

# Who stays, who goes?

A new look at teacher attrition in using  
administrative data

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# Overview

- Existing estimates of teacher attrition vary widely. For early career teachers, estimates for the share of teachers that leave within their first 5 years range from as low as 5% to as high as 50%.
- Research on the why teachers leave the profession is largely based on surveys of former teachers, which often have low response rates and potentially selected samples.
- Relatively little is known about where teachers go when they leave the profession and their long run outcomes
- We show that administrative tax data can be used to help answer these questions.

## Findings preview

- Teacher attrition rates are relatively low and falling, although attrition remains elevated in certain settings
- Not all attrition is harmful with many teachers leaving to take up other education related roles or take time out of the workforce
- Financial factors appear to play a limited role in explaining teacher attrition with former teachers earning less in the long term than those who remain
- Teacher supply is constrained further up the pipeline

# Agenda

- 01** Motivation
- 02** Data
- 03** Methodology
- 04** Results
- 05** Conclusion

# Motivation

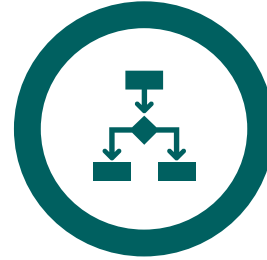


# Existing estimates using surveys and teacher registration data have limitations



## Teacher registration data

- Clear measure of the number of qualified teachers in a state
- But many teachers who leave teaching keep their registration (QCT, 2013; AITSL 2023)
- And there is no simple way to compare attrition rates with other occupations
- No way to identify where teachers are going, why they are leaving or what their long run outcomes are



## Workforce data

- Good measure of the number of teachers employed in the public system
- But misses the 15-20% of the teaching workforce employed in temporary positions (Weldon 2018)
- Does not capture teachers moving to other states or the private sector
- No way to identify where teachers are going, why they are leaving or what their long run outcomes are

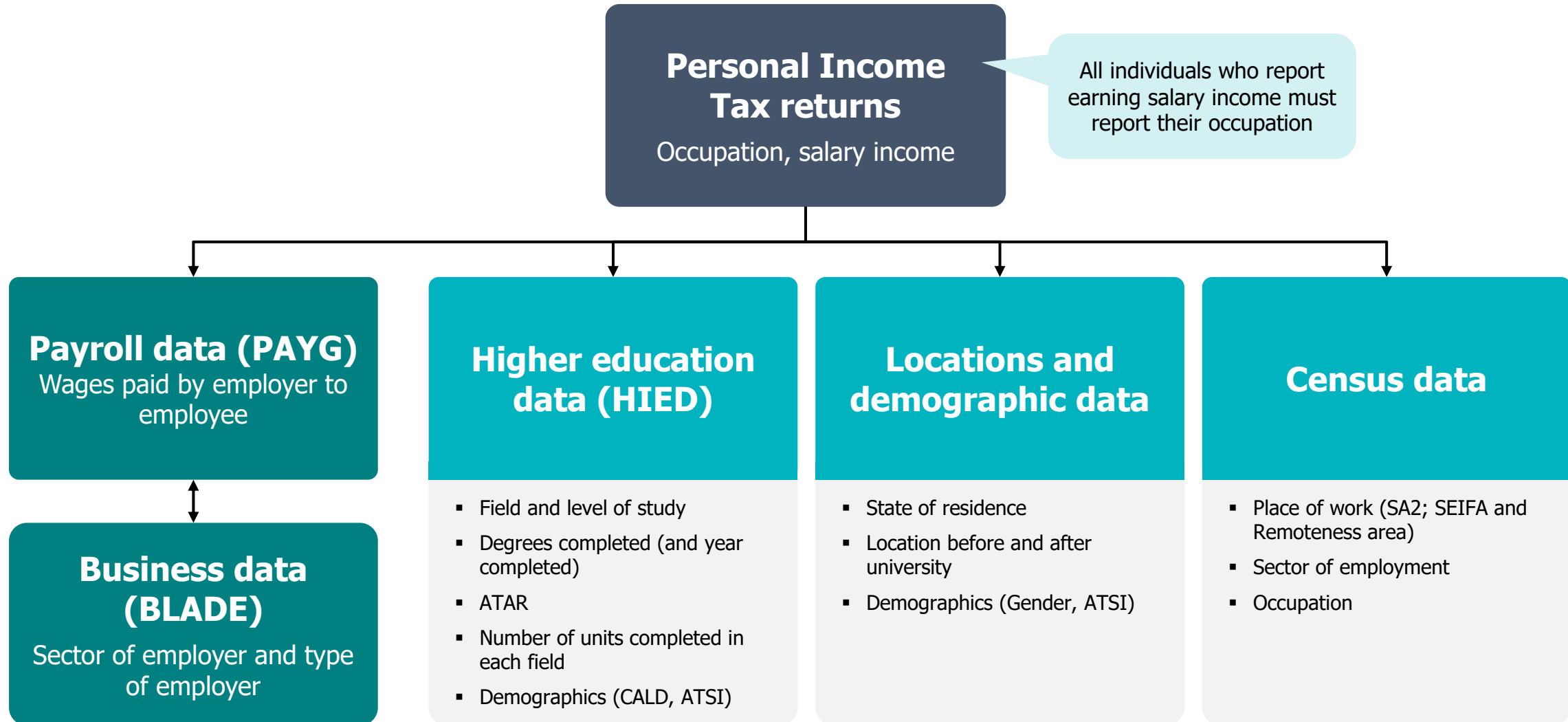


## Survey data

- Ability to understand reasons for leaving teaching
- But surveys of teachers generally have very low response rates and likely suffer from selection
- May be difficult to compare attrition with other occupations
- Hard to identify long run outcomes for those that leave teaching

