

Inquiry into promoting economic dynamism, competition and business formation

Productivity Commission submission

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Introduction

The Productivity Commission welcomes the opportunity to make this submission to the Inquiry into promoting economic dynamism, competition and business formation. The terms of reference are broad-ranging, covering dynamism, competition and business formation. The issue is important because of the enduring productivity slowdown in Australia and the consequences this has for wage growth and general prosperity — issues explored in depth in the Commission’s recently released 5-year Productivity Inquiry (PC 2023b). In this submission, the Commission has focused on selective facets of economic dynamism.

Economic dynamism is concerned with the efficient adaptation to new demand and supply trends and re-organisation of resources (labour and capital) across the economy, supported by the creation of new knowledge and its rapid diffusion.¹ The concept of dynamism recognises that new technologies are not seamlessly adopted throughout an economy, but will often require people to move and learn, investments in physical and intangible capital, new managerial models, and the death and emergence of businesses and business models. It gives prominence to the actions and capabilities of all firms and employees — not just the few technological leaders in an economy. Accordingly, while highly innovative firms remain critical to dynamism, much of the Commission’s focus in its recent 5-year Productivity Inquiry was on the performance of the forgotten ‘98%’ (those firms not generating ‘new to the world’ innovation), and more broadly on the long-term fundamental factors that underpin productivity performance, such as skill formation, infrastructure, and digital adoption (PC 2023d).

This broad concept of dynamism is hard to measure well; indeed, no indicator reflects this phenomenon precisely. This submission focusses on firm entry and exit, concentration, price-markups, labour market mobility and investment, recognising these are proxies for dynamism, which have varying insights into the underlying processes. The current discourse generally points to movements in these indicators as an important explanator of Australia’s and other OECD countries’ aggregate productivity and wage slowdown.²

It is important to distinguish between dynamism as a *process* at continuous work in the economy and *indicators* of it. Dynamism as a process is indeed fundamental to economic growth and productivity. However, movements in the imperfect proxies may reflect factors unrelated to real dynamism in an economy. It is therefore important to focus on the factors that determine the fundamental drivers of dynamism in the economy and to take care in using proxies for dynamism as the appropriate targets for policy. Accordingly, we take a nuanced approach to such indicators — some are better than others at identifying the underlying processes. The validity, interpretation and value of indicators matter because of their potential policy relevance. There are several facets to this. An indicator may provide:

- insights into the factors affecting the productivity slowdown that suggest workable policy remedies
- a valid measure of economic dynamism that provides little guidance for policymakers about what to do about it or that reveals effects on dynamism that are insufficiently large to demand much attention
- less valid or ambiguous measures that might lead to policies that are ineffective or even counterproductive.

¹ Increasing economic dynamism can lower prices for consumers and raise wages for workers. Dynamism can also promote more choice, innovation and better-quality goods/services, although these are harder to measure. This submission focusses on the link between productivity and economic dynamism in its various forms.

² This is supported by an extensive and rapidly growing academic literature drawing on large firm and employee micro-datasets in Australia and other OECD countries (Andrews et al. 2022; Andrews and Criscuolo 2013; Andrews, Criscuolo and Gal 2015; Andrews, Criscuolo and Hansell 2019; Andrews, Hambur and Bahar 2021; Andrews and Hansell 2019; Andrews, Nicoletti and von Rueden 2020; Andrews and Westmore 2014; Hambur and Andrews 2023; Saia, Andrews and Albrizio 2015).

One concern is that aggregate, economy wide trends mask differences at the industry or local level, which can be important for policy. Further, the same trend could mean many different things in different markets. This submission demonstrates that there *may be* other interpretations of recent trends in some of the indicators, which would have neutral, or positive, effects on productivity (section 1). The submission goes on to discuss some key emerging trends in relation to dynamism that arose during the Commissions appearance at a public hearing for the inquiry. Ultimately, policies should not focus on changing the *indicators* of dynamism (such as encouraging firm entries or increasing employee mobility), but rather on the fundamental mechanisms amenable to government action that underpin dynamism and productivity growth (section 2 — policy implications).

The state of play

Much of the contemporary research shows that, when measured at an aggregate level, competition and business dynamism in Australia has declined. But economy-wide metrics give only partial and sometimes spurious insights into the drivers of competition in individual markets. This submission examines the five common metrics of dynamism noted above, and considers:

- competing interpretations of the apparent declines in the proxies of economic dynamism, and the implications this may have for the relationship between economic dynamism and productivity. Our view is that some indicators are better at diagnosing worrying aspects of dynamism over the past decade.
- how recent declines could vary across industries and across different places
- putting Australia's position in perspective by considering outcomes among global peers. If trends in indicators are mirrored overseas (which many are), then the explanation for the trends cannot be simply Australian-based, and should consider the context and environment within different countries.

Firm entry and exit rates

Firm entry and exit rates are prominent measures of business dynamism and competition because they are an indicator of 'creative destruction' in the economy. New firms enter the market to contest profits, offering new products and ideas, while less productive firms struggle to compete and exit the market.

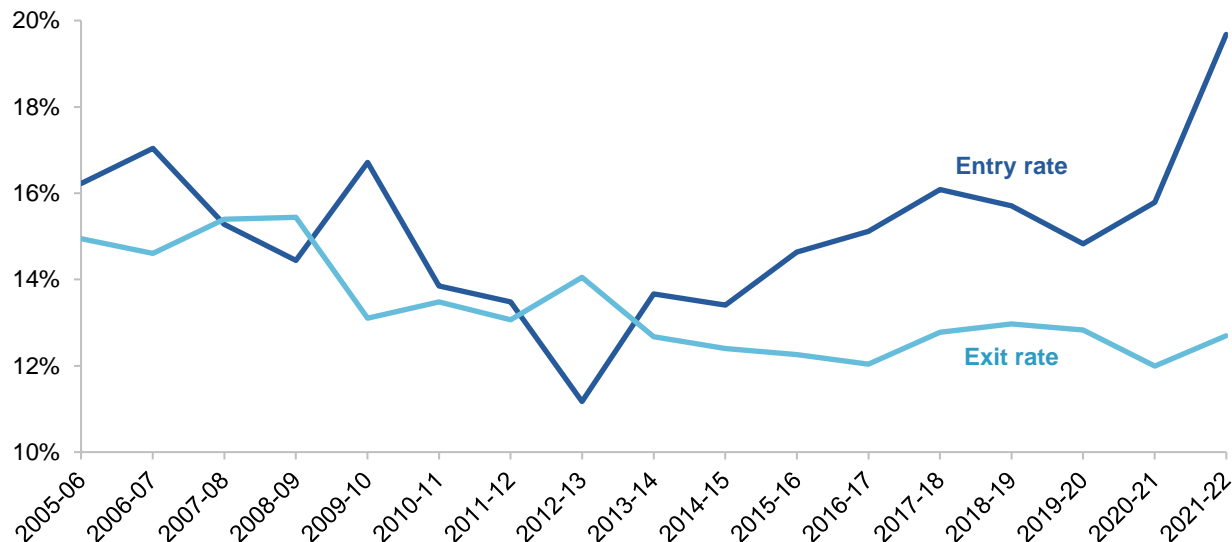
Rates of firm entry and exit in Australia declined between 2005-06 and 2013-14 by about 2.5% (figure 1). The entry rate grew modestly between 2013-14 and 2019-20, before experiencing a significant increase during the COVID-19 pandemic. The exit rate has continued to decline.

The increase in the entry rate is largely driven by non-employing firms, which exhibit higher churn relative to employing businesses over the period (panel b and c). To some extent this is unsurprising, as a majority of businesses begin as non-employers in their first year and are typically easier to set up and more likely to fail (Bakhtiari 2017). However, as non-employing businesses includes platform workers, the level of firm dynamism in the economy may be overstated (although they would add to labour dynamism given the flexibility of this work and its novel applications).

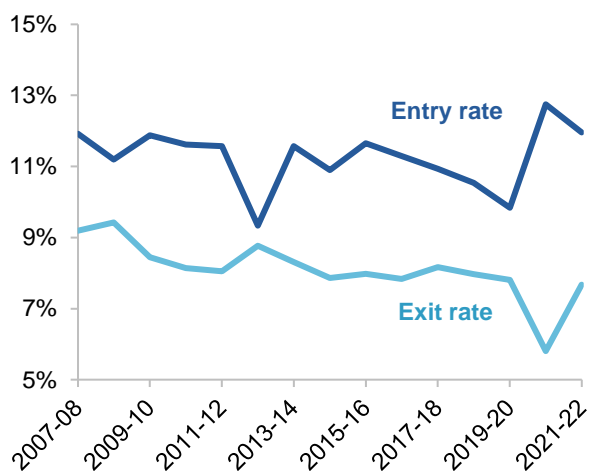
Exits have reduced over the period for both employing and non-employing businesses, meaning about an extra 50,000 businesses survived in 2021-22 that would otherwise have exited at 2005-06 rates of churn. Nonetheless, for employing businesses, entries remain above exits over the entire period, growing the stock of competing businesses overall.

Figure 1 – Firm entries and exits in Australia^a

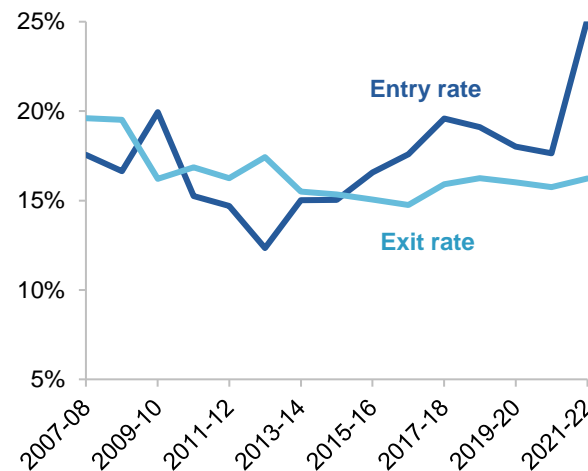
a. Firm entry and exit rates, all businesses



b. Firm entry and exit rates, employing businesses



c. Firm entry and exit rates, non-employed businesses



a. Entry and exit rates are expressed as a percentage of the number of businesses operating at the beginning of the period. Source: ABS (*Counts of Businesses, Including Entries and Exits*, various issues, cat. No. 8165.0).

Interpreting the change in firm entry and exit

Lower entry of new firms *may* reduce competitive pressures on incumbents, raising prices and profits. It may also point to reduced entrepreneurship, industry-wide innovation and risk-taking, limiting productivity growth. There is unsurprising evidence that exiting firms tend to be less productive than survivors and that their poorer performance was present some years prior to their exit (Nguyen and Hansell 2014). If exit rates fall for inefficient firms, then this reduces average firm productivity levels in an industry, and takes pressure off incumbents that face mediocre competitors. Some evidence suggests that since the early 2000s, firms with the largest market shares have been able to maintain their position in the market for longer (Day et al. 2022), which may reflect weaker competitive pressures on incumbents.

Nevertheless, declining entry and exit rates do not necessarily imply market settings antithetical to productivity and economic growth. The number of new firms may matter less for innovation and productivity

compared to competition between established firms and incentives for firm growth. Established firms can often leverage their experience in the industry and innovate more successfully than new entrants. Incumbent firms are generally more likely to have better access to capital and finance to invest in productivity-enhancing capital and technology. Research in New Zealand found that productivity growth mostly comes from incumbent firms, rather than new firms entering the market (Law and McLellan 2005). While some new entrants may be disruptive influences, and grow quickly, many small firm entries are in low-technology activities like cafes and restaurants, and do not have high productivity compared with established firms. They also often exit soon. The benefits to productivity from business churn is therefore a balancing act — entrants that survive and exiters typically add to productivity, while many small new entrants are not initially very productive and reduce average productivity (Chien, Breunig and Welsh 2021). The net productivity effects of entry and exit may cancel out.

Competition can be strong even with lower entry and exit rates if there is contestability, or a small number of firms are competing vigorously for market share (the Australian supermarket sector is one such sector — box 1). Moreover, within any industry there is significant heterogeneity across outputs, so competition effects depend on the specific activities of businesses within an industry. For example, fast food franchises, boutique restaurants and local cafes are all classified as in the same industry, but are imperfect substitutes for consumers. Increasing the number of fast-food franchises does not necessarily create competition for a boutique restaurant. And beverages and meals produced and consumed at home are substitutes for meals and beverages produced and sold by businesses, a form of competition obscured by the statistics. In the case of tradeable goods, the number of domestic businesses and entry and exit rates are largely irrelevant for competition.

Last, while firm exits may typically increase productivity, this is not always true. Firm exits impose costs. Productive assets are often scrapped, employees face search costs in finding new jobs, human capital can be lost, and productive firm networks can be weakened. Recessions reveal the extreme economic losses of significant firm closures, notwithstanding that they may improve the efficiency of markets as the recession recedes (Caballero and Hammour 1994, 1996). The desirability of preventing ‘fire sales’ of businesses associated with business bankruptcy and insolvency has long been recognised in policies of firm closure. Business support measures during the advent of COVID-19 were intended to maintain the viability of intrinsically sound firms (PC 2021c, p. 44).

Empirical research has explored the impact of business churn on productivity enhancing mechanisms such as efficient resource allocation and innovation. However its underlying causes and impact on aggregate productivity remains contested (see for example Akcigit and Ates (2020), Andrews and Hansell (2019), Bento and Restuccia (2022), Li (2017) and Decker et. al. (2016)).

Ultimately, increases in entry and exit rates are not necessarily good for productivity and consumer welfare. Rather, there is an optimal level of entry and exit in an economy as both entry and exit, and the forces underpinning them, incorporate both benefits and costs.

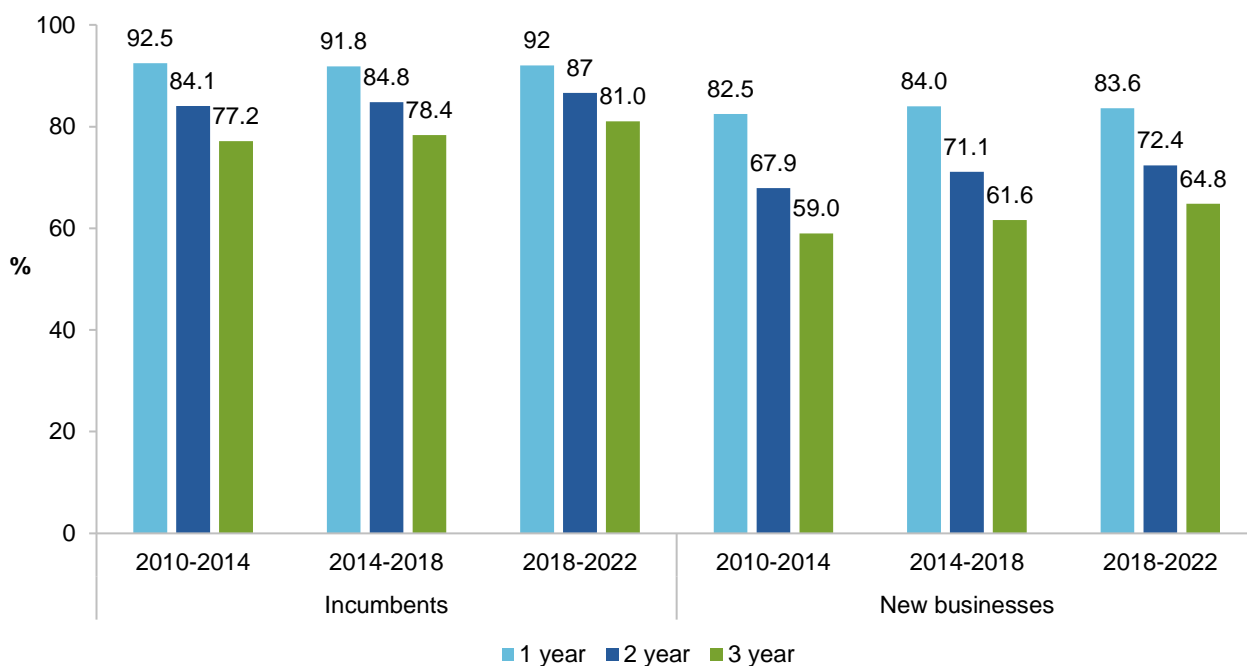
A fall in dynamism is not the only reason firm exit are declining

A fall in ‘dynamism’ is not the only explanation for the decline in firm exit rates. Firm exit rates and firm survival rates also depend on macroeconomic conditions and interest rate settings for businesses, as well as structural factors within the economy like shifts in industry structure. Broadly improved business conditions that reduce exit rates would not necessarily limit competition and productivity growth and may improve it. Increasing interest rates can reduce company survival (Buddelmeyer, Jensen and Webster 2010), while company failure is primarily driven by aggregate conditions (failure is more likely during a recession) and cyclical company factors (profitability, indebtedness and liquidity) (Kenney, La Cava and Rodgers 2016). The improved survival rates of businesses may partly be explained by the easing of monetary policy following the

global financial crisis that occurred alongside the decline in business exits. Business borrowing rates steadily declined for both small and large businesses over this period (Bank and Lewis 2021).

