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DID JOBSAVER MAINTAIN VALUABLE WORKER-FIRM MATCHES? UNDERSTANDING THE WORKERS SUPPORTED BY JOBSAVER

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Summary

The New South Wales (NSW) JobSaver program was a job retention scheme that supported businesses and workers during the 2021 COVID-19 lockdowns in NSW by subsidising a proportion of firms' payroll expenses. But like the federal JobKeeper program, it may have preserved jobs during the lockdown at the cost of poorer future labour market outcomes for the workers that were covered. At a cost of $7.2 billion, the scheme was also a significant fiscal outlay for the government.

Job retention policies like JobSaver are often justified on the basis that they protect high match quality jobs. But we found:

- Workers covered by JobSaver tended to be younger, lower paid and spent less time with their employers, which are characteristics that are unlikely to be associated with high match value jobs.
- When comparing workers at firms with similar characteristics, workers supported by only JobSaver were around 10 per cent less likely than unsupported workers to stay at their jobs post-pandemic, which indicates that these jobs may not have had high enduring match value.
- Workers who were covered by both JobKeeper and JobSaver experienced worse post-pandemic earnings outcomes on average, earning $3,000 less the year after the pandemic than other groups of workers, even after controlling for observable worker and firm characteristics. This may indicate that job retention schemes tied workers to unsuitable jobs with worse earnings trajectories.

Due to the limited evidence of high match quality jobs being saved, losses to household income from higher unemployment during future economic downturns may be better addressed through traditional income support programs rather than job retention schemes. And if job retention schemes had to be part of the policy mix, they should be in place for as short a period as possible to limit the negative effects.

Program design also matters. The JobSaver program did not have the same strict retention effects compared to the JobKeeper program, which preserved productivity-enhancing labour mobility, potentially mitigating some of the negative effects of the wage subsidy.

The NSW Government's JobSaver program supported businesses and workers economically affected by the 2021 COVID-19 lockdowns. It incentivised firms to preserve levels of employment at pre-lockdown levels by providing a payroll subsidy to firms that was tied to the firm maintaining worker headcounts.

The purpose of job retention schemes like JobSaver and JobKeeper is threefold:

- Support workers by providing income support and prevent labour market scarring.
- Support businesses by ensuring solvent but liquidity-constrained businesses remained operational.
- Preserve employment relationships so that valuable worker-firm matches were not lost.

Other programs, such as household income support and business cashflow support programs, can achieve the first two objectives, but job retention schemes are perceived as being unique in their ability to achieve the third objective.

During the pandemic, job retention-style programs such as JobSaver were favoured over more traditional income support programs on the basis that the pandemic's economic circumstances uniquely created the need to preserve worker-firm relationships, especially for jobs that were of high match value. Governments were concerned that – due to uncertainty – firms would excessively end employment relationships even for high match value jobs. Frictions in the labour market may then make it more difficult for these workers and firms to match up again once economic conditions improved (Borland & Hunt, 2023).

High match value jobs are employment relationships where the productivity, wages and profits generated by the specific combination of a worker and firm significantly exceed what would be achieved if either party were matched with different alternatives (Abowd et al., 1999). These gains are driven by the unique combination of the worker's skills, abilities and preferences with the firm's technology, culture and work environment (Lazear & Oyer, 2012).

Job retention schemes were also more feasible to deploy given the available government infrastructure in the highly time sensitive context of the pandemic. There is some evidence that job retention schemes that efficiently target high match value jobs can help preserve employment relationships in sectors with high firm-specific human capital (Giupponi & Landais, 2023). But job retention schemes that go on for too long may delay necessary reallocation of workers to more productive firms and sectors (Boeri & Bruecker, 2011).

Our research finds that JobSaver likely did not target high match value jobs. JobSaver recipients were typically younger, with lower tenure and pre-pandemic earnings compared to other workers. Furthermore, workers covered by both JobSaver and the preceding federal JobKeeper program experienced worse job retention and earnings growth after these programs ended. These findings suggest not only that the protected jobs were of lower match quality, but also that workers with lower match quality were disproportionately present in firms where jobs were protected by JobKeeper and JobSaver.

Importantly, both JobKeeper and JobSaver were introduced in an emergency where policymakers faced unprecedented uncertainty and time constraints – during the pandemic's onset in 2020 and NSW's 2021 outbreak and lockdown respectively. With administrative concerns about the ability to provide direct income support and business loan schemes, the emergency situation meant that the JobKeeper and JobSaver schemes were an understandable response during a period of great uncertainty.

Box 1: What was the JobSaver program and how did it compare to JobKeeper?

Overview

The COVID-19 JobSaver Payment Program was a joint initiative of the NSW and Australian governments, launched in response to the economic impact of the 2021 COVID-19 lockdowns in NSW. The program provided fortnightly financial support to affected businesses and not-for-profit (NFP) organisations across NSW, commencing on 18 July 2021. Support continued through November 2021, with payments gradually tapering from October as restrictions eased and economic activity resumed.

Program eligibility

To be eligible for JobSaver, businesses and NFPs needed to have an active ABN and operate in NSW, meet turnover thresholds, demonstrate a 30% or greater decline in turnover due to COVID-19 restrictions, and maintain its employee headcount while receiving payments under the program. Non-employing businesses could also qualify for a weekly payment if the business was the owner's primary income source and met these criteria.

Support payments

Eligible entities received fortnightly payments equivalent to 40% of their NSW weekly payroll, with a minimum payment of $1,500 to a maximum payment of $100,000 per week. From 10 October 2021, payments were reduced as part of a tapering aligned with the easing of movement restrictions. In a significant difference from JobKeeper, payments were not required to be used solely for paying employees – firms could use these payments for all business expenses.

Comparing JobSaver and JobKeeper

JobKeeper was a temporary wage subsidy introduced by the Australian Government in March 2020 to help businesses significantly affected by COVID-19 retain their employees by providing $1,500 per fortnight for each eligible worker. Both the federal JobKeeper and NSW JobSaver were pandemic relief programs designed to help businesses retain staff, but they differed in key ways. JobKeeper provided a fixed wage subsidy that employers had to pass directly to eligible employees, with strict requirements on employee tenure and residency. In contrast, JobSaver offered payments based on a percentage of payroll, not tied to specific workers, giving businesses more flexibility in how funds were used. JobSaver also had broader eligibility, which included casual employees and non-citizens. While both aimed to preserve employment, JobKeeper targeted individual jobs, whereas JobSaver supported businesses as a whole.

However, with the benefit of time and hindsight, governments have the opportunity to carefully plan their response to future crises. Our analysis provides valuable insights on suitable responses to future economic downturns. Our view is that job retention schemes should generally be avoided, and if they are pursued, schemes should only be operational for a short time and be carefully targeted. This may necessitate investing in stronger data infrastructure and effective delivery mechanisms at both State and Federal levels, so government can be better equipped to quickly provide targeted income support to households and business during future shocks. This approach would help protect people's livelihoods and business continuity without retaining poor job matches. Ultimately, building this policy capability would be a lasting and meaningful improvement inspired by the challenges faced during the pandemic.

Why job match quality matters

The JobSaver program aimed to support businesses negatively impacted by COVID-19 lockdowns in NSW by supporting high match quality jobs (for more details on the policy rules, see Appendix A.1). This note assesses the quality of the jobs that were supported by looking at indicators of job match quality. Job match quality is the idea that workers with certain skills, experiences and preferences are better fit for jobs in particular firms.

Job match quality is important for firm productivity and worker earnings. Better-matched workers are more productive and are less likely to separate from their employers (Abel & Deitz, 2015; Jackson, 2013). Together, this raises firm productivity and reduces labour costs to firms associated with worker turnover. Furthermore, workers in better matched jobs earn more than less well-matched employees. Better matches are also associated with faster wage growth, potentially driven by a greater ability to build firm-specific human capital compared to poorer matched workers (Fredriksson et al., 2018).

