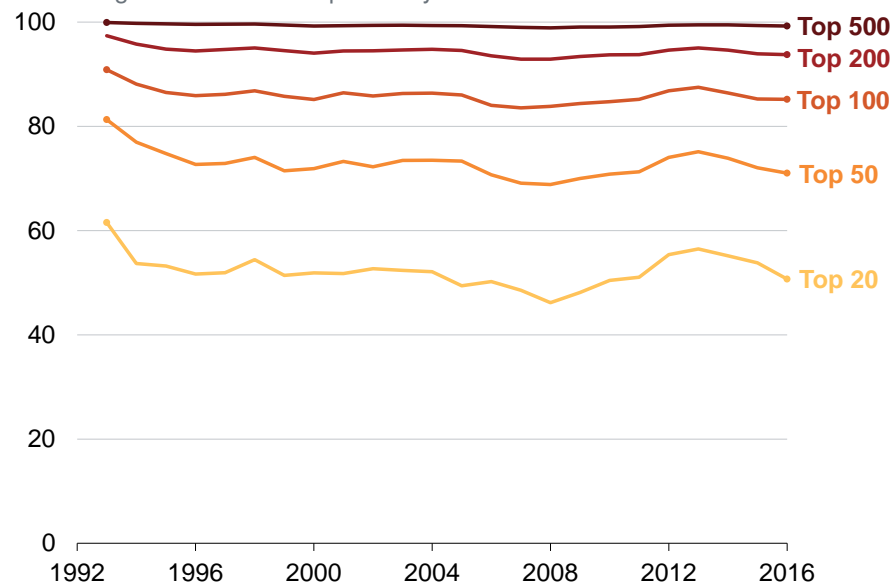
31. The observation of ACCC Chair Rod Sims cited above (Sims 2016a) relied on analysis that appears to have included only firms that were still listed on the ASX at the end of the time period examined, and to have excluded firms that delisted in years prior, leading to an incorrect finding that the revenues of the largest ASX-listed firms have grown faster than GDP over time.

32. The Economist (2016b).

30. Janda (2008); IBISWorld (2015); and Bouris (2015).

Figure 3.1: Revenues of large listed firms have not grown faster than revenues of smaller firms

Percentage of all revenue reported by ASX-listed firms

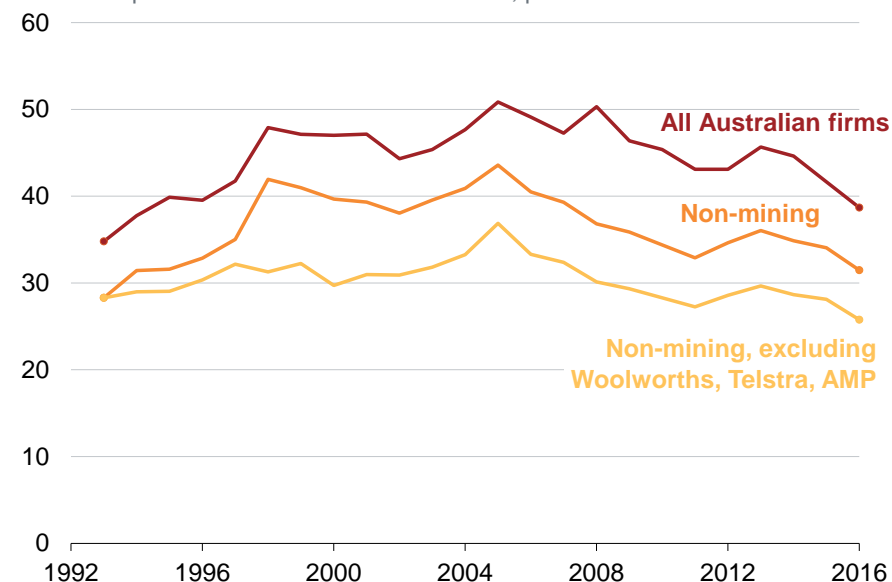


Notes: Top firms are the largest by reported revenue for each year. Excludes Exchange-Traded Funds (ETFs), foreign-headquartered firms, and mining and metals. Includes firms producing tradeables. Nominal values across financial years.

Source: Grattan analysis of Morningstar (2017).

Figure 3.2: Revenues of large listed firms have not grown faster than GDP

Ratio of top 100 listed firms' revenue to GDP, per cent



Notes: Top 100 firms by market capitalisation with positive revenue. Non-mining firms is 100 firms excluding Metals and Mining. Non-mining, excluding Woolworths, Telstra and AMP is 100 firms excluding these three large ASX listings. Most of the early increase is due to the relisting of Woolworths in 1993, and the listing of AMP and Telstra later in the 1990s. Excludes Exchange-Traded Funds (ETFs) and foreign-headquartered firms. Includes firms producing tradeables.

Source: Grattan analysis of Morningstar (2017) and ABS (2016).

data is too limited to analyse every sector in the non-traded private economy.

Concentration in the largest sectors with barriers to entry has not changed much on average. Large banks acquired smaller firms, and their market shares rose as a result. The largest firms in mobile telecommunications, supermarkets, reinsurance, and retail and wholesale fuel have lost market share (Figure 3.3 and Figure 3.4 on the following page).

Some smaller sectors become more concentrated, including meat processing, breweries and soft drinks.³³ One study found preliminary evidence that concentration rose across the whole economy between 2003 and 2015. But the study is difficult to interpret because the sector groups are quite large and it did not identify which sectors became more concentrated, give more weight to larger sectors, or separate non-tradeables and tradeables.³⁴

3.2.1 Banks

The market share of the largest two banks increased around the time of the global financial crisis: Westpac acquired St George bank, and Commonwealth Bank acquired Bankwest from its financially distressed parent bank in the UK.³⁵ The major banks have lost a little market share since then.

3.2.2 Supermarkets

The two large supermarket chains, Coles and Woolworths, have lost market share since 2005. They will probably lose more share. The main recent international entrants, Aldi and Costco, plan to expand

33. Leigh (2016).

34. Bakhtiari (2017).

35. Figure 3.3 shows the merger of Commonwealth and Bankwest in 2012, which is when APRA reporting was integrated.

further. Amazon Fresh and Kaufland are expected to begin operating in Australia soon.³⁶ Consumers are likely to benefit from greater diversity and lower prices.³⁷

3.2.3 Mobile telecommunications

Concentration in mobile telecommunications rose in 2009 when Vodafone, the third-largest network, bought Hutchison, the smallest of the four networks, reducing the number of networks to three. The regulator approved the acquisition on the basis that it was likely to result in a stronger third competitor in the market. Vodafone is one of the largest mobile operators globally.³⁸

When market share of subscribers is measured to include resellers, the share of the three big networks has fallen. Resellers may not increase price competition in Australia much yet, though they do shop around from network for network.

Mobile telecommunications is a relatively new sector, and network technology develops fast, so it is difficult to forecast how the market might evolve. For example, new operators using long-range forms of Wi-Fi might become viable competitors for some current uses of mobile networks. And the networks' planned 5G systems might also come to pose strong competition for some fixed-line internet services.

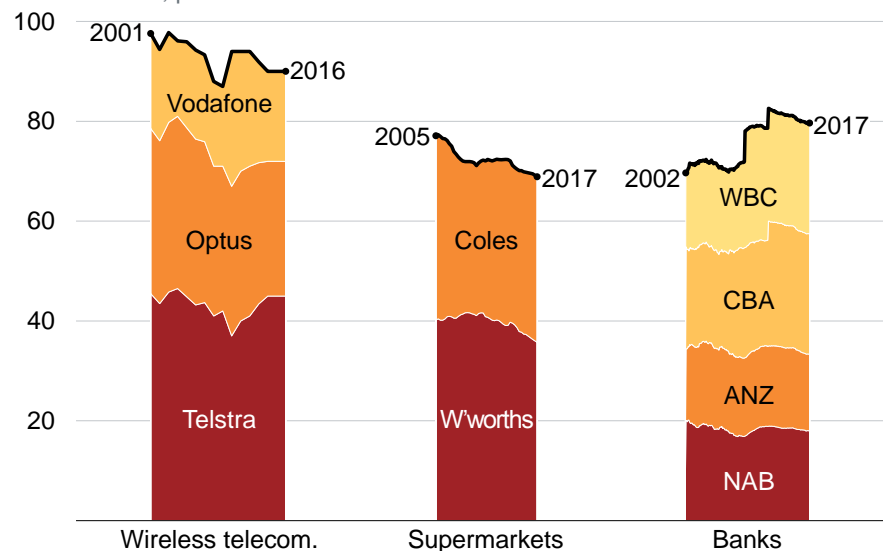
36. Evans (2017); and Forbes (2017).

37. As just one example, the two major supermarkets, which tend to be higher priced than Aldi (Clemons 2017), dropped their prices in response to an Aldi store opening in their vicinity (ACCC 2008a), though more recently they have moved to statewide pricing.

38. ACCC (2009).

Figure 3.3: Concentration has fallen in supermarkets, and risen in banking

Market share, per cent

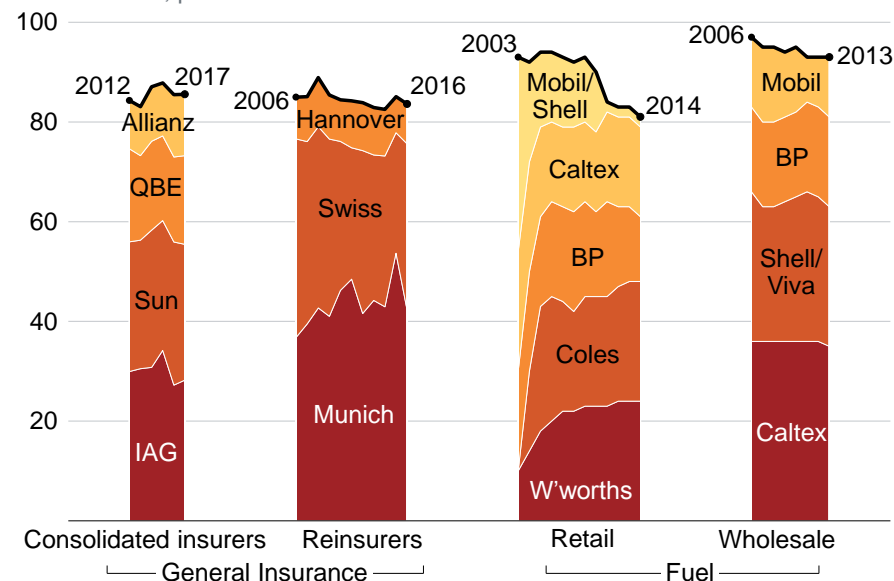


Notes: Wireless telecom.: market share defined by mobile phone subscribers, including resellers. Supermarkets: market share defined by total revenue. Banks: market share defined by gross loans and advances.

Source: Grattan analysis of ACCC (2016a), Roy Morgan (2017) and APRA (2017a).

Figure 3.4: Concentration has changed little in insurance, and has fallen in petrol retailing

Market share, per cent



Notes: Consolidated insurers: market share defined by gross earned premium (QBE adjusted for foreign-earned premium). Reinsurers: market share defined by gross written premium. Fuel retail and wholesale: market share defined by total revenue.

Source: Grattan analysis of APRA (2017b) and ACCC (2014).

3.2.4 Fuel wholesale and retail

Independent firms have gained market share in fuel retailing markets over the past 10 years.³⁹ They also gained a small share in wholesaling. But both markets remain highly concentrated.

The retail petrol industry has changed substantially. Retailers are no longer mostly integrated with refiners. The retail fuel market has become more integrated with supermarkets, an evolution from co-branded service stations accepting shopper-dockets for fuel discounts. At the same time, the market share of independent retailers (including 7-Eleven) has tripled from 6 per cent to 19 per cent.⁴⁰

The wholesale petrol industry has become less dependent on the local refineries since the mid-2000s. Independent wholesalers have increased their import capacity from 3 per cent to 8 per cent.⁴¹

3.2.5 General, life and health insurance

Some evidence suggests the general, life and health insurance sectors have become more concentrated since the early 2000s. But they have been stable in recent years.⁴²

In **general insurance**, APRA reports there was a period of increasing concentration in the early 2000s after HIH Insurance collapsed.⁴³ Recently, both consolidated direct insurance and reinsurance have had steady concentration levels, as shown in Figure 3.3 on the previous page. Reinsurers show no trend over the past decade, and consolidated insurers have had stable concentration levels since 2012.⁴⁴

39. Independent retailers are retailers (owning single or multiple sites) other than supermarket retailers and refiner-wholesalers, ACCC (2014).

40. Ibid.

41. Ibid.

42. APRA (2017b); and APRA (2014).

43. Not shown in Figure 3.3 due to lack of available data. APRA (2014).

44. Consolidated insurer data is not available before 2012.

In **life insurance**, the total number of firms licensed to sell life insurance has fallen from 55 in 1992, to 36 in 2002 and 21 in 2012. This is the result of mergers and foreign insurers withdrawing from the Australian market.⁴⁵ But concentration measured by assets has been relatively stable for the past decade.⁴⁶

In **health insurance**, licence numbers have declined over the past 20 years. There are currently 36 licensed health insurers, in the mid-1990s there were around 50 licensed health insurers.⁴⁷ Since 2011 concentration by insurance policies has been relatively stable in the health insurance sector.

Concentration in the insurance sectors increased in part due to the privatisation of government insurers and demutualisation of mutually owned insurers, some of which later merged with other firms.

The insurance industry also became more concentrated due to APRA's prudential framework changes. Before the collapse of HIH Insurance, 'unsustainable competition' had been driving down premium prices and resulting in erratic returns.⁴⁸ In APRA's judgement, the general insurance sector is now a 'safer, more efficient and more competitive industry'.⁴⁹

3.3 Firm profitability has been steady since the mid-1990s

Another measure of competitive intensity is profit. The average return on equity of large listed Australian firms has been steady since the mid-1990s. Between 1995 and 2001, the equity-weighted average return on equity of the top-200 ASX firms was 11.8 per cent. Between 2002

45. A decline in the number of licences may not affect competition if firms with small market shares exit. APRA (2012).

46. APRA (2017c).

47. PHIAC (2015); and APRA (2017c).

48. APRA (2014, pp. 23–24).

49. Ibid. (p. 23).

Box 1: Mergers, acquisitions and market concentration

Some have pointed to the role of mergers and acquisitions (M&A) in increasing concentration. For example, Leigh and Triggs (2017) remark:

In many industries, Australia's markets are more concentrated than those in comparable countries. We also find some evidence that the problem is getting worse. For example, the number of mergers and acquisitions has nearly tripled since 1992.

Some acquisitions in Australia have increased concentration. In banking, concentration increased in 2008 when the Commonwealth Bank acquired Bankwest (though this increased financial stability), and Westpac acquired St George.^a In mobile telecommunications, concentration increased when Vodafone acquired Hutchison (Three), though this may have resulted in a more viable third competitor to the larger two firms in that market. Mergers have also been an important factor in the increasing concentration in the US, where some analysts argue that anti-trust enforcement has been too weak.^b

But M&A activity does not necessarily increase market power. First, mergers are tightly governed by competition law and must be approved by the ACCC. The effects on competition of a proposed merger are considered by the ACCC.^c

Second, international acquisitions do not affect Australia's non-traded private economy. Rio Tinto's merger with Alcan in 2007 had little effect on competition in Australia.

- a. APRA (2017a).
- b. Shapiro (2017).
- c. ACCC (2008b).
- d. 7-Eleven (2010).
- e. Moldofsky (2005).
- f. ACCC (2003). The tradeables sectors are about the same size as the sum of the high-barriers sectors.
- g. ACCC (2016b).

