

A New Measure of Job Searchers for Australia

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Abstract

The RBA's assessment of spare capacity in the labour market incorporates the signal from a broad suite of indicators. The ratio of job vacancies to unemployed persons, which attempts to assess the imbalance between unmet labour demand and the labour supply available to meet this demand, is a standard measure of spare capacity in the labour market. One shortcoming of this measure is that it implicitly assumes that job vacancies are only filled by the unemployed. In practice, job vacancies are also filled by other job searchers who may be outside the labour force or searching on the job. This article describes the construction and characteristics of a more comprehensive measure of job searchers (the Searchers Index) that considers both the unemployed and those who are not classified as being unemployed. The Searchers Index allows us to construct an alternative measure of spare capacity (the vacancies-to-searchers ratio), which exhibits different properties to the vacancies-to-unemployed ratio. The vacancies-to-searchers ratio will be included in the suite of indicators that we monitor to assess spare capacity in the labour market moving forward.

Introduction

Understanding the extent of spare capacity (or conversely, tightness) in the labour market is important for the RBA's dual mandate of price stability and full employment. First, the *Statement on the Conduct of Monetary Policy* requires the RBA to communicate its assessment of how labour market conditions stand relative to full employment (Ballantyne, Sharma and Taylor 2024). Second, tightness in the labour market can impact the degree of inflationary pressures in the economy. RBA staff therefore closely monitor a number of measures of tightness when assessing conditions in the labour market.¹ One commonly used measure is the ratio of job vacancies to unemployed persons (the V-U ratio), which attempts to gauge the mismatch between labour demand (proxied by job vacancies) and the potential labour supply that could meet this demand (proxied by the unemployed). The V-U ratio has eased since its mid-2022 peak but continues to be well above pre-pandemic levels.

A key shortcoming of the V-U ratio is that the unemployed are only a subset of all job searchers and hence the ratio effectively ignores how searchers outside of unemployment contribute to the filling of vacancies. The Australian Bureau of Statistics (ABS) defines the unemployed as non-working individuals aged 15 years and over who have either actively looked for work in the previous four weeks and were available to work in the reference week of the Labour Force Survey or were waiting to start a job within four weeks from the end of the reference week but could have started working during the reference week had the job been available. However, many people fall outside this definition despite being able to fill vacancies, such as those who are looking for work but only passively, or those actively looking for work but who were not available to start work in the reference week. Furthermore, the V-U ratio places equal weight on each unemployed person despite some unemployed people (e.g. those who have remained unemployed for a long time) having a persistently lower probability of finding a job.

To address these limitations, I construct a more comprehensive measure of 'effective job searchers' called the 'Searchers Index' (SI). This measure of effective searchers not only accounts for the unemployed but also accounts for those 'not in the labour force' (NILF) and those who are employed who may be searching on-the-job. To do this, I first disaggregate the working age population into 11 labour market cohorts. Using microdata from the ABS' Longitudinal Labour Force Survey, I calculate each cohort's share of the population and their probability of finding a job – their job-finding rate (JFR) – over time (which is used to construct the SI). I then apply weights to each labour market cohort to capture variation in these JFRs and population shares, resulting in a measure of 'effective searchers' in the economy. Due to limitations on data availability, the sample begins in 2001.

Several overseas studies have also attempted to construct measures of effective job searchers. They have also first divided the population into several cohorts of searchers. In these studies, the weight applied to each cohort is fixed at either the ratio of the cohort's JFR at a point in time or the cohort's long-run average JFR relative to that of a chosen base cohort (Abraham, Haltiwanger and Rendell 2020; Byrne and Conefrey 2017; Heise, Pearce and Weber 2024; Hornstein, Kudlyak and Lange 2014; Kudlyak 2017). The key disadvantage of using a fixed weight is that the chosen weight may become less reflective of the cohort over time. My approach extends the literature by using Australian microdata and by allowing the weights to vary over time.²

In this article, I discuss different cohorts of job searchers and describe how the SI is constructed using these cohorts. I find that drawing together information on job vacancies and effective searchers into a vacancies-to-searchers ratio (V-S ratio) leads to a new and more comprehensive indicator of labour market tightness.

