

WHAT IF WE DIDN'T CARE? IMPLICATIONS OF GROWTH IN THE CARE ECONOMY FOR THE BROADER MACROECONOMY

Matthew Maltman & Ewan Rankin

The rapidly growing 'care economy' now employs 15% of working Australians, up from 10% in the early 2010s. This has expanded critical services to many Australians. It has also required trade-offs elsewhere in the economy. In particular:

- There has been virtually no measured labour productivity growth in the care economy for 20 years. Measuring productivity in the sector is a challenge and some quality improvements in health have likely been missed. Nonetheless, there have been material barriers to meeting more of the rising demand for care with productivity gains.
- In fact, reallocation towards the care economy has reduced economy-wide measures of labour productivity. Taking measured productivity at face value, reallocation to care has subtracted 0.2 per cent each year since 2019, a substantial acceleration of its prior effect. This is one of the causes of Australia's poor measured productivity performance post-pandemic, equivalent to about 10% of the gap between the recent absence of economy-wide productivity growth and the 'strong productivity growth' benchmark 2% annual pace recorded up to the mid-2000s.
- Around 20 per cent of care economy employment growth has come from new migrants, lower than the equivalent figure for many other growing industries. There has also been some 'activation' of existing residents previously not working.
- However, most growth in the care economy ultimately required reallocation of workers from other industries. Productivity growth and 'labour shedding' from other industries such as retail and hospitality has helped. But there has also been intensifying competition for labour resources. There remains a strong female bias in care economy employment.
- Higher relative wage growth for care jobs is encouraging labour reallocation. Together with strong growth in demand this has seen care economy consumer prices grow relatively quickly. Price growth has supported business entry in some parts of the care economy but not others. Taxes to finance government spending on care also contribute to reallocation.

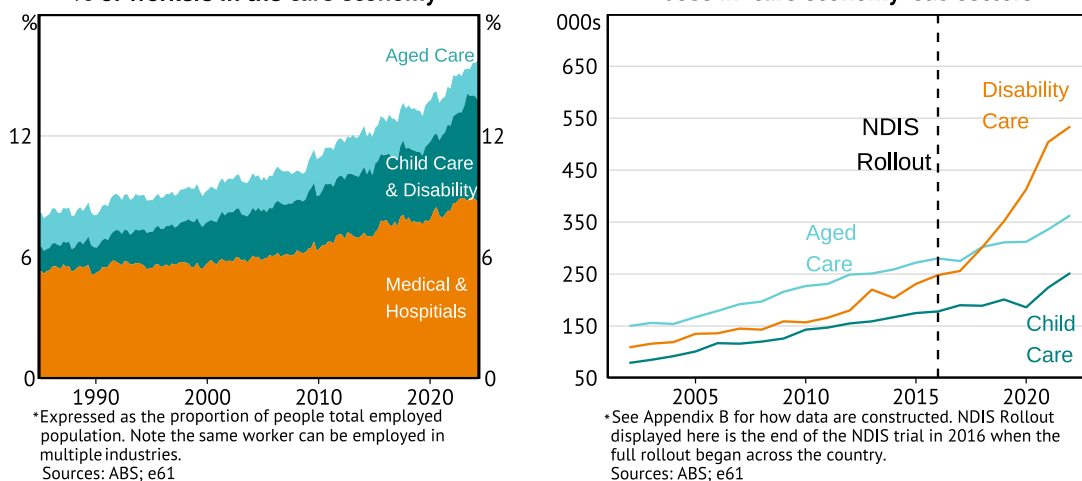
Reforms to NDIS and other aspects of the care economy should be based on the efficiency, effectiveness and welfare implications of the services themselves. But given forecasts of ever-rising demand for care, it is important to keep in mind that government spending on a particular sector has trade-offs because of the economy's supply-side constraints.

Policy and demographic changes have driven dramatic growth in the care economy

The 'care economy' - medical, aged, child and disability care taken together - now employs over 15% of working Australians (Figure 1, Panel A). That's up from 10% in the early 2010s, making it the economy's fastest growing sector since that time.

Growth has been driven by rollout of the NDIS and other policy choices, as well as the ageing population. Indeed, employment in disability care has doubled over the past decade (Figure 1, panel B). Demand for care is projected to rise further over the decades ahead (Commonwealth Treasury, 2023; Jobs and Skills Australia, 2023).

Figure 1: The 'care economy' is the fastest growing employer in the Australian Economy



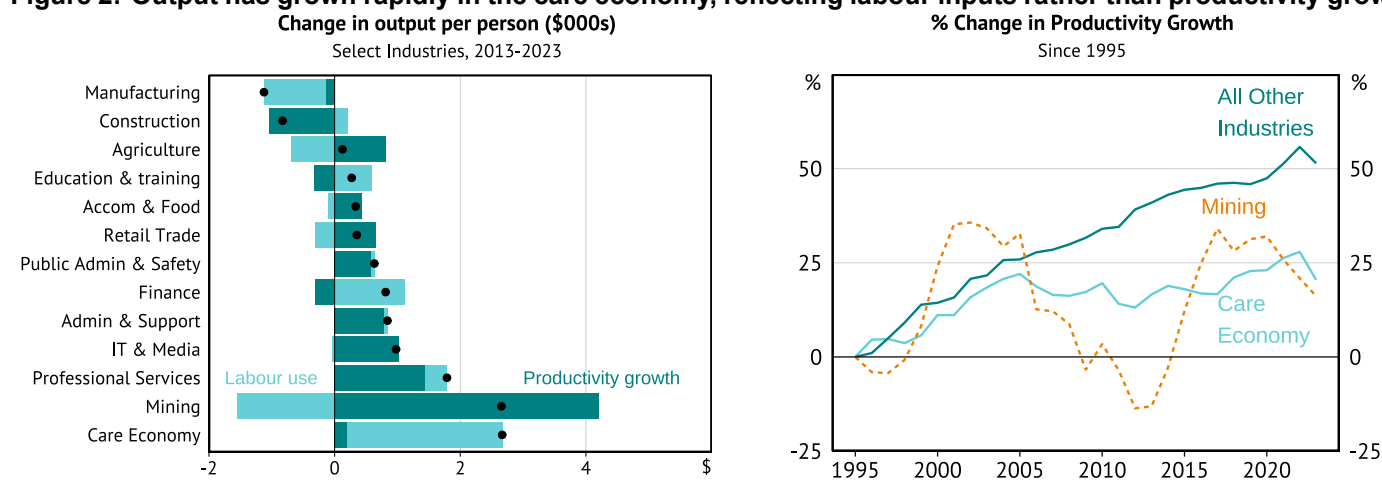
This matters because a growing care economy delivers critical services to more Australians, including to the ⅓ million NDIS participants. “*It has been life changing*” begins the first quote in the NDIS Review (2023). There have also been important benefits for the many Australians who provide unpaid care to people with disabilities, long-term health issues, or age-related conditions (Akyol & Nolan, 2024).