Over the period that exit rates fell, Australia observed higher survival rates after 2 and 3 years for both new and incumbent employing businesses, suggesting broader improvements in market conditions rather than reduced competition for less productive incumbents (figure 2). These survival rates may also be productivity enhancing — firms survive, become incumbents in the market and begin growing and competing, improving productivity.

Figure 2 – Survival rates for new and incumbent employing businesses, 2010 to 2022



Source: ABS (*Counts of Businesses, Including Entries and Exits*, various issues, cat. No. 8165.0).

While it is difficult to determine the extent that declining exit rates reflect greater survival of less competitive businesses, some research suggests the share of labour going to businesses at the edge of financial viability (known as ‘zombie’ businesses) has not risen since 2007 (Bowman 2022). This may mean that viable and productive businesses have been more successful in staying in the market. Moreover, the survival of new startups, especially in some innovative sectors, may be necessary for the wider commercialisation of new services and products. For example, greater access to credit or improved management will decrease exit rates of startups — which will be productivity enhancing.

Many business exits are also due to lifestyle factors such as retirement, relocation or career changes. Indeed, less than 10% of firms exits are due to economic failure (insolvency) and past survey data has found about two thirds of terminated businesses did not lose any money (PC 2015, p. 295).³

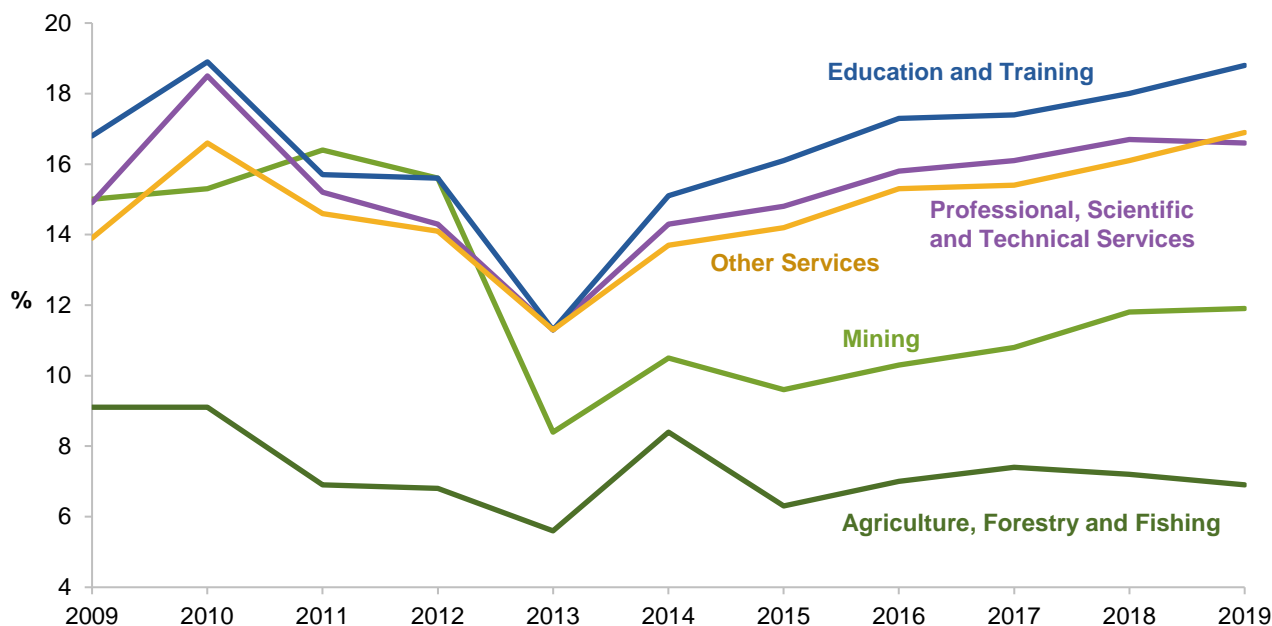
³ Bankruptcy and insolvency laws can also affect whether a business exits a market. The direction of policy has been to limit the exit of intrinsically viable businesses (PC 2022b vol. 5, p. 16). For example, in 2021 the Australian Government implemented arrangements for restructuring via small business restructuring practitioners, and there were other reforms in 2017. Changes in insolvency law have probably reduced exit rates below what they would have been, but the effect will have been negligible given the low prevalence of insolvencies, and in any case, cannot explain the longer-term trend.

A breakdown by industry

Aggregate data masks changes in entry and exit at the industry level. In the decade prior to the pandemic, exit rates declined across all industries except transport, postal and warehousing (likely reflecting the large impact from rideshare and food delivery platforms). This provides further evidence that the increase in survivability has been broad-based and more likely attributable to favourable economic conditions that affected all industries.

Changes in entry rates were more varied. Entries generally increased more in services (Education and Training, Professional, Scientific and Technical Services and Other Services), and less in primary and secondary industries (Agriculture, Mining) (figure 3). Most industries maintained a positive difference between entries and exits, leading to an increase in the stock of businesses overall. Agriculture, Forestry and Fishing, Manufacturing and Retail Trade were the only industries to experience declines in the number of firms due to average entry rates below exit rates (figure 4). The lower entry rates in the Retail Trade sector is likely due to structural change in the industry from the introduction of 'big box' retailers that focus on high volumes and economies of scale (see section below for more discussion on market concentration). Some research suggests that despite the dominance of a few large firms in Retail Trade, heightened competition has occurred through online shopping and the entrance of international firms, forcing retail businesses to remain highly price competitive (Carter 2019; Hambur and La Cava 2018) (box 1).

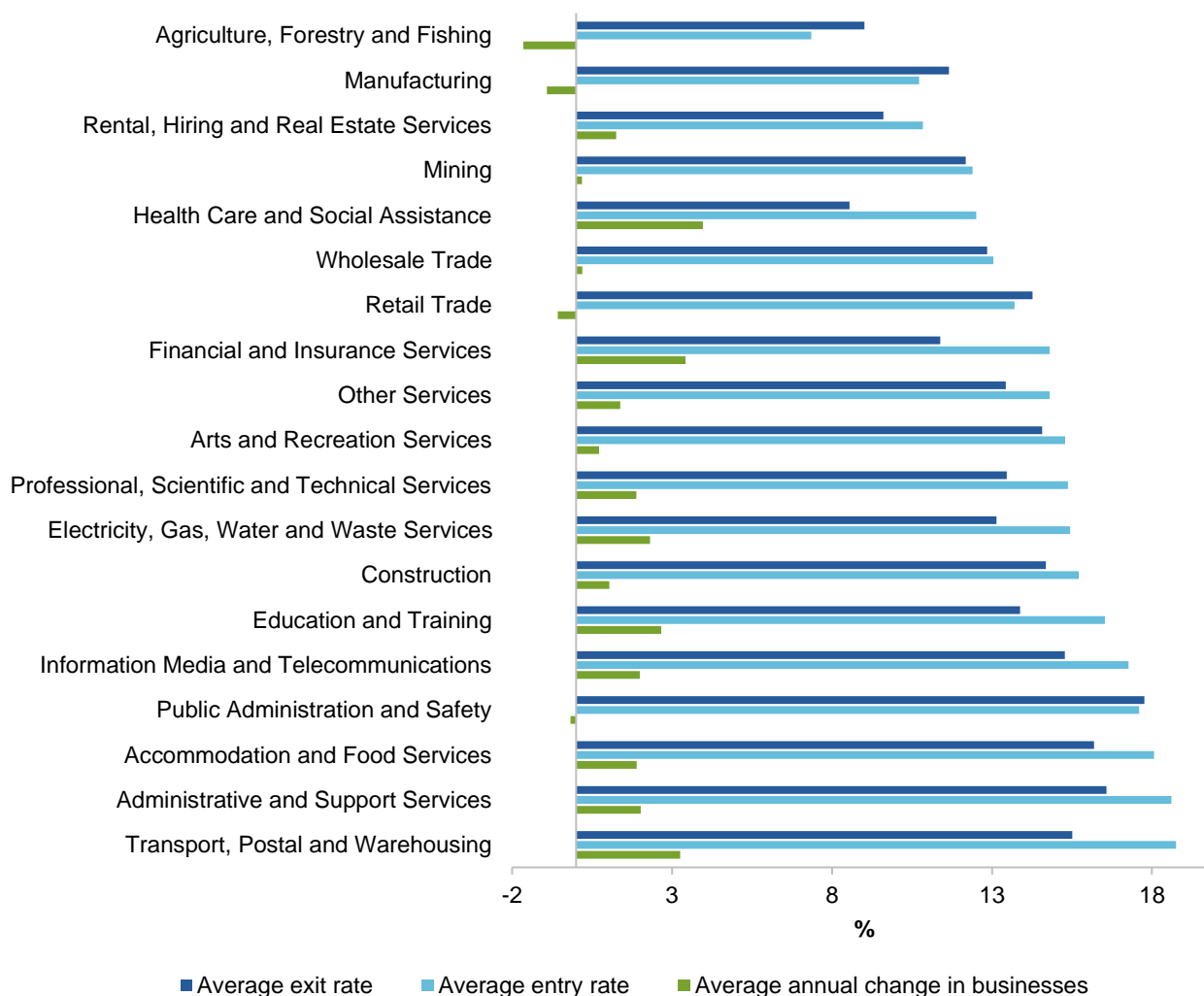
Figure 3 – Gross entry rates increased the most in services^a



a. This figure shows gross entry rates (i.e. the number of businesses that enter the industry, without considering the number of businesses that have exited the industry). Includes employing and non-employed businesses.

Source: ABS (*Counts of Businesses, Including Entries and Exits*, various issues, cat. No. 8165.0).

Figure 4 – Average business churn and increase in business, 2008-09 to 2018-19^a



a. Includes employing and non-employing businesses. Averages are the arithmetic mean over the decade. Entry and exit rates as a proportion of businesses in each size category at the beginning of the financial year.

Source: ABS (*Counts of Businesses, Including Entries and Exits*, various issues, cat. No. 8165.0).

Box 1 – The retail industry

Australia’s retail industry offers an exemplar of low exit rates and high concentration, but strong competition, which is at odds with the conventional wisdom on economic dynamism.

Entry rates into the retail sector have slowed (to be below the national average), while concentration has increased (Carter 2019; Hambur and La Cava 2018).

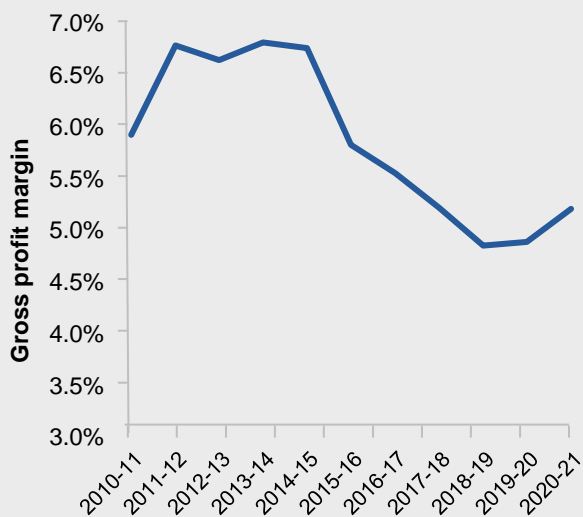
In particular, department stores and supermarkets are very highly concentrated (with the top 4 firms making up over 75% of industry sales) and concentration increasing over the past 20 years. In supermarkets, two firms — Wesfarmers (including Coles) and Woolworths — increased from about 30%

Box 1 – The retail industry

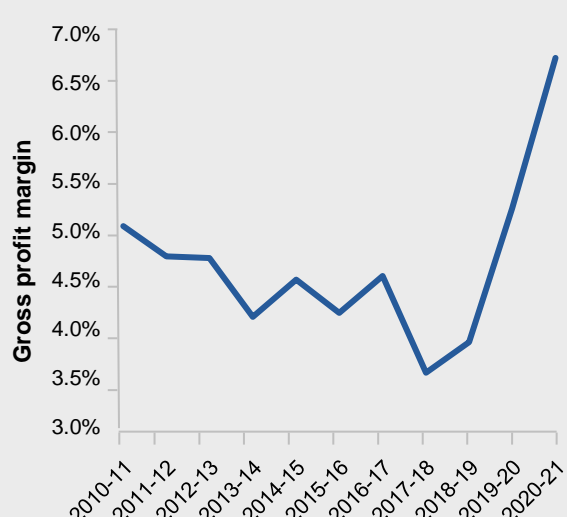
of total *retail* trade in 2001 to peak at about 40% in 2013 (most recent data puts it just below its 2013 peak of 40%) (Hambur and La Cava 2018).

However, despite the persistent and high level of concentration, the RBA report an increase in competition in the retail sector. Combining industry data with their liaison program, the RBA point to falling net margins, and falling mark-ups in the retail industry, as evidence of growing competition. A growing number of firms cite competition as a reason for forcing prices down (Carter 2019). The figures below show gross profit margin declining across the retail sector until 2019 (a sign of heightened competition), before increasing after the COVID-19 pandemic.

Gross profit margin – food retail



Gross profit margin – non-food retail



Source: ABS (2022, *Australian Industry*, 2020-21, Cat. no. 8155.0, table 2).

Supermarkets (included in food-retail) in particular are worth closer investigation. The sector has observed aggressive competition between Australia’s two major domestic supermarkets despite the high level of concentration. Woolworths Group has a 37% share of the market in 2021 and Coles 28%. The other two main competitors, Aldi and Metcash (which includes IGA and Foodland), had a 10% and 7% share respectively (Hunt Export Advice 2023). There are other competitors in the wings offering new delivery options — including Amazon Fresh.

Supermarkets reported that they have responded to increases in competition by limiting price increases and enhancing the ‘in-store experience’ — improving the level of customer service and increasing the range of services offered. Retailers are unwilling to lower costs by reducing headcount due to the negative impact it may have on service and sales. In short, two large players with a competitive fringe have provided a highly competitive market in Australia.

