

Job Search Behavior among the Employed and Non-Employed

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Abstract

Using a unique new survey, we study the relationship between search effort and search outcomes for employed and non-employed job seekers. Our data have extensive information on individuals' current and previous employment situations, search behavior, job offers, accepted offers, and reservation wages. We find that the unemployed fare much worse than the employed in their job search prospects along several dimensions, despite higher job search effort. The unemployed receive fewer offers per job application, and conditional on an offer, they are offered lower pay, fewer benefits, and fewer hours. Despite this, they are more likely to accept these lower-quality offers but are also much more likely to again engage in job search on their new job. In contrast, employed job seekers receive a higher fraction of both solicited and unsolicited job offers. In fact, the employed that are not searching tend to generate more plentiful and higher-quality job offers than the unemployed. We apply our results to a model of on-the-job search with search frictions and endogenous search effort. A simple application of the estimates to the model suggest that the employed are substantially more efficient in their job search relative to the unemployed.

Keywords: job search, unemployment, search effort, reservation wage
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PRELIMINARY AND INCOMPLETE. PLEASE DO NOT CITE WITHOUT PERMISSION.

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1. Introduction

Economists have studied how workers find jobs for some time. Most studies, however, have focused on the job search of the unemployed. Early theories of frictional job search focus on search among the unemployed. (e.g., McCall, 1970; Mortensen, 1977; Pissarides, 1985; Mortensen and Pissarides, 1994). Search theories have also focused on on-the-job search.¹ Recent theories have also looked at the relationship between labor force participation and search (e.g., Alvarez and Shimer, 2010). Empirical research on the search behavior outside of the unemployed, however, has been sparse, primarily because of a lack of data on it.

We design and implement a survey that focuses on the job search behavior and outcomes for all individuals, regardless of their labor market status. The survey is a supplement of the Survey of Consumer Expectations, which is administered monthly by the Federal Reserve Bank of New York to a sample of roughly 1,300 individuals. Our survey asks an expansive list of questions on the employment status and current job search, if any, of all respondents. We ask about an individual's search effort and search methods, including whether any unsolicited contacts, referrals, or other informal methods were used. We also elicit information on their reservation wage and other job characteristics that are important for the acceptance decision. In terms of outcomes, we ask about any job offers received, how those offers came about, the characteristics of those offers, and whether these offers were accepted. We also we ask those currently employed similar questions about the search process that led to their current job.

The overarching theme from our findings is that the unemployed face relatively poor job search prospects along multiple dimensions. They exert the most effort, in both time spent and applications

¹ See for example, Burdett, 1978; Pissarides, 1994; Cahuc, Postel-Vinay, Robin, 2006; Mortensen and Nagypal, 2007; Menzio and Shi, 2009; and Moscarini and Postel-Vinay, 2013).

sent, yet yield the fewest employer contacts and job offers per application sent. When they do receive an offer, it tends to pay a lower wage, offer fewer hours, and is considerably less likely to offer any benefits. The offers are somewhat worse than their reported reservation job values, which are already low relative to the reservation job values of those searching while employed. In contrast, employed job seekers tend to do relatively well in their searches. They are much more likely to find full-time work with benefits, and the offers are in line with, if not better than, their reservation job values, on average. More striking is that the employed who do not search for new work also receive better and more frequent job offers than the unemployed, underscoring the importance of informal recruiting mechanisms such as unsolicited employer contacts and hiring through referrals.

Survey responses on the search process that led the employed to their current jobs reinforce this theme. Specifically, we find that those that were hired directly from employment after quitting their previous job are in jobs that pay better, have longer hours, and are more likely to offer benefits, consistent with a “job ladder” model of wage growth. Those hired from non-employment, in contrast, are not only employed in lower-quality jobs, but are also more likely to be searching for new work at the time of the survey. While our data are not longitudinal, we can deal with selection issues due to unobserved heterogeneity by controlling for the previous wages and hours of the employed, among other observable characteristics of the workers and their jobs. We find that those who quit directly to their current job have similar wages and hours to those who were hired following a non-employment spell. Consequently, controlling for observable worker characteristics and their prior wages and hours only reduces the difference in wages from about 36 log points to about 22 log points, and only reduces the difference in earnings from about 52 log points to 30 log points. The residual differences are economically large and statistically significant.

Our data have additional implications for the distribution of offer wages, the distribution of accepted wages, and the reservation wages of the employed and unemployed. We find that the reservation wage of the unemployed is considerably lower than the reservation wage of employed job seekers, even after controlling for observable characteristics and prior earnings. The offer wage distributions of the employed and unemployed are quite different unconditionally, but once one conditions on their reservation wage, the distributions are actually very similar. The difference in outcomes between the employed and unemployed, therefore, comes from their differences in accepted wages (relative to their reservation wage). After applying our controls, the mean accepted wage for employed job seekers is about 15 log points higher than their mean offer wage, while the mean accepted wage for the unemployed is about the same as their mean offer wage. In other words, the unemployed are much more likely to accept relatively poor job offers, despite a similar job offer distribution as employed job seekers (relative to their reservation wage). Related to this fact, the unemployed accept 30 percent of their offers because they are their only option, while only 2 percent of the employed accept offers for the same reason.

