AUSTRALIAN LABOUR MARKET POLICIES AND EMPLOYMENT DYNAMICS

e61 Research Note No. XX

Summary

Australian Labour Market Policies and Employment Dynamics

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This research note investigates the implications of changes in the JobSeeker payment and the imposition of non-compete clauses on labour market flows and labour productivity. We do this by using a search and matching model, calibrated to match the Australian economy.

We find that a 10% increase in the unemployment benefit would increase the average unemployment rate from 3.3% to around 3.6%, as people take longer to return to work (a lower job finding rate). However, it would also increase movements between jobs (job-to-job transitions).

The more time spent looking for work is due to some workers moving out of poorly matched jobs and other workers only entering employment when there are enough attractive jobs - as a result, average labour productivity rises by 0.18%.

However, these results depend on Australia's current low benefit payment level. We also find that if income replacement was already at levels typical overseas, benefit policy would start to restrict job transitions and have greater upward pressure on the unemployment rate.

Alternatively, regulatory policies that protect job attachment by increasing the cost of searching for work, such as stricter non-compete clauses, help to maintain current job matches and do not significantly increase unemployment. However, they drive a decline in job-to-job transitions by maintaining attachment to low productivity, poorly matched, jobs - thereby driving down average labour productivity.

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Labour market and income support policies have to be evaluated together

e61 is undertaking research to better understand the implications of some of Australia's unique labour market policies, such as the Fair Work Act and the JobSeeker unemployment benefit payment.

One of the reasons for undertaking this work is to comment on the debate about whether labour market policies should protect jobs or incomes. Some policies, such as JobSeeker, protect incomes by providing a payment to individuals if their employment ends. Other policies aim to retain job matches by either subsidising work (wage subsidies) or making it difficult for employees and workers to sever a labour market relationship (such as non-compete clauses).

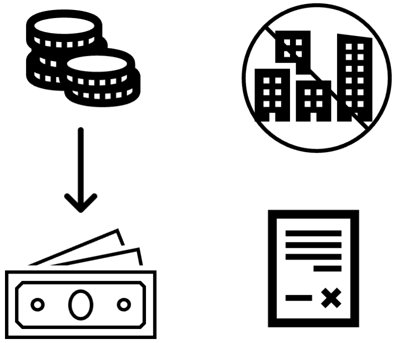


Figure 1: Policies protecting incomes or job attachment

Coming out of COVID this debate has intensified Demirgüç-Kunt, Lokshin, and Torre (2022) - with unemployment benefits the key instrument for supporting incomes, while payroll and wage subsidies are viewed as a way of protecting existing jobs.

Recent literature has undertaken comparisons of these policies - comparing income transfer to *expenditure* on alternative job retention policy tools such as payroll subsidies and short-time work schemes.[1].

However, an increase in the stringency of labour protection laws combined with counter-veiling non-compete clauses for employees could provide an alternative policy for maintaining job attachment - and it would be a policy that does not have a fiscal cost. Contractual obligations to maintain an attachment to an employer increase the cost for both employers and employees from separating. Allowing such policies may be attractive to policy makers given that they maintain labour market attachment without government having to spend money. Furthermore, as shown in Andrews and Jarvis (2023) there has been increasing take-up of such policies in Australia.

To help shed light on the consequences of these policies, we have constructed a Search and Matching (SAM) model of the Australian economy. We examine these two policy changes in terms of their implication on labour market flows, productivity, and unemployment.

[1]e.g. Recent examples of analysis of job retention policies are Cooper, Meyer, and Schott (2017),Niedermayer and Tilly (2016),Cahuc, Kramarz, and Nevoux (2018), Giupponi and Landais (2022))

Research design

The model that is used is a replication of Fujita and Ramey (2012), calibrated to Australian economic data. This is a structural search and matching (SAM) model featuring exogenous separation, endogenous separation, and on-the-job (OJS) search (each term will be discussed below). This model is calibrated to match the Australian data (Appendix B), and the model fit is similar between the US and Australian versions of the model (Appendix C).

The approach was chosen due to its focus on the *separation* margin of the labour market - where an individual either leaves a job to become unemployed, or leaves a job to start a new job. For the latter, the worker is required to engage in the OJS search successfully before she is able to move to the new job. Becoming unemployed can occur due to reasons associated with a reduction in an employee's relative productivity or pay (endogenous separation), general labour market risk and the economic cycle (exogenous separation), and when someone quits and fails to find a sufficiently good new job (failed OJS search).

Similarly, vacant jobs are filled by individuals who are currently unemployed and those who undertake successful on the job search. In turn, both unemployment and vacancy in the labour market will affect the job finding rate for unemployed workers.[2]

The core mechanism that drives job search and matching behaviour in this model is the reduction in the *relative value of job matches*. As time goes on, alternative jobs become relatively more attractive as the relative productivity of the existing job declines. Due to this, workers have an incentive to move to more productive, higher paying jobs.

The *unemployment benefit* then increases the incentive to move out of a job in the following way:

- *Higher reservation wage*: By increasing income when out of work, individuals in low-income jobs will transition from employment to unemployment. This will also lead to individuals who would have previously undertaken on-the-job search to simply become unemployed.
- *Higher insurance value*: By increasing expected income when quitting/risking termination to undertake a job search, individuals who previously would have stayed in a poorly matched job are incentivised to attempt to find a new job.