**Data**

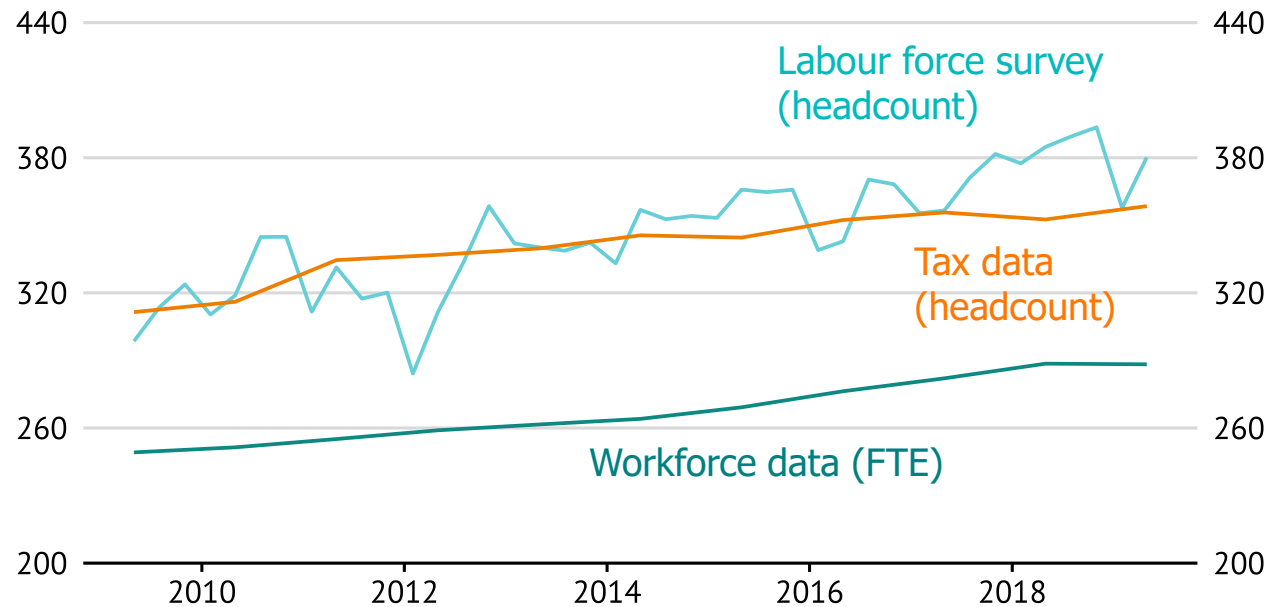
# Longitudinal linked employee-employer dataset (L-LEED)



# The number of teachers in the tax data tracks public data sources

## Comparing tax data estimates with other data sources\*

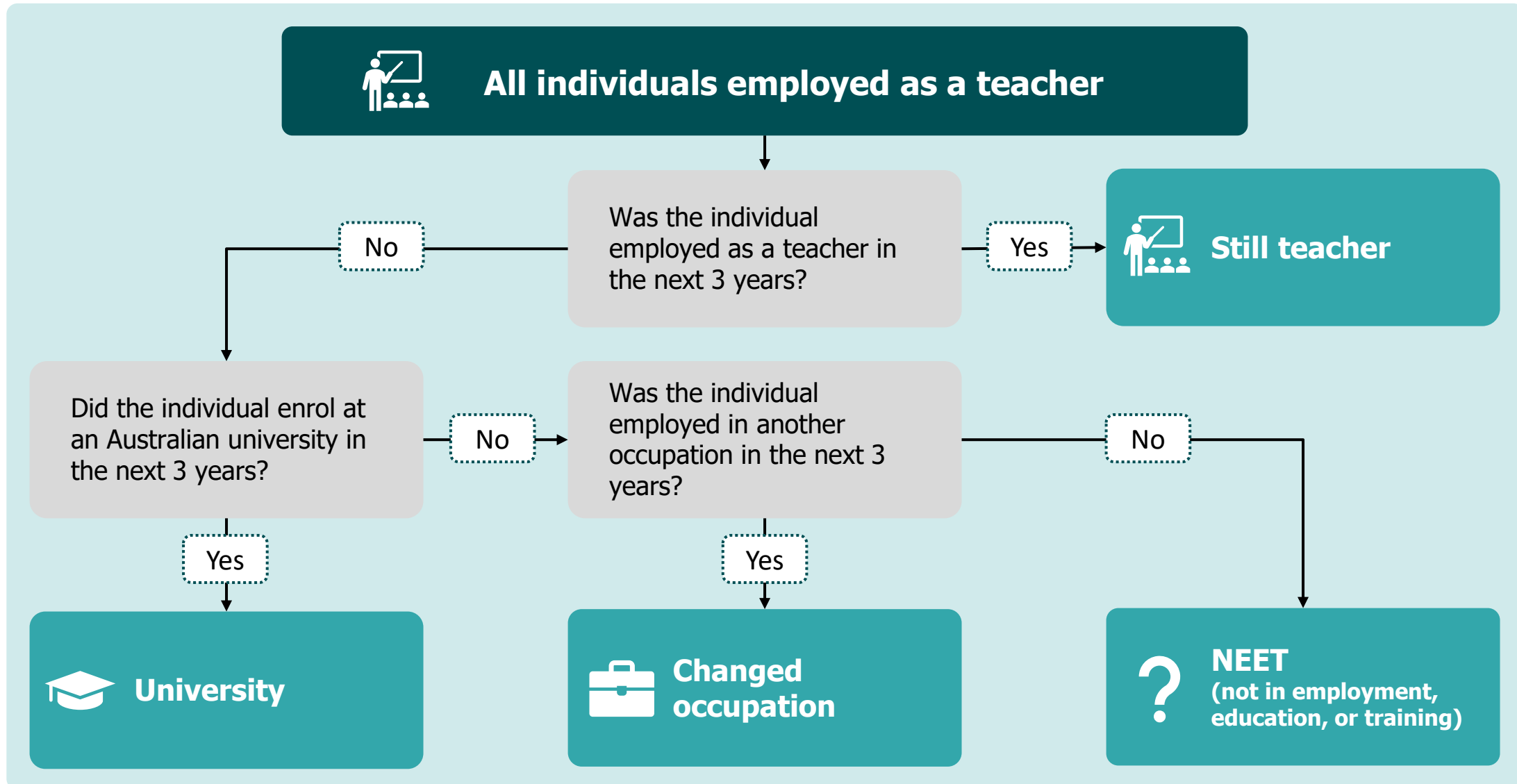
Number of classroom teachers  
Number employed in Australia, '000



\* Workforce data comes from the Australian Curriculum, Assessment and Reporting Authority (ACARA).  
Sources: ABS; e61