We relate our results to a model of on-the-job search with search frictions and endogenous search effort. Specifically, like Hornstein, Krusell, and Violante (2011), we extend the model of Christensen et al. (2005) to allow for differences in the search effort and search efficiency of the employed and unemployed. Within the framework of our survey, “search efficiency” within the model captures differences in the job-offer arrival rate between the employed and unemployed that occur along multiple margins, including differences in employer preferences (including any penalty due to being unemployed, like that identified by Kroft, Lange, and Notowidigdo, 2013), differences in the incidence of unsolicited employer contacts and referrals, and any unobserved job seeker differences that affect the job-finding probability and are not captured by our data. Taking our measure of applications per week as our measure of search effort and the ratio of job offers to applications as our

measure of search efficiency, our model implies that job search by the employed is between 1.9 and 3.4 times more efficient than job search by the unemployed, depending on how we treat offers received by the employed who are not looking for work.

Our findings provide several contributions to the literature on job search. First, we provide the most comprehensive evidence to date on the nature of on-the-job search, building on recent work by Fujita (2013). On the job search is pervasive, with over 25 percent of the employed looking for work during our survey month. More striking is the propensity of employed individuals not seeking work to generate job offers. This finding has strong implications for labor market models that incorporate on-the-job search. The finding is analogous to recent work on vacancies by Davis, Faberman, and Haltiwanger (2013), who find that a sizable fraction of hiring by firms occurs without the use of a formal vacancy. Part of our result stems the fact that informal job search methods, such as the use of referrals and unsolicited contacts by employers, play an important role in the job search process.² Second, we find that the distinction between those seeking new work (which is generally for full-time work) and those seeking additional work (which is generally part-time work) is important for reconciling the data with theory. Those seeking additional work often behave more like the unemployed than those seeking new work. Third, we find that the job seekers value multiple aspects of a job, particularly the wage paid, the hours worked, and the benefits offered. The degree to which job seekers value the different aspects of a job depends partly on their labor force status. Finally, we show that there exists large heterogeneity in job search outcomes by labor force status that persist after controlling for a variety of observable and unobservable characteristics. Through the lens of a standard labor search model, we show that this implies the employed are much more efficient in their job searches.

² Models of hiring through referrals such as Galenianos (2013) appear consistent with our findings.

The next section describes our survey. Section 3 presents our basic evidence on job search behavior and job search outcomes by labor force status. Section 4 presents evidence on search effort, reservation wages, offer wages, and accepted wages. Section 5 presents a model of on-the-job search with endogenous search effort, as well as some back-of-the-envelope calculations for the model-implied differences in search efficiency between the employed and unemployed. Section 6 concludes.

2. Data

Our data are a supplement to the Survey of Consumer Expectations (SCE), administered monthly by the Federal Reserve Bank of New York. The SCE is a nationally-representative survey of roughly 1,300 individuals that asks respondents about their expectations about various aspects of the economy. We designed the supplement ourselves and first administered it in October 2013. We have administered it annually in 2014 and 2015 since then. The results in this paper are based on the 2013 and 2014 data, with the sample restricted to individuals aged 18 to 64. We designed the supplement to ask a broad range of questions on employment status, job search behavior, and job search outcomes. Demographic data is also available for respondents through the monthly portion of the survey.

The data ask a variety of questions that are tailored to individuals' employment status and job search behavior. For the employed, including the self-employed, we ask questions about their wages, hours, benefits, and the type of work they do, including questions on the characteristics of their workplace. For the non-employed, we ask a range of questions about their work history, including detailed questions on their most recent employment spell. We also ask questions related to the type of non-employment, including those related to retirement, school enrollment status, and any temporary layoff.

Regardless of employment status, we ask all individuals if they have searched for work within the last four weeks, and if they had not searched, whether or not they would accept a job if one was offered to them. Among the employed, we distinguish between searching for new work or a job in addition to their current one. In our evidence below, this distinction turns out to be important. For individuals who have searched or would at least be willing to accept a new job if offered, we ask a series of questions relating to their job search (if any), including the reasons for their decision to (not) search. We ask an exhaustive set of questions on the types of effort exerted when seeking new work (e.g., updating resumes, searching online, contacting employers directly). We also ask about the number of job applications completed within the last four weeks and the number of employer contacts and job offers received. We also probe further to see how those contacts and offers came about, i.e., whether they were the result of traditional search methods or whether they came about through a referral or an unsolicited employer contact. For those who received an offer, including any offers within the last six months, we ask about a range of characteristics of the job offer, including the wage offered, the expected hours, and its benefits, as well as the type of work to be done and the characteristics of the employer. We also ask what led, or may lead, the respondent to accept or reject the offer, and ask a range of questions about whether there was any bargaining over the wage with either the current or future employer. Finally, we ask job seekers about their reservation job values, including their reservation wage and their preferred hours, and how much the wage would have to change for them to endure a variety of work disamenities (e.g., no benefits, longer hours, longer commute, relocation).

Given our relatively small sample size, we only observe a handful of job seekers, and an even smaller fraction with offers. At the same time, all employed respondents had to come about their current jobs somehow, so we ask them a range of retrospective questions about the search process for their current job, as well as questions about their previous job, including its wage paid, hours, and benefits. Most importantly, we ask respondents about their employment status at the time they were hired, which

allows us to compare their responses to those who are currently searching for work by labor force status. Finally, we ask all respondents questions regarding any benefits the respondents currently receive, such as unemployment or disability insurance, and basic questions about the household.

We try to obtain a direct hourly measure of wages, but when that is not supplied by respondents, we measure the wage as earnings per hour, based on the reported hours worked. The work hours reported are the usual hours worked at the current, most recent, offered, etc., job. Many of the survey questions follow a format similar to the Current Population Survey (CPS). One notable difference we have with the CPS is how we define labor force status. The CPS first asks individuals if they are employed or not. For the non-employed, it follows up by asking if the respondent had done anything in the previous month to search for work. Those that did, or did not because they were on temporary layoff, are counted as unemployed, while all others are counted as out of the labor force. Those who did not search are then probed to see why they are out of the labor force (e.g., retirement, full-time student, discouraged worker, etc.)

