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The Mitchell Institute for Education and Health Policy at Victoria University is one of the country's leading education and health policy think tanks and trusted thought leaders. Our mission is to improve evidence-based health and education policy, to increase access and opportunities in education and health for all Australians.

#### **Acknowledgements**

The author would like to thank Ben Bardon from the National Australian Apprenticeship Association (NAAA), Bob Bowden and Dianne Dayhew for discussions regarding the impact of the coronavirus pandemic on apprentices and trainees.

The author would also like to thank Sergio Macklin, Sarah Pilcher, Dr. Nina Van Dyke and Dr. Lizzie Knight for their input and feedback on previous versions of this paper.

#### **Suggested citation**

Hurley, P. (2020). The impact of coronavirus on apprentices and trainees. Mitchell Institute for Education and Health Policy, Victoria University.

Available from: www.mitchellinstitute.org.au

Cover photo by Matthew Sichkaruk via Unsplash.

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## **Key points**

- The Mitchell Institute estimates new apprenticeships/traineeships will decline by 30% within two years. This equates to approximately 130,000 fewer new apprentices and trainees from the start of the pandemic to June 2023.
- Currently enrolled apprentices/trainees are forecast to decline by approximately 20%, falling to their lowest level in 2023 where it is forecasted there will 50,000 fewer apprentices/trainees 'in training'.
- Previous recessions show an amplified relationship between the unemployment rate and apprenticeship/traineeship figures. In the last two recessions, a 5 percentage point increase in the unemployment rate resulted in a 30% decrease in apprenticeship commencements.
- We estimate that the reduction in the number of available apprenticeships and traineeships will lead to 50% more school leavers classified as 'not in employment, education or training' (NEET). The NEET category is an indicator of disengagement and is associated with poor long-term outcomes.
- Current policies designed to support apprentices and trainees, such as the JobKeeper program, may mask the scale and severity of the decline.
- Downturns in the number of apprenticeships can have long lasting effects and raise the prospect of skills shortages occurring which hamper a coronavirus economic recovery.
- There are policy responses that will help reduce the impact of the coronavirus on apprentices and trainees. These are:
  - increasing employer incentives and wage subsidies to make it easier for employers to keep current apprentices and trainees or bring on new ones;
  - integrating new apprentices and trainees into public spending projects to grow the number of opportunities available; and
  - establishing innovative labour market programs that provide apprentices and trainees with work in their occupation while the economy recovers.

### Introduction

Apprenticeships and traineeships are an important pathway into the workforce for 150,000 people each year (NCVER, 2019a). Young people in particular rely on them to transition successfully from school to a career (Ranasinghe, Chew, Knight, & Siekmann, 2019). There are about 270,000 currently enrolled apprentices and trainees, and about 70% of these are under the age of 25 (NCVER, 2019a).<sup>1</sup>

At the Mitchell Institute, we wanted to understand the impact of the coronavirus on apprentices and trainees. We looked at previous recessions to see what history can tell us to expect.

We found that the lessons of the past are startling.

In previous recessions there was a 30% decline in the number of new apprentices and all the evidence suggests Australia should expect at least the same in the next few years. This means that over one hundred thousand people will miss out on the opportunity to find their way into the workforce and start a career.

What makes these figures so alarming is that without these pathways many young people have limited options and end up either unemployed or outside the labour force. If young people stay disengaged from education or the workforce, this is associated with terrible long-term outcomes (Powell, Salignac, Meltzer, Muir, & Weier, 2018; Stanwick, Forrest, & Skujins, 2017).

Australia needs to find a way to minimise the damage the pandemic will cause apprentices and trainees. We need to increase the support we provide to employers so that they have the confidence to employ an apprentice or a trainee during uncertain economic times. We also need to create projects so that apprentices and trainees can stay employed and working in their occupation while the employment market recovers.

While these policy responses come with costs that need further exploration, the cost of doing nothing will also be significant.

Furthermore, these policy responses are temporary. If we implement them, Australia can help a generation of people who are facing a troubled future for no other reason than they were unlucky enough to be trying to enter the workforce during a pandemic.

<sup>&</sup>lt;sup>1</sup> There are differences between a traineeship and an apprenticeship in that a traineeship is generally in a non-trade related area and is usually around 12 months in duration. Thee are around 100,000 currently enrolled trainees and 85,000 commencements annually. Apprenticeships usually last for three to four years and are in trade related areas. There are approximately 180,000 currently enrolled apprentices and 75,000 apprenticeship commencements every year.