The net effect on job-to-job transitions associated with a change in the benefit level is then ambiguous. However, we should expect an increase in separations from current jobs and a higher unemployment rate. Although unemployment is higher, we would also anticipate some increase in average match productivity for those who are employed. The search model approach allows us to quantify these channels.

We will also use this approach to investigate other labour market policies that may *increase the cost of on-the-job search*. Policies such as non-compete clauses and apprenticeship based occupational licencing are often implemented to incentivise firm investment in workers and encourage the build up of firm-worker relationships.

Our approach will focus on describing the results for job finding rate, separation rate, and average labour productivity based on two policies that generate a same change in job-to-job transitions: a 10% increase in the benefit level and a comparative increase in on-the-job search costs with equivalent effect on job-to-job transitions.

[2] This approach has several shortcomings. Individuals do not select their hours of work (no intensive margin), individual productivity differences are solely due to differences in match specific productivity, there is no on the job learning , and there is only one sector. Loosening each of these assumption may attenuate or accentuate the magnitude of the presented results.

Policy change – increase in unemployment benefits

The first policy we consider with this model is the implications of a 10% increase in the JobSeeker payment. For context, the $90 of additional JobSeeker payment increases since COVID reflect a 12% increase in the benefit level for single people without children (Appendix Za).

In this model, an increase in the benefit level influences the labour market choices of workers in two important ways - by increasing the attractiveness of not working and by providing insurance for job search.

The first channel will see individuals stay out of employment who could be working. This is the labour supply costs that policy makers are concerned with when considering an increase in benefits. However, the second channel can support productive transitions by workers by reducing the risk associated with on-the-job search and making individuals more likely to leave poorly matched jobs.

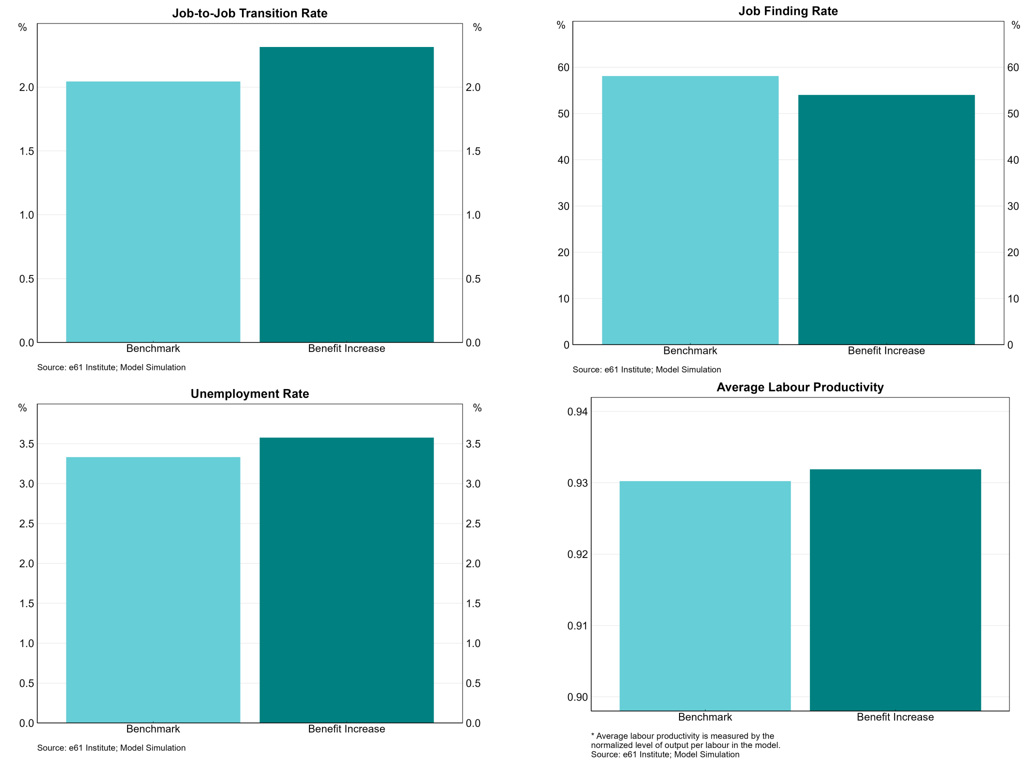
Comparing the default benefit system (labelled as “Benchmark”) and a benefit system with a 10% higher payment rate (labelled as “Benefit increase”) we find that the job-to-job transition rate increases from just above 2.0% to around 2.3%. This is is consistent with the insurance motive channel dominating the incentive to transition to unemployment.

However, the work disincentive does still exist, with individuals taking longer to find work (a lower job finding rate) and the unemployment rate rising from 3.3% to 3.6% (Figure 2).

In this scenario ALP rises. This is solely due to relatively poorly matched individuals leaving their current employment - by either switching to a more productive employer or becoming unemployed. Such an effect is indicative of better average match efficiency and match quality in the labour market.

On average this will also translate into higher wages, by both increasing productivity and increasing the bargaining power of workers.

Figure 2: 10% Benefit increase



However, there may be distributional consequences that are not captured by this model - if greater unemployment persistence is concentrated among lower productivity workers and work helps to build human capital a higher benefit rate may generate a poverty trap. This implies that the higher ALP is achieved at the cost of pushing lower productivity workers out of employment rather than enhancing the productivity of employed workers.

