

# Skills Match Quality Following the COVID-19 Pandemic

Georgia Wiley and Lydia Wang<sup>[\*]</sup>

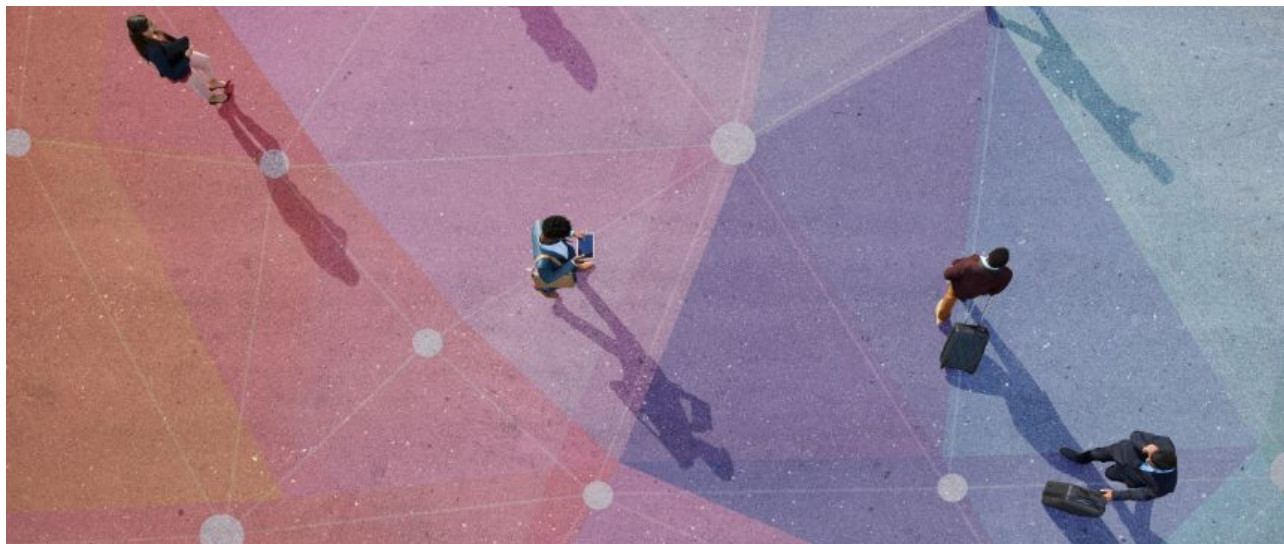


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## Abstract

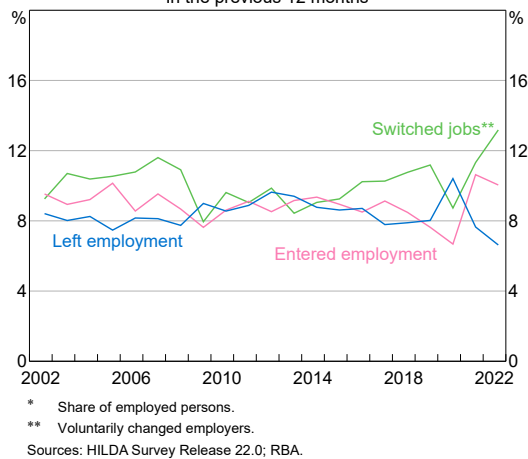
The strength in labour market conditions after the COVID-19 pandemic caused many individuals to either enter the labour market or to change jobs. These labour dynamics may have an influence on both recent and longer term productivity outcomes by affecting how well workers' skills are matched to their new jobs. We use self-reported measures from the Household, Income and Labour Dynamics in Australia Survey to examine whether workers are better or less well matched to their jobs following the pandemic, and whether these skills matches may change in the future. Overall, based on the data, we find there is little evidence that the recent increase in labour mobility affected how well workers are matched to their jobs up until 2022, which suggests that this is not a key driver of recent slow productivity growth.

## Introduction

Australian labour market conditions reached their tightest levels in several decades in late 2022 following the COVID-19 pandemic.<sup>[1]</sup> Many new workers entered the labour market during this time and existing workers were able to change or switch jobs more easily. The rate at which workers switched jobs increased significantly in 2022, more than compensating for the fall in job switches

during the pandemic (Graph 1).<sup>[2]</sup> Similarly, the rate at which individuals entered into employment (either from unemployment or from outside of the labour force) increased to above-average levels in 2021 and 2022, while the rate at which individuals left employment fell. An increase in labour market movements, such as those that occurred in 2022, can influence productivity outcomes in the short and longer term by affecting the extent to which

**Graph 1**  
**Employment Flows\***  
In the previous 12 months



workers' skills are matched to the requirements of their new jobs.