# Estimating the impact of coronavirus on apprentice/trainee commencements

Apprentice/trainee commencements refer to the number of apprenticeship/traineeship training contracts that started in a given period.

Research into apprentice/trainee commencements during previous downturns have made the following findings (Karmel & Milotkowski, 2008; Karmel & Misko, 2009; Karmel & Oliver, 2011):

- Apprentice/trainee commencements are very sensitive to changes in the wider employment market. Uncertain economic conditions mean that employers generally refrain from taking on new apprentices/trainees. This is particularly relevant for apprenticeships because employers need to make a commitment of three to four years, which can be difficult in uncertain economic conditions.
- There is an amplified relationship between unemployment rates and commencements. In both the 1980s and 1990s recessions, a 5 percentage point increase in the unemployment rate resulted in a 30% decrease in apprenticeship commencements. This suggest that as unemployment rises, there is a sixfold impact on apprentice/trainee commencements.
- The time taken for commencements to recover to pre-downturn levels can vary. In the 1980s, apprenticeship commencements returned to their pre-recession levels within four years. However, the 1990s recession resulted in a much more protracted downturn and it took over a decade for apprenticeship commencements to reach their pre-recession levels.

Figure 1 shows the percentage change in apprenticeship commencements during the 1980s and 1990s recession as a percentage of their pre-recession peak levels.<sup>2</sup>

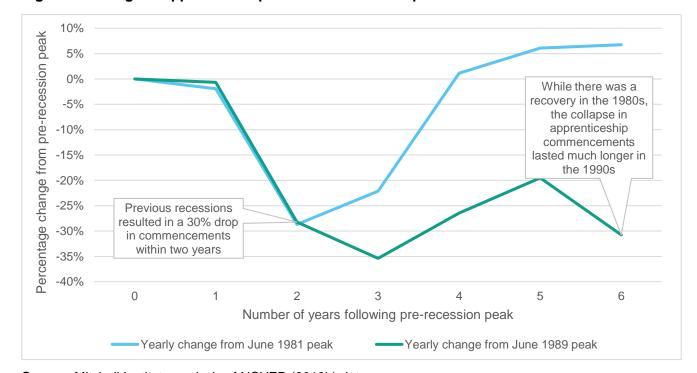


Figure 1: Change in apprenticeship commencements in previous recessions.

Source: Mitchell Institute analysis of NCVER (2019b) data

This figure shows that the initial decline in apprenticeship commencements during the past two recessions followed very similarly trajectories. The first year after the peak resulted in a small

<sup>&</sup>lt;sup>2</sup> Data from previous recession focuses on trade apprentices as data for traineeships before the mid-1990s are unavailable.

decline in commencements as the impact of the economic downturn began to affect official data. This was followed by a decline of around 30% in commencements as the onset of the recession began to be fully felt.

This figure suggests an amplified relationship between unemployment rates and apprenticeship commencements. In the 1980s recession there was a 5.1 percentage point increase in the unemployment rate and in the 1990s recession there was a 5.3 percentage point increase in the unemployment rate (ABS, 2020). This suggests that each one percentage point increase in unemployment is associated with a six per cent decrease in apprenticeship commencements.

Official data from the Reserve Bank forecasts a similar 5 percentage point increase in the unemployment rate from December 2019 to June 2020 (RBA, 2020).

The Mitchell Institute has modelled the impact on apprenticeship commencements using data from previous recessions. Figure 2 averages the rate of change that occurred during the 1980s and 1990s recessions and applies this to pre-coronavirus data to forecast future changes in apprentice/trainee commencements<sup>3</sup>.

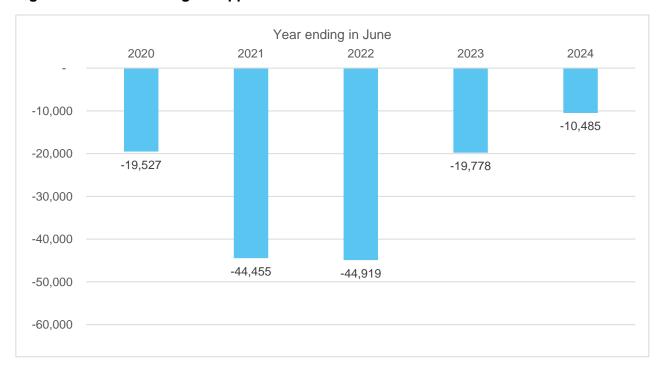


Figure 2: Forecast change in apprentice/trainee commencements

Source: Mitchell Institute analysis of NCVER (2019b) data

This figure shows a forecast drop in commencements of almost 20,000 in the year to June 2020 as commencements begin to wane.