# Methodology

# Measuring teacher attrition

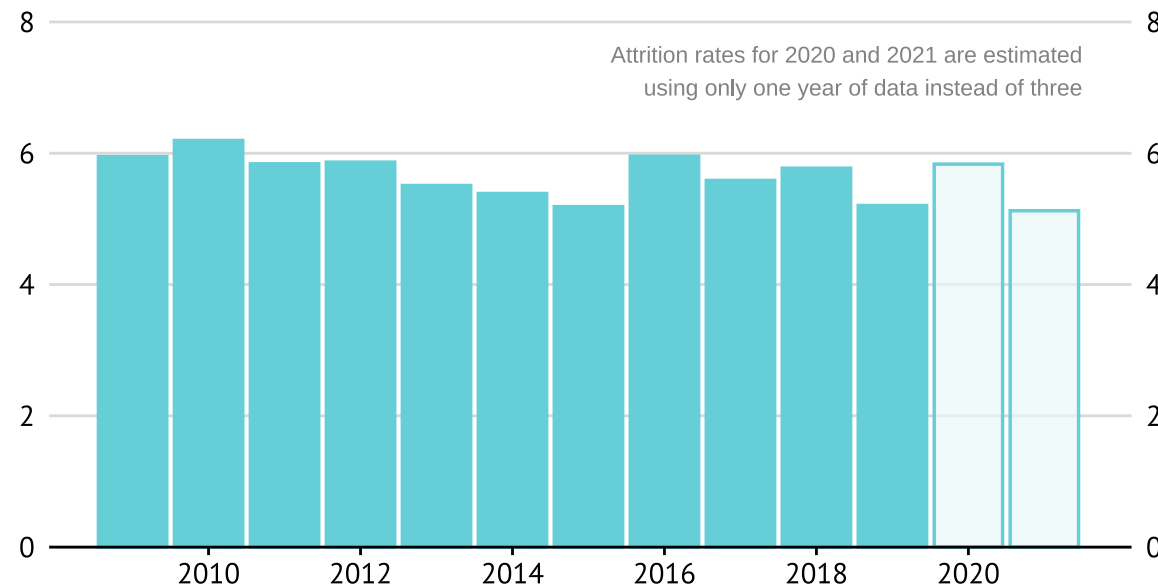


**How many teachers are leaving?**

# Between 5% and 6% of teachers leave the occupation each year

## Annual teacher attrition rate

Teachers of all ages attrition rate by year  
Share of employed teachers leaving each year, %



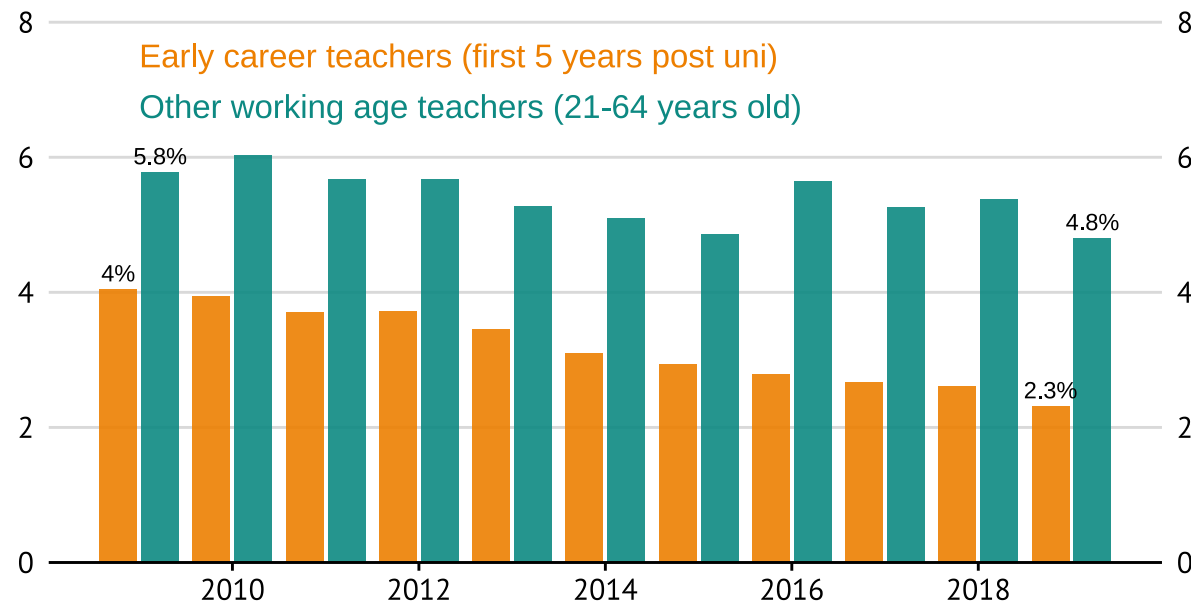
\* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Because the tax data we use to estimate attrition is only available up to 2022, attrition rates for 2020 and 2021 are estimated by looking ahead only one year instead of three (as in other years). They are then scaled to the equivalent three year rate based on past data.  
Sources: ABS; e61



# Attrition has declined further for early career teachers

## Annual teacher attrition rate

Working age teachers, by years since graduation  
Share of employed teachers leaving each year, %



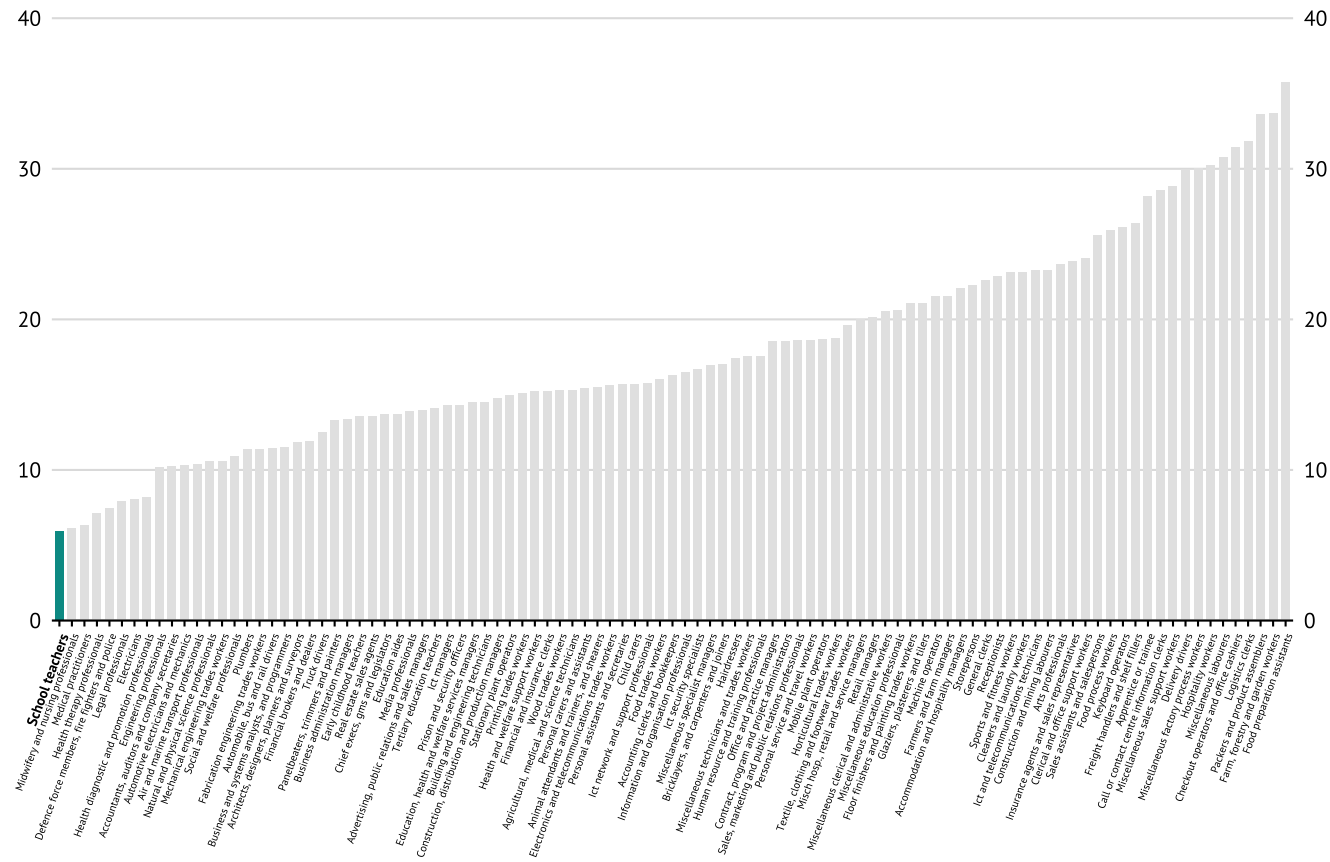
\* Early career teachers are defined as those who are in their first five years after graduating from their initial school teacher education course. Teachers are defined as having left the profession if they are not employed as a teacher for the next three years.