Workers can improve their job match quality by moving to new jobs at different firms. But job retention programs discourage these moves. JobKeeper, in particular, explicitly tied payments to the retention of existing worker-firm relationships, preventing productivity-enhancing job moves. In contrast, JobSaver's program rules only required total wage bills to remain constant, without placing specific restrictions on worker moves, similar to the Paycheck Protection Program in the US (US Treasury, 2020). The difference in program rules may have allowed the labour market to continue to facilitate productivity-enhancing job switching.

Governments in Australia and overseas implemented job retention schemes due to their concern that the pandemic would indiscriminately destroy worker-firm matches, but leave economic structures unchanged (Morrison, 2020). This would have the consequence of reducing productivity as other factors of production would remain underutilised while workers and firms went through the costly and imperfect process of reforming matches again. However, even given uncertainty firms and workers are likely to try to maintain good job matches. Intuitively, this leads to the matches that are at risk of separation tending to be weaker – as businesses will tend to let go of workers they see as less well matched, while workers are more likely to leave firms they see as a poor match.

Job match quality is difficult to measure using any single metric, and as such, throughout this note we use 3 different indicators that provide suggestive evidence for higher quality matches: prior job tenure, job retention rates and subsequent earnings growth (Belot et al., 2024).

Longer tenure reflects stronger worker-firm matches as employees develop firm-specific skills, although this effect typically peaks around 18-24 months of tenure (Nagypál, 2007). Job retention rates measure workers remaining at firms over time. Workers are more likely to stay at a job for longer if the match value of the job is higher. Thirdly, earnings growth correlates closely with match quality, as better-matched workers tend to experience faster wage growth (Fredriksson et al., 2018).

Who were the workers receiving JobSaver?

This section examines the pre-pandemic characteristics of these workers to understand both the factors influencing JobSaver eligibility and their post-pandemic outcomes. Through this analysis, we evaluate whether JobSaver effectively preserved valuable worker-firm matches that were at risk during the pandemic.

We group workers based on their joint status under the preceding federal JobKeeper and subsequent NSW JobSaver program, rather than categorising them by individual policy receipt alone. This results in four groups (see Appendix A.2 for policy group definitions) those who received:

- JobKeeper and JobSaver policies;
- only JobKeeper;

- only JobSaver; and
- no JobKeeper or JobSaver policies.

By analysing these four groups, we reveal differences in worker characteristics and outcomes that aggregated comparisons (e.g., JobSaver vs. non-JobSaver) may obscure.

In this section we only analyse job matches that existed prior to the outbreak of the COVID pandemic. The purpose of doing so is to understand more about the characteristics of job matches that had long-term support (receiving both JobKeeper and JobSaver) and those that were ineligible for the initial Federal assistance (JobSaver only).

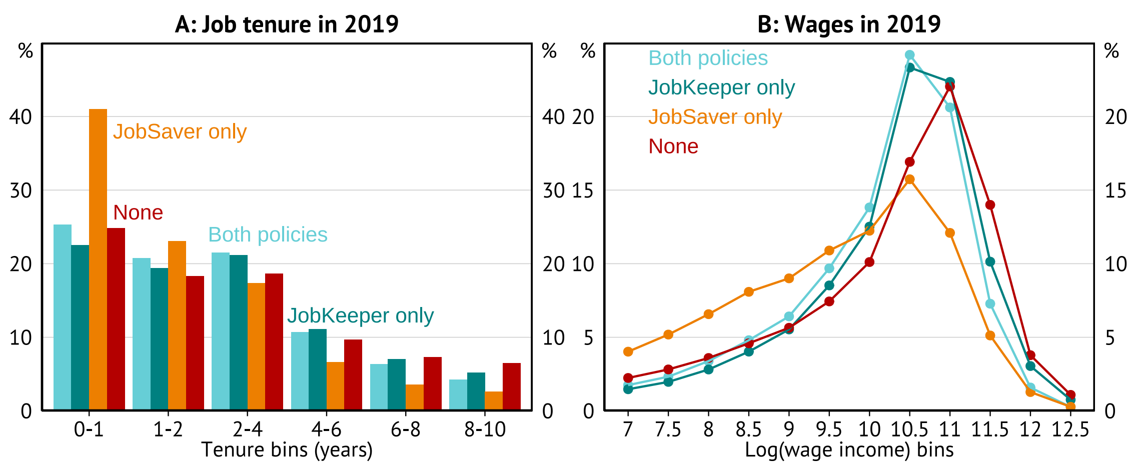
JobSaver was targeted at the firm level, covering all workers in firms that met the eligibility criteria based on turnover decline and payroll size, regardless of individual worker characteristics. In contrast, JobKeeper applied at the worker level, targeting eligible workers based on characteristics like tenure and casual status.

Workers who received only JobSaver had lower incomes, shorter tenures, and lower skill levels in 2019 (pre-pandemic) compared to all other worker groups, including those who received both JobKeeper and JobSaver. Of all jobs that existed prior to the COVID outbreak, over 40% of JobSaver-only recipients had tenure of less than 1 year, a significantly higher share than other policy groups (Figure 1A). Longer tenure generally reflects stronger worker-firm matches, as employees gain firm-specific skills and employers invest in their learning and development.[1] Short tenure suggests JobSaver-only matches were weaker and less valuable, reflecting reduced investment from both employers and employees. Additionally, JobSaver-only recipients had the highest proportion of young people, with around one-third aged 15-24 (Figure 2A). The age and tenure distributions suggests many in this group were young, possibly casual workers just entering the labour market.[2]

JobSaver-only workers earned lower incomes compared to all other workers in 2019, averaging $5,700 less than workers who received both JobKeeper and JobSaver (Figure 1B). They were also concentrated in low-skilled occupations, with fewer in highly-skilled occupations compared to other groups (Figure 2B). Taken together, these pre-pandemic patterns of short tenure, low income and low skill levels collectively suggest JobSaver supported less valuable firm-worker matches.

Figure 1: Distribution of workers by tenure and wages

By policy group

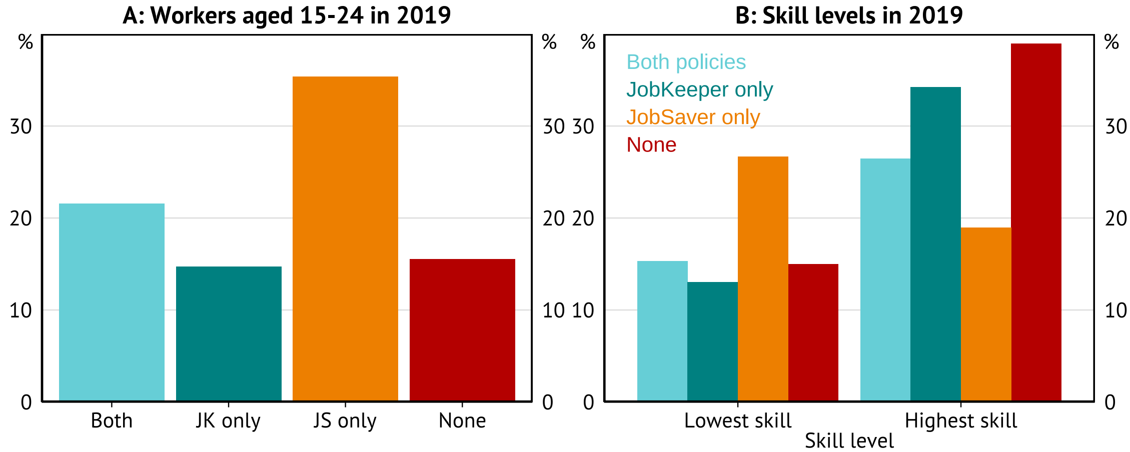


Sources: ABS; e61 Institute

1 These effects tend to peak at around 18 months to 2 years on the job (Nagypál, 2007), after which the estimated return to tenure slightly declines. We found a similar pattern of returns to tenure in the Australian data in Andrews, Nolan, and Vass (2023).
2 We cannot determine workers' casual status in the administrative data.