In 2021 and 2022, the Mitchell Institute forecasts approximately 45,000 less commencements each year when compared to pre-coronavirus levels. This is a reduction of approximately 30% in 2021 and 2022 when compared to pre-coronavirus levels. This forecast suggests that it will take until at least 2024 for commencements to recover to levels close to what they were before any coronavirus related downturn.

Given these apprentices take 3 to 4 years to complete, this suggest the supply of trained tradespeople could be diminished for up to eight years.

<sup>&</sup>lt;sup>3</sup> Data for 2020 is based on industry reports that suggest a 12.5% decline in commencements for the year ending June 2020 (Mcmillan, 2020).

## Estimating the impact of coronavirus on 'in-training' apprentices/trainees

'In-training' refers to contracts where the apprentice/trainee is actively training under the terms of their contract at a given point in time.

Research has shown that overall 'in-training' apprentices/trainees can have the following characteristics during a downturn (Karmel & Milotkowski, 2008; Karmel & Misko, 2009; Karmel & Oliver, 2011):

- Completion rates go up during a downturn. This is because apprentices/trainees are less likely to voluntarily leave an employer when there is a weaker employment market. This also means that higher completion rates can obscure the impact of job losses on apprentice/trainee figures.
- It takes approximately one and a half to two years from the onset of a recession for a decline in commencements to fully impact 'in-training' figures. This means a decline in number of people starting apprenticeships can take a couple of years to flow through to a decline in the overall number of people actively doing an apprenticeship. This also means that, at least initially, 'in-training' figures can be less impacted than commencement figures.
- During economic downturns there is an increase in the number of apprentices/trainees who report they did not complete their apprenticeship because of redundancy or job loss. For instance, during the global financial crisis (GFC) the reason for non-completion of a trade apprenticeship due to loss of job or redundancy increased from 9.5% to 26.8% (Karmel & Oliver, 2011). Research also shows that, when compared to similar cohorts, those apprentices and trainees who were made redundant were also more likely to be unemployed nine months after they lost their job (Karmel & Oliver, 2011).
- Downturns interrupt the pipeline of apprentices moving through the system. This means
  that the decline in 'in-training' apprentices/trainees can have long term effects that stretch
  beyond an economic downturn. This raises the prospect of skills shortages as the decline
  in apprenticeships is fully felt at a time when the economy is recovering.

Figure 3 shows the percentage change in the number of 'in training' apprentices from their peak levels during the 1980s and 1990s recession. Unlike Figure 1 that shows a similar decline in commencements, Figure 3 displays data for the 1980s recession beginning in 1983 instead of 1982, and for the 1990s recession beginning in from 1990 instead of 1989. This is because there is a delay, or a lag, in the impact of a recession on 'in-training' figures (Karmel & Misko, 2009).

0% Percentage decline from pre-recession peak -5% -10% -15% -20% In previous recessions, when -25% compared to commencements, it took longer for 'in training' figures -30% to reach their lowest level. It also took longer to recover to pre--35% recession levels. -40% 0 2 3 5 6 Number of years following pre-recession peak Yearly change from June 1982 peak Yearly change from June 1990 peak

Figure 3: Change in apprentices 'in training' in previous recessions

Source: Mitchell Institute analysis of NCVER (2019b) data

This figure shows that the impact on 'in-training' apprentices in the initial stages of the 1980s and 1990s recession were very similar. The number of 'in-training' apprentices fell by approximately 10% from peak levels within two years. However, the 1990s recession resulted in a much deeper and longer-term decline in 'in training' apprenticeships.

Figure 4 forecasts the impact of changes in 'in training' apprentices and trainees using the above data. Figure 4 averages the rate of change that occurred during the 1980s and 1990s recessions and applies this to pre-coronavirus data to forecast future changes in 'in training' apprentices and trainees.

