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Dynamic Trade-offs and Labor Supply under the CARES Act

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Abstract

The CARES Act resulted in many unemployed workers receiving benefits that exceeded wages at their previous job. Given this, would an unemployed worker reject an offer to return to their former job at the same wage? Qualitatively, we provide a very simple dynamic model that incorporates four reasons the answer could be 'no': (i) the temporary nature of the CARES Act, (ii) uncertainty that their return-to-work offer might expire, (iii) search frictions, and (iv) wage losses out of unemployment in a recession. Quantitatively, when evaluated under empirically relevant parameters, we find it unlikely a worker would reject an offer to return to work at the same wage. We show special cases where this is not true and relate these to anecdotal evidence.

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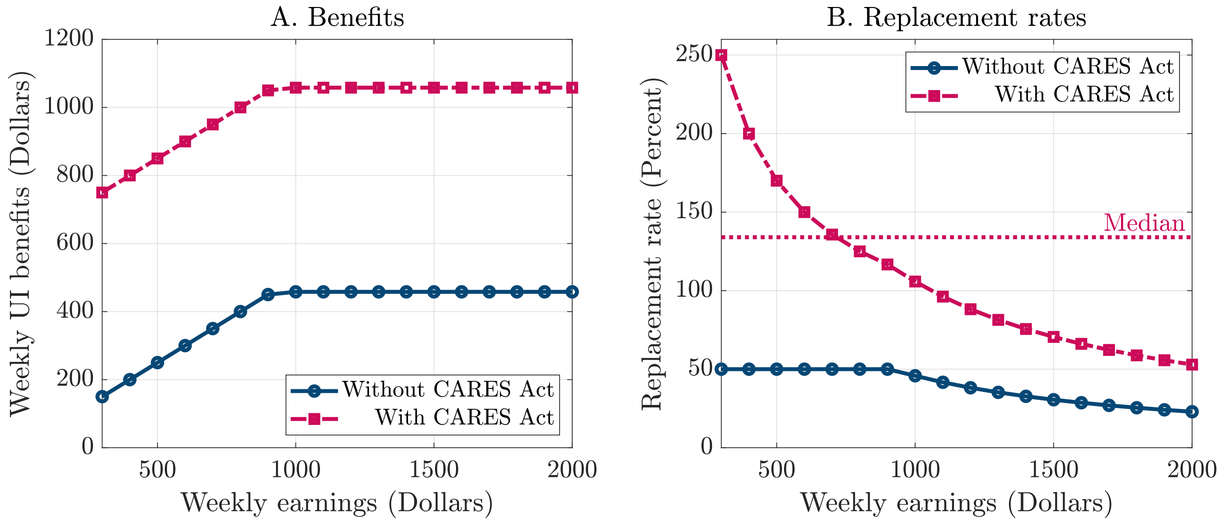

Figure 1: Unemployment benefits with and without the CARES Act 2020.

Notes: Without the CARES Act benefits are 50 percent of previous wage, up to a cap on benefits of $458 per week. With the CARES Act, benefits are increased by $600 per week.

1 Introduction

The CARES Act increased the level of unemployment benefits to many workers in the U.S. economy. Empirical studies to date have found little effect on employment, as we discuss below. However, there exists anecdotal evidence of workers turning down return-to-work offers in favor of unemployment. In this paper we provide a simple theory of labor supply in this environment, and the role of different features of the worker's job, the labor market and policy. Taken to data, we show that outside of extreme cases, it is difficult to rationalize workers not accepting an offer to return to work, hence providing quantitative support for the empirical results thus far.

CARES Act 2020. How did the CARES Act affect replacement rates?[1] Ganong, Noel, and Vavra (2020) provide a useful calculator for computing the level of weekly benefits given previous weekly wages. Figure 1 plots the level of benefits and the replacement rate both with and without the CARES Act. Without the CARES Act, unemployment benefits are 50 percent of the previous wage, up to a cap of $458 per week. With the CARES Act, all individuals receive an additional $600 per week, regardless of the level of the previous wage. As reported by Ganong, Noel, and Vavra (2020) this leads to a median replacement rate of 134 percent. They find that around 68 percent of workers have a replacement rate greater than 100 percent. If a worker faced with a *return-to-work* offer were to only make a *static trade-off* between UI benefits and weekly earnings, 68 percent of workers would not return to work.

[1] For the text of the CARES Act see https://www.congress.gov/116/bills/hr748/BILLS-116hr748enr.pdf.

Approach. We write down a very simple model that describes the labor supply decision of a worker. The worker earned a wage w in a previous job and is faced with the decision of whether to return to work at their previous employer and again earn w or be unemployed under the CARES Act. The return-to-work offer is not assured, and expires with some probability that we view as capturing how easily replaceable the worker is. Similarly, the additional benefits of the CARES Act have only a limited duration. If the worker's return-to-work offer expires, they search for a new job which may take some to find, and is possibly associated with wage losses, which are common when workers experience unemployment in a recession.