Third, cross-sector acquisitions may not change market power much and may even decrease it. Wesfarmers' acquisition of Coles did not increase supermarket concentration. 7-Eleven's acquisition of Mobil Oil Australia's retail fuel sites decreased fuel retailing concentration.^d

Fourth, M&A may not increase market concentration in the long term if smaller firms are growing fast enough. Woolworths and Metcash's combined acquisition of parts of Foodland's Australian business in 2005 temporarily boosted concentration, but this was more than offset in subsequent years by Aldi's gain in market share.^e

Fifth, in the tradeables sectors, M&A activity that increases the apparent level of concentration will often not give the enlarged firm more market power. For example, the ACCC found that Xstrata's acquisition of MIM Holdings was 'unlikely to substantially lessen competition', in part because Australia's markets for thermal and coking coal are integrated into global markets.^f

Similarly, transactions in sectors with low barriers to entry do not increase market power much. These sectors are about three times the size of sectors with high barriers to entry. Acquisitions such as Quadrant's acquisitions of Goodlife Health Clubs, Jetts Australia and Fitness First Australia do not reduce competitive intensity much.^g

For these reasons, the level of aggregate M&A provides little guidance to whether markets are becoming more concentrated.

and 2008, the equity-weighted average returns rose to 12.7 per cent. Recently, between 2009 and 2015, the equity-weighted average returns of the top-200 ASX firms has fallen to 11.1 per cent (Figure 3.5).⁵⁰

The US has experienced a widening spread of firm returns over the same period.⁵¹ In the US, some analysts have suggested that rising market concentration played an important role.⁵²

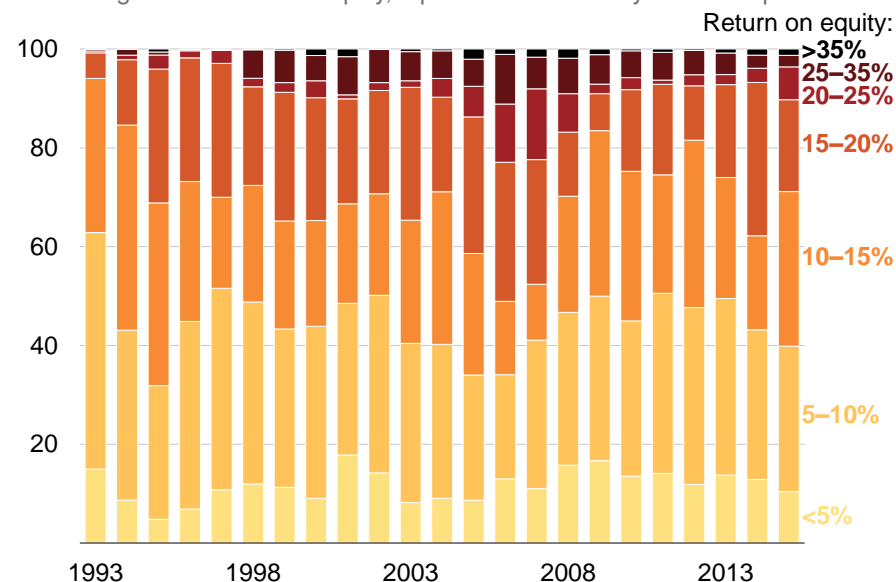
The small increase in the spread of profitability in the mid-2000s is likely to be due to other factors, such as the generally buoyant conditions, and a decline in the costs of debt in more recent years. The rise of ‘superstar firms’ may also have played a role. Superstar firms earn high returns thanks to differentiated intellectual property, or strong network effects.⁵³ The growth of such sectors (which include pharmaceuticals and internet platforms) is a key contributor to the rising spread of profitability in the US.⁵⁴ In turn the rise of these sectors reflect shifts in demand and technology, as well as protections for intellectual property.⁵⁵

In Australia, such sectors are not as large as in the US, but they are big enough to make a difference to the overall spread of returns. For example, in 2015 about half of the most profitable top-200 ASX firms were technology, platform, or otherwise innovative firms.⁵⁶ While these

50. Excludes metals and mining, foreign firms, exchange-traded funds and firms with negative equity (Morningstar 2017).
51. The Economist (2016a) The increasing spread of returns may not persist if returns are weighted by invested capital, or equity.
52. White House Council of Economic Advisers (2016); and Ganapati (2017).
53. UNCTAD (2017); and Autor et al. (2017).
54. Koller et al. (2010, pp. 71–76).
55. Larger firms do not have higher returns. Firm revenue size is not associated with higher return on invested capital (ROIC), but higher revenue growth is associated with higher ROIC. Koller et al. (Ibid.).
56. Ranked by return on equity, 11 of the top 20 were firms in software, internet services, biotechnology, medical technology, professional services or IP services. These firms were: IPH Limited, Altium Limited, OFX Group Limited, CSL Limited,

Figure 3.5: Profitability has not changed much

Percentage of shareholder equity, top 200 listed firms by market capitalisation



Notes: Top 200 is excluding Exchange-Traded Funds (ETFs), foreign-headquartered firms, mining and metals, and firms with negative equity. Includes firms producing tradeables. Financial years.

Source: Grattan analysis of Morningstar (2017).

firms have pricing power, in many cases it is better thought of as a return to innovation or to intellectual property than to a dominant share of a broader market.

3.4 Other measures of competitive pressure

Other metrics, such as net firm creation and investment, are often used as indicators of competitive pressure and business dynamism.⁵⁷

3.4.1 Firm dynamism

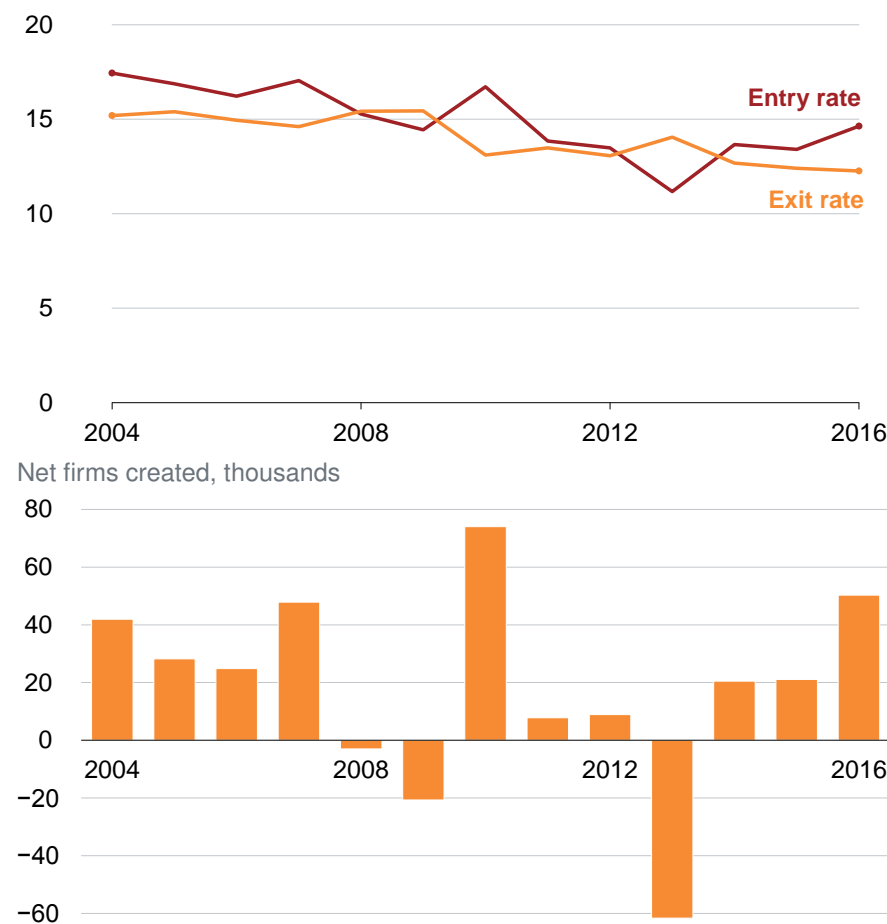
Firm creation has slowed in Australia since at least the mid-2000s (Figure 3.6); in the US there has been a longer-run decline.⁵⁸ Some regard firm creation as a measure of dynamism and competitive pressure. It may also be important to employment growth, because young, fast-growing firms are responsible for most employment growth.⁵⁹

The decline in firm creation may not be a problem. The firm exit rate has also declined overall (according to ABS data shown in Figure 3.6), largely offsetting the fall in firm entry.⁶⁰ In any event, there is not much reason to think the decline in firm creation rates is due to any increase in the market power of large firms.

3.4.2 Investment

Similarly, non-mining investment in Australia is low by historic standards. Some commentators have suggested that incumbent

Figure 3.6: One measure of firm ‘dynamism’ has slowed
Firm creation and destruction as a percentage of incumbent firms



Source: ABS (2017b).

Carsales.com Limited, Cochlear Limited, REA Group Ltd, Speedcast International Limited, Technology One Limited, Monadelphous Group Limited, and Sirtex Medical Limited (Morningstar 2017).

57. White House Council of Economic Advisers (2016); and Leigh and Triggs (2016).

58. White House Council of Economic Advisers (2016) and Furman (2016).

59. Swanepoel and Harrison (2015).

60. Breunig and Wong (2007) and Shane (2010). The exit rate of younger firms may have spiked temporarily around 2011, though the causes are not well understood (Bakhtiari 2017).

oligopolists might not invest much.⁶¹ But low investment does not seem to have had much to do with competitive pressure. Low non-mining investment in Australia has instead been due to two factors: a trend decline in the capital intensity of the economy (thanks to lower capital goods prices and a shift to services); and, more recently, low output growth.⁶²

3.5 Summing up

The balance of evidence suggests that competitive pressure in Australia has not waned since the early 2000s. Large firms in Australia have grown about as fast as small listed firms, on average, and about as fast as GDP, over the past 20 years. Profitability rose briefly through the mid-2000s, but has not changed much over the past 20 years. Some concentrated sectors became more concentrated; others less. Bank concentration has increased due to mergers; wireless telecommunications has become less concentrated, at least including resellers, despite mergers. But over the whole economy, concentration and profits appear remarkably steady.

Nonetheless, many of Australia's concentrated sectors do remain of concern. Further analysis of economy-wide and sector-specific concentration, by government departments and academics with access to more detailed data, would be useful. The next chapter examines what profitability reveals about competitive pressure in Australia's concentrated sectors.

61. The Economist (2016c).

62. Minifie et al. (2017).

4 Does market power boost profits in Australia?

Some large firms in Australia are thought to earn high profits by virtue of their market power. As a regulator and a politician put it:

‘It is not clear that sustained high profits of the large banks (compared internationally) can be traced to exceptional performance. To the contrary, there appears to be an element that reflects the degree to which the competitors of the large banks are handicapped in their ability to effectively contest the market.’

– ACCC (2017c, p. 1)

‘Australia’s current regulatory regime has made it too easy for the Coles and Woolworths duopoly to profit at the expense of producers and consumers.’

– Senator Nick Xenophon (2012, p. 219)

This chapter assesses these concerns quantitatively right across the non-traded economy.

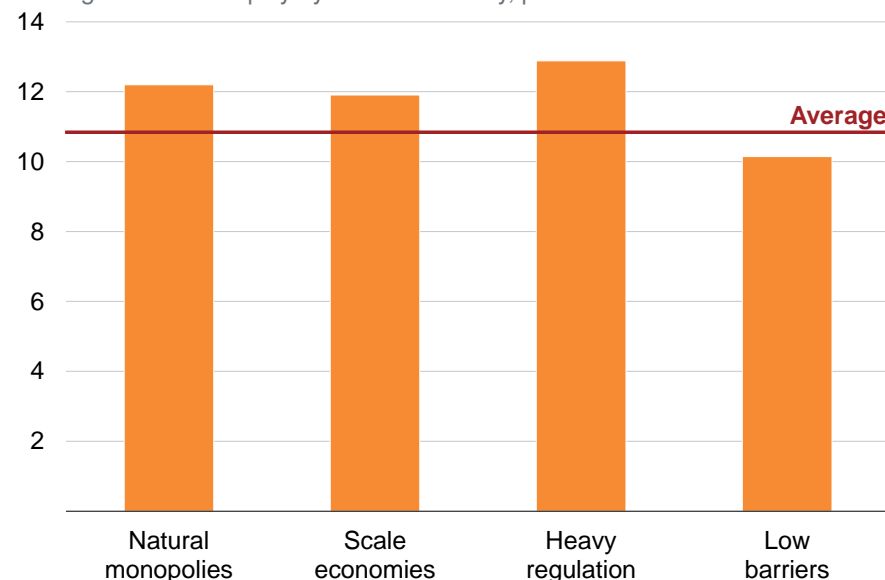
4.1 Profits are higher behind barriers to entry

Profits are higher in Australia behind barriers to entry. Figure 4.1 shows that high-barrier sectors all earn above-average returns, while low-barrier sectors earn below-average returns:

- **natural-monopoly** sectors earn an average return on equity of 12 per cent;
- **scale-economy** sectors also earn about 12 per cent;
- **heavy regulation** earn nearly 13 per cent;
- **low barriers** sectors earn a significantly lower average return of about 10 per cent.

Figure 4.1: Profits are higher in sectors with barriers to entry

Average return on equity by barriers to entry, per cent



Note: Average returns calculated from 2010-11 to 2015-16, weighted by equity, excluding goodwill.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b) and Morningstar (2017).

4.2 A larger share of profits exceeds the cost of equity behind barriers to entry

A firm typically seeks to earn profits that exceed the cost of the equity shareholders have invested in it (see Box 2 on page 31). About 20 per cent of the \$200 billion of profits earned across sectors in the non-traded private economy exceeds that estimate cost of equity are in excess of that estimated return required by shareholders. We call them 'super-normal' profits.

Figure 4.2 breaks down the profits within each group of sectors into those earned at or below the cost of equity ('normal' profits, orange), and those earned above the cost of equity ('super-normal' profits, red).

- More than 40 per cent of total profits in natural-monopoly sectors are above the cost of equity;
- About 50 per cent of total profits in scale-economy sectors are above the cost of equity;
- Under 20 per cent of total profits earned in the heavily regulated sectors are above the cost of equity, even though that group earns the highest average return on equity;⁶³
- Under 20 per cent of total profits earned in the low-barriers sectors exceed the cost of equity.

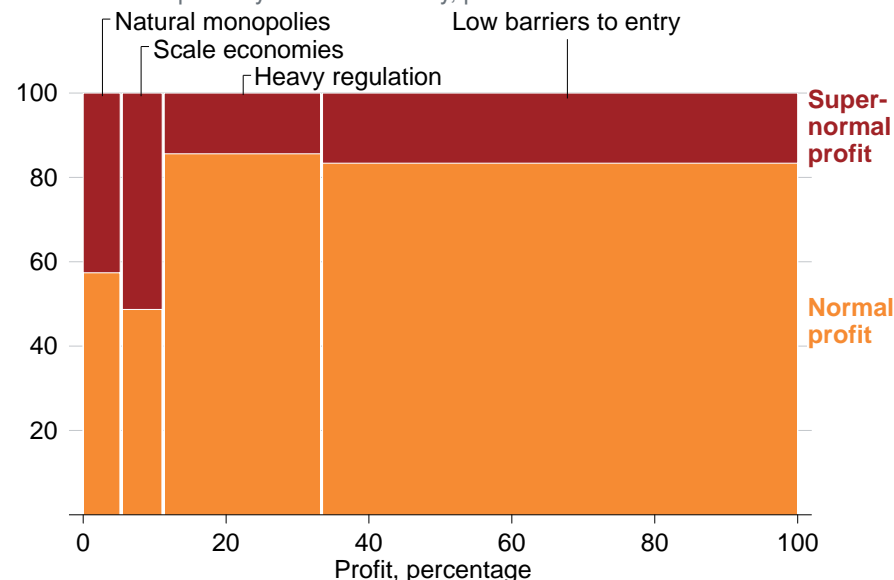
Overall, about 40 per cent of all super-normal profits are earned behind barriers to entry, even though those sectors account for under 30 per cent of total equity.⁶⁴ The other 60 per cent of all super-normal profits are earned in sectors with low barriers to entry, while they account for 70 per cent of total equity.

63. That is partly because heavily-regulated sectors are estimated to have higher investment risks.

64. Economists sometimes refer to super-normal profits as 'economic profits' or 'rents'.

Figure 4.2: Super-normal profits are higher in sectors with barriers to entry

Breakdown of profit by barriers to entry, per cent



Note: Excludes traded sectors and those dominated by government firms. Based on average sector returns calculated from 2010-11 to 2015-16.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b) and Morningstar (2017).

4.3 Profits vary a lot across sectors

Sectors with high barriers to entry earn higher returns on average, but the presence of barriers explains only 7 per cent of the variation in returns.⁶⁵

Similarly, highly concentrated sectors are more profitable, on average. But concentration explains less than 10 per cent of the variation in returns across sectors.⁶⁶

Figure 4.3 shows that there is substantial variation in returns for both high-barrier and low-barrier sectors, regardless of the concentration level.

Returns vary even more widely between individual firms. Operating behind barriers to entry explains only 2 per cent of the variation in average returns over six years at the firm level. Many things affect a firm's returns, including the quality of management and culture, and innovations in products and processes.

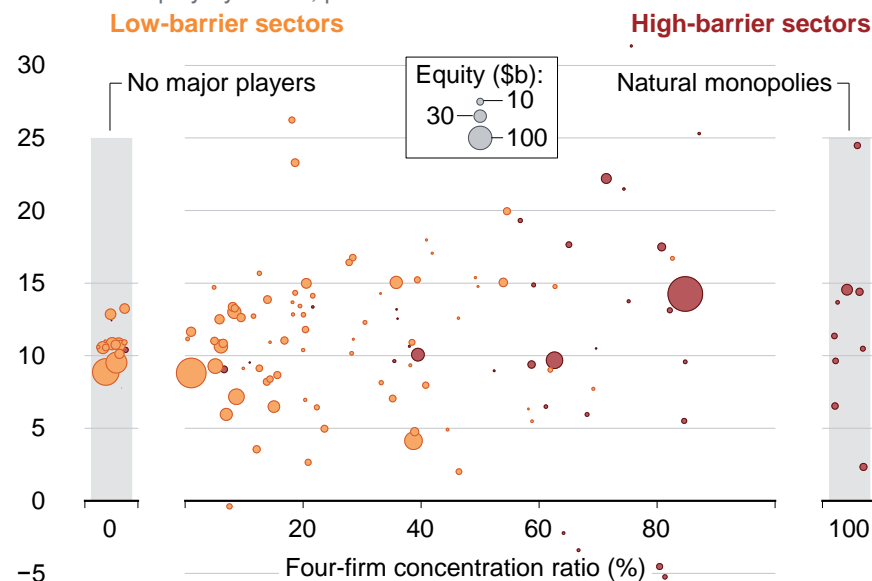
In summary, operating in a concentrated sector with barriers to entry is far from a guarantee of high profitability. But there are a number of sectors behind barriers to entry that are highly profitable, as identified in the following section.

65. Based on the R^2 of an equity-weighted regression of sector returns against indicators of barriers to entry.

66. Concentrated sectors, by definition, are dominated by a few large firms, and so are more likely to display very high or very low returns. For instance, if a dominant firm has an extreme return, this can have a significant impact on the sector-level return, whereas an extreme return from a firm with a small market share will have little impact at the sector level.