In contrast, we first ask the reason an individual is non-employed. We count an individual as unemployed if they respond that they are either “not working, but would like to work,” and report that they are actively searching for work or “temporarily laid off.” Our measure differs in that if an individual self-reports themselves in one of the other non-employment categories (e.g., retired, student, homemaker, etc.), they will be counted as out of the labor force even if they report actively searching for work. The benefit of this approach is that it allows us to look at search behavior across all three labor force categories (employed, unemployed, and out of the labor force). An issue that has plagued the measurement of gross worker flows in the CPS data is classification error (see Poterba and Summers, 1986). That is, individuals in the CPS tend to report themselves as unemployed one period, out of the labor force the next period, and unemployed again the following period. These classification errors can

have a large impact on the measured cyclical movement into and out of the labor force (Elsby, Hobijn, Sahin, 2013). Defining labor force status as we do can help uncover the sources of classification error, and give a better understanding of the labor dynamics of those who are considered out of the labor force.

Table 1 presents basic (sample-weighted) summary statistics from our survey and the October 2013 and 2014 CPS. The statistics across the two surveys are very similar, with some notable differences. The employment population ratio and the labor force participation rate are both somewhat higher in the SCE labor survey, as is the unemployment rate (based on the CPS definition). Demographic makeup is nearly identical, with the one notable exception being a higher share of married individuals in the SCE labor survey.

3. Evidence

3.A. Characteristics of Job Search Effort and Outcomes

We begin with evidence on the basic characteristics of an individual's job search and its results. Table 2 reports the incidence of job search within the last four weeks by labor force status, using the labor force definition described in the previous section. By construction, all unemployed search. Among the employed, 25 percent looked for new work in the last four weeks, with 20 percent applying to at least one job. Of those searching on the job, 35 percent were searching for an additional job and not looking to leave their current job. Over 14 percent of those reporting themselves as out of the labor force looked for work in the previous four weeks. An additional 5 percent did not search but would take a job if one was offered to them. Among the employed, nearly 7 percent did not search but would take a new job if offered.

Table 3 reports the effort and outcomes related to the job search process. We expand on the three labor market states. We separate the employed into those looking for new work, only looking for additional work, and those not looking at all; we split the unemployed into the short-term and long-term unemployed; and we split those out of the labor force into the retired and non-retired. The estimates are for all individuals, regardless of whether they searched. The estimates show that the unemployed send substantially more job applications than any other group, and that the short-term unemployed send almost twice as many applications as the long-term unemployed (10.8 vs. 6.6). The long-term unemployed, in turn, apply to more jobs than the employed seeking either new work (5.1) or additional work (4.4). Nevertheless, those employed and seeking new work receive the greatest number of employer contacts despite their lower search effort. They are also the most likely to receive an unsolicited contact from an employer. Unsolicited contacts and contacts through referrals are the primary way by which the employed not looking for work receive an offer. Despite the fact that they are not looking for work, these workers receive about one-third as many offers as workers who are searching on the job and about one-quarter as many offers as the unemployed.

Table 4 reports estimates on job search and search outcomes conditional on whether an individual actively looked for work. Here, we do not disaggregate the unemployed and those out of the labor force. The unemployed still put in about double the effort as employed job seekers, in terms of hours spent searching within the last week and applications sent within the last four weeks, compared to the employed. Nevertheless, the employed still have a greater contact yield (employer contacts per application sent), with those seeking new work have a yield that is more than triple that of the unemployed (0.59 versus 0.17). Furthermore, the employed seeking new work are much more likely to have received an offer from one of their employer contacts and generate more offers per application than the unemployed. The employed are also much more likely to seek work similar to their current job: 34 percent of those looking for new work are seeking something similar to their current job, while only 6

percent of the unemployed are seeking something similar to their most recent job. The employed seeking an additional job and those out of the labor force tend to disproportionately seek only part-time jobs.

Table 5 reports the distribution of search effort and outcomes by labor force status. The unemployed make up about 5 percent of our sample, but account for over 32 percent of all job applications sent. At the same time, they only receive 13 percent of all offers made. In stark contrast, the employed who report not looking for work account send no applications by construction but account for 25 of all employer contacts and receive 28 percent of all job offers. This is due, in part, to the fact that they also account for 40 percent of all unsolicited employer contacts and 30 percent of all referrals. Those actively searching on the job account for another 47 percent of all job offers. Thus, the job search behavior of the unemployed can be characterized by high effort, but relatively low returns in terms of employer contacts and job offers. The employed, on the other hand, fare fairly well regardless of whether they are actually looking for work.

3.B. The Job Search Process of the Currently Employed

We can also examine job search retroactively for those employed at the time of the survey interview by asking them how they came about their current jobs. The advantage of this approach is that we are able to compare the starting wages across labor force statuses controlling for differences in prior employment history (i.e., the wage and hours of the previous job), which provides a rough proxy for any unobserved differences in individual characteristics that cause individuals to sort into different labor force statuses. Our retroactive questioning allows us to differentiate individuals into those who were previously employed but quit directly to their new job, those who were previously employed but started

their job immediately following a layoff, and those who were hired from non-employment.³ We first focus on the job characteristics of the current job relative to those of the previous job. We then examine how the search process for the current job differs by employment status at the time of hire.