Job searchers in Australia

There are different types of job searchers in the economy, each with varying degrees of attachment to the labour market and hence impacts on labour market outcomes. For example, an individual who has been unemployed for a short period of time is more attached to the workforce than someone outside the labour force who has reported that they are unable to work or has retired. Figure 1 shows a disaggregation of the working age population into 11 mutually exclusive labour market cohorts, or types of searchers, based on their likely attachment to the labour force or, for the employed, their assessed incentive to find another job (see Appendix A for further detail on these cohorts).

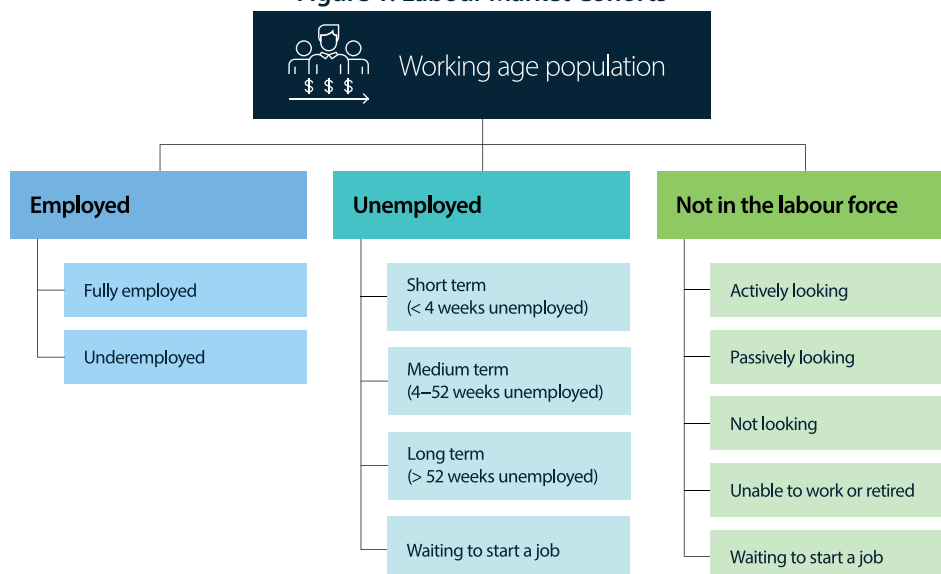
I initially divide the working age population into the three main labour market states – the employed, unemployed and those not in the labour force. In turn, I split the employed into those who are underemployed and those who are not (i.e. the ‘fully employed’); the underemployed likely have a greater incentive to switch jobs or find an additional job as they tend to be dissatisfied with their current working hours. I generally group the unemployed based on their duration of unemployment, split into short-, medium- and long-term unemployed.³ Finally, I categorise those not in the labour force into those who are conceptually most similar to the unemployed but who do not meet the criteria to be officially classified as being unemployed (i.e. those who actively or passively looked for work) and those less likely to engage in job search activities (i.e.

those who have reported that they are ‘not looking’ for work or ‘unable to work or retired’). I split out the individuals who are waiting to start a job (classified as either unemployed or being outside the labour force) because their attachment to a job means they are much more likely to find a job compared with other cohorts.

I consider how each cohort’s share of the population and JFR (which are inputs into the SI) varies. For the employed, the JFR refers to the probability that they either switch a job or gain an additional job over a one-month period.⁴ For the unemployed or those outside the labour force, the JFR is the likelihood that the individual transitions into employment over the month. The JFRs for each cohort subsequently imply a *relative* JFR for the cohort, which is defined as the cohort’s JFR as a ratio to the average JFR for the population (where the average JFR can be interpreted as the probability that the average individual in the population is able to secure a job).⁵

There is considerable variation in relative JFRs and population shares across cohorts, which lends support to the differentiated treatment of each cohort in the SI.⁶ Relative JFRs are generally highest for cohorts who are waiting to start a job; these individuals are already attached to a job and are therefore most likely to transition into employment within a month (Graph 1). Those who have been unemployed for shorter durations (the short- and medium-term unemployed) and cohorts outside the labour force who are actively or passively looking for work have the next-highest relative JFRs.