The limits of higher benefits

The effect of an increase in benefits on the labour market depends on how large the value of not working is. When someone loses their job they lose the income from that job. But part of this is replaced with income support from friends and family, and also with the time they gain to do other things (which may provide income or leisure). The *replacement rate* tells us how high the value of not working is relative to the value of continuing to work.

In our main scenario the replacement rate for an individual who leaves their job is 50% of average output per worker. Although this sounds high it is at the lower end of the literature, and reflects the fact that government support payments in Australian are lower relative to income than in most other high-income countries (Appendix D).

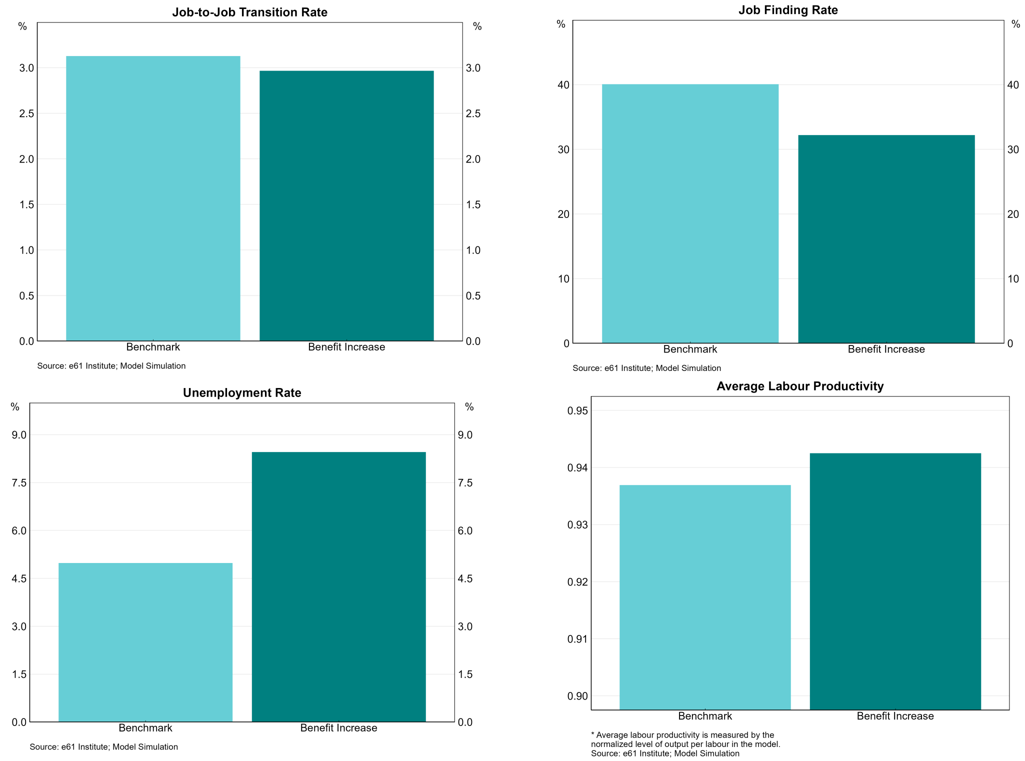
Fujita and Ramey (2012) use a replacement rate of 70% in the United States. If this was the benefit rate in our Australian model the response to a 10% increase in benefits would be very different (Figure 3).

Unlike the situation with the lower payment level, when the payment level is high an increase in the payment *reduces* job-to-job transitions and the job finding rate. The job-to-job transition rates declines from 3.0% to around 2.7%, and the job finding rate falls from around 40% to 32%, respectively. Overall these trends led to a reduction of flows into employment.

With a high replacement rate individuals become more willing to leave work entirely - even with a prolonged period of search required to find a new job match. This leads to the separation rate rising from around 2.1% to 3%

The sharp increase in people becoming unemployed and slower process of becoming re-employed both combine to significantly increase the unemployment rate - rising from 5% to 9% . However, for those who remain employed, the level of ALP becomes higher than the benchmark level. This is because the outside option of these employees (the unemployment benefit) is very high and as a result even moderately matched workers are willing to leave their job for unemployment.

Figure 3: 10% Benefit increase



Policy change – introduction of stricter non-compete clauses

The second policy considered are institutional changes that increase on-the-job search costs (Appendix Zb). The example that we use to motivate this policy is the imposition or strengthening of non-compete clauses - however any policy that gets in the way of a worker searching for a new job would work the same way in our model.

We focus on non-compete clauses due to their rising policy and academic importance. There are some recent papers studying the effect of non-compete clauses and quantifying its role in the labour market dynamics. Potter, Hobijn, and Kurmann (2022) applies a SAM model to study the efficiency of non-compete clauses, especially those bounded with low-wage workers. Goudou (2023) and Shi (2023) both highlight the effect of non-compete clauses on workers mobility and extend it to the firm investment decision. Marx and Fleming (2012) broadly discuss the impact of non-compete clauses on heterogeneous workers and firms, and then investigate the potential regional implications.