Table 6 presents the characteristics of the current and previous job by labor force status at the time of hire. We focus on the comparison of the non-employed to those who directly quit to their current job. Those hired from non-employment are paid lower wages, have fewer work hours, and are much less likely to have any benefits. Furthermore, those who were hired after quitting their previous job fare considerably better than those hired following a layoff. Those hired through a quit also appear to have better job stability, with an average job tenure just under 8 years, compared to just over 4 years for the non-employed. When we condition on observable characteristics of the worker and the job, the differences in wages fall somewhat.⁴ The log difference in the current wage and starting wage between those who quit and the non-employed are 46 log points and 36 log points, respectively, before applying controls, and 23 log points and 24 log points, respectively, after controlling for observable characteristics. The differences in earnings are even larger: 61 and 52 log points, respectively, unconditionally, and 31 and 33 log points respectively, after applying controls. Controlling for the (log) wage and (log) hours of the previous job changes these differences only slightly, to 32 and 30 log points, respectively. The last rows of Table 6 shows why this is the case. Despite the large differences in the quality of the current job across the two labor force categories, the differences in the quality of the previous jobs are small and statistically insignificant. Both the wages and the work hours of the previous

³ In unreported results, we experiment with further differentiating the non-employed by those who were and were not searching for work when they were hired, but it turns out that nearly all of the non-employed were looking for work when hired.

⁴ The individual characteristics that the residual wage measures control for sex, age, age squared, marital status, marital status $\times$ sex, education, race, homeowner status, and number of household children. The job characteristics that the measures control for are a two-digit occupation, two-digit industry, tenure, tenure squared, firm size, an indicator for self-employment, and the date of the reported wage (e.g., the survey date for the current wage, and the date of hire for the starting wage).

jobs are comparable across groups. Unconditionally, the log difference in the previous wage between those who quit directly to their current job and those that were non-employed is only 8 log points, and falls to less than 2 log points when controlling for observable characteristics. Differences in earnings between the two groups are also small: 12 log points unconditionally, and 3 log points controlling for observable characteristics. Figure 1 illustrates these differences graphically for the full distribution of the employed. It plots the (log) difference in the starting wage, relative to the previous wage, for those who quit directly to their current job and those who were previous non-employed. After controlling for observable characteristics, those who quit receive a 6 log point increase in their wage, while those who were non-employed receive a 16 log point *decrease* in their wage.

Table 7 reports the estimates on search behavior for the current job by labor force status at the time of hiring. Those hired from non-employment search more than twice as long, on average, as those who quit directly to their current job. The non-employed are also considerably less likely to have had a referral or unsolicited contact in their prior search, consistent with the outcomes of current job seekers in Tables 3 and 4. The non-employed also sent more applications per week (and considerably more total applications, since their search spells were so much longer), but received about half as many offers per week as those who quit directly to their current job. Consequently, the non-employed have much lower offers per application than those who quit, 0.179 versus 0.462. Finally, those hired from non-employment are about twice as likely to be searching for work again at the time of the survey interview, with 42 percent of them actively looking for new work, compared to 21 percent of those who quit to their current job.

The evidence does not seem to support the hypothesis that the poor employment prospects of those seeking work from non-employment are the result of negative selection. In contrast, the employment histories by labor force status at the time of hire are quite similar. Instead, the evidence

appears consistent with an implicit penalty for job seeking while unemployed, similar to Kroft, Lange, and Notowidigdo (2013). Even those who found work immediately following a layoff fare better than those who are non-employed. If job-finding has a stochastic and idiosyncratic component to it, these individuals could be thought of as those who were stochastically “lucky” in their job findings prospects, while the remainder are those who were forced into a spell of non-employment before finding a job, further dampening their prospects. There may still be some unobserved differences across individuals that previous job history does not capture, but the job histories alone suggest that individuals at the time of hire are fairly similar, on average, across the labor force categories.

4. Characteristics of Job Offers, Accepted Jobs, and the Reservation Wage

Thus far, it is clear that the unemployed fare worse than those searching while on the job in their job-finding prospects. They exert more effort yet receive fewer offers. Furthermore, those who do find work appear to be in lower-quality jobs than those who quit directly to their current job despite the fact that there are little differences in the earnings of their previous jobs. This holds even after controlling for observable characteristics of the job and worker.

To dig further into why these differences persist, we examine how the actual job offers, including all offers and the subset of those that are accepted, differ by labor force status at the time of the offer. We also compare how reported reservation job values differ by labor force status. The measures are important features of most models of labor market search, and within such models, are tightly linked. For example, in a canonical model of wage dispersion, such as Burdett and Mortensen (1998), the difference between the distribution of offered wages and accepted wages is determined by the reservation wage of the unemployed. The model we present below also has this feature. Consequently, it is useful to see how these constructs relate to each other in the data, as they each have a direct relationship to theory.

Our survey asks individuals about any offers they received in the last four weeks. For those who received no offer in the last four weeks, it probes further to elicit information on any offers received within the last six months. It asks about a variety of job characteristics and about characteristics of the search and bargaining process. It also asks if the offer was accepted (and if it represented their current job), and it asks whether the individual was employed, either full-time or part-time at the time of the offer. Our reservation wage represents the lowest wage an individual is willing to accept. We also ask about their desired hours and their preferences on other aspects of the job (relocation, commuting, health benefits, and hours).

