

DISCUSSION PAPER SERIES

IZA DP No. 14859

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Layoffs?**

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ABSTRACT

Did the Australian Jobkeeper Program Save Jobs by Subsidizing Temporary Layoffs?*

We analyze the JobKeeper lump-sum wage subsidy introduced by the Australian government in response to the COVID-19 pandemic, paying particular attention to the role of temporary layoffs in saving jobs. Although temporary layoffs were widely used, we find that recalls of workers on temporary layoff played only a small role in the early recovery. This suggests either that temporary layoffs were very long, or that many workers on temporary layoffs were never recalled.

JEL Classification: J08, J20

Keywords: wage subsidy, temporary layoffs, JobKeeper

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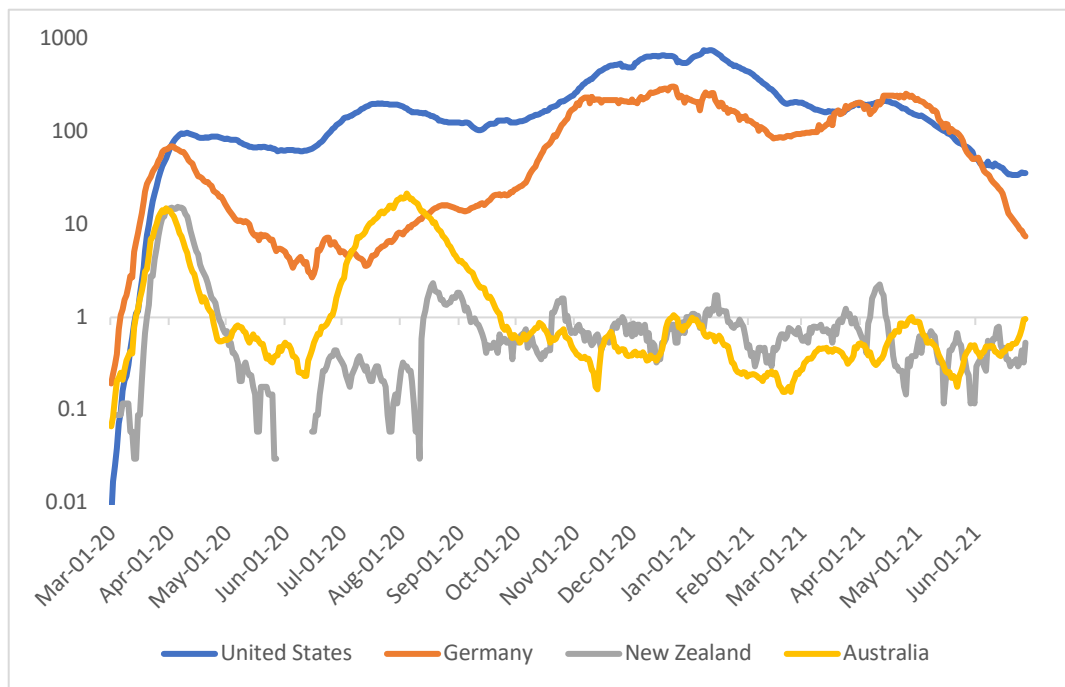
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Introduction

The combination of Australia's geographic isolation, a willingness to seal both national and state borders, and periodic lockdowns have kept its cumulative COVID-19 cases and deaths low by international standards. Figure 1's smoothed plot of daily COVID-19 cases in selected countries (note log scale) shows Australia contained the initial COVID-19 outbreak by early May 2020, before a more severe but geographically limited outbreak in July-October 2020 brought national COVID-19 cases back to the previous peak. By October the case load had returned to a low level, where it remained through mid-2021.

Figure 1: Daily Covid-19 new cases per million people



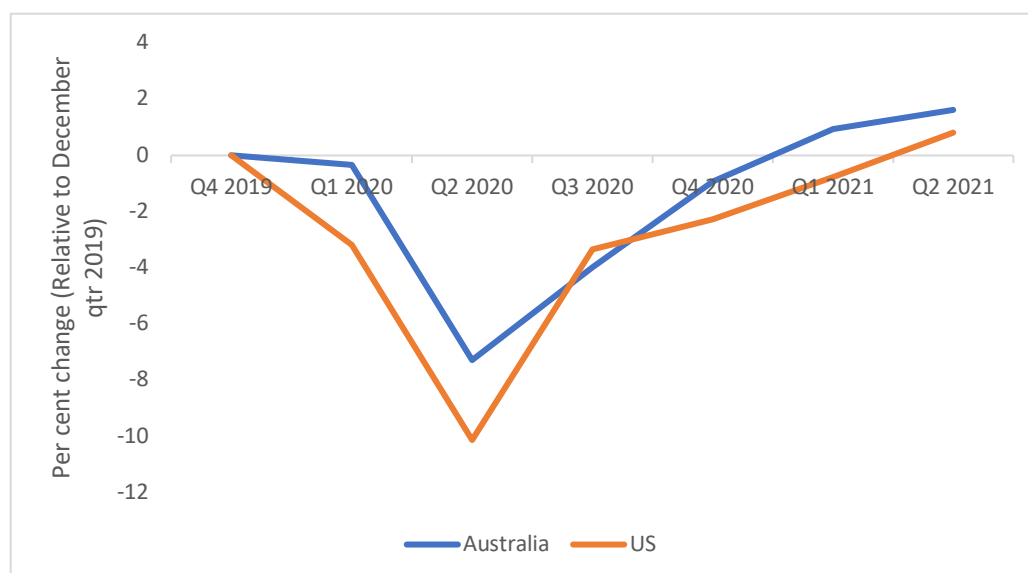
Notes: Seven day moving average. March 1, 2020-June 20, 2021.

Source: Ourworldindata.org

In March 2020, anticipating economic distress, federal and state governments implemented support and stimulus policies worth 8.6 percent of GDP by June 2020. This share is well above the median of advanced economies, though below the U.S. share of 10.8 percent.¹ By June 2021, Australia's share had cumulated to 17.4 percent, compared to 22.2 percent for the United States.²

As a result of the public health and economic interventions, Australia's COVID-19-induced downturn in 2020 was short compared to past recessions (only one quarter long), shallower than the U.S. downturn, (a 7.3 percent decline in GDP compared to 10.1 percent) and limited to the first wave of infections (see Figure 2).

Figure 2: Real GDP in Australia and the United States



Note: Series are seasonally adjusted.

Sources: Australia: ABS, Australian National Accounts: National Income, Expenditure and Product, Table 1; US:

<https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=2&isuri=1&1921=survey>

¹ International Monetary Fund (2020). <https://www.imf.org/en/Topics/imf-and-covid19/~media/Files/Topics/COVID/FM-Database/june-2020-fiscal-monitor-database-of-fiscal-measures-in-response-to-covid19.ashx>, accessed August 16, 2021. The shares comprise additional spending and foregone revenue, exclusive of additional health expenditures.

² International Monetary Fund (2021). <https://www.imf.org/en/Topics/imf-and-covid19/~media/Files/Topics/COVID/FM-Database/july-2021-country-fiscal-measures-database-publication-v2.ashx>, accessed August 16, 2021.

In this paper, we will focus on the JobKeeper policy, a wage subsidy program. Its aims included mitigating employment decline and business insolvency, providing income support (in a way that relieved pressure on the existing public benefits system), providing macro-economic stimulus, and setting propitious conditions for eventual recovery by maintaining employer-employee connections. Our particular interest is the degree to which employer-employee connections maintained through JobKeeper dampened the employment cycle. That is, we focus on the question of whether JobKeeper facilitated use of temporary layoffs, while recognizing that the impact of the program in saving jobs will also have included maintaining some workers in jobs with positive hours. Our analysis relies in part on synthesizing results from existing academic papers and government reports. A key paper is that of Bishop and Day (2020), who find that JobKeeper reduced employment losses by at least 700,000, or 5.4 percent of initial employment, in its first four months.

Description of JobKeeper and other measures

The JobKeeper wage subsidy program was announced on March 30, 2020. Initially it was set to last for six months. Enrolment into the program commenced on April 20. On July 21 it was announced that JobKeeper would be extended for six months until the end of March 2021, with reduced payments and modified eligibility criteria (Frydenberg, 2020; Australian Treasury, 2020a). Accordingly, we distinguish between two phases of the program: Phase 1 from March 30 to September 27, 2020; and Phase 2 from September 28, 2020 to March 28, 2021. Despite considerable pressure in early 2021 for the JobKeeper program to be further extended, that did not happen.

The JobKeeper payment was made to (i) eligible employers for employees covered by the program; and (ii) eligible self-employed individuals (sole traders). Employees were covered by the program if they were working in full-time or part-time permanent jobs, or in a casual job and had been with their employer on a regular basis for more than 12 months.³ In Australia permanent employees have an advance commitment to on-going employment, are entitled to paid leave and must give or receive notice to end the employment; whereas casual employees (employed ‘at will’ in U.S. parlance) accept a job offer knowing there is no firm advance commitment to ongoing work with an agreed pattern of work.⁴ A ‘one-in-all-in’ rule meant that once a business or not-for-profit nominated to

³ <https://www.fairwork.gov.au/employee-entitlements/types-of-employees/casual-part-time-and-full-time/casual-employees>.