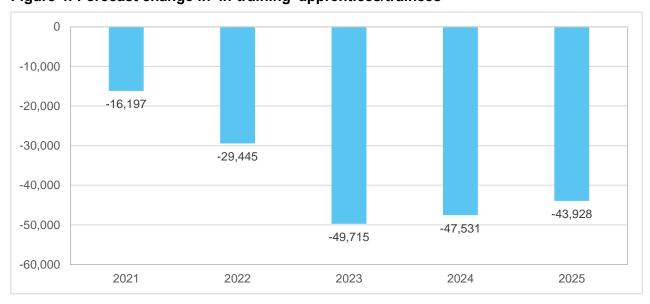


Figure 4: Forecast change in 'in-training' apprentices/trainees

Source: Mitchell Institute analysis of NCVER (2019b) data

This figure shows that the decline in 'in-training' apprentices/trainees can take a number of years to reach their lowest levels. This forecast suggest that it will be 2023 when the number of apprentices/trainees 'in-training' reaches its lowest levels.

# Apprentices, trainees, and the labour market

The analysis above suggests that apprentices and trainees will be especially vulnerable to changes in labour market conditions caused by the coronavirus pandemic. This is because, unlike other parts of our education system, apprentices and trainees require a contract with an employer.

In addition, there are two further points discussed below arising from the analysis. These points focus on the uncertainty of the current economic environment and the impact of reduced pathways for young people into the workforce.

#### Uncertain economic conditions mean the situation could be much worse

It is important to note there is considerable uncertainty in the current economic environment and current policies make comparisons with previous recessions more complicated.

For instance, the Australian Government has introduced two measures that impact apprentices/trainees. The first is JobKeeper which is a temporary subsidy for employers to enable them to retain staff. The second is the Supporting Apprentices and Trainees initiative which provides a wage subsidy to small businesses to support the retention of their existing apprentices and trainees.

These two measures may obscure the impact of the downturn on the number of new apprenticeship/traineeships and those 'in training'. Australian Treasury estimates suggest that without JobKeeper the unemployment rate would reach 15%, instead of the current forecast of 10% (Sullivan, 2020). Such a scenario would mean the scale of the impact, and the number of apprentices and trainees affected, would be much larger than what our forecasts suggest.

#### Youth pathways into employment are going to be heavily impacted

Apprenticeships/traineeships are an important pathway for young people into the workforce. Approximately 12% of school leavers follow a transition from school to employment that relies on an apprenticeship or traineeship (NCVER, 2020; Ranasinghe et al., 2019). The decline in commencements represents a significant problem for school leavers who will have reduced options when making the transition from school to the workforce.

The potential consequences of these reduced pathways are very concerning. Data from the Longitudinal Survey of Australian Youth (LSAY) show that 6.9% of people aged approximately 18 years-old are not in employment, education or training (NEET) (NCVER, 2020). This NEET category is an indicator of disengagement and is associated with poor long-term outcomes. These outcomes include higher rates of long-term unemployment, higher incidences of health problems, and lifelong engagement with the labour market characterised by insecure work and lower pay (Powell et al., 2018; Stanwick et al., 2017).

Based on the above forecasts and LSAY data outlining youth pathways, the number of school leavers classified as NEET is estimated to increase by approximately 50%, to over 10% of school leavers. This is due to reduced pathways into apprenticeships and traineeships (NCVER, 2020).

Indeed, this potential increase in young people classified as NEET is symptomatic of a much wider problem in youth transitions from school into the workforce. In April 2020, the youth unemployment rate increased by 2.3 percentage points in one month to 13.8%, which is higher than the increase

in overall unemployment figures which increased over the same period by 1 percentage point to 6% (ABS, 2020).

This means that not only are there likely to be fewer apprenticeships and traineeships available for young people, at the same time there is likely to be a reduction in other jobs available for young people.

This helps show how vulnerable Australia's young people are to an employment market that has been substantially weakened by the coronavirus pandemic. It also highlights the urgency of policy responses that encourage an increase in apprentice/trainee commencements and enable currently enrolled apprentices/trainees to stay connected to an employer.

# Policy responses – how to flatten the curve

The data outlined above show how Australia risks a deep negative curve in the number of apprentices and trainees that results in a reduction of new apprentices and trainees and where current apprentices and trainees lose their jobs.

The aim of policy responses should be to meet these twin challenges so that the pipeline of apprentices and trainees continues to operate at as close to pre-coronavirus levels as possible.