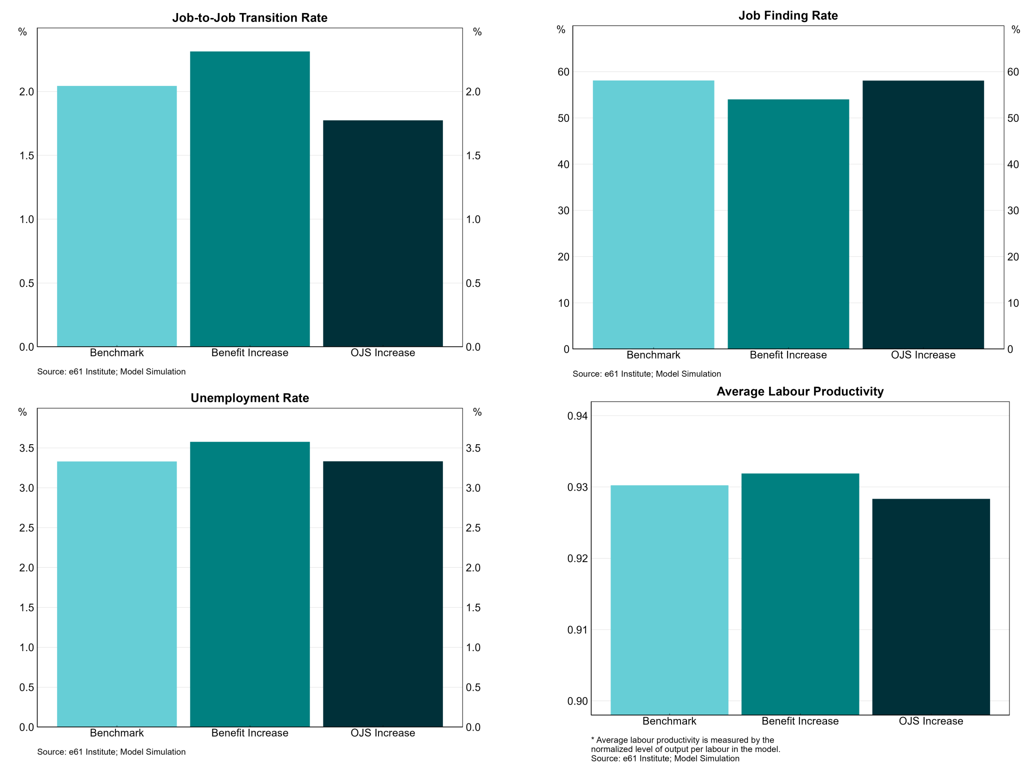
Furthermore, such policy issues are currently live in Australia (Andrews and Jarvis (2023)).

We assume that this policy increases on the job search costs by 30%. This policy choice is picked as it leads to a similar response in terms of job-to-job transitions as the 10% increase in benefits - which allows us to compare the relative effect of this policy on other margins of the labour market. This is shown in Figure 4.

There is no significant impact on the job-finding rate or unemployment rate from this policy. However, compared to the increase in unemployment benefits, rising OJS costs significantly reduces job-to-job transitions and reduces labour productivity. Employed workers bounded by non-compete clauses are unable to smoothly shift to another job - and must either be unemployed or pay a cost associated with violating the clause. This leads to individuals maintaining low quality job matches for longer.

However, our modelling does not capture any employee or firm investment decisions made on the basis of non-compete clauses. As noted in Goudou (2023) and Shi (2023) such a policy may support investment in workers' human capital - mitigating the negative productivity effects found here.

Figure 4: Increase in OJS costs



Increasing benefits to maintain job to job transitions

What happens if there is a change in the policy mix - allowing for the imposition of non-compete clauses but increasing benefits to maintain the incentive to switch between jobs? This is the scenario where OJS costs rise 30% which the unemployment benefit is increased by 10%.

By design this policy mix leads to little change in the rate of job-to-job transitions. For the individuals in our model, this is equivalent to saying that the incentive to undertake on the job search is unchanged - so the reduced risk of search due to a higher unemployment benefit cancels out the increased cost of OJS.

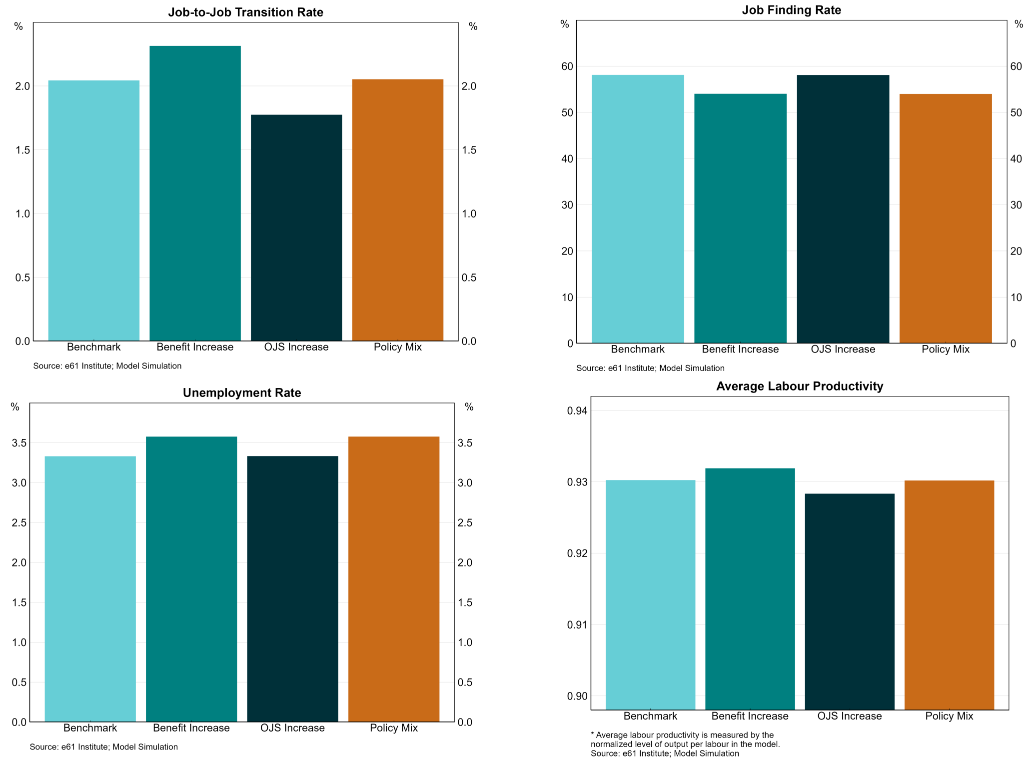
Furthermore, as these two effects cancel out the separation rate and ALP are also largely unchanged following the policy change - as working individuals face the same incentive to exit once their relative productivity is at the same level as in the bench-mark case.