⁴ Eligibility also required an employee to be an Australian citizen, the holder of a permanent visa, a Protected Special Category Visa Holder, a non-protected Special Category Visa Holder who has been residing continually in Australia for 10 years or more, or a Special Category (Subclass 444) Visa Holder. Eligibility for

receive JobKeeper, the payment was to be made to all its eligible employees. An employee retained eligibility so long as he or she remained with the same employer.⁵

Phase 1

In Phase 1 the wage subsidy paid was \$750 per week per employee or self-employed individual. In order to qualify, employees needed to have been included in a firm's payroll records on or before 1 March 2020.⁶ Employees who had been laid off after March 1 but then re-attached after announcement of the program, were eligible. The same flat subsidy of \$750 per week was paid for all recipients, regardless of their hours worked or earnings prior to or while JobKeeper was in effect. Those working zero hours also received the full payment. Employees whose work hours were such that their total earnings were above \$750 per week had the difference between the subsidy and their total earnings paid by their employer. Australian labor law prevents hourly wages of employees from being reduced, and no exception was made for the pandemic.

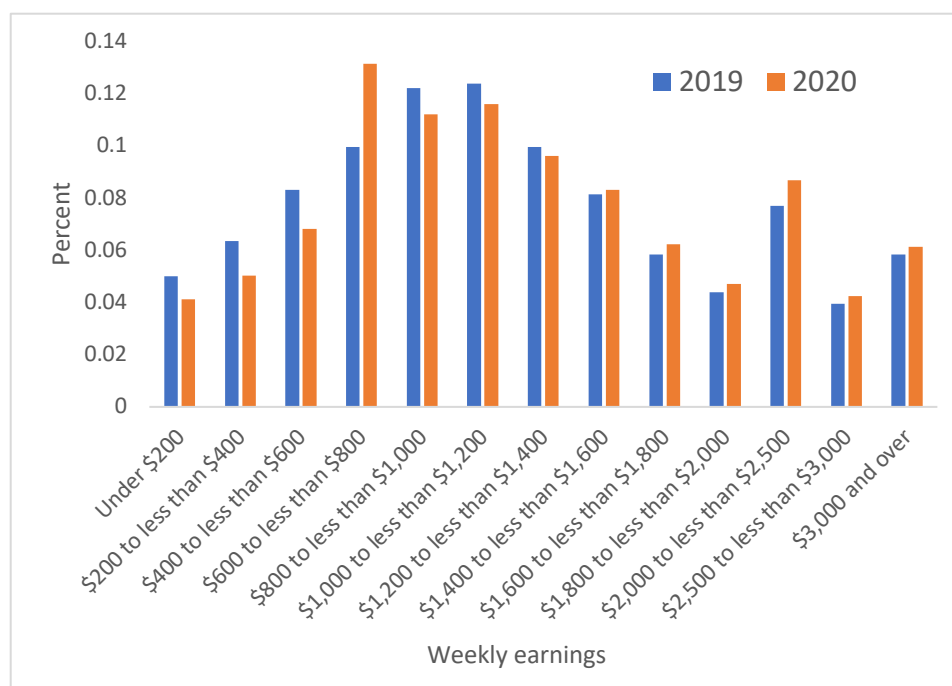
The distribution of weekly earnings for all employed persons including the self-employed show the expected bunching around \$750. These data are available annually in August, in categories. Figure 3 shows that the share of employed persons with weekly earnings in the range from \$600 to \$800 increased from 10.0 percent in August 2019 (prior to COVID-19 and JobKeeper) to 13.2 percent in August 2020 (during Phase 1). The same data indicate that 29.6 percent of workers earned \$800 or less in August 2019.

JobKeeper was also restricted via ruling some types of organisations to be outside the scope of the program – for example, government agencies, universities and major banks.

⁵ Where an employee had multiple jobs at which they were eligible to receive JobKeeper, they were required to nominate a 'primary employer' to whom the subsidy would be paid.

⁶ Self-employed individuals needed to have been carrying on their business on 1 March and to be able to meet requirements relating to having a registered business and submitted recent tax statements.

Figure 3: Weekly earnings distribution, all employed persons, August 2019 and August 2020



Source: ABS, Characteristics of Employment, Tablebuilder.

For an employer to be able to claim JobKeeper for their employees during Phase 1, they needed to meet a turnover test. Eligibility required an organisation to have experienced or to anticipate a reduction in turnover relative to a comparable period a year ago: a 15 percent reduction for a registered charity; and a 30 or 50 percent reduction for businesses with turnover respectively less or more than \$1 billion. The reduction in turnover was required to be for a minimum of one month between March and September 2020. Once eligibility was established, an organisation then received JobKeeper through to September 27, regardless of its turnover in subsequent months.⁷

Phase 2

Phase 2 made changes to the size of the wage subsidy and to the eligibility criteria – in two stages: from (i) 28 September 2020 to 3 January 2021; and (ii) 4 January 2021 to 28 March 2021 (Australian Treasury, 2020a). The size of wage subsidy was progressively reduced and separate payments based on hours of work were introduced. For 28 September 2020 to 3 January 2021 the

⁷ For further details on businesses' eligibility for Phase 1 of JobKeeper, see <https://www.ato.gov.au/law/view/pdf/pbr/lcr2020-001.pdf>.

payment was set at \$600 per week for all eligible employees and self-employed individuals who, in the four weekly pay periods before the reference period, were working for 20 hours or more a week on average; with the payment falling to \$500 per week from 4 January 2021 to 28 March 2021. Employees and self-employed individuals working for less than 20 hours a week on average in the reference period had a payment rate of \$375 per week for 28 September 2020 to 3 January 2021 and \$325 per week from 4 January to 28 March 2021.

Furthermore, eligibility conditions for JobKeeper were tightened. Organisations seeking to claim the subsidy for Q4 2020 were required to reassess their eligibility with reference to their actual turnover in Q3 2020 compared to the same period in 2019. They were then required to again reassess their eligibility for JobKeeper payments in Q1 2021 by demonstrating that they met the relevant decline in turnover test in Q4 2020. The reference date for an employee to be eligible for JobKeeper payments for Phase 2 was updated to 1 July 2020.

Statistics on receipt of JobKeeper

Table 1 provides information on the number of JobKeeper recipients. In Phase 1 the JobKeeper payment was made to about 3.5 million recipients, just over one-quarter of employed persons in Australia. A survey conducted in the week after enrolments in JobKeeper opened (April 22 to 28) found that about 95 per cent of eligible businesses had or were planning to apply for JobKeeper (Australian Bureau of Statistics, 2020). With stricter eligibility requirements in Phase 2, and with the progress of economic recovery, the number of recipients fell to about 1.7 million in Q4 2020 and then to 1.1 million in the Q1 2021.

Table 1: Number of individual recipients of JobKeeper (employees and sole traders)

	Number of JobKeeper recipients	Persons employed	JobKeeper recipients as % of persons employed
April 2020	3,368,680	12,413,000	27.2
May 2020	3,580,365	12,192,600	29.4
June 2020	3,639,526	12,392,500	29.4
July 2020	3,659,934	12,471,900	29.3
August 2020	3,642,790	12,562,700	29.0
September 2020	3,610,916	12,567,100	28.7
October 2020	1,633,406	12,735,400	12.8
November 2020	1,606,673	12,881,700	12.5
December 2020	1,569,009	12,995,500	12.1
January 2021	1,087,037	12,734,800	8.5
February 2021	1,072,520	13,036,200	8.2
March 2021	1,031,848	13,062,800	7.9

Sources: Number of JobKeeper recipients: Treasury (2021, Table 4). Persons employed: ABS, Labour Force Australia, Table 1.

Receipt of JobKeeper varied substantially by industry. In the hardest-hit industries, such as accommodation and food services and arts and recreation services, almost 50 percent of employee compensation in the Q2 2020 was accounted for by the JobKeeper subsidy. By contrast, in industries less affected by COVID-19, such as health care and social assistance, or where few businesses were eligible for JobKeeper, such as education and training, the share of employee compensation from the program was 10 percent or less.⁸

Because the recession was short, because Phase 1 eligibility could be based on expected rather than actual revenue declines and required a decline only in a single month, and because businesses' JobKeeper payments could continue unconditionally for months after eligibility was established, a significant share of JobKeeper payments went to businesses whose quarterly revenue when receiving JobKeeper was higher than one year previously. For example, in Q2 (April-June) of 2020, 22 percent of JobKeeper payments went to businesses which had higher revenue than in the same quarter in 2019.⁹

⁸ ABS, Government support for Business, Figure 2; accessed at:

<https://www.abs.gov.au/articles/government-support-business#jobkeeper-payments-by-industry>

⁹ Parliamentary Budget Office, 2021, Response to Information Request Lodged by Andrew Leigh MP. Organizations for which this information can be calculated received 81 percent of JobKeeper payments.