These issues are made more pressing as current supports such as JobKeeper and the Supporting Apprentices and Trainees Initiative are temporary and are scheduled to expire in September 2020. Alternative policy responses are needed in order to support apprentices and trainees once the temporary arrangements finish.

It is useful to think of the aim of policy responses as 'flattening the curve'. There are already reductions in the number of commencements and reports of job losses (Mcmillan, 2020). But this does not mean that Australia cannot minimise the impact of coronavirus on apprentices and trainees.

These policy solutions will require additional government funding and more work needs to be undertaken to fully quantify these costs. However, the price of inaction risks costing Australia much more.

For many individuals, fewer apprenticeships and traineeships will disrupt their transition to the workforce. young people continue to be locked out of the workforce, there are concerning long-term outcomes such as higher rates of long-term unemployment and higher incidences of health problems (Powell et al., 2018).

Without action, industry risks losing the next generation of skilled workers as the coronavirus pandemic will compromise the supply of apprentices and trainees.

In addition, the Australian Government risks paying more to support individuals who would otherwise be able to support themselves, while at the same time losing the skilled workforce needed for the economic recovery following coronavirus.

It is also important to highlight the general policy context where government funding of VET is at its lowest levels since 2011 (Hurley & Van Dyke, 2019). Australia also currently spends about \$800 million less on employer incentives for apprentices and trainees than it did in 2012. The funding for employer incentives was reduced for good reasons, largely because it was thought not to be adding to the broader labour force (Noonan & Pilcher, 2017).

However, given the current economic climate, the time is now to put the money that we have saved over the past decade back into apprentices and trainees. Investing additional extra funds now will make a huge difference and ensure our apprentice and trainee system continues to operate as effectively as possible.

The challenges faced by apprentices and trainees because of the coronavirus pandemic are significant. However, there are effective responses available to policy makers that can mitigate the impact of the coronavirus on apprentices and trainees.

There are three policy responses that the Mitchell Institute believes will go a long way to 'flattening the curve' and minimise the impact of the coronavirus on apprentices and trainees.

#### 1. Increase incentives and wage subsidies

The evidence about the effectiveness of employer incentives on influencing the number of apprentices and trainees during normal periods is mixed (NCVER, 2014). However, these are not normal times.

The lesson from previous recessions is clear; employers are reluctant to take on apprentices in a time of economic uncertainty. New apprentices are a substantial undertaking by an employer which is difficult to make during an economic downturn. While there are incentives available, new apprentices still cost employers considerably, particularly in terms of higher supervision requirements (Nechvoglod, Karmel, & Saunders, 2009).

Increased incentives and wage subsidies will help employers cover the costs of hiring new apprentices. It will also help smooth the transition off JobKeeper and the Supporting Apprentices and Trainees Initiative.

The National Australian Apprenticeship Association (NAAA, 2020, p. 11) recommends a \$500 a week wage subsidy for new apprentices to 'prevent this year's school leavers becoming a "lost COVID - 19 cohort" by engaging them immediately in the labour market'.

Policies such as these will help minimise the lost opportunity that fewer new apprenticeships pose for both individuals and industry.

#### 2. Integrating new apprentices and trainees into public spending projects

Governments often establish quotas for apprentices and trainees as part of large scale publicly funded projects. Examples include the Victorian Government's Metro Tunnel project which aims to create 5,000 jobs during the construction phase, including 500 apprentices, trainees and engineering cadetships, and the New South Wales Government's NorthConnex construction project, which aims to have 20 per cent of all trade work completed by apprentices (Metro Tunnel, 2020; NorthConnex, 2020).

Increasing the number of apprentices and trainees working on these and future projects has the potential to create thousands more commencements and also opportunities for those apprentices who are out of work.

It is also important to accompany an increase in the number of apprentices and trainees on publicly funded projects with wraparound support. Apprentices and trainees need to be engaged in meaningful work and employers need support to manage any increased number of apprentices and trainees working on projects.

Possible models for wraparound support include the Victorian Government's MetroHub and the NSW Government's Barangaroo Skills Exchange. These are partnership arrangements, often between TAFE institutes, major construction companies and other social partners, that provide jobseekers with a gateway onto the project, maximising their long-term employment opportunities.

#### 3. Innovative labour market programs to support apprentices and trainees

Investing in innovative labour market programs will also help keep apprentices in work while the job market remains weak.