Figure 2: Worker age and skill levels

By policy group

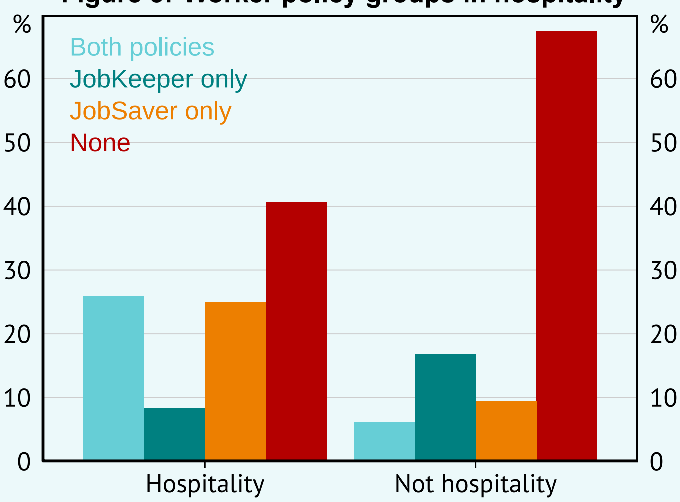


Sources: ABS; e61 Institute

Box 2: JobSaver and the hospitality industry

The hospitality industry, heavily impacted by pandemic lockdowns, has high mobility and casualisation rates. Its workforce typically comprises younger workers with lower tenures, incomes and skills - characteristics also seen in JobSaver-only workers. Unlike JobKeeper, which specifically excluded short-tenured casual workers, JobSaver had no such restrictions, leading to an over-representation of short-tenured casual workers in the JobSaver-only group. Unsurprisingly, this industry had the highest proportion of JobSaver-only recipients among all industries. Combined with the both-policy group, JobSaver recipients accounted for 50% of the hospitality workforce.

Figure 3: Worker policy groups in hospitality



Sources: ABS; e61 Institute

How well did JobSaver workers fare?

In this section we consider all matches that were in place in New South Wales at the beginning of the JobSaver program and the related NSW lockdowns. This is the set of jobs that were exposed to the lockdowns and the related policy interventions (i.e. JobSaver) due to these lockdowns.

This section analyses worker retention rates and earnings growth both during and after the pandemic. We found that while workers covered by JobKeeper or both policies remained at their jobs longer, this increased retention actually produced negative outcomes. These groups experienced worse earnings growth compared to both JobSaver-only recipients and workers not covered by either policy, even after controlling for demographic factors like age, tenure and industry. This evidence suggests that rigid retention requirements preventing natural job mobility can trap workers in low match-quality positions, ultimately harming both productivity and earnings potential.

Retention rates

As our first indicator, we look at retention rates. Retention rates measure the proportion of workers who stay at a firm over time. Workers are more likely to stay at a job for longer if the match value of the job is higher.

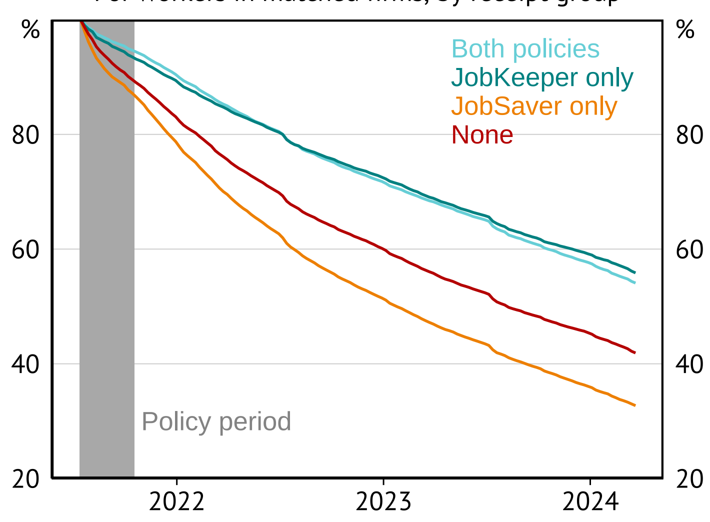
The design of the JobSaver and JobKeeper programs created different incentives for firms to retain workers, and we observe these differences in the retention outcomes for workers. The design of the JobKeeper program mandated job retention by tying the payment to firms keeping their workers. JobSaver was different as payment was tied to maintaining a firm's overall payroll, so individual workers were not prevented from leaving. This allowed firms to replace workers who left voluntarily and maintain their payment eligibility. Hence, JobSaver did not have the same strict retention effects as JobKeeper, which may have mitigated the negative effects of the wage subsidy. Despite this, workers covered for the full periods by both JobKeeper and JobSaver would have been kept in their jobs for around 1½ years.

Workers who received only JobSaver support were significantly less likely to remain with their employers compared to those covered by both JobSaver and JobKeeper. JobSaver-only recipients exhibited the lowest retention rates both during and after the policy period. By contrast, workers protected by JobKeeper since March 2020 showed substantially higher retention rates.

Lower retention rates suggest that the match was not particularly valuable for workers and firms – as they were willing to leave it in the absence of the subsidy. At face value this may imply that longer retention indicates that those who were long-term dependent on the subsides were well matched. However, as will be shown below the earnings trajectories of these workers indicates that there may be other factors driving this low retention.

About 15 per cent of JobSaver recipients left their positions during the policy period (Figure 4). This flexibility represents a positive aspect of JobSaver, which unlike JobKeeper did not discourage job transitions, potentially facilitating better subsequent job matches. This measure also controlled for differences in firm revenue performance, so it is not being driven by differences in the performance of firms that employed JobSaver and JobKeeper-covered workers.

Figure 4: Worker retention rates
For workers in matched firms, by receipt group

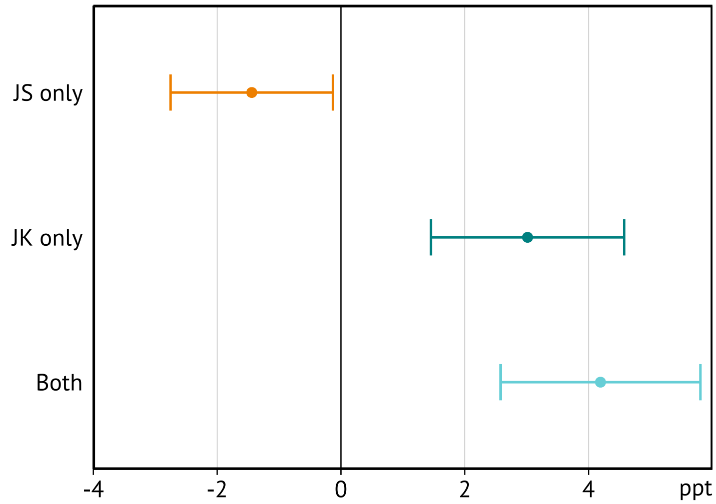


Sources: ABS; e61 Institute

This difference persists when looking at 2-year retention rates comparing the jobs held by workers from July 2021 to July 2023 (Figure 5). Controlling for worker and firm characteristics, workers covered by only JobSaver were 4 percentage points more likely to leave their jobs after 2 years than workers who were not covered by any job retention schemes. In contrast, workers covered by JobKeeper (both only or JobSaver as well) were 3–4 percentage points more likely to stay at their jobs than no-policy workers.

Figure 5: Differences in retention rates by policy status

Matched firms; relative to baseline of no policy**



* With 95% confidence intervals
** Retention rates compare mid-July 2021 to mid-July 2023. Matched Firms. Controls: age, gender, age x gender, income quartile, tenure, year, industry, occupation
Sources: ABS; e61 Institute

Furthermore, these retention differences persist across all age groups but are most pronounced among the youngest and oldest workers. Industry factors also played a role, with hospitality workers showing lower retention rates than other sectors, especially among JobSaver-only recipients.