Other measures introduced at onset of COVID-19

The announcement of the JobKeeper program followed an extensive set of policies already introduced by the Australian federal and state governments in mid-March 2020 in response to the onset of COVID-19.¹⁰ The main Federal government policies were support to business via cash grants, underwriting loans and extra tax write-offs for investment; and increased household incomes and spending capacity through higher welfare payments and permitting them to make withdrawals from their pension funds.¹¹

Theory

The theoretical impact of JobKeeper is complex. JobKeeper affected both labor demand and labor supply, in ways that differed for workers according to eligibility and initial earnings, and is likely have inserted a wedge between demand and supply given the legal prohibition on reducing the hourly wage. We assume in our analysis that because the economic disruptions and JobKeeper program were expected to be temporary, firms did not adjust the capital stock.

Static analysis

The simplest analysis is a static model that assumes all workers are the same and initially earn more than the JobKeeper subsidy (“high earners”). For labor demand, the JobKeeper subsidy in isolation would increase a firm’s optimal output (scale effect), which would tend to increase demand for labor. This scale effect would offset the effect of the output reduction due to the decline in consumer demand from COVID-19. JobKeeper’s influence on how a firm combines inputs to produce a given output, the substitution effect, depends on the net response of firm output to the decline in consumer demand, JobKeeper and other government subsidies. For the few firms experiencing no change or an increase in output, there would be no substitution effect, since the subsidy was not available for newly hired workers. On the other hand, for the more typical case of a firm reducing output, the fixed cost of a worker is reduced by the per-worker subsidy while the cost of an extra hour per worker remains unchanged, incentivizing the firm to substitute from hours per

¹⁰ For details of these policies, see: <https://www.pm.gov.au/media/economic-stimulus-package>; <https://www.pm.gov.au/media/supporting-australian-workers-and-business>; <https://www.pm.gov.au/media/130-billion-jobkeeper-payment-keep-australians-job>

¹¹ Recipients of government welfare payments had their incomes raised through one-off cash payments and temporary increases in benefit levels; for example, the flat amount JobSeeker (unemployment) payment was initially increased by \$275 per week (raising the overall payment for a single person to \$562.85 per week).

worker to heads (number of workers). JobKeeper would therefore mitigate the reduction in heads and total hours worked while reducing hours per worker. For this reason, some have referred to the program as a “short-time wage subsidy” (Cassells and Duncan 2020).

This model ignores the fact that some eligible workers initially earned less than the JobKeeper amount (“low earners”). In a more sophisticated model with heterogeneous workers, JobKeeper’s effect on heads and total hours of high earners is ambiguous since firms substitute from high earners to the fully subsidized low earners. While JobKeeper bolsters demand for total hours of the smaller group of low earners, its effect on the hours per worker versus heads choice is unclear. Workers ineligible for JobKeeper must also be considered. For these workers, JobKeeper’s effect on demand is ambiguous as it is boosted by the scale effect but reduced by substitution to eligible workers (for firms reducing output). However, for ineligible workers, JobKeeper has no effect on the choice between hours per worker and heads. Overall, therefore, it is unclear whether JobKeeper incentivized firms to substitute from hours per worker to heads.

On the labor supply side, some workers initially earning more than JobKeeper will be unaffected by its introduction, while others would choose to reduce hours to zero and collect JobKeeper. Hours per worker stay the same and heads (with positive hours) decline. All workers initially earning less than JobKeeper will choose to reduce hours to zero, while ineligible workers will not change their labor supply.

Putting supply and demand together in the static model, for workers initially earning more than JobKeeper, employment and total hours will fall as supply shifts in and demand shifts in or stays the same, while hours per worker fall. Because the hourly wage cannot legally fall, workers will be underemployed (will want to work longer hours), but the relative size of the two shifts determines whether there is unemployment or a shortage of heads.

The market outcome for workers initially earning less than JobKeeper is more complex, since none will want to work positive hours unless they prefer work to leisure, but the demand for some of them will be positive. The temporary nature of the program meant employers demanding positive hours of these workers might be able to persuade them to work due to worker fears of jeopardizing future promotion or being legally fired: the outcome would depend on the relative bargaining power of the two parties.

Dynamic analysis

Firms do not simply consider the present in responding to shocks. Dynamic considerations such as hoarding high-performing workers and weeding out low-performing workers – whose firing costs are lower when they can be justified by a loss of business - are likely to be important. JobKeeper was designed to encourage the use of temporary rather than permanent layoffs. If it is easy to permanently lay off workers, and if it is easy to rehire “permanently” laid-off workers, there is no real distinction. In Australia, there are firing costs associated with “permanently” laying off a typical worker, and workers are more likely to search for another job if the layoff does not have a likely recall date.¹² Temporary layoffs may thus preserve good matches and firm-specific human capital, and reduce firing and search costs, albeit possibly at the cost of laid-off workers being idle when they might have been working in a new job. JobKeeper made temporary layoffs more appealing to workers because it paid about \$200 per week above the JobSeeker (unemployment) benefit. By lowering the likelihood of workers on temporary layoff searching for another job, and hence making it more likely that they would be available for recall, JobKeeper also increased employers’ incentives to use temporary layoffs.

Data

Datasets

Our analysis mainly uses aggregate-level data from the Australian Bureau of Statistics (ABS) Labour Force Survey. This survey is undertaken monthly; for the two weeks prior to the Sunday which falls between the 12th and 18th of that month. Given the timing of the survey, we interpret data in 2020 for March as being pre-COVID-19 and April onwards as during COVID-19; with data for April being pre-JobKeeper and for May as being after the introduction of JobKeeper.

Other data we draw on are from the ABS Payroll Jobs and Wages series, Characteristics of Employment survey, special household and business surveys relating to COVID-19 and National Accounts. These are supplemented with material drawn from government reports and research studies that have used official and proprietary data sources not available to us. For example, government reports on JobKeeper have been able to use Australian Tax Office data which link organisation-level and employee-level measures, allowing organisations participating in the JobKeeper

¹² We calculate that 84% of employees eligible for JobKeeper had permanent status, and hence would have been costly for employers to lay off.

program and individual payment recipients to be identified (for example, Australian Treasury, 2020b, 2021).

Concepts

The concept of employment differs in Australia from the United States and Canada in a way important for this study. An Australian worker may be “stood down” if his or her firm experiences a work stoppage for reasons beyond its control. The practice has similarities with what in the United States would be known as temporary layoffs: stood-down workers work no hours and are not paid, and may or may not have a specific recall date. The crucial difference is that unlike temporarily laid-off U.S. workers, stood-down Australian workers are still considered employed (both legally and statistically), and the employer therefore cannot simply fail to recall them.¹³ If the employer does not want to recall a stood-down worker, he or she must go through the normal dismissal process usually involving a notice period or pay in lieu of notice; severance pay; and justification of why the worker cannot be redeployed in another job at the company. Exceptions to this include casual workers and permanent workers with short tenure.¹⁴

We refer to stand-downs as temporary layoffs, and approximate workers on temporary layoff in the Labour Force Survey as those responding that they were employed and working zero hours for the reason of ‘no work, not enough work available or stood down’. We use this estimate to create alternative employment and unemployment series, including and excluding temporarily laid off workers.

Decomposition of the decline and recovery of GDP

The initial onset of the virus brought a severe economic contraction in Australia, due to government-imposed lockdowns and ‘fear’ effects on households’ willingness to engage in activities where there was a risk of contracting the virus. After that period of lockdown, however, economic activity has largely been able to resume, as was shown in Figure 1. To understand the role of

¹³ <https://www.fwc.gov.au/industrial-action-benchbook/payments-relating-industrial-action/standing-down-employees#field-content-1-heading>, accessed July 24, 2021. The standing down rules were clarified in the Covid context: <https://coronavirus.fairwork.gov.au/coronavirus-and-australian-workplace-laws/changes-to-workplace-laws-during-coronavirus/jobkeeper-scheme-overview/jobkeeper-enabling-stand-down-directions>, accessed July 24, 2021.

¹⁴ <https://coronavirus.fairwork.gov.au/coronavirus-and-australian-workplace-laws/changes-to-workplace-laws-during-coronavirus/jobkeeper-scheme-overview/ending-employment-and-the-jobkeeper-scheme>, accessed July 24, 2021.