### Skills matches and productivity

Productivity measures how efficiently the economy uses its resources.<sup>[3]</sup> An important driver of an economy's productivity is how well suited or matched workers are to their jobs. If a worker's skills align well with those required by their job, they will tend to be more productive (Coraggio *et al* 2023). However, if a worker's skills are less well suited or matched, they will tend to be less productive.

Higher levels of labour market movement, such as those in late 2022, can affect the quality of skills matches. If it is easy for workers to move between jobs, it can become easier for them to flow into better suited and higher paying jobs (Deutscher 2019). Better skills matches can make workers more productive and, in turn, can support productivity growth. However, individuals starting jobs from unemployment or outside of the labour force may have a lower quality of skills match to their job if, for example, they do not have all of the skills required for the job, or their skills have diminished because they are not being used. This could mean that new workers entering employment are less well matched to their jobs, and therefore less productive.

These labour dynamics can take some time to play out. For example, if workers take some time to adjust to a new job and develop relevant job-specific skills, they may initially be less well matched to the job and less productive, but they could

become better matched to the job and more productive over time. If this is the case, the recent increase in labour market movements may have temporarily weighed on productivity, but this could unwind in the near future.

Given the important role productivity plays in driving sustainable wages and income growth, in this article we consider the extent to which the recent increases in labour market movements may have affected the quality of skills matches, and what this means for recent and future productivity growth. For our research, we use self-assessed measures on skills matches from the 2022 release of the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

### Data

Measuring how well matched workers are to their jobs is difficult because it is hard to quantify an individual's skill set and how it maps to different jobs.<sup>[4]</sup> The HILDA Survey presents a direct way to measure skills match quality as it asks individuals questions about how well suited their skills are to their job, as well as how much training they receive.

Commenced in 2001, the HILDA Survey is a longitudinal Australian study that tracks a representative group of individuals (approximately 17,000 people from 9,000 households) each year. The HILDA Survey involves individual interviews and self-completion questionnaires that contain useful demographic information, such as age, employment status and gender.

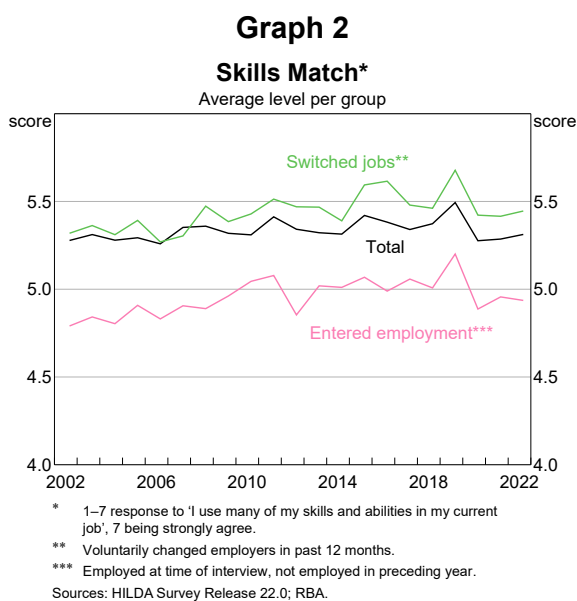
One focus area of the HILDA Survey is the labour market. Individuals are asked a range of questions on how well their job uses their skills and abilities, how much work-related training they have received, and what their level of job satisfaction is with their current job. To measure skills match, we use responses to the question asking individuals to rate the extent to which they use their skills and abilities in their current job (answered on a scale of 1 (strongly disagree) to 7 (strongly agree)). Individuals who report a higher score can be thought of as having a better skills match to their jobs. Individuals who report a lower score might do so because they do not have the required skills for their job or might

have other skills that they are not able to use in their current job. The productivity implications may differ depending on whether a worker lacks required skills for the role or has underutilised skills.<sup>[5]</sup> While responses to the survey questions are subjective, they provide a simple and direct read on skills match quality that is not available elsewhere.

A key advantage of using data from the HILDA Survey is that the same group of individuals is followed each year. As such, we can look at how perceptions of skills match change when an individual starts a new job. Findings from our analysis of the HILDA Survey data are discussed below.