Figure 4.3: Sector returns are highly variable, especially behind barriers to entry

Return on equity by sector, per cent



Notes: Returns are based on averages from 2010-11 to 2015-16. Equity excludes goodwill. Four-firm concentration ratio based on sector revenue. Chart excludes traded sectors and those dominated by government firms. Most sectors are 4-digit ANZSIC, but some have been aggregated to 2-digit ANZSIC due to size or data limitations. Natural monopoly firms are considered to have a 100 per cent concentration ratio in their local market.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b) and Morningstar (2017).

Box 2: Profits, market power and the cost of equity

Profit plays an important and legitimate role in society. Protecting and increasing financial value is typically (though not always) prime among an owner's objectives when investing in or running a business.

Profit also plays a critical broader role in the economy by providing signals about what things customers value and how best to produce those things. Profits reward valuable decisions, attract competitors, and direct capital and innovation effort. The owners of firms that get these things right often enjoy a period of high profitability. Customers benefit too, as competing firms make available the things they want most at lower price and in greater volumes and higher quality.

But where profits are high because firms face little competition, they are earned at the expense of customers or suppliers. They are also associated with inefficiencies: the things customers value are curtailed, through high prices, when additional output would be worth more than the cost of the full inputs required to make them available. Identifying whether higher profits are due to innovation and cost reduction or to a lack of competitive pressure is difficult. Profitability is influenced by many factors, including innovation effort and risks that can be difficult to measure. A competitive market should, however, ensure that super-normal profits from a given product-set converge towards a normal level over time. Persistently high returns can suggest that competitive pressure is weak, especially if aligned to other measures

such as high market concentration and a lack of growth, investment and innovation.

This chapter uses the return on equity as its profitability measure. That is, the profit (after tax) that a firm reports, for every dollar of shareholders' equity.

The report also uses a concept called the cost of equity. Roughly speaking, that is an estimate of how much return shareholders require. 'Normal profit' is earned when the return on equity is equal to the cost of equity. Firms create value for shareholders when their profitability exceeds the cost of equity. 'Super-normal' profit (or 'economic' profit) is the difference between total profit and normal profit.^a

The return on equity at the sector level calculated for this report is the weighted average of firm-level returns over a six-year period. Sector returns are calculated at the 4-digit ANZSIC level, or aggregated to the 2-digit level where firm-level data is too sparse. Return on equity is adjusted for goodwill to ensure that the profitability measure is not reduced by acquisitions.^b

The cost of equity is also estimated for each sector, taking into account a measure of investment risk. Risk is defined using estimates of sector *beta* from the *Capital Asset Pricing Model*.^c

- a. When we sum across sectors to yield an estimate of super-normal profit for a group of sectors, we do not provide a discount for sectors that earn below the cost of equity.
- b. That is, goodwill is subtracted from shareholders' equity – this is similar to *return on tangible equity*. Goodwill represents the amount that a firm has paid above the book value of another firm it has acquired.
- c. Estimates of *beta* are sourced from Morningstar (2017). The risk-adjusted cost of equity for each sector is calculated according to the following formula: $R_{RA(i)} = R_N + (\beta_{(i)} - 1)R_{RP}$, where R_N is the cost of equity in a sector with an average market level of risk ($\beta = 1$), $\beta_{(i)}$ is the *CAPM beta* for sector i , and R_{RP} is the market risk premium. This report uses a risk premium of 6%, consistent with Fernandez et al. (2016), and a risk-free rate equal to the average yield on 10-year government bonds from 2011 to 2016, 3.7%; see RBA (2017a) and RBA (2017b). This results in a cost of equity equal to 9.7%.

4.4 Some sectors are much more profitable than others, especially behind barriers

While profitability is highly variable across sectors (Figure 4.3), sectors earning profits well above the cost of equity are more prominent behind barriers to entry. This section explores returns for sectors with barriers to entry, and identifies those which are highly profitable.

About 75 percent of sectors behind barriers to entry earn above the cost of equity (when sectors are weighted by the amount of equity). And 20 per cent earn more than 5 percentage points above the cost of equity. Very high profitability is even more common in natural-monopoly and scale-economy sectors, with half of all equity earning super-normal returns of more than 5 per cent.

Three-quarters of low-barrier sectors also earn above the cost of equity (Figure A.7 in Appendix A). But very high profitability is far less common, with less than 10 per cent of equity earning super-normal returns of more than 5 per cent.

Figure 4.4 on the following page displays the profitability across all sectors with barriers to entry. The width of each bar denotes shareholder equity, while the height represents the average return on equity.⁶⁷ As such, the area of each bar denotes total sector profit.⁶⁸

Similarly to Figure 4.2, sector profit is broken into two components: 'normal' profit (orange), and 'super-normal' profit (red).⁶⁹ Figure 4.4 is separated into the three barriers-to-entry groups, but the scale is consistent across each.

67. Shareholder equity is adjusted to remove goodwill. The most profitable sectors have taller bars, while the largest sectors have wider bars.

68. This is net profit *after* tax.

69. Sectors earning below the cost of equity do not have a red component. Instead, below-normal profits are shaded grey.

Profits in natural-monopoly sectors

Some natural-monopoly sectors are particularly profitable, as shown in the upper left panel of Figure 4.4.⁷⁰

Returns to electricity distribution are nearly double their cost of equity; returns on electricity transmission are lower, but still well above their estimated cost of equity. This may not continue: returns in electricity transmission and distribution are coming down because of tougher regulatory 'determinations'.

Returns to the wired telecommunications sector, dominated by Telstra, have been extraordinarily high. This may be due in large part to the fact that most of the copper telecoms network was built long ago, and so its book value is likely to be substantially below its replacement value, while the regulated pricing was determined until recently with reference to an estimate of the full replacement cost of the network.⁷¹ Looking ahead, the fixed-line telecommunications is progressively shifting to the NBN, radically reshaping the industry.

Returns to port and water transport terminal operators are, on average, close to the cost of equity, although some port operators are earning substantially higher returns.

Nearly half of returns earned by airport operators from 2010-11 to 2015-16 were super-normal profits.

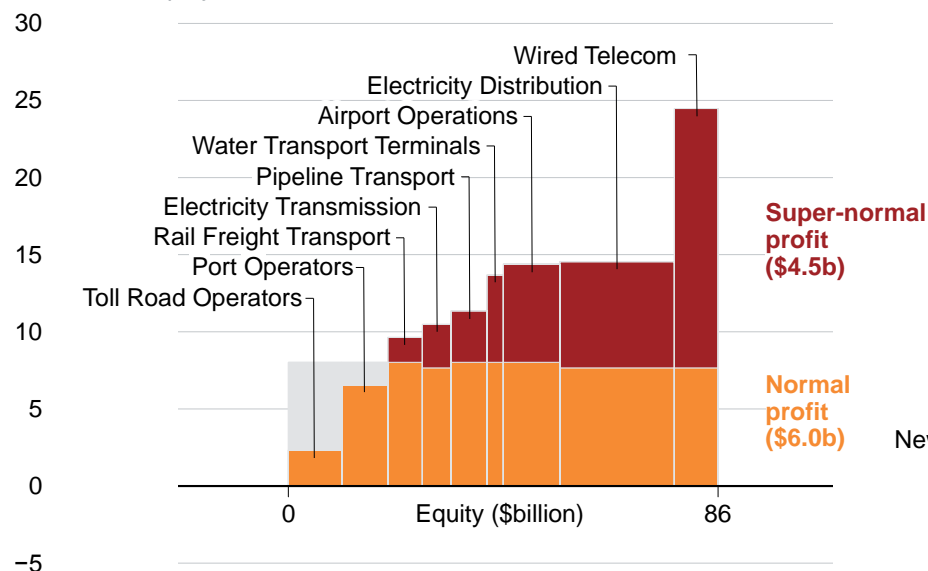
70. Natural-monopoly sectors are typically lower risk, partly reflecting the barriers to entry, and, in some cases, reflecting that returns are regulated in many of these sectors.

71. ACCC (2016a).

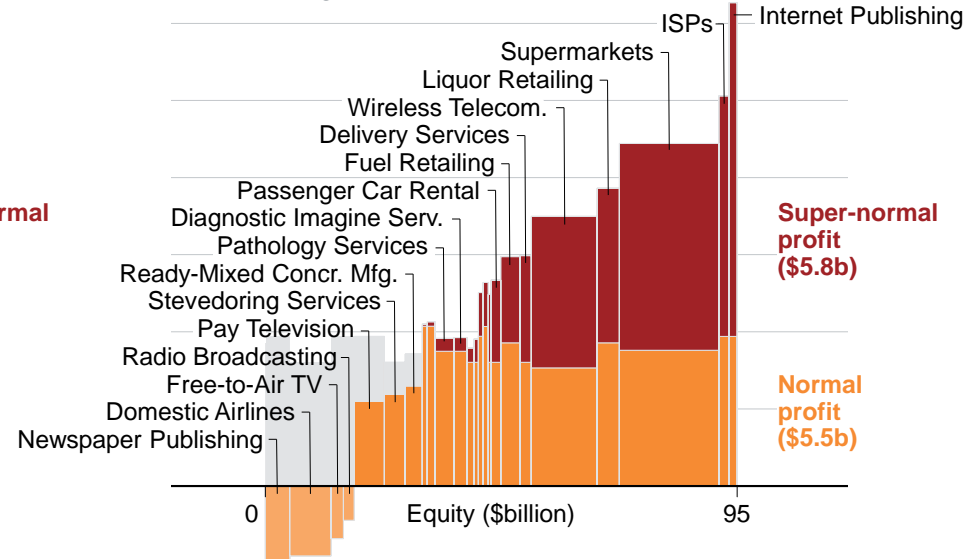
Figure 4.4: Sectors with barriers to entry earn more than \$16 billion in super-profits

Average return on equity, per cent

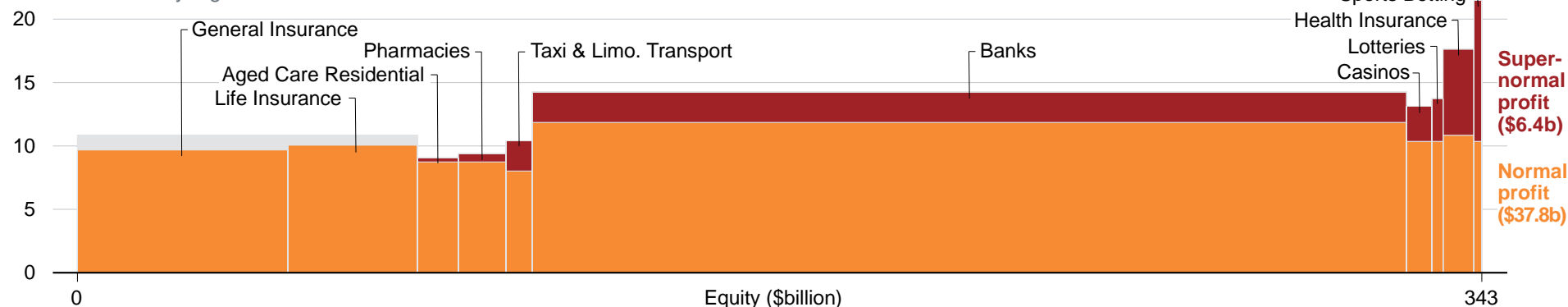
Natural-monopoly sectors



Sectors with significant scale economies



Sectors with heavy regulation



Notes: Profits and super-normal profits are after tax. Sectors are 4-digit ANZSIC. Sector average returns calculated from 2010-11 to 2015-16, weighted by firm equity, excluding goodwill. Shaded areas represent below-normal profits.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b) and Morningstar (2017).

Profits in scale-economy sectors

Some scale-economy sectors are earning well above the cost of equity, as shown in the upper right panel of Figure 4.4.

Super-normal profits account for more than half of total profits in supermarkets, liquor retailing, and wireless telecommunications. Returns are even higher for internet service providers and internet publishers, although these sectors are relatively small.

But some sectors with large economies of scale have not delivered high profits, including the four sectors with the lowest returns in the non-traded private economy – domestic airlines, newspaper publishing, free-to-air TV, and radio broadcasting.

The print and broadcast media were once highly profitable but have struggled against competition from online media. Not coincidentally, the most profitable sector in the non-traded private economy is internet publishing, which includes the profitable and rapidly growing online platforms for employment, housing and car advertisements.

Profits in sectors with high regulatory barriers

Sectors with heavier regulation are large, as can be seen from the lower panel of Figure 4.4. The largest, by far, is the banking sector, but general and life insurers are also large relative to other sectors.

Overall, super-normal profits account for only 14 per cent of total profits earned in sectors with heavy regulation, with 80 per cent of these contributed by the banks. Very high returns are uncommon, with only sports betting and health insurance earning returns more than 5 per cent above their cost of equity. Banks earn an average return of 14.2 per cent; super-normal profits account for 17 per cent of total profit, once risk is factored in.

The other highly regulated sectors that earn above-normal profits include residential aged care, pharmacies, taxis, casinos and lotteries. The gambling sectors, although relatively small, earn super-normal profits that may reflect state government licence regulations.⁷² The general and life insurance sectors earned a bit below a normal return over the period of the study.

Profits in low-barrier sectors

Sectors with low barriers to entry account for about three-quarters of the non-traded private economy, by value added. Some sectors with low barriers to entry are highly profitable. These are typically a mix of wholesale and retail sectors, professional services, and some construction (Figure A.7 on page 50 in Appendix A). But the majority of such sectors earn either a normal return or a relatively small super-normal return.

4.5 Profitable firms tend to stay that way, especially behind barriers

High profits reward innovation and efficiency (Box 2), but they tend to fade over time. Even where firms are able to set high prices for a time, competition tends to wear them down over time:

‘If you have faith in open markets, you know that price gouging will often be temporary; that the money being made will attract new entrants and this increase in supply will bring prices down.’

– Rod Sims (2017)

But it can take many years for high profits to fade toward the cost of equity. Among the 200 largest Australian firms on the ASX (excluding mining), those with high returns initially still over-perform a decade

72. Our data excludes the non-profit social clubs so does not explicitly pick up revenue from gaming machines.

later, by about half as much, (Figure 4.5). The top 10 per cent of firms a decade ago – earning an average return of 38 per cent – are typically still earning 22 per cent returns today.⁷³

The most profitable firms are highly likely to remain profitable. Figure 4.6 on the next page follows the top 200 ASX-listed firms over a decade.⁷⁴ Firms in the top fifth by profitability are more than twice as likely to be there after a decade than less-profitable firms. And firms in the bottom fifth are likely to remain there or drop out completely.⁷⁵

Profitability persists more strongly for firms in sectors with barriers to entry – at least, judging by how the market values them.

On average, the market values a firm with recent returns of 20 per cent about 60 per cent higher than a firm with recent returns of 10 per cent.⁷⁶ Implicitly, markets expect currently profitable firms to slowly fade towards the average.

But the market expects profits to persist for longer in sectors with barriers to entry. For a given level of profitability today, investors are prepared to pay a premium of about 20 per cent for shares in firms in protected sectors than for those in sectors where barriers to entry are low (Figure 4.7 on the following page).

4.6 Summing up

Profits are higher behind barriers to entry. Average profitability is about 20 per cent higher in sectors with barriers to entry. And super-normal profits are more likely to be earned behind barriers to entry than in

73. Returns across firms in the US fade at a similar pace; see Koller et al. (2010).

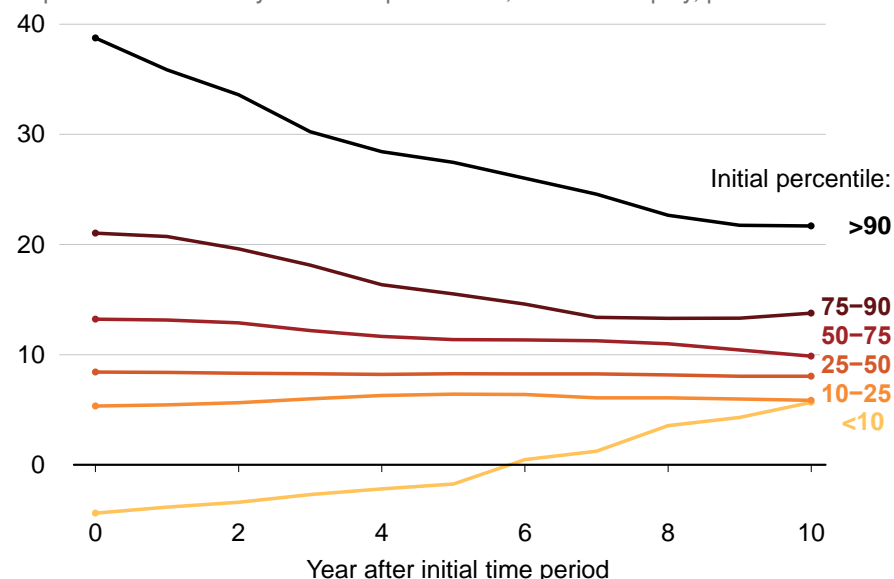
74. The analysis includes ten-year periods beginning 2000 to 2005.

75. The 'no data' category in Figure 4.6 represents firms that are either no longer listed, or for which data is missing.

76. If the market expected historical returns to persist indefinitely, it would value the firm with a 20 per cent return at double that of the firm with a 10 per cent return.