These innovative programs include what is known as 'live work' or intermediate labour market programs. These are programs that provide actual work experience in either simulated or specially designed environments where apprentices and trainees can work while the broader labour market remains weak. As the job market recovers, apprentices and trainees are transitioned off these arrangements into regular contracts with employers.

These programs have traditionally been used as a bridge to employment for the long-term unemployed and usually involve working on projects that have a community benefit.

In the 1990s these programs were part of responses to tackle long term youth unemployment. For instance, building and construction apprentices worked on housing projects using government funds to build and sell houses. Other examples include where apprentices were placed in government-funded community and public building projects to undertake maintenance work on student villages, local nursing homes and general hospitals (Karmel & Misko, 2009).

The successful features of these types of projects are generally those that are smaller scale, include local and community partners, involve actual work, lead to a qualification, and where the participants receives a wage (Borland, 2014; Borland & Tseng, 2011).

By investing in these type of programs tens of thousands of out of work apprentices and young people can have the opportunity to start a career. And as the labour market recovers, people in these programs are transitioned off them to regular contracts with employers.

## **Technical Appendix**

This paper seeks to estimate the impact of the coronavirus on apprentices and trainees using analysis from previous economic downturns.

In order to do this, research and data from NCVER and the ABS (2020) were used. This research contains extensive discussions regarding the effect of economic downturns on apprentices and trainees (Karmel & Milotkowski, 2008; Karmel & Misko, 2009; Karmel & Oliver, 2011). NCVER (2018, 2019a) also produce detailed data that enable the exploration of the impact of previous economic downturns on apprentices and trainees.

For instance, Karmel and Oliver (2011) apply the following model to forecast trade commencements during any given period.

$$C_t = \rho C_{t-1} + \beta_1 E_t + \beta_2 |E_t - E_{t-i}|^+ + \beta_3 |E_t - E_{t-i}|^- + e$$

Where C refers to commencements, E is the total employment in a given trade, t is the quarter of the reported figure, and  $|E_t-E_{t-i}|^+$  is a positive change in employment between period i and period t and  $|E_t-E_{t-i}|^-$  is a negative change in employment between period i and period t.

While this model can explain the impact of changes in employment on apprenticeship commencements, as Karmel and Oliver (2011, p. 18) state, this "model typically underestimates the extent" of any decline.

As this paper seeks to understand the extent of a potential decline caused by the coronavirus pandemic, a different approach has been selected. This approach uses the average decline in previous downturns from peak levels and applies this decline to current apprenticeship figures in order to estimate the impact of the coronavirus on apprentices and trainees.

There have been three downturns over the past forty years, two of which have been recessions. The table below displays the six-monthly change in the unemployment rate for each economic downturn along with the forecast unemployment rate caused by the coronavirus pandemic.

Table 1: Unemployment rate in previous economic downturns

1980s recession	Dec- 1981	Jun- 1982	Dec- 1982	Jun- 1983	Dec- 1983	Jun- 1984
Unemployment rate (%)	6.0	6.8	9.4	10.2	9.5	9.1
Percentage point increase from December before onset of downturn	0	0.7	3.4	4.2	3.4	3.1
1990s recession	Dec- 1989	Jun- 1990	Dec- 1990	Jun- 1991	Dec- 1991	Jun- 1992
Unemployment rate (%)	5.8	6.6	8.0	9.5	10.5	10.8
Percentage point increase from December before onset of downturn	0	0.8	2.2	3.7	4.6	5.0
GFC	Dec- 2008	Jun- 2009	Dec- 2009	Jun- 2010	Dec- 2010	Jun- 2011
Unemployment rate (%)	4.6	5.9	5.5	5.1	4.9	4.9
Percentage point increase from December before onset of downturn	0	1.3	0.9	0.6	0.3	0.3
2020 Coronavirus pandemic	Dec- 2019	Jun- 2020	Dec- 2020	Jun- 2021	Dec- 2021	Jun- 2022
Unemployment rate (%, actual and forecast)	5.2	10.0	9.0	8.5	7.5	6.5
Percentage point increase from December before onset of downturn	0	4.8	3.8	3.3	2.3	1.3

Source: Mitchell Institute analysis of ABS (2020) and RBA (2020) data

Based on the table above, data from the 1980s recessions and 1990s recession have been included when estimating the impact of the coronavirus on apprentices and trainees, and data from the GFC excluded. This is because there was a significant rise in the unemployment rate in both the 1980s recession and 1990s recession on a scale similar to current forecasts, whereas the increase in the unemployment rate during the GFC was much smaller.