But growth in the care economy is also drawing a substantial reallocation of labour from the production of other goods and services. This note describes that reallocation of labour and its implications for productivity growth. This informs the public discussion underway about the implications of the care economy for productivity (eg: Kehoe, 2024; McIlroy and Read, 2024).

Growth in the care economy has not been assisted by productivity growth

The care economy was also the largest area of growth in output over the 10 years to 2023, narrowly outpacing mining. Per Australian, we produced around \$2660 a year more in caring services by 2023 in inflation-adjusted terms (Figure 2, panel A). Almost all of this - 93% - was facilitated by increased hours worked in the sector. By contrast, the care economy had basically no labour productivity growth over the decade to 2023, or the decade prior for that matter (Figure 2, panel B).¹ Productivity growth in parts of the care economy has probably been under-measured due to challenges in capturing quality improvements (Productivity Commission, 2024). Regardless, the remarkable growth in labour use in the care economy is well measured.

Figure 2: Output has grown rapidly in the care economy, reflecting labour inputs rather than productivity growth



* Per Person is defined as Australians aged 15+
Sources: ABS; e61

Sources: ABS; e61

Reallocation to the care economy accounts for a small but material share of the productivity slowdown

We assess the role of a growing care economy in Australia’s labour productivity slowdown. We decompose economy-wide labour productivity growth as described in Appendix A into:

- ‘Direct effects’ which capture *within sector* productivity growth. There has been little measured productivity growth within the care economy over the past decade (noting the challenges in measuring productivity in the sector²).
- ‘Labour-reallocation effects’ which capture the *shift in the share of hours worked* between low and high productivity industries. Under this approach, industries have positive reallocation effects if they experience an increase in their labour inputs and they have a higher than average level of labour productivity, or if they experience a fall in labour hours and have lower than average labour productivity.

Reallocation towards the care economy is assessed to be a net-negative for labour productivity overall. It has mechanically reduced measured labour productivity growth by an average of about 0.2 percentage points each year since 2020 as employment in the care economy has grown especially quickly (Figure 3).³ The effect over the 2010s and late 2000s was also negative, but substantially smaller at less than 0.1 percentage point. To provide some sense of scale, 0.2 percentage points is

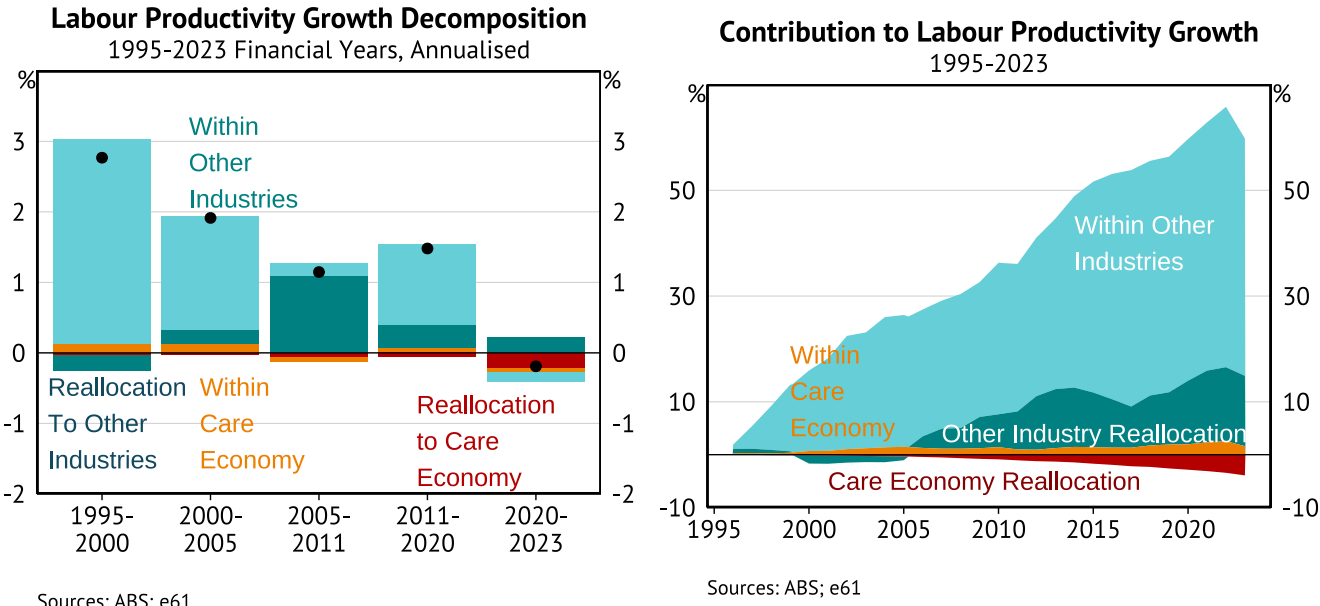
1 In this note, labour productivity is calculated using industry value-added and hours worked (not adjusted for changes in the quality of labour).

2 We note that obtaining reliable estimates of output have been notoriously conceptually and practically difficult for non-market sectors of the economy (Annabel, 2023; Productivity Commission, 2017). For these reasons, the ABS does not release estimates of multifactor productivity for the non-market sector.

3 Be mindful that 2020 and 2021 saw pandemic-related distortions in productivity measures (Bruno et al., 2023).

equivalent to about 10% of the gap between the recent absence of economy-wide productivity growth and the strong productivity growth benchmark of 2% annual average growth up to the mid-2000s. Cumulating over time, the effect of reallocation to the care economy amounts to a level of labour productivity by 2023 that is several percentage points lower than otherwise.

Figure 3: Labour Productivity 'shift-share' decomposition



There are limitations to this method in establishing the true 'causal' effect of the care economy's expansion on labour productivity (i.e. relative to a counterfactual where the care economy did not grow). We discuss these in greater detail in Appendix A. In brief:

1. The decomposition does not consider the productivity of the prior industry of workers that move to the care economy, focusing only on changes in the absolute amount of labour used in each industry.
2. The term for 'reallocation' to the care economy does not include the additional impact of the (relatively poor) productivity growth 'within' the care economy becoming more important, but this effect is small (around 0.02ppt per year recently).
3. The decomposition does not consider any causal effects of the care economy's rise on productivity growth in other industries. In principle, these could go either way.
4. It bears repeating that productivity growth in parts of the care economy has probably been under-measured.