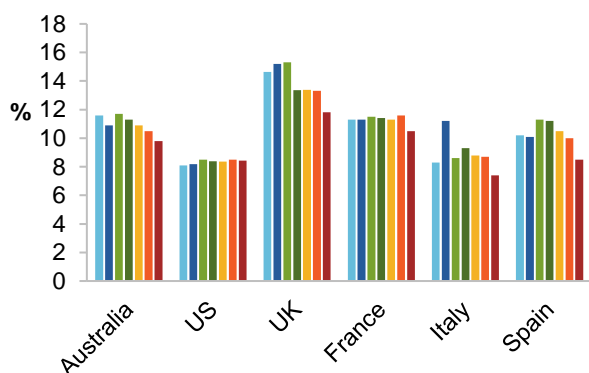
International comparisons

International comparisons of business dynamism also show that exit and entry rates have declined for many OECD economies from 2000 to 2015 (OECD 2021a), which given weak and slowing productivity growth, has heightened interest in business churn as an indicator of dynamism. The recent picture tells a less clear-cut story, with trends in exit and entry rates varying considerably across countries (figure 5). Past work by the

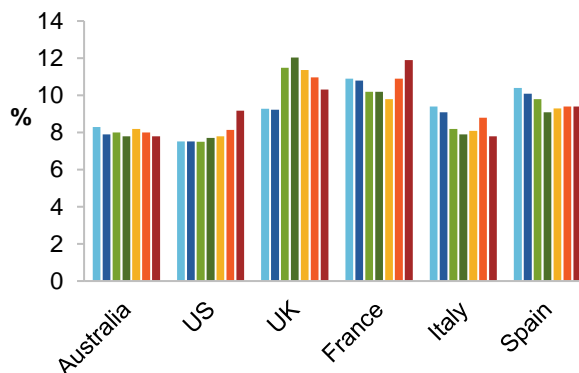
Commission found that the churn of business entries and exits in Australia is comparable to other countries over 2006–2013 (PC 2015). More recent data shows similar results. There has been a larger decline in entries compared to some countries, however entry rates are still relatively high. Exit rates are slightly lower, however they have been relatively stable over the period compared to other countries (figure 5). Data for a broader group of countries for just before the COVID-19 pandemic shows Australia has roughly comparable entry rates and slightly lower exit rates than peers (figure 6).

Figure 5 – International trends in business entry and exit, 2014 to 2020^a

a. Entry rates for employing businesses



b. Exit rates for employing businesses

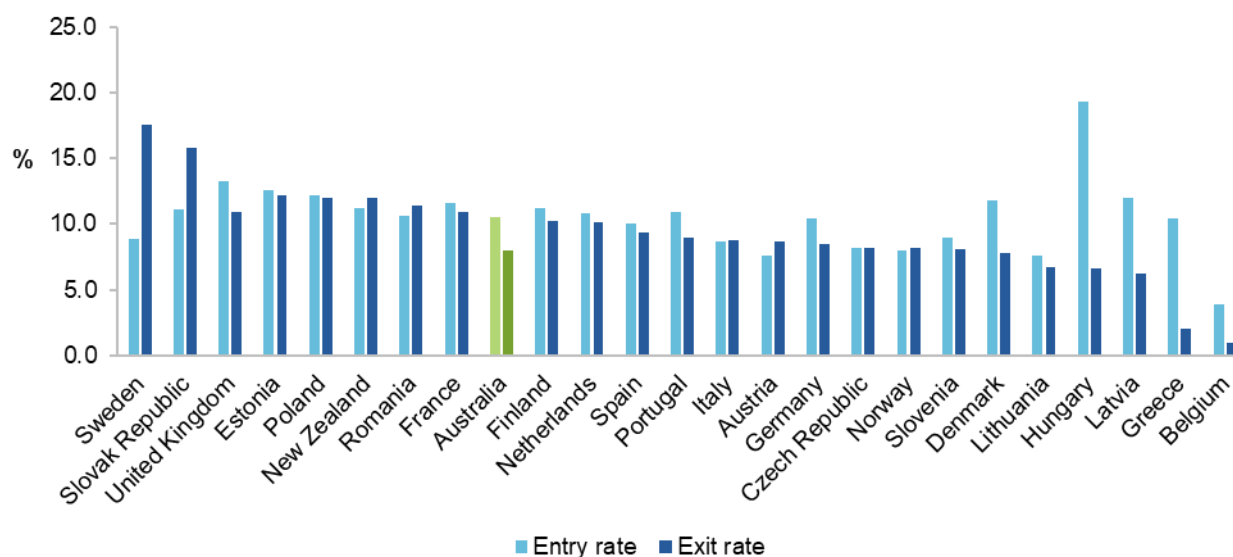


■ 2014 ■ 2015 ■ 2016 ■ 2017 ■ 2018 ■ 2019 ■ 2020

a. International comparisons based on employing businesses have been found to be more relevant than indicators using all businesses because results are sensitive to the coverage of business registers. Australia is based upon financial years, while the other countries are calendar years. France, Italy and Spain exclude Agriculture, Forestry and Fishing.

Source: ABS (*Counts of Businesses, Including Entries and Exits*, various issues, cat. No. 8165.0), US Census Bureau (2020), ONS (2021), OECD (2023a).

Figure 6 – International comparison of employing business entry and exit rates, 2019^a



■ Entry rate ■ Exit rate

a. Agriculture, Forestry and Fishing is included in entry and exits for Australia but excluded for all other OECD countries. Australia is based upon financial years, while the other OECD countries are based on calendar years.

Source: OECD (2023a).

Firm entry/exit dynamics can be a source of productivity enhancement, but it is difficult to establish this for any given industry. The appropriate policy imperative to limit obstacles to firm entry (such as those posed by regulation) and to discourage anti-competitive conduct or inefficient market dominance apply regardless of any observed patterns of exits and entries (section 2).

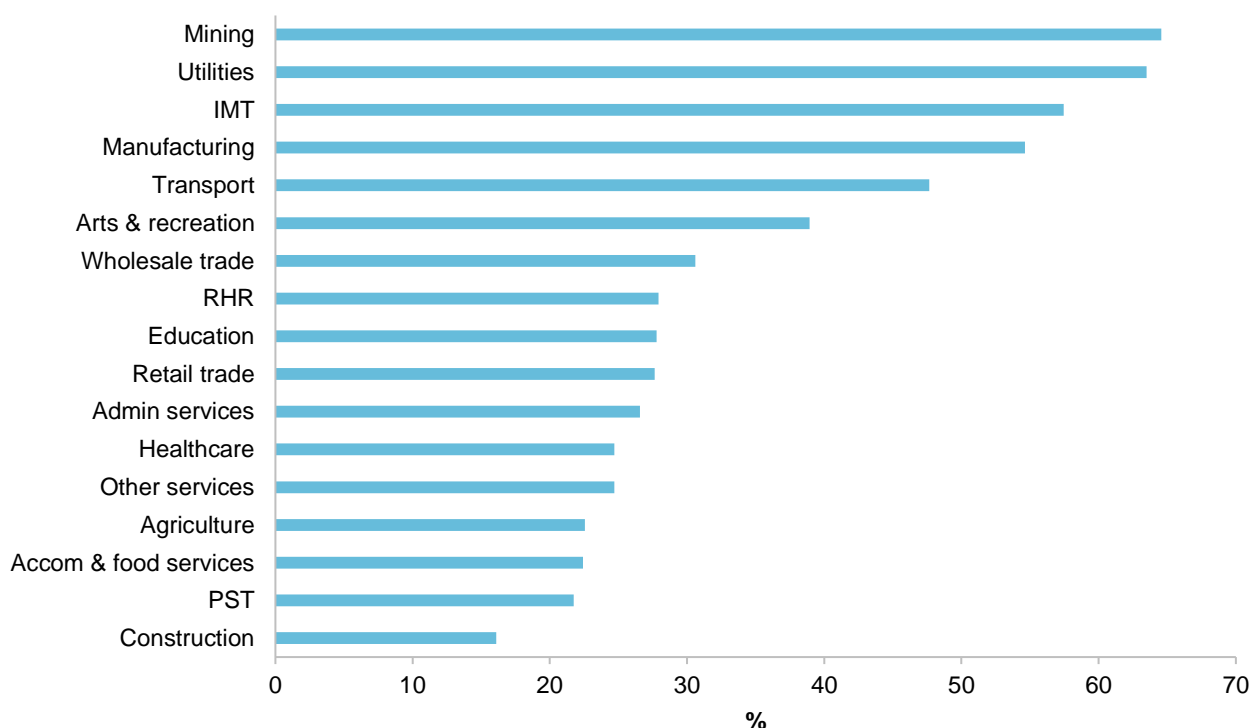
Rising concentration

Measures of concentration are based on the prominence of large firms in any given industry and are a proxy the level of competition and potential market power.

No indicator of concentration is perfect

One common measure is the share of output accounted for the top 4 largest firms. In Australia, there are numerous industries in which the four largest firms account for over 40% of the total industry output (figure 7). Averaged across all industries, some 42% of total output is from the four largest firms in each industry in 2014-15 (Hambur and La Cava 2018, p. 4). Looking at a different level of aggregation and more recent data, the Productivity Commission has found that the banking, supermarkets, mobile telecommunications, internet service provider, fuel wholesale and retail, and general insurance sectors all have four firm market shares of 70% or more (PC 2023a, p. 3).

Figure 7 – A handful of Australian industries are dominated by the top 4 firms^a
Top 4 firms’ share of industry output, 2001/2 – 2014-15 average



a. IMT is information, media and telecommunications; RHR is rental, hiring and real estate; PST is the professional, scientific and technical services sector.

Source: Hambur & La Cava (2018, p. 4).

Another commonly used measure of industry concentration is the Herfindahl-Hirschman Index (HHI). The HHI is calculated by taking the sum of squared market shares (s) of firms (i) in each market (m) at time (t). This is:

$$HHI_{mt} = \sum_i s_{imt}^2$$

The closer $HHI \rightarrow 1$ the more the industry is dominated by a few businesses (with $HHI=1$ indicating that all output from an industry is accounted for by just one firm). At the other extreme, as $HHI \rightarrow 0$ many firms contribute to the output in the industry. In general, the HHI assumes industries with less dispersion in market share are more competitive (for example, an industry with two firms that have 50% market share is more competitive than an industry with two firms having a market share of 60% and 40% respectively). This means a change in HHI over time might reflect developments in an industry, such as the entry of new firms (lowering HHI) or the growth of a few large firms (increasing HHI). The US Department of Justice (2010) categorises industry concentration as:

- unconcentrated industries: HHI below 0.15
- moderately concentrated industries: HHI between 0.15 and 0.25
- highly concentrated industries: HHI above 0.25.

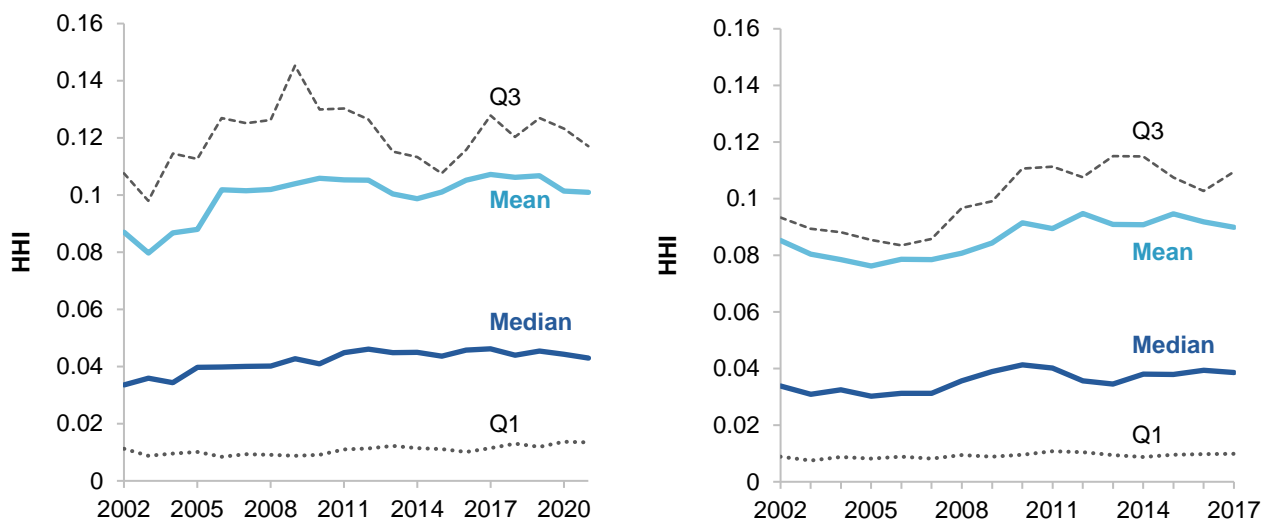
Some measures using HHIs show that overall business concentration in the Australian economy increased between 2002 and 2016 (figure 8). Productivity Commission estimates and Bakhtiari (2021) both suggest that in 2016 HHI was about 0.1 (figure 8), which is relatively unconcentrated.

The trends in HHI depend on industry aggregation and definition of a business. Productivity Commission estimates (constructed using BLADE data at the ABN and 3-digit industry level) suggest that average HHI rose from about 0.08 to about 0.1 between 2003 and 2006, and then remained fairly static. An alternative method adopted by Bakhtiari (2021) using Type of Activity Unit (TAU) identifiers suggests an increase in concentration occurred between 2006 and 2010. Further, using the 75th percentile of businesses (rather than the mean) produces a different trend in concentration between 2007 and 2012 (the dashed grey line in figure 8).

The different methods and levels of aggregation capture different aspects of the heterogeneity within and across industries. The variations suggests that caution should be exercised when using HHI as a policy analysis tool.

Figure 8 – Estimation method of HHI can alter the narrative

Commission estimation of HHI (LHS) & Bakhtiari (2019) estimation of HHI (RHS)



Source: Productivity Commission estimates based on BLADE and Bakhtiari (2021, p. 63).

Interpreting the change in concentration

High concentration can be good or bad for productivity and economic prosperity, depending on the context (Covarrubias, Gutiérrez and Philippon 2020). High concentration may indicate firms have, and can exploit, market power. However, it could also arise because highly-performing firms displace less efficient firms, leading to higher concentration, but better outcomes for consumers. As long as competitive pressures remain (i.e. other firms can adopt the techniques of the highly performing firms and improve their productivity), there is no competitive problem. Both ‘good’ and ‘bad’ implications of rising concentration are explored in greater detail below.

Rising HHI could undermine competitive pressures and lead to poorer market outcomes ...

On one hand, growing concentration risks the exercise of market power by increasingly dominant incumbents. This could lead to managerial complacency, reduced investment (to keep quantity low and prices high), undermined incentives for innovation (slowing productivity) and lower consumer welfare. This underpins concerns about the relatively high concentration of some key industries in Australia noted above.

These risks may be even greater than suggested by aggregate concentration measures:

- measures of industry concentration at the national level are not useful where there is industry concentration in local areas, especially in smaller regional towns
- within industries — even those defined at a highly disaggregated level — there is often considerable differentiation between the activities of different firms. Even if industry concentration is low, this may not be true for segments within the industry
- There can be common owners of businesses that are identified as separate entities in official statistics. The common owners may have incentives to limit competition between these businesses (Leigh 2022).

... but rising concentration could also reflect a number of other more benign factors

On the other hand, levels of, and changes in, HHI are not necessarily indicative of weakened competition or poorer consumer outcomes. This is why it is important for competition regulators and policymakers to scrutinise the workings of any given industry where the risks appear high before reaching definitive conclusions.

Industry concentration is only a partial indicator of competition — as noted above, a small number of rival firms can compete vigorously (as in the retail industry — box 1).

The scope for a dominant domestic business to set excessive prices for business users of their goods or services also depends on the demand characteristics of the markets into which the final goods are supplied. If a customer is supplying products into highly competitive global markets, the scope for a dominant firm to extract monopoly rents is largely eliminated. For example, notwithstanding the industry dominance of vertically-integrated bulk wheat operators, the Commission (2013, p. 277) found they had little capacity to set excessive prices given they were selling into a highly competitive global wheat market (which means that demand would be very responsive to any price hikes).

Competition can also remain strong if there is market contestability — the potential for entry of new domestic or foreign businesses. Market contestability is not immediately observable in industry concentration and dynamism statistics.⁴ Even industries with a small number of firms may be highly competitive if there is the credible threat of entry (Baumol 1982).

⁴ Baumol defined a contestable market as one where entry is free and exit is costless (Baumol 1982, p. 3), although a more practical interpretation would be that barriers to entry and exit may be relatively low.

Moreover, high HHIs in a domestic industry subject to import competition or competing in global export markets are unlikely to have adverse impacts on prices or incentives for efficiency. Indeed, if there are scale economies, domestic industry concentration may be efficiency-enhancing. While competition from overseas competitors has historically been fiercest in tradeable goods, exposure to trade competition is becoming increasingly important in services (PC 2023a, pp. 8–9).