### Trends in skills matching

Despite the sharp rise in labour market movements, the degree to which workers felt their job used many of their skills and abilities remained relatively flat in 2022 and was slightly below pre-pandemic levels (Graph 2). There are several reasons why this might be the case.



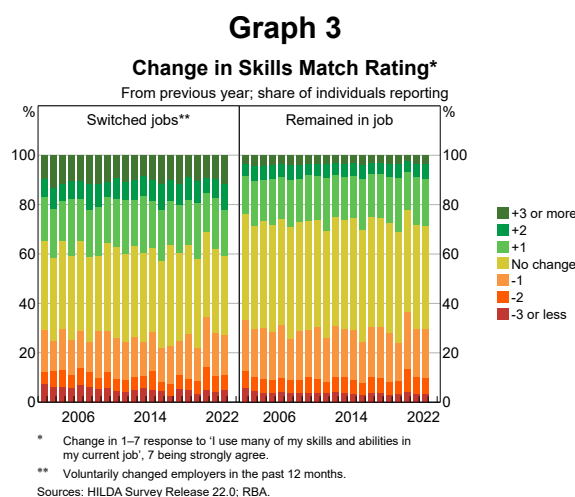
First, there are two labour dynamics at play that are likely to have offsetting effects. Workers who switched from one job to another tend to be better matched to their new job. As such, the increase in the share of workers switching jobs would have pushed up aggregate skills match quality in the economy. However, individuals entering jobs from outside of the labour market tended to be less well

matched to their jobs. The increase in the flow of new workers from outside the labour market would therefore have lowered the aggregate quality of skills matches.

Second, while labour market mobility picked up in 2022, the share of individuals switching jobs or entering employment was still relatively low, and so any compositional effect is likely to be relatively limited. However, it may be that the HILDA Survey understates the true level of job switching that occurred in 2022 because many of the interviews were conducted before the end of the year.<sup>[6]</sup> To the extent this is the case, the compositional effect will be understated in our results.

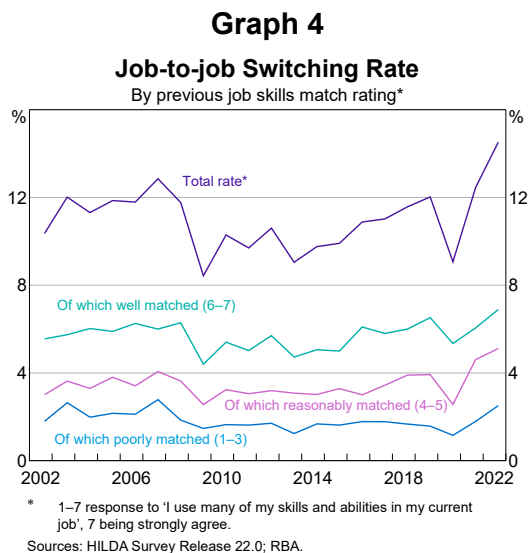
Third, while individuals tend to feel better matched to their new jobs, the improvement in self-assessed skills match is relatively small on average.

Graph 3 compares the ratings of individuals who switched jobs (left-hand panel) with those who did not switch jobs (right-hand panel).<sup>[7]</sup> While individuals who switched jobs were more likely to report an improvement in skills match (green bars), around one-third of those who switched jobs reported no change in the degree to which their skills were matched to their job (yellow bars) and one-quarter reported that their skills were less suited to their current job than reported previously (red bars).



The fact that a sizeable share of workers do not appear to become better matched after switching jobs may reflect that many individuals already felt reasonably well matched before they switched jobs and so the scope to increase the quality of their

skills match was more limited. Of the approximately 15 per cent of individuals who switched jobs in 2022, around half reported they were already well matched to their jobs (reporting a high score of either 6 or 7) (Graph 4).<sup>[8]</sup> This reporting was broadly similar to that observed prior to the pandemic.



The decrease in skills match reported by some individuals switching jobs may also reflect that workers switch jobs for a variety of reasons. Individuals might choose to switch to a job less suited to their skills because, for example, it is associated with greater work-life balance, it offers a higher salary, the type of work is more satisfying, or they may be changing careers. We discuss trends in broader measures of job suitability further below.