JobKeeper, it is helpful to start by establishing the dimensions along which the economy adjusted in the downturn and recovery. Accordingly, we use quarterly data to decompose additively the changes in GDP into changes in: Labor productivity (GDP/Hrs), labor input and population size (Pop), with labor input subdivided into hours worked per employed person (Hrs/Emp), share of the labor force employed (Emp/LF) and the labor force participation rate (LF/Pop):

$$\Delta \ln(\text{GDP}) = \Delta \ln(\text{GDP}/\text{Hrs}) + \Delta \ln(\text{Hrs}/\text{Emp}) + \Delta \ln(\text{Emp}/\text{LF}) + \Delta \ln(\text{LF}/\text{Pop}) + \Delta \ln(\text{Pop}).$$

Table 2 shows that the 7.2 percent decrease in GDP from Q1 2020 to Q2 2020 and the 8.3 percent recovery from Q2 2020 to Q1 2021 (when JobKeeper ended and GDP had returned to its original level) were primarily associated with changes in labor input. Withdrawal from the labor force accounts for about one-half (3.9 percent, column 5) of the GDP decline, while entry into the labor force accounts for about one-half (4.1 percent, column 5) of the GDP recovery. The adjustment roles of hours per employed person and (un)employment (columns 3 and 4) depend on how workers on temporary layoff are classified. When they are counted as employed, changes in average hours (column 3) make a larger contribution than changes in unemployment (Emp/LF, column 4); but when they are instead counted as unemployed, changes in unemployment dominate: increases in unemployment account for 5.0 percent of the decline in GDP while decreases account for 4.2 percent of the recovery in GDP (column 4 in square brackets). Labor productivity grew in both periods (column 2), probably reflecting a composition effect as shares of output from industries intensive in low-skill labor (such as accommodation and food services) decreased due to COVID-19. Population growth was negligible (column 6) due to a halt in migration.

The decomposition hints that temporary layoffs could have played an important role in the cycle, albeit more so in the downturn than the recovery, while worksharing (reducing work hours to positive hours) may not have.

Table 2: Decomposition of change in real GDP (percent), Q1 2020 to Q1 2021

	ΔGDP (1)	$\Delta\text{GDP}/\text{Hrs}$ (2)	$\Delta\text{Hrs}/\text{Emp}$ (3)	$\Delta\text{Emp}/\text{LF}$ (4)	$\Delta\text{LF}/\text{Pop}$ (5)	ΔPop (6)
Downturn	-7.2	+1.4	-3.2	-1.8	-3.9	+0.3
Q1 2020-Q2 2020			[0]	[-5.0]		
Recovery	+8.3	+1.1	+2.0	+1.0	+4.1	+0.1
Q2 2020-Q1 2021			[-1.2]	[+4.2]		

Note: (i) Base case treats workers who are temporarily laid off as employed. Case in square brackets treats those workers as unemployed; and (ii) Data are seasonally adjusted.

Source: (i) GDP: ABS, Australian National Accounts: National Income, Expenditure and Product, Table 1; (ii) Monthly hours: ABS, Labour Force Australia, Table 19; (iii) Employment/Labour Force/Population: ABS, Labour Force Australia, Table 1; (iv) Temporary layoffs: ABS, Labour Force Australia – Detailed, EM2a

Monthly evolution of the labor market

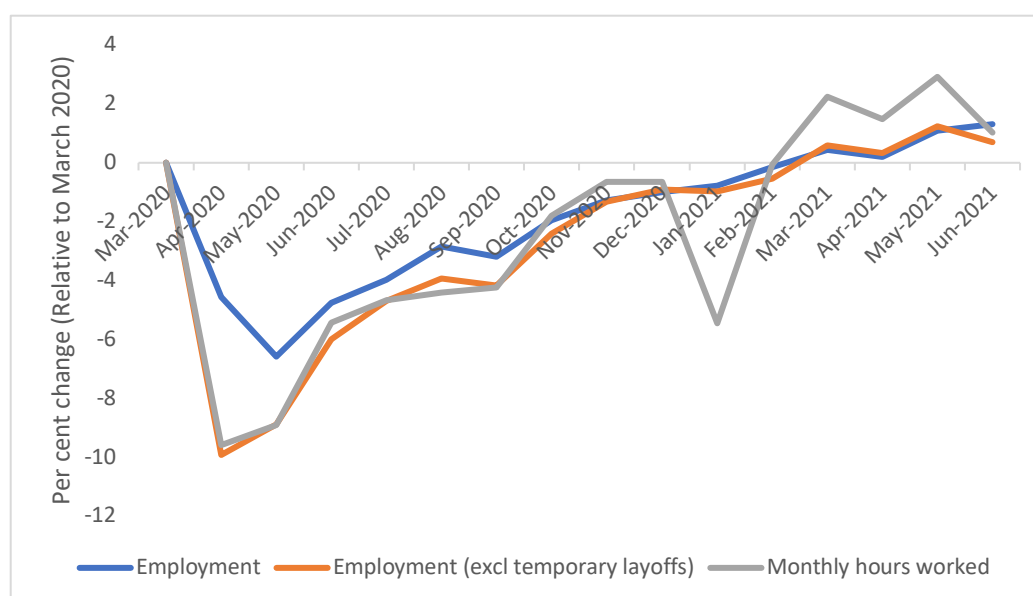
Before examining the connection between temporary layoffs and JobKeeper in detail, we provide further useful descriptive information on the labor market, including on temporary layoffs and hours per worker, using monthly data for more accurate timing.

Worker-hours, Employment and Unemployment

The monthly employment series during COVID-19 are presented in Figure 4. Worker-hours fell by 9.5 percent in the month from early March to early April 2020. The month from early April to early May was a transitional month coinciding with the introduction of JobKeeper, with worker-hours improving very slightly to 8.9 percent below the early March level. That was followed by a steady and quite rapid recovery to late 2020, after which the growth in worker-hours has continued at a slower rate.¹⁵ By June 2021, worker-hours were one percent above the level immediately prior to COVID-19. The path of persons employed is almost identical (except for the January dip) if workers on temporary layoff are classified as not employed; if they are classified as employed, the initial decrease and subsequent recovery in employment are dampened. According to the ABS Payroll Jobs series, the jobs trough was the week of 12th-18th April (Borland and Charlton 2020).

¹⁵ The large decrease in monthly hours worked in January 2021 was due to an exceptionally large number of people taking vacation during that summer month (over and above the usual number incorporated into the seasonal adjustment).

Figure 4: Employment and worker-hours, March 2020 to June 2021



Note: (i) Including/Excluding temporarily laid off = including/excluding workers on zero hours for reason of ‘no work, not enough work, stood down’; and (ii) Data are seasonally adjusted.

Sources: (i) Employment/Monthly hours worked - ABS, Labour Force Australia, Tables 1 and 19: (ii) Zero hours workers— ABS, Labour Force Australia – Detailed, EM2a.

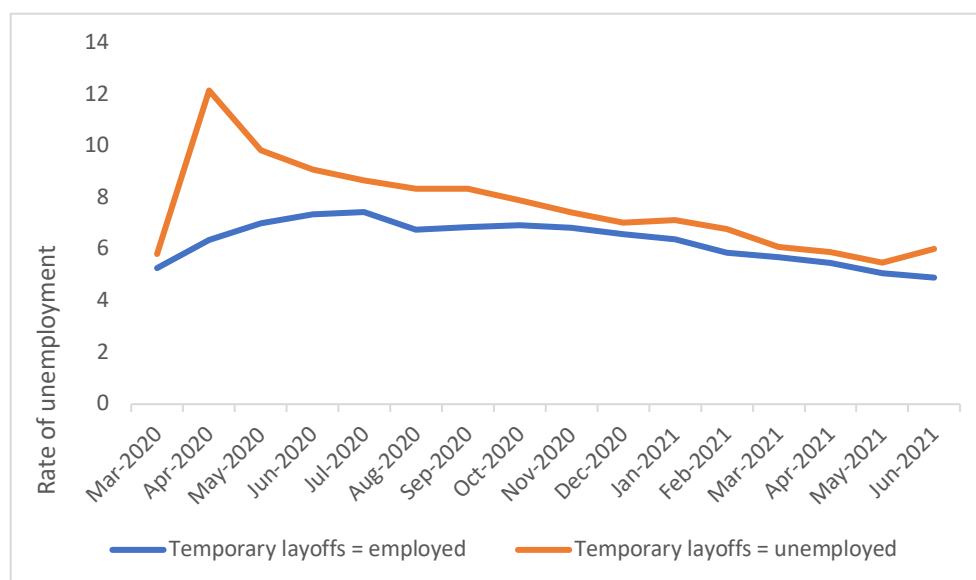
Data from the ABS Characteristics of Employment survey show that the employment declines were concentrated among low-tenure and casual workers. Between August 2019 and August 2020, employment of workers with less than one year of tenure fell 17.7 percent for permanent workers and 21.9 percent for casual workers: this is indicative of hiring freezes. Employment of casual workers with more than one year of tenure fell 5.8 percent, suggesting employer-initiated separations, while employment of permanent workers with more than one year of tenure actually rose 3.8 percent.

The impact of COVID-19 by industry was highly uneven – reflecting that the extent of social contact and scope for transmission of virus between workers and customers, and hence impact of government lockdowns and ‘fear’ effects, varied by industry. In Australia, almost 50 percent of initial job losses (based on the Payroll survey, including temporary layoffs) came from just three industries (which prior to the pandemic accounted for only 18.7 percent of jobs): accommodation and food services; arts and recreation services; and retail trade.