The net of these limitations is that the impact of the care economy on the productivity slowdown could be higher or lower than our estimated reallocation effect. Nonetheless, our estimate is a useful illustration that: (1) growth in the care economy is having a small but material net negative effect on measured labour productivity, but (2) it cannot explain the majority of the productivity slowdown. Most of the slowdown can be explained by a decline in productivity growth within a wide range of other industries. The causes of this broad-based decline are not fully understood, but declining economic dynamism and a slowing of economic reform are prominent in accounts (Duretto et al., 2022, Bruno et al., 2023, e61 Institute, 2022).⁴

The care economy has activated some new workers, but labour reallocation from other industries has fueled most of its growth

Care economy employment grew by 625,000 over the decade to 2022 (Figure 4).⁵ Where did these workers come from? Around 20 per cent of the growth in care economy employment came from new migrants. This is not especially large given the scale of the care economy's expansion. Looking instead at the stock of workers employed in the care economy, we see a

⁴ The productivity slowdown has been a global phenomena across advanced economies, but so has a longer-run trend upwards in the size of the care economy. OECD data covering 2000 to 2018 points to an increase across virtually all rich countries in the share of hours worked in 'Human health and social work activities', though Australia has had a relatively large increase.
⁵ We use tax file data available till 2022 for this analysis (See Appendix B). Since 2022, other data sources suggest the sector has grown by more than 200,000 workers.

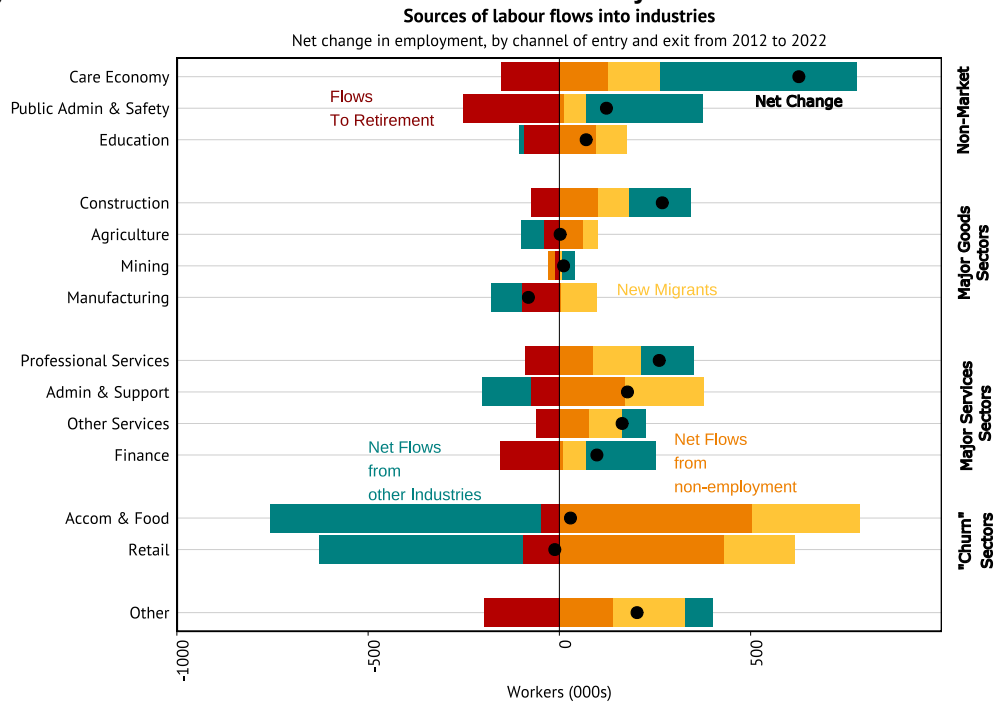
similarly unremarkable picture: the care economy accounts for 15 per cent of employment among new migrants, exactly in line with its employment share among all Australians (Appendix Figure C.6).

A further share of care economy employment growth came from existing residents that weren't previously working. The exact size of this group depends on the time period over which 'previously not working' is defined. In our measure, around 20 per cent of new care economy workers did not work in the calendar year prior. This share would be higher if workers with shorter stints out of work were also considered.

These new workers joining the care economy include anyone that may have been 'activated' because the expansion of government-funded care services eased their obligations as unpaid carers. We don't yet have a precise handle on the size of this effect. There is some evidence that the labour market potential that can be unlocked by supporting caregivers is more limited than sometimes suggested (Akyol & Nolan, 2024).⁶

Even with some new workers activated, most growth in the care economy required a flow of workers from other sectors. The care economy was, on net, the largest destination for job switchers over the decade to 2022.⁷

Figure 4: Where does new labour in the care economy and other industries come from?



Almost half of job switches to the care economy came from retail and accommodation & food (Graph C.3 Panel A). In part, this reflects that retail and accommodation & food are high 'churn' industries, that many Australians use as a first rung on the job ladder. Fast growth in the care economy looks to have captured many of the subsequent second steps on the job ladder. But there is also a degree of a genuine labour shedding from retail and hospitality, as productivity growth has been material and per capita labour use has declined (refer back to Figure 2, Panel A). The other half of the net flow of workers into the care economy has come mostly from other services industries plus a modest flow from manufacturing.

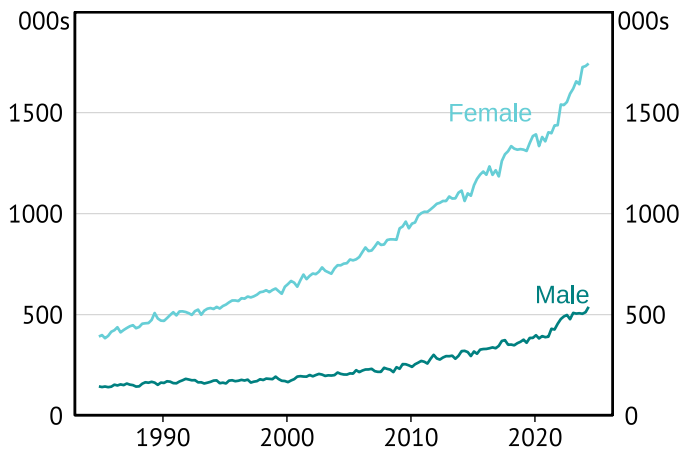
Some of these job switches into the care economy will have been 'backfilled' by other flows of workers between industries. This means that labour flows provide just one perspective and absolute changes in labour use in each industry are also relevant (as shown in the light bars in Figure 2, Panel A). As an example of these contrasting perspectives, there are few direct flows of workers from agriculture to the care economy. But agriculture's labour use declined between 2013 and 2023 on a per capita basis while output per capita was unchanged. Productivity growth in agriculture facilitated labour shedding. On net, there was a reallocation of workers to the care economy, just not via direct movements from agriculture to care.

⁶ Some forms of medical, child and disability care can also support future labour force participation of recipients.

⁷ The rate of job switching across all industries, including the care economy, would be lower if shorter stints out of work in between jobs were classified instead as flows from non-employment. The longer that someone is out of work, the more it makes sense to classify them as a flow from non-employment rather than their previous job, but there is no objectively correct threshold to apply.