Table 8 presents the characteristics of all job offers by labor force status at the time of the job offer. We focus on the comparison of the non-employed to those looking for full-time work. In short, the non-employed receive consistently worse job offers than the employed. Those who were employed full-time at the time of the offer receive offers with wages that are 82 percent higher, hours that are 28 percent higher, and are half as likely to have no benefits. They are also twice as likely to have received their offer through an unsolicited contact, though only slightly more likely to have received the offer through a referral. Potentially contributing to the differences in job offers between the two groups, the full-time employed are more than twice as likely to bargain over their offers, with 45 percent of their offers involving some bargaining, compared to 21 percent for the non-employed. Controlling for observable worker characteristics reduces the differences between the full-time employed and non-employed considerably, but large differences persist. The difference in (log) offer wage between the two groups falls from 60 log points to 28 log points, while the difference in (log) offer earnings falls from 84

log points to 45 log points. Additionally controlling for the prior wage and hours of the individual reduces the wage and earnings differences to 18 and 28 log points, respectively.⁵

Despite these relatively poor job offers, the non-employed are more than twice as likely to accept them as the full-time employed, with 58 percent of offers accepted versus 27 percent. Table 9 shows that the lower degree of selectivity by the non-employed generates even more stark differences between their accepted wages and those of the full-time employed. The evidence suggests that a primary reason for the lack of selectivity is the lack of alternative options for the non-employed. Over 30 percent of the non-employed cite a lack of other alternatives as the main reason for accepting an offer, while only 2 percent of the full-time employed cite that as their primary reason. Consequently, the (log) difference in accepted wages between the full-time employed and non-employed grows to 91 log points, and the (log) difference in earnings grows to 115 log points, unconditionally. The (log) difference in wages is still 31 log points, and the (log) difference in earnings is 41 log points, after controlling for observable characteristics. Additionally controlling for the prior wage and hours removes much of the difference, however, with the (log) difference in wages falling to 14 log points, and the (log) difference in earnings is only 6 log points.

Table 10 shows another reason the non-employed are more likely to accept poor job offers: they have lower reservation wages. Notably, the table presents our reservation job value estimates by labor force status at the time of the survey interview. We focus on the comparison of the unemployed to those who are employed and seeking a new job. The unemployed have a substantially lower reservation wage, on average, than the employed seeking new work. Despite this, both groups are generally looking for full-time work. The evidence in Tables 8 and 9, however, show that the employed

⁵ The prior wage and hours for individuals comes from the previous job for the employed and the most recent job of the non-employed.

are much more likely to find it. Unconditionally, the log difference in reservation wages between the employed seeking new work and the unemployed is 49 log points, while the log difference in earnings is 59 log points. Controlling for observable characteristics reduces these differences to 29 and 31 log points, respectively, but additionally controlling for the wage and hours of the prior job increases the difference back somewhat, to 36 and 37 log points, respectively. Additionally, despite a lower reservation wage, the unemployed appear less willing to relocate for new work, with 55 percent saying they would not do it for any wage. Only 30 percent of the employed seeking new work say the same. The employed are somewhat more likely require health insurance and slightly less likely to accept higher than their desired hours.

Putting the evidence on job offers, accepted offers, and reservation wages together suggests that the unemployed accept relatively poor job offers in part because they have few other options and in part because their reservation wages are low. It is worth noting that the two causes need not be independent of each other. Figure 2 presents the difference in the distributions of the offered wages and accepted wages for the full-time employed and non-employed, defined by their labor force status at the time of their offer. The top panel presents the distributions controlling for observable characteristics and the prior wage and hours, but with no normalizations. The bottom panel shows the distributions with the same controls, but normalizes the wages relative to an individual's reservation wage.

Consistent with the evidence in Tables 8 and 9, the offer wage distribution of the full-time employed stochastically dominates the offer distribution of the non-employed, and the accepted wage distribution of the full-time employed also stochastically dominates the accepted wage distribution of the non-employed. As one would expect, within each group of individuals, the accepted wage distribution is less disperse than the offer wage distribution, though there is not much evidence of left

truncation of the distributions, as one might expect if acceptance decisions were dominated by a single reservation wage.

Since Table 10 shows that there is clear and systematic differences in the reservation wage, we turn to the normalized distributions in the bottom panel of Figure 2. In this case, the offer distribution and the acceptance distribution of the non-employed are now very similar. In other words, once we account for heterogeneity in reservation wages, the non-employed generally accept what they are offered. This is not the case for the full-time employed, however. Accounting for the differences in their reservation wages suggests that their accepted wage offer distribution is less disperse and stochastically dominates their offered wage distribution. In other words, the full-time employed are selective in the jobs that they accept, and as theory would predict, their reservation wage drives a wedge between their offered wages and accepted wages.

5. A Model of On-the-Job Search with Endogenous Search Effort

5.A. Model Setup

We now turn to a model of on-the-job search with endogenous search effort. Our model is an extension of the model of Christensen et al. (2005). Here, we allow for differing levels of search efficiency between the employed and unemployed, which is reflected in differing job-offer arrival rates. The model economy is comprised of homogenous, risk neutral workers who can search either on-the-job or while unemployed. Wage offers, w , are drawn from an i.i.d. distribution with c.d.f. $F(w)$, i.e., $F(w)$ equals the probability a wage $w' \leq w$ is drawn. Similarly, $F(w)$ is the fraction of vacancies that offer w or less.

Outside offers arrive at Poisson rate $s\lambda$, where s is the endogenously chosen level of search effort and λ is the job-offer arrival rate. The job-offer arrival rate differs by employment status, so that

$\lambda = \lambda_i$ for $i \in \{e, u\}$.⁶ Search effort has an increasing, convex cost, $c(s)$, with $c', c'' > 0$ and $c(0) = c'(0) = 0$. Existing jobs end exogenously at a rate δ , and the discount rate is r .