But longer tenures are not always good. The match suitability of workers and firms vary over time as the economy evolves. Research shows that gains from an additional year at a firm decline strongly with tenure, so very long tenures may not reflect continued high match quality (Buchinsky et al., 2010; Topel, 1991). Locking workers into the same firm may be negative – harming the worker's earning potential by tying them to an unsuitable job and hurting a firm's productivity by forcing them to hold onto an unsuitable worker. As a result, it is valuable to look at another outcome – worker earnings growth.

Earnings growth

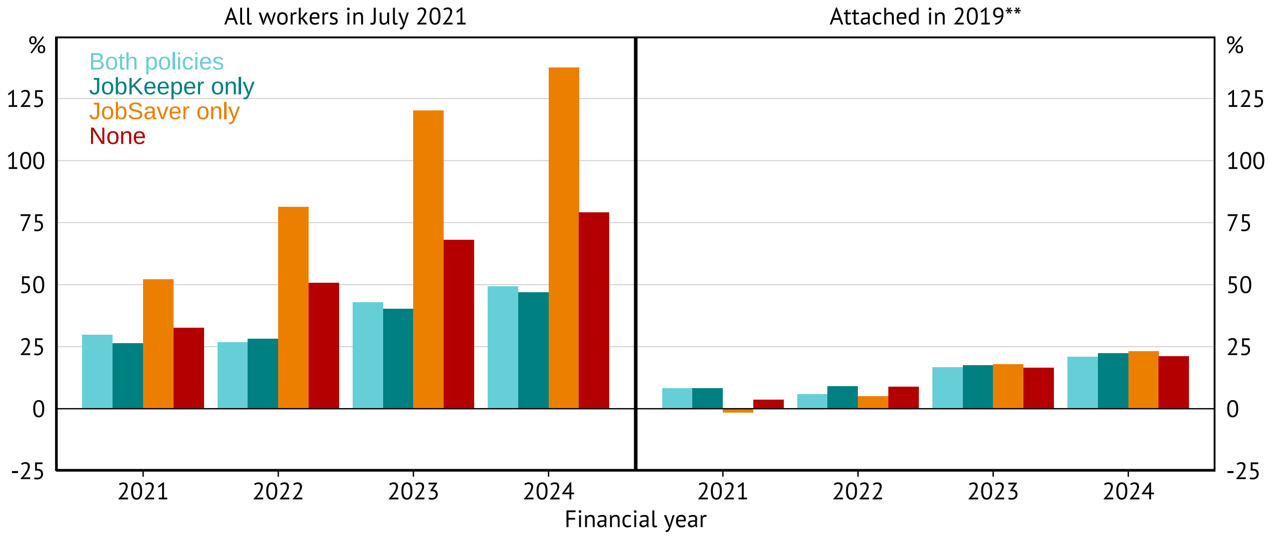
The second measure we analyse, worker earnings growth, relates closely to worker-firm match quality. Workers in better matched jobs tend to experience faster wage growth throughout their tenure with the firm (Fredriksson et al., 2018). We measure worker earnings growth for two cohorts of workers: workers who were employed in July 2021 and workers that were already attached to firms in 2019, before the pandemic. Understanding the earnings trajectory of workers that were already employed before these policies took effect is important, as one of the key justifications for job retention schemes is to protect existing employment relationships.

The pattern of worker earnings growth since the pandemic echoes the trends observed in the job retention data. Analysing average earnings growth since 2019 suggests workers supported exclusively by JobSaver demonstrated stronger income growth compared to other groups (Figure 6). But this is due to compositional effects, as newer labour market entrants were disproportionately attached to JobSaver-supported jobs. When restricting the analysis to workers actively employed in 2019, JobSaver recipients no longer outperform other groups, suggesting that the outcomes for workers across the different policies was broadly similar.

Workers who were covered by JobKeeper or both policies experienced worse earnings outcomes than other workers, including workers who were covered only by JobSaver. This contextualises with the earlier results on job retention, and suggests that workers who were long-term reliant on subsides to support their job ended up being tied to poor performing firms.

When we control for worker and firm characteristics, workers covered by both policies experienced a $3,000 earnings loss in FY2022 compared to non-recipient workers (Figure 7). This shrinks to around $1,800 in FY2024 for recipients of both policies and around $1,100 for JobKeeper-only recipients. This significant and negative earnings outcome is in contrast to JobSaver-

Figure 6: Earnings growth since 2019*

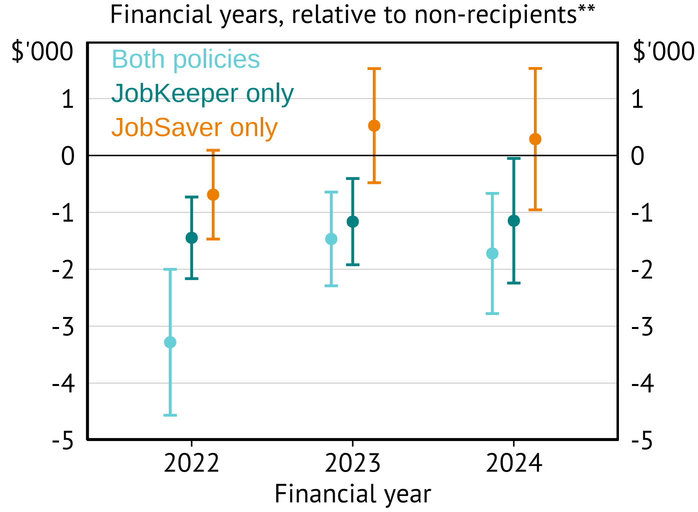


* Employees of matched firms.
** Earned at least $25k in FY19.
Sources: ABS; e61 Institute

only recipients, who have wage outcomes that are statistically the same as those who were covered by no wage subsidies, suggesting that the flexibility to leave poor matches mitigated wage penalties despite the intervention.

Figure 7: Difference in labour earnings*

Financial years, relative to non-recipients**



* Only those employed in 2019 and earning over $25k.
** Uses a set of firms matched on turnover and turnover declines. Controls: age, age x gender, year, industry, occupation.
Sources: ABS; e61 Institute

These findings add important context to the high retention of long-term subsidy recipients: artificially binding workers to increasingly unsuitable firms for extended periods (around 18 months for recipients of both policies) negatively impacts future earnings potential due to worsening worker-firm match effects. JobSaver's shorter duration and different program design appears to have limited match-quality deterioration by allowing workers to transition to better-matched positions, whereas the combined policies created persistent earnings penalties by prolonging poor-quality employment relationships.

Policy implications

Job retention schemes like JobSaver appear unnecessary for protecting the jobs that matter most. Even when they succeed in preserving employment relationships, they do so at a substantial fiscal cost of over $100,000 per job-year saved that could be directed towards more effective programs (Bishop & Day, 2020; Watson et al., 2022).

Job retention schemes may have had some economic benefits at the time, as argued by some, such as Hamilton and Holden (2024). But our findings – as well as earlier research by Andrews, Nolan, and Vass (2023) – demonstrate the need to counter calls for job retention schemes during the next protracted economic downturn. These findings should not be viewed as criticism of the NSW Government's response at the time. The JobSaver program was developed under extraordinary time pressure, and many of its limitations reflected the constrained policy levers available to the NSW Government during the crisis.

The workers that JobSaver covered were unlikely to be high match value jobs that could justify the fiscal cost of protection. JobSaver's recipients were younger, had lower tenures and earnings prior to the pandemic than other workers, which are indicators of low match value. However, a notable advantage of JobSaver over the federal JobKeeper program was that it did not restrict workers to their existing firms, thereby supporting greater labour mobility. If such a policy is considered again in the future, maintaining this flexibility could help mitigate potential negative impacts on productivity.