Movement in the official rate of unemployment in Australia was muted given the large fall in official employment. It reached a peak of 7.4 percent in mid-2020 compared to 5.3 percent prior to COVID-19 (Figure 5). The relatively small increase in the official rate of unemployment is explained by the large flow out of the labor force, and also by the classification of persons on temporary layoff

as employed. If workers who are on temporary layoff are instead classified as unemployed, the peak rate of unemployment becomes 12.2 percent (see figure 5).

Figure 5: Rate of unemployment, March 2020 to June 2021



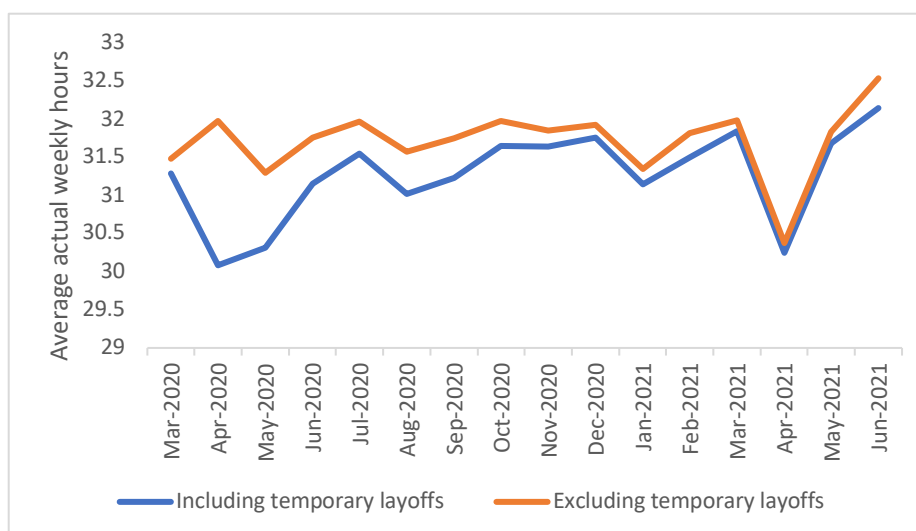
Note: Including/Excluding temporarily laid off = including/excluding workers on zero hours for reason of 'no work, not enough work, stood down'.

Sources: (i) Rate of unemployment: ABS, Labour Force Australia, Table 1; and (ii) Zero hours workers: ABS Labour Force Australia – Detailed, EM2a.

Hours per worker and the extent of worksharing

The quarterly decomposition of GDP hinted that worksharing (reducing hours per worker without reducing them to zero) was not a significant margin of adjustment stimulated by JobKeeper. Monthly data in Figure 6a show that using the official definition of employment, hours per worker fell considerably from early March to early April 2020, before returning to their original level over the next two months. However, this definition includes workers on temporary layoff with zero hours. When we exclude these workers, we find that hours per worker oscillated, rising somewhat from early March (31.5 hours per week) to early April (32.0 hours per week), before falling back to their original level between early April and early May as JobKeeper was introduced (31.3 hours per week).

Figure 6a: Average actual weekly hours worked, March 2020 to June 2021



Notes: Data have been manually seasonally adjusted using average monthly deviations from annual mean for 2015-19; Including/Excluding temporarily laid off = including/excluding zero hours workers for the reason of 'no work, not enough work, stood down' relative to March 2020.

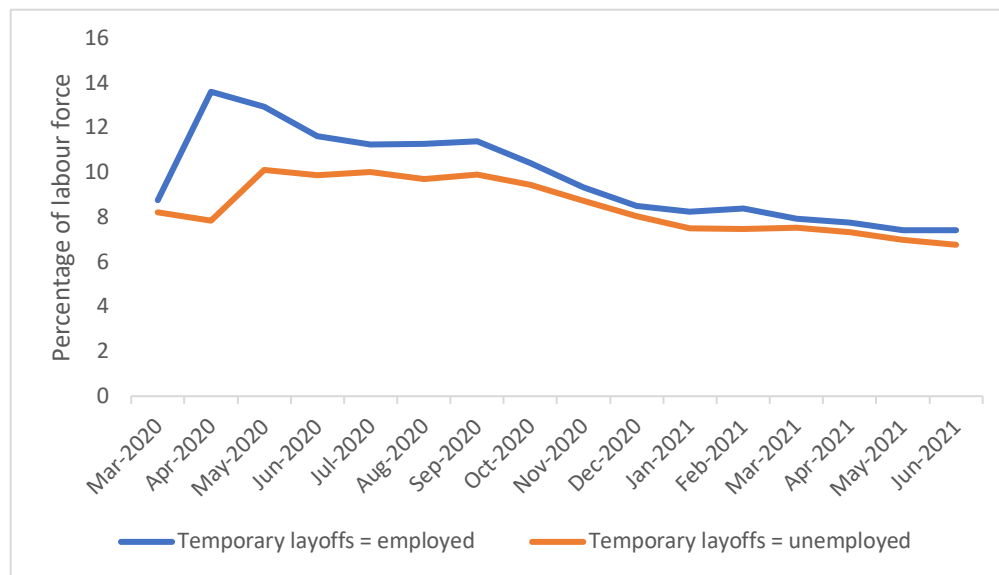
Sources: (i) Average actual weekly hours worked - ABS, Labour Force Australia - Detailed, Table 09;

(ii) Zero hours workers - ABS, Labour Force Australia - detailed, EM2a.

Since employment exclusive of those on temporary layoff changed little between early April and early May (see Figure 4), the change in the composition of employment may be small, and the decline of 0.7 hours per week may genuinely indicate a small reduction in hours per worker (to positive values) stimulated by JobKeeper. Consistent with this, the share of workers saying they want to work more hours (the underemployment rate), exclusive of those temporarily laid off, rose somewhat from 7.9 percent to 10.1 percent over the same period (Figure 6b). These hours adjustments may have played a very modest role in the arrest of the employment decline in April.¹⁶

¹⁶ Our unreported analysis of data over the longer period from February to May 2020 indicates that changes in industry composition slightly moderated the decrease in average weekly hours worked that would otherwise have occurred. (We are obliged to consider this longer period because industry-level data are only available quarterly.)

Figure 6b: Rate of under-unemployment, March 2020 to June 2021



Note: Including/Excluding temporarily laid off = including/excluding zero hours workers for the reason of 'no work, not enough work, stood down'.

Sources: (i) Rate of under-employment: ABS, Labour Force Australia, Table 22; and (ii) Zero hours workers: ABS Labour Force Australia – Detailed, EM2a.

Overall effect of JobKeeper on employment

Before turning to the role of temporary layoffs in saving jobs, we consider the overall effect of JobKeeper. Because the policy was national and introduced simultaneously for all workers, it is very difficult to develop a counterfactual scenario where JobKeeper was not introduced. Bishop and Day (2020) use the best possible approach, estimating the impact of JobKeeper as the difference in the change in employment outcomes for casual workers with less than 12 months tenure at their employer, who were not eligible for JobKeeper, and casual workers with at least 12 months tenure, who were eligible. Using this approach involves an assumption that the estimated impact for casual workers extends to permanent workers. Bishop and Day estimate that at least 700,000 jobs were saved by JobKeeper, based on data through May (mostly downturn), and counting workers placed on temporary layoff as employed.¹⁷

¹⁷ It is not possible to track employment of workers earning above and below the JobKeeper payment as earnings are available in publicly available data only for August of each year.

Role of temporary layoffs over downturn and recovery

We next scrutinize temporary layoffs more carefully, using our data and external estimates to answer the questions at the heart of the paper: whether JobKeeper encouraged temporary layoffs; whether, if so, these temporary layoffs substituted for permanent layoffs; and whether, if so, the employer-employee connection provided by JobKeeper spurred a faster recovery.¹⁸

Downturn

The combination of COVID-19 and government policies clearly encouraged temporary layoffs in the downturn. While workers on temporary layoff as a share of all workers had not risen above 0.7 percent in the previous 6 years for which the series is available, this share peaked at 6.2 percent in April 2020. Unfortunately, we cannot identify which workers on temporary layoff were receiving JobKeeper, and even if we could, there is no obvious identification strategy for estimating how many workers on temporary layoff and receiving JobKeeper would have been permanently laid off in the absence of JobKeeper. Furthermore, these workers on temporary layoff would only be an estimate of jobs saved if they were all recalled in the upturn.

The most informative statistic comes from the Treasury, which found that in May 2020, 375,000 individuals were on firm payrolls with JobKeeper as their only monetary compensation (Treasury 2021). This was slightly after the trough in mid-April in the ABS index of the payroll jobs (Australian Bureau of Statistics, 2021a). If all 375,000 would have been permanently laid off and never rehired at the same employer in the absence of JobKeeper, and if they all subsequently returned to positive hours with the same employer, this would constitute an accurate measure of jobs saved by JobKeeper via temporary layoffs. 375,000 workers (2.9 percent of March 2020 employment) is therefore the upper bound on employment saved, which given the 10 percent decline in employment exclusive of temporary layoffs relative to pre-COVID-19 (early March 2020) implies a 22% $(2.9/(2.9+10))$ reduction in employment lost in the downturn.