Given this setup, the Bellman equation for the employed is

$$rW(w) = \max_{s \geq 0} \left\{ w - c(s) + s\lambda_e \int [\max\{W(x), W(w)\} - W(w)] dF(x) - \delta[W(w) - U] \right\}. \quad (1)$$

This can be rewritten as

$$W(w) = \max_{s \geq 0} \left\{ \frac{w - c(s) + s\lambda_e \int \max\{W(x), W(w)\} dF(x) + \delta U}{r + \delta + s\lambda_e} \right\}.$$

As Christensen et al. (2005) note, one can show that the value of employment is increasing in the wage. Consequently, optimal search effort will vary with the wage. Since the cost of search effort is increasing and convex, search effort will decline with the wage. One can write the derivative of (1) with respect to w as

$$W'(w) = \frac{1}{r + \delta + s_e(w)\lambda_e[1 - F(w)]} > 0,$$

where $s_e(w)$ is the optimal choice of search effort by the employed given w . As one can see, the derivative is strictly positive. The first order condition of (1) is

$$\begin{aligned} c'(s_e(w)) &= \lambda_e \int_w^{\bar{w}} [W(x) - W(w)] dF(x) = \lambda_e \int_w^{\bar{w}} W'(x)[1 - F(x)] dx \\ &= \lambda_e \int_w^{\bar{w}} \frac{[1 - F(x)]}{r + \delta + s_e(x)\lambda_e[1 - F(x)]} dx, \end{aligned} \quad (2)$$

⁶ Our model is closely related to the extension of Christensen et al. (2005) derived by Hornstein, Krusell, and Violante (2011), but it maintains the distinction between search effort, s_i , and search efficiency, λ_i , since our data can separately identify the two.

where $\bar{w}$ is the upper support of $F(w)$. The last two equalities can be derived by integrating by parts and substituting for $W'(w)$. Note that, since $s'(w) < 0$, it will be the case that $s(\bar{w}) = 0$.

The unemployed face a similar value of search. While unemployed, individual receive a flow utility of unemployment, b . They have the same search cost function as the employed, but face a different job-offer arrival rate. Consequently, an unemployed job seeker solves

$$rU = \max_{s \geq 0} \left\{ b - c(s) + s\lambda_u \int [\max\{W(x), U\} - U] dF(x) \right\}. \quad (3)$$

The unemployed will have a reservation wage, R , that solves $W(R) = U$. In other words, the reservation wage is the wage where the unemployed are just indifferent between a job that pays R and unemployment. One can show that, since the unemployed all have the same flow value of unemployment and face the same expected wage, they will all choose the same search effort. As it turns out, the optimal search effort of the unemployed will depend only on the reservation wage, so that the search effort of the unemployed, s_u , is such that $s_u = s_u(R)$. Despite the fairly straightforward solution to the optimal search effort of the unemployed, it is useful in this case to derive the first order condition for (3) because it will be useful in deriving R in this model,

$$c'(s_u) = \lambda_u \int_R^{\bar{w}} \frac{[1 - F(x)]}{r + \delta + s_e(x)\lambda_e[1 - F(x)]} dx. \quad (4)$$

The solution is identical to (2) except for the different job-offer arrival rate and the fact that the expected value of search, represented by the integral, spans all possible equilibrium wages, since no firm will offer a wage (and no worker will accept a wage) less than R in equilibrium.

We can obtain an expression for the reservation wage by using the fact that $W(R) = U$ and substituting in (1) and (3). Doing so yields the following expression,

$$R = b - [c(s_u) - c(s_e(R))] + [s_u\lambda_u - s_e(R)\lambda_e] \int_R^{\bar{w}} \frac{[1 - F(x)]}{r + \delta + s_e(x)\lambda_e[1 - F(x)]} dx. \quad (5)$$

In general, whether or not the reservation wage is greater than or less than the flow value of unemployment, b , will depend on the search effort cost function and the expected returns to search, conditional on the job-finding rate, i.e., the integral on the right-hand side of (5). Regardless of the relative value of the reservation wage, it will be the case that those employed at the reservation wage will exert greater (less) search effort than the unemployed if $\lambda_e > \lambda_u$ ($\lambda_e < \lambda_u$). To see this, simply substitute (2) into (4) for the case where $w = R$ to obtain

$$c'(s_u) = \frac{\lambda_u}{\lambda_e} c'(s_e(R)). \quad (6)$$

Since $c(s)$ is convex, $\lambda_e > \lambda_u$ will imply that $s_u < s_e(R)$. Note that if $\lambda_e = \lambda_u$, then $R = b$ and $s_u = s_e(R)$ and we have exactly the model of Christensen et al. (2005). To understand how the reservation wage will respond to these differences, maintain the assumption that $\lambda_e > \lambda_u$ and return to equation (5). Given that $s_u < s_e(R)$, the difference in cost functions on the right-hand side of (5) will tend to increase the reservation wage. Searching while employed will imply higher equilibrium search effort (because of the greater returns to search), so the job seeker will have to be compensated with a higher reservation wage. At the same time, $s_u < s_e(R)$ implies that the last term on the right-hand side is negative. Higher search efficiency while employed increase the option value of employment, causing the job seeker to lower her reservation wage in order to become employed and have an opportunity of even better (or at least more frequent) job offers once employed. Though we do not derive it here, one can premultiply the right-hand sides of (2) and (4) by s_i and substitute them into the last term on the right-hand side of (5), then appeal to the fact that $c(s)$ is a convex function to show that, in general, the reservation wage will be less than b when $\lambda_e > \lambda_u$. That is to say, the option value of employment is the dominant effect on the reservation wage.