The following two tables outlines the rate of the decline from peak levels in the 1980s and 1990s recession for commencements and 'in-training' trade apprentices. Historical NCVER data is available in annual intervals for the period ending in June of the relevant year.

Table 2: Decline in trade apprentice commencements following onset of previous recessions

Number of years following pre-recession peak	0	1	2	3	4	5	6
Yearly change from June 1981 peak	0%	-1.9%	-28.7%	-22.1%	1.1%	6.1%	6.7%
Yearly change from June 1989 peak	0%	-0.7%	-28.2%	-35.4%	-26.5%	-19.5%	-30.8%
Mean decline	0%	-1.3%	-28.5%	-28.8%	-12.7%	-6.7%	-12.0%
Variance of mean decline	0%	±0.6%	±0.2%	±6.6%	±13.8%	±12.8%	±18.8%

Source: Mitchell Institute analysis of (NCVER, 2019b)

Table 3: Decline in 'in training' trade apprentices following onset of previous recessions

Number of years following pre-recession peak	0	1	2	3	4	5	6
Yearly change from June 1982 peak	0%	-5.7%	-10.4%	-12.6%	-11.4%	-5.6%	0.0%
Yearly change from June 1990 peak	0%	-6.2%	-11.2%	-23.8%	-23.4%	-26.6%	-24.8%
Mean decline	0%	-5.9%	-10.8%	-18.2%	-17.4%	-16.1%	-12.4%
Variance of mean decline	0%	±0.3%	±0.4%	±5.6%	±6.0%	±10.5%	±12.4%

Source: Mitchell Institute analysis of (NCVER, 2019b)

The mean decline in the above two tables provides the basis for the forecast change in apprentice/trainee commencements and 'in training' figures due to the coronavirus. Commencements in the year ending June 2020 are the exception to this. This exception is to take into account preliminary data which suggests that there has been an over 50% decline in apprentice/trainee commencements since the beginning of the coronavirus pandemic (Mcmillan, 2020). Annualising this amount to the year ending June 2021 suggests a decline of at least 12.5% in commencements, much greater than what occurred in previous recessions. Indeed, Table 1 shows how current forecasts predict a much sharper increase in unemployment in 2020 when compared to previous recessions. Consequently, for the year ending June 2020, a rate of decline of 12.5% has been used to incorporate information that is currently available.

### **Limitations**

The characteristics of any research design or methodology impact the interpretation of findings and place constraints on the generalisability of findings. Some of the limitations of this study are outlined in the table below.

As the impact of the coronavirus becomes more apparent, it is important that further research occurs that enables a more accurate understanding of the impact on apprentices and trainees.

Table 4: Limitations of study

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Limitation	Overview
Difference between apprenticeships and traineeships	Apprenticeships and traineeships have different characteristics.
	The difference between a traineeship and an apprenticeship is that a traineeship is generally in a non-trade related area and a traineeship is usually for around 12 months whereas an apprenticeship usually lasts for three to four years.
	Previous research has shown that apprenticeships and traineeships can be impacted by changes in economic conditions in different ways (Karmel & Oliver, 2011; Noonan & Pilcher, 2017).
	Data for traineeships from previous recessions were unavailable and this analysis relies on declines that occurred in trade apprenticeships.
	Consequently, this study does not make the distinction between apprenticeships and traineeships when forecasting the impact of the coronavirus on apprentices and trainees. Further research into this area may be possible when official data are published.
Unknown economic circumstances	As noted above, there is considerable uncertainty in the current economic forecasts. The effect of government initiatives, such as JobKeeper, may mask the impact of the current downturn and also make comparisons that rely on increases in previous unemployment rates less appropriate.
Lack of industry level and location-based data	Karmel and Misko (2009, p. 10) stress 'the importance of looking at the impact of the downturn at a disaggregated level', noting the variations that occur during downturns not only between apprenticeships and traineeships, but also between different trades. Some industries can be more impacted by others during a downturn, as can different locations. The methodology used in this paper does not disaggregate data to industry or location-based levels. Further research into the impact of the coronavirus on different industries and in different

locations will be possible when official data
become available.

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