With the data we have available, we can put this number in context. Figure 7 plots the number of workers on temporary layoff from March 2020-June 2021 (not all of whom were necessarily receiving JobKeeper when the program was in operation). In the March 2020 Labor Force Survey,

¹⁸ Bishop and Day (2020) do test sensitivity to the definition of employment and to extending the data through July to include some of the recovery. A comparison of these results in principle allows a calculation of the role of temporary layoffs, but the differences between the estimates do not have a clear pattern and are small compared with the standard errors.

pre-COVID-19, the number was 76,200. It surged to 766,600 in the April survey, when JobKeeper was announced, before subsiding to 368,400 a month later, and generally declining thereafter, returning to its March level in November.¹⁹

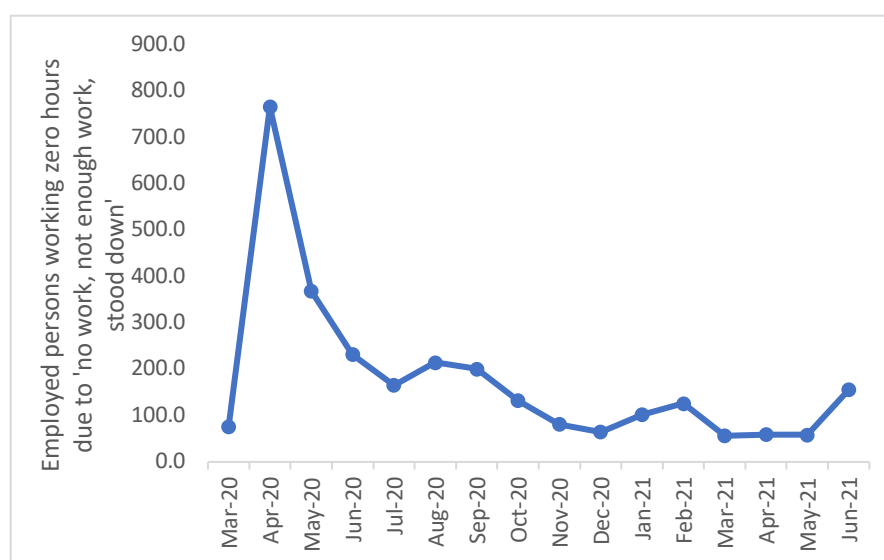
An estimate of the number of temporary layoffs due to JobKeeper in the downturn is the difference between the number a month after JobKeeper was announced (at the employment trough), and the pre-COVID-19 number, or $368,400 - 76,200 = 292,200$ or 2.2% of pre-COVID-19 employment and an 18% reduction in jobs lost. Similarly, Bishop and Day (2020) calculate from the Labour Force Survey micro data that in early May 310,000 people were classified as away from work for more than four weeks but still paid by their employer (most likely receiving JobKeeper).

Our estimate could be smaller than the Treasury estimate because the stock of workers on temporary layoff increased between early and mid-May, but this seems unlikely given the evidence that the job market improved in May. A different possibility is that the 70-80,000 workers on temporary layoff in normal times were able to obtain JobKeeper in May despite not being on layoff due to COVID-19, thus biasing upwards jobs saved based on the Treasury statistic. On the other hand, it is possible that these normal temporary layoffs did not occur during COVID-19 and that all May temporary layoffs were associated with COVID-19 and JobKeeper, in which case Figure 7 would suggest 368,400 jobs saved, essentially the same as Treasury's estimate.²⁰

¹⁹ In the April survey the category of 'no work, not enough work, stood down' will also include permanent layoffs. This is because a worker who is permanently laid off and did not work in the Labour Force Survey reference week, but who received payment for work in the last 4 weeks, is counted as employed.

²⁰ Bishop and Day (2020) speculate that their number differs from Treasury's due to JobKeeper recipients temporarily laid off from one job but being paid (non-JobKeeper earnings) at another firm: for the purposes of counting jobs saved, it is unclear how such workers should be classified.

Figure 7: Number of workers on temporary layoff



Source: ABS, Labour Force Survey – Detailed, EM2a.

Recovery

The study of the downturn in isolation suggests 292,000-375,000 jobs were saved by JobKeeper-induced temporary layoffs, but we also want to know how many resumed positive hours with the same employer in the recovery. Although we cannot measure this directly, we can investigate whether workers returning from temporary layoff appear to have been the earliest and largest source of increased worker-hours in the recovery. Speeding the recovery in this way was an objective of JobKeeper; if for some reason temporarily laid-off workers remained at zero hours until late in the recovery, the objective would not have been attained.

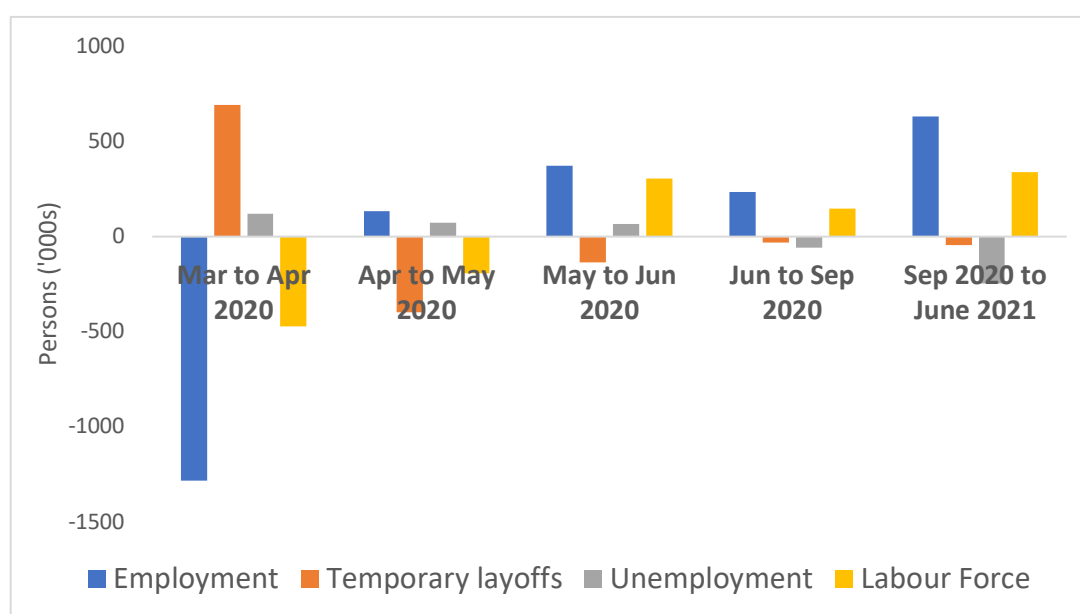
The monthly changes in numbers of workers in various labor market states, shown in Figure 8, casts doubt on the importance of temporary layoffs for the recovery. Considering the downturn first, the figure shows that during the pre-JobKeeper month of March, employment (excluding workers on temporary layoff) fell approximately equally due to temporary layoffs and exits from the labor force.²¹ During the transitional month of April, the number of workers on temporary layoff fell

²¹ Note that what we refer to as the month of March is the period from the March to April Labour Force surveys. Similarly, references to the months of April and May are respectively to the periods from the April to May and May to June Labour Force surveys.

considerably, as already seen in Figure 7, but exits from the labor force continued and unemployment increased slightly as it had in March.²²

The third set of bars represent May, the first month of unambiguous recovery. Workers on temporary layoff decreased by only 136,200, less than half the stock shown in Figure 7, and we estimate below that about one quarter of these transitioned to non-employment. A conservative definition of jobs saved in the way hoped for could thus be merely $0.75 \times 136,200 = 102,150$. Focusing on only the first recovery month may seem restrictive, but in fact in each of the next three months (which we group together in the figure) the stock of temporarily laid-off workers changed very little and employment rose due to an expansion of the labor force. Only from September did the source of employment increase become more balanced between labor force expansion, unemployment decline, and recalls from temporary layoff.

Figure 8: Changes in number of workers in different labor market states over time



Note: (i) The categories are mutually exclusive; (ii) Temporary layoffs = working zero hours for reason 'no work, not enough work, stood down'.

Sources: (i) Employment/Unemployment/Labour Force: ABS, Labour Force Survey, Table 1; (ii) Zero hours workers: ABS, Labour Force Australia – Detailed, EM2a.

²² As noted in footnote 17, this decrease will have included recent permanent layoffs who had been included in April in the category of employed on zero hours for the reason of 'no work, not enough work, stood down'.

We have access to tables based on longitudinal data that can make us more confident in the interpretation of the cross-section data in Figure 8: monthly matrices for individuals' transitions between not employed, employed at zero hours, and employed at positive hours. The category of employed on zero hours includes, but is not limited to, workers on temporary layoff, but during the initial months after the onset of COVID-19, transitions to and from this category were mainly from temporary layoffs.²³ Unfortunately, the matrices are available beginning only for March to April 2020, so the most recent matrices must be used as a proxy for normal times, and seasonal adjustment is not possible. The transition rates are displayed in graphical form in Figure 9 (the y-axis scales differ across panels).