More work is needed, but by tying workers to poorly matched jobs, job retention schemes may have contributed to longer-term problems with productivity (also noted by the Productivity Commission in Thiris (2024)). For example, the United States, which had stimulus more targeted at people rather than workers, has experienced much better productivity outcomes post-pandemic than Australia and most other advanced economies, many of which focused policy on protecting workers.

We can see some evidence for this by looking at the earnings outcomes for workers who were covered by both JobKeeper and JobSaver, and hence covered by job retention schemes for the longest. This extended period of policy coverage unnecessarily tied workers down to their jobs, and workers suffered a significant earnings penalty compared to other groups of workers. This may have been driven by recipients of both policies delaying their departures from poorly performing firms, reducing productivity-enhancing job mobility (Andrews, Bahar, & Hambur, 2023). If job retention programs are used again in the future, they should be designed to operate for as short a time period as necessary to minimise the negative effects on job mobility and earnings.

References

Abel, J. R., & Deitz, R. (2015). Agglomeration and job matching among college graduates. *Regional Science and Urban Economics*, *51*, 14–24. https://doi.org/10.1016/j.regsciurbeco.2014.12.001

Abowd, J. M., Kramarz, F., & Margolis, D. N. (1999). High Wage Workers and High Wage Firms. *Econometrica*, *67*(2), 251333.

Andrews, D., Bahar, E., & Hambur, J. (2023). *The Effects of COVID-19 and JobKeeper on Productivity-Enhancing Reallocation in Australia*. https://doi.org/10.2139/ssrn.4506098

Andrews, D., Nolan, M., & Vass, L. (2023). *What can JobKeeper teach us about job retention schemes?*, e61 Institute.

Belot, M., Liu, X., & Triantafyllou, V. (2024). Measuring the quality of a match. *Labour Economics*, *89*, 102568. https://doi.org/10.1016/j.labeco.2024.102568

Bishop, J., & Day, I. (2020, November). *How Many Jobs Did Jobkeeper Keep?* https://doi.org/10.47688/rdp2020-07

Boeri, T., & Bruecker, H. (2011). Short-time work benefits revisited: some lessons from the Great Recession. *Economic Policy*, *26*(68), 697–765. https://doi.org/10.1111/j.1468-0327.2011.271.x

Borland, J., & Hunt, J. (2023). JobKeeper: An Initial Assessment. *Australian Economic Review*, *56*(1), 109–123. https://doi.org/10.1111/1467-8462.12503

Buchinsky, M., Fougere, D., Kramarz, F., & Tchernis, R. (2010). Interfirm Mobility, Wages and the Returns to Seniority and Experience in the United States. *Review of Economic Studies*, *77*(3), 972–1001. https://doi.org/10.1111/j.1467-937X.2010.598.x

Fredriksson, P., Hensvik, L., & Skans, O. N. (2018). Mismatch of Talent: Evidence on Match Quality, Entry Wages, and Job Mobility. *American Economic Review*, *108*(11), 3303–3338. https://doi.org/10.1257/aer.20160848

Giupponi, G., & Landais, C. (2023). Subsidizing Labour Hoarding in Recessions: The Employment and Welfare Effects of Short-time Work. *The Review of Economic Studies*, *90*(4), 1963–2005. https://doi.org/10.1093/restud/rdac069

Hamilton, S., & Holden, R. (2024). *Australia's Pandemic Exceptionalism*. UNSW Press.

Jackson, C. K. (2013). Match Quality, Worker Productivity, and Worker Mobility: Direct Evidence from Teachers. *The Review of Economics and Statistics*, *95*(4), 1096–1116. https://doi.org/10.1162/REST{_}a{_}00339

Lazear, E. P., & Oyer, P. (2012). Personnel Economics. In R. Gibbons & J. Roberts (Eds.), *The handbook of organizational economics*. Princeton University Press. https://EconPapers.repec.org/RePEc:pup:chapts:9889-12

Morrison, S. (2020, March). The Hon. Scott Morrison MP Prime Minister.

Nagypál, É. (2007). Learning by Doing vs. Learning About Match Quality: Can We Tell Them Apart? *The Review of Economic Studies*, *74*(2), 537–566. https://doi.org/10.1111/j.1467-937X.2007.00430.x

Thiris, J. (2024). *The great productivity divide*, Productivity Commission. https://www.pc.gov.au/ongoing/productivity-insights/bulletins/quarterly-bulletin-december-2024/bulletin-december-2024.pdf

Topel, R. (1991). Specific Capital, Mobility, and Wages: Wages Rise with Job Seniority. *Journal of Political Economy*, *99*(1), 145–176. https://doi.org/10.1086/261744

US Treasury. (2020). Paycheck Protection Program. https://home.treasury.gov/policy-issues/coronavirus/assistance-for-small-businesses/paycheck-protection-program

Watson, T., Tervala, J., & Sainsbury, T. (2022). *The JobKeeper Payment: How Good Are Wage Subsidies?* https://doi.org/10.2139/ssrn.4103865

A.1. Detailed JobSaver program rules and comparison with JobKeeper rules

JobSaver Program eligibility

To be eligible for the payments, employing businesses or NFPs must:

- Have an active Australian Business Number (ABN) who were operating in NSW on 1 June 2021,
- Had an aggregate annual turnover between $75,000 and $250 million (inclusive) for the year ended 30 June 2020,
- Suffered a decline in turnover of 30% or more due to the Public Health Order over a minimum two-week period commencing 26 June 2021 compared to the same period in 2019, the same period in 2021, or the two week period immediately before the Public Health Order (12 - 25 June 2021), and
- Maintain its employee headcount while continuing to receive payments under the Program.

Non-employing businesses were also eligible for a weekly payment of $1,000 if the business was the primary income source of the owner and it met the criteria listed above.

Support

Eligible entities received fortnightly payments equivalent to 40% of their NSW weekly payroll, with a minimum payment of $1,500 to a maximum payment of $100,000 per week. From October 10, 2021, payments were reduced as part of a phased-down approach aligned with the easing of restrictions. Highly impacted industries such as tourism and accommodation and food services were eligible for JobSaver Extension payments. These businesses were subject to stricter eligibility criteria and higher maximum weekly payment thresholds.

While the payment calculations were based on payroll figures, they can be used to cover general business costs that helped entities to survive, maintain relationships with employees and prepare to resume operations after lockdowns, including but not limited to:

- Salaries and wages,
- Utilities and rent,
- Financial, legal or other advice,
- Marketing and communications,
- Persihable goods, or
- Other business costs.

JobSaver vs. JobKeeper

The federal JobKeeper program was introduced in March 2020. While both aimed to provide pandemic relief, the NSW JobSaver program differed significantly from the federal JobKeeper Payment scheme in several important ways.