If a firm in a highly concentrated industry has market power, but uses it primarily to set high prices in export markets, then there is a tradeoff between any efficiency losses from lack of domestic competition and the benefits from higher income flows from foreigners facing higher prices. More generally, for consumers there may be a tradeoff between scale/network benefits and higher prices (Roberts 2014, p. 895), though ideally competition policy can retain network benefits and strong competition through requirements for any-to-any connectivity (as in telecommunication services).

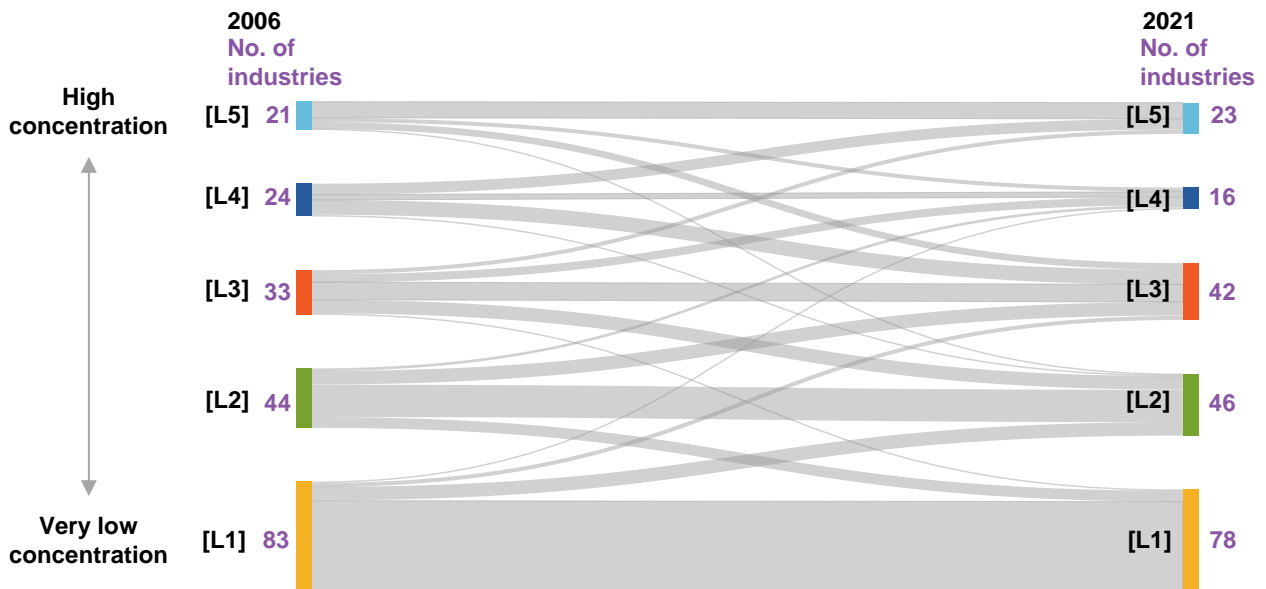
In conclusion, as Syverson has put it, concentration measures need to be viewed as highly imperfect measures of underlying competitive pressures:

Perhaps the deepest conceptual problem with concentration as a measure of market power is that it is an outcome, not an immutable core determinant of how competitive an industry or market is. The nature and intensity of industry competition combine with other supply and demand primitives to determine equilibrium concentration. However, the conditions of competition drive concentration, not vice versa. As a result, concentration is worse than just a noisy barometer of market power. Instead, we cannot even generally know which way the barometer is oriented. Even if researchers agree on a definition of the market, concentration can be associated with either less or more competition. Syverson (2019, p. 26).

The dynamics of industry concentration

Trends in HHI at the aggregate level do not mean all industries become more concentrated. Figure 9 shows the movements of industries between varying levels of concentration (on a scale from L5 to L1, with L5 being high concentration and L1 being very low) from 2006 and 2021. For example, about 60% of the most concentrated industries stayed that way from 2006 to 2021, just over 10% stayed reasonably concentrated, and nearly 30% had become lowly concentrated using the Department of Justice criteria. Most industries (comprising L1, L2 and L3 in figure 9) are not concentrated, and very few of these became concentrated from 2006 to 2021. Similarly, the distribution of concentration measures across industries shows relative stability from 2006 to 2021 (figure 10). The density has thickened most at around $HHI=0.1$, which is a still relatively low level of concentration.

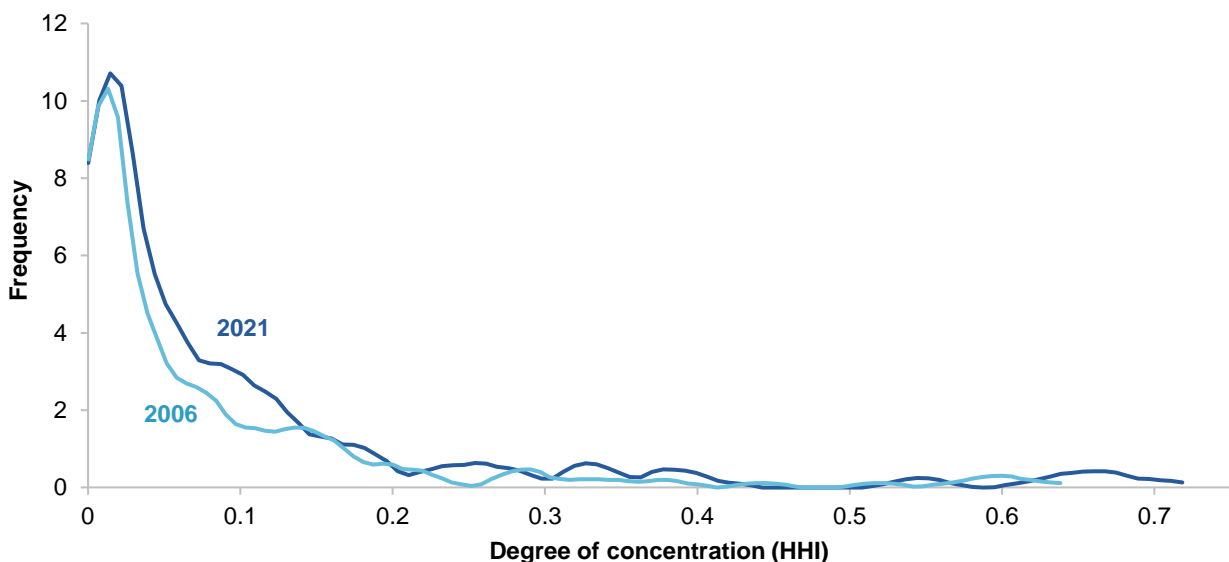
Figure 9 – Concentration levels by industry are subject to flux^a
2006 to 2023



a. The categories for HHI are L5 ($HHI \geq 0.25$); L4 ($0.15 \leq HHI < 0.25$); L3 ($0.07 \leq HHI < 0.15$); L2 ($0.025 \leq HHI < 0.15$) and L1 ($HHI < 0.025$). The HHI values are based on a 3-digit industry classification. The number of industries on the left hand size represents the distribution of concentration in 2006 and those on the right, the distribution in 2021.

Source: Productivity Commission estimates based on BLADE.

Figure 10 – Most industries are not highly concentrated and this has not changed much^a
Distribution of HHIs. 2006 to 2021



a. Based on using kernel density estimation using an Epanechnikov kernel and 100 bins and HHIs for 3-digit ABS industries.

Source: Productivity Commission estimates based on BLADE.

A breakdown by industry

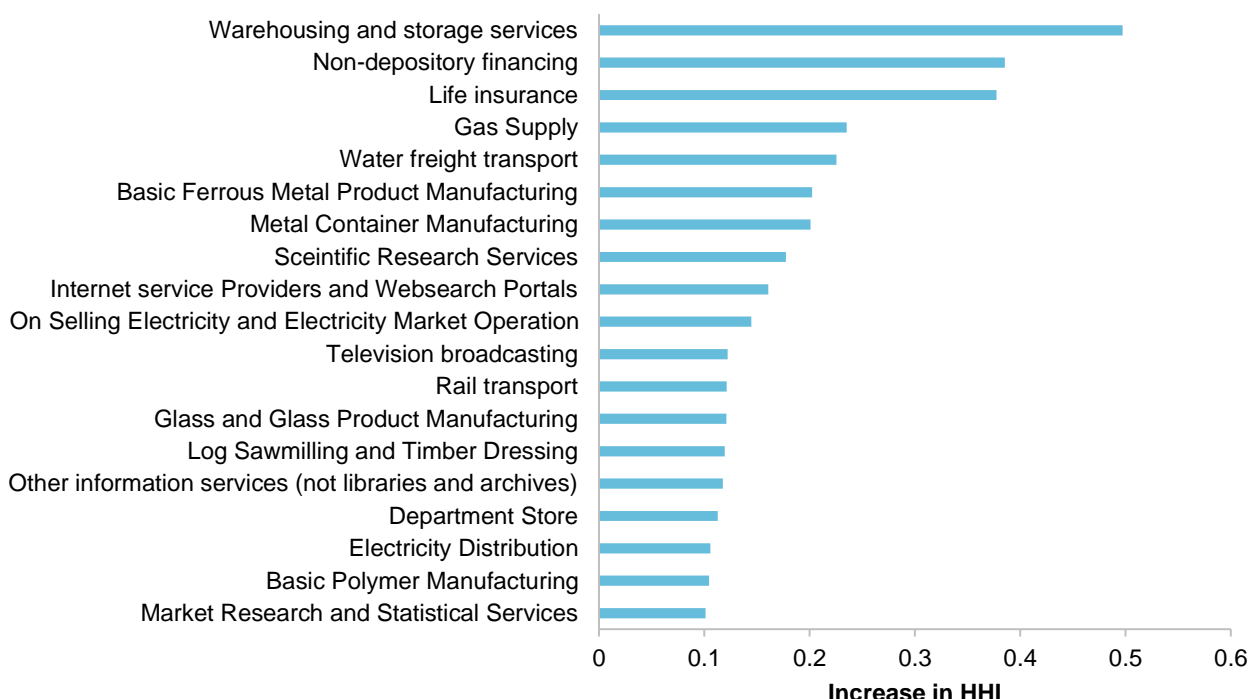
As varying industries face different levels of demand and differing cost-structures, it is important to consider the level of aggregation when creating measures of concentration — such as at the industry rather than national

level. Australian industry-specific data shows that industry concentration trends have varied by industry, which suggests that factors influencing concentration have not been consistent across the economy.

The sustained increase in Australia’s average HHI has been driven by relatively large increases in concentration across a variety of industries including: warehousing and storage services, non-depository financing, life insurance, gas supply, water freight transport and various manufacturing industries (figure 11).

Figure 11 – Concentration increased in parts of the storage, finance & insurance, gas, transport and manufacturing industries^a

Increase in nominal HHI 2007 to 2017



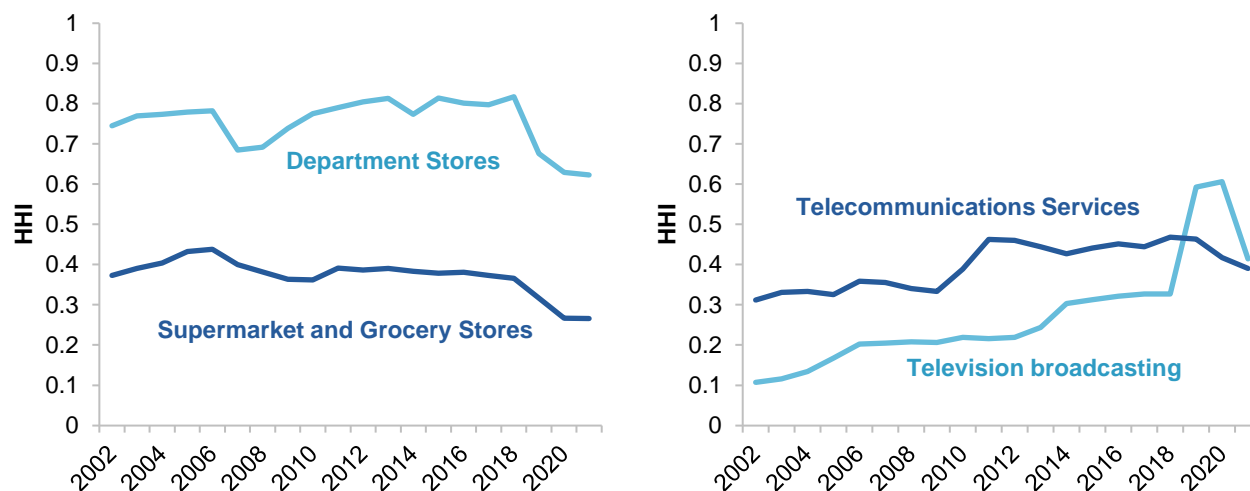
a. This period was chosen as some changes in categorisation prior to 2007 and following 2017 can create anomalous statistics. Source: Productivity Commission estimates based on BLADE.

However, understanding the implications of trends in HHI requires broader information about any industry to assess whether concentration matters.

Department stores are highly concentrated in Australia (the HHI was greater than 0.6 in 2021). However, specialty retail stores and online shopping strongly compete with this industry, giving them limited room to set excessive prices. Similarly, concentration in the supermarket industry has decreased from about 0.43 in 2006 to about 0.26 in 2021 (figure 12), a likely reflection of the entry of some global grocery stores like Aldi. However, while entry may have played a role in the declining price margins discussed above, the most important factor is likely to be the intense rivalry between the two dominant businesses.

Additionally, in industries like television and telecommunications, domestic concentration appears to be increasing (figure 12). However, such industries are subject to entry by new suppliers and other forms of rivalry. For example, NBN Co — the dominant national broadband provider faces competition from wireless 5G networks in urban areas and low-earth orbit satellites in regional areas (PC 2023c, p. 45). As a content provider, the television industry must compete with a vast suite of internet options delivered via social media platforms (such as Meta and Instagram) and video-streaming services (like Netflix and Stan).

Figure 12 – HHI tells some, but not all, of the story



Source: Productivity Commission estimates based on BLADE

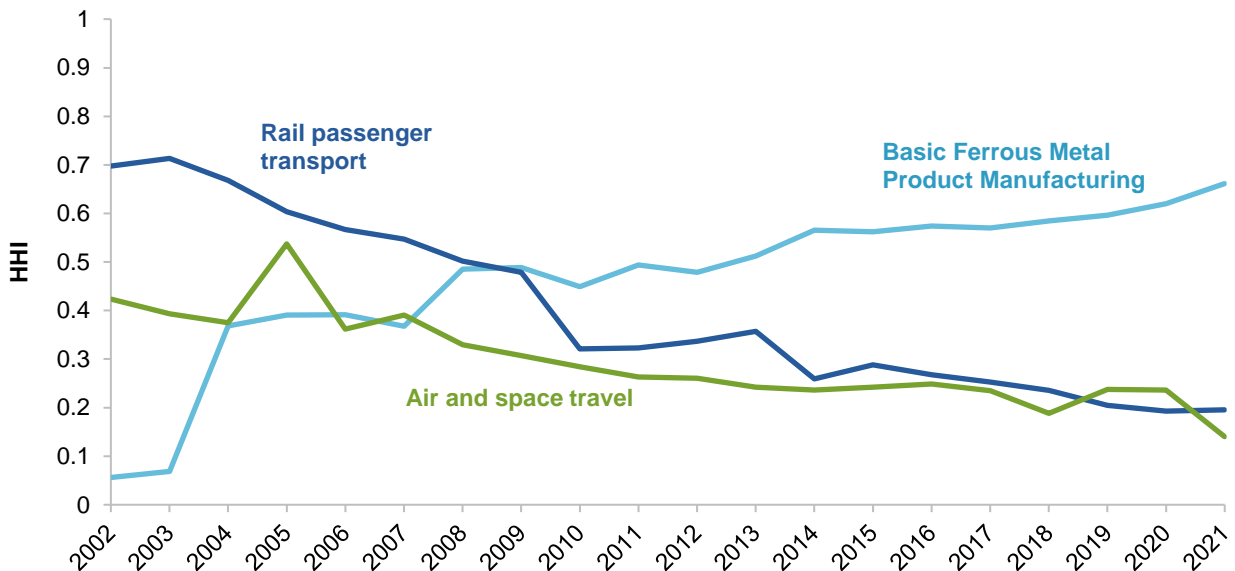
Trends in HHI at an industry level may mask varying trends at the sub-industry level. For example, air travel has become less concentrated in recent decades (figure 13), which will in part reflect the entry of low-cost operators like Jetstar. However, the latter is more a brand than a separate airline as it is owned by Qantas and sets prices to attract non-business customers, who tend to have greater responsiveness to fares. The key independent low-cost operator, Tiger Airways, exited the industry in 2020. Competition in the Australian airline industry primarily relies on rivalry between Qantas and Virgin Airways (and Rex in regional areas), and potential entry by new airlines (such as Bonza). In busy routes, the concentrated structure of the industry may not matter given this rivalry. Nevertheless, in some regional markets, the ACCC has expressed greater concern about market power (ACCC 2022), indicating that detailed assessment of markets and industries are often required to reach policy conclusions about whether and where concentration matters or not.