Results. Our main analysis consists of plotting what we call the *reservation replacement rate*, as a function of the workers' previous wage. We define the reservation replacement rate as the replacement rate *under the CARES Act* that would make the worker indifferent between accepting the return-to-work offer at wage w and remaining unemployed. We denote this $\widehat{\rho}^C(w)$. We compare this to the actual replacement rate under the CARES Act $\rho^C(w)$, which we plotted in Figure 1B. If the reservation replacement rate exceeds the replacement rate under the CARES Act, then the worker would prefer to return to work.

First, we show two special cases where the reservation replacement rate is equal to one, such that 68 percent of workers would prefer to remain unemployed: (i) when there are no search frictions and job loss in a recession is associated with no wage losses, and (ii) when the worker is never at risk of losing their offer to return to work at their previous employer. Second, we show that empirically reasonable deviations from these special cases lead to a reservation replacement rate that *exceeds* $\rho^C(w)$. This rationalizes the empirical results we discuss below. In other words, workers would only choose unemployment over a return-to-work offer, if the additional unemployment benefits under the CARES Act were much larger than \$600 per week. The reservation replacement rate increases in (i) the probability that the CARES Act expires, (ii) the probability that the return-to-work offer is lost, (iii) the expected amount of time until a new job offer arrives if they turn down their return-to-work offer, and (iv) wage losses relative to their former employment.

Empirical literature. These results are consistent with the empirical literature that has studied the effects of the CARES Act. Using data from online vacancy postings Marinescu, Skandalis, and Zhao (2020) find that employers did not struggle to find applicants while the CARES Act was in place. Using data on plant payroll from Homebase, Altonji, Contractor, Finamor, Haygood, Lindenlaub, Meghir, O'Dea, Scott, Wang, and Washington (2020) find that workers who faced larger expansions in UI benefits returned to their previous jobs at similar rates to those with smaller expansions in UI benefits. Using the same data, Bartik, Bertrand, Lin, Rothstein, and Unrath (2020) come to a similar conclusion. Using the high-frequency Census Household Pulse Survey, Dube (2020) finds that across-state variation in replacement rates did not affect employment across states.

Quantitative literature. Our short paper complements recent papers that integrate the labor supply decisions of workers in frictional labor markets with models of disease transmission. A key theme of this work is that increased unemployment benefits dampen the infection externality associated with workers' labor supply decisions. Birinci, Karahan, Mercan, and See (2020) find that the optimal policy during a pandemic includes both additional UI benefits and payroll subsidies. Gregory, Menzio, and Wiczer (2020) find that short-term lockdowns have long-lasting negative effects on unemployment. Tertilt, Brotherhood, Kircher, and Santos (2020) study various policies in a model with incomplete information and heterogenous agents. Kapička and Rupert (2020) find that more generous unemployment benefits can reduce overall infection by 17 percentage points. In this short paper we do not consider the health consequences of employment, and provide a very simple framework for thinking through the non-health related incentives toward and against individual labor supply under the CARES Act.

The most related papers are Petrosky-Nadeau (2020) and Mitman and Rabinovich (2020). The former computes the reservation benefit level required to convince workers in different occupations to turn down a new job offer and remain in unemployment under the CARES Act. The latter computes the optimal UI policy in a model where search effort responds to benefits. A key result in Mitman and Rabinovich (2020) is that tieing benefits to the unemployment rate puts too much history dependence into UI policy. They find that the optimal replacement rate in the reopening phase is 70 percent. We consider a slightly a setting in which a worker holds a job offer from their previous employer which has some risk of expiring. We also consider the possibility of wage losses following unemployment in the recession, which occurs if the worker's return-to-work offer expires. We find that the reservation level of benefits is highly sensitive to these wage losses and that an empirically reasonable degree of wage loss leads to reservation levels of benefits that exceed what is offered under the CARES Act.

Outline. This paper has four remaining sections. Section 2 describes the model. Section 3 describes our main results. Section 4 shows how different workers may make different labor supply decisions. Section 5 concludes with caveats and possible avenues for future research.

2 Model

2.1 Environment

We consider the problem of a single worker, that earned a wage w in a previous job and is faced with the decision of whether to go back to that job and earn a wage w or be unemployed under the CARES Act. Workers discount the future at rate $\beta < 1$, and live hand-to-mouth such that consumption c is equal to their wage w or unemployment benefits b each period, for which they get utility $u(c)$.[2]

When unemployed under the CARES Act, the worker receives benefits $b^C(w)$ that are equal to a replacement rate $\rho^C(w)$ times their previous wage, w. The CARES Act expires each period with probability χ, which we choose such that the expected duration of the Act is 4 months, as in the data. After the CARES Act expires, benefits are $b(w)$ and are determined by a replacement rate $\rho(w)$.