Figure 4.5: Super profits fade about halfway in a decade

Top 200 listed firms by market capitalisation, return on equity, per cent

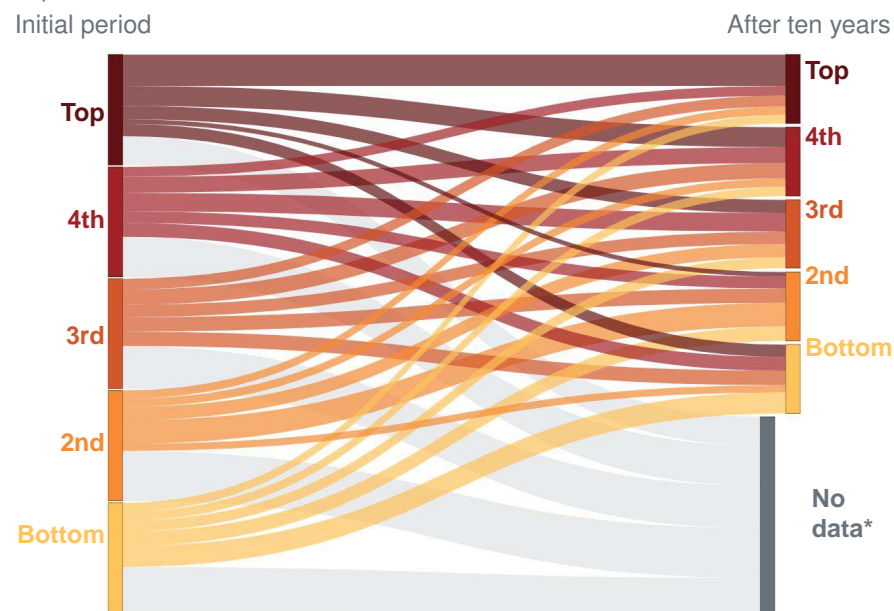


Notes: Median firm within each percentile group. Returns based on 3-year moving average. Top 200 is excluding Exchange-Traded Funds (ETFs), foreign-headquartered firms, mining and metals, and firms with negative equity. Includes firms producing tradeables. Includes ten-year periods beginning 2000 to 2005.

Source: Grattan analysis of Morningstar (2017).

Figure 4.6: More than a third of the most profitable firms are still the most profitable ten years later

Return on equity quintiles over ten years, top 200 listed firms by market capitalisation



Notes: Returns based on 3-year moving average. Top 200 is excluding Exchange-Traded Funds (ETFs), foreign-headquartered firms, mining and metals, and firms with negative equity. Includes firms producing tradeables. No data in year 10 is either due to firms having missing data or being delisted because they have closed or been acquired.

Source: Grattan analysis of Morningstar (2017).

Figure 4.7: The market expects profits in high-barrier sectors to persist for longer

Market-to-book ratio, top 200 listed firms by revenue, 2016



Notes: Average return on equity and market-to-book exclude goodwill. Top 200 is excluding Exchange-Traded Funds (ETFs), foreign-headquartered firms, mining and metals, and firms with negative equity. Includes firms producing tradeables. Average return on equity calculated from 2010-11 to 2015-16, with a risk-adjustment using firm-level CAPM beta. Average market-to-book by return is estimated using a smooth regression function, and is not equity weighted (applying an equity weight results in an even larger gap between firms from low- and high-barrier sectors). The difference in average market-to-book between high- and low-barrier sectors is significant at the 1% level, even after controlling for revenue growth over six years.

Source: Grattan analysis of Morningstar (2017), IBISWorld (2017a) and IBISWorld (2017b).

other sectors. Super-profits in sectors with higher barriers to entry are over \$16 billion a year, or 1 per cent of GDP – almost as large as the super-normal profits earned in the much bigger group of sectors with low barriers to entry. And markets expect profits behind barriers to stay higher than those elsewhere.

Over \$10 billion of super-normal profit is earned in monopoly sectors or other regulated sectors. That suggests that regulators have not done all they could to ensure consumers get a good deal in these sectors.

The following chapter explores the implications of market power for consumers – do they pay more, or do large firms bring down costs so they benefit from scale economies?

5 Does weak competitive pressure cost Australian consumers?

Consumers and advocacy groups often complain that firms with market power ‘gouge’ their consumers on price. Complaints about fuel-price cycles, excessive bank fees, and confusing electricity prices are common.⁷⁷ There are also concerns about wider impacts of powerful firms, such as supermarkets squeezing their suppliers, and fewer brands being available on shelves.⁷⁸

There are two reasons consumers might pay more in sectors with market power: higher profit margins, and higher production costs. This chapter finds that mark-ups – profit margins above *full* costs, including the cost of compensating shareholders with a normal return – average 3 per cent in sectors with barriers to entry, compared to 1.5 per cent in low-barrier sectors.⁷⁹

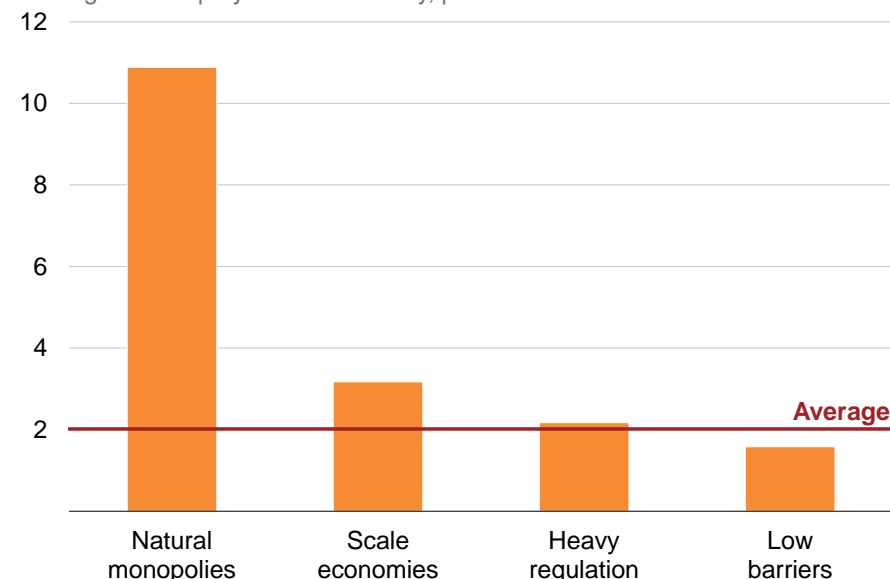
But in some sectors where a few large firms dominate the market, production costs can be lower thanks to economies of scale. If those scale benefits are large enough, prices might be lower than they would be if consumers were served instead by many small firms, even if their margins were lower.

5.1 High profits push up prices by a few percent, but net economic costs are low

Across the non-traded private economy, mark-ups average 2 per cent (Figure 5.1).⁸⁰ But in natural monopoly sectors, mark-ups average

Figure 5.1: Mark-ups are higher in sectors with barriers to entry

Average mark-up by barriers to entry, per cent



Notes: Average mark-up in each sector is calculated as total super-normal profits (before tax) divided by total revenue. Average for each sector group is weighted by revenue. Average mark-up in natural monopoly sectors is 8.9 per cent when wired telecom. is excluded.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b) and Morningstar (2017).

77. For example: Latham (2014), Wenham (2017), Collier (2015) and Reddy (2017).

78. See, for instance, Knox (2014) and Dalley and Sheftalovich (2014).

79. A mark-up in a sector is calculated as the total super-normal profits earned (before tax) divided by total sector revenue.

80. In other words, if super-profits in sectors dropped to zero, but costs did not change, average prices would fall 2 per cent.

more than 10 per cent. They are about 3 per cent in the scale-economy sectors and 2 per cent in the highly regulated sectors.

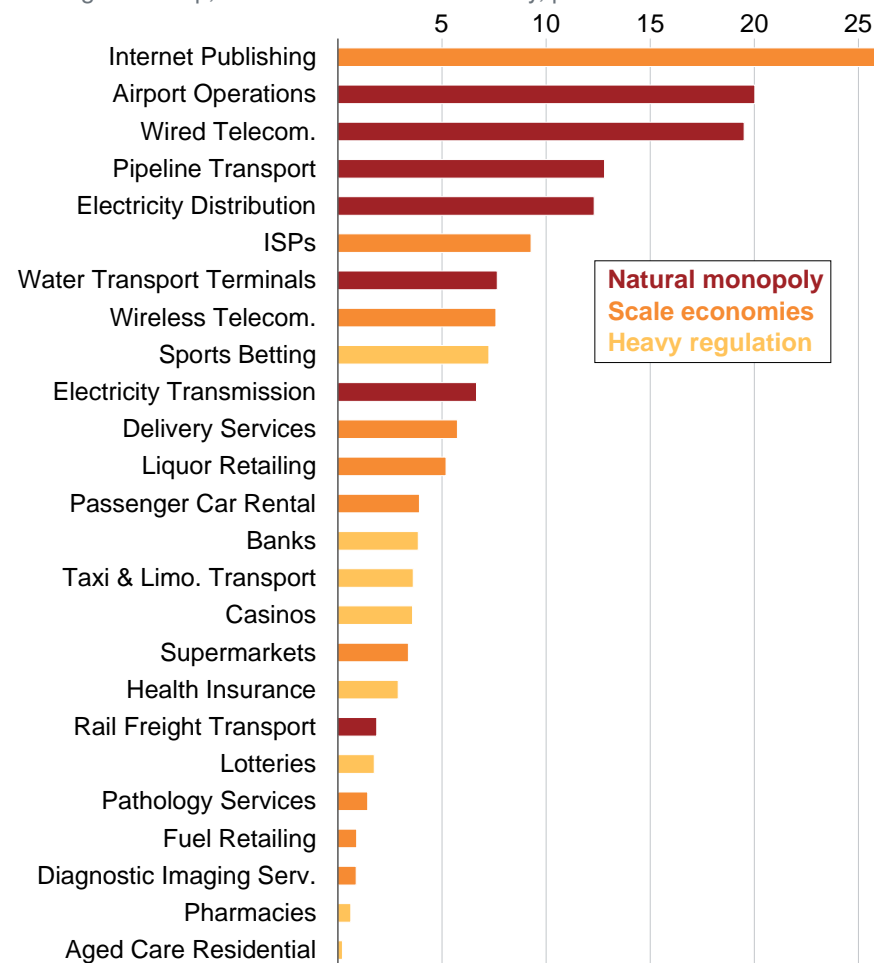
5.1.1 A few sectors have very high mark-ups

Mark-ups are high in some sectors with barriers to entry (Figure 5.2), including in some natural monopoly sectors such as wired telecom- munications, airport operations, and electricity distribution. Chapter 6 recommends ways to strengthen the regulation of these sectors.

Mark-ups are also high in a few sectors with scale economies, such as internet publishing, ISPs, and wireless telecommunications. The high mark-ups in ISPs and wireless telecommunications mainly reflect Telstra's high returns. In the case of internet publishing, the largest firms have developed innovative online marketplaces that bring buyers and sellers together, and their profitability may attract competitors and other innovators.

Highly profitable sectors – those with significant super-normal returns – are more likely to have high mark-ups. But some sectors with high returns have relatively low mark-ups. For example, the return on equity in supermarkets is more than double the cost of equity, but consumer prices exceed costs by just 3 per cent. Retailers typically earn a normal profit with a small profit margin, so a small mark-up above this can result in large super-normal profits.

Figure 5.2: Mark-ups vary strongly across sectors
Average mark-up, sectors with barriers to entry, per cent



Notes: Average mark-up in each sector is calculated as total super-normal profits (before tax) divided by total revenue. Excludes sectors that do not earn super-normal profit, because these have a mark-up of zero.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b) and Morningstar (2017).

5.1.2 Net economic costs may be much smaller than mark-ups

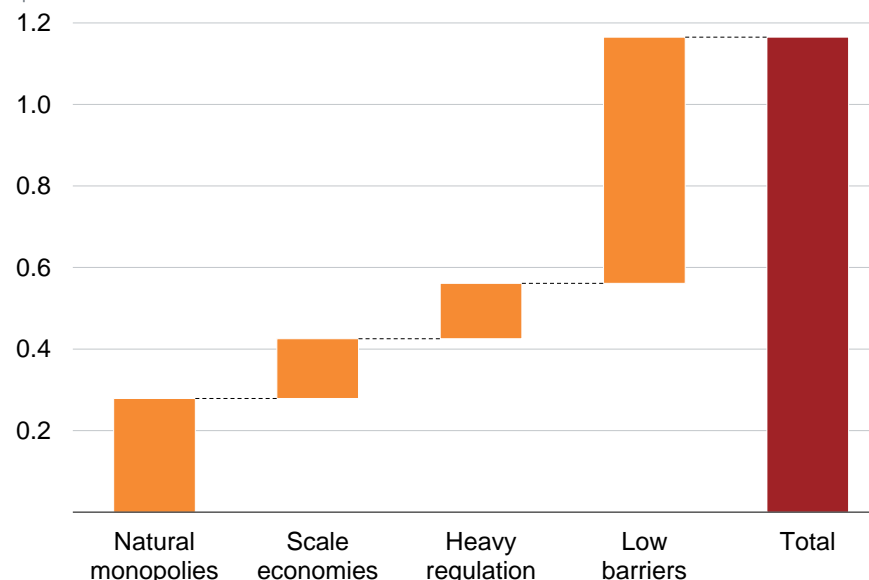
Mark-ups are paid for by consumers (or suppliers) to the owners of firms; shareholders benefit, but consumers pay more. But mark-ups entail an additional net economic cost. In order to charge a mark-up, firms must restrict what they produce, even though consumers would be willing to pay more than the full cost of producing it.

Figure 5.3 illustrates the potential increase in economic welfare that would arise from additional production if mark-ups were reduced to zero in the non-traded private economy. By implication, the net economic cost of mark-ups is about \$1.2 billion, or less than a tenth of one per cent of GDP. Only about half of the cost is incurred by customers of the sectors with barriers to entry. This relatively small estimate of the welfare cost of market power is consistent with most literature on oligopolies in Australia and internationally.⁸¹

The estimate of costs could be viewed as a potential economic gain from increasing competitive intensity and tightening regulation across the non-traded economy, on the assumption that only profits, and not costs, are affected by market power.

Figure 5.3: The net economic cost of mark-ups is small

Potential increase in economic welfare from reducing mark-ups to zero, \$ billion



Notes: Baseline assumes no change in sectors that do not earn super-normal profits and no changes to costs. Price elasticities of demand for different sectors taken from various estimates in empirical literature.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b), Morningstar (2017), Fan and Hyndman (2011), Andreyeva et al. (2010), Cadman and Dineen (2008), Seale and Regmi (2006) and Clements (2008).

81. Harberger (1954), Worcester (1973), Hefford and Round (1978) and Ritz (2016). This particular measure of the economic welfare cost is technically not directly comparable to GDP.

5.2 Scale economies reduce costs in concentrated sectors

Larger firms have lower costs in some sectors. Many studies have found significant economies of scale in a range of sectors, including supermarkets, telecommunications, and banks.⁸² Markets tend to be highly concentrated in scale-economy sectors (see Figure 1.3 on page 11), reflecting that such markets can typically only sustain a limited number of firms.⁸³

Firms that reduce their costs via scale economies can usually increase their profit margins without increasing their prices. Figure 5.4 finds that the largest firm in a sector has an average profit margin 2-to-4 percentage points above the margins of the fourth-largest firm.

Consumers can also benefit from scale economies, however, if some of the cost reductions are passed through. This is likely; firms need to expand output if they are to grow and realise the potential for scale economies, which is difficult without offering lower prices than smaller competitors. In supermarkets, for example, larger firms have higher profit margins, but the cost reductions they achieve are far larger, as outlined in Box 3.

Consumers could be worse off if scale-economy sectors became less concentrated, because costs would rise, even if profit margins fell. But a lack of competition can make it easier for an inefficient firm to survive. In that circumstance, executives may seek a quiet life or award their teams generous compensation. There is a wide range of evidence that firms perform less well when competitive pressure is weaker.⁸⁴

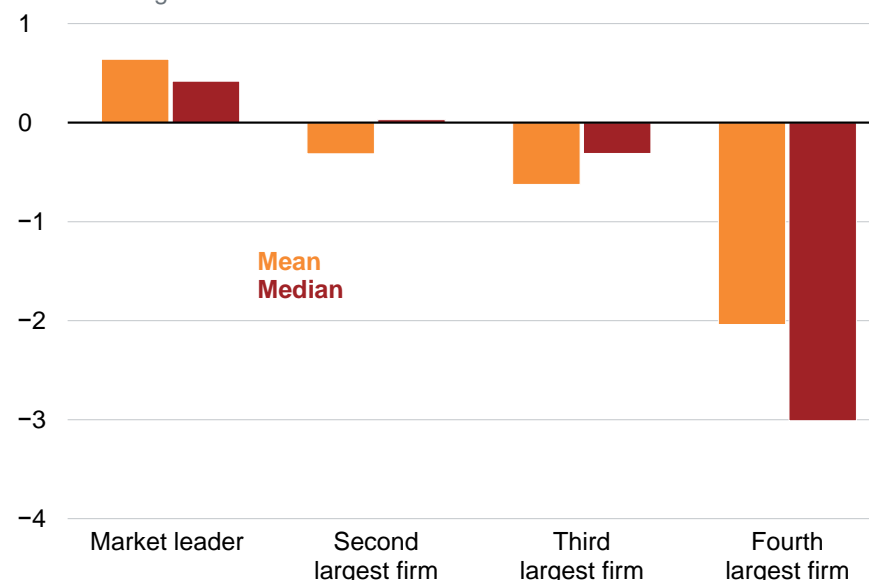
82. For example, Ellickson (2007), Keh and Chu (2003) and Guy et al. (2005) (supermarkets and retail); Bloch et al. (2001) and Nam et al. (2009) (wired and wireless telecommunications); Allen and Liu (2007) and J. P. Hughes and Mester (2013) (banking).