Sources: ABS; e61

# Teachers have relatively low rates of attrition

## Annual attrition rate across occupations

Individuals aged 21-64, by ANZSCO minor group  
Share of individuals leaving occupation, %



\* Individuals are defined as having left their occupation if they are not employed in that occupation for any of the next three years.

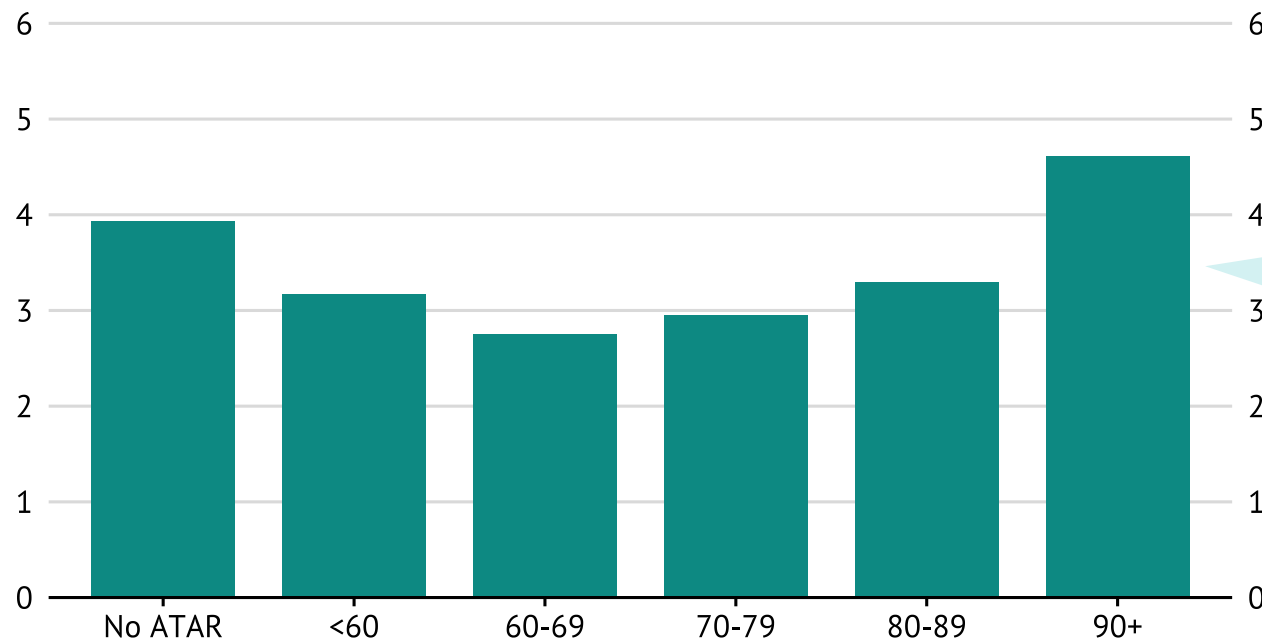
Sources: ABS; e61

# Attrition is concentrated in specific settings

## Attrition rate by teacher ATAR

Teachers aged 21-30

Average attrition rate between 2015 and 2017, %



Teachers with ATARs above 90 are about 70% more likely to leave than teachers with ATARs between 60 and 69

\* Mean attrition rates between 2015 and 2017. An individual's Australian Tertiary Admission Rank (ATAR), is a percentile ranking system used to measure a high-school student's academic performance relative to their peers in the same graduating year, with a score ranging from 0 to 99.95. ATAR scores are only available for teachers who started university after 2004. Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Sources: ABS; e61

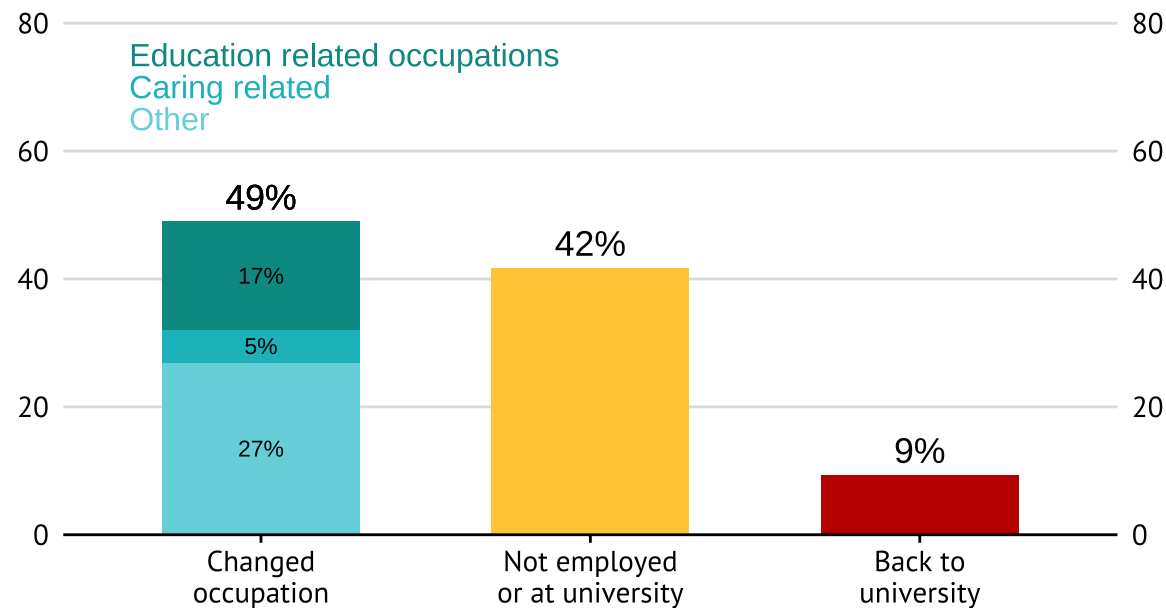
**Where do teachers go when they leave?**