The danger of simplistic interpretation of concentration indexes comes into even greater relief for rail passenger transport in which a single operator provides services on any given network segment. The high level of concentration in this industry is desirable. It would be highly inefficient to have multiple rail lines serving the same customer base — the industry is a natural monopoly in which costs fall as passenger numbers increase. Even were the operators inclined to set high prices, travellers often have the capacity for motor vehicle and active travel (walking and cycling for short distances). In any case, operators in this industry are largely owned by state governments. Prices are not too high, the normal concern of an industry dominated by one or a few businesses. On efficiency grounds, the fixed costs of the industry are largely funded through the tax system, while ticket prices are highly subsidised to achieve affordability goals, to reap certain economies of scale and to offset some of the negative costs of road use congestion (PC 2021b). The fact that rail passenger transport has an HHI value of less than one and that it is declining (figure 13) is indicative of the problematic definition of the industry (a common set of activities across all of Australia). In fact, in any *relevant* market, HHI is usually equal to 1 as there are rarely instances where two passenger rail services compete with each other for the same passengers. (In the rare instances where passengers have some choice between heavy and light rail for their journeys — as in some parts of Sydney — the service is provided by a common owner). This is not a matter of concern.

Paradoxically, high domestic concentration may also indicate growing competition. The signature example is the Australian motor vehicle industry, where global competition intensified as tariff and other assistance for the local industry was removed, leading to the successive exit by the major local manufacturers. The

substantial increase in concentration in the basic ferrous metal product manufacturing industry since 2003 (figure 13) is likely to principally reflect the declining relative size of the domestic industry, rather than a sign that contestability is falling.

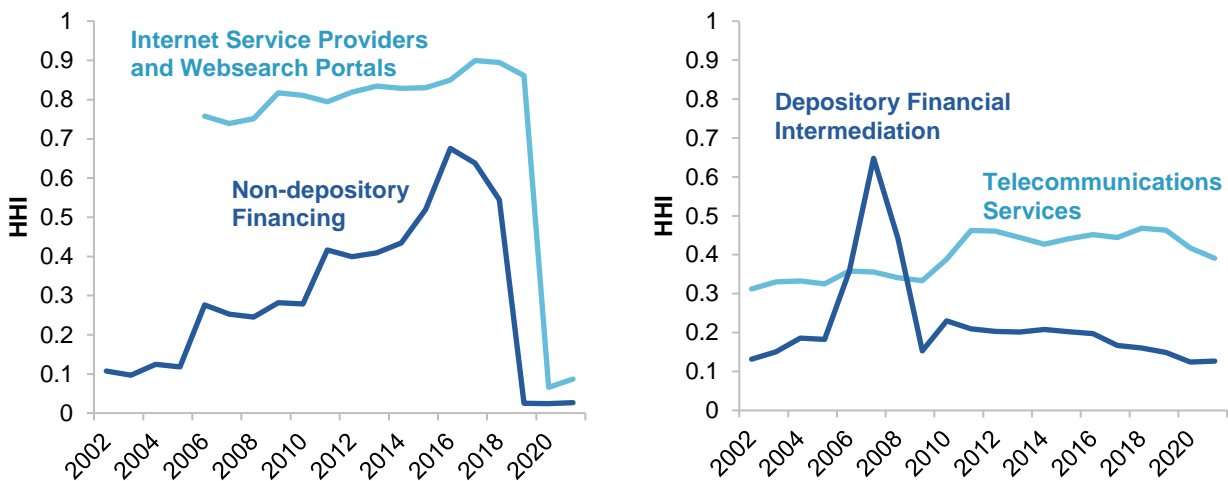
Figure 13 – HHI may not tell us useful things about specific industries



Source: Productivity Commission estimates based on BLADE

HHI may also provide unreliable measures if classifications of firms within industries change. Figure 14 shows a rapid decline in HHI for internet search providers and web search portals and non-depository financing between 2018 and 2021. This has occurred because the major firm in each category was reclassified to wired telecommunications and into deposit taking respectively. However, it is not clear that they have ceased their previous operations and changed the dynamics in their original industries. Nor for that matter have the recipient industries shown higher levels of concentration as a result of the reclassification.

Figure 14 – Classification of firms can have large effects on HHI



Source: Productivity Commission estimates based on BLADE.

The relationship between concentration and productivity⁵

If high concentration undermines competitive pressures, it can reduce incentives to lower costs and investment in new technologies and therefore reduce business efficiency. If the source of increasing concentration are barriers to entry or limits on the risk of exit by incumbents, then this may have separate adverse impacts on productivity because it alters the distribution of efficiency across businesses in an industry. Moreover, industries with just a few dominant businesses can distort labour markets by providing fewer opportunities for employees to move between incumbents and challengers. Such movements are one mechanism for wage growth and the diffusion of productivity-promoting knowledge (Hambur 2023).

Nonetheless, in theory, rising concentration could improve productivity if there are significant economies of scale (with natural monopolies being an extreme example) or if dominant firms invest more in research and development, resulting in technological advancements. R&D spillovers and diffusion of best practice may also be more readily achieved if there are a few firms since the transactions costs of transferring knowledge are lower (for example between a dominant incumbent and its suppliers).

The link between concentration and productivity may also involve reverse causation. Highly-performing firms can displace other firms, leading to higher concentration. In this case, higher concentration is an effect not a cause.

Accordingly, empirical evidence about the causal effects of rising concentration is critical in making judgments about which of these various factors dominate and in what contexts.

While empirical evidence tends to find competition improves firm-level productivity, this result is highly dependent on the proxy used to measure competition (Soames, Bruncker and Talgaswatta 2011; Bloom et al. 2015; Beneito, Rochina-Barrachina and Sanchis 2017). Research examining concentration has found little empirical evidence (either in Australia or overseas) that it necessarily undermines firm-level productivity. In fact, there is more support for the notion that concentration is typically accompanied by skewness towards highly productive firms that are leveraging technology, scale economies and network effects (the ‘superstar’ hypothesis) (Syverson 2004; Bessen 2017; Van Reenen 2018; Autor et al. 2020). Some evidence shows higher concentration through mergers can improve efficiency. An assessment of about 5,000 ownership changes in US power plants found that acquired plants experienced an average 4% increase in efficiency 5 to 8 months after acquisition (Demirer and Karaduman 2022). However, in so far as technology is driving concentration, this may also play into sluggish aggregate labour productivity measures if technology diffusion is slower to the majority of lagging firms (Andrews, Criscuolo and Hansell 2019). In Australia, Bakhtiari (2019) finds a largely positive relationship between productivity and concentration, which he argues is likely driven by technological change and international trade rather than weakening competition.

In summary, the relationship between concentration and productivity is complex and multi-faceted. As a result, concentration can either increase or decrease productivity depending on the environment and the industry. More generally, research distinguishes between good versus bad concentration:

Concentration and competition are positively related when shocks to ex post competition play a dominant role in the data. For example, lower search costs make it hard for inefficient producers to survive, force them to merge or exit, and lead to higher concentration. Increasing productivity differences among firms — often embedded in intangible assets — can play a similar role. If these explanations are correct, the remaining firms in the market should be the most productive and concentration should go hand in hand with strong productivity growth and intangible investment.

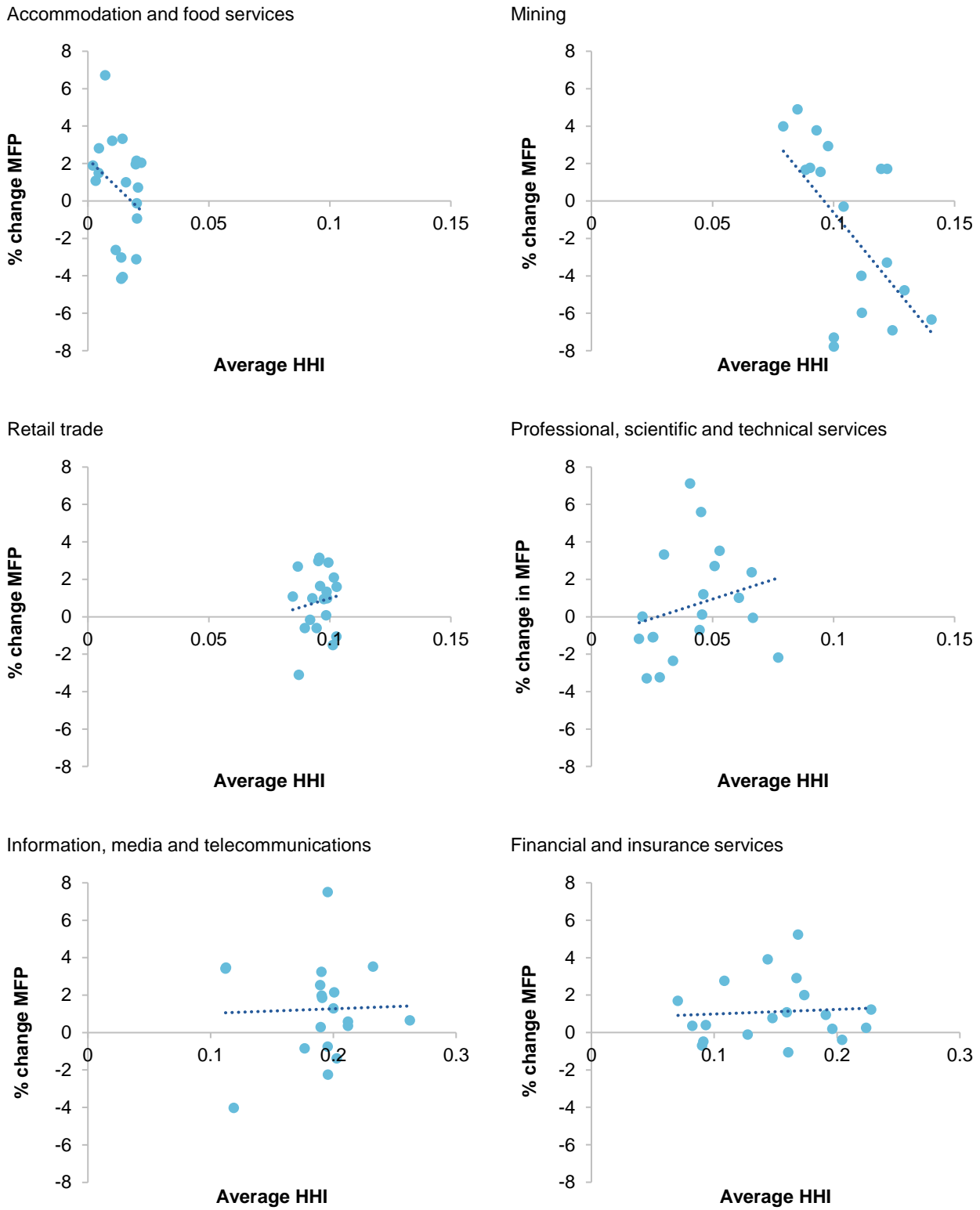
Concentration and competition are negatively related when shocks to entry costs play a dominant role in the data. This can result from changes in antitrust enforcement, barriers to entry, or the

⁵ The Committee requested the Commission to consider this issue in its submission.

threat of predatory behavior by incumbents. If these explanations are correct, concentration should be negatively related to productivity and investment. (Philippon 2019)

Given interest by the Committee in any empirical links between concentration and productivity, the Commission's examination of simple (non-causal) correlations between average concentration and multi-factor productivity growth at the 1-digit industry subdivision level reveal only weak relationships, barring mining (figure 15). This does not eliminate the potential for linkages. A more rigorous analysis would need to consider other confounding factors affecting multifactor productivity (such as innovation, exposure to global competition, the importance of fixed costs), problems in identifying the direction of causality, lags between changes in concentration and productivity, the regional distribution of businesses and inter-industry spillovers. Accordingly, the results should be seen as indicative.

Figure 15 – HHI and multifactor productivity growth at the industry level^a



a. HHI is estimated by taking a simple average of the HHI of each 3-digit industry within a 1-digit industry. Each dot represents the average HHI and the annual change in MFP for that year.

Source: PC estimates from BLADE and ABS productivity indices.

Investment as a vehicle for knowledge diffusion

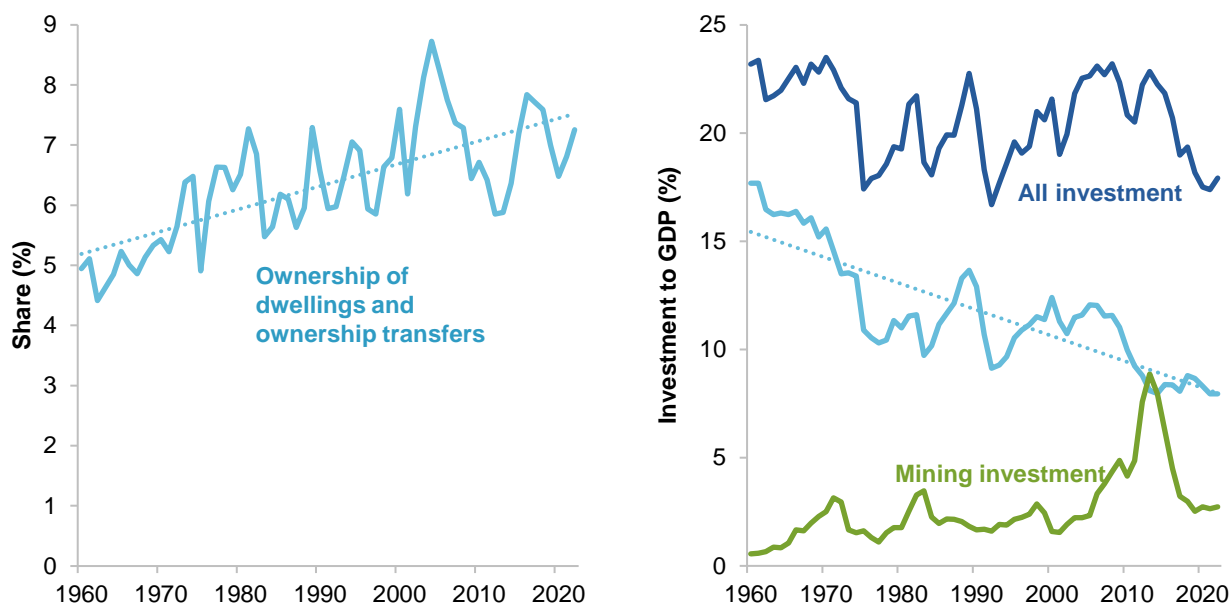
Business investment is a critical component of Australia's economic growth. Investing in new productive capacity increases labour productivity, raises wages and incomes, and generates innovation. Investment therefore influences both the short-term performance of Australia's economy as well as our future prosperity. (The Australian Government and Heads of Treasury 2017). Investment does not just add a greater capacity for producing goods and services, but is in its own right, an important transmission mechanism for knowledge.

The ratio of investment spending to GDP provides a useful metric for the strength of investment. The ratio of investment in dwellings and ownership transfer costs to GDP has generally been strong over the longer run and has been accompanied by periodic resources booms. However, when investments in mining, dwellings, ownership transfer costs are excluded, the investment ratio has demonstrated a secular decline for decades and is at its lowest level since 1960 (figure 16). Since the global financial crisis, all business investment as a share of GDP in Australia has declined.