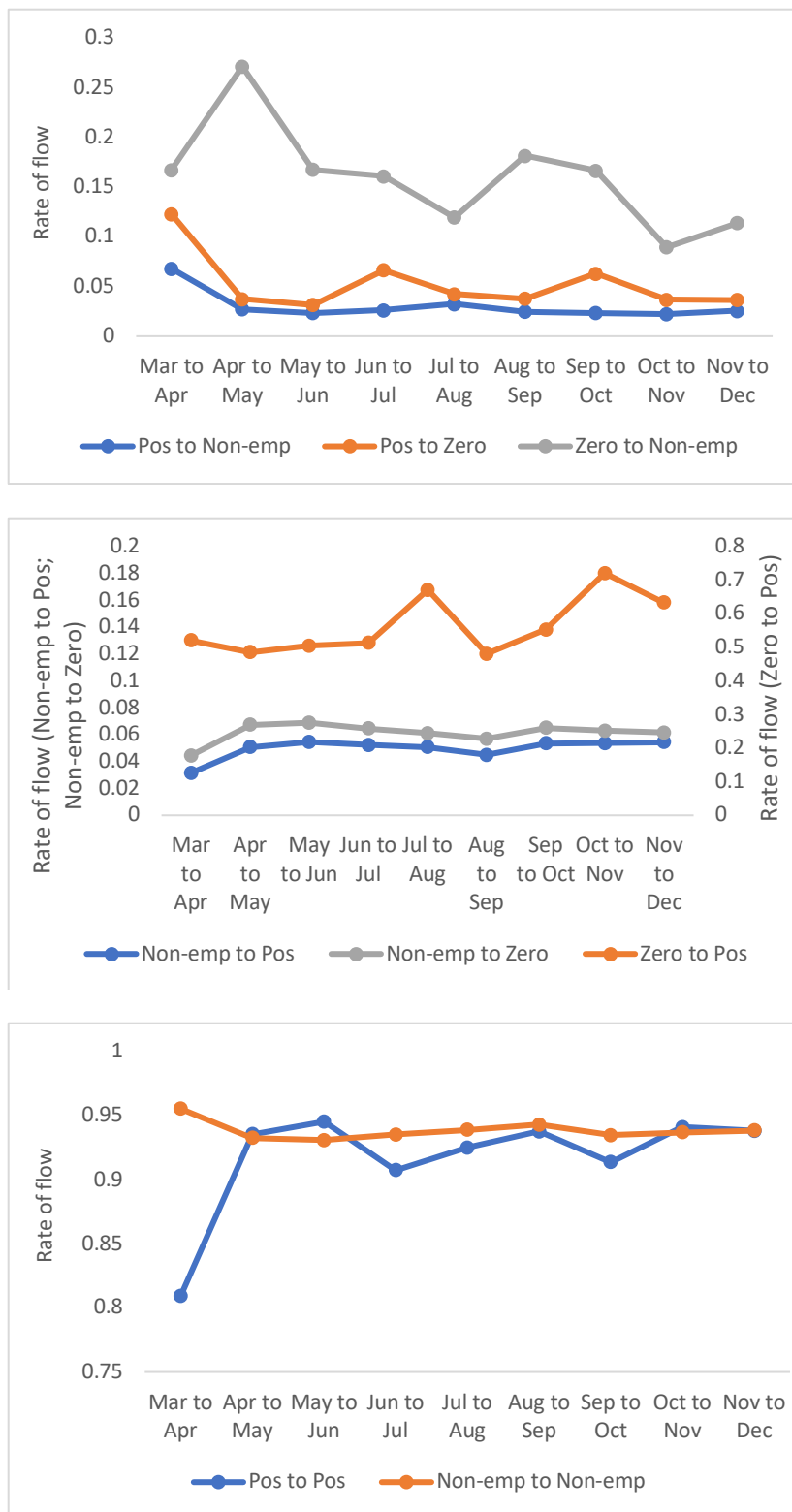
The top graph confirms the high rate of transitions from positive-hour employment to both zero-hour employment and non-employment between the pre-COVID period in early March 2020 and after the onset of COVID-19 in early April 2020. The spike in transitions from zero-hour employment to non-employment between early April and early May confirms what we had inferred from cross-section data above: that a large fraction of those in early April who were working zero hours due to 'no work, not enough work, stood down' were in fact recent permanent layoffs. Hence the high early April stock of these workers is not an accurate indicator of jobs saved by temporary layoffs.

Positive-hour employment increased between April and May and between May and June (see Figure 4) as the stay-rate in positive-hour employment returned to a normal level (Figure 9 bottom graph), a constant inflow rate from zero hours (middle graph) operated on an elevated stock of zero hours workers, and the transition rate from non-employment to positive-hour employment rose (middle graph).²⁴ The May-June transition matrix indicates that 75 percent of those leaving zero-hour employment in that period moved to positive-hour employment, a number we applied above to the stock of temporarily laid-off identified by Treasury.

²³ In the cross-section data, for March to April, April to May and May to June, 65, 46 and 72 percent respectively of the changes in the total number of workers employed on zero hours were due to changes in the category of 'no work, not enough work, stood down'.

²⁴ The timing of the employment recovery in May versus June in Figure 4 does not correspond exactly to the changes implied by Figure 9, due to the discrepancy between temporarily laid off workers and all workers with zero hours.

Figure 9: Monthly transition rates between labor force states



Source: Australian Bureau of Statistics, Labour Force Australia, Insights into Hours Worked, April to December 2020.

In summary, analysis of the downturn alone almost certainly overestimates jobs saved by JobKeeper-induced temporary layoffs: our analysis of the recovery suggests that as few as 100,000 workers may have been recalled from temporary layoff in the first month of the recovery, compared to an employment increase of 375,000 workers, and very small numbers in the subsequent three months. Instead, recovery was driven by hires of workers directly from out of the labor force, some of whom may have been rehired by their previous employer. Our conclusion is consistent with Treasury analysis which found that in May 2020 there were 375,000 workers receiving JobKeeper payments for zero hours of work and that in September 2020 that number had declined to only 235,000 (Australian Treasury, 2021, p.29). This implies at most 140,000 recalls from JobKeeper-induced temporary layoffs in the first several months of the recovery.

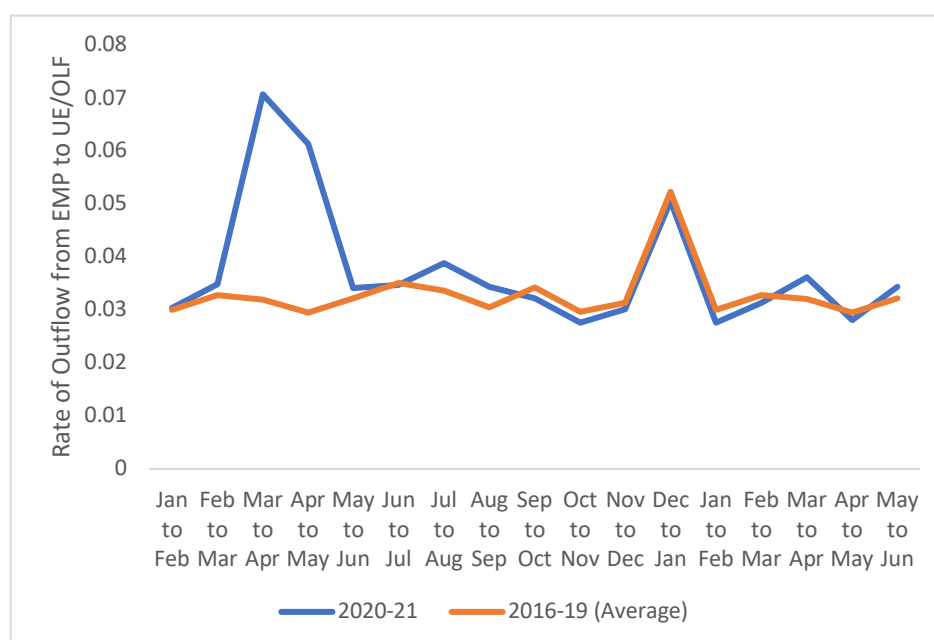
How disruptive was the phasing out of JobKeeper?

The phasing out of a subsidy could be associated with increased separations of workers from firms (both involuntary and voluntary). The size of that increase might indicate the extent to which the subsidy was stimulating labor demand by keeping output artificially high (offsetting the drag of continuing COVID-related restrictions on economic activity) and/or disincentivizing reallocations of workers to more productive firms or industries.

The transition from Phase 1 to the less generous Phase 2 of JobKeeper occurred when most of Australia had recovered from the downturn, with the exception of the locked-down state of Victoria. By the time JobKeeper ended, the economy was performing well throughout the country and COVID-19 rates were low.

Plots of outflows from employment in Figure 10 show that any effect of the Phase 1 to Phase 2 transition at the end of September 2020 was imperceptible, and that the outflows rose only 13 percent (by 45,000 people) compared to previous years when the program ended at the end of March 2021. This suggests that once the economy recovered, JobKeeper was primarily increasing firm profits (though stimulus effects on consumer demand are unlikely to be detectable from this graph).