This would indicate that a higher benefit payment could be used in conjunction with other regulatory policies to keep the incentive to exit work unchanged, while allowing policy makers to encourage job attachment where they believe this is appropriate.

However, this is not the whole story. Such a change in the policy mix would lead to unemployed individuals finding it more difficult to re-enter the workforce, and would thereby increase the unemployment rate and the duration of unemployment for those who are out of work.

As a result, although a higher benefit may be able to mitigate some of the productivity costs of regulations that limit labour mobility, it only does so by increasing the per-sistence and magnitude of unemployment. In this way, such a change in the policy mix would work by increasing an individuals attachment to their labour market state - keeping those employed with their employer, and those out of work in unemployment.

Figure 5: 10% Benefit increase AND non-compete clauses



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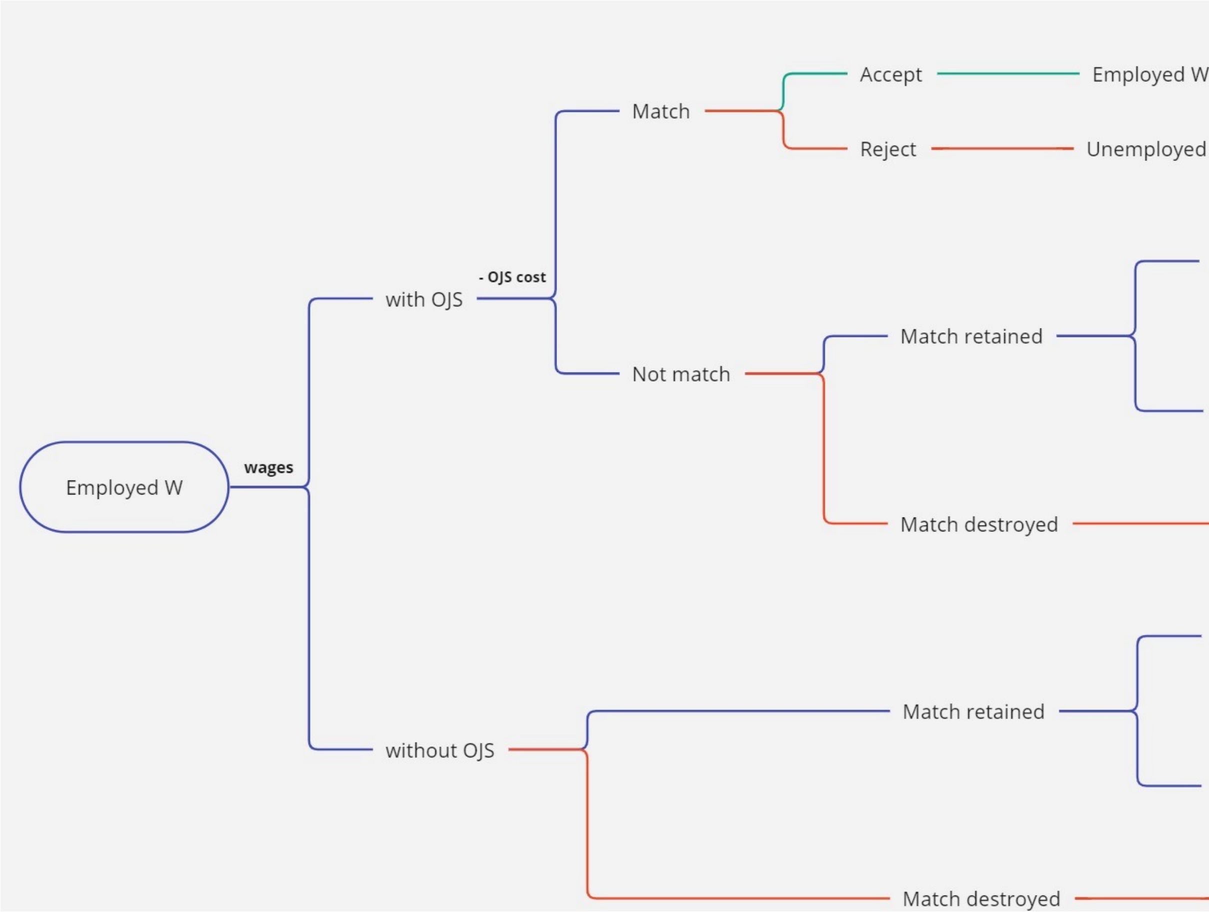
Appendix A