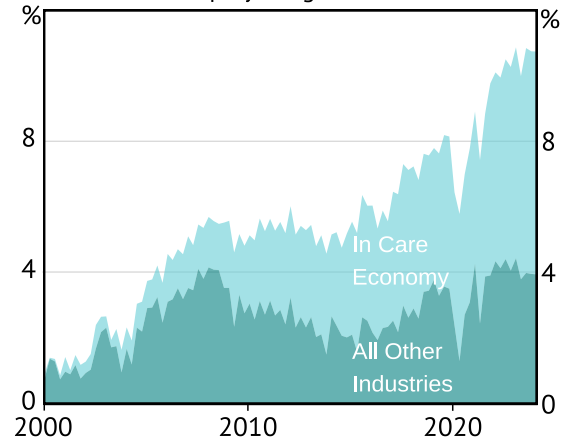
Female employment accounts for three quarters of the care economy's expansion since the early 2010s (Figure 5, Panel B). There has been a long-standing skew female in occupations like carer and nurse (Dwyer & Griselda, 2024). Recently, there has been a bit of an acceleration in male employment. But it remains interesting that males are not adapting more to the growing availability of carer jobs. This may be contributing to a rise in the disengagement of young men from work or education (e61 Institute, 2022) and to the further rise in female participation in the paid labour force. Since 2000, the care economy can account for 7 of the 11 percentage points increase in the female employment-to-population ratio (Figure 5, Panel A).

Figure 5: Females account for a large share of employment growth in the care economy
Care Economy Employment
 By Sex



Sources: ABS; e61

Growth in female employment
 Percentage point change in share of women employed aged 15+



* In 2000, 8.5% of women aged 15+ were employed in the care economy, and 41% were employed in other industries
 Sources: ABS; e61

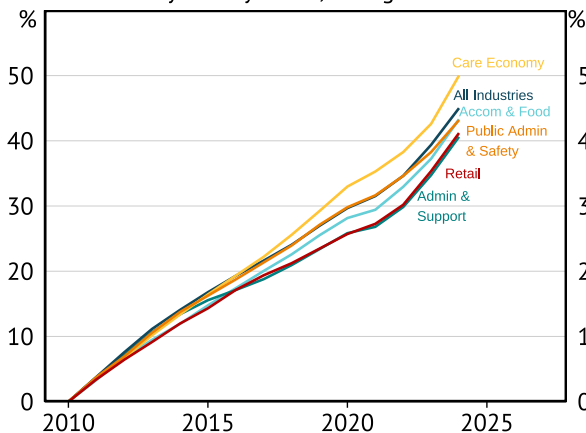
Relative wages and prices have played a role in the reallocation to the care economy

Relatively strong wages growth in the care economy looks to have encouraged labour reallocation from other industries (Figure 6 Panel A). In fact, over this period the only industry with higher wages growth was the utilities and energy sector.

Government-sponsored wage increases for early childhood educators and aged carers in 2024 will further raise relative wages. This latest impetus to labour reallocation may assist in closing the very large remaining stock of job vacancies in the care economy (Appendix Figure C.5).

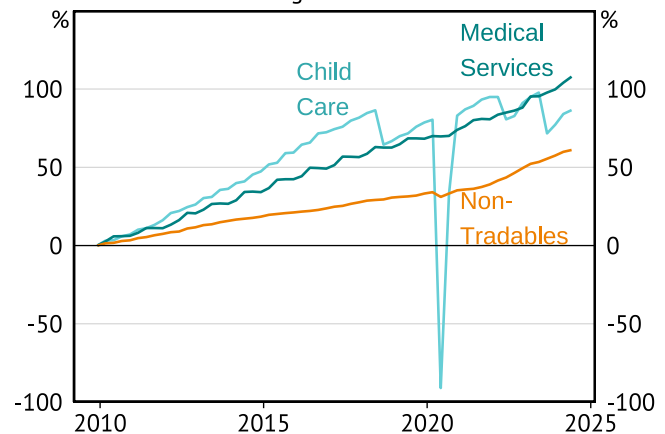
Figure 6: Wages and prices have been growing relatively quickly in the care economy

Growth in Industry Wages
 Ordinary Hourly Rates, change from 2010



* Wage Price Index for selected industries
 Sources: ABS; e61

Growth in Consumer Prices
 Change from 2010



* The large decline in child care prices in 2020 was due to a temporary free childcare policy.
 Sources: ABS; e61

Consumer price inflation has also been relatively high in the care economy (Figure 6 Panel B). This is true even though increases in government subsidies reduce measured consumer prices, most evident in the series for child care. Many care economy services are at least part-funded by the government and delivered below cost, partly shielding demand for the services from underlying prices. These underlying prices received by businesses have grown even more than consumer prices.

Higher prices - if associated with higher margins once wage and non-labour cost pressures are considered - will have encouraged firm entry and the growth of existing firms to facilitate the care economy's growth. Indeed, there has been some relative increase in firm entry to the care economy over the past 5 years or so (Appendix Figure C.4). That said, care economy firm entry rates remain close to the average of all industries despite the sector's dramatic expansion, highlighting structural challenges to dynamism in the sector. For instance, firm entry rates remain very low in aged care and medical services.

Much of the rise of the care economy is government-financed, and the taxes that fund this have redistributive and efficiency implications. If taxes are higher than otherwise to finance the expansion in the care economy, this reduces household disposable incomes and demand for a broad range of goods and services.

Policy implications

Growth in the care economy is providing critical services to many Australians, with benefits to the community more broadly from the insurance and positive externalities that they provide. For instance, the NDIS fills out a disability services sector that was formerly 'underfunded, unfair, fragmented, and inefficient' (Productivity Commission, 2011).

Productivity growth in the care economy would be the lowest cost path to its continued expansion. Productivity has the potential to deliver a desirable combination of greater efficiency and better outcomes for participants, their supporters, and care workers. For instance, there are clearly problems with the quality of care and governance in some parts of the NDIS, which goes to show that there are areas of reform that could improve both quality and efficiency.⁸

Governments need to also consider the types of productivity growth possible in the sector. Gains may be easier to find from quality improvements (e.g. providing better quality care with the same level of inputs), rather than labour saving technologies (e.g. providing the same quality of care with less inputs).

There are substantial impediments to productivity growth in the care economy, discussed extensively in Productivity Commission (2021a) and King (2019). Many providers face little or no competition and there can be a separation between who pays for the service and who uses it. This limits incentives to meet consumer preferences, innovate or contain costs. Care services can be complex and quality hard to measure, contributing to unclear objectives and causing governments to reach for what they can control and mandate inputs (such as child-to-carer ratios). State and federal responsibility can over- or under-lap.

The Productivity Commission identified 3 main areas for reform in the non-market sector, mindful of these impediments.⁹ Government should look to adjust funding models, for instance to pay for outcomes rather than quantity of services delivered, including a greater focus on preventative care. They should do more to support the flow of good new ideas and discourage wasteful practices such as medical procedures not supported by the latest evidence. And they should support opportunities for technology adoption in administration, diagnostic tools, the replacement of some manual labour and even some services.