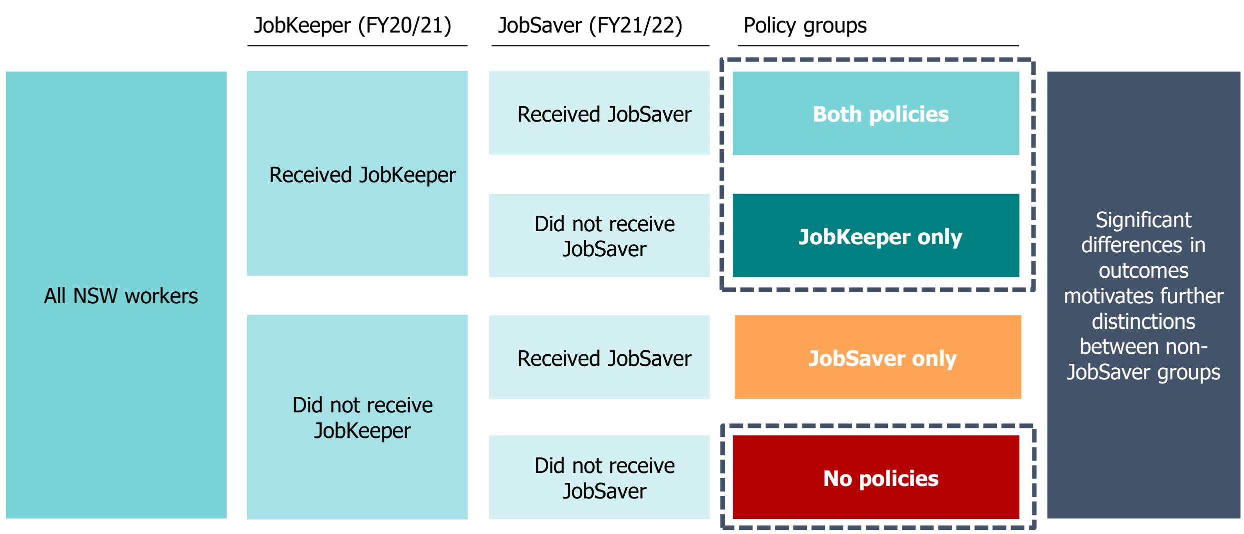
The design of JobSaver reflected both deliberate policy objectives and institutional constraints. The NSW Government aimed to design a policy that supported businesses while targeting similar job retention goals as the federal JobKeeper program. Tying payments to maintaining payrolls aligned with this purpose. However, Service NSW, who administered the program, did not have access to individual worker-level information unlike the federal JobKeeper program, which forced them to target the payments at the firm level. This resulted in a program that affected different groups of workers, and produced different incentives for firms and workers compared to the JobKeeper program.

As mentioned, JobSaver payments were calculated as a percentage of payroll (40%) but weren't tied to specific employees, giving businesses more flexibility in how funds were allocated across their operations. In contrast, JobKeeper provided a fixed payment amount of $1,500 per fortnight per eligible worker that employers were required to pass directly to those specific employees. Additionally, JobSaver's eligibility extended to casual employees without restrictions on tenure or citizenship status, unlike JobKeeper which required casual workers to have been employed for at least 12 months and meet Australian residency requirements. Both programs functioned as job retention schemes, but with distinct implementation approaches. While JobKeeper operated as a direct wage subsidy with strict pass-through requirements to specific workers, JobSaver implemented a more flexible job retention framework that preserved employment relationships by supporting businesses as a whole, allowing employers to maintain their workforce while adapting to changing pandemic conditions.

A.2. Data construction and definitions

Defining the policy groups used in the analysis

To better understand the distribution of support during the pandemic, we categorised recipients based on their joint receipt of the federal JobKeeper and NSW JobSaver programs. The four distinct recipient groups are visualised in the diagram below:



JobKeeper receipt was defined and measured consistently with Andrews, Nolan, and Vass (2023). An individual is denoted as being a JobKeeper recipients if they received either the initial JobKeeper payment or either of the extensions. Specifically, this considered only individuals who received under administrative code XXX or earlier - based on information provided by the Australian Treasury.

JobSaver receipt was defined and measured using data from New South Wales Treasury. The data was provided at the *firm* level, with all employees who were in the firm as at 15 July 2021 treated as JobSaver recipients in our analysis. The decision to focus only on workers employed on this date was in order to focus on the underlying *retention* of workers that had match value that was being protected prior to the announcement.

This implies that individuals hired by JobSaver firms after the introduction of the policy are not included as JobSaver recipients. When we used a wider window to include these individuals the results were roughly similar to those reported in this note.

Classification of each group was done in the following way:

- **JobKeeper only** refer to individuals who received the a JobKeeper payment but were not at a JobSaver firm.
- **JobSaver only** refers to individuals who were at a JobSaver firm, but did not receive a JobKeeper payment.
- The *Both* and *None* groups were then identified based on whether both or neither of the above payments were received.

Demographic factor	Category	Policy Status				Total
		Both	JK only	JS only	None	
Age	15-24	21.55	14.73	35.35	15.52	18.61
Age	25-34	25.18	25.11	28.69	26.79	26.57
Age	35-44	21.94	23.86	16.30	22.34	21.77
Age	45-54	19.04	21.43	12.27	19.82	19.03
Age	55-64	12.29	14.86	7.39	15.53	14.03
Gender	Female	47.75	48.04	46.95	50.28	49.23
Gender	Male	52.25	51.96	53.05	49.72	50.77
Location	Greater Sydney	72.97	65.22	71.89	66.05	67.60
Location	Rest of NSW	27.03	34.78	28.11	33.95	32.40
Skill level	1	26.42	34.20	18.93	38.92	34.25
Skill level	2	16.63	13.86	13.52	13.52	14.01
Skill level	3	17.41	17.43	13.96	9.47	12.21
Skill level	4	24.25	21.49	26.92	23.13	23.48
Skill level	5	15.29	13.02	26.66	14.96	16.04
Tenure	[0,1]	25.29	22.54	41.00	24.81	26.50
Tenure	(1,2]	20.76	19.41	23.05	18.32	19.37
Tenure	(2,4]	21.54	21.18	17.34	18.68	19.25
Tenure	(4,6]	10.72	11.12	6.64	9.66	9.64
Tenure	(6,8]	6.38	7.01	3.58	7.29	6.69
Tenure	(8,10]	4.28	5.17	2.63	6.49	5.55
Tenure	(10,12]	3.25	3.96	1.79	3.82	3.52
Tenure	(12,14]	2.51	2.87	1.48	2.82	2.62
Tenure	(14,16]	2.16	2.61	1.25	2.55	2.35
Tenure	(16,18]	3.11	4.12	1.24	5.56	4.52
Industry	Admin. & Support	7.84	8.63	12.23	10.26	9.94
Industry	Agriculture	0.67	1.85	1.18	1.65	1.49
Industry	Arts & Rec.	3.06	1.90	1.77	0.79	1.37
Industry	Construction	12.53	8.73	9.79	4.47	6.78
Industry	Education	3.78	4.88	2.98	6.23	5.33
Industry	Finance	2.29	3.75	6.42	6.61	5.61
Industry	Health & Social	8.01	11.97	6.29	12.37	10.99
Industry	Hiring & Real Estate	3.32	3.38	3.28	1.69	2.33
Industry	Hospitality	14.98	4.94	16.62	5.28	7.91
Industry	Manufacturing	6.68	7.18	5.05	5.42	5.79
Industry	Media & Telecom.	1.38	2.02	1.15	1.73	1.65
Industry	Mining	0.11	0.32	0.25	0.91	0.64
Industry	Other	6.24	5.47	3.99	2.93	3.85
Industry	Professionals	10.18	11.34	6.30	8.49	8.84
Industry	Public Admin.	1.55	2.34	2.86	13.29	8.96
Industry	Retail Trade	9.32	9.72	11.08	8.68	9.20
Industry	Transport	2.60	5.22	2.53	3.85	3.71
Industry	Utilities	0.28	0.32	0.41	0.79	0.61
Industry	Wholesale Trade	5.17	6.05	5.81	4.57	5.00

Note: Percentage in policy status columns represents the proportion of individuals in that category within the respective status. Total column shows overall proportion of each category across all policy statuses.