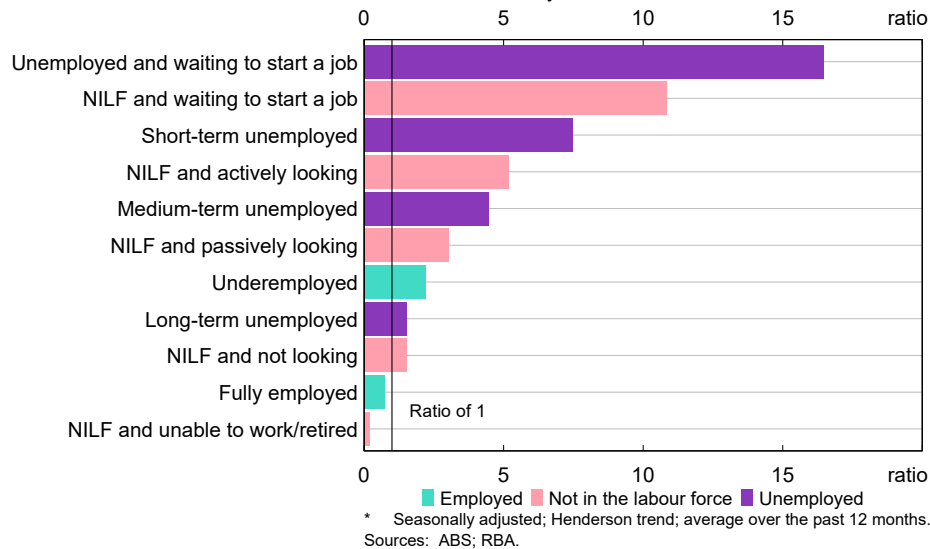
Figure 1: Labour Market Cohorts



Graph 1

Relative Probability of Finding a Job Within a Month*

By labour market cohort



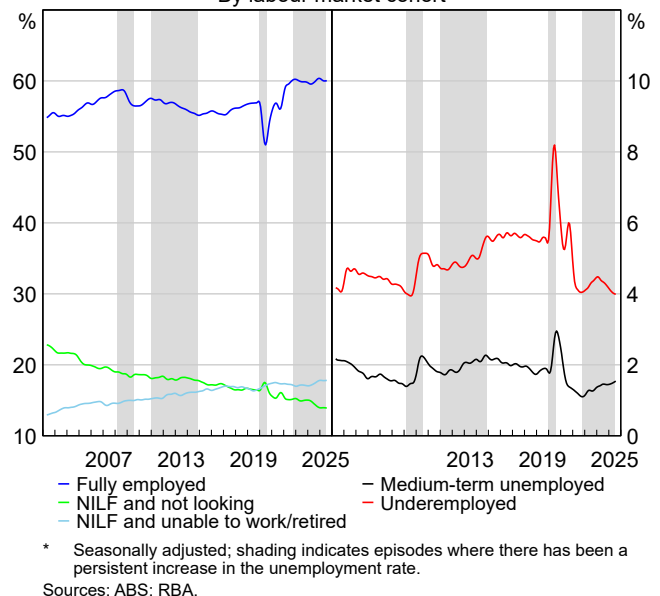
For example, the short-term unemployed are around seven times more likely to find a job in the month than the average individual in the population. By contrast, the relative JFRs of the employed, particularly the fully employed, are low; the fully employed are around 30 per cent less likely to switch jobs or find an additional job than an average individual in the population. In general, this is likely because the fully employed have less incentive to switch jobs or find a secondary job if they are already satisfied with their current working hours. As expected, those who are long-term unemployed or who are outside the labour force and have indicated that they are either unable to work or retired or not looking for work also have low JFRs.⁷

Cohorts with lower relative JFRs tend to have larger population shares (and vice versa). For instance, the fully employed account for a sizeable share of the population (around 60 per cent) but have a relatively low JFR, as do those that are outside the labour force who have either reported that they are not looking for work or are unable to work or retired (who account for 14 and 18 per cent of the working age population respectively) (Graph 2). Conversely, those waiting to start a job have the highest relative JFRs but account for a very small share (around 0.6 per cent) of the population (Graph 3).