The return-to-work offer consists of being paid the previous wage w, however with probability δ the offer permanently expires. If the return-to-work offer expires without being accepted, the worker searches for a new job. A new job arrives with probability $\phi \leq 1$, and has a wage that is $(1 - \psi) \leq 1$ times the previous wage w. If the worker accepts this job offer, or accepts the return-to-work offer, they hold their job forever.

2.2 Bellman equations

We are interested in the decision of an unemployed worker choosing between returning to work, or remaining unemployed under the CARES Act. The worker compares two values:

$$\max \left\{ V\left(w\right), U_1^C(w) \right\},$$

where $V\left(w\right)$ is the presented discounted value of accepting the return-to-work offer, and $U_1^C(w)$ is the value of unemployment under the CARES Act. Since we assume that an individual holds a job forever, then

$$V\left(w\right) = u\left(w\right) + \beta V\left(w\right) \quad \Longrightarrow \quad V\left(w\right) = \frac{u\left(w\right)}{1 - \beta}.$$

Let the present discounted value of lifetime utility for an individual that is unemployed under the CARES Act with a return-to-work offer be given by $U_1^C(w)$. Then $U_1^C(w)$ satisfies the following Bell-

[2] As shown in Figure 1, replacement rates are highest for low wage workers. Evidence that low wage workers' consumption responses to benefits have been consistent with hand-to-mouth behavior is provided by Chetty, Friedman, Hendren, Stepner, and Team (2020); Cox, Ganong, Noel, Vavra, Wong, Farrell, and Greig (2020); and Coibion, Gorodnichenko, and Weber (2020).

man equation:

$$
\begin{aligned}
U_1^C(w) \quad &= u\left(\rho^C(w)w\right) + \beta\Big[(1-\chi)(1-\delta)\max\left\{V(w), U_1^C(w)\right\} \\
&\quad + (1-\chi)\,\delta\left[\phi\max\left\{V((1-\psi)w), U_0^C(w)\right\} + (1-\phi)\,U_0^C(w)\right] \\
&\quad + \chi(1-\delta)\max\left\{V(w), U_1(w)\right\} \\
&\quad + \chi\delta\Big[\phi\max\left\{V((1-\psi)w), U_0(w)\right\} + (1-\phi)\,U_0(w)\Big]\Big].
\end{aligned} \tag{1}
$$

With probability $(1-\chi)(1-\delta)$, nothing changes——the CARES Act remains in place, and the return-to-work offer is still available——so the worker faces the same decision again tomorrow. With probability $(1-\chi)\,\delta$ the CARES Act continues but the return-to-work offer expires. The worker finds a new job with probability ϕ, but only receives a wage of $(1-\psi)\,w$ at the new job. The value of unemployment $U_0^C(w)$ will reflect the loss of the return-to-work option, and is written below. With probability χ the CARES Act expires, which changes the value of unemployment. The last line combines the expiration of the offer and the CARES Act.

The remaining unemployment values in (1) are comprised of special cases:

$$
\text{No CARES/No offer: } U_0(w) = u(\rho(w)w) + \beta\left[\phi\max\left\{V((1-\psi)w), U_0(w)\right\} + (1-\phi)\,U_0(w)\right]
$$

$$
\begin{aligned}
\text{No CARES/Offer: } U_1(w) &= u(\rho(w)w) + \beta\Big[(1-\delta)\max\left\{V(w), U_1(w)\right\} \\
&\quad + \delta\Big[\phi\max\left\{V((1-\psi)w), U_0(w)\right\} + (1-\phi)\,U_0(w)\Big]\Big]
\end{aligned}
$$

$$
\begin{aligned}
\text{CARES/No offer: } U_0^C(w) &= u(\rho^C(w)w) + \beta\Big[(1-\chi)\left[\phi\max\left\{V((1-\psi)w), U_0^C(w)\right\} + (1-\phi)\,U_0^C(w)\right] \\
&\quad + \chi\Big[\phi\max\left\{V((1-\psi)w), U_0(w)\right\} + (1-\phi)\,U_0(w)\Big]\Big]
\end{aligned}
$$

2.3 Reservation replacement rate

We define the *reservation replacement rate* $\widehat{\rho}^C(w)$ as the replacement rate under the CARES Act that would make a worker with previous wage w indifferent between accepting a return-to-work offer and remaining in unemployment:

$$
V(w) = U_1^C\left(w\,;\,\widehat{\rho}^C(w)\right). \tag{2}
$$

The value of unemployment under the CARES Act is increasing in the replacement rate. Therefore, if the actual replacement rate in the CARES Act $\rho^{C,Data}(w)$—plotted in Figure 1B—is less than $\widehat{\rho}^{C}(w)$, then the individual would find it optimal to return to work.