Some types of investment are more knowledge-intensive. Their use extracts and builds upon that knowledge, increasing the returns from formal and informal skill formation, and increasing the capacity for innovation. A concerning aspect of recent trends in investment — as highlighted in the Commission's 5-year Productivity Inquiry — is that investment in knowledge-intensive capital — capital with 'brains' — has been sluggish over the recent decade (figure 17). Of all the various measures of falling trends in dynamism, this may be the most concerning.

Figure 16 – Investment trends^a

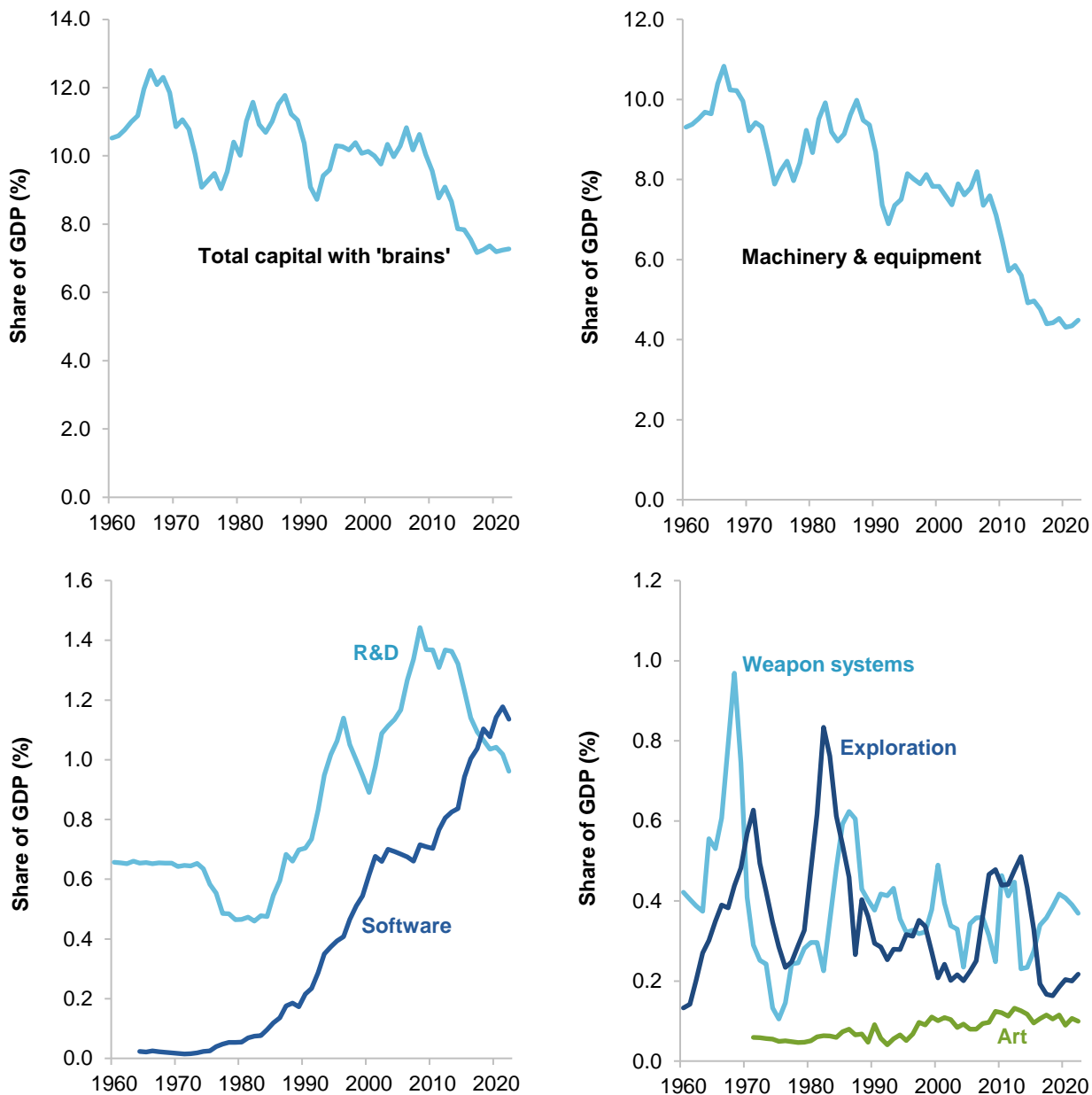
Selective investment ratios, 1959-60 to 2021-22



a. The reason for excluding investments in dwellings and transfers costs is these are unlikely to generate any economy wide spillovers. Mining investments are highly productive, but their volatility, especially associated with the recent resources boom, masks the trends in other investments.

Source: ABS (2022, *Australian System of National Accounts*, Private Gross Fixed Capital Formation, by Industry, table 52, Cat. no. 5204.0).

Figure 17 – Knowledge-intensive investment has generally fallen compared with GDP^a 1959-60 to 2021-22



a. The total capital with brains (the top left panel) is the sum of all the other investment types shown in the other three panels (in current price terms) as a share of current price GDP. The data includes one more year of observations than the Commission’s recently released 5-year Productivity Inquiry.

Source: ABS (2022, *Australian System of National Accounts*, table 56, Capital Stock, by Type of asset, Cat. no. 5204.0).

Firm mark-ups

Firm mark ups — the size of the gap between a firm’s price and marginal cost — is often used as an indicator of market power and associated with this, weaker competitive pressures and economic dynamism. In Australia, some evidence suggests mark ups have risen by 5% since the mid-2000s (Hambur 2021).

Interpreting the change in firm mark-ups

Interpreting rising markups has two challenges:

- Significant data constraints lead to imperfect measures of mark-ups.
- Uncertainty over the underlying causes of changes in mark-ups complicates their interpretation.

Data constraints

The main challenge in measuring mark ups is the lack of firm level data on prices. Researchers have typically worked around this issue using Hall's (1986; 1988) insight that a firm's markup under cost-minimisation would be equal to the ratio of its elasticity of output to its variable input and the share of revenue paid to that input. However, there is disagreement on whether available accounting data can reasonably isolate variable costs from fixed costs (Traina 2018), and whether revenue data can be relied upon to derive the markup ratio (Bond et al. 2021).⁶ De Ridder et al (2022) use price data from French manufacturing firms to test the validity of this estimation approach and find that while it cannot measure the *level* of markups accurately, it is highly correlated with the trend of true markup values. In other words, assuming that findings from the French manufacturing data can be generalised, Hall's method may be useful in understanding trends in markups and market power but not the magnitude of the issue.

There are a number of potential underlying causes

There are three causes driving mark-ups typically posited in the literature, each of which has different implications for economic growth and productivity.

On the one hand, rising mark ups could reflect reduced competition. In this scenario, mark-ups can be linked to low investment, business dynamism and productivity and higher pure profit shares (Barkai 2020; De Ridder 2019; Gutiérrez and Philippon 2017).

On the other hand, the 'superstar hypothesis' posits that mark-ups and growing market concentration could reflect efficiency gains rather than market power. This is because the most productive firms (the 'superstar' firms) have been able to increase economies of scale, rely on network effects, and extract greater reward from higher quality or lower cost products (Autor et al. 2020).

Finally, technology and approaches to production has also been suggested as possible reason for changing mark-up — as firms invest more in intangible assets (such as branding, or marketing), overall costs rise. Firms need to charge a higher price to cover these fixed costs.

In an attempt to resolve this uncertainty, De Loecker et al. (2021) model the increase in markups and suggest technological change has reallocated resources to more productive firms. However, they find this positive effect is overshadowed by higher market concentration that leads to lower business dynamism and pass-through from productivity shocks, leading to a net decline in welfare.

However, Syverson (2019) cautions against broad conclusions on markups because the relationship between competition and welfare can be diametrically opposed depending upon the structure of individual markets. One reason for this is that most models linking markups with market power assume a Cournot oligopoly model of competition in which firms compete over a homogenous good, which implies higher markups lead to greater deadweight loss (a measure of inefficiency). However, when using an alternative

⁶ Price-setting firms must reduce prices to raise output, meaning markup estimates are likely biased where revenue data is used to estimate output elasticities, rather than output data (De Ridder et al 2022). Bond et al (2021) claim the use of revenue elasticity would mean the estimate contains no useful information on markups.

model with firms producing differentiated goods, greater market concentration and profit can be positively correlated with lower price-cost margins and markups.⁷

A breakdown by industry

Research on sector or industry specific markups confirms the heterogeneity of relationships between efficiency and market power. Crouzet and Eberly (2019) examine the relationship between industry investment in intangible assets and markups. They find intangible investment has been associated with productivity gains in consumer sectors (e.g. wholesale and retail trade), while markups have remained stable. In contrast, market power has potentially played a larger role in health and high-tech sectors, where intangible investments are more closely associated with higher mark ups. Similarly, information services tend to reflect a traditional story of the coexistence of low investment, high concentration, markups and profits (Davis and Orhangazi 2021).

International comparisons

There has been similar findings internationally, with research finding growing firm mark-ups (using comparable methods applied to Australian data). The increases internationally appear to have been larger than increases in Australia (De Loecker and Eeckhout 2018), which could be attributable to differences in the policy environment. This is consistent with OECD measures of product market regulation that show Australia is in the lowest quartile among member countries for overall restrictiveness of these regulations — indicating lower barriers to firm entry and competition (OECD 2021b, p. 42).

Mark-ups and profit margins after the pandemic⁸

There has been some commentary in the Australian media that firms were using the inflationary environment to ‘unfairly’ mark-up prices and record unusually large profits. For example, the Centre for Future Work calculated that excess corporate profits⁹ accounted for 69% of additional inflation over the pandemic, while the labour costs accounted for only 18% (Stanford 2023, p. 2).

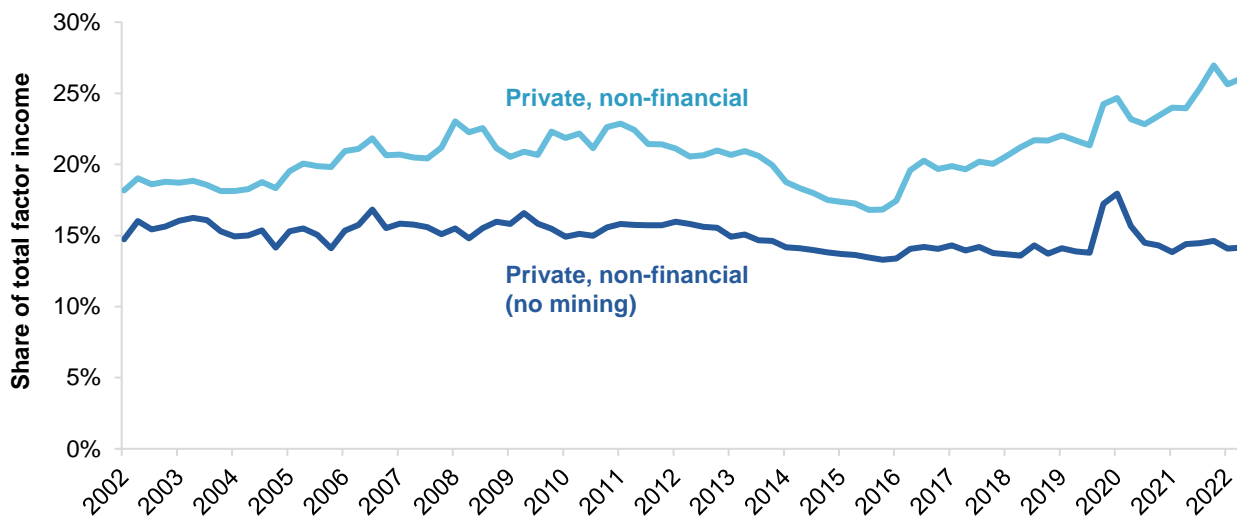
However, this analysis overstates the role that corporate profits play in driving inflation. Rising international prices for commodities and energy have been contributing strongly to corporate profits, rather than exceptional markups in other industries. The mining sector in particular has benefited from this, with mining profits a larger share of GDP than all other non-financial businesses combined in 2022 (RBA 2023). Stripping mining out of the corporate profits indicates that profits have been stable as a share of total factor income during the current inflationary period (figure 18).

⁷ This is because substitution between goods increases where trade, transport or search costs are lowered, which increases product competition but favours lower-cost firms who take an increasingly larger share of sales.

⁸ The Committee requested the Commission to consider this issue in its submission.

⁹ ‘Excess’ profit is calculated as the additional price increases above the RBA’s 2.5% target rate of inflation.

Figure 18 — Capital incomes share of total factor income^a



a. Capital income measured by gross operating surplus; government sector excluded.

Source: ABS (2022, *Australian National Accounts: National Income, Expenditure and Product*, Cat. no. 5206.0, table 7 and table 45).

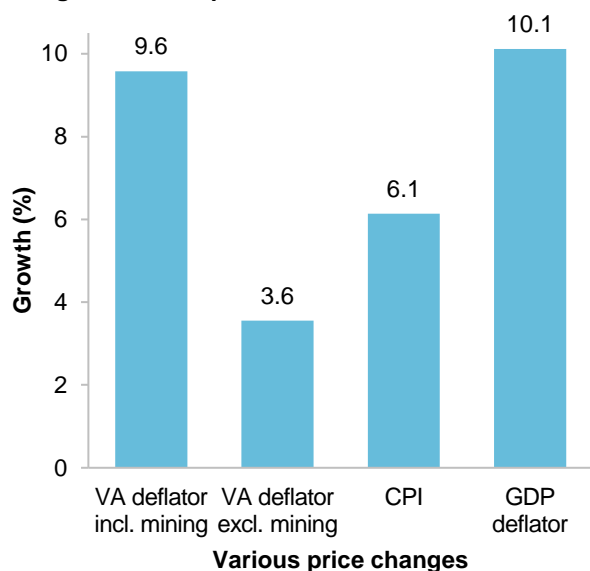
Indeed, removing the share of mining profit from Stanford’s analysis shows that corporate profit and labour costs account for an equal share of excess inflation over the period. This suggests that much of the observed pattern reflects the general transmission of inflationary pressures across the economy (though, as we caution throughout this submission, what happens in aggregate will often not be replicated at more disaggregated levels).

Another way of considering this issue is to consider various movements in producer prices. Once mining is removed, the measure of all other industry prices has grown by less than the consumer price index (CPI) from 2019-20 to 2021-22 (figure 19). At the industry-specific level, only two industries — agriculture and mining — have significant price increases relative to the CPI.

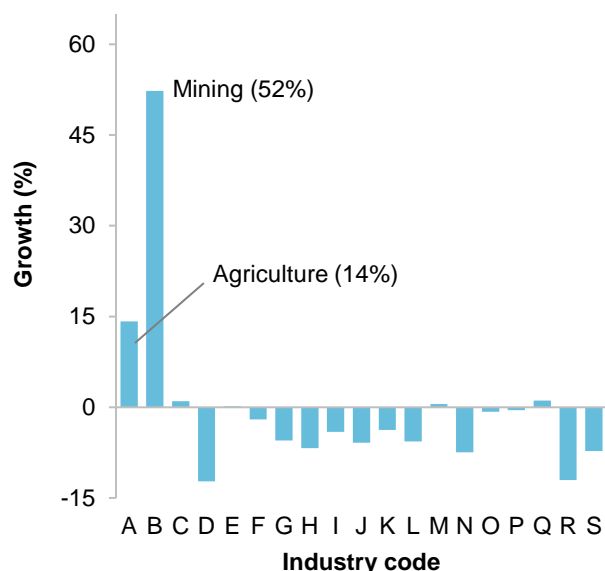
Figure 19 — Most producer prices are growing at less than inflation^{a,b}

Change in prices 2019-20 to 2021-22

Change in various prices



Change in relative producer price to CPI



a. The economywide value-added (VA) measure is close to the usual GDP deflator but derived from all industry gross value added, which does not include taxes less subsidies on products. The GDP deflator is shown for comparison and is very close in value. **b.** The relevant industries are: Agriculture, forestry and fishing (A); Mining (B); Manufacturing (C); Electricity, gas, water and waste services (D); Construction (E); Wholesale trade;(F) Retail trade; (G) Accommodation and food services; (H) Transport, postal and warehousing; (I) Information media and telecommunications; (J) Financial and insurance services; (K) Rental, hiring and real estate services; (L) Professional, scientific and technical services; (M) Administrative and support services; (N) Public administration and safety; (O) Education and training; (P) Health care and social assistance; (Q) Arts and recreation services; (R) Other services (S).