Table A.1: Distribution of Firms and Workers by Policy Received (FY19 group)

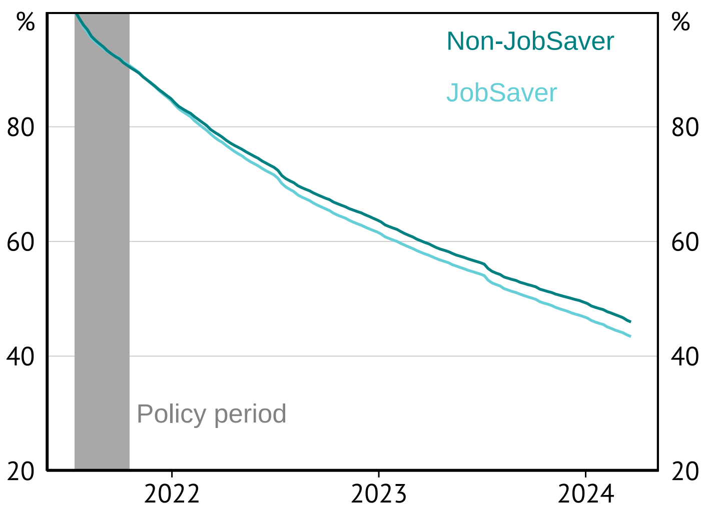
Policy	**Firms**		**Workers**	
	Count (000s)	**Prop**	**Count (000s)**	**Prop**
None	135	48.0%	2,058	50.9%
JobKeeper only	63	22.6%	457	12.0%
JobSaver only	17	6.1%	403	11.2%
Both	66	23.4%	462	13.0%
Total	281		3,381	

A.3. Relative results for aggregate groups

In this note we compare outcomes from four groups: those who don't receive either JobKeeper or JobSaver, those who received only JobKeeper, those who received only JobSaver, and those who received both.

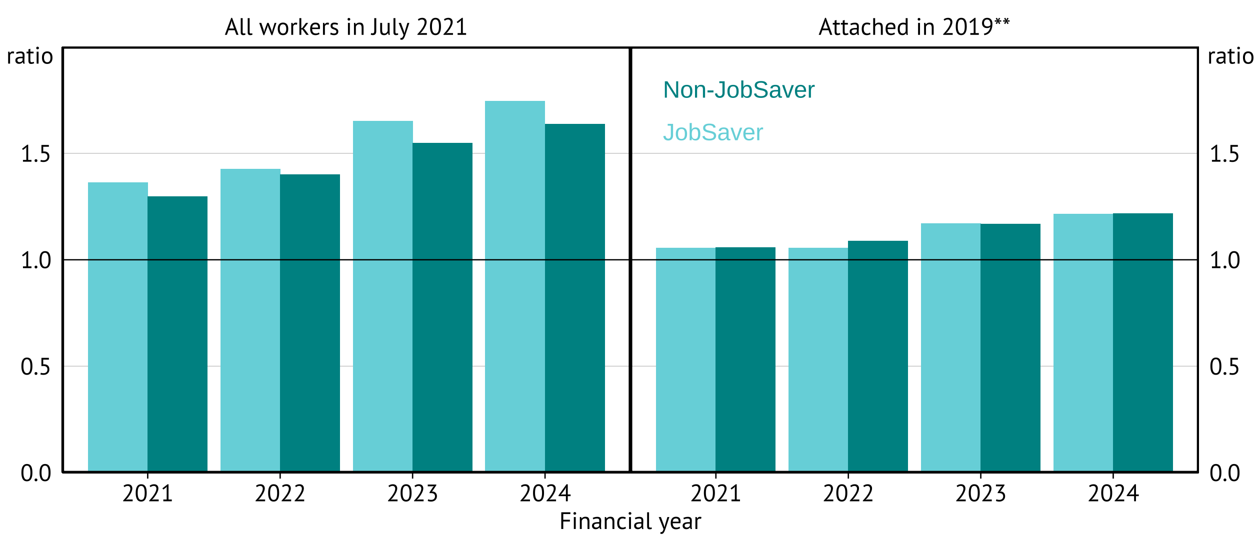
The reason we look at these four groups is due to the difference in the type of treatment received by each distinct group. Below we show the results when we instead only look at two groups – those who receive JobSaver and those that do not.

Figure A.1: Aggregate worker retention rates
For workers in matched firms, by JobSaver receipt



Sources: ABS; e61 Institute

Figure A.2: Aggregate earnings growth since 2019*
FY19 earnings = 1



* Employees of matched firms.
** Earned at least $25k in FY19.
Sources: ABS; e61 Institute

Simply comparing JobSaver recipients to non-recipients shows relatively similar retention and income trends in the years following COVID-19. However, as illustrated in the note this may be due to heterogeneous effects on groups depending on their prior experience with the JobKeeper program.

A.4. Regression framework and matching methodology

The results reported in the Research Note reflect a comparison between a set of matched firms. In this appendix we describe the purpose of matching, the matching process used, and the potential shortcomings associated with matching.

A.4.1 The purpose of matching

The JobSaver program was a payroll subsidy targeted at businesses on the basis of their observed revenue decline during the Public Health Order lockdown period. As a result, such businesses were *selected* on the basis of the revenue shock they faced.

When comparing the outcomes of workers at JobSaver recipient firms to those at non-recipient firms we are capturing both the effect of JobSaver, and the effect of being at a firm that was selected into JobSaver versus one that was not. As weaker/more fragile firms could arguably have been the firms that were selected into JobSaver, the comparison between these firms may simply reflect that fact these firms were weaker/different to start with.

A.4.2 Propensity Score Matching

We match firms on the basis of the following factors:

- Revenue in the September 2021 quarter.
- Quarterly and annual revenue change.
- Industry.

To do so we use Propensity Score Matching. This involves estimating a probit model of whether an individual firm is a JobSaver recipient based on these observed factors. Matching is done without replacement using nearest-neighbour matching on the estimated propensity score, without imposing a caliper. Unmatched treated units are retained using the closest available match. The final matched sample includes XXX treated and control firms.

The matching criteria used intends to select control firms that experience similar revenue shocks in the *September quarter*, are a similar size, and operate in a comparable industry to the treatment firm they are matched with.

A.4.3 Limitations to interpretation of the results

The process described above compares firms of similar size that experienced similar revenue declines during this period. This ensures that the revenue shock faced by the firms is the same when making the comparison. But it does not rule out there there are still relevant reasons why one firm selected into the JobSaver payment while the other did not - reasons that may still bias our results.

The reasons why businesses who experience similar revenue declines in the same industry may either select into the JobSaver program or not are the following unobserved factors:

- The timing of the revenue shock within the quarter: We only observe whether the firm received the payment and their *quarterly* turnover from GST statistics. However, eligibility was based on the change in revenue over two-weeks. As a result, a business with a sharp drop in revenue followed by a rebound will look similar to a business with a smaller but more persistent decline in revenue. This bias is likely to include **weaker firms in the control group**.
- Unobserved eligibility criteria:
- The willingness to select into the payment:

If the only reason why firms within an industry with the same quarterly revenue firms differentially ended up in the JobSaver program was *random timing* of the shock during the September quarter then the difference in outcomes for workers and firms could be interpreted as the causal effect of JobSaver.

However, it is likely that there is still differential selection into the programme for the reasons described above. As a result, our results should be viewed as descriptive evidence of the differences between these groups – not causal evidence of the effect of JobSaver on worker outcomes.

A.5. Regression tables and additional graphs

For our retention comparison (Figure 5) we consider the set of jobs in matched firms that were in place in July 2021 and track the proportion of these jobs that remained in place two years later in July 2023 by job retention support received.

To do this was estimate a linear probability model of job retention for the full set of individuals employed in July 2021 in NSW. The retention variable takes a value of 1 if the individual remains in the same job in July 2023 (including rejoining this job) and a value of 0 if they are no longer observed in that role.

Our primary model estimates the probability of job retention as a function of the job retention support received (with a reference of no support), gender, age, 2019 income quartile for the individual, and log tenure with industry fixed effects. We can express this as follows:

$$\text{Retain}_i = \sum_k \beta_k \cdot \text{Type}_{ik} + \gamma_1 \cdot \text{Gender}_i + \gamma_2 \cdot \text{Quartile2019}_i + \gamma_3 \cdot \log(\text{Tenure}_i) + f(\text{Age}_i) + \lambda_i^{\text{ind}} + \epsilon_i \quad (1)$$

where:

- Retain_i is an indicator equal to 1 if individual i remains in (or returns to) the same job in July 2023, having been employed in that job in July 2021; 0 otherwise.
- Type_{ik} is a dummy for whether individual i received a job retention payment of type $k \in \{\text{JobKeeper only (JK), JobSaver only (JS), Both}\}$, with no support as the omitted category.
- Gender_i is a binary variable for gender.
- Quartile2019_i is a categorical variable indicating the individual's income quartile in 2019.
- $\log(\text{Tenure}_i)$ is the log of tenure at the job (defined as their year of employment), transformed to accommodate zero values.
- $f(\text{Age}_i)$ is a third-degree polynomial in age.
- λ_i^{ind} are industry fixed effects.
- ϵ_i is the error term.