3 Results

3.1 Special cases

If the standard replacement rate in absence of the CARES Act, $\rho(w)$, is less than one, then there are two special cases under which $\widehat{\rho}^{C}(w) = 1$. The case of $\rho(w) < 1$ is the empirically relevant case, as shown in Figure 1B, where the replacement rate without the CARES Act is 50 percent or less. These cases are independent of all other parameters of the model.

1. **No frictions, no wage loss** - If $\phi = 1$ and $\psi = 0$, then even if the worker's return-to-work offer expires, they can transition immediately to another job with no wage loss. Therefore the level of benefits that would make the worker indifferent between taking the return-to-work offer or remaining unemployed under the CARES Act is equal to their previous wage.

2. **Can always return-to-work** - If $\delta = 0$, then the worker's return-to-work offer is always available. Since $\rho(w) < 1$, when the CARES Act expires they will always return to work at wage w. Returning to (1), the value of unemployment under the CARES Act and the value of employment are

$$\begin{aligned} U_1^C(w) &= u(\rho^C(w)w) + \beta\Big[\chi V(w) + (1-\chi)\max\Big\{V(w), U_1^C(w)\Big\}\Big], \\ V(w) &= u(w) + \beta V(w). \end{aligned}$$

   This makes clear that to be indifferent between returning to work and unemployment before the expiration of the CARES Act, their benefits must equal their previous wage.

Under these special cases, all workers that receive a replacement rate under the CARES Act of $\rho^{C,Data}(w) > 1$, will choose to remain unemployed as long as the CARES Act has not expired. As noted by Ganong, Noel, and Vavra (2020), this is around 68 percent of workers. These are the same outcomes as a *static* decision. In the first case, no frictions and no wage loss make the future the same as today, which makes the decision essentially static. In the second case, no loss of the return-to-work offer preserves today's outside option into the future, which similarly makes the decision static.

3.2 Parameters

We find it instructive to move away from these special cases in steps. We fix some parameters, and then move $\{\phi, \psi, \delta, \chi\}$ to empirically reasonable values one by one.

Fixed parameters. A model period is one week, and we set β such that it implies a 5 percent risk-free rate. The expiry rate of the CARES Act, χ, is set to $1/16$ in our benchmark, giving an expected duration of four months: April-July, 2020. We use log utility: $u(c) = \log c$. We set the replacement rate absent the CARES Act to replicate Figure 1B: $\rho(w) = \min\{\, 0.50w\, ,\, 458\,\}$.

Variable parameters. We consider ranges of the parameters $\{\phi, \psi, \delta, \chi\}$ as follows. The average monthly job finding rate at the trough of post-war recessions is around 0.40 (Shimer, 2012). We consider values of ϕ that deliver steadily worse monthly job finding rates: {0.80, 0.60, 0.40}. The parameter ψ governs the loss in lifetime earnings associated with a transition through unemployment in a recession. The headline result of Davis and von Wachter (2011), is that this value is around 15 percent (see also Huckfeldt, 2016). We consider values of ψ that give steadily worse lifetime wage losses: $\psi \in$ {0.01, 0.02, 0.03}. We turn to the empirically relevant case of $\psi = 0.15$ at the end. With little data on recall rates in the current recession, we consider values of δ that give steadily lower recall prospects. We consider values of δ that deliver probabilities of the return-to-work offer no longer being available after 4 months of the CARES Act of 0.05, 0.25 and 0.50. We use π to denote this probability.[3] Lastly, we consider values of χ that imply durations of the CARES Act benefits of {4, 8, 12} months.

3.3 Comparative statics

In this subsection we qualitatively compare reservation replacement rates under these different configurations of parameters. In the following section we quantitatively assess the empirically relevant case.

1. Labor market frictions - ϕ. Figure 2A considers the case where labor market frictions may lead to protracted unemployment if the return-to-work offer expires before it is accepted. The pink downward sloping line plots the replacement rate under the CARES Act as a function of the previous wage (cf. Figure 1B). The remaining lines plot the *reservation replacement rate* from the model under different values of ϕ, which deliver different monthly job finding rates. As ϕ decreases and the job finding rate falls, the reservation replacement rate increases from the orange to the blue dashed line.

[3]That is, $\delta = 1 - (1-\pi)^{1/16}$, this requires values of δ equal to 0.018, 0.032, and 0.042, respectively.