Diagramatic representation of transitions

I. Employment

Figure A.1: From employment transitions



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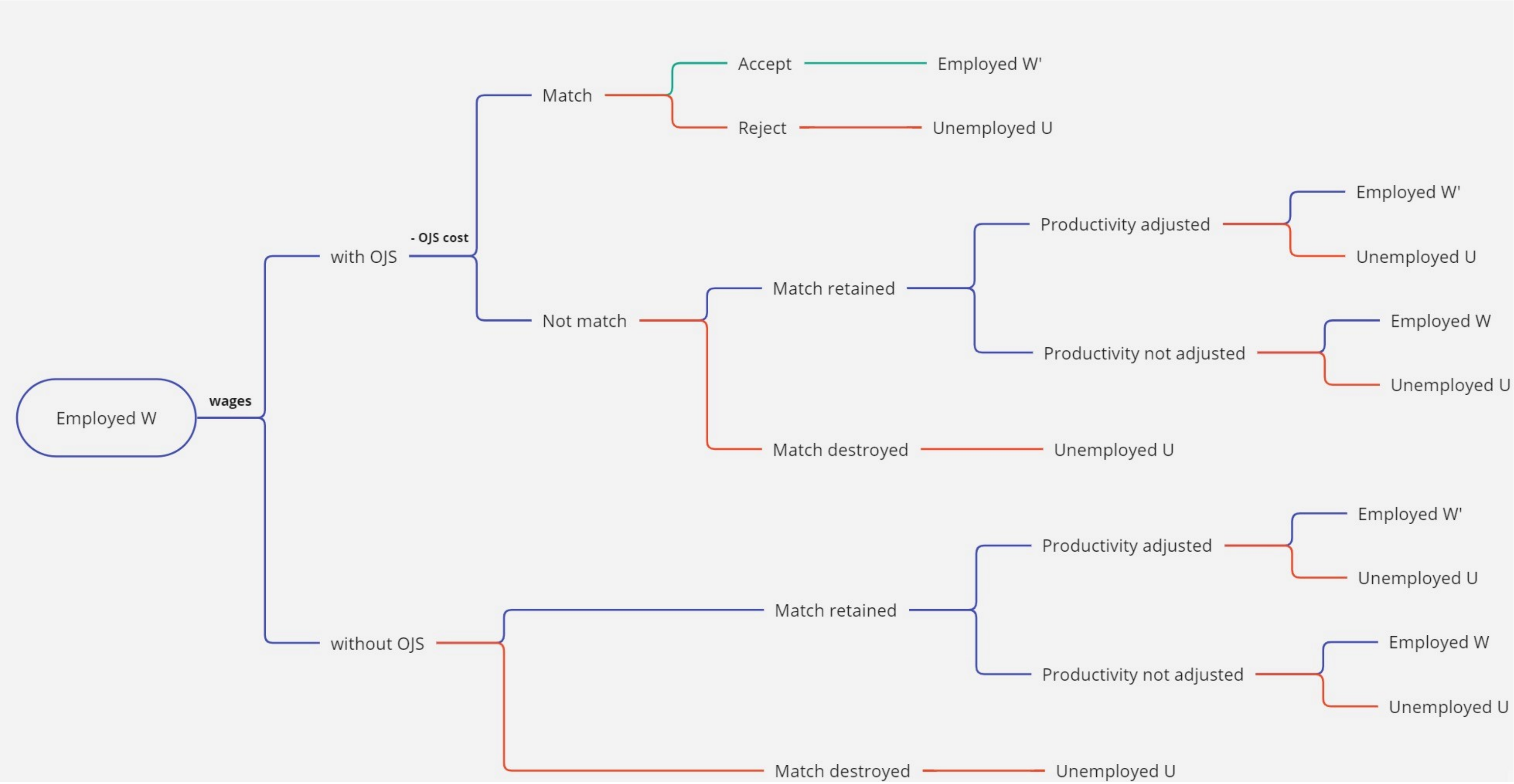
Sources: e61 Institute

II. Unemployment

Figure A.2: From unemployment transitions



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Sources: e61 Institute

Appendix B

Comparison of Australian and US data

Table 1 displays the original calibration targets from Fujita and Ramey (2012) in Panel A, and the comparatively calculated results from the Australian dataset in Panel B. There are 7 essential variables listed as columns of each table, in the sequence of unemployment rate (u_t), job finding rate (JFR_t), separation rate (SR_t), unemployment-employment flow (UE_t), employment-unemployment flow (EU_t), vacancy posting rate (v_t), and labour market tightness (v_t/u_t), respectively.

Table 1. Second Moment Properties: US vs. Australia Calibration

X_t	u_t	JFR_t	SR_t	UE_t	EU_t	v_t	v_t/u_t
Panel A: US Data							
σ_X	0.096	0.077	0.058	0.042	0.052	0.126	0.218
$cor(p_t, X_t)$	-0.460	0.369	-0.535	-0.337	-0.521	0.564	0.527
$cor(p_t, X_t)/\sigma_p$	-5.914	3.786	-4.157	-1.879	-3.644	9.542	15.437
$cor(X_t, X_{t-1})$	0.926	0.804	0.631	0.416	0.560	0.920	0.930
Panel B: Australian Data							
σ_X	0.060	0.056	0.062	0.059	0.054	0.073	0.114
$cor(p_t, X_t)$	0.212	-0.048	0.260	0.217	0.175	-0.351	-0.314
$cor(p_t, X_t)/\sigma_p$	1.279	-0.269	1.601	1.286	0.936	-2.559	-3.573
$cor(X_t, X_{t-1})$	0.778	0.327	0.563	0.547	0.213	0.573	0.736

Notes. σ_X: standard deviation of the variable X; $cor(p_t, X_t)$: correlation between labor productivity p_t and X_t; $cor(p_t, X_t)/\sigma_p$: elasticity of X_t with respect to p_t; $cor(X_t, X_{t-1})$: correlation between X_t and X_{t-1}.