Policy settings to support the reallocation of labour to the care economy are also important. Relative wages growth in the care economy is the best mechanism to facilitate this reallocation. The wages of many care economy workers are set or heavily influenced by award wages and the Fair Work Commission must consider the sector's growth and substantial level of job vacancies in its judgement of the appropriate wage rates. A well functioning VET sector is another key source of labour supply. Migration also has a role to play in meeting the sector's employment needs, but Grattan argue persuasively that an expansion in less-skilled migration would be a less desirable solution than an increase in relative wages (Coates et al., 2022).

Broader labour market policy setting are also relevant to smoothing the transition to a permanently larger caring sector. Andrews and Jarvis (2023) find that non-compete clauses, which may reduce labour market mobility, have expanded to workers in childcare. Occupational licensing and minimum qualification requirements are important tools to ensure quality, but may also restrict labour mobility into the caring sector (Bowman et al., 2024).

⁸ See for example the account in Stickels (2024).

⁹ In a similar vein, the Susan McKinnon Foundation is supporting analysis of the key lessons from non-market sector productivity success stories (Sturgess, 2022, 2024). They highlight the value of setting clear objectives and financial incentives, outside challenge or a 'startup' mentality to encourage innovation, and the importance of empowerment to choose the operational approach at the state/national level and among direct managers of front-line staff.

References

- Akyol, P., & Nolan, M. (2024). *What's the cost of caring? the caregivers of people with disabilities*. e61 Institute.
- Andrews, D., & Jarvis, B. (2023, June). The ghosts of employers' past: How prevalent are non-compete clauses in australia? [e61 Micronote]. e61ABS. <https://www.e61.institute/research/the-ghosts-of-employers-past-how-prevalent-are-non-compete-clauses-in-australia>
- Annabel, J. (2023). *Enhancing measures of non-market output in economic statistics: Progress paper* (tech. rep.). Australian Bureau of Statistics. <https://www.abs.gov.au/statistics/research/enhancing-measures-non-market-output-economic-statistics-progress-paper>
- Australian Bureau of Statistics. (2013). *Australian system of national accounts: Concepts, sources and methods*.
- Australian Bureau of Statistics. (2024a). Business longitudinal analysis data environment (blade), australia [Accessed: 30/08/2024].
- Australian Bureau of Statistics. (2024b). Microdata: Person level integrated data asset (plida), australia [Accessed: 30/08/2024].
- Bowman, J., Hambur, J., & Markovski, N. (2024). Examining the macroeconomic costs of occupational entry regulations. *RBA Research Discussion Paper*.
- Bruno, A., Dunphy, J., & Georgiakakis, F. (2023). Recent trends in Australian productivity. *RBA Bulletin*.
- Campbell, S., & Withers, H. (2017). Australian productivity trends and the effect of structural change. *Australian Treasury Economic Roundup*.
- Coates, B., Wiltshire, T., & Reysenbach, T. (2022). *Australia's migration opportunity: How rethinking skilled migration can solve some of our biggest problems*. Grattan Institute.
- Commonwealth Treasury. (2023). *Intergenerational report 2023* (tech. rep.). Commonwealth Treasury. Canberra.
- Duretto, Z., Majeed, O., & Hambur, J. (2022). Overview: Understanding productivity in Australia and the global slowdown. *Treasury Round Up*.
- Dwyer, E., & Griselda, S. (2024). *Beyond skills and occupations: Unpacking Australia's gender wage gap*. e61 Institute.
- e61 Institute. (2022). *Better harnessing Australia's talent: Five facts for the summit*.
- Jobs and Skills Australia. (2023, June). *Annual jobs and skills report 2023*. Jobs and Skills Australia.
- Kehoe, J. (2024). The ndis is a taxpayer sinkhole. is it an economy killer too? [Accessed: 2024-08-12]. *Australian Financial Review*. <https://www.afr.com/policy/economy/the-ndis-is-a-taxpayer-sinkhole-is-it-an-economy-killer-too-20240606-p5jpp6>
- King, S. P. (2019). *Human services: The next wave of productivity reform*.
- McIlroy, T., & Read, M. (2024). 'care economy' won't boost productivity: Wood [Accessed: 2024-07-19]. *Australian Financial Review*. <https://www.afr.com/politics/federal/care-economy-won-t-boost-productivity-wood-20240717-p5juc0>
- NDIS Review. (2023). *Working together to deliver the ndis - independent review into the national disability insurance scheme - final report*.
- Productivity Commission. (2011). *Disability care and support - inquiry report* (tech. rep.). Productivity Commission.
- Productivity Commission. (2017). *Non-market sector productivity, shifting the dial: 5 year productivity review, supporting paper no. 2* (tech. rep.). Productivity Commission.
- Productivity Commission. (2021a). *Advancing prosperity - 5-year productivity inquiry report* (tech. rep.). Productivity Commission.
- Productivity Commission. (2021b, June). *Productivity insights: Recent developments June 2021*. Productivity Commission.
- Productivity Commission. (2024). *Advances in measuring healthcare productivity* (Research Paper). Productivity Commission. Canberra.
- Stickels, L. (2024). The view from inside the ndis [Accessed: 2024-09-25]. *The Saturday Paper*. <https://www.thesaturdaypaper.com.au/news/education/2024/09/21/the-view-inside-the-ndis>
- Sturgess, G. L. (2022). *Lessons from a nsw success story at the john morony correctional centre*. Susan McKinnon Foundation.
- Sturgess, G. L. (2024). *Lessons from nsw health pathology: Productivity, control and performance*. Susan McKinnon Foundation.

We adopt a shift-share design used to decompose the forces driving labour productivity. This design has been previously used in an Australian context to decompose multifactor and labour productivity in the market sector (Australian Bureau of Statistics, 2013; Campbell & Withers, 2017; Productivity Commission, 2021b).

Our decomposition follows:

$$(1) \quad \ln \left(\frac{ALP_t}{ALP_{t-1}} \right) = \sum_i w_{i,t} \ln \left(\frac{LP_{i,t}^{PV}}{LP_{i,t-1}^{PV}} \right) + \left[\sum_i w_{i,t} \ln \left(\frac{H_{i,t}}{H_{i,t-1}} \right) - \sum_i h_{i,t} \ln \left(\frac{H_{i,t}}{H_{i,t-1}} \right) \right]$$

Where:

- ALP is the aggregate labour productivity (aggregate value added per hour);
- LP_i^{PV} is the value-added labour productivity for industry i ;
- w_i is the two period average of industry i 's share in aggregate value added;
- h_i is the industry i 's share in aggregate hours in period $t - 1$; and
- H is hours worked.

A full derivation of equation 1 can be found in Campbell and Withers (2017). The first term is the 'direct' or 'within industry' estimate of labour productivity, which is effectively the weighted share of labour productivity growth within each sector across the two periods.

The second term is the labour-reallocation effect that captures the impact of the aggregate output of the shift of labour between industries with differing levels of productivity.