5.B. Model Steady-State

In steady state, unemployment inflows must equal unemployment outflows, and employment inflows must equal employment outflows. Normalizing the labor force to one, the inflow into unemployment will be $(1 - u)\delta$ and the outflow from unemployment to employment will be $s_u\lambda_u[1 - F(R)]u$. This implies that the steady-state level of unemployment solves

$$\frac{u}{1 - u} = \frac{\delta}{s_u\lambda_u[1 - F(R)]} = \frac{\delta}{s_u\lambda_u}. \quad (7)$$

where the last equality follows because $F(R) = 0$ in equilibrium. Equation (7) illustrates the standard model of unemployment where increases in the job destruction rate (i.e., turnover) increases the unemployment rate, while increases in the job-finding rate of the unemployed decreases unemployment.

Turning to the steady-state equation for the employed, we must first define the c.d.f. of the distribution of wages of the employed as $G(w)$, i.e., $G(w)$ is the fraction of all workers earnings wage less than or equal to w . Since wages do not change while employed, $G(w)$ is also equal to the c.d.f. of the distribution of accepted wages. The c.d.f. will evolve through an inflow of unemployed into jobs with a wage between R and w . Therefore, the inflow will be $s_u\lambda_u[F(w) - F(R)]u$. It will also evolve through an outflow of employed workers. The outflow will consist of all workers with a wage of w or less that loses their job exogenously, plus all workers who find a job that pays $w' > w$. This implies that the outflow of employed workers is

$$(1 - u)G(w)\delta + (1 - u)\lambda_e \int_R^w s_e(x)[1 - F(w)]dG(x).$$

Rewriting the employment flow steady state equation, one obtains

$$\delta G(w) + \lambda_e [1 - F(w)] \int_R^w s_e(x) dG(x) = s_u \lambda_u [F(w) - F(R)] \frac{u}{1-u} = \delta F(w), \quad (8)$$

where the last inequality follows from (7) and the fact that $F(R) = 0$. Equation (8) implies that $G(w)$ stochastically dominates $F(w)$, and the difference can be interpreted as a employment premium on the wage. It is decreasing in the job destruction rate, but increasing in the job-offer rate. Note also that the integral is equal to the average search effort for all those searching on the job with a wage less than or equal to w .

$$\frac{F(w) - G(w)}{1 - F(w)} = \frac{\lambda_e}{\delta} \int_R^w s_e(x) dG(x) > 0, \text{ for all } w \in (\underline{w}, \bar{w}). \quad (9)$$

5.C. Basic Calibration

If we let search effort costs be $c(s) = \frac{s^{1+\gamma}}{1+\gamma}$, $\gamma \geq 0$, we can derive a more specific function for the reservation wage in (5). First, note that $c'(s) = s^\gamma$, which we can substitute into (6) to show that

$$s_u = \left(\frac{\lambda_u}{\lambda_e} \right)^{\frac{1}{\gamma}} s_e(R). \quad (10)$$

Substituting this into (5) and rearranging terms, we get the following expression for the reservation wage,

$$R = b - c(s_u) \left(1 - \left(\frac{\lambda_e}{\lambda_u} \right)^{\frac{1+\gamma}{\gamma}} \right) + s_u \lambda_u \left(1 - \left(\frac{\lambda_e}{\lambda_u} \right)^{\frac{1+\gamma}{\gamma}} \right) \int_R^{\bar{w}} \frac{[1 - F(x)]}{r + \delta + s_e(x) \lambda_e [1 - F(x)]} dx. \quad (11)$$

By substituting in (4) to (11) and rearranging terms, this can be simplified even further to obtain the following expression for the reservation wage,

$$R = b - \frac{\gamma}{1 + \gamma} \left(\left(\frac{\lambda_e}{\lambda_u} \right)^{\frac{1+\gamma}{\gamma}} - 1 \right) s_u^{1+\gamma}. \quad (12)$$

We close out this section with a brief calibration of the model to our data. Table 11 presents the implied values for λ_i from the data. We assume that search effort by labor force status is directly proportional to the number of applications job seekers sent in the previous four weeks. The results in Table 4 suggest that using hours searched per week would yield similar results. We estimate the job offer arrival rate, $s_i \lambda_i$ as the number of offers received. Therefore, the job offer arrival rate, λ_i , our measure of search efficiency, is the number of offers received per application sent. In the data, we can estimate these parameters for the employed one of two ways: for all employed individuals, and for only the employed who actively search.

We present the calibration exercise in Table 11. In the exercise, we normalize the search effort of the unemployed to 1. We estimate the parameters for the employed both ways. Including all employed greatly increased their implied search efficiency because many employed who are not looking for work receive job offers. In both cases, our data suggest that $\lambda_u < \lambda_e$. In the case when we only consider the employed who actively search, the ratio λ_e/λ_u is 1.90, and in the case where we consider all of the employed, the ratio is 3.42. Thus, the employed are considerably more efficient in their search, in terms of the model parameters.