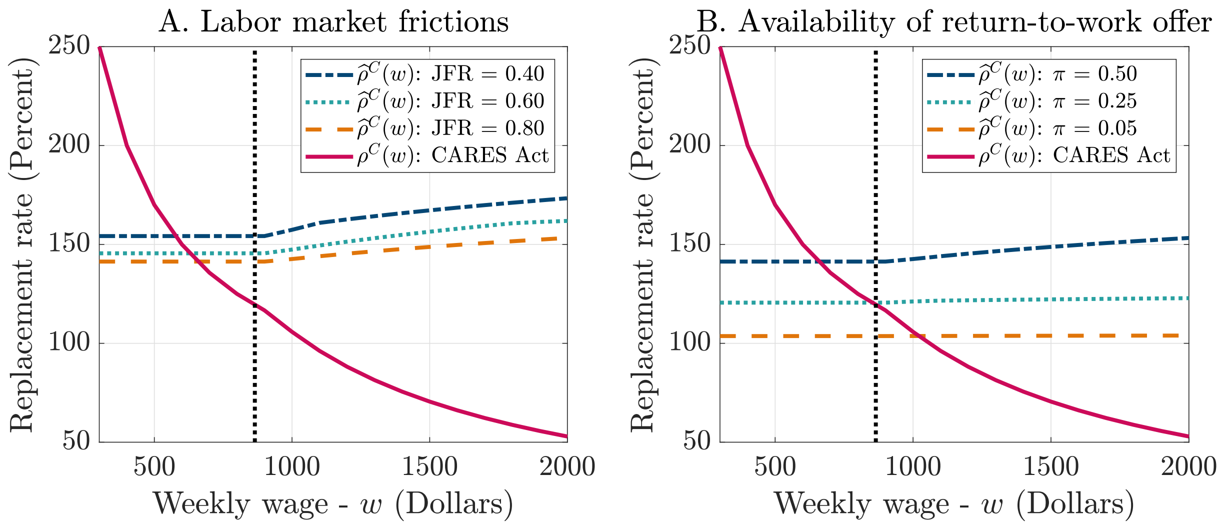

Figure 2: Effects of labor market frictions and persistence of return-to-work offer.

Notes: In both cases wages on job loss are only 1 percent ($\psi = 0.01$). In **Panel A**, δ is such that the probability of the return-to-work offer expires after 4 months is $\pi = 0.05$. The parameter ϕ is varied to deliver different job finding rates, $JFR \in \{0.40, 0.60, 0.80\}$. In **Panel B**, ϕ is such that the monthly job finding rate is 0.80. The parameter δ is varied to deliver different probabilities of the return-to-work offer expiring after 4 months, $\pi \in \{0.50, 0.25, 0.05\}$. The black vertical line gives the median wage.

Under this parameterization, the worker has a 95 percent chance that their return-to-work offer being available after four months. Nonetheless, if the offer expires without having been accepted, and the CARES Act expires, the worker will be faced with the lower replacement rate of the usual unemployment insurance policy, while they find a new job. As the job finding rate decreases, the expected length of time on these lower benefits becomes longer, which reduces the value of being unemployed under the CARES Act. This requires a higher level of benefits under the CARES Act to make the worker indifferent between unemployment and returning to work.

2. Recall - δ. Figure 2B shows how the reservation replacement rate varies with the probability that the workers' return-to-work offer is still available to them in the future. Recall the special case: if $\delta = 0$, such that the probability the job is always available in four months, then the reservation replacement rate is equal to one. As δ increases, and thus π increases, the reservation replacement rate increases, as can be seen from comparing the orange to the blue line. Intuitively, when the return-to-work offer is only held tenuously, there is a higher probability that turning down the offer will leave the worker in unemployment when the CARES Act expires. Additionally, with ψ slightly above zero, the possibility of lower future wages also requires higher benefits under the CARES Act to leave the worker indifferent. Note that even if ψ were equal to zero, the prospect of lower future benefits after the expiration of the CARES Act would by itself require a higher reservation replacement rate under the CARES Act.