# Many teachers who leave either move to another education related role or exit the workforce entirely

## Destination of school teachers leaving teaching

Teachers of all ages, excluding likely retirements

Teachers leaving between 2015 and 2019, %



\* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers aged over 60 who leave teaching, exit the labour force and are not at university for the next three years are excluded from this chart as likely retirements. Teachers are defined as going 'back to university' if they enrol at an Australian university (in a CSP or HELP supported) within 3 years of leaving. Teachers are defined as changing occupation if they enter a new job within three years of leaving teaching. Education related roles include education professionals and managers, as well as education aides. Caring related roles include all other carers and aides.

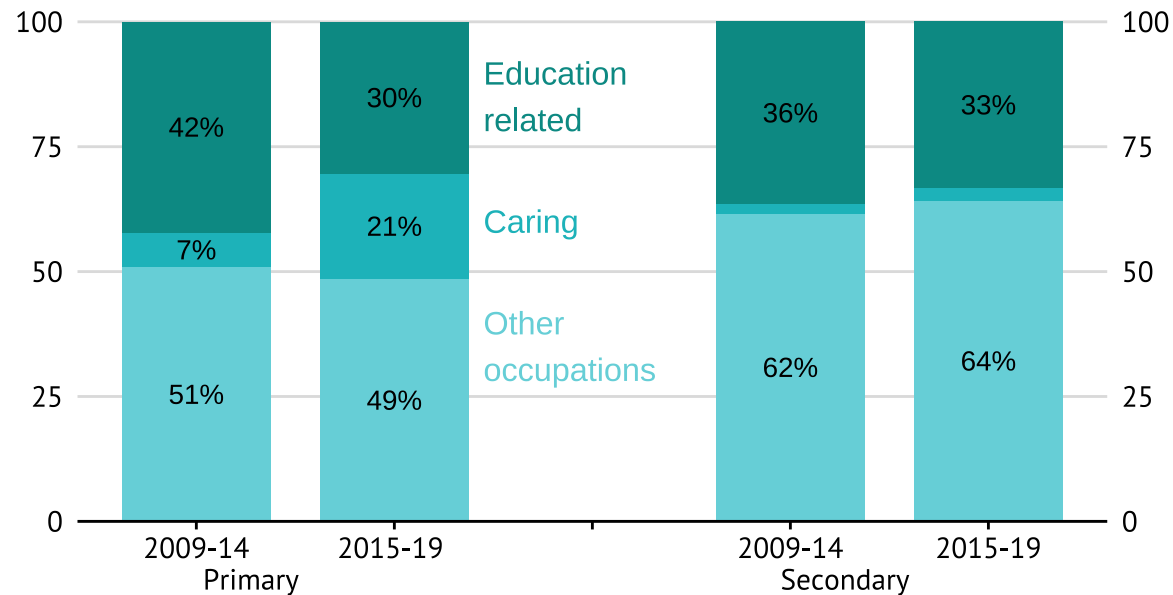
Sources: ABS; e61

# Of those who change occupations, a growing number are moving into the care economy

## Destination of school teachers changing occupations

Change in destination occupations

Teachers of all ages who changed occupation, %



\* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers are defined as changing occupation if they enter a new job within three years of leaving teaching. Education related roles include education professionals and managers, as well as education aides. Caring related roles include all other carers and aides.