Graph 2

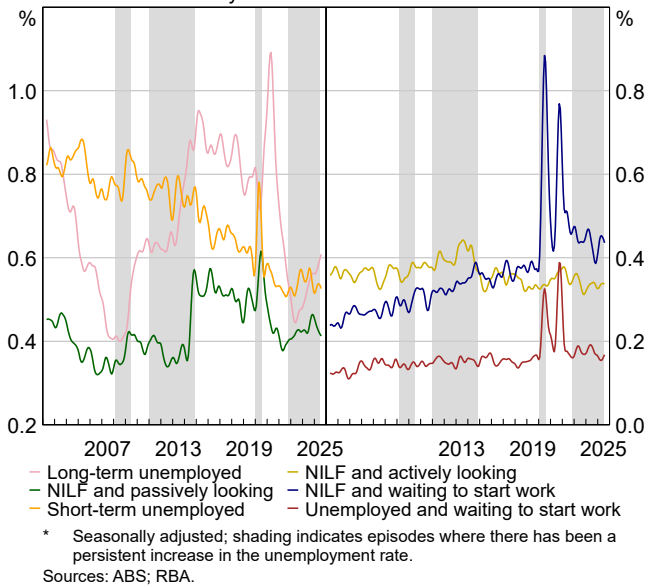
Share of the Working Age Population*

By labour market cohort



Graph 3

Share of the Working Age Population* By labour market cohort



Changes in population shares over time reflect broader demographic and labour market trends. The increased rate of participation in the workforce over time, especially by women, has contributed to the share of the population that is fully employed rising to be around its highest level since the early 2000s; the fully employed share of the population has remained around this elevated level since late 2022. Relatedly, the share of the population that is outside the labour force and reportedly not looking for work has trended down. An ageing population has also contributed to the upwards trend in the share of the population who are unable to work or retired. The downwards trend in the short-term unemployed share (which typically captures the unemployed who are between jobs) could partially reflect the long-run decline in the job mobility rate and, in turn, a general decline in business dynamism (Ellis 2021).

How is the Searchers Index constructed?

The SI is constructed broadly as follows (with further detail on the methodology provided in Appendix A):⁸

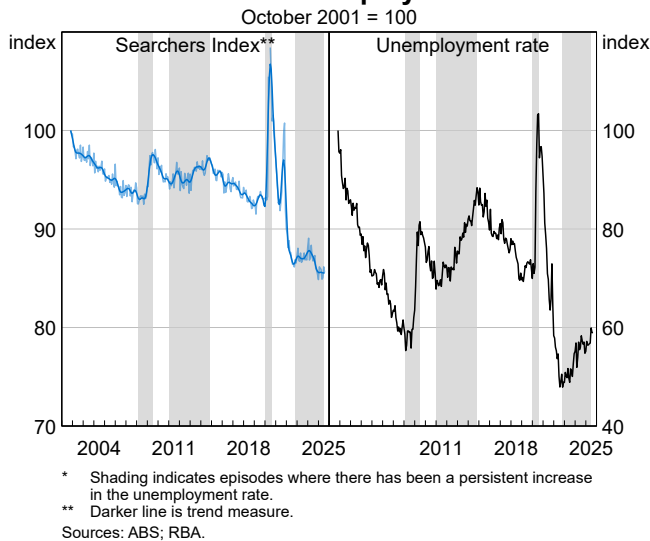
1. After disaggregating the working age population into the 11 labour market cohorts discussed above, each cohort's share of the population and relative JFR over time is calculated.
2. The percentage change in the SI in a certain month is given by a weighted average of the rate of growth in each cohort's share of the population in that month. The weight assigned to each cohort is given by their share of total hires and is allowed to vary over time. A cohort's share of total hires is equal to the product of their relative JFR and their share of the population.⁹ This means the weight assigned to a cohort increases with how intensely each cohort searches for a job (proxied by their relative JFR) and their relative importance (or their share of the population).
3. Taking together the series of (percentage) changes in the SI over time results in an aggregate index (i.e. the SI). The SI can be decomposed into the contributions of each underlying cohort; some of these are presented below. Each cohort's contribution to the SI mechanically increases (decreases) alongside an increase (decrease) in their share of the population.¹⁰

What does the Searchers Index tell us?