Figure 10: Outflow rate from employment



Note: Data are not seasonally adjusted.

Source: ABS, Labour Force Australia, GM2.

Benefit-cost assessment

Social benefit could come from JobKeeper in several main ways. First, by providing macroeconomic stimulus the program promoted increased economic activity and allowed smoothing of income over time. Second, increasing incomes of workers who would otherwise have experienced lower or zero hours of work had a positive distributional impact. Third, by increasing the survival rate of viable businesses that would have ceased to exist in the absence of JobKeeper and by decreasing costs of job search and hiring in recovery due to job connections preserved, the program decreased adjustment costs associated with COVID-19.

The monetary cost of JobKeeper was \$88.8 billion. Taking account of the fact that workers whose jobs were saved by JobKeeper would otherwise have been receiving the JobSeeker (unemployment) benefit gives a direct cost of \$75.5 billion.²⁵ A further indirect cost may have been to ‘freeze’ firm and worker dynamics and hence lower labor productivity – for example, firms may

²⁵ This estimate is based on assumptions that (i) one-fifth of JobKeeper recipients would otherwise have received JobSeeker; and (ii) that the JobSeeker payment was about three-quarters of the JobKeeper payment throughout both programs.

have been discouraged from churning their workforces because the payment was only available for employees already working with the employer.

At this stage, it is not possible to make any overall benefit-cost assessment of JobKeeper. We can, however, address several aspects that are relevant to that overall assessment. First, the cost of preserving job connections via JobKeeper appears to be relatively high. Dividing \$75.5 billion by the estimate of 700,000 jobs saved gives an average cost per job saved of \$107,900 (about \$US80,500).²⁶ This is relatively high by comparison with previous international programs; for example, the American Recovery and Reinvestment Act of 2008 is estimated to have had an average cost per job saved of about \$US50,000 (Chodorow-Reich, 2019). It is, however, much less than the estimated cost of \$US224,000 per job supported by the Paycheck Protection Program implemented by the US government to deal with COVID-19 (Autor et al., 2021, p.24).

Second, it seems indubitable that JobKeeper provided substantial macroeconomic stimulus in Australia during 2020 and 2021. The relatively short duration of economic downturn and fast pace of recovery are likely to have been in part due to JobKeeper raising household and business incomes and improving confidence. For example, consumer and business confidence increased rapidly following the announcement of JobKeeper (Australian Treasury, 2021, p.26). At this stage, however, it is not possible to separate the precise effect of JobKeeper on macroeconomic activity from other government stimulus measures and from successful management of COVID-19.

Third, who received the JobKeeper payments matters. When employment losses peaked in May 2020 it is estimated that one-quarter of payments went to labor as increased income and three-quarters as a transfer to businesses and not-for-profits (Treasury, 2021, p.28). As employment recovered in subsequent months the share of payments going to labour will have fallen and the share to business increased. That business received the greater share of payments was partly due to the one-in-all-in feature of the program; and partly due to the economic downturn caused by COVID-19 being less severe than the initial scenario for which JobKeeper was designed. The distribution of JobKeeper payments between labour and business has implications for the extent and timing of macroeconomic stimulus. Whereas the payments going to labor are likely to have brought a relatively immediate increase in consumption spending, the impact of the payments that constituted a transfer to businesses and not-for-profits is less certain. The distributional consequences of such a large transfer to business

²⁶ Note that this is very much a best-case scenario, being based on a peak estimate of jobs saved. Breunig and Watson (2020) estimate that the cost per job retained by JobKeeper in the first 6 months was between \$70,000 and \$102,000.

cannot be assessed until more data are available. However, analysis by the Australian Treasury shows that the income component of JobKeeper went predominantly to individual workers at the bottom of the income distribution (Australian Treasury, 2021, p.31).

Fourth, the costs of JobKeeper deriving from freezing of firm and worker dynamics are likely to have been minimal. Annual labor productivity growth from 2012 to 2019 in Australia was 1.1 percent per annum (Australian Bureau of Statistics, 2021b, Table 1). The share of productivity growth that can be attributed to employment reallocation – based on reviews of microeconomic studies of firm-level productivity - is about one-quarter to one-half (Foster et al., 1998, Table 4). Hence, taking into account that JobKeeper covered only one-fourth of the Australian workforce at its peak, even if the program had prevented all employment reallocation among recipients, the cost of missing productivity growth would be equal to at most 0.1 to 0.15 percent of GDP.²⁷ In fact, the minimal job destruction that occurred in the transition from Phase 1 to Phase 2, and when the program ended in March 2021, suggest that the negative effect on productivity would have been even less.

Lessons from JobKeeper

JobKeeper was introduced at short notice in the face of a crisis whose duration and severity were unclear, and hindsight can inform improvements in preparation for a future sudden economic downturn. One key question is whether the cost per job saved could be reduced from \$100,000 with adjustments to the program. The Australian government did make adjustments to JobKeeper when the program was renewed in September 2020, notably reducing costs by reducing payments to part-time workers. Lower payments to part-time workers may not have changed the microeconomic incentives meaningfully, but would have reduced the stimulus to consumption. If inframarginal payments to firms do not produce much stimulus, the second phase of JobKeeper would have been a better program to use initially. Had JobKeeper been introduced earlier, its impact on jobs may also have been larger, and hence the cost per job lower.

Another cost concern is the relatively large proportion of JobKeeper subsidies that flowed to businesses that had revenue decreases smaller than the intended threshold for eligibility. Whether a program such as JobKeeper should incorporate built-in features allowing spending to adapt to the

²⁷ The minimal job destruction that occurred between Phase 1 to Phase 2, and then when the program ended in March 2021, suggest that the negative effect of JobKeeper on productivity would have been even less. Andrews, Hambur and Moore (2021, p.28) suggest from a review of employment reallocation during COVID-19 in Australia ‘...that the reallocation-productivity link remained intact amongst the JobKeeper eligible workforce suggests that the JRS did not completely distort natural market selection’.

severity of downturn it is seeking to address is therefore likely to be an important topic of policy debate. One idea proposed is for such programs to include a claw-back mechanism from businesses which ex-post are found not to have met eligibility conditions.

Given the importance of a quick policy response, and given the limited degree to which JobKeeper appears to have shared the available work hours among workers, a short-time work program as used in Germany, Switzerland and elsewhere in Europe could also be worth considering for Australia. The long-standing German program, for example, has the twin objectives of reducing employment loss and retaining employer-worker matches. It can be used at any time by individual firms suffering revenue declines affecting a sufficiently large share of workers, and though it is used principally in recessions, it does not need to be activated in response to a recession.²⁸ A short-time program seems likely to save jobs at lower cost than JobKeeper due to lower deadweight loss, and to reduce hours per worker more equitably.²⁹

Conclusion

Australia's JobKeeper program provided a lump-sum wage subsidy to workers via employers, to be paid even if the workers' hours were reduced to zero. Theoretically, JobKeeper should subsidize labor hoarding and speed recovery through its promotion of temporary layoffs, as well as mitigating output decline (except when the output decline is due directly to COVID-19 restrictions). Theory may also seem to predict that JobKeeper is a kind of worksharing program, where jobs are saved by cuts in hours per worker to positive hours, but once one considers worker groups with differing eligibility, the prediction no longer holds.

The best empirical evidence in the literature (Bishop and Day 2020) suggests that the subsidy may have reduced total employment losses by at least 700,000 in the downturn, equivalent to 5.2% of March 2020 employment, implying a reduction in employment losses of about one third (since actual employment loss was 10 percent). Our examination of the downturn indicates that the subset saved due to putting workers on temporary layoff was 292,000-375,000. However, our analysis of the recovery suggests that as few as 100,000 workers were recalled from temporary layoff in the first

²⁸ For a description of short time work in Germany during Covid, see <https://www.bmas.de/DE/Corona/Fragen-und-Antworten/Fragen-und-Antworten-KUG/faq-kug-kurzarbeit-und-qualifizierung.html>, or in English, <https://www.imf.org/en/News/Articles/2020/06/11/na061120-kurzarbeit-germanys-short-time-work-benefit>, accessed June 27, 2021.

²⁹ Burda and Hunt (2011); Guipponi and Landais (2020).

month of the recovery, and very small numbers in the subsequent three months, with recovery driven by workers hired directly from out of the labor force. Temporary layoffs facilitated by JobKeeper seem not to have speeded recovery, raising the question of how many were in fact recalled to positive hours of work.

JobKeeper does not appear to have operated as a short-time work (worksharing) program: there was little reduction of worker hours to positive hours. Adjustment came through hiring freezes and temporary and permanent layoffs, particularly of casual and low-tenure permanent workers with lower firing costs. Given this, and given high costs per job saved by JobKeeper, we believe that in preparation for the next recession, it would be valuable for Australia to consider setting up a short-time work system similar to that in Germany and Switzerland.

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