To compute our Australian statistics, we use multiple data sources, including the Longitudinal Labour Force Survey (LLFS), ABS national accounts, and ABS job vacancy measure, respectively. The computational procedure follows a similar process to that described by Fujita and Ramey (2006, 2012). However, due to the availability of data, the sample period for Australian data applied here is from 2006Q1 to 2019Q4, compared to the US sample period from 1976Q1 to 2005Q4.

It is worth mentioning that for some variables, Australian data shows a very different nature from US data. In terms of standard deviation, the stock variables from Australian data, such as unemployment and vacancies, exhibit relatively lower volatility. On the contrary, the transition flows between unemployment and employment are more volatile in both the entry and exit. These statistics indicate that Australia may have greater variability in flows in and out of work, while the overall stock of unemployed and those advertising for positions is more stable.

Another distinct difference between US and Australian data is the degree of correlation between variables of interest and labour productivity, which further affects their responsiveness (i.e., elasticity) to labour productivity. It shows that, compared to the US data results, all parallel variables of interest have an opposite relationship to labour productivity. One possible explanation for the opposite sign is that the data sample spans different years and time periods, and the data volatility reflects a different labour market environment and technological background. The other reason might be the composition of the Australian industry. For some more capital-intensive industries, the higher labour productivity may come from the development of technology. In this case, even if labour productivity increases, firms will tend to use capital-intensive production techniques rather than labour-intensive ones.

Appendix C

Australian Model comparisons (type of job search)

Table 2. Benchmark Calibration for Australia

X_t	u_t	JFR_t	SR_t	UE_t	EU_t	v_t	v_t/u_t
Panel A: Data							
σ_X	0.060	0.056	0.062	0.059	0.054	0.073	0.114
$cor(p_t, X_t)$	0.212	-0.048	0.260	0.217	0.175	-0.351	-0.314
$cor(p_t, X_t)/\sigma_p$	1.279	-0.269	1.601	1.286	0.936	-2.559	-3.573
$cor(X_t, X_{t-1})$	0.778	0.327	0.563	0.547	0.213	0.573	0.736
Panel B: Endogenous separation without OJS							
σ_X	0.054	0.013	0.056	0.041	0.052	0.018	0.044
$cor(p_t, X_t)$	-0.925	0.991	-0.910	-0.863	-0.890	-0.324	0.996
$cor(p_t, X_t)/\sigma_p$	-4.196	1.103	-4.343	-3.018	-3.903	-0.500	3.695
$cor(X_t, X_{t-1})$	0.819	0.762	0.598	0.818	0.554	0.568	0.762
Panel C: Endogenous separation with OJS							
σ_X	0.063	0.013	0.062	0.051	0.059	0.040	0.098
$cor(p_t, X_t)$	-0.897	0.995	-0.919	-0.820	-0.913	0.969	0.998
$cor(p_t, X_t)/\sigma_p$	-4.273	1.019	-4.363	-3.170	-4.095	2.984	7.443
$cor(X_t, X_{t-1})$	0.845	0.763	0.697	0.846	0.678	0.669	0.762

Notes. σ_X: standard deviation of the variable X; $cor(p_t, X_t)$: correlation between labor productivity p_t and X_t; $cor(p_t, X_t)/\sigma_p$: elasticity of X_t with respect to p_t; $cor(X_t, X_{t-1})$: correlation between X_t and X_{t-1}. Simulated data are quarterly averages of weekly series, logged and HP filtered, with smoothing parameter 1600. Each replication computes simulated statistics from a sample of 120 quarterly observations. Reported statistics are averages over 1000 replications.

This section presents the calibrated results from the endogenous separation searching model without and with OJS. The benchmark calibration for the Australian labour market is shown in Table 2. Panel A shows the calibration target of each variable of interest. Panel B and Panel C present the simulated results from the two model specifications, which can also be used to compare the role of on-the-job search in the structural model. In general, our simulated results with the Australian dataset show a consistent finding, as the conclusion from Fujita and Ramey (2012). The model simulation provides a realistic volatility in the separation rate and the transition from UE and EU. However, the model still fails to match the variability of the job-finding rate. Compared to the US dataset, our simulated results are closer to matching the volatility of the unemployment rate and vacancy rate, but the gap still exists.

Appendix D

The importance of the opportunity cost of unemployment

This note used an *unemployment insurance replacement ratio* of 0.5 for the reported results. This is higher than the 0.4 value used in Shimer (2005) and the 0.32 average income replacement rate of the Australian benefit system as per 2022. However, it is also significantly lower than the 0.7 used in Fujita and Ramey (2012) and the 0.94 value suggested as an alternative in Mortensen and Nagypál (2007).

The unemployment insurance ratio (*b*) is very important for determining these results. A higher initial replacement rate generates a scenario where:

- The 10% increase in the replacement rate generates a larger increase in the benefit payment received - therefore scaling up the disincentive to work.
- Even for an equivalent increase in the replacement rate, the effect on the separation rate and the unemployment rate rises - as individuals are incentivised to leave their jobs more quickly.
- The sign of the policy effect on the job finding rate flips from positive to negative.