Looking at the slightly longer term, the data suggest that since the onset of the pandemic, workers feel less well matched to their jobs. So while there is no evidence that skills matches deteriorated in 2022 due to increased labour mobility, they appear to have deteriorated somewhat previously. If this is the case, it could more generally help to explain why productivity growth has been slower over the period, though without knowing the cause it is hard to assess whether it will unwind. This finding is broadly consistent with other evidence that pandemic-related factors disrupted the efficient reallocation of labour during this time (Andrews, Bahar and Hambur 2023).

## Evolution of skills match ratings

The trends discussed above suggest that the strength in the labour market did not materially affect workers' perceptions of how well their skills were being used in their jobs in 2022. However, it is possible that workers become better matched to their job over time. If this is the case, then the quality of skills matches may improve over the next few years, contributing to stronger productivity growth going forward.

In this section, we explore the quality of skills matches over time by considering:

1. if workers tend to feel better suited to their jobs after a few years in the role
2. if workers started more complex jobs than usual that might take more time to feel well matched
3. the amount of structured training that workers receive, particularly those entering new jobs.

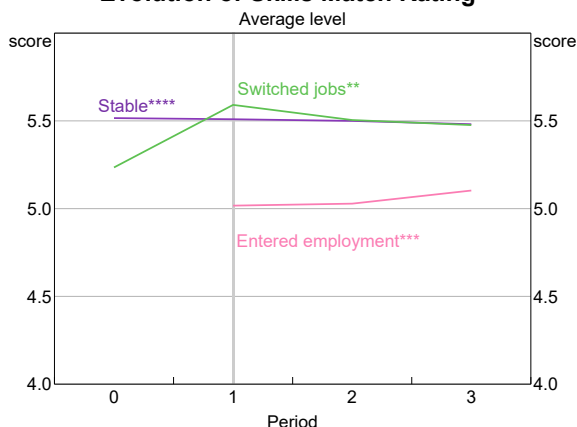
## Evolution of skills matches over history

The longitudinal nature of the HILDA Survey makes it possible to track how individuals assess their suitability to their job in the years before and after starting a new job.<sup>[9]</sup>

Individuals entering employment are less likely than existing workers to feel they are using many of their skills and abilities in their job (Graph 5), but after two-to-three years in employment, they tend to feel slightly better suited to their job than when they first started. This change, however, is relatively small and these individuals overall feel less well matched to their jobs than existing workers. Existing workers who switch jobs feel better matched immediately after the switch, but maintain this level over the next couple of years. This self-assessed measure suggests that, after changing jobs, individuals do not tend to become better suited to their job in the years that follow.

**Graph 5**

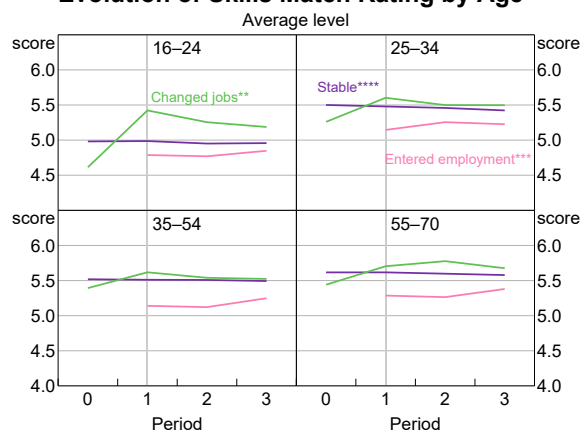
**Evolution of Skills Match Rating\***



\* 1–7 response to 'I use many of my skills and abilities in my current job', 7 being strongly agree.  
 \*\* Changed jobs in period 1 and remained in that job.  
 \*\*\* Entered employment in period 1 and remained employed.  
 \*\*\*\* Maintained job from period 0.  
 Sources: HILDA Survey Release 22.0; RBA.

**Graph 6**

**Evolution of Skills Match Rating by Age\***



\* 1–7 response to 'I use many of my skills and abilities in my current job', 7 being strongly agree.  
 \*\* Changed jobs in period 1 and remained in that job.  
 \*\*\* Entered employment in period 1 and remained employed.  
 \*\*\*\* Maintained job from period 0.  
 Sources: HILDA Survey Release 22.0; RBA.