The SI and the unemployment rate move together, which suggests they both capture broad trends in labour market tightness (Graph 4). As with the unemployment rate, a decline (increase) in the SI is generally indicative of tighter (looser) conditions in the labour market, all else equal. For the SI, this is because it suggests that there are fewer (more) job searchers available to meet firms' demand for labour (as proxied, for instance, by job vacancies). Both series tend to be countercyclical; the SI tends to increase during a labour market downturn (defined as a period during which the unemployment rate is rising) and decline during the subsequent recovery. That said, there are periods in which these measures evolve differently, which may point to differences in effective searchers among the

unemployed and other cohorts. For example, while the SI has declined since early 2024, the unemployment rate has risen over this period. This implies that while there were more unemployed effective searchers, there was also an offsetting reduction in searchers outside of unemployment such that the measure of effective searchers declined in aggregate. The SI has stabilised in recent months alongside several other labour market indicators such as job vacancies and measures of employment intentions. Together, these outcomes highlight the importance of considering a range of indicators besides the unemployment rate when assessing labour market conditions.

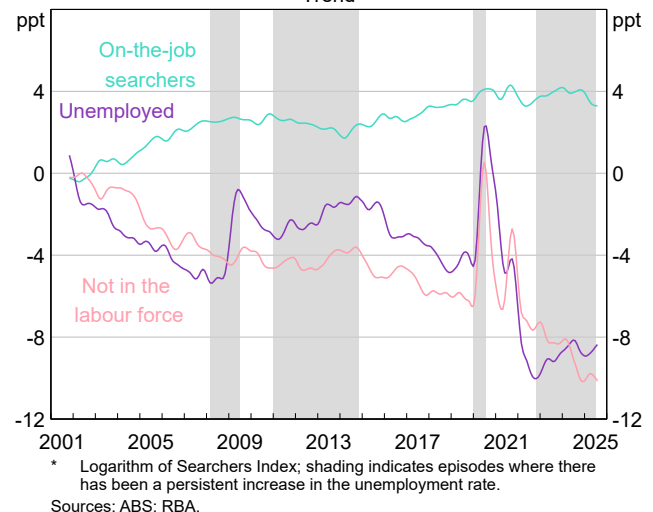
Graph 4
Searchers
Index and the Unemployment Rate*



The SI is considerably less cyclical compared with the unemployment rate. This is likely because the SI captures other labour market cohorts who help to dampen the cyclicity of the unemployed. In a downturn, the unemployed share of the population tends to rise, resulting in an increasing unemployment rate. However, there could also be a decline in the share of on-the-job searchers during a downturn such that the SI may not rise as much as the unemployment rate. If we only take signal from the unemployment rate (for a given level of vacancies), we may therefore overstate the easing in the labour market relative to the case where we also considered the SI (which accounts for changes in search activity among, for example, the employed).

The SI captures longer run trends in the participation rate and employment-to-population ratio, as trends in cohorts' population shares directly influence their contributions to the SI (as described above). This can be observed by examining, for simplicity, the contributions of the three main labour market states (i.e. employment, unemployment and not in the labour force) to the SI.¹¹ The contribution of the employed has trended up while the contribution of those outside the labour force has trended down, consistent with the upwards trends in the employment-to-population ratio and the participation rate (Graph 5). The overall contributions of the employed and NILF cohorts to the SI are largely influenced by these long-run trends. By contrast, the contribution of the unemployed is notably countercyclical.

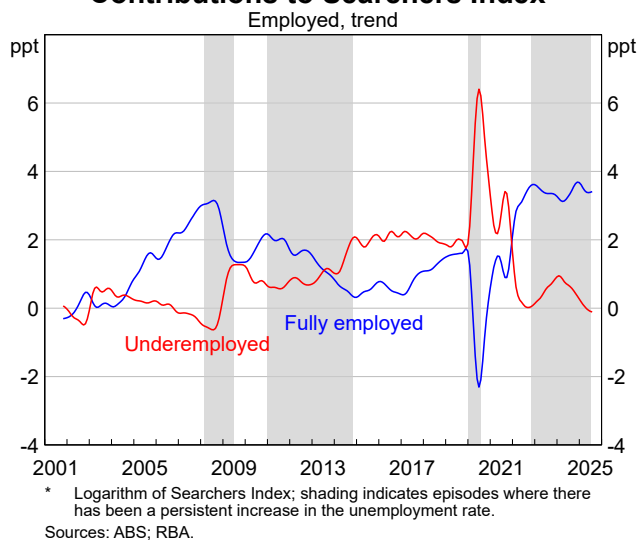
Graph 5
Contributions to the Searchers Index*