We note that the labour-reallocation effect differs from the true 'causal' effect of the care economy's expansion on labour productivity for several reasons:

1. The decomposition does not consider the productivity of the prior industry of workers that move to the care economy. Rather, it focuses only on changes in the absolute amount of labour used in each industry. Although the care economy is a below-average labour productivity industry, if its expansion came predominately at the expense of even lower productivity industries (for instance retail or hospitality), then this would be a net positive for labour productivity not identified through the above decomposition.¹⁰ There is no simple way to identify which industries ultimately 'provided' the labour to the care economy. The next section shows the immediate prior industry of workers that flowed to the care economy, but some of these job switches into the care economy will have been 'backfilled' by other flows of workers.
2. The term for 'reallocation' to the care economy does not include the additional impact of the (relatively poor) productivity growth 'within' the care economy becoming gradually more important over time. In effect, the falling share of the economy accounted for by industries other than the care economy contributes a small part of why the 'within other industries' contributions decline over time.
3. The decomposition does not consider any causal effects of the care economy's rise on productivity growth in other industries. There are hypothetical forces in both directions here. On the positive side, the pressure of labour reallocation to the care economy may have caused firms in other industries to search harder for labour productivity improvements such as increased use of physical or digital capital. Also, the provision of care could boost the quality of the workforce if it activates skilled workers and/or improves the labour market potential of people with a disability. On the negative side of the ledger, to the degree that taxes rise to fund the care economy then this can cause hurtful distortions to productivity.

¹⁰ The decomposition would identify a net positive reallocation effect within these other industries like retail or hospitality, but would not identify that the labour has gone to the care economy.

Flows Data

Analysis in this note observes individual worker flows across industries over time. For this analysis, we construct a Longitudinal Linked Employee-Employer Dataset (L-LEED) of all jobholders using administrative data from BLADE (firm side) and PLIDA (individual side) (Australian Bureau of Statistics, 2024a, 2024b). For firms we draw information on firmographics from the business register information. For individuals we construct a spine based off Personal Income Tax data. We then merge in other information on workers from the PLIDA demographic files. We link workers to firms using firm-worker links provided by payment summary data, constructing a yearly panel dataset. This L-LEED covers the (financial year) period from 2001–02 to 2021–22.

We prefer the L-LEED to purely individual side data to obtain more accurate and consistent information on industry of employment. For instance, some individuals report their industry of employment in their Personal Income Taxes, but this can be misclassified, left missing, or vary idiosyncratically from year-to-year (even if the individual did not switch employment).

For analysis observing the stock of jobs (e.g. Figure 1, Panel B), we report the total number of jobs within an industry sector reported for that financial year.

For analysis where we report worker flows (e.g. Figure 4), we take a few extra steps in restricting the L-LEED. First, we restrict data to the last 10 financial years available. Second, we confine the data to only have one year-individual combination, by restricting the data to an individual's main job in that year. We define 'main job' as the job in which they reported the greatest labour income within that year. We do this as a worker can theoretically work across multiple industries at a given point in time.

We define worker states as the following:

- Non-Employment: The individual is working age (18-64) and is not linked to a firm in the financial year, nor reports any labour income.
- New Migrant in industry 'X': The individual reports a year of arrival in Australia after turning 18, and reports their first employment spell in the L-LEED in Industry X.
- Employed in Industry 'X': The individual is not a new migrant, and reports their largest source of income in the financial year in a firm in industry X.
- Retirement: The individual is not linked to a firm in the financial year, nor reports any labour income, and a) reports no income in any future years, and b) is over the age of 65.

We note that our data are on an annual basis, so flows will be affected by time aggregation bias as we only observe the individual's labour market status over a year. The data may miss short unemployment spells or mid-year transitions between employment and non-employment, as individuals are classified by their predominant status over the entire year. For instance, a worker may transition from employment in industry 'X' to unemployment to industry 'Y' over two financial years. This would be classified as a transition between industry X and Y in our data.

Transitions from or to non-employment¹¹ should be considered as longer-term spells outside of work. We consider annual data as we are interested in longer-term structural trends of worker movement between industries rather than short-term moves. Alternative data sources (e.g. the Longitudinal Labour Force Survey, or Single Touch Payroll (STP)) data could provide more granular information on job transitions for future analysis.

Care Economy Definition

We define the 'care economy' as ANZSIC Industry Code Q "Health Care and Social Assistance". The Care Economy consists of 2-digit codes 84 ('Hospitals'), 85 ('Medical and Other Health Care Services'), 86 ('Residential Care Services'), and 87 ('Social

¹¹ We also note that we are unable to distinguish between unemployment or NILF in our data.

Assistance Services"). 'Social Assistance Services' can also be decomposed further into two three digit codes each of interest: 871 ('Child Care Services') and 879 ('Other Social Assistance Services').

Throughout this note, for brevity and ease of analysis we group and refer to these subsectors as:

- 'Medical and Hospitals': ANZSIC 2-digit codes 84 & 85. These industries consist of primary medical services, GPs, specialists, and ambulances.
- 'Aged Care': ANZSIC 2 digit code 86. This code consists largely of Aged Care Residential Services (4-digit code 8601), but also includes 'Other Residential Care Services (4-digit code 8609) which includes workers in hospice, crisis, and community mental health care.
- 'Child Care': ANZSIC 3 digit code 871. This includes before/after school care, child care, and day care services.
- 'Disability care': 3 digit code 879. This consists of disabilities assistance services, but also includes miscellaneous caring services that do not fit into the above categories, including: adoption services, alcoholics anonymous operations, youth welfare services, and soup kitchens.

Figure C.1: Employment growth in the care economy has been female-biased

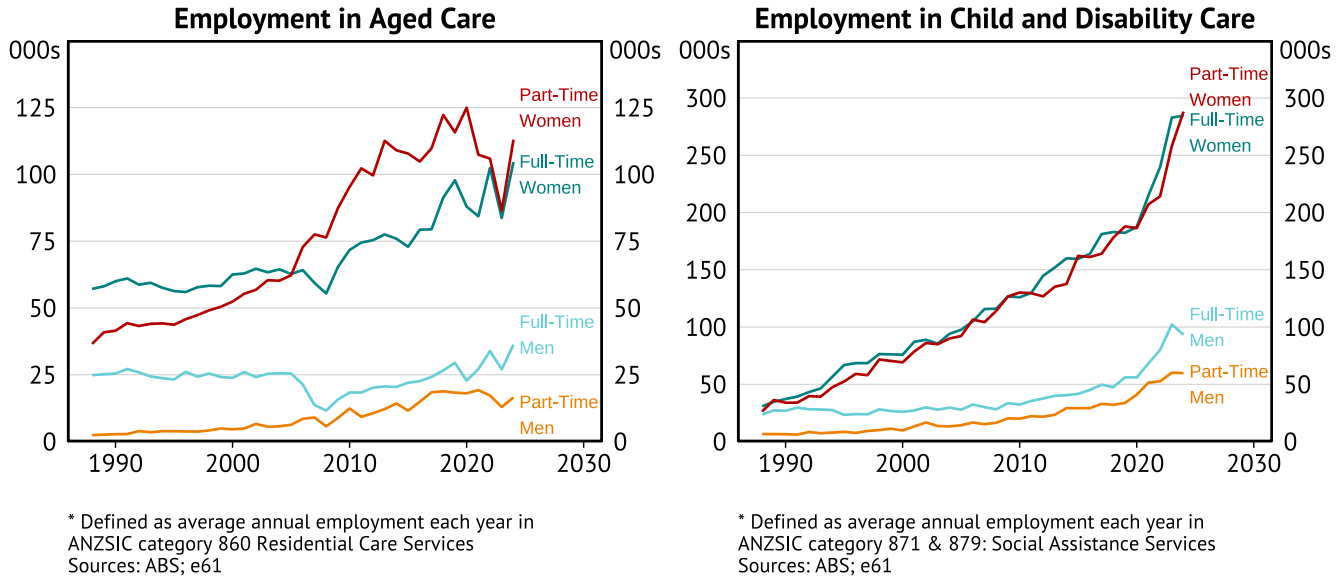


Figure C.2: Health care & social assistance also has a low level of productivity (though not the lowest)