83. Shaked and Sutton (1983).

84. See Leibenstein (1966), Nickell (1996) and Joskow (2007). Poor performance may also include low customer satisfaction; see C. X. Chen et al. (2014) and Kimmelman and Cooper (2017).

Figure 5.4: Larger firms have higher profit margins

Average profit margin by firm revenue rank, percentage points deviation from sector average



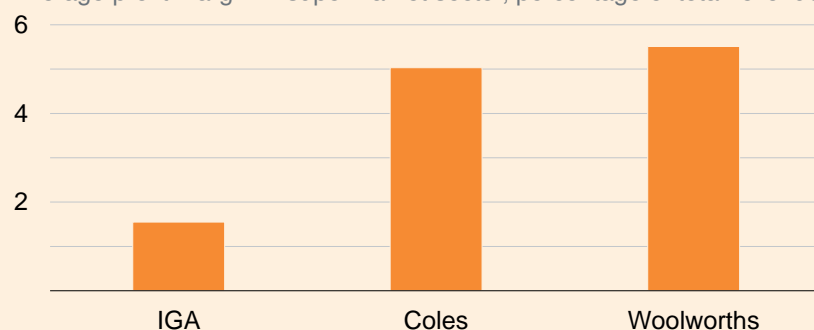
Notes: Profit margins are standardised across sectors. Average estimates are not weighted by sector size.

Source: Grattan analysis of IBISWorld (2017a) and IBISWorld (2017b).

Box 3: Scale, cost and market power in supermarkets

Figure 5.5: Large supermarkets have higher profit margins

Average profit margin in supermarket sector, percentage of total revenue



Note: Profit margin is total profit divided by total revenue, average from 2010-11 to 2015-16.

Source: Grattan analysis of IBISWorld (2017a) and IBISWorld (2017b).

Figure 5.5 shows that the two largest supermarkets, Coles and Woolworths, have substantially higher profit margins than their smaller rival IGA. Yet their average prices are lower than IGA's, which implies that the larger supermarkets must have lower costs.^a The large chains' consumers benefit from lower prices, and the chains retain some of the cost savings.

The cost advantage may only partly stem from scale. Large supermarket chains can better defray IT, head office and distribution costs. But they also have market power in procurement.

- a. Prices of leading brands are about 5-to-7 per cent lower at Coles and Woolworths than at IGA; see Clemons (2017).

But such inefficiency is probably not large enough to absorb the scale economies enjoyed by larger firms.⁸⁵ If large firms routinely permitted poor management to erode all their scale economies, smaller firms or potential entrants may be able to beat them on price and gain market share. That is likely to impose a degree of performance discipline on the incumbents.

5.3 Summing up: the net economic costs of market power may be small

The mark-ups presented in this chapter are only indicative of the possible benefits consumers might derive from less-concentrated markets.

Customers pay about 2 per cent above costs in Australia's non-traded private sector economy, on average. In sectors with barriers to entry, they pay about 3 per cent above costs. In a few sectors, including airports and electricity distribution, the consumer costs are higher. The net economic loss from these excess margins may be quite low, because most of the burden on consumers is offset by higher income to shareholders.

The analysis omits the costs of losing economies of scale, and the possible gains from greater cost discipline. Larger firms tend to have lower costs, but it is likely that costs would be even lower if managers remained vigilant even when competitive pressure is weak.

The estimated benefits also do not consider how the risks of misuse of market power to deter entry or harm competitors might drop sharply as the number of competing firms rises. That could add strongly to the relatively modest benefits of stronger competition that stem purely from lower profits.

85. See Barros and Perrigot (2008), Yang and K.-H. Chen (2009) and Shamsuddin and Xiang (2012).

6 Keeping the pressure on: what policy makers should do

The competition policy agenda for the three groups of sectors with barriers to entry should be to tighten regulation of natural monopolies; to lift the regulatory burden more broadly across the economy, but toughen pro-competition regulation; and to reduce barriers to entry in the scale-economy sectors. Government should also make it easier for consumers to compare and switch providers, and adapt policy to technology and disruption.

6.1 Tighten regulation of natural monopolies

Natural monopolies face little direct competition, by definition, so many of them are regulated with the aim of constraining prices while still providing strong commercial incentives for investment and innovation. Commonwealth agencies regulate some natural monopolies (for example, telecommunications); states regulate others (for example, most ports).

But the needed regulation is not working well everywhere. The high profits earned in electricity distribution and transmission, in ports, in wired telecoms, and in some airports suggest that regulation may be too lax in these sectors. Practitioners have also highlighted deficiencies in the regulation of natural monopolies:

‘The preference for price monitoring of privatised monopolies is a big part of the problem. In the absence of competition, merely monitoring prices makes little to no difference. Price monitoring does not amount to regulation.’

– Rod Sims (2016b)

Governments cannot increase competitive pressure on natural monopolies, but they can improve the performance of natural monopolies by:

- Cutting prices in **electricity distribution and transmission**. Previous work has shown how poor regulation has failed to put pressure on returns to operators.⁸⁶
- Toughening price and access regulation in **ports**. Some ports negotiate access and prices with a small number of commercial customers, and price negotiations that are not backed by the alternative of arbitration will reflect the often unbalanced bargaining power of customer and supplier. Other ports set prices to a broader set of users, subject to a regulated cap or to competitive pressure from nearby ports. In either case, high prices can result if regulation does not sufficiently compensate for weak competitive pressure.⁸⁷
- Writing off enough of the National Broadband Network to ensure pricing permits efficient use of **fixed-line telecommunications**. The wholesale prices of many fixed-line voice and data services are directly regulated by the ACCC, as are retail prices for voice-line rental and some calls. A 2015 ACCC pricing decision reduced the regulated prices in fixed-line telecoms.⁸⁸ The NBN is becoming the main provider of fixed-line services. If its costs prove too high, prices will also be inefficiently high if they are set to maximise cost recovery.⁸⁹
- Setting clear conditions for **airports**, under which regulators should move from price monitoring to price regulation. There is

86. Wood et al. (2012) and AER (2017). The most recent regulatory determinations are beginning to apply pressure.

87. Sims (2016c); Victorian Treasurer and Minister for Ports (2015); Queensland Competition Authority (2017); and Essential Services Commission (2014).

88. The regulated price was reduced in part because the ACCC no longer set its pricing to cover the costs of building a new network (ACCC 2015).

89. ACCC (2017a).

increasing concern that the ACCC-administered price monitoring regime is too weak. That regime has not done much to constrain market power in some capital city airports, though some have continued to invest strongly.⁹⁰

- No longer boosting prices of **privatised assets** by limiting competition or regulation at the expense of users.⁹¹

6.2 Lift the regulatory burden more broadly, but toughen pro-competition regulation

In the heavily-regulated sectors, the government should: cut the overall regulatory burden; make it easier for banking customers to switch, and for financial services competitors to enter; intensify pricing pressure on health insurers; permit stronger competition in pharmacies; and set higher licence prices for sports betting and casinos.

- Cut the **overall regulatory burden** by removing constraints on entry and exit, cutting preferential treatment of firms, and reducing impediments to efficient allocation of labour and capital. The main opportunities in these areas, identified by the Harper Review and the Productivity Commission, include reforming the industrial relations system, aligning Australian product standards with those in other major markets, relaxing restrictions on retail trading hours, and mandating company director identification numbers. Other opportunities include reviewing industry assistance, improving government procurement, relaxing restrictions on cabotage and shipping, improving trade in books and second-hand cars, implementing the National Water Initiative, and reviewing competition in the gas market.⁹²

90. Productivity Commission (2012); ACCC (2017d); and Janda (2017).

91. ACCC (2016c).

92. Harper et al. (2015) and Productivity Commission (2017a).

- In **banking**, governments should make it easier for customers to switch banks, and make it easier for new competitors to enter the market. Government could cut switching costs by making it easier for customers to share their data, to transfer their direct debits to a new bank, and to free-up their data from the control of their current bank.⁹³ Competition should also be strengthened in other parts of the financial services industry, including superannuation and foreign exchange.⁹⁴
- In **health insurance**, APRA and government should increase the pressure they apply on premiums, and should consider giving premium approvals less frequently.⁹⁵
- In **pharmacies**, government should finally remove constraints on competition, as many reviews have urged.⁹⁶
- In **sports betting and casinos**, governments concerned about problem gambling may prefer not to issue more licences, even though that would reduce the super-normal returns some incumbents earn. Instead, governments should review options to get better public value from existing licences, for example by auctioning them.⁹⁷

93. The Productivity Commission is conducting an inquiry into competition in the financial system (Productivity Commission 2017b) and Treasury is reviewing policy options for 'open banking' (Australian Treasury 2017).

94. Minifie et al. (2015) and The Australian (2017).

95. See Laffont and Tirole (1993, Chapter 9) for a discussion of how repeatedly reset short-term prices can deter regulated firms from reducing costs.

96. Productivity Commission (2017a).

97. The Victorian Government auctioned gaming machine licences in 2008, and in future will take a share of revenue (Victorian Commission for Gambling and Liquor Regulation 2018).

6.3 Reduce barriers to entry in the scale-economy sectors

Policy makers can help intensify competition in the scale-economy sectors, but there are no silver bullets. About half of the profits earned there are super-profits, suggesting that competitive pressure is weak or takes effect only gradually (Chapter 4). The case for further changes to competition laws, however, is not strong now. Protecting competitive pressure in the scale-economy sectors is 'core business' for the ACCC. It applies the Competition and Consumer Act in seeking to protect competition by preventing the misuse of market power, preventing cartels and other concerted practices, and preventing mergers that would lead to a substantial lessening of competition. The Harper Review's agenda for changes to the competition laws has been largely delivered, though there may be scope to increase penalties for some breaches of the law.⁹⁸

That leaves policies that may intensify competition across the economy (as discussed elsewhere in this chapter) or in individual sectors.

Supermarkets remain highly concentrated and highly profitable. While the incumbents have built profitable businesses with large market shares in liquor and petrol retailing, they have lost market share to new entrants in their core supermarket businesses (Chapter 3). One option that might intensify competitive pressure is to relax zoning restrictions that can limit the entry of competitors.⁹⁹

Mobile telecoms is a concentrated and highly profitable sector, but the networks are investing strongly, and the price of data service is

falling fast. The ACCC's draft communications market study found that there was adequate competition. Competitive intensity may not change much unless someone builds a fourth network, but there may be little government can do to encourage that. The ACCC recently rejected applications to subject mobile networks to an access regime. Policy makers should ensure that 5G networks are allowed to compete freely with the NBN.¹⁰⁰

6.4 Make it easier for consumers to compare and switch providers

Many consumers find it complex and confusing to compare providers of retail energy, mobile telecoms, mortgages, and superannuation. Consumers can also find switching providers cumbersome and costly. As a result, many pay high prices in such 'confusopolies'.¹⁰¹

Governments can improve market functioning by mandating that providers share information so customers can compare. Governments can reduce customer-switching costs through initiatives such as mobile number portability. And governments should design more wholesale forms of competition to increase competitive intensity in markets such as superannuation where members are highly disengaged.¹⁰²

6.5 Adapt policy to technology and disruption

Three major technology shifts are changing competition and challenging policy makers. First, online platforms have developed in media, search and retail. The larger platforms have developed significant pricing and market power.¹⁰³

98. Harper et al. (2015); Morrison (2017); and Beaton-Wells (2017).

99. ACCC (2008a) and Productivity Commission (2011). Some submissions to the Harper Review proposed changing merger laws to constrain 'creeping acquisitions' (where a firm gains market power through a series of small individual transactions that individually do not result in a substantial lessening of competition). The Harper Review considered and rejected the proposed changes (Harper et al. 2015).

100. ACCC (2017a); and ACCC (2017e).

101. Retail energy: Wood and Blowers (2017) and Ben-David (2015); mobile telecoms: Gans (2005); mortgages: D. Hughes (2017); and superannuation: Minifie et al. (2015).

102. Ibid.

103. The Economist (2017a).

Second, data is becoming an important source of competitive advantage. Online platforms amass data on customers, and that can reinforce their competitive positions. More generally, control of data is now central to how businesses retain and derive revenue from their customers.¹⁰⁴

Third, firms increasingly set their prices by machine. Algorithms can set prices for individual customers based on extensive knowledge of their likely income and preferences. They can also set prices based on what competitors charge, and so make it easier to settle on practices that limit price competition.

Government can improve the quality of competition in such online, data-intensive and automated markets by:

- Mandating that customers can take their data with them to another provider.¹⁰⁵
- Mandating that data not be withheld by firms with market power to the detriment of competition (for example, mandating that car manufacturers share data essential for servicing the cars).¹⁰⁶
- Monitoring algorithmic pricing for evidence of tacit collusion, and even requiring companies to share their computer code for forensic examination.¹⁰⁷
- Giving weight to the value of data in mergers and acquisitions, even if the owner of the data is small by traditional measures such as market share or revenue.¹⁰⁸

104. Ibid.

105. Gruen (2014a); Zingales and Rolnick (2017); and Harford (2017).

106. Priluck (2015); Ezrachi and Stucke (2016); and The Economist (2017b).

107. ACCC (2017b).

108. The Economist (2017a).

- Making available to consumers government services now available only to businesses.¹⁰⁹

Governments around the world, including Australia's, are examining ideas like these, but few have implemented policies based on them.¹¹⁰

6.6 Summing up

Contrary to widespread belief, the market power of firms in large, concentrated sectors in Australia is not higher than in most countries. Neither has it changed much in the past 15 years. Barriers to entry and market concentration account for only a small fraction of the variation in profit across firms. But firms in some sectors that are protected by barriers to entry do earn persistent high profits. They pass on higher prices to their consumers (or lower prices to their suppliers) that total about \$16 billion, or 1 per cent of GDP.

Governments should seek to intensify competitive pressure in the private economy. While existing policy settings and laws have limited the accumulation and misuse of power by large firms across much of the economy, the patterns of concentration and super-profits behind barriers to entry suggest that governments and regulators can do better.

No single major policy change would strongly increase competitive intensity in Australia's non-traded economy. But there is much governments can and should do.

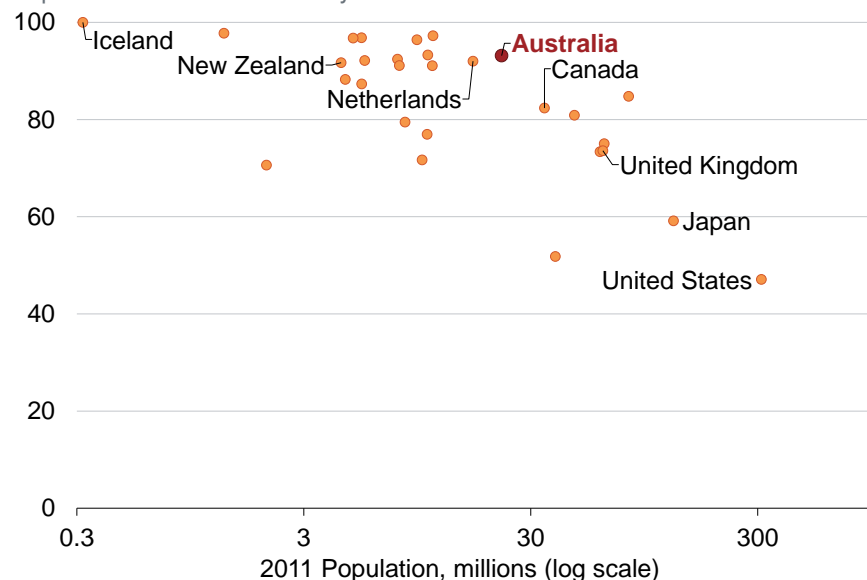
109. The Economist (2017a); and Gruen (2014b).

110. Productivity Commission (2017c); Harding (2017); and OECD (2017b).

Appendix A: Supplementary charts

Figure A.1: The biggest five banks serve over 80 per cent of the market in most OECD economies

Top five-firm market shares by assets

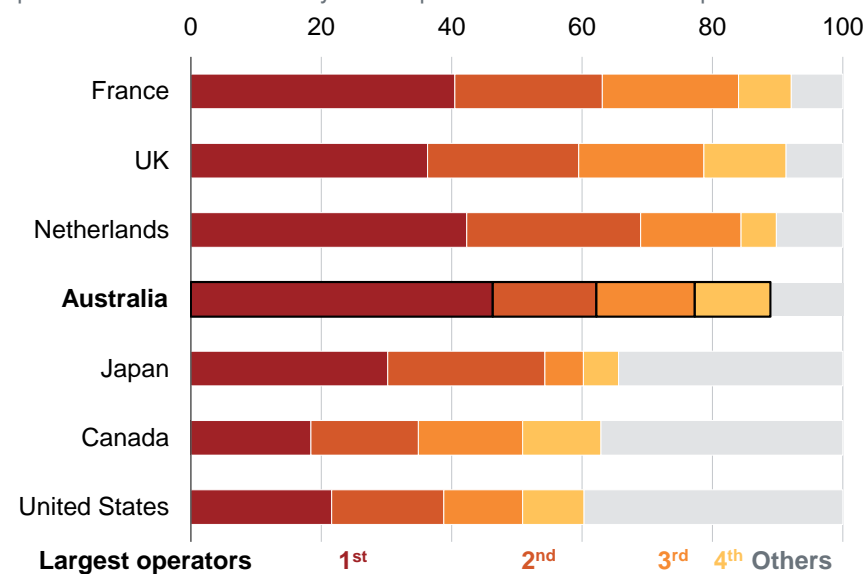


Note: Assets of five largest banks as a share of assets of all commercial banks, 2011-2015 average.