In general, the redistribution of workers from a cohort with a higher relative JFR to one with a lower relative JFR tends to weigh on overall search activity and the SI. Over time, as workers have increasingly moved into employment (which tends to be associated with a lower relative JFR), consistent with an upwardly trending employment-to-population ratio, the SI has trended down. This is further shown in Graph 5, with the general downward trends in the contributions of the NILF and unemployed cohorts (who tend to have higher relative JFRs) dominating the upwards trend in the contribution of the employed, who tend to have lower relative JFRs. Overall, the slight decline in the SI since early 2024 largely reflects a reduction in effective searchers who are classified as being outside the labour force.

These aggregated contributions can mask differences across the underlying cohorts. For example, within the employed group, the fully employed and underemployed cohorts behave in opposing ways over the business cycle (Graph 6). Similar to the unemployed, the contribution of the underemployed tends to move countercyclically, as observed during the global financial crisis, as the underemployment rate typically rises when the labour market eases. By contrast, the contribution of the fully employed tends to fall when labour market conditions soften.

Graph 6
Contributions to Searchers Index*

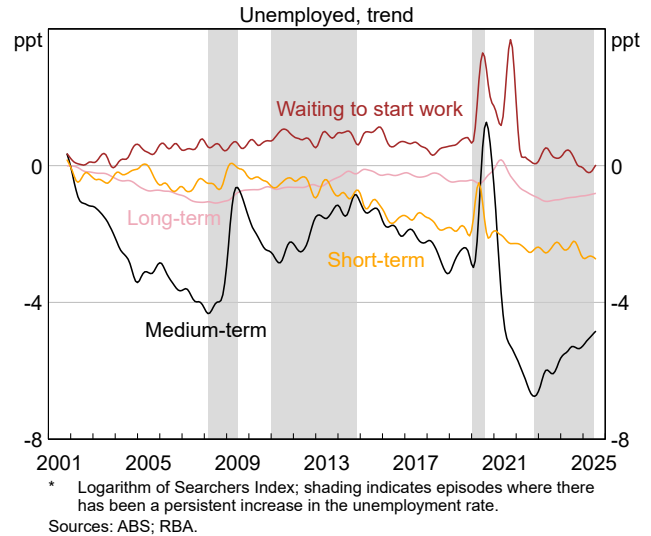


The medium-term unemployed, who typically capture cyclical unemployment, look to be driving most of the cyclicity in the overall contribution of the unemployed (Graph 7). The contributions of most other unemployed cohorts and cohorts outside the labour force do not tend to respond systematically to the business cycle.¹²

What does the V-S ratio tell us?

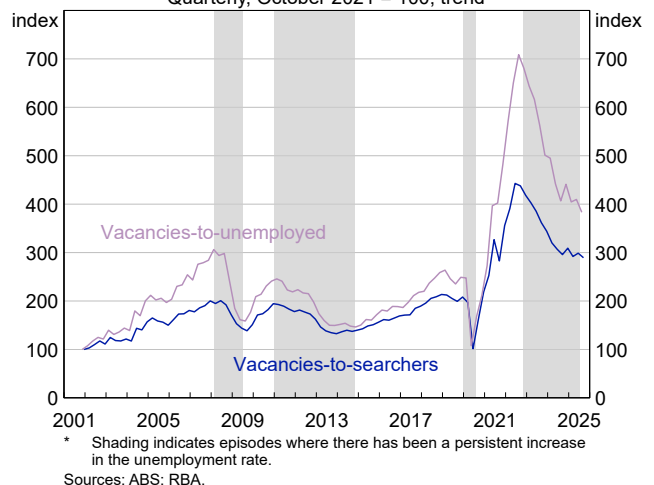
The SI allows us to construct a more comprehensive measure of labour market tightness called the V-S ratio. As with the V-U ratio, the V-S ratio attempts to capture the balance between the demand for labour (proxied by job vacancies) and the potential supply of labour that could meet this demand. That said, unlike the V-U ratio, the V-S ratio recognises that vacancies are not only filled by the unemployed but also by other job searchers who are either already employed or who are outside the labour force.