Table A.2: Retention Results by Model

Term	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Policies Received (reference is None)						
Both	0.145 (0.00)***	0.108 (0.00)***	0.106 (0.00)***	0.088 (0.00)***	0.094 (0.01)***	0.042 (0.01)***
Only JobKeeper	0.153 (0.00)***	0.114 (0.00)***	0.114 (0.00)***	0.09 (0.00)***	0.086 (0.01)***	0.030 (0.01)***
Only JobSaver	-0.078 (0.00)***	-0.052 (0.00)***	-0.053 (0.00)***	-0.041 (0.00)***	-0.029 (0.01)***	-0.014 (0.01)***
Controls						
Gender (ref = Male)			-0.075 (0.00)***	-0.057 (0.00)***	-0.043 (0.01)***	-0.038 (0.01)***
Gender:Age			0.001 (0.00)***	0.002 (0.00)***	0.001 (0.00)***	0.001 (0.00)***
Age		53.8 (0.49)***	49.4 (0.69)***	40.5 (0.69)***	39.9 (2.63)***	25.6 (2.95)***
Age^2		-19.9 (0.48)***	-19.9 (0.48)***	-9.14 (0.50)***	-8.8 (1.06)***	-9.47 (0.97)***
Age^3		-7.47 (0.48)***	-7.66 (0.48)***	-10.6 (0.48)***	-10.9 (1.24)***	-11 (1.20)***
Income Quartile				0.074 (0.00)***	0.069 (0.00)***	0.059 (0.00)***
Tenure (log)						0.118 (0.01)***
(Intercept)	0.491 (0.00)***	0.498 (0.00)***	0.516 (0.00)***	0.345 (0.00)***		
Fixed Effects					Industry	Industry
R-squared	0.035	0.076	0.077	0.095	0.102	0.124
Observations	308184	308181	308179	308178	308171	308171

Notes: Robust standard errors in parentheses. $^{***}p < 0.01$, $^{**}p < 0.05$, $^{*}p < 0.1$. Age is a third degree polynomial.

Our income regressions (Figure 7) compare the earning trajectories of individuals who earned at least $25,000 in the 2019 Financial Year. We estimate the difference in earnings for those who relied on job retention payments relative to those who did not, relative to their pre-COVID difference.

Our reported results control for age, gender, income quartile in 2019, tenure, industry, and occupation. Formally this is given as:

$$y_{it} = \sum_t \gamma_t \cdot \mathbb{1}_{(t)} + \sum_k \delta_k \cdot \text{Type}_{ik} + \sum_t \sum_k \beta_{tk} \cdot \left(\mathbb{1}_{(t)} \times \text{Type}_{ik}\right) + \mathbf{X}_i'\theta + \lambda_i^{\text{ind}} + \lambda_i^{\text{occ}} + \epsilon_{it} \tag{2}$$

where:

- y_{it} is the annual income (in thousands of dollars) for individual i in financial year t.
- $\mathbb{1}_{(t)}$ is an indicator for year $t \in \{2022, 2023, 2024\}$, with 2021 as the reference year.
- Type_{ik} indicates whether individual i received a job retention payment of type $k \in \{\text{JobKeeper only (JK)}, \text{JobSaver only (JS)}, \text{Both}\}$.
- γ_t captures year-specific effects common to all individuals.
- δ_k captures baseline (2021) differences in earnings between recipients and non-recipients of payment type k.
- β_{tk} captures the treatment effect for type k in year t — the difference in post-treatment earnings relative to the 2021 baseline.
- $\mathbf{X}_i$ is a vector of control variables: a third-degree polynomial in age, age:gender, 2019 income quartile, and log tenure.
- θ is a vector of coefficients on the controls.
- λ_i^{ind} and λ_i^{occ} denote industry and occupation fixed effects, respectively.
- ϵ_{it} is the error term.

The β_{tk} coefficients are the terms of interest, representing if individuals receiving the specific job retention support either over or under performed those that did not.

Table A.3: Income Results by Model

Term	Model 1	Model 2	Model 3	Model 4	Model 5
Treatment Differences (ref = 2021)					
Year: 2022					
Both	-4.29 (0.48)***	-4.34 (0.47)***	-4.34 (0.47)***	-4.27 (0.54)***	-3.28 (0.65)***
JK Only	-2.47 (0.53)***	-2.54 (0.52)***	-2.54 (0.52)***	-2.48 (0.27)***	-1.45 (0.37)***
JS Only	0.477 (0.60)	0.158 (0.59)	0.158 (0.59)	0.231 (0.52)	-0.688 (0.40)
Year: 2023					
Both	-2.61 (0.48)***	-2.65 (0.47)***	-2.65 (0.47)***	-2.53 (0.43)***	-1.47 (0.42)***
JK Only	-2.35 (0.54)***	-2.43 (0.53)***	-2.43 (0.53)***	-2.32 (0.44)***	-1.16 (0.39)***
JS Only	2.95 (0.61)***	2.38 (0.60)***	2.38 (0.60)***	2.44 (0.62)***	0.524 (0.51)
Year: 2024					
Both	-2.85 (0.48)***	-2.94 (0.47)***	-2.94 (0.47)***	-2.84 (0.53)***	-1.72 (0.54)***
JK Only	-2.21 (0.54)***	-2.34 (0.53)***	-2.34 (0.53)***	-2.24 (0.55)***	-1.15 (0.56)*
JS Only	3.02 (0.61)***	2.22 (0.60)***	2.22 (0.60)***	2.31 (0.68)***	0.287 (0.63)
Fixed Effects					
2022	2.90 (0.37)***	2.74 (0.37)***	2.74 (0.37)***	2.70 (0.50)***	1.68 (0.34)***
2023	7.50 (0.38)***	7.13 (0.37)***	7.13 (0.37)***	7.03 (0.68)***	5.76 (0.54)***
2024	10.1 (0.38)***	9.64 (0.37)***	9.64 (0.37)***	9.57 (0.68)***	8.31 (0.61)***
Both	2.78 (0.34)***	2.62 (0.33)***	2.62 (0.33)***	4.05 (0.77)***	1.81 (0.90)*
JK Only	1.55 (0.38)***	1.64 (0.37)***	1.64 (0.37)***	2.37 (1.08)**	1.03 (0.71)
JS Only	-6.60 (0.43)***	-5.87 (0.42)***	-5.87 (0.42)***	-3.82 (0.81)***	0.021 (1.05)
Controls					
Age		87.5 (32.70)***	87.5 (32.70)***	-94.7 (200.98)	2510 (234520)
Age^2		-3080 (32.47)***	-3080 (32.47)***	-2830 (247.64)***	-2400 (207.74)***
Age^3		481 (32.54)***	481 (32.54)***	281 (101.05)**	-160 (101.54)
Gender × Age				0.021 (0.00)***	-0.430 (36120)
Intercept					
(Intercept)	57.8 (0.26)***	58.1 (0.26)***	58.1 (0.26)***		
Fixed Effects				Industry	Industry + Occupation
R-squared	0.017	0.051	0.051	0.100	0.157
Observations	255735	255735	255735	252926	170113

Notes: Coefficients and standard errors are in **thousands of dollars**. Robust standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Age is a third degree polynomial.

A.6. ABS data disclaimer

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 MADIP 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.

A.7. Acknowledgements

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