Source: Grattan analysis of World Bank (2017) and OECD (2017a).

Figure A.2: Internet service provision is concentrated in most economies

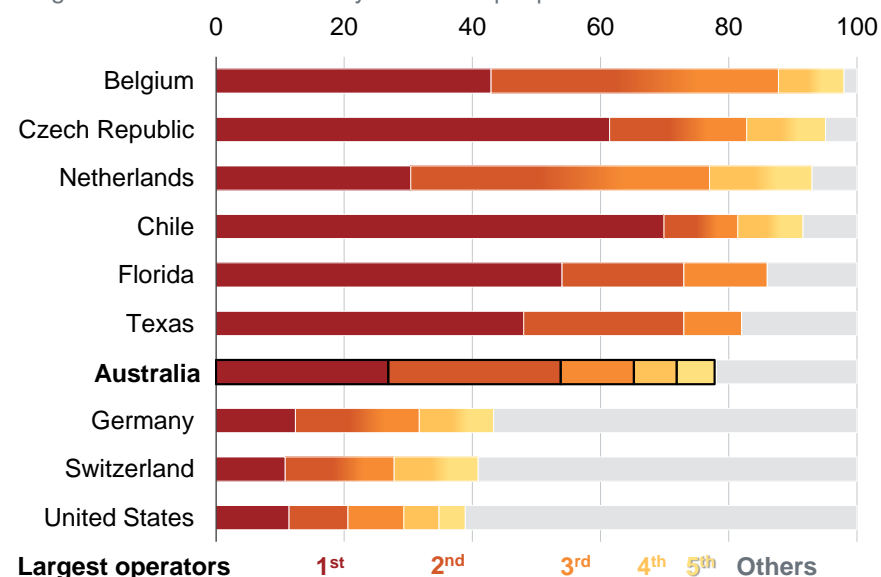
Top four-firm market shares by subscriptions in internet service providers



Source: Grattan analysis of Statista (2013c), Point Topic (2016), Statista (2013d), Statista (2013e), Statista (2013f) and Statista (2013g).

Figure A.3: Health insurance is frequently a concentrated sector

Largest firms' market shares by number of people insured in health insurance

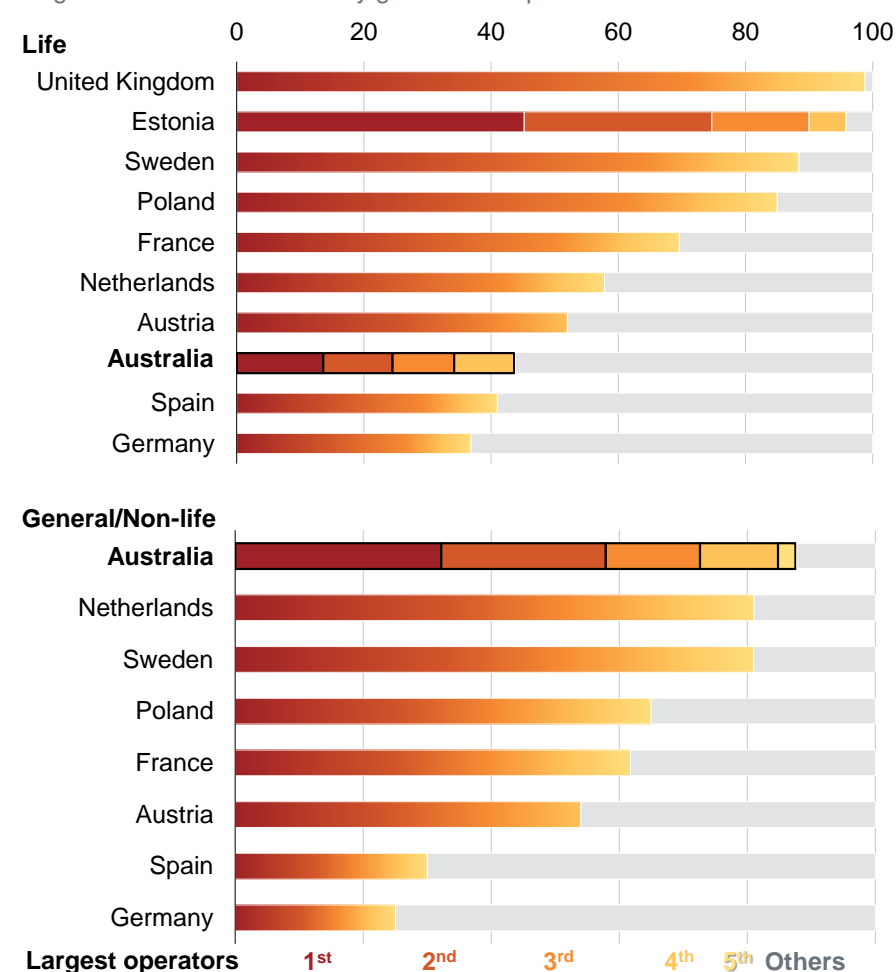


Notes: Gradient bars for Belgium, Czech Republic, Netherlands, Chile, Germany and Switzerland show the 2nd and 3rd, and 4th and 5th firms market share as a combined value where individual firm market shares were unavailable.

Source: Grattan analysis of Statista (2015), IBISWorld (2017a), KFF.org (2014) and OECD (2016).

Figure A.4: Insurance sectors are generally concentrated in all countries

Largest firms' market shares by gross written premiums in insurance sectors

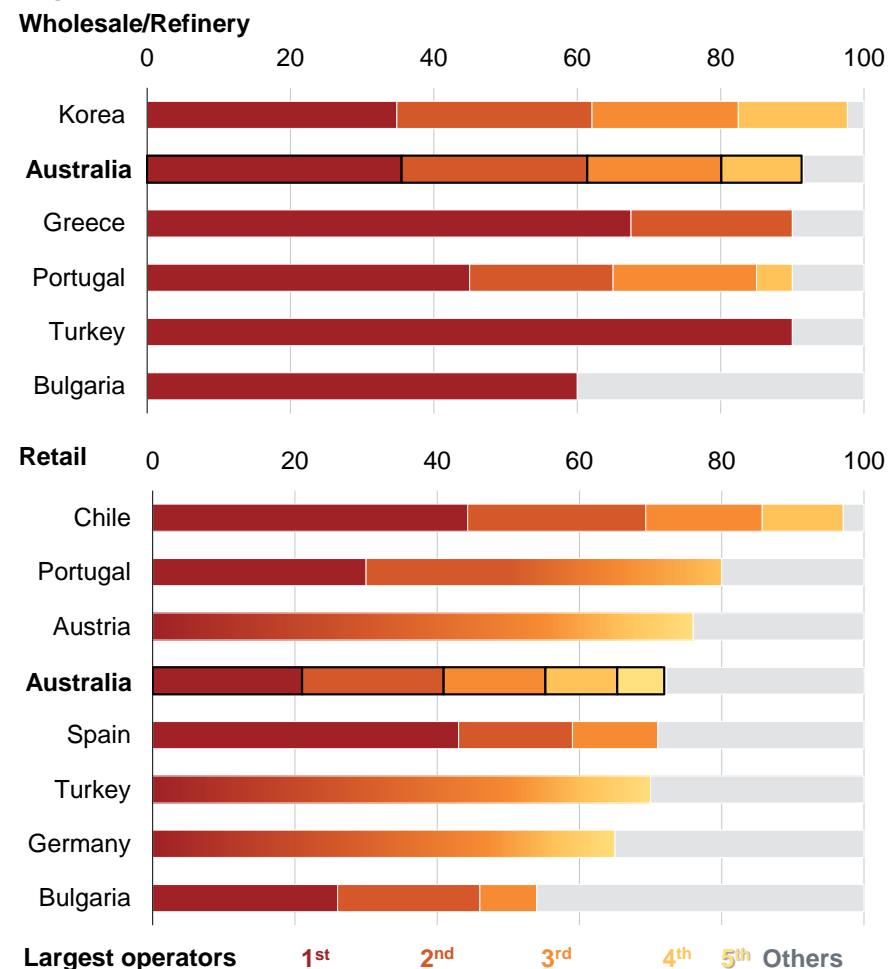


Notes: Gradient bars represent 4-firm market shares for life insurance and 5-firm market shares for general insurance where individual firm market shares were unavailable.

Source: Grattan analysis of IBISWorld (2017a), PwC (2011) and ABI (2007).

Figure A.5: Fuel wholesale and retail is also typically concentrated

Largest firms' market shares in fuel sectors



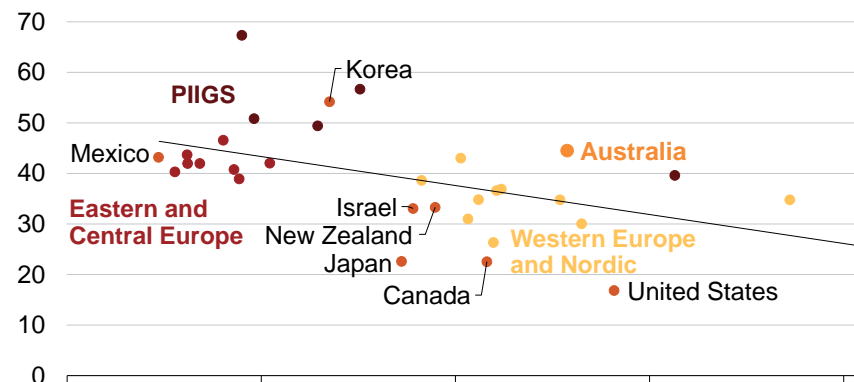
Notes: Gradient bars for Austria, Turkey and Germany represent 5-firm market share, and for Portugal the 2nd to 4th firm market share, where individual firm market shares were unavailable.

Source: Grattan analysis of OECD (2013), Autoridade da Concorrência (2009), IBISWorld (2017a) and Reuters (2012).

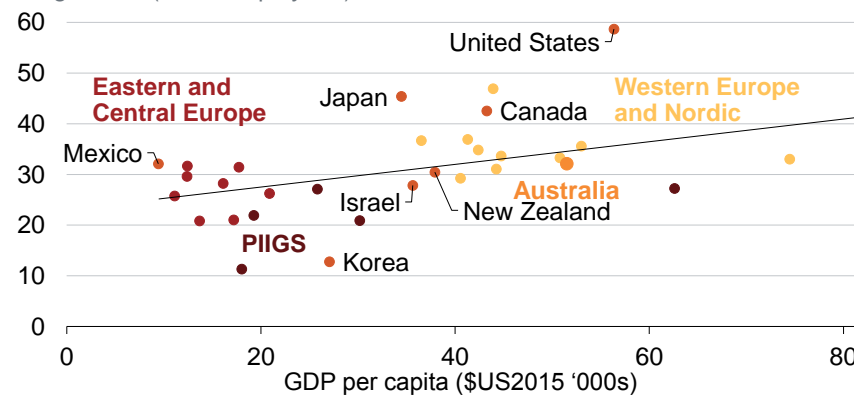
Figure A.6: More workers are employed in large firms in higher-income economies

Employment by firm size, percentage

Small firms (1–19 employees)



Large firms (250+ employees)

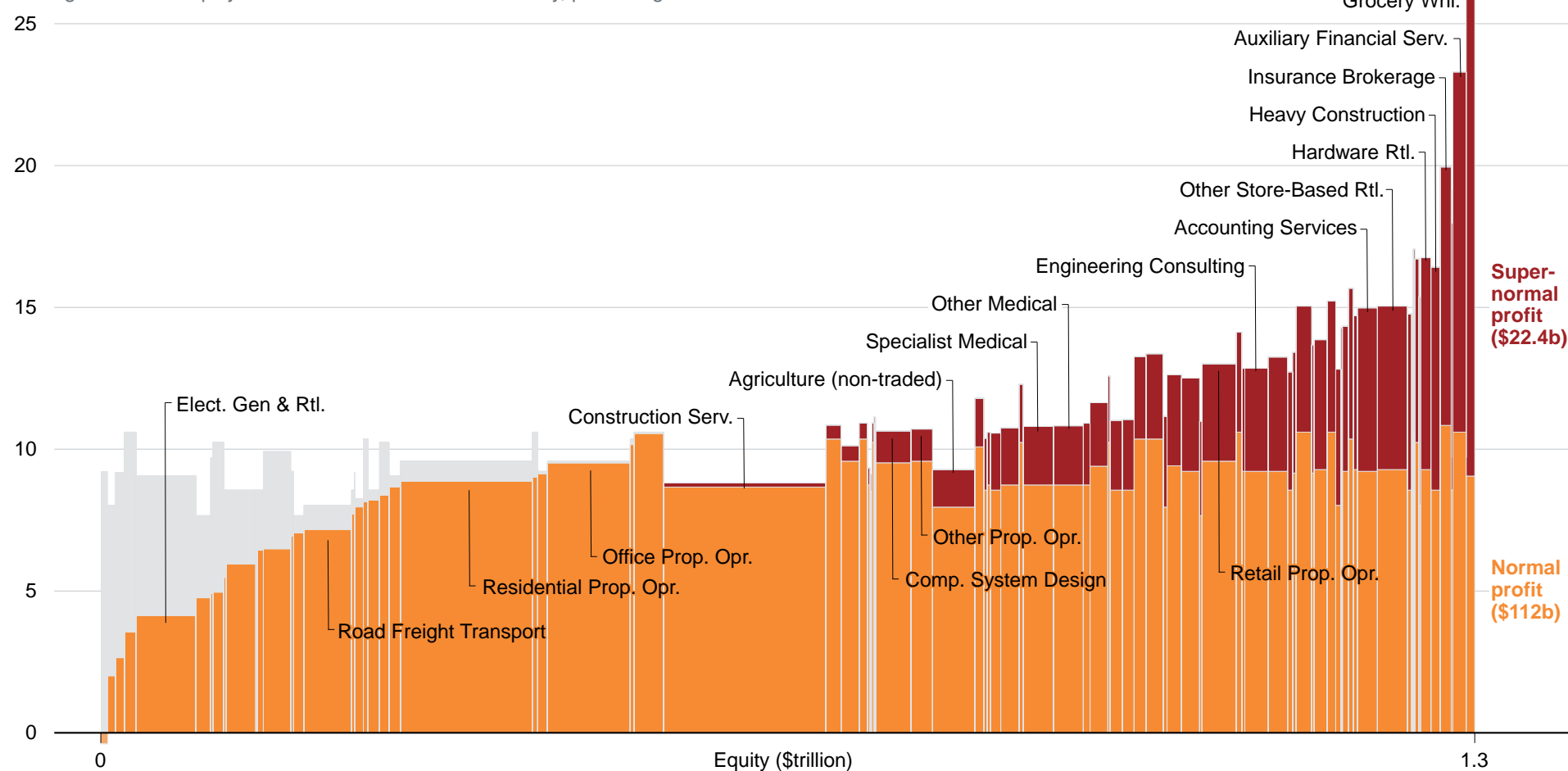


Note: GDP per capita based on current exchange rates. OECD countries except Luxembourg. Data for 2014 except Japan (2013) and Israel (2012). Total employment is total number engaged, except in Canada, Korea, and the US (number of employees). PIIGS: Portugal, Italy, Ireland, Greece and Spain.

Source: Grattan analysis of OECD (2017a).

Figure A.7: Super-normal profits are relatively small across sectors with low barriers to entry

Average return on equity in sectors with low barriers to entry, percentage



Notes: Sectors are 4-digit ANZSIC, but some have been aggregated to 2-digit ANZSIC due to size or data limitations. Sector average returns calculated from 2010-11 to 2015-16, excluding goodwill, weighted by firm equity. Shaded areas represent below-normal profits.

Source: Grattan analysis of IBISWorld (2017a), IBISWorld (2017b) and Morningstar (2017).

References

- 7-Eleven (2010). *ACCC Approves 7-Eleven Acquisition of Mobile Retail Fuels Business*. <https://www.7eleven.com.au/media-centre/article/accc-approves-7-eleven-acquisition-of-mobil-retail-fuels-business>.
- ABI (2007). *Profitability and concentration in the UK general insurance market*. http://ec.europa.eu/competition/sectors/financial_services/inquiries/replies_interim_report/31_abi_2.pdf.
- ABS (2016). *Australian System of National Accounts, 2015-16*. cat. no. 5204.0. Accessed 28 July 2017. Australian Bureau of Statistics. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/5204.0>.
- (2017a). *Australian System of National Accounts, 2016-17*. cat. no. 5204.0. Accessed 21 November 2017. Australian Bureau of Statistics. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/5204.0>.
- (2017b). *Counts of Australian Businesses, including Entries and Exits, Jun 2012 to Jun 2016*. Cat. 8165.0. Australian Bureau of Statistics. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/8165.0>.
- ACCC (2003). *ACCC not to oppose Xstrata Plc's proposed acquisition of MIM Holdings Limited*. <https://www.accc.gov.au/media-release/accc-not-to-oppose-xstrata-plcs-proposed-acquisition-of-mim-holdings-limited>.
- (2008a). *Report of the ACCC inquiry into the competitiveness of retail prices for standard groceries*. <https://www.accc.gov.au/publications/report-of-the-accc-inquiry-into-the-competitiveness-of-retail-prices-for-standard-groceries-july-2008>.
- (2008b). *Merger guidelines*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/business/mergers>.
- (2009). *ACCC not to oppose proposed merger of Vodafone and Hutchison*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/media-release/accc-not-to-oppose-proposed-merger-of-vodafone-and-hutchison>.
- (2014). *Monitoring of the Australian petroleum industry 2014 - Report*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/publications/annual-monitoring-of-the-australian-petroleum-industry/monitoring-of-the-australian-petroleum-industry-2014-report>.
- (2015). *ACCC Fixed line services decision leads to one-off uniform fall in access prices of 9.4%*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/media-release/accc-fixed-line-services-decision-leads-to-one-off-uniform-fall-in-access-prices-of-94>.
- (2016a). *ACCC telecommunications report*. Australian Competition and Consumer Commission. Reports from 2000-01 to 2015-16. <https://www.accc.gov.au/publications/accc-telecommunications-report>.
- (2016b). *ACCC will not oppose Quadrant's proposed acquisition of Fitness First*. <https://www.accc.gov.au/media-release/accc-will-not-oppose-quadrants-proposed-acquisition-of-fitness-first>.
- (2016c). *Privatisation needs smarter regulation*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/media-release/privatisation-needs-smarter-regulation>.
- (2017a). *Communications sector market study draft report*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/about-us/market-studies/communications-sector-market-study>.
- (2017b). *New car retailing industry market study draft report*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/about-us/market-studies/new-car-retailing-industry-market-study>.