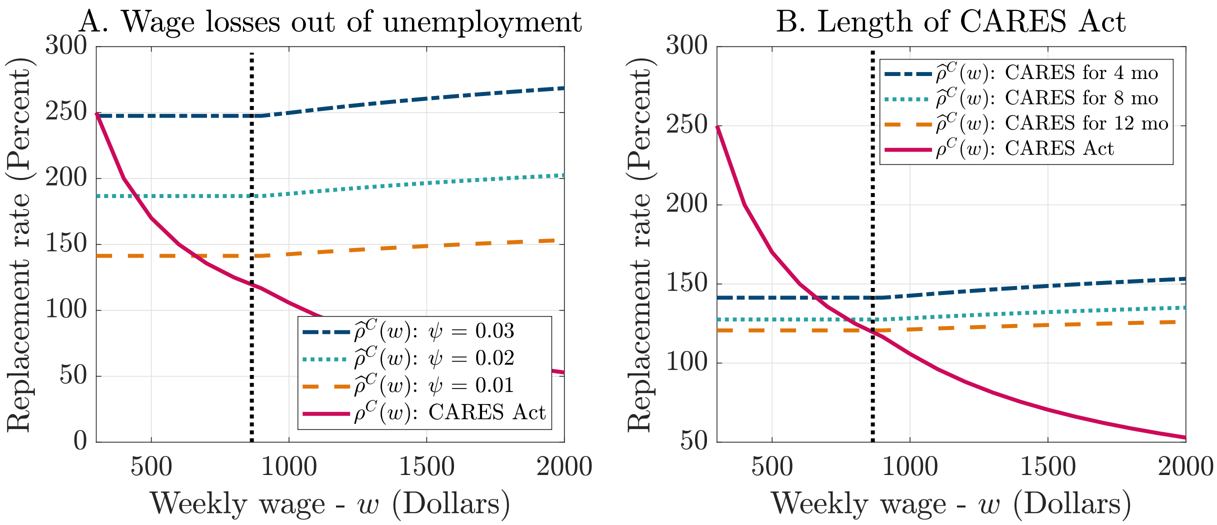

Figure 3: Effect of re-employment wage losses and length of CARES Act

Notes: In both cases ϕ is such that the monthly job finding rate is 0.80, and δ is such that the probability of the return-to-work offer expires after 4 months is only 5 percent ($\pi = 0.05$). In **Panel A**, the CARES Act lasts for 4 months, and the parameter ψ is varied such that reemployment wage losses are $\{3, 2, 1\}$ percent of the previous wage. In **Panel B**, reemployment wages are only 1 percent less than the previous wage ($\psi = 0.01$), and the parameter χ is varied to change the expected length of the CARES Act between 4, 8 and 12 months. The black vertical line gives the median wage.

3. Wage losses - ψ. Figure 3A shows how the reservation replacement rate varies with the prospect of lower future wages in the case that the return-to-work offer is not accepted, and the worker ends up in a new job after a spell of unemployment. Even with a very high probability that the worker's job is still available after four months ($\pi = 0.05$), the reservation replacement rate is highly sensitive to re-employment wages. As the loss in present discounted value of wages, ψ, increases from one percent to three percent the reservation replacement rate almost doubles. Why such a large increase? The CARES Act is short in duration, while the scarring effects of job loss in a recession are long-lived. Substantially higher benefits under the CARES Act are required for a worker to be indifferent between short-term higher benefits and long-term lower wages.

4. Expiration of CARES Act - χ. Finally, Figure 3B shows how the reservation replacement rate varies with respect to the expected duration of the CARES Act provisions. If the duration of the CARES Act were significantly longer, then the reservation replacement rate would also be lower. With a shorter duration, the reservation replacement rate increases.

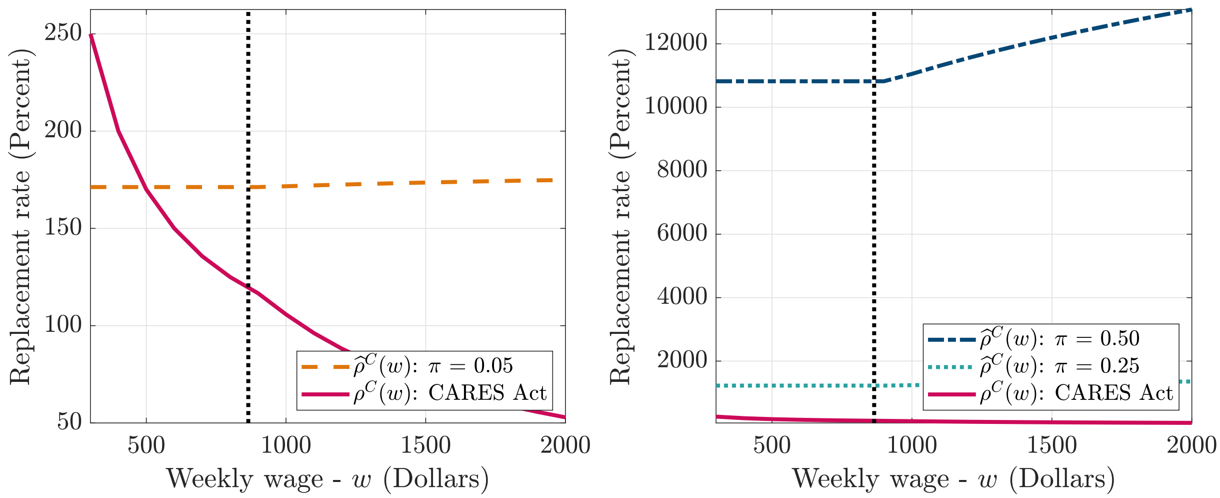

Figure 4: Reservation replacement rates under empirical values of ψ and ϕ.