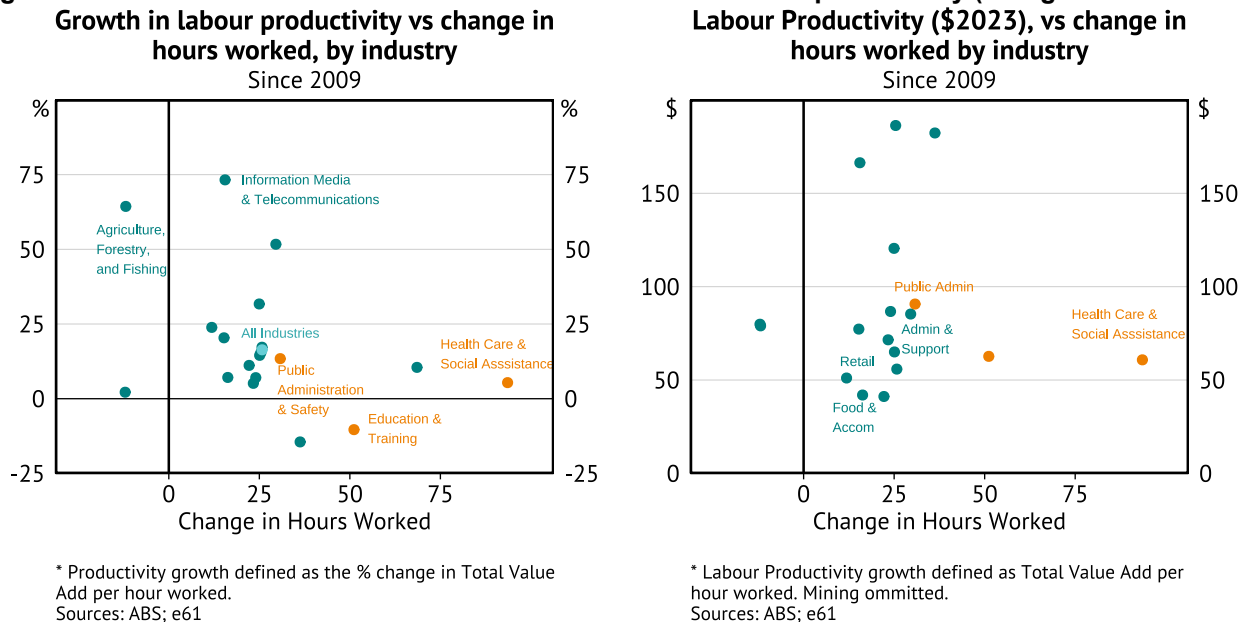
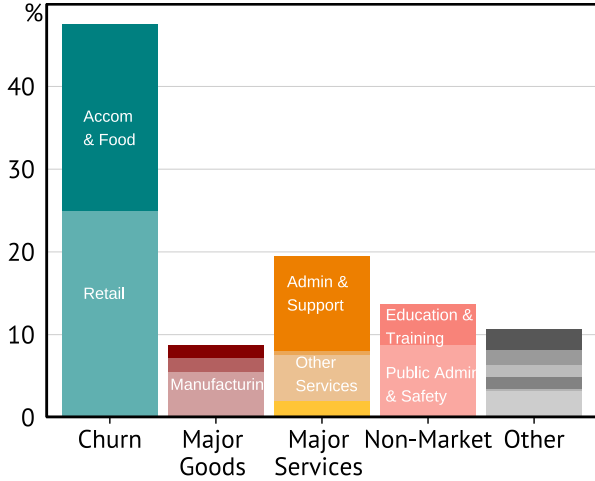


Figure C.3: Flows from other industries into the care economy

Source industries for industry-to-industry labour flows into the care economy

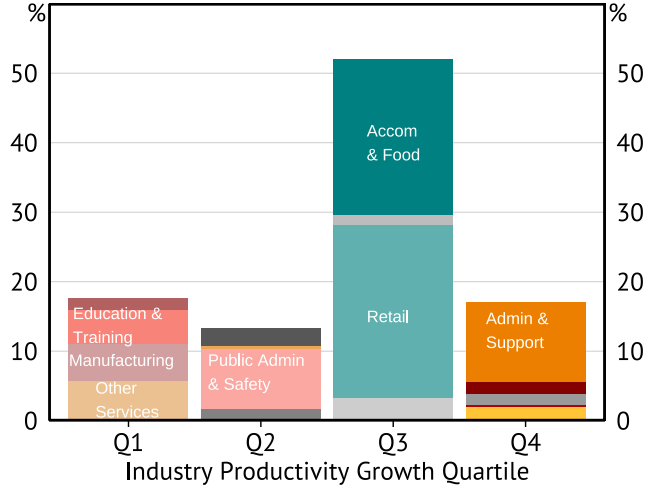
Proportion of net flows, 2012 to 2022



* See Appendix B for information on data construction. Flows from firms not reporting an industry are omitted
Sources: ABS; e61