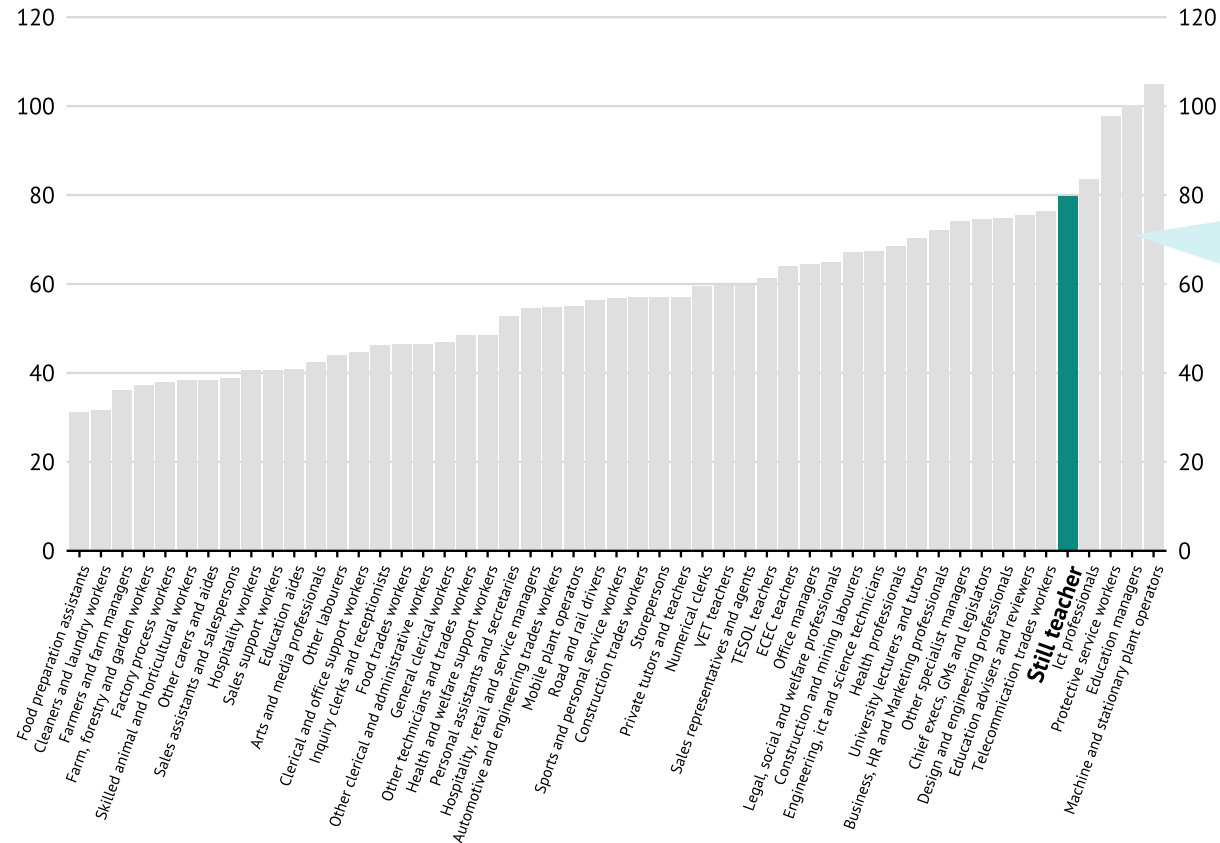
Sources: ABS; e61

**What role do financial factors play?**

# Most teachers who change occupation earn less over the long term

## Labour market outcomes of former teachers

Teachers aged 21 to 54 who left between 2009 and 2011  
Mean income 10 years later, 2023 prices, \$'000



Former teachers earn \$21,000 less than those remaining in the profession after 10 years, on average.

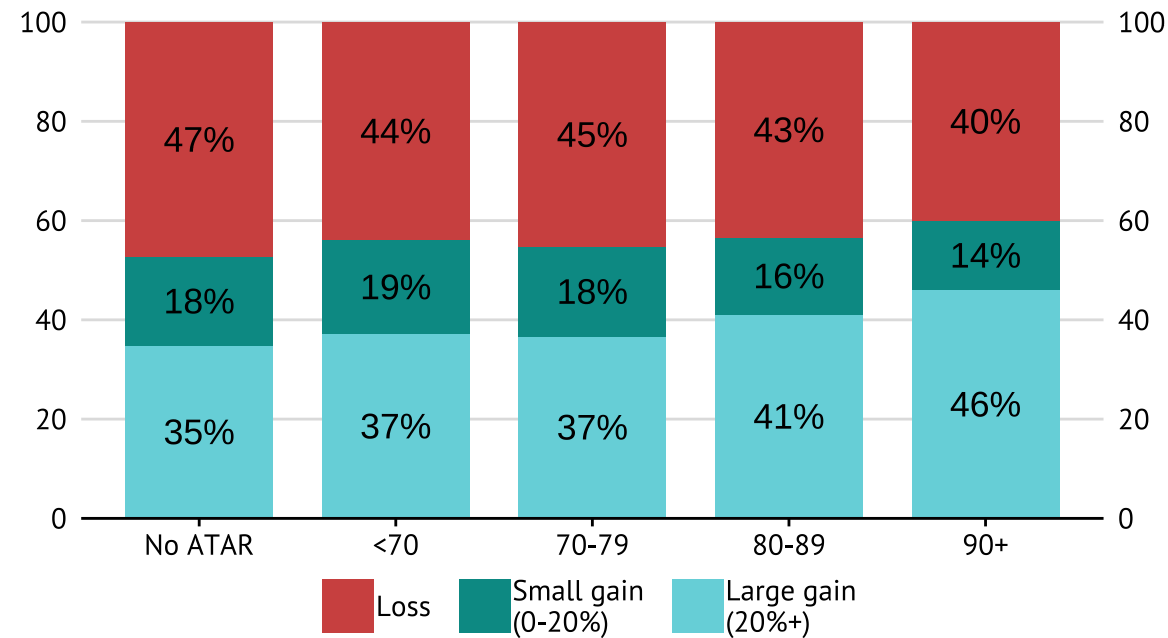
\* Mean wage income of former teachers 10 years after they left teaching. Data for 21 to 54 year old school teachers who left teaching and changed occupations. Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers leaving the profession are classified as having changed occupation if they report working in another occupation within the next three years. Destination occupations are recorded at the ANZSCO sub-division (2-digit) level with the exception of education professionals, which are recorded at the 4-digit level.  
Sources: ABS; e61



# High-ATAR teachers receive short term pay gains

## Pay gains by teacher ATAR

Teachers who changed occupation  
Increase in income relative to income as a teacher, %



\* The change in an individual's pay (annual wage income) is calculated by comparing the total wage income they earned in the year before leaving teaching to the total wage income they earned in the year after starting their new job. This calculation is conducted using only data from individuals who started working in another occupation within three years of leaving teaching. An individual's Australian Tertiary Admission Rank (ATAR), is a percentile ranking system used to measure a high-school student's academic performance relative to their peers in the same graduating year, with a score ranging from 0 to 99.95. ATAR data is only available for teachers who entered university from 2005.

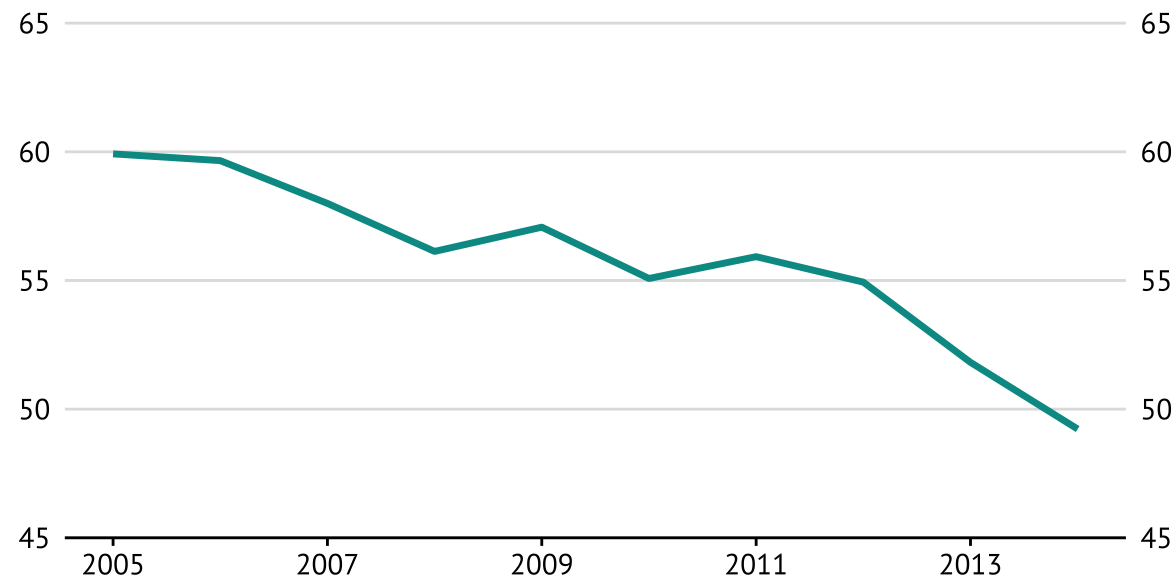
Sources: ABS; e61

**What else could be constraining teacher supply?**

# Completion rates in teaching degrees are falling

## Completion rate of teaching students

Students studying a bachelors degree, by first year of enrolment  
Completion rate within 6 years, %