Notes: Here $\psi = 0.15$, consistent with evidence from Davis and von Wachter (2011) and ϕ is such that the monthly job finding rate is 0.40, consistent with evidence from Shimer (2012). The parameter δ is varied to change the probability that the return-to-work offer expires in 4 months (π), which is reported in the legend. The black vertical line gives the median wage.

3.4 Main results - Empirically relevant case

We now turn to the empirically relevant case. First, in contrast to the above comparative statics, we incorporate the effect of job loss in a recession on the present discounted value of lifetime earnings as estimated by Davis and von Wachter (2011). This is substantially larger than the above cases. We set $\psi = 0.15$, which leads to a 15 percent loss in lifetime earnings, as opposed to the value of $\psi = 0.01$ in the above exercises. Second, in contrast to the above comparative statics, we incorporate the job finding rate commonly found in recessions. We set ϕ to match a 40 percent monthly job finding rate, as opposed to 80 percent in the above exercises. Without empirical estimates we consider values of δ such that the probability the return-to-work offer expires within four months is 0.05, 0.25, and 0.50.

Figure 4 plots the reservation replacement rate under these three cases and compares it to the replacement rate under the CARES Act. Our main result is that only a worker with a low previous wage and a nearly certain return-to-work offer, would turn down their old employer and remain unemployed under the CARES Act. To put this in context, the left panel—in which the worker faces only a 5 percent chance that their old job is not available after four months—shows that the reservation replacement rate is less than the CARES Act replacement rate for workers with hourly wages less than \$12.50 an hour. If the probability of the return-to-work offer remaining available and the wage are *positively correlated*—such that low wage jobs have more transitory return-to-work offers—then it may be the case that very few workers are in this region. The right panel shows that for higher probabilities that the return-to-work offer expires, reservation replacement rates far exceed that which is offered under the CARES Act.