Patterns in job suitability are similar across age groups (Graph 6). In all age groups, individuals who enter employment tend to feel better suited to their jobs after some time in the role, but still tend to feel less well matched to the job than existing workers. Also in all age groups, individuals who switch jobs report an increase in job suitability immediately after switching jobs, but no further improvement over time. Younger workers (16–24 years) who switch jobs experience the largest improvement in skills match. This could reflect that younger workers tend to shift from casual employment to professional employment that better uses their skills and education. However, there is no further improvement in job suitability for younger workers after some time in their new job.<sup>[10]</sup>

Overall, based on this measure of skills match, it is unlikely that individuals who started new jobs (i.e. switched jobs or entered employment) in 2022 will become significantly better matched to their jobs over time, at least based on self-reported measures. As a result, these results provide little reason to expect a boost to productivity in coming years due to an improvement in the quality of skills matches.

**Trends in job complexity**

While there is limited evidence that workers feel better matched to their job over time based on history, it is possible that recent labour market dynamics differ. For example, some jobs may require

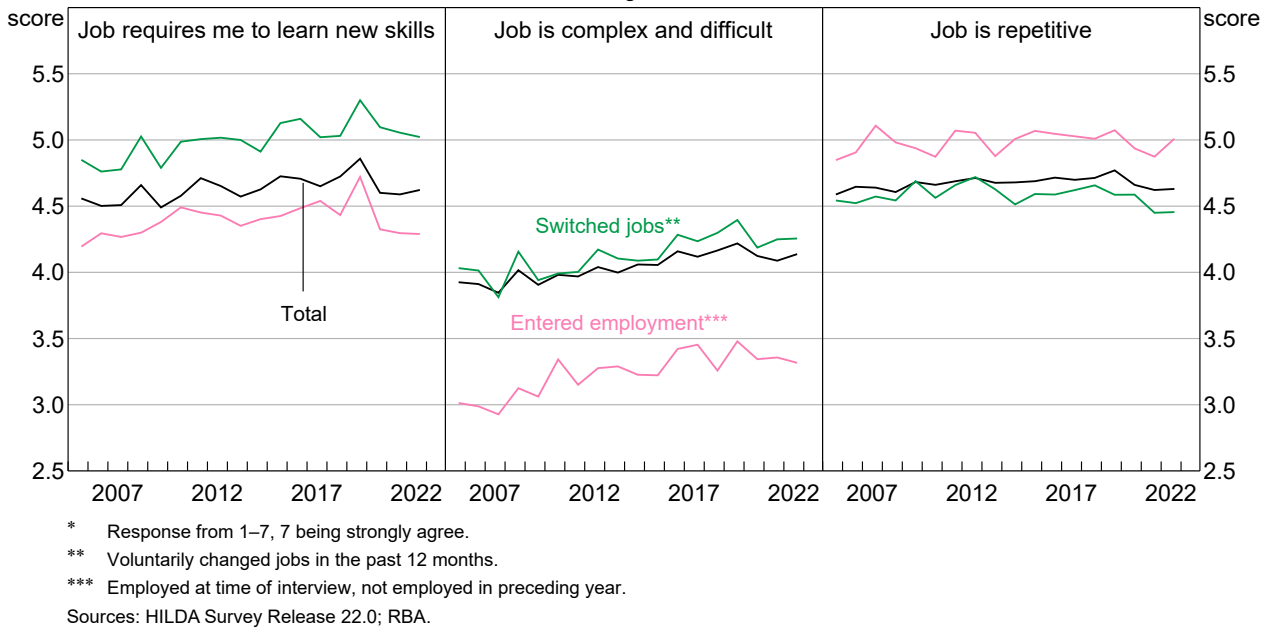
more time and training before an individual feels comfortable and able to perform at their best. It might be the case that workers have been more likely to enter such jobs in recent years.

To explore this, we examine whether individuals who started jobs in 2022 have tended to enter more complex jobs that might require further skills development. While complex jobs may take some time to adjust to, they could produce greater productivity gains over time as individuals become more comfortable in their roles and work to their best potential.

In general, we find that individuals who enter employment are more likely to find their jobs repetitive and report lower-than-average job complexity and need to learn new skills (Graph 7). This finding is likely due to a higher share of these individuals starting in entry-level roles. However, individuals who switch jobs report a greater need (above the average) to learn new skills, and also report that their jobs are slightly more complex and less repetitive.

Overall, individuals who started new jobs in 2022 were not more likely than before or during the pandemic to move into jobs that were more complex or required the development of new skills. This finding suggests that the quality of skills matches for these individuals will follow a similar path to previous years and, as such, they are unlikely

**Graph 7**  
**Job Fit Metrics**  
Average level



to become significantly better matched to their job over time.