- ACCC (2017c). *Australian Competition and Consumer Commission submission to the Productivity Commission inquiry into Competition in the Australian Financial System*. September 2017. http://www.pc.gov.au/__data/assets/pdf_file/0019/221860/sub017-financial-system.pdf.
- (2017d). *Airport monitoring report 2015-16*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/regulated-infrastructure/airports-aviation/airports-monitoring>.
- (2017e). *Mobile services*. Australian Competition and Consumer Commission. <https://www.accc.gov.au/regulated-infrastructure/communications/mobile-services>.
- ACMA (2016). *Communications report 2015-16*. Australian Communications and Media Authority. <https://www.acma.gov.au/theACMA/communications-report-2015-16>.
- AER (2017). *Determinations and Access Arrangements*. Australian Energy Regulator. <https://www.aer.gov.au/networks-pipelines/determinations-access-arrangements>.
- Allen, J. and Liu, Y. (2007). "Efficiency and economies of scale of large Canadian banks". *Canadian Journal of Economics/Revue canadienne d'économie* 40.1, pp. 225–244.
- Andreyeva et al. (2010). Andreyeva, T., Long, M. W. and Brownell, K. D. "The impact of food prices on consumption: A systematic review of research on the price elasticity of demand for food". *American Journal of Public Health* 100.2, pp. 216–222. ISSN: 1541-0048.
- APRA (2012). *APRA insight: issue 3 2012*. Australian Prudential Regulation Authority. <http://www.apra.gov.au/Insight/Documents/12-Insight-issue-3.pdf>.
- (2014). *Financial System Inquiry: Submission*. Australian Prudential Regulation Authority. <http://www.apra.gov.au/Submissions/Documents/APRA-2014-FSI-Submission-FINAL.pdf>.
- (2017a). *Back series of Monthly Banking Statistics*. Australian Prudential Regulation Authority. <http://www.apra.gov.au/adi/publications/pages/monthly-banking-statistics.aspx>.
- (2017b). *General Insurance Institution-level Statistics: Database*. Australian Prudential Regulation Authority. <https://www.investors.com/research/the-new-america/zillow-starts-bidding-war-for-prime-real-estate-between-agents/>.
- (2017c). *Submission to the Productivity Commission Inquiry into Competition in the Australian Financial System*. Australian Prudential Regulation Authority. <http://www.apra.gov.au/Submissions/Documents/APRA-PC-Submission-FINAL-September2017.pdf>.
- Australian Treasury (2014). *Financial System Inquiry: Final Report*. http://fsi.gov.au/files/2014/12/FSI_Final_Report_Consolidated20141210.pdf.
- (2017). *Review into open banking in Australia*. <https://treasury.gov.au/review/review-into-open-banking-in-australia/>.
- Autor et al. (2017). Autor, D., Dorn, D., Katz, L., Patterson, C. and Reenen, J. van. *The Fall of the Labor Share and the Rise of Superstar Firms*. 23396. National Bureau of Economic Research, Inc. <http://EconPapers.repec.org/RePEc:nber:wp:23396>.
- Autoridade da Concorrência (2009). *Detailed analysis of the liquid fuel and bottled gas sectors in Portugal*. http://www.concorrenca.pt/vEN/Estudos_e_Publicacoes/Estudos_Economicos/Energia_e_Combustiveis/Documents/Final_Report_on_Liquid_and_Gas_Fuels_March_2009_English_version.pdf.
- Bakhtiari, S. (2017). *Entrepreneurship Dynamics in Australia: Lessons from Micro-Data*. <https://www.industry.gov.au/Office-of-the-Chief-Economist/Research-Papers/Pages/Entrepreneurship-Dynamics-in-Australia-Lessons-from-Micro-data.aspx>.

- Barros, C. P. and Perrigot, R. (2008). "Analysing technical and allocative efficiency in the French grocery retailing industry". *The International Review of Retail, Distribution and Consumer Research* 18.4, pp. 361–380.
- Battersby, B. (2006). *Does Distance Matter? The Effect of Geographic Isolation on Productivity Levels*. Treasury Working Paper (Australian Treasury), 2006-03.
- Beaton-Wells, C. (2017). "Cartels caught ripping off Australian consumers should be hit with bigger fines". *The Conversation*. <https://theconversation.com/cartels-caught-ripping-off-australian-consumers-should-be-hit-with-bigger-fines-78750>.
- Ben-David, R. (2015). *If the retail energy market is competitive then is Lara Bingle a Russian cosmonaut?* Victorian Essential Services Commission. <http://esc.vic.gov.au/wp-content/uploads/esc/fc/fc947897-7d4f-4772-97c9-959e3baad0db.pdf>.
- Bloch et al. (2001). Bloch, H., Madden, G. and Savage, S. J. "Economies of scale and scope in Australian telecommunications". *Review of Industrial Organization* 18.2, pp. 219–227.
- Bouris, M. (2015). *Opinion: Supermarket giants are damaging small business in Australia*. <http://www.news.com.au/finance/small-business/opinion-supermarket-giants-are-damaging-small-business-in-australia/news-story/756fe80cd30c4b13983d813133186cf1>.
- Breunig, R. and Wong, M.-H. (2007). "The Role of Firm Dynamics in Australia's Productivity Growth". *The Australian Economic Review*. https://crawford.anu.edu.au/pdf/staff/robert_breunig/Breunig&Wong2.107.pdf.
- Bullock, M. (2017). *Big Banks and Financial Stability*. Speech to the Melbourne Institute Economic and Social Outlook Conference. <https://www.rba.gov.au/speeches/2017/sp-ag-2017-07-21.html>.
- Cadman, R. and Dineen, C. (2008). "Price and income elasticity of demand for broadband subscriptions: A cross-sectional model of OECD countries". *SPC Network* 19, pp. 03–08.
- Carlton, D. (2005). *Barriers to Entry*. NBER Working Paper No. 11645. <http://www.nber.org/papers/w11645>.
- Charney, M. (2015). *Traffic, Transparency and Talent Technology: The Future of Online Recruiting*. <http://recruitingdaily.com/traffic-transparency-talent-technology-the-future-of-online-recruiting/>.
- C. X. Chen et al. (2014). Chen, C. X., Matsumura, E. M., Shin, J. Y. and Wu, S. Y.-C. "The effect of competition intensity and competition type on the use of customer satisfaction measures in executive annual bonus contracts". *The Accounting Review* 90.1, pp. 229–263.
- Clements, K. W. (2008). "Price elasticities of demand are minus one-half". *Economics Letters* 99.3, pp. 490–493.
- Clemons, R. (2017). *Want to spend less at the checkout?* Choice. <https://www.choice.com.au/shopping/everyday-shopping/supermarkets/articles/cheapest-groceries-australia>.
- Collier, K. (2015). "Dozens of Melbourne petrol stations raise prices by 30c a litre". *Herald Sun*. <http://www.heraldsun.com.au/news/dozens-of-melbourne-petrol-stations-raise-prices-by-30c-a-litre/news-story/1737fd212ebf2c13fac494a7eabb40e2>.
- CRTC (2017). *Communications Monitoring Report 2016*. Canadian Radio-television and Telecommunications Commission. <https://crtc.gc.ca/eng/publications/reports/PolicyMonitoring/2016/cmr.pdf>.
- Dalley, E. and Sheftalovich, Z. (2014). "The situation on the supermarket shelves". *Choice*. <https://www.choice.com.au/shopping/everyday-shopping/supermarkets/articles/choice-supermarket-special>.
- Davies, J. (2017). *Infographic: Who are the MNO market share leaders in Europe?* <http://telecoms.com/483122/infographic-who-are-the-mno-market-share-leaders-in-europe/>.
- Dean, S. and Fraser, I. (2015). *Rightmove profits surge as it attracts record number of customers*. <http://www.telegraph.co.uk/business/2017/07/28/rightmove-profits-surge-attracts-record-number-customers/>.

- Demsetz, H. (1982). "Barriers to Entry". *American Economic Review* 72, pp. 47–57.
- Dolman et al. (2007). Dolman, B., Parham, D. and Zheng, S. *Can Australia Match US Productivity Performance?* Staff Working Paper. Productivity Commission.
<http://www.pc.gov.au/research/supporting/australia-match-usa>.
- Dutch News (2017). *Albert Heijn increases Dutch food market share*.
<http://www.dutchnews.nl/news/archives/2017/02/albert-heijn-increases-dutch-food-market-share/>.
- Dwyer, T. (2016). *FactCheck: is Australia's level of media ownership concentration one of the highest in the world?*
<https://theconversation.com/factcheck-is-australias-level-of-media-ownership-concentration-one-of-the-highest-in-the-world-68437>.
- Economic Innovation Group (2017). *Dynamism In Retreat*. February 2017.
<http://eig.org/dynamism>.
- Ellickson, P. B. (2007). "Does Sutton apply to supermarkets?" *The RAND Journal of Economics* 38.1, pp. 43–59.
- Essential Services Commission (2014). *Review of Victorian Ports Regulation 2014*. <https://www.esc.vic.gov.au/project/transport/ports/2148-review-of-victorian-ports-regulation-2014/>.
- Evans, S. (2017). "German supermarket Kaufland buys site in Adelaide as it follows Aldi into Australia". *Australian Financial Review*.
<http://www.afr.com/business/retail/fmcg/german-supermarket-kaufland-buys-site-in-adelaide-as-it-follows-aldi-into-australia-20171005-gyveuh>.
- Ezrachi, A. and Stucke, M. E. (2016). *Virtual Competition: The Promise and Perils of the Algorithm-Driven Economy*. Cambridge: Harvard University Press.
- Fan, S. and Hyndman, R. J. (2011). "The price elasticity of electricity demand in South Australia". *Energy Policy* 39.6, pp. 3709–3719.
- FCC (2017). *Twentieth Mobile Wireless Competition Report*. FCC-CIRC1709-08. Federal Communications Commission.
https://apps.fcc.gov/edocs_public/attachmatch/DOC-346595A1.pdf.
- FDIC (2017). *Deposit Market Share Reports - Summary of Deposits*.
<https://www5.fdic.gov/sod/sodmarketbank.asp?baritem=2>.
- Fernandez et al. (2016). Fernandez, P., Ortiz, A. and Acin, I. F. *Market Risk Premium used in 71 countries in 2016: a survey with 6,932 answers*. IESE Business School. University of Navarra.
- Forbes (2017). "Amazon's Impending Arrival In Australia Has Retailers Trembling". *Forbes Asia*. <https://www.forbes.com/sites/forbesasia/2017/11/01/amazons-impending-arrival-in-australia-has-retailers-trembling/#8a1add794dd>.
- Foroohar, R. (2017). "Silicon Valley has too much power". *Financial Times*.
<https://www.ft.com/content/60a49086-3714-11e7-bce4-9023f8c0fd2e>.
- Furman, J. (2016). *President Obama's Economic Record and the Challenges Ahead*. Gerald R. Ford School of Public Policy, University of Michigan, Ann Arbor, MI. https://obamawhitehouse.archives.gov/sites/default/files/page/files/20161128_ford_school_furman.pdf.
- Ganapati, S. (2017). *Oligopolies, Prices, and Quantities: Has Industry Concentration Increased Price and Restricted Output?*
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3030966.
- Gans, J. (2005). *Real Consumers and Telco Choice: The Road to Confusopoly*. Presentation to the Australian Telecommunications Summit, Sydney, November 2005. <https://www.scribd.com/presentation/25355523/The-Road-to-Confusopoly>.
- GAO (2014). *Airline Competition: The Average Number of Competitors in Markets Serving the Majority of Passengers Has Changed Little in Recent Years, but Stakeholders Voice Concerns about Competition*. United States Government Accountability Office.
<http://www.gao.gov/assets/670/664060.pdf>.

- Graham, J. (2017). *Zillow In Position To Dominate Online Real Estate Ad Market*. <https://www.investors.com/research/the-new-america/zillow-starts-bidding-war-for-prime-real-estate-between-agents/>.
- Gruen, N. (2014a). "Free, marginal cost pricing and policy". *Club Troppo*. <http://clubtroppo.com.au/2014/08/19/free-marginal-cost-pricing-and-policy/>.
- (2014b). "Central banking for all". *Nesta*. <https://www.nesta.org.uk/publications/central-banking-all-modest-case-radical-reform>.
- Grullon et al. (2016). Grullon, G., Larkin, Y. and Michaely, R. *Are US Industries Becoming More Concentrated?* Unpublished Working Paper.
- Gutiérrez, G. and Philippon, T. (2017). *Declining Competition and Investment in the U.S.* NBER Working Paper No. 23583. <http://www.nber.org/papers/w23583>.
- Guy et al. (2005). Guy, C., Bennison, D. and Clarke, R. "Scale economies and superstore retailing: new evidence from the UK". *Journal of Retailing and Consumer Services* 12.2, pp. 73–81.
- Harberger, A. C. (1954). "Monopoly and resource allocation". *The American Economic Review* 44 (2), pp. 77–87.
- Harding, R. (2017). "Japan considers tough anti-monopoly rules on data". *Financial Times*. <https://www.ft.com/content/a2e4f05c-66ae-11e7-8526-7b38dcaef614>.
- Harford, T. (2017). "A way to poke Facebook off its uncontested perch". *Financial Times*. <https://www.ft.com/content/f17202d2-be60-11e7-9836-b25f8adaa111>.
- Harper et al. (2015). Harper, I., Anderson, P., McCluskey, S. and O'Bryan, M. *Competition Policy Review Final Report*. <http://competitionpolicyreview.gov.au/final-report/>.
- Hatch, P. (2016). *Apple iPhone 7: Here's how much 'Australia Tax' you'll pay*. <http://www.smh.com.au/business/consumer-affairs/apple-iphone-7-heres-how-much-australia-tax-youll-pay-20160909-grckfl.html>.
- Hefford, C. and Round, D. K. (1978). "The welfare cost of monopoly in Australia". *Southern Economic Journal*, pp. 846–860.
- Hughes, D. (2017). "Haggle for best mortgage rate and grab a bargain, analysis reveals". *Australian Financial Review*. <http://www.afr.com/personal-finance/haggle-for-best-mortgage-rate-and-grab-a-bargain-analysis-reveals-20171026-gz999q>.
- Hughes, J. P. and Mester, L. J. (2013). "Who said large banks don't experience scale economies? Evidence from a risk-return-driven cost function". *Journal of Financial Intermediation* 22.4, pp. 559–585.
- IAS (2016). *Factsheet: The alcohol industry*. <http://www.ias.org.uk/uploads/pdf/Factsheets/fsIndustry01042016.pdf>.
- IBISWorld (2015). *Master the market: Competition between Masters and Bunnings has forced smaller operators to exit*. <https://www.ibisworld.com.au/media/2015/11/24/master-the-market-competition-between-masters-and-bunnings-has-forced-smaller-operators-to-exit/>.
- (2017a). *Industry Reports*. <https://www.ibisworld.com.au/industry-trends/market-research-reports/>.
- (2017b). *Company Research*. <https://www.ibisworld.com.au/australian-company-research-reports/>.
- Irvine, J. (2011). "Top bosses' riches are undeserved". *Sydney Morning Herald*. <http://www.smh.com.au/federal-politics/political-opinion/top-bosses-riches-are-undeserved-20111101-1mttj.html>.
- Janda, M. (2008). *St George, Westpac agree on merger terms*. ABC News. <http://www.abc.net.au/news/2008-05-13/st-george-westpac-agree-on-merger-terms/2434060>.
- (2017). *ACCC suggests airport regulation, says flyers pay up to \$1.6b in extra fees due to privatisations*. ABC News. <http://www.abc.net.au/news/2017-03-06/accc-says-consumers-gouged-through-poor-airport-privatisations/8327196>.
- Joskow, P. L. (2007). "Regulation of natural monopoly". *Handbook of law and economics* 2, pp. 1227–1348.