Graph 7
Contributions to Searchers Index*



The V-S and V-U ratios tend to co-move as the unemployment rate and SI are correlated (Graph 8). Both measures suggest that tightness in the labour market increased significantly after mid-2020 to reach a record high in mid-2022 and that labour market tightness has subsequently eased. More recently, the V-S ratio looks to have stabilised somewhat while the V-U ratio has declined further. Both ratios remain at levels that are above pre-pandemic outcomes. Despite the upwards trends in these series, these indicators provide some evidence that conditions in the labour market remain somewhat tight.

Graph 8
Measures of Tightness*



Given that the V-S ratio captures a much broader set of potential job searchers, we intend to include the V-S ratio in the suite of measures of spare capacity we monitor on a regular basis. Furthermore, we plan to investigate its relationship with wages growth and inflation as some overseas studies have found that the V-S ratio could be a relatively good predictor of these variables (Heise, Pearce and Weber 2024).

Conclusion

The SI tends to move together with the unemployment rate, although it exhibits considerably less cyclical. By considering those searching on-the-job or while outside the labour force, it accounts for the possibility that an increase in unemployed searchers could be offset by a decline in searchers from another cohort. This dampens the degree to which effective searchers changes over time relative to that implied by the unemployment rate. The SI captures the net effect of movements of workers between cohorts with different (relative) JFRs, including the impact of broader labour market trends. The V-S ratio constructed using the SI and the V-U ratio evolve similarly; both suggest that labour market conditions remained somewhat tight over 2025. Nevertheless, it is important to note that the RBA considers a number of labour market indicators when forming its assessment of full employment as each measure has its own limitations, and that the V-S ratio is but one of many metrics that can be included in the RBA's toolkit.

Appendix A: Description of labour market cohorts and further detail on the Searchers Index

Cohort descriptions

Table A.1 provides descriptions of the 11 labour market cohorts underlying the Searchers Index.

Table A.1: Labour Market Cohorts

Cohort	Definition
Employed	
<i>Underemployed</i>	Consistent with the ABS definition of underemployment, this category includes those who are working part-time and are willing and able to work more hours and those who are usually working full-time but who worked less than 35 hours in the reference week for economic reasons (e.g. there was insufficient work available or they were stood down).
<i>Fully employed</i>	Any employed person who does not fall within the ABS definition of underemployment.
Unemployed	
<i>Waiting to start a job</i>	An unemployed person who is waiting to start a job in the next four weeks and who was available to work in the reference week if the job was available then.
<i>Short-term unemployed</i>	Those who have been unemployed for less than four weeks and are not an unemployed person waiting to start a job.
<i>Medium-term unemployed</i>	Those who have been unemployed for four to 52 weeks and are not an unemployed person waiting to start a job.
<i>Long-term unemployed</i>	Those who have been unemployed for more than 52 weeks and are not an unemployed person waiting to start a job.
Not in the labour force	
<i>Actively looking</i>	Those who have taken active steps to seek work (e.g. by applying to vacancies or interviewing) but who were not available to start in the reference week and therefore were not classified as 'unemployed'.
<i>Passively looking</i>	Those who have taken some steps to seek work (e.g. by looking on job advertisement platforms).
<i>Waiting to start a job</i>	A person who is waiting to start a job but who did not meet the definition of an unemployed person waiting to start a job described above.
<i>Not looking</i>	Those who have reported that they have not taken any steps to look for work.
<i>Unable to work or retired</i>	Those who are permanently unable to work, institutionalised or at a boarding school or who are permanently not intending to work and aged 65 and over.

Sources: ABS; RBA.

Further detail on the construction of the Searchers Index

The SI is constructed using a chained Tornqvist index. Growth in the SI is defined as a weighted average of the percentage growth in each cohort's share of the population (Equation 1). The weight applied to each cohort is a simple average of its share of total hires in the current and previous months. As a cohort's share of hires can be expressed as the product of its relative JFR and population share, cohorts are effectively weighted by (a proxy of) how intensely they search for work and their importance in the population respectively. In particular, the share of total hires of cohort i at time t can be written as $\frac{hires_{i,t}}{total\ hires_t} = \frac{JFR_{i,t} \times Population_{i,t}}{JFR_t \times Population_t} = Relative\ JFR_{i,t} \times Population\ share_{i,t}$.