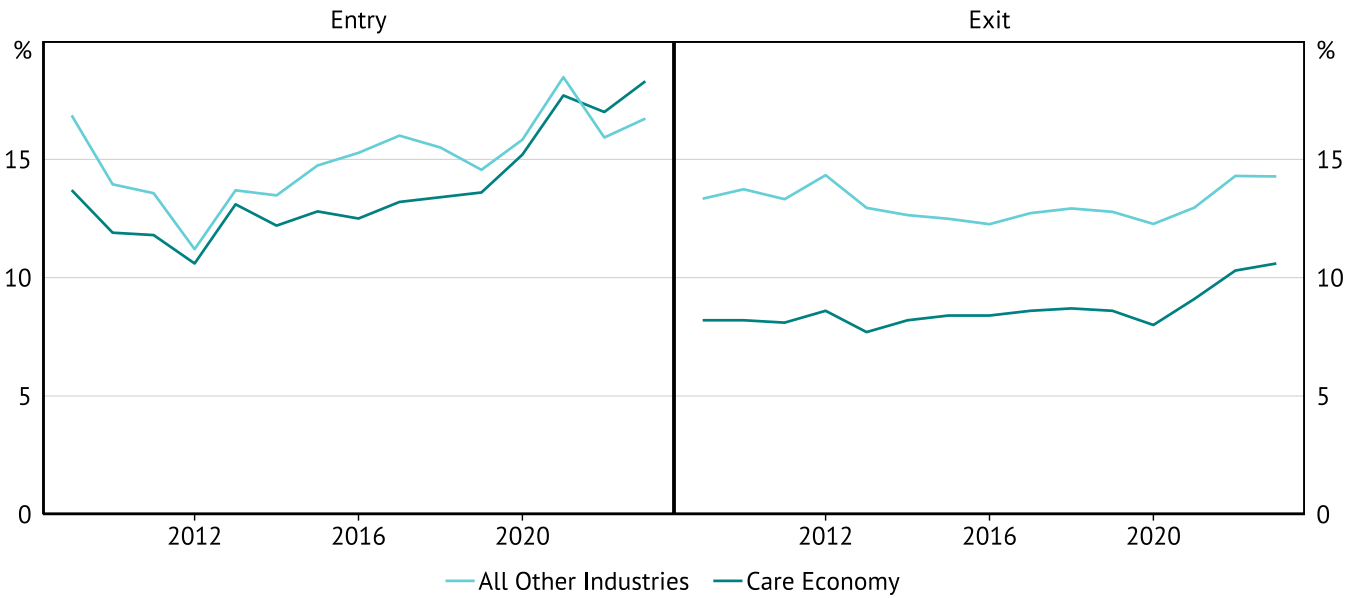
Flows into the care economy by labour productivity of source industry

by industry productivity growth quartile since 2012



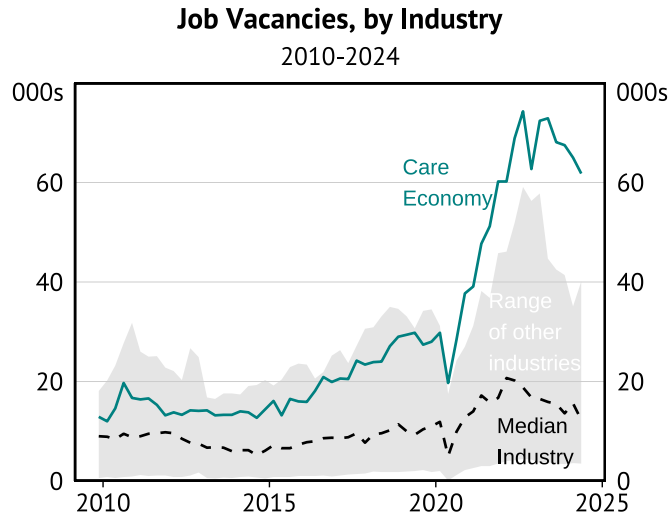
* See Appendix B for information on data construction. Flows from firms not reporting an industry are omitted
Sources: ABS; e61

Figure C.4: Firm entry and exit rates, by sector



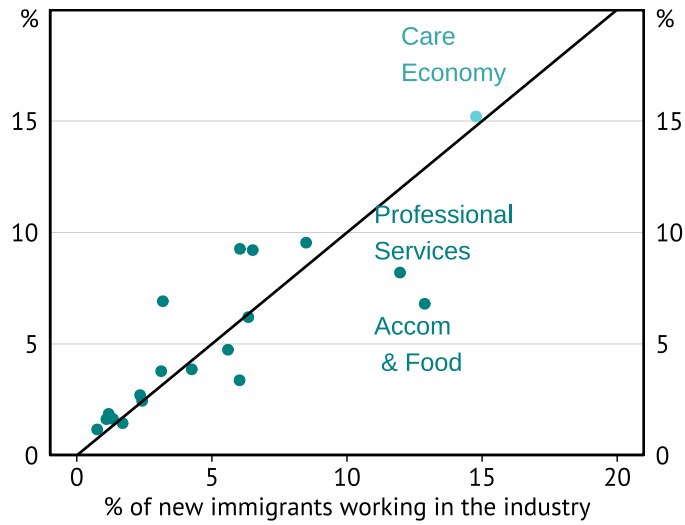
Sources: ABS; e61

Figure C.5: Job Vacancies have spiked in the care economy over the past 4 years



Sources: ABS; e61

Figure C.6: Migrants flow into the care economy at around its employment share
Employment (%), versus new immigrants (%),
by industry



* 'New immigrants' defined as persons in the 2021 census over the age of 15 who were living offshore 5 years ago.
Sources: ABS; e61

Business Longitudinal Analysis Data Environment (BLADE)

This paper uses unit record data held in the BLADE data environment which is hosted by the Australian Bureau of Statistics. The results are based, in part, on Australian Business Register (ABR) data supplied by the Registrar to the Australian Bureau of Statistics (ABS) under A New Tax System (Australian Business Number) Act 1999 and tax data supplied by the Australian Taxation Office (ATO) to the ABS under the Taxation Administration Act 1953. These require that such data are only used for the purpose of carrying out functions of the ABS. No individual information collected under the Census and Statistics Act 1905 is provided back to the Registrar or ATO for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes and is not related to the ability of the data to support the ABR or ATO's core operational requirements. Legislative requirements to ensure the privacy and secrecy of this data have been followed. Only people authorised under the Australian Bureau of Statistics Act 1975 have been allowed to view data about any particular firm in conducting these analyses. In accordance with the Census and Statistics Act 1905, results have been confidentialised to ensure that they are not likely to enable the identification of a particular person or organisation.

Person Level Integrated Data Asset (PLIDA)

The results of these studies are based, in part, on data supplied to the ABS under the Taxation Administration Act 1953, A New Tax System (Australian Business Number) Act 1999, Australian Border Force Act 2015, Social Security (Administration) Act 1999, A New Tax System (Family Assistance) (Administration) Act 1999, Paid Parental Leave Act 2010 and/or the Student Assistance Act 1973. Such data may only used for the purpose of administering the Census and Statistics Act 1905 or performance of functions of the ABS as set out in section 6 of the Australian Bureau of Statistics Act 1975. No individual information collected under the Census and Statistics Act 1905 is provided back to custodians for administrative or regulatory purposes. Any discussion of data limitations or weaknesses is in the context of using the data for statistical purposes and is not related to the ability of the data to support the Australian Taxation Office, Australian Business Register, Department of Social Services and/or Department of Home Affairs' core operational requirements.

Legislative requirements to ensure privacy and secrecy of these data have been followed. For access to PLIDA and/or BLADE data under Section 16A of the ABS Act 1975 or enabled by section 15 of the Census and Statistics (Information Release and Access) Determination 2018, source data are de-identified and so data about specific individuals has not been viewed in conducting this analysis. In accordance with the Census and Statistics Act 1905, results have been treated where necessary to ensure that they are not likely to enable identification of a particular person or organisation.