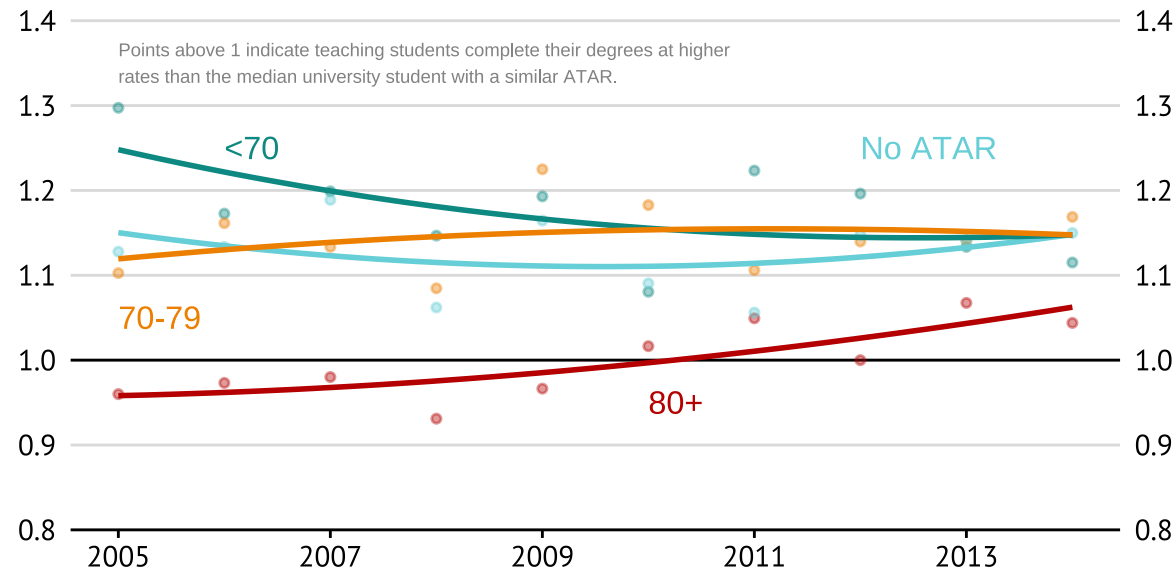


\* Sample includes CSP and HELP eligible undergraduate students who started their courses between 2005 and 2014. An individual's Australian Tertiary Admission Rank (ATAR), is a percentile ranking system used to measure a high-school student's academic performance relative to their peers in the same graduating year, with a score ranging from 0 to 99.95.  
Sources: ABS; e61

# Although teaching completion rates remain in line with completion rates in other fields

## Teaching completion rates relative to median university completion rate

Completion rate within 6 years  
Ratio relative to median rate for given ATAR



\* Ratio of teaching completion rate relative to median narrow field completion rate for students of a given ATAR. Points above (below) 1 indicate first year teaching students complete their degrees at higher (lower) rates than the median rate for students with a similar ATAR.

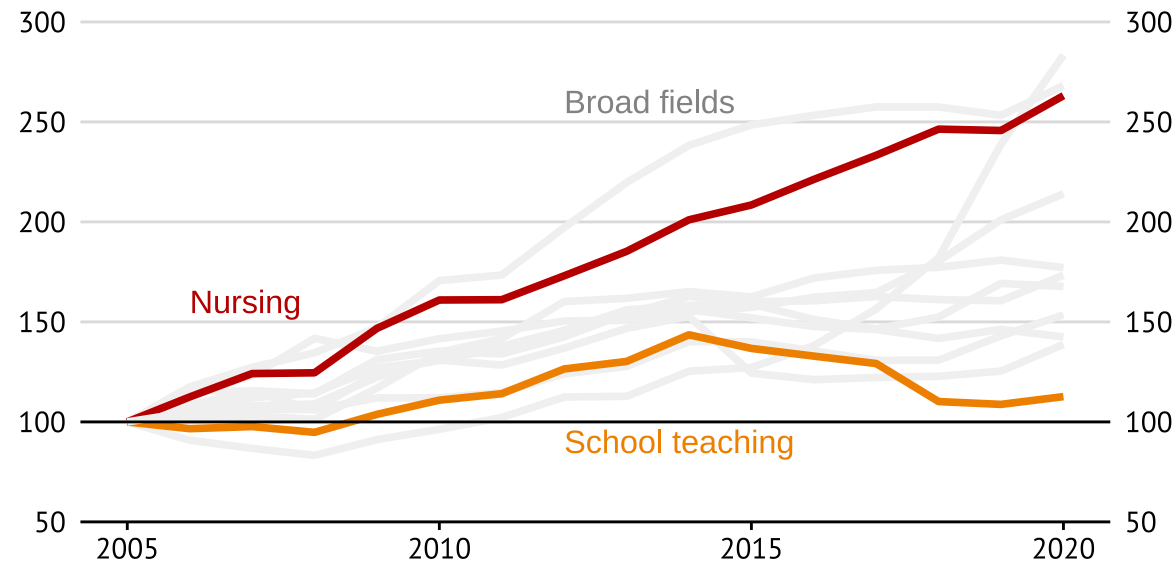
Sources: ABS; e61

# New university enrolments in teaching have fallen far behind other fields

## New university degree commencements

By field of education

CSP and HELP eligible student commencements, index 2005 = 100



\* The Higher Education Information Management System (HEIMS) data we use includes students who are enrolled in a Commonwealth Supported Place (CSP) or apply for Higher Education Loan Program (HELP) loan. We define teaching students as those enrolled in primary teacher education (070103) or secondary teacher education (070105) courses. We further narrow the focus of our analysis to students enrolled in or completing a Bachelors, Masters (non-research), or Graduate Diploma course. For degree commencements, we use the date the student first enrolled in a unit (consumed student load) in that course. There are several important limitations of this data which we discuss in Appendix C.2.4. Sources: ABS; Department of Education; e61