Equation 1 implies that the (log) SI in month T is the sum of the cumulative contributions of each cohort to the SI over time given an arbitrary and unobserved initial level for the SI (SI_0) (Equation 2).

$$\log\left(\frac{SI_t}{SI_{t-1}}\right) = \sum_{i=1}^n x_{i,t} \log\left(\frac{Pop\ share_{i,t}}{Pop\ share_{i,t-1}}\right) \quad (1)$$

$$\log(SI_T) = \sum_{i=1}^n \sum_{t=1}^T x_{i,t} \log\left(\frac{Pop\ share_{i,t}}{Pop\ share_{i,t-1}}\right) + \log(SI_0) \quad (2)$$

Where n is the number of cohorts, $x_{i,t}$ is the weight applied to cohort i and $Pop\ share_{i,t}$ is cohort i 's share of the population at time t .

The contribution of cohort i to the (log) SI at time T given an initial level for the SI (SI_0) is given by:

$$\sum_{t=1}^T x_{i,t} \log\left(\frac{Pop\ share_{i,t}}{Pop\ share_{i,t-1}}\right)$$

Each cohort's contribution to the change in the SI between period $t-1$ and period t is $x_{i,t} \log\left(\frac{Pop\ share_{i,t}}{Pop\ share_{i,t-1}}\right)$. Since $x_{i,t}$ is the weight (or the average share of total hires) for cohort i and is non-negative, the sign of each cohort's contribution is determined by the percentage change in their share of the population or $\log\left(\frac{Pop\ share_{i,t}}{Pop\ share_{i,t-1}}\right)$.

Endnotes

- * The author completed this work while in Economic Analysis Department. The author would like to thank Martin McCarthy, Mike Major and Kevin Lane for helpful discussions on this work.
- 1 For our latest assessment of spare capacity in the labour market, see RBA (2025).
 - 2 Previous literature constructed measures of effective searchers by calculating a weighted average of the quantity of each type of job searcher using fixed weights. It is natural to want to account for time-varying weights but this is not straightforward. With time-varying weights, the resulting measure of searchers will not be a 'pure' measure of changes in the quantities of each type of job searcher. That is, the measure of effective searchers may vary due to a change in a cohort's JFR even if the quantity of each type of job searcher is held constant. McCarthy (forthcoming) proposed the use of a chained Tornqvist quantity index, which is a pure measure of changes in the quantity of effective searchers that uses time-varying weights.
 - 3 Specifically, they can be short-term, medium-term or long-term unemployed if they have been unemployed for fewer than four weeks, between four and 52 weeks and over 52 weeks respectively.
 - 4 I account for secondary jobs gained as they also contribute to the filling of vacancies and are of importance now given that the multiple job-holding rate remains elevated (see ABS (2025)).
 - 5 The average JFR of the population – the aggregate JFR – is a weighted average of cohort-specific JFRs. The weights used in the construction of the aggregate JFR refer to each cohort's share of the population.
 - 6 It is worth noting that these JFRs refer to the unconditional probability that an individual finds work rather than the probability they find work *conditional* on them searching for work. Hence, a cohort can have a low JFR simply because many individuals in that cohort do not search for or accept a job. For an unemployed individual, the unconditional and conditional (given they are searching for a job) probabilities of finding a job should be identical as the unemployed are, by definition, actively searching for a job. However, these two probabilities could differ for the employed and those outside the labour force as the probability they find a job, conditional on the individual already searching for a job, should be higher than the relevant unconditional probability.
 - 7 The low (relative) JFR for the long-term unemployed is consistent with the finding in Cassidy *et al* (2020).
 - 8 The formula underlying the SI is called a 'chain Tornqvist index' and is recommended by McCarthy (forthcoming).
 - 9 See Appendix A for a proof of how a cohort's share of total hires is equal to the product of their relative JFR and their share of the population.
 - 10 See Appendix A for a mathematical explanation of how the change in each cohort's contribution depends on the change in their population share.
 - 11 These contributions are simply equal to the sum of the contributions of the relevant underlying labour market cohorts.
 - 12 The contribution of the cohort that is outside the labour force and passively looking for work cohort has risen over time. This may be partly due to job vacancies becoming more readily accessible online, such that it has become easier for individuals to be classified as 'passively looking' for work. An individual may have 'passively looked for work' if, for example, they had looked at a job advertisement without directly applying or contacting an employer.

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