Source: ABS (2022, *Australian System of National Accounts*, Cat. no. 5204.0, table 5) and ABS (2023, *Consumer Price Index*, Cat. no. 6401.0, table 8).

From some perspectives, these results are not surprising. An inflationary environment should not give businesses fresh opportunities for *sustained* exploitation of market power — if they possess this power, they will exploit it at any time.

Nonetheless, the empirical results above are still at a relatively high level of aggregation and there may be instances where businesses might be able to exert some temporary market power. There are several avenues for this.

- Businesses with market power tend to only pass-through some of the higher costs of inputs at the time of the price shock (so margins fall), but then recover the reduced profits through higher price margins at a later time (Menezes and Quiggin 2022). An example is fuel price increases, where the initial increase in fuel prices following the war in Ukraine were only partly reflected in bowser prices, but with subsequent recoupment by refiners and retailers of the earlier lost margin.
- Consumer inertia and high search costs may temporarily reduce consumers' willingness to substitute for lower-cost alternatives, allowing businesses with market power to 'over-price' without losing as much market share as they might otherwise (OECD 2022, p. 20).
- The current inflationary environment coincides with significant uncertainty about future economic growth and has precipitated much higher borrowing costs, which may reduce the threat of entry for incumbents.

There are rival explanations for any excess pricing that do not relate to market power. For instance, to the extent that businesses use fixed cost pricing contracts, they will need to anticipate the risks of inflationary pressures on costs. If their expectations are biased upwards, then their prices will overshoot observed inflation. In the United States, Glover et al (2023) argue that while markups have driven a significant share of inflation during the pandemic, the timing and cross-industry patterns of these increases suggest firms were raising prices in anticipation of future costs rather than exploiting market power to drive up profits.

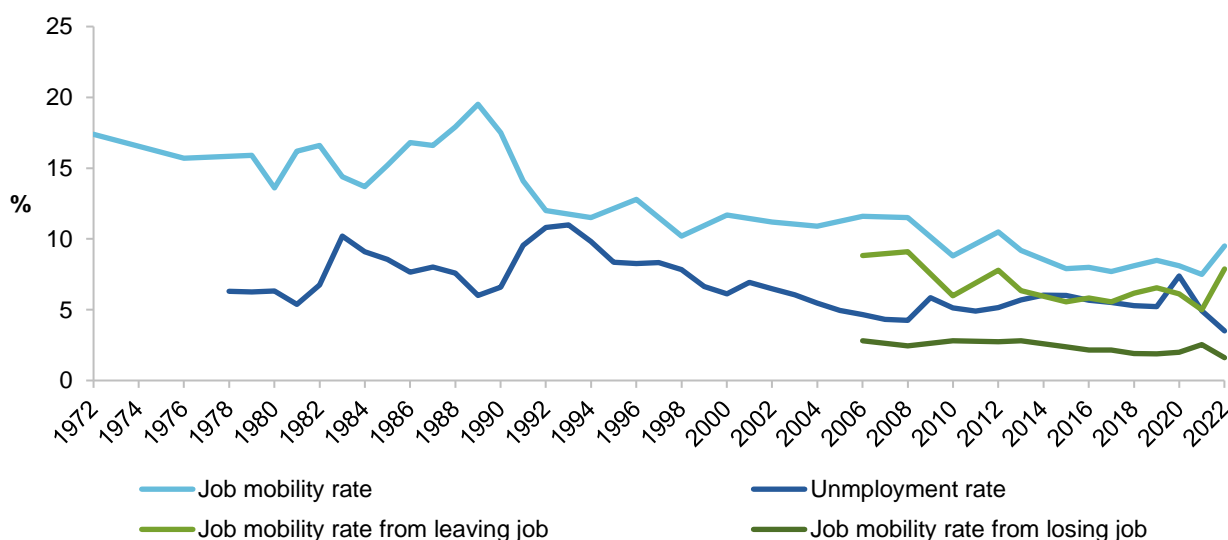
Wage stickiness could also play a role in higher price margins for some businesses. Enterprise agreements tend to create some wage inertia during the life of an agreement (though it is possible to make higher wage offers), while award wage increases are determined by the Fair Work Commission and do not always match inflation. However, while such wage inertia may increase price margins, they do not contribute to inflation.

Overall, the existing aggregate evidence does not suggest that high price margins associated with exploitation of market power have played a significant role in accentuating the higher input costs and supply constraints that precipitated the current inflationary episode. However, there is insufficient evidence about this at a detailed industry level.

Labour market turnover

Over the past 30 years, Australians have become, on average, less likely to change employers (figure 20). As noted by Black and Chow (2022), the decline persisted through periods of flat or falling unemployment, despite job mobility¹⁰ tending to increase cyclically in response to better labour market conditions — suggesting more structural factors are involved. The long-run slowdown in mobility has been recently framed as an indicator of reducing dynamism (Andrews and Hansell 2019; Ellis 2021; Hambur 2023).

Figure 20 – Job mobility has declined even through periods of falling unemployment^{a,b}
Share of employees who changed employers in the past twelve months; unemployment rate



a. Labour mobility data was not available for 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011 and 2014. These points are interpolated. b. Job mobility rates are measured as of the February of the years indicated.

Source: ABS (2022, *Job Mobility*, Chart 3 and table 1).

¹⁰ Defined here in line with the ABS as the proportion of employed people who changed jobs over a given period. This includes both employees who voluntarily changed from job to job, and those who lost a previous job.

Hambur (2023) has linked the fall in labour mobility with the recent slow-down in wage growth. He finds that slow wage growth in the lead-up to COVID-19 may be in part attributable to declining occupational mobility (as well as declining firm entry and exit). However, a decline in job mobility is not necessarily detrimental for wage growth — as with concentration and firm entry and exit, some mobility is good for wages and productivity, while some mobility may be bad for wages and productivity. These competing effects of mobility are explored below.

Interpreting the changes in job mobility

Falling job mobility has an ambiguous effect on productivity ...

The prime contention of those concerned about falling mobility is that it has reduced options for labour matching. Employees faced with a diverse set of outside options can find businesses that better match their capabilities, raising their wages and allocating labour to the firms that make best use of their skills. There are concerns that market concentration has reduced the capacity for this efficiency-promoting matching, and frustrated resource re-allocation and wage increases. The matching benefits of mobility to employees appears to be strongest for early career workers, who are more likely to gain from experimenting with different jobs to find their best fit, even if they do not have as much of an immediate impact at the destination firm.¹¹ A further related concern is that that labour mobility is a source of technological diffusion and productivity growth. New workers bring tacit knowledge and different perspectives and experiences, challenging accepted wisdoms. This can lead to higher wages for movers (though testing this empirically can be difficult as higher wages are a motivation for a job move, not necessarily an outcome of a productivity improvement in the recipient firm).

However, higher job mobility need not always increase productivity. Businesses facing high employee turnover rates have weaker incentives to invest in workers because they will be less likely to obtain a return. Small firms run the risk of losing institutional knowledge that may be specific to just one or two workers. Firms also need to spend more on recruitment and training (or reallocating tasks to other employees). Moreover, a considerable share of labour mobility is involuntary or does not involve a transition to a job. For many, the enduring concern has been job precariousness, not stability.

There need be no presumption that more or less job mobility is bad, but that like concentration, it is sometimes bad and sometimes good. For instance, the benefits of labour mobility on technological diffusion are likely to diminish after some point. The movement of one or two employees from firm A to firm B transfers new knowledge, but it is unlikely the incremental benefits of further movements are large unless the businesses produce highly differentiated goods. At some point, therefore, the benefits can be expected to be outweighed by the transactions and other costs of mobility.

The empirical evidence suggests there is an inverted U relationship between productivity and labour turnover at the individual firm level, including in Australia (De Winne et al. 2018; Harris, Tang and Tseng 2002). Ultimately, the optimal level of job mobility is unknown. (In fact, De Winne et al. (2018) and Harris et al. (2002) find that the optimal rate of job mobility was, respectively below, and significantly higher than, the average mobility of the firms in their respective samples.) The optimal level of mobility will also vary for different sectors of the economy, as the positive and negative implications described above will all weigh differently on different industries, jobs, occupations and roles. For example, workers moving between fast-food restaurants will have different productivity implications than knowledge-workers moving between innovation leading firms. One of the potential explanations of reduced global productivity growth rates are barriers to the diffusion of effective management practices, which is a major factor underpinning firm

¹¹ It is worth noting that firms could respond to reduced labour mobility by improving their recruitment processes, and therefore partly negate labour market mismatches that arise from slowing mobility.

performance (PC 2022a; Van Reenen 2018). Mobility of some types of employees may help reduce these barriers, but successful implementation of new management practices requires businesses to make complementary investments and to be receptive. Organisational economics shows that business internal structures, cultures, incentives, information collection approaches, recruitment and a multiple of other factors determine performance outcomes (Gibbons and Roberts 2013). Accordingly, mobility of good managers is not sufficient for productivity benefits. In the Commission’s work on innovations in chronic disease management, we found that champion leaders can make changes, but need other supporting leaders and organisational structures to sustain change (PC 2021a, pp. 101–102).

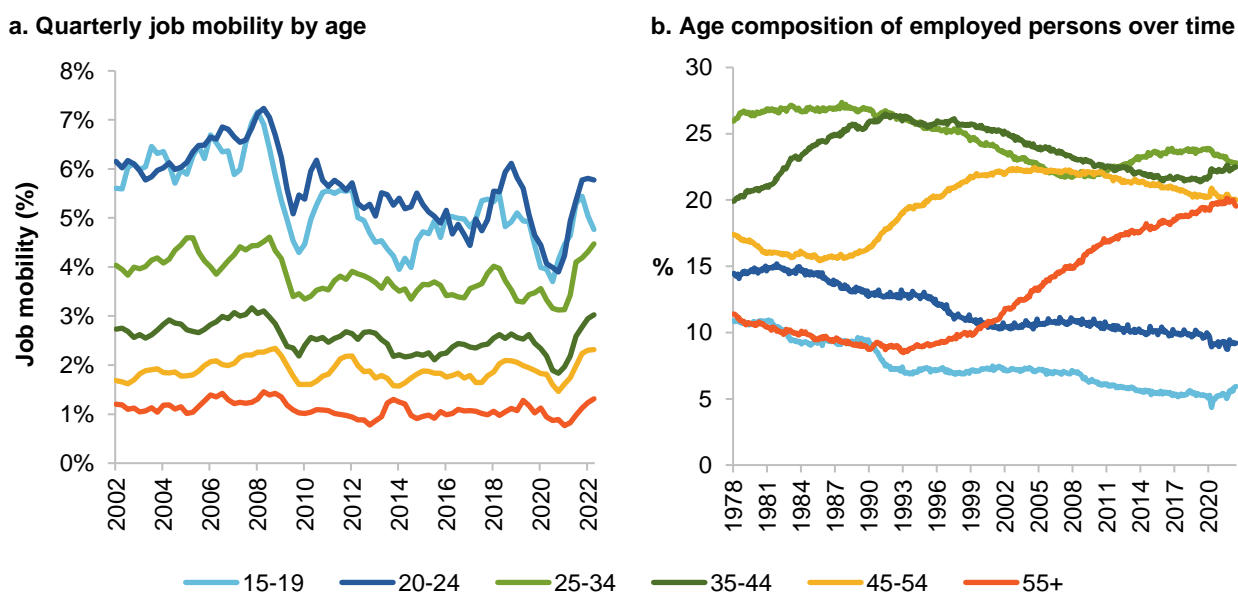
... and it could also reflect a number of other factors

There are several potential explanations for the long-run decline in labour mobility. Whether recent trends in job mobility require specific policy interventions depend on the reasons for the change.

First, much of the longer-term mobility decline (pre-COVID-19) appears to reflect demographic factors. With older age groups working for longer and younger groups staying longer in education, today’s labour force is much older than it used to be (figure 21). And it is the youngest workers who are the most mobile.

A simple ‘shift-share’ decomposition of the change in mobility between 2002–04 and 2018–20¹² indicates that changes in the age distribution of the employed population accounted for just over a third of the change in the overall mobility rate across that period.

Figure 21 – The ageing of the workforce affects mobility



Source: ABS (2022, *Labour Force*, table 22); Productivity Commission estimates based on ABS (*Longitudinal Labour Force*, unpublished Datalab data).

A further complication is that the fall in job mobility might partially represent the downstream effect of other trends in the economy. Hambur (2023, p. 19) found that much of the more recent decline in labour mobility reflected reduced rates of switching from mature to young firms as firm entry rates declined. Even after controlling for the

¹² This analysis compared average mobility over 2002–2004, and average mobility in the three years prior to March 2020 (i.e. the onset of the lockdowns associated with the COVID-19 pandemic).

overall business cycle, there was a strong positive correlation between a region’s rate of firm entry and its switching rate. This suggests that the job mobility trend is partly an outcome of other trends in dynamism.

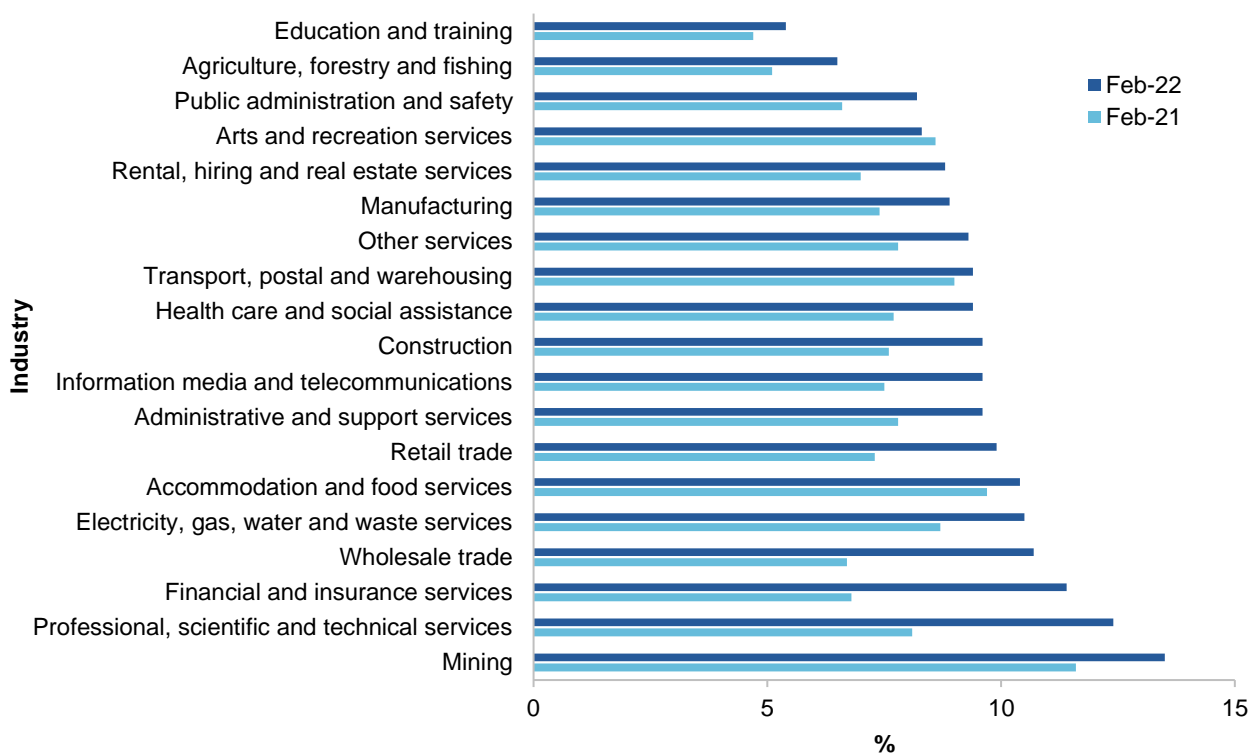
A breakdown by industry and occupation

The role of job mobility as a channel for spurring the spread of innovative ideas and skills, and therefore productivity gains will vary between industries, based on their complexity, their reliance on intangible capital, and their rate of innovation. For instance, a movement between one fast food operator and another is unlikely to generate many knowledge spillovers.