# Conclusion

# Conclusion

- Teacher attrition rates are relatively low and falling, especially for early career teachers
  - Early career teacher attrition rates declined from 4% in 2009, to 2.3% in 2019
  - Teachers have lower rates of attrition than most other occupations
- Not all attrition is harmful with many teachers leaving to take up other education related roles or take time out of the workforce before later returning
- Financial factors appear to play a limited role in explaining teacher attrition with most teachers who change occupation earning less in the long term
- Teacher supply is constrained further up the pipeline with new enrolments in teaching degrees falling far behind other fields

**Spares**

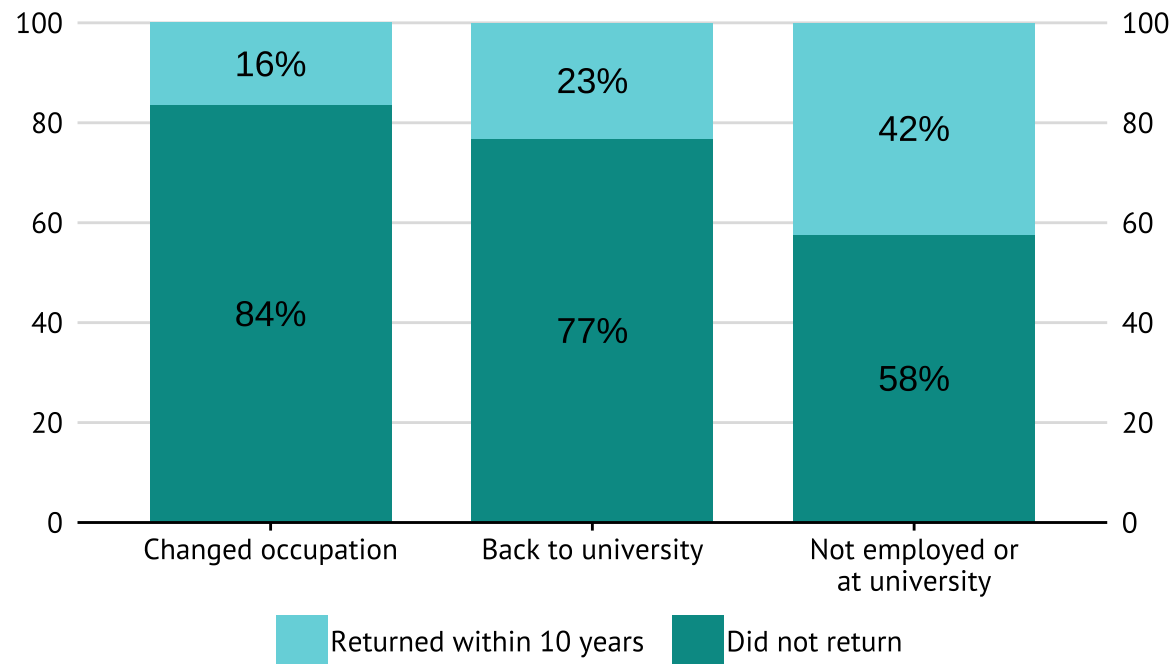


# Of those who exit the workforce, many later return to teaching

## Share of former teachers who return to teaching

Teachers of all ages

Teachers leaving between 2009 and 2011, %

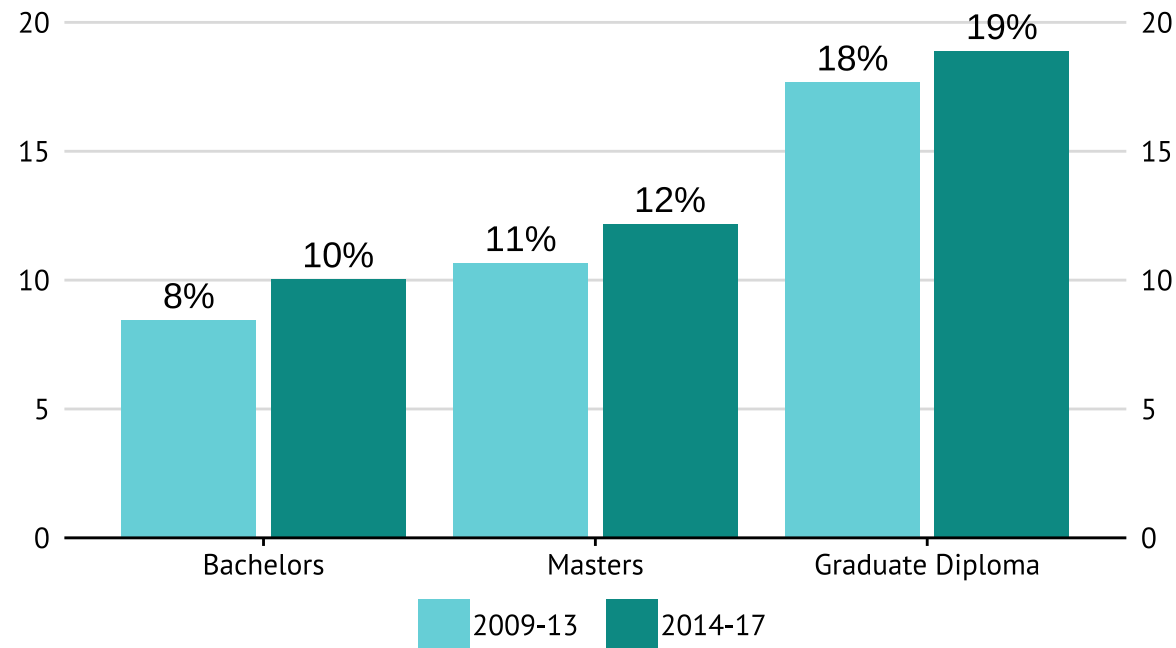


\* Teachers are defined as having left the profession if they are not employed as a teacher for the next three years. Teachers are then classified as having returned if they are again employed as a teacher 10 years after leaving teaching. Teachers are defined as going 'back to university' if they enrol at an Australian university (in a CSP or HELP supported) within 3 years of leaving. Teachers are defined as changing occupation if they enter a new job within three years of leaving teaching. Education related roles include education professionals and managers, as well as education aides. Caring related roles include all other carers and aides. Sources: ABS; e61

# A growing share of teaching graduates never go on to work as teachers

## Share of teaching graduates never employed as a teacher

Teachers who graduated from 2009 to 2017, by course type  
Share never employed as a school teacher, %



\* Employment as a teacher is based on whether a graduate ever reports being a school teacher as the main occupation in which they earned wage and salary income on their personal income tax return. Individual who study school teaching but never report it as their main occupation will be counted as never being employed as a teacher.

Sources: ABS; e61