**Trends in on-the-job training**

We also explore trends in on-the-job training to gain insights into whether more workers are being upskilled and therefore more likely to become better matched to their jobs and more productive over time.

The HILDA Survey asks workers whether they have participated in a structured work-related training program in the past year and, if so, what its purpose was and how much time was spent on it. The latest data suggest that the share of employees who participated in structured work-related training in 2022 and the number of hours spent training per employee were below their pre-pandemic levels (Graph 8). This is also true for people with less than one year in a job. However, the measures only capture structured work-related programs, whereas new starters might be more likely to learn on the job outside of such structured courses.

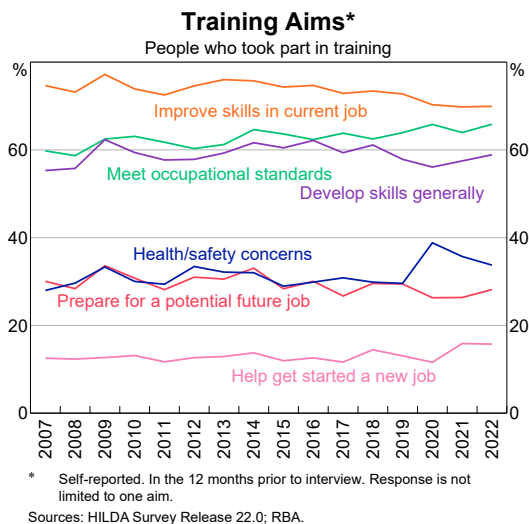
Of those workers who report undertaking training since the onset of the pandemic in 2020, there was a slight increase in the share of workers who undertook compliance-related courses ('health/safety' and 'occupational standards') and

onboarding courses ('help get started') (Graph 9). The latter likely reflects the increase in workers entering employment or switching to new jobs. By contrast, the share of workers who took part in courses aimed at improving skills has declined moderately since the pandemic – participation in these courses has trended down since the mid-2000s. Given these findings, it appears there has been a limited focus on upskilling existing workers since the onset of the pandemic.

**Graph 8**  
**Job-related Training Indicators**  
Employees



**Graph 9**



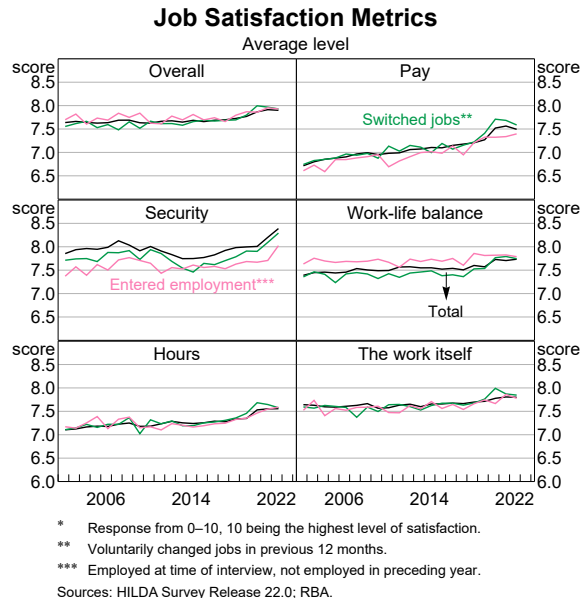
Overall, there is limited evidence that there has been an increase in structured work-related training. As such, there is no evidence to suggest that there will be a large increase in worker productivity and skills match over coming years. However, as this finding is based on the 2022 HILDA Survey data, it might not capture more recent changes in job-related training in response to the strong labour market. In RBA liaison discussions since 2023, firms have indicated that they have had to hire and train less-experienced workers, with some firms using upskilling opportunities to retain existing employees.

**Trends in job satisfaction levels**

In addition to a higher quality of skills match to a job, individuals may also be more productive if they are generally more satisfied with their jobs. The HILDA Survey asks respondents to rate their satisfaction with different elements of their job on a scale from 0 to 10, with higher scores indicating greater levels of satisfaction.

Over time, individuals who start new jobs have tended to report similar scores for their satisfaction with the work itself, hours and the job overall, compared with those who have remained in their jobs (Graph 10). New starters, however, tend to report lower levels of job security satisfaction, which is consistent with shorter job tenures.