Levels of labour mobility are relatively similar across industries. In the most recent data available, there was only a 2.5 percentage point gap between the fourth most and third least mobile industry of the 19 ABS industry designations (figure 22). Accordingly, there does not appear to be any economic forces that encourage greater labour mobility in the industries where spillovers rates would be likely to be higher. Moreover, mobility tends to be lower for high-skill occupations, and until after the peak of the COVID pandemic, relatively flat over the last decade (figure 23).

Figure 22 – Mobility is fairly similar across the economy

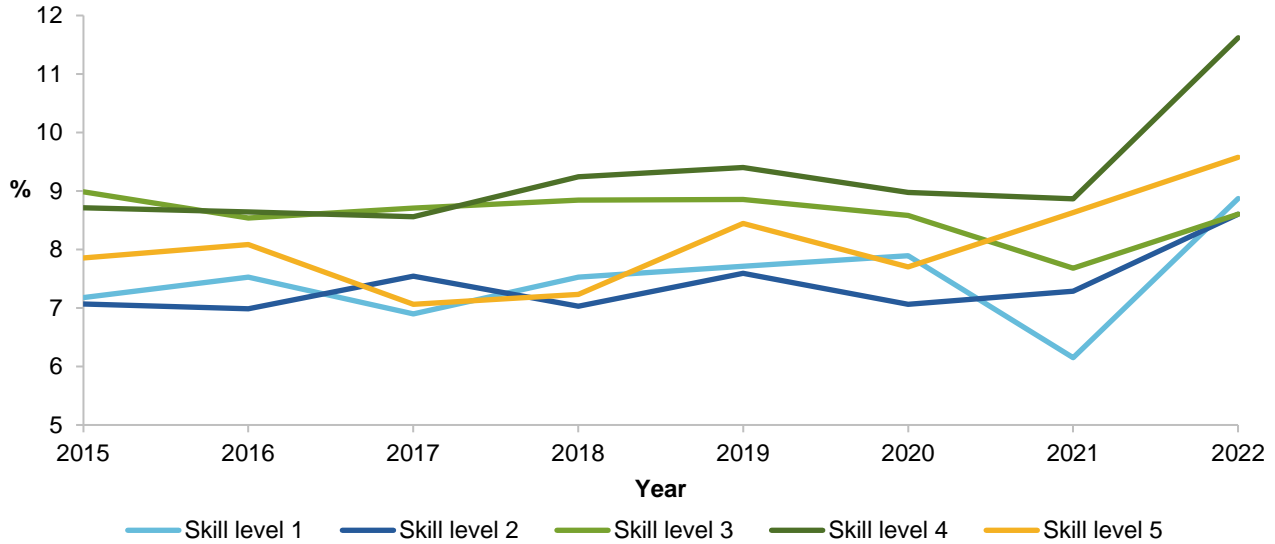
Job mobility rate by industry



Source: ABS (2022, *Job Mobility*, Chart 8b).

Figure 23 – Mobility is slightly lower in higher skilled occupations^a

Job mobility by occupation skill level



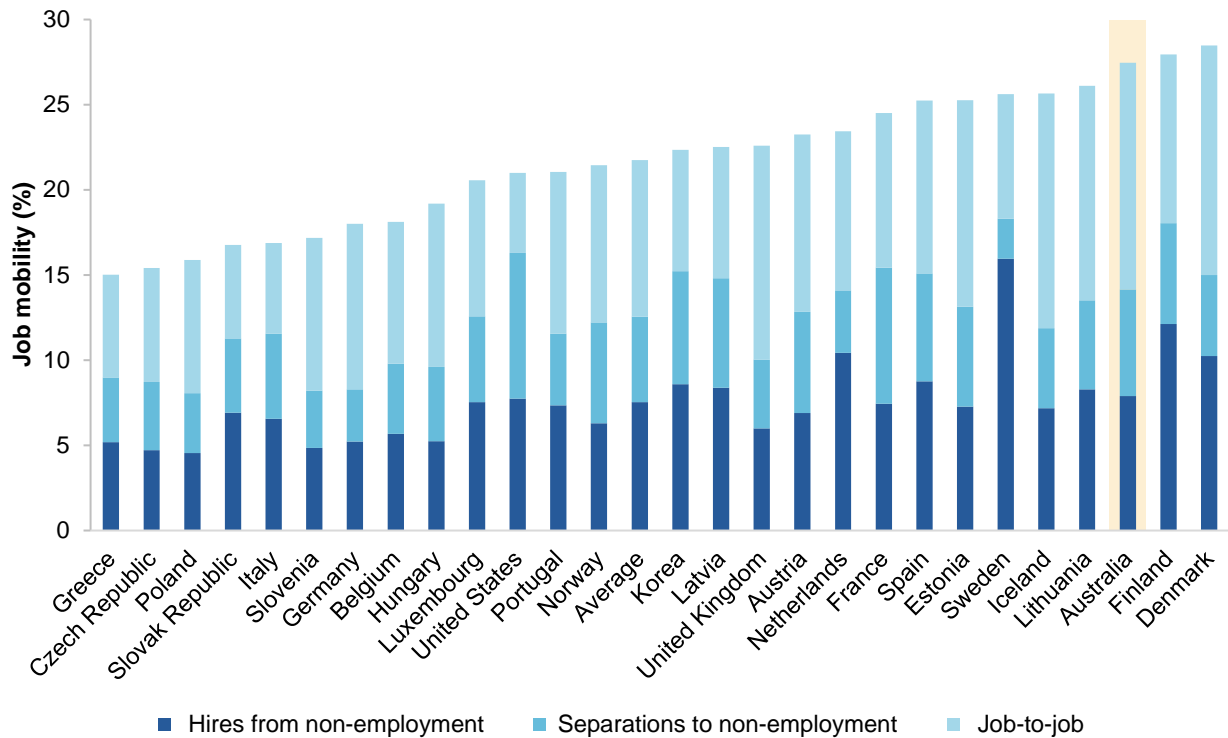
a. Lower numbers represent higher skill levels.

Source: ABS (2022, *Job Mobility*, table 7).

International comparisons

The global picture suggests Australia has a relatively high degree of labour mobility. As of 2017–19, Australia’s job mobility rate was the third highest out of a selection of 27 OECD countries (figure 24), even while being close to its lowest historically recorded point. And the decline in job mobility is not unique to Australia, with the United Kingdom and, to a lesser extent, the United States, having experienced a similar pattern over the 21st century (Azzopardi et al. 2020, pp. 10–14; Cominetti et al. 2021, pp. 34–37).

Figure 24 – Australia’s job mobility remains very high by international standards



Sources: OECD (2023b, p. 24).

As with firm entry and exit, *more* labour mobility does not guarantee productivity growth. This is especially true in light of the other potential causal factors. Policy should focus on addressing any labour market frictions that make it harder for workers to make job switches they would have otherwise chosen (section 2).

The implications for policy

As it currently stands, the economic dynamism literature is largely an exploration of current trends, and their potential influence on productivity. The previous section outlines these trends and their various interpretations. On face value, aspects of the ‘diffusion machine’ in Australia have atrophied. However, the growing empirical work on dynamism has not yet clearly identified the specific policy implications of this. Interpretation of the empirical evidence and design of any policy solutions to potential problems requires care.

Against this backdrop, the primary implication for policy is for governments to focus on *what we know matters for productivity* (such as skill formation, labour markets, migration, foreign investment, trade openness, financial markets, the tax system, regulation, and barriers to competition in certain industries and locations). Optimising dynamism will require a suite of policy levers and often a sectoral focus across all of these areas.

Productivity Commission analysis identifies five key areas for policy. A summary of each of these areas, and their relevance to economic dynamism, is provided below. The details are available in the Productivity Commission’s 5-year Productivity Inquiry — the volumes and chapters cited below help point the reader to the relevant publication.

There is a long list of reforms. Some are easily implementable, and will have immediate effect on economic dynamism. Others will take longer to implement, and/or will have only secondary or tertiary effects on dynamism. But they will all work towards optimising the movement of resources within the economy. Getting

these policy settings right — rather than focusing on increasing or decreasing a narrow subset of indicators — will go a long way to ensuring economic inputs (land, labour, capital) are put towards their best use.

1. Building an adaptable workforce to supply the skilled workers for Australia's future economy

As set out in section 1, increasing labour mobility is not a guarantee of increasing productivity (at the firm or economy level). Maximising productivity is about ensuring Australians have the skills demanded in a changing economy and having a labour market that effectively matches workers with the right jobs that require those skills. This includes making sure workers can move to more suitable jobs; while firms are able to find and attract suitable workers.

Three themes emerge where labour-market reform can improve economic dynamism:

- Policy should reflect fit-for-purpose **labour market regulations**.¹³ This will help firms find the right workers, encourage firms to invest in their workers and identify best uses of labour, help workers fully apply their skills and capabilities, and support workers in finding their optimal job (Volume 7, chapters 3-5).¹⁴
- Government can update **skilled migration** regulation, moving towards more employer nomination and a shift away from skill lists, helping firms meet their skills needs and matching workers with the jobs they were trained to do (Volume 7, chapter 2). Skilled employer-nominated migration, in particular, is a direct way of addressing skill shortages and means for diffusing knowledge from very different economic environments.
- **Education reform**, targeted at improving the quality of schools, VET and universities. While this would not have an immediate influence on dynamism, education reform will improve the supply of skilled workers across the economy. A more skilled workforce is more likely to be able to adapt to changing needs and will be able to be more mobile to match with firms that are most in need of their skills (Volume 8).

2. Regulatory settings that influence firm behaviour and promote competition

Competition policy and regulations should foster competition and generate contestability in markets, keeping prices in-step with costs and driving innovation and efficiency improvements. The Productivity Inquiry identified several areas where regulatory settings could be improved.¹⁵

- The design of **mergers control**.¹⁶ Mergers have the effect of increasing market share for a smaller number of firms (increasing concentration), but do not, in and of itself, mean the market is less competitive. The ACCC has argued that the current merger control regime 'is skewed towards clearance' of anticompetitive acquisitions

¹³ The range of regulations identified in the Commission's Productivity Inquiry includes streamlining occupational licensing, more flexible workplace relations laws (reforming the award system and enterprise bargaining), improving the sustainability and safety of platform work and the gig economy, and faster recognition of migrant qualifications.

¹⁴ One additional example of labour market reform not covered in the Productivity Inquiry is in minimising the use of non-compete clauses in contracts. Currently, in Australia non-compete clauses are by default not enforceable (unless the employer can demonstrate that they go no further than reasonably necessary to protect the employer's legitimate business interests) but workers may not know this, or may not be willing to bear the cost of legal action to avoid being bound by a non-compete clause. It may be more effective for the default to be non-compete clauses do not exist, unless the firm can prove a clause is integral to protecting their interests.

¹⁵ One area not referenced in Productivity Inquiry is the need to adopt the optimal bankruptcy laws. Bankruptcy laws have a significant impact on firm turnover (in particular, firm exit). Balance in bankruptcy laws is important — they should encourage some risk-taking and innovation among incumbent firms, without underwriting poor investment choices. They should help firms facing temporary challenges stay in business, ensure poor-performing firms exit, but avoid a 'fire sale' of assets. Further analysis is needed to determine exactly how to achieve this balance.

¹⁶ A merger or acquisition is illegal (i.e. anticompetitive) under section 50 of the CCA if it would have the effect, or be likely to have the effect, of substantially lessening competition in a market.

(Sims 2021), which is a function of the unique system of processes for clearing mergers.¹⁷ To correct this, the ACCC has proposed a new formal authorisation regime, but there is value in reforms to the ACCC's internal merger review processes, and government consideration of how best to avoid perverse incentives across the three alternative procedures for mergers clearance (Volume 3, chapter 1).

- Improving **planning and zoning** regulation, to facilitate the entry of new firms. Location is an important factor for businesses that rely on a physical presence — barriers to viable locations can be a barrier to entry in a number of sectors (Volume 3, chapter 1).
- **Reducing barriers to trade and foreign investment** (by reducing or even removing tariffs), to encourage foreign capital into Australia and make domestic markets contestable, regardless of market concentration. It would also allow for improved entry into Australian markets (Volume 3, chapter 3). Like skilled migration, foreign direct investment is a way of encouraging diffusion of new ideas.
- **Transitioning the tax system**, so taxes do not act as a barrier to firms looking to enter a market, discourage entrepreneurship and innovation, or limit individual's movements (Volume 3, chapter 2).
- Examining **Australia's risk protection system**. The current system of insurance and risk protection and management (through, for example, voluntary and mandatory insurance, or social safety nets) can unduly reduce risk-appetite, preventing the adoption of innovative approaches and stifling the entry of new firms (Volume 3, chapter 1).

3. Harnessing data and digital technology

The benefits for productivity of increasing digitisation are diverse and diffuse. Technology allows data to be collected, transmitted and analysed more cheaply and quickly than ever before, benefitting consumers, businesses and governments. Designing a reform agenda to harness data and digital technology, has a number of implications for economic dynamism:

- **Investing in digital infrastructure, particularly in regional and remote Australia** will improve job mobility by providing remote work opportunities (Volume 4, chapter 3).
- **Investing in technical digital and data skills** will limit the extent to which digital and data skills act as barriers to joining a new job and optimising job mobility (Volume 4, chapter 3).
- **Balancing cyber-security and economic growth** by minimising the regulatory burden of cyber-security will reduce barriers to entry for new firms, while also minimising the influence cyber risks have on deterring new firms from entering a market and competing (Volume 4, chapter 3).
- Harnessing opportunities and **ensuring regulation does not unduly stymie new business models** that arise from digital progress will lower barriers to entry for firms that historically have required a bricks and mortar presence to gain market share, and increase threat of competition from online-delivered services (Volume 3, chapter 1).
- Making **better use of government data** will support the diffusion of ideas from leading firms to the 98% of Australian firms that are not at the efficiency frontier (Volume 5, chapter 2).

4. The non-market sector

So far, this submission (and the dynamism literature more broadly) is largely isolated to goods and services that trade in markets and are bought and sold largely by private entities. However, an increasing share of activity in the economy is in highly regulated services, or for goods and services provided by governments. Often there is only one or two suppliers in a given area, little choice, and funding and other institutional

¹⁷ At present in Australia, a potentially anticompetitive merger can be cleared by any of three alternative procedures — an informal review process by the ACCC, a formal authorisation from the ACCC, or clearance from the Federal Court. The three alternative procedures involve different legal standards and burdens of proof and in practice, these differences could invite regulatory gaming by merger parties.

barriers to competition and technological diffusion. Pervasive waste can persist. Choice and diversity in employment services is now long established and has more recently extended to many disability services via consumer-directed control. But in general, options for choice and the potential for disruption is a rarity among government services. For in many government activities, the conduits for diffusion and dynamism are weak, notwithstanding that parts of the system can be highly innovative (PC 2021a). The need for dynamism in non-market services presents one of the largest challenges for governments given the rising pre-eminence of services funded, regulated or provided by government (such as aged and health care). The Commission has proposed a wide suite of recommendations for enhancing productivity and dynamism in government services and activities (Volume 5).

5. Positioning the economy and society to address climate change

Decarbonisation will have fundamental effects on industry structures and technologies, and must rely on a high level of dynamism to achieve governments' goals efficiently. While some measures will require strong levels of government direction, the growing evidence on economic dynamism gives substantial weight to giving people and firms incentives to innovate and change.

Three reforms themes have been identified as the most-valuable in responding to addressing climate change (efficient greenhouse gas abatement through an enhanced safeguards mechanism, adaptation in building to avoid costly adjustments in the future, and developing an updated electricity system) (Volume 6).

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