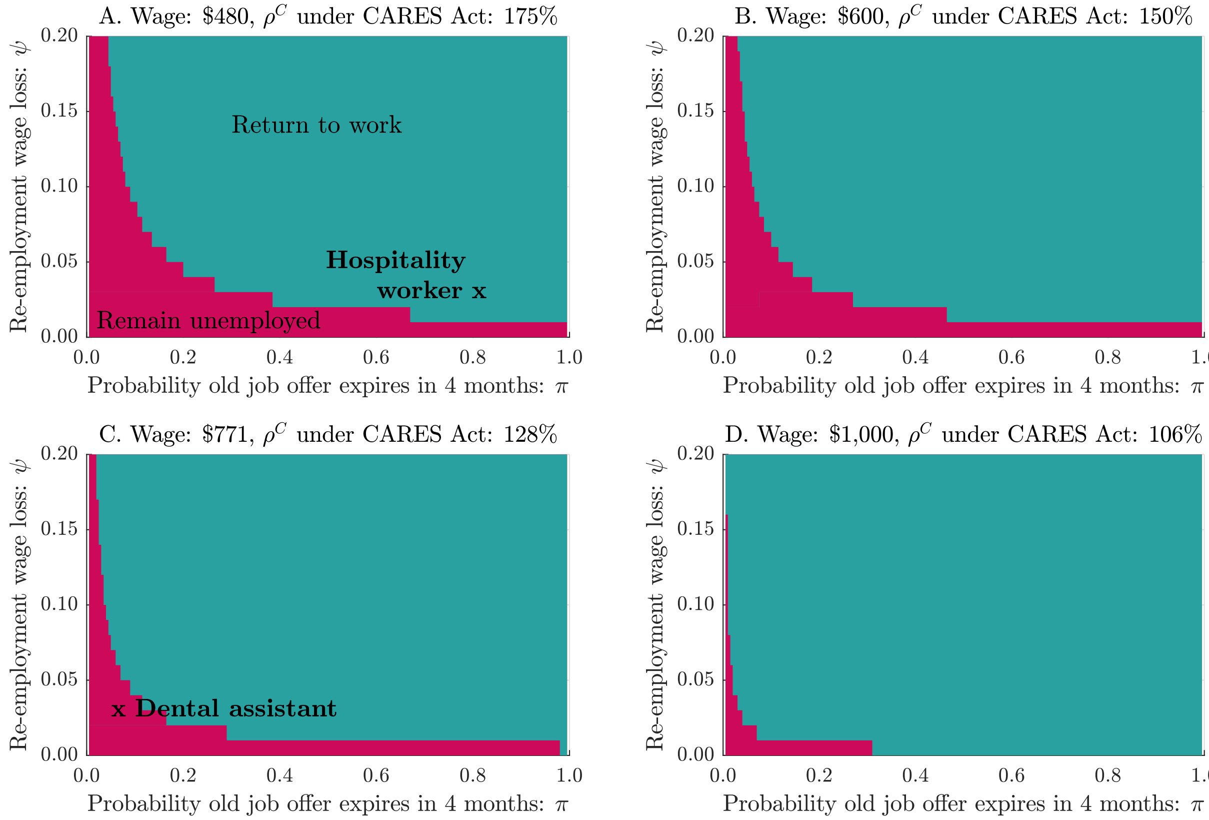

Figure 5: Rationalizing the return to work decisions of two types of workers.

Notes: Here ϕ is set such that the monthly job finding rate is 0.40, consistent with evidence from Shimer (2012). The four panels correspond to different levels of wages, which imply different replacement rates under the CARES Act, which we note in the title of each figure. On the y-axis we vary wage losses on re-employment ψ between zero and 20 percent. On the x-axis we vary the probability that the worker's return-to-work offer is no longer available in 4 months time, π, between 0 and 1. The *pink* region to the lower-left gives values of (π, ψ) such that the worker would choose to remain unemployed. The *green* region to the upper-right gives values of (π, ψ) such that the worker would choose to return to work. The mark for a *Dental assistant* corresponds to the median hourly wage of \$19.27/hr. The mark for a *Food preparation / serving worker* (hospitality worker) corresponds to the median hourly wage of \$12.01/hr. In both cases wage losses after unemployment are 3 percent: $\psi = 0.03$.

4 Two types of workers

Despite our previous results, there is anecdotal evidence that some workers may have chosen to remain unemployed under the CARES Act. As an example, we have both attended dentists in New York City and Chicago that reported having trouble getting their Dental Assistants to return to work under the CARES Act. Meanwhile, we have both found that in reopened coffee shops, most of the usual staff have returned. The model neatly rationalizes this through the probability that the worker's return-to-work offer remains valid.

In Figure 5 we compare a hypothetical *Dental Assistant* to a hypothetical *Food Preparation / Serving Worker*, and also plot the return to work decisions of different types of workers by their initial wage,

π and ψ. Consistent with Figure 4, choosing to remain unemployed requires a low previous wage, a low probability that the return-to-work offer stays available, and wage losses out of unemployment in a recession that are in general less than the empirically relevant case of $\psi = 0.15$.

We now turn to our two cases in panels A and C. The median weekly wage of a Food Preparation / Serving Worker is \$480/week, and that of a Dental Assistant is \$770/week.[4] We assume low wage losses out of unemployment are for both workers and set $\psi = 0.03$; the former due to a minimum wage that provides a floor to wage losses, and the latter due to specialized skills. We assume both workers face the same labor market frictions. The key difference is in the probability that the return-to-work offer expires. The Dental Assistant is hard to replace, and has only a 5 percent chance of their job not being available after four months ($\pi = 0.05$). The hospitality worker is more easily replaceable, and has an 80 percent chance of their job not being available after four months ($\pi = 0.80$). As shown in the figures, the median hospitality worker would return to work, while the median dental assistant would choose to remain unemployed under the CARES Act and return to work when it expires.[5]

5 Conclusion

In this short paper we use a simple *dynamic* model to enumerate reasons workers may return to work despite having access to unemployment benefits in excess of their previous wage. If workers made a *static comparison* of their previous wage to the benefits available under the CARES Act, then 68 percent of laid off workers would not have returned to work if offered their previous jobs over April to July 2020. A *dynamic comparison* factors in the limited duration of CARES Act benefits, the possibility that the option to return to their previous job is rescinded, the fact that finding a new job takes time if their old job is lost, and the prospect of permanently lower wages after the career setback of being unemployed in a recession. Quantitatively, once these factors are taken into account, we find that very few workers would not have returned to work. Only workers with a low previous wage, an almost certain return-to-work offer, and very low wage losses after unemployment would turn down their old job and remain unemployed under the CARES Act. Nonetheless, we describe jobs that satisfy these characteristics.

We conclude that high unemployment in April to July 2020 is unlikely to be due to low labor supply directly linked to the CARES Act. The causes of high unemployment are therefore outside of the scope of our analysis, and thus more likely due to low labor demand, or low labor supply due to health risks. In this paper we do not attempt to distinguish the two.

[4]See BLS Occupationa and Employment Statistics https://www.bls.gov/oes/current/oes319091.htm for *Dental Assistant* and https://www.bls.gov/oes/current/oes319091.htm for *Food Preparation / Serving Worker*.

[5]Not shown in the figure, this also holds for workers in a large part of the wage distribution of each type.

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