**Graph 10**



For many of the job satisfaction measures, worker satisfaction increased in 2020 and remained elevated in 2021 and 2022. This is most evident in the measures for satisfaction with pay, job security and hours. Individuals who switched jobs during this time were more likely to report an increase in satisfaction in pay and work-life balance. This increase in worker satisfaction may be temporary because of pandemic-specific factors. However, this increase may have supported productivity during this period, and if sustained, may continue to do so.

**Conclusion**

Overall, our research suggests that the high level of labour market mobility in 2022 did not materially impact how well matched workers felt to their jobs in aggregate, at least based on self-assessed measures from the HILDA Survey. To the extent these measures are associated with higher observed productivity, it therefore appears unlikely that the recent pick up in labour mobility is behind recent slow productivity growth. Further, based on historical patterns, it appears unlikely that these workers will feel substantially better matched to their new jobs over coming years. Taken together, our findings suggest that the upside risk to productivity from significant improvements in skills match quality is small.

However, our findings should be interpreted with some caution. The timing of the HILDA Survey

means it may not capture labour market movements over late 2022, and also may not account for all trends in on-the-job training. Additionally, while the HILDA Survey is invaluable in giving a direct read on skills match, the questions are subjective and may be better suited to capturing substantial changes in the alignment between a worker's skills and the job requirements. The self-assessed measures may be less able to capture small improvements in job suitability and satisfaction as well as increases in non-structured

training, all of which may affect productivity. Finally, the relationship between self-reported mismatches and realised productivity outcomes may not be clear cut, especially given we do not distinguish between 'over-' and 'under-skilled' workers. While our results suggest changes in skills match quality have not been a significant driver of productivity outcomes in recent years, they are not definitive.

## Endnotes

- [\*] Georgia Wiley is from Economic Research Department and Lydia Wang is from Economic Analysis Department. They would like to thank Jonathan Hambur, Anirudh Yadav, Joyce Tan, Kevin Lane and Martin McCarthy for comments on this article.
- [1] For a more detailed discussion on the impact of the pandemic on job mobility, see Black and Chow (2022).
- [2] We focus on voluntary job-to-job transitions. This captures individuals who were employed in the previous HILDA Survey, changed jobs in the past 12 months, were not fired and did not spend any time in unemployment or more than one month outside of the labour force.
- [3] For a discussion of recent developments, see Bruno, Dunphy and Georgiakakis (2023).
- [4] Other work in the United States has addressed this issue by creating a measure of multidimensional skills match using a dataset on the skill requirements of certain jobs with test scores from an individual's vocational and non-cognitive tests (Guvenen *et al* 2020). Data limitations in Australia prevent us from following this approach.
- [5] For example, an under-skilled worker and an over-skilled worker might both report a 3 out of 7 rating on skills match with their current job. From the employers' perspective, the over-skilled worker would have the skills necessary to perform the job and so is likely to be as productive as a worker who is well matched to the job, but the under-skilled worker is likely to be less productive because they do not have all of the necessary skills. While both workers could be better matched and more productive in other more suitable roles, the impact of the mismatch on their current job productivity will be different.
- [6] The HILDA Survey interviews most individuals in the third quarter of the year. In 2022, 37 per cent of interviews took place in August, 35 per cent in September and 17 per cent in October. The rate of job switching remained high in the fourth quarter of 2022.
- [7] We define 'remained in job' as staying at the same employer, and includes individuals who were promoted and changed roles within the organisation.
- [8] Interestingly, Graph 4 shows that the decline in job-switching rates from the mid-2000s was broad-based across all levels of job matching. This suggests it was not simply driven by workers being better matched to their existing jobs, and so having less of a need to switch jobs.
- [9] For this exercise, we focus on a smaller sample. New entrants to employment must remain employed for the next two interviews, while individuals who switched jobs must remain in that role for the next two interviews. In doing so, we exclude individuals who switched jobs only briefly and new entrants who exited employment relatively quickly. Given these excluded groups are likely to be less well matched than the individuals who remain, this means the reported quality of matches are higher than otherwise, but ensures that our results are not being driven by these individuals leaving employment or moving to a new job.
- [10] The lack of further improvement is somewhat surprising. It could reflect the important role that job switching plays in finding better matches for younger workers. It could also reflect the subjective nature of the measures, with younger workers feeling they quickly become 'over-skilled' for entry-level roles.



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