However, this parameter does not simply represent the financial income replacement associated with the unemployment benefit. It also includes other financial support received and the opportunity cost of work (home production and the value of leisure time). As a result, it is reasonable to assume that *b* will be higher than the unemployment benefit replacement rate values of 0.28-0.32 recorded during our study period.

The 0.7 used in US studies provides a useful benchmark, given the following points: i) not all individuals will receiving the unemployment benefit ([put in OECD figure]]) ii) the unemployment benefit replacement rate during this period was between 0.55 – 0.6.

Given that the government income replacement in both the US and Australia only supports a fraction of those who are employed, but the payment rates are between 20-30 percentage points higher in the US than in Australia, we have settled on a value for *b* of 0.5.

Appendix E

Model description

In the baseline model, workers are employed or unemployed. Employed workers receive a certain fraction of their match surplus with the firm, while unemployed workers receive a fixed amount of unemployment insurance in every period.

Firms in an active match with workers gain the rest of match surplus, and vacant firms have zero value due to the free-entry condition.

The match surplus refers to the incremental value created when a worker is matched with a firm over the worker stays unemployed and the firm remains vacant. The value of match surplus is expressed as below:

$$\begin{aligned} S_t(x) &= M_t(x) - U_t - V_t \\ &= \max\left\{S_t^c(x), 0\right\}, \end{aligned} \tag{1}$$

where $M_t(x^h)$ refers to the value of a match, and it relates to the match-specific productivity x of the matched worker.

In the model, both employed and unemployed workers can search for a new job. In the search and matching process, unemployed workers meet a new firm at the job finding rate in the labour market. If unemployed workers are better off accepting the job offer, then they will decide to transit from unemployment to employment. Employed workers spend additional job search cost to meet with another firm based on their contact rate. When they meet with another firm, they will compare the new match with the existing match to decide whether they should switch to the new firm or stay at their current firm.

The value of an unemployed worker is shown as:

$$U_t = b + \beta E_t\left[f(\theta_t)\pi S_{t+1}(x^h) + U_{t+1}\right], \tag{2}$$

where b stands for the flow value of unemployment insurance received from income support program.

Additionally, since we allow for OJS in the labour market, in each period, employed workers need to decide whether they are going to engage in OJS when retaining the job match or they are going to destroy the job match and stay unemployed. Therefore, by incorporating the OJS into the model, the match continuation decision is expressed below.

$$M_t(x) = max\left\{M_t^{cn}(x), M_t^{cs}(x), U_t + V_t\right\}, \tag{3}$$

where $M_t^{cn}(x)$ and $M_t^{cs}(x)$ represent the value of continuation of the match with no OJS and with OJS, respectively. These two values are shown as follows:

$$\begin{aligned} M_t^{cn}(x) = z_t x + \beta E_t\Bigg[&(1-s)\left(\lambda\int_0^{x^h} M_{t+1}(y)dG(y) + (1-\lambda)M_{t+1}(x)\right) \\ &+ s(U_{t+1} + V_{t+1})\Bigg] \end{aligned} \tag{4}$$

The employed worker produces an output level of $z_t x$ at the beginning of each period, where z_t and x are the aggregate and match-specific productivity of each worker, respectively. Then at the probability of s, the exogenous separation arrives and the job match is destroyed. If the match survives from the exogenous separation session, a change in worker match-specific productivity occurs with probability λ. The switch occurs in the form of randomly drawing a level of match-specific productivity from its distribution.

(5)
$$M_t^{cs}(x) = z_t x - a + \beta E_t \Bigg[f(\theta_t)\Big(\pi S_{t+1}(x^h) + U_{t+1} + V_{t+1}\Big) + (1 - f(\theta_t))\Big\{(1-s)\Big(\lambda \int_0^{x^h} M_{t+1}(y)dG(y) + (1-\lambda)M_{t+1}(x)\Big) + s(U_{t+1} + V_{t+1})\Big\}\Bigg]$$

When OJS is allowed during the match, the employed worker starts the production phase. However, the employed worker participates in OJS at the cost of a, which is incurred at the beginning of each period and is not related to the results of OJS.

Similarly, when considering OJS into the model, the match surplus now is written as:

(6)
$$S_t(x) = \max\Big\{S_t^{cs}(x), S_t^{cn}(x), 0\Big\},$$

where $S_t^{cs}(x)$ and $S_t^{cn}(x)$ represent match surplus with and without OJS. Following our previous equation for U_t and the free entry condition, i.e., $V_t = 0$, these two terms can be explicitly expressed as:

(7)
$$S_t^{cs}(x) = z_t x - a - b + \beta(1 - f(\theta_t))(1-s)E_t\Big[\lambda \int_0^{x^h} S_{t+1}(y)dG(y) + (1-\lambda)S_{t+1}(x)\Big]$$

(8)
$$S_t^{cn}(x) = z_t x - b + \beta E_t\Big[(1-s)\Big(\lambda \int_0^{x^h} S_{t+1}(y)dG(y) + (1-\lambda)S_{t+1}(x) - f(\theta_t)\pi S_{t+1}(x^h)\Big)\Big]$$

Appendix F

Outline of Australian SAM models

There have been a number of search and matching models applied to the Australian economy in the past, details of these for comparison are outlined below.