- Keh, H. T. and Chu, S. (2003). "Retail productivity and scale economies at the firm level: a DEA approach". *Omega* 31.2, pp. 75–82.
- KFF.org (2014). *Market Share and Enrollment of Largest Three Insurers-Large Group Market*. Kaiser Family Foundation. <https://www.kff.org/state-category/health-insurance-managed-care/insurance-market-competitiveness/>.
- Kimmelman, G. and Cooper, M. (2017). *A communications oligopoly on steroids; why antitrust enforcement and regulatory oversight in digital communications matter*. Washington Center for Equitable Growth. <http://equitablegrowth.org/report/a-communications-oligopoly-on-steroids/>.
- Knox, M. (2014). "Supermarket monsters". *The Monthly*. <https://www.themonthly.com.au/issue/2014/august/1406815200/malcolm-knox/supermarket-monsters>.
- Koller et al. (2010). Koller, T., Goedhart, M. and Wessels, D. *Valuation: Measuring and Managing the Value of Companies*. 5th ed. New Jersey: Wiley.
- Laffont, J.-J. and Tirole, J. (1993). *A Theory of Incentives in Procurement and Regulation*. The MIT Press. <https://EconPapers.repec.org/RePEc:mtp:titles:0262121743>.
- Latham, A. (2014). "15 ridiculous ways banks are ripping you off". *Supermoney*. <https://www.supermoney.com/2014/06/15-ways-banks-ripping-off/>.
- Law, J. (2017). *Why Australian customers get a raw deal*. <http://www.news.com.au/finance/money/costs/why-australian-customers-get-a-raw-deal/news-story/ea3eaafea38e6c6dff2bdc8e5626a18c>.
- Leibenstein, H. (1966). "Allocative efficiency vs. "X-efficiency"". *The American Economic Review*, pp. 392–415.
- Leigh, A. (2016). *Markets, Monopolies and Moguls: the relationship between inequality and competition*. http://www.andrewleigh.com/markets_monopolies_moguls_speech.
- Leigh, A. and Triggs, A. (2016). "Markets, Monopolies and Moguls: The Relationship between Inequality and Competition." *Australian Economic Review* 4, p. 389. ISSN: 0004-9018.
- (2017). "It's time to put markets ahead of monopolies". *Huffington Post*. http://www.huffingtonpost.com.au/andrew-leigh/its-time-to-put-markets-ahead-of-monopolies_a_21647051/.
- Löf, U. (2011). *The Strength of Competition in the Swedish Grocery Retailing Market: A Comparison to Germany*. https://gupea.ub.gu.se/bitstream/2077/28686/1/gupea_2077_28686_1.pdf.
- Macrobusiness (2013). *The rise and rise of rent-seeking*. <https://www.macrobusiness.com.au/2013/08/the-rise-and-rise-of-rent-seeking/>.
- (2017). *The monster duopoly economy revealed*. <https://www.macrobusiness.com.au/2017/04/monster-duopoly-economy-revealed/>.
- Minifie et al. (2015). Minifie, J., Savage, J. and Cameron, T. *Super savings*. Grattan Institute. <https://grattan.edu.au/report/super-savings/>.
- Minifie et al. (2017). Minifie, J., Chisholm, C. and Percival, L. *Stagnation nation: Australian investment in a low-growth world*. Grattan Institute. <https://grattan.edu.au/report/stagnation-nation/>.
- Moldofsky, L. (2005). "Foodland sold to Woolworths and Metcash". *Financial Times*. <https://www.ft.com/content/cddf1c68-ccc1-11d9-bb87-00000e2511c8>.
- Morningstar (2017). *DatAnalysis Premium*. <http://datanalysis.morningstar.com.au/>.
- Morrison, S. (2017). *Media release: Aussie small business and consumers the winners as strengthened competition laws commence*. The Treasurer.
- Nam et al. (2009). Nam, C., Kwon, Y., Kim, S. and Lee, H. "Estimating scale economies of the wireless telecommunications industry using EVA data". *Telecommunications Policy* 33.1, pp. 29–40.

- Neely, M. C. (1994). "Going Interstate: A New Dawn For U.S. Banking". *Regional Economist*. <https://www.stlouisfed.org/publications/regional-economist/july-1994/going-interstate-a-new-dawn-for-us-banking>.
- Nickell, S. J. (1996). "Competition and corporate performance". *Journal of political economy* 104.4, pp. 724–746.
- O'Donnell, A. (2016). *Grocery giants: Does Texas belong to H-E-B or Walmart?* <http://austin.blog.statesman.com/2016/05/31/grocery-giants-does-texas-belong-to-h-e-b-or-walmart/>.
- OECD (2007). *Competition and Barriers to Entry*. Policy Brief. Organisation for Economic Cooperation and Development. <http://www.oecd.org/competition/mergers/37921908.pdf1>.
- (2013). *Policy Roundtables: Competition in Road Fuel*. <https://www.oecd.org/competition/CompetitionInRoadFuel.pdf>.
- (2016). *The first Health System Characteristics online database*. <https://qdd.oecd.org/subject.aspx?Subject=hsc>.
- (2017a). *OECD.Stat*. Organisation for Economic Co-operation and Development. <http://stats.oecd.org/>.
- (2017b). *Algorithms and Collusion: Competition Policy in the Digital Age*. <http://www.oecd.org/competition/algorithms-collusion-competition-policy-in-the-digital-age.htm>.
- Peterson, H. (2017). *Walmart won't battle Amazon for Whole Foods for a very simple reason*. <https://www.businessinsider.com.au/walmart-wont-battle-amazon-for-whole-foods-2017-6?r=US&IR=T>.
- PHIAC (2015). *Competition in the Australian Private Health Insurance Market*. Private Health Insurance Administration Council. http://www.apra.gov.au/PHI/PHIAC-Archive/Documents/Competition-in-the-Australian-PHI-market_June-2015.pdf.
- Pinckaers, M. and Smith, M. E. (2012). *The Benelux Food Retail Market*. https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Retail%20Foods_The%20Hague_Netherlands_6-25-2012.pdf.
- Point Topic (2016). *Broadband take-up and operator market shares in the UK in 2016*. <http://point-topic.com/free-analysis/broadband-take-up-and-operator-market-shares-in-the-uk-in-2016/>.
- Priluck, J. (2015). "When bots collude". *The New Yorker*. <https://www.newyorker.com/business/currency/when-bots-collude>.
- Productivity Commission (2011). *Economic Structure and Performance of the Australian Retail Industry*. Productivity Commission Inquiry Report No. 56, November 11. <https://www.pc.gov.au/inquiries/completed/retail-industry/report/retail-industry.pdf>.
- (2012). *Economic Regulation of Airport Services*. Inquiry Report. <https://www.pc.gov.au/inquiries/completed/airport-regulation/report>.
- (2017a). *Shifting the Dial: 5-year Productivity Review*. Inquiry Report. <http://www.pc.gov.au/inquiries/completed/productivity-review#report>.
- (2017b). *Competition in the Australian Financial System*. Public Inquiry. <http://www.pc.gov.au/inquiries/current/financial-system>.
- (2017c). *Data Availability and Use*. Inquiry Report. <https://www.pc.gov.au/inquiries/completed/data-access/report>.
- PwC (2011). *Study on the impact of the revision of the Insurance Mediation Directive*. http://ec.europa.eu/internal_market/insurance/docs/mediation/imd_final_en.pdf.
- Queensland Competition Authority (2017). *Port regulation overview*. <http://www.qca.org.au/Ports>.
- RBA (2017a). *Capital Market Yields – Government Bonds – Monthly – F2.1*. Reserve Bank of Australia. <https://www.rba.gov.au/statistics/tables/>.
- (2017b). *Capital Market Yields – Government Bonds – Monthly – 1696 to May 2013 – F2*. Reserve Bank of Australia. <https://www.rba.gov.au/statistics/historical-data.html>.
- Reddy, N. (2017). *Will re-regulation of energy prices stop price gouging? Make it cheaper*. <https://www.makeitcheaper.com.au/blog/reregulation-stop-price-gouging>.

- Reuters (2012). *UPDATE 2-Bulgaria watchdog accuses 4 oil firms of price-fixing*. <https://uk.reuters.com/article/bulgaria-antitrust/update-2-bulgaria-watchdog-accuses-4-oil-firms-of-price-fixing-idUKL5E8EG2KD20120316>.
- Ritter, D. (2013). "Australia, land of market domination". *The Guardian*. <https://www.theguardian.com/commentisfree/2013/aug/27/australia-power-duopoly>.
- Ritz, R. A. (2016). *Oligopolistic competition and welfare*. Cambridge Working Paper Economics.
- Roer, A. van de (2015). *MVNOs nearing 20% of Dutch mobile market*. <https://www.telecompaper.com/pressrelease/mvnos-nearing-20-of-dutch-mobile-market--1091831>.
- Roy Morgan (2017). *Roy Morgan Single Source (Australia), December 2005 to March 2017*. Base: Australian grocery buyers 14+, weighted to households. <http://www.roymorgan.com/products/single-source>.
- Roy Morgan Australia (2017). *Aldi hits new high in supermarket wars*. <http://www.roymorgan.com/findings/7234-woolworths-coles-aldi-iga-supermarket-market-shares-australia-march-2017-201705171406>.
- Sandhu, M. (2017). "EU 2.4 billion fine on Google was justified, but it is only a start". *Financial Times*. <https://www.ft.com/content/2f15b832-5cb8-11e7-b553-e2df1b0c3220>.
- Seale, J. L. and Regmi, A. (2006). "Modeling international consumption patterns". *Review of Income and Wealth* 52.4, pp. 603–624.
- Shaked, A. and Sutton, J. (1983). "Natural Oligopolies". *Econometrica* 51.5, pp. 1469–1484.
- Shamsuddin, A. and Xiang, D. (2012). "Does bank efficiency matter? Market value relevance of bank efficiency in Australia". *Applied Economics* 44.27, pp. 3563–3572.
- Shane, S. A. (2010). *The Illusions of Entrepreneurship: The Costly Myths That Entrepreneurs, Investors, and Policy Makers Live By*. New Haven: Yale University Press.
- Shapiro, C. (2017). *Antitrust in a time of populism*. Haas School of Business, University of California at Berkeley. <http://faculty.haas.berkeley.edu/shapiro/antitrustpopulism.pdf>.
- Sherter, A. (2009). "Bank Mergers and the 'Curse of Bigness'". *CBS News*. <https://www.cbsnews.com/news/bank-mergers-and-the-curse-of-bigness/>.
- Sims, R. (2016a). *Is Australia's economy getting more concentrated and does this matter?* Address to the RBB Economics Conference 2016, Sydney. <https://www.accc.gov.au/speech/keynote-address-rbb-economics-conference-0>.
- (2016b). *Privatisation needs smarter regulation*. Comments made at the Melbourne Economic Forum. <https://www.accc.gov.au/media-release/privatisation-needs-smarter-regulation>.
- (2016c). "Ports: What measure of regulation". *Ports Australia Conference*. Melbourne. <https://www.accc.gov.au/speech/ports-what-measure-of-regulation>.
- (2017). *The role of the ACCC in restoring faith in free markets*. Address delivered to Competition Law Conference, May 6 2017. <https://www.accc.gov.au/speech/the-role-of-the-accc-in-restoring-faith-in-free-markets>.
- Statista (2013a). *Leading three grocery retailers in Portugal 2013, by food retail format market share*. <https://www.statista.com/statistics/415941/leading-grocery-retailers-in-portugal-by-food-retail-market-share/>.
- (2013b). *Leading three grocery retailers in Italy in 2013, by food retail format market share*. <https://www.statista.com/statistics/415869/leading-grocery-retailers-by-food-retail-format-market-share-italy/>.
- (2013c). *Market shares of internet service providers in the United States in the fourth quarter of 2013*. <https://www.statista.com/statistics/327131/number-of-broadband-subscribers-in-selected-countries/>.

- Statista (2013d). *Market shares of internet service providers in France in the fourth quarter of 2013*.
<https://www.statista.com/statistics/326642/number-of-broadband-subscribers-in-france/>.
- (2013e). *Market shares of internet service providers in Canada in the fourth quarter of 2013*.
<https://www.statista.com/statistics/326191/number-of-broadband-subscribers-in-canada/>.
- (2013f). *Market shares of internet service providers in Australia in the fourth quarter of 2013*.
<https://www.statista.com/statistics/326147/number-of-broadband-subscribers-in-australia/>.
- (2013g). *Market shares of internet service providers in the Netherlands in the fourth quarter of 2013*.
<https://www.statista.com/statistics/327083/number-of-broadband-subscribers-in-the-netherlands/>.
- (2015). *Market share of leading health insurance companies in the United States in 2015, by direct premiums written*.
<https://www.statista.com/statistics/216518/leading-us-health-insurance-groups-in-the-us/>.
- (2017a). *Market share of grocery stores in Ireland for the 12 weeks ending October 8, 2017*. <https://www.statista.com/statistics/534106/grocery-market-share-ireland/>.
- (2017b). *Market share of grocery stores in Spain for the 12 weeks to September 10, 2017*. <https://www.statista.com/statistics/535392/grocery-market-share-spain/>.
- (2017c). *Market share of grocery stores in France for the 12 weeks ending October 17, 2017*. <https://www.statista.com/statistics/535415/grocery-market-share-france/>.
- (2017d). *Market share of grocery stores in Great Britain from January 2015 to March 2017*.
<https://www.statista.com/statistics/280208/grocery-market-share-in-the-united-kingdom-uk/>.
- Swanepoel, J. A. and Harrison, A. W. (2015). *The business size distribution in Australia*. Department of Industry, Innovation and Science.
<https://industry.gov.au/Office-of-the-Chief-Economist/Research-Papers/Documents/Research-Paper-5-The-business-size-distribution-in-Australia.pdf>.
- The Australian (2017). “Big four banks reap billions in fees”. *The Australian*.
<http://www.theaustralian.com.au/business/financial-services/big-four-banks-reap-billions-in-hidden-foreign-exchange-fees/news-story/8a5119da897398c67b0626e3378763c2>.
- The Economist (2016a). *Too much of a good thing: Profits are too high. America needs a giant dose of competition*.
<https://www.economist.com/news/briefing/21695385-profits-are-too-high-america-needs-giant-dose-competition-too-much-good-thing>.
- (2016b). *The rise of the superstars*. http://www.economist.com/sites/default/files/20160917_companies.pdf.
- (2016c). *The problem with profits*.
<https://www.economist.com/news/leaders/21695392-big-firms-united-states-have-never-had-it-so-good-time-more-competition-problem>.
- (2017a). *The world's most valuable resource is no longer oil, but data*.
<https://www.economist.com/news/leaders/21721656-data-economy-demands-new-approach-antitrust-rules-worlds-most-valuable-resource>.
- (2017b). *Price-bots can collude against consumers*.
<https://www.economist.com/news/finance-and-economics/21721648-trustbusters-might-have-fight-algorithms-algorithms-price-bots-can-collude>.
- Trigaux, R. (2015). *Publix retains iron grip on No. 1 spot in Florida's competitive grocery business*.
<http://www.tampabay.com/news/business/retail/publix-retains-iron-grip-at-no1601-spot-in-floridas-competitive-grocery/2252386>.

- UFCW (2010). *Loblaws and the Canadian retail food industry*.
http://www.ufcw.ca/index.php?option=com_content&view=article&id=1831:ontario-loblaw-talks-resume-after-massive-strike-mandate&Itemid=6&lang=en.
- UNCTAD (2017). *Beyond Austerity: Towards a Global New Deal*. Trade and Development Report 2017. United Nations Conference on Trade and Development. <http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=1852>.
- US Bureau of Transportation Statistics (2017). *Origin and Destination Survey: DB1B, 2017-Q1*. United States Department of Transportation.
<https://www.transtats.bts.gov/>.
- Victorian Commission for Gambling and Liquor Regulation (2018). *Announcement regarding gaming machine arrangements*.
<https://www.vcglr.vic.gov.au/news/announcement-regarding-gaming-machine-arrangements>.
- Victorian Treasurer and Minister for Ports (2015). *Government Strengthens Port Regulatory Regime With Additional Safeguards*. Victorian Government. <https://www.premier.vic.gov.au/government-strengthens-port-regulatory-regime-with-additional-safeguards/>.
- Wenham, M. (2017). "This is despicable, shameless price gouging". *Courier Mail*. <http://www.couriermail.com.au/rendezview/this-is-despicable-shameless-price-gouging/news-story/4c8c206fcdef99d477b0e5426e0ddc61>.
- White House Council of Economic Advisers (2016). *Benefits of competition and indicators of market power*.
https://obamawhitehouse.archives.gov/sites/default/files/page/files/20160502_competition_issue_brief_updated_cea.pdf.
- Wood et al. (2012). Wood, T., Hunter, A., O'Toole, M., Venkataraman, P. and Carter, L. *Putting the customer back in front: How to make electricity cheaper*. Report No. 2012-09. Grattan Institute.
<https://grattan.edu.au/report/putting-the-customer-back-in-front-how-to-make-electricity-prices-cheaper/>.
- Wood, T. and Blowers, D. (2017). *Price shock: Is the retail electricity market failing consumers?* Report No. 2015-04. Grattan Institute.
<https://grattan.edu.au/report/price-shock/>.
- Worcester, D. A. (1973). "New estimates of the welfare loss to monopoly, United States: 1956-1969". *Southern Economic Journal*, pp. 234–245.
- World Bank (2017). *Global Financial Development Database (GFDD)*.
<https://data.worldbank.org/data-catalog/global-financial-development>.
- Xenophon, N. (2012). *Minority Report by Nick Xenophon, Independent Senator for South Australia*. Cited in: Senate committee on Australia's food processing sector. August 2012.
http://www.aph.gov.au/~media/wopapub/senate/committee/foodprocessing_ctte/foodprocessing/report/report_pdf.ashx.
- Yang, C.-H. and Chen, K.-H. (2009). "Are small firms less efficient?" *Small Business Economics* 32.4, pp. 375–395.
- Zingales, L. and Rolnick, G. (2017). "A way to own your social-media data". *New York Times*. <https://www.nytimes.com/2017/06/30/opinion/social-data-google-facebook-europe.html>.