6. Conclusions

[TO BE COMPLETED]

References

- Alvarez, Fernando, and Robert Shimer, 2011. "Search and rest unemployment." *Econometrica* 79(1): 75-122.
- Burdett, Kenneth, 1978. "A theory of employee job search and quit rates." *The American Economic Review* 68(1): 212-220.
- Burdett, Kenneth, and Dale T. Mortensen, 1998. "Wage differentials, employer size, and unemployment." *International Economic Review*: 257-273.
- Cahuc, Pierre, Fabien Postel-Vinay, and Jean-Marc Robin, 2006. "Wage bargaining with on-the-job search: Theory and evidence." *Econometrica* 74(2): 323-364.
- Christensen, Bent Jesper, Rasmus Lentz, Dale T. Mortensen, George R. Neumann, and Axel Werwatz, 2005. "On-the-Job Search and the Wage Distribution." *Journal of Labor Economics*, Vol. 23 (1): 31-58.
- Davis, Steven J., R. Jason Faberman, and John C. Haltiwanger, 2013. "The Establishment-Level Behavior of Vacancies and Hiring," *Quarterly Journal of Economics*, Vol. 128 (2): 581-622.
- Elsby, Michael WL, Bart Hobijn, and Ayşegül Şahin, 2015. "On the importance of the participation margin for labor market fluctuations." *Journal of Monetary Economics* 72: 64-82.
- Fujita, Shigeru, 2012. "An Empirical Analysis of On-the-Job Search and Job-to-Job Transitions," Federal Reserve Bank of Philadelphia Working Paper No. 10-34R.
- Galenianos, Manolis, 2013. "Learning about match quality and the use of referrals." *Review of Economic Dynamics* 16, (4): 668-690.
- Hornstein, Andreas, Per Krusell, and G. L. Violante, 2011. "Frictional wage dispersion in search models: A quantitative assessment." *American Economic Review* 101 (7): 2873-98.
- Kroft, Kory, Fabian Lange, and Matthew J. Notowidigdo, 2013. "Duration Dependence and Labor Market Conditions: Theory and Evidence from a Field Experiment," *Quarterly Journal of Economics*, Vol. 128(3), 1123-1167.
- McCall, John Joseph. "Economics of information and job search." *The Quarterly Journal of Economics* (1970): 113-126.
- Menzio, Guido, and Shouyong Shi, 2011. "Efficient Search on the Job and the Business Cycle." *Journal of Political Economy* 119 (3): 468-510.
- Mortensen, Dale. T., 1977. "Unemployment Insurance and the Labor Supply Decision," in: A. Katz, ed., "The economics of unemployment insurance: a symposium", *Industrial and Labor Relations Review*, 30.
- Mortensen, Dale T., and Eva Nagypal, 2007. "More on unemployment and vacancy fluctuations." *Review of Economic dynamics* 10 (3): 327-347.
- Moscarini, Giuseppe, and Fabien Postel-Vinay, 2013. "Stochastic search equilibrium." *The Review of Economic Studies*, 80(4): 1545-1581.
- Pissarides, Christopher A., 1985. "Short-run equilibrium dynamics of unemployment, vacancies, and real wages." *The American Economic Review* 75(4): 676-690.

Pissarides, Christopher A., 1994. "Search unemployment with on-the-job search." *The Review of Economic Studies* 61 (3): 457-475.

Poterba, James M., and Lawrence H. Summers, 1986. "Reporting errors and labor market dynamics." *Econometrica: Journal of the Econometric Society*: 1319-1338.

Table 1. Summary Statistics, SCE Labor Supplement vs. CPS, October 2013

	SCE Labor (2013-14)	CPS, Oct. 2013	CPS, Oct. 2014
<i>Labor Force Status</i>			
Employment-Population Ratio	0.643	0.602	0.610
Unemployment Rate (BLS Definition, % of LF)	9.8	6.0	7.2
Unemployment Rate (SCE Definition, % of LF)	6.5	---	---
Percent not in the Labor Force (SCE Definition)	31.3	35.9	36.0
<i>Demographics</i>			
Percent Male	49.5	50.2	50.3
Percent White	77.6	79.6	79.3
Percent Married	62.1	50.2	50.2
Percent with College Degree	30.8	31.7	32.4
Percent aged 16-40	27.2	29.6	29.8
Percent aged 40-59	39.0	38.4	37.4
Percent aged 60+	33.8	32.0	32.8

Note: Estimates come from authors' tabulations from the SCE Labor Supplement or the Current Population Survey (CPS) for October 2013 and October 2014.

Table 2. Basic Job Search Statistics by Labor Force Status

	Employed	Unemployed	Out of LF
Percent that actively searched for work, self-reported or through revealed effort	25.1 (1.1)	100.0 (0.0)	14.4 (1.9)
Percent applying to at least one vacancy in last four weeks	20.0 (1.0)	96.3 (2.0)	10.8 (1.7)
Percent with positive time spent searching in last seven days	20.4 (1.0)	92.9 (2.8)	11.4 (1.7)
Percent reporting looking for work in last four weeks	21.2 (1.0)	100.0 (0.0)	12.7 (1.8)
Percent with no search, but would take job if offered, last four weeks	7.2 (0.6)	0.0 (0.0)	5.2 (1.2)
Percent only searching for additional job, last four weeks	8.7 (0.7)		
No. of Observations	1,626	86	349

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and 2014, restricted to individuals aged 18-64. Standard errors are in parentheses.

Table 3. Search Effort and Outcomes by Detailed Labor Force Status

	<i>Employed</i>			<i>Unemployed</i>		<i>OLF</i>	
	Wants New Job	Wants Addl. Job	Not Looking	< 26 Weeks	≥ 26 Weeks	Non- Retired	Retired
<i>Job Search over Last Four Weeks</i>							
Mean applications	5.14 (0.84)	3.38 (0.44)	0.00 (---)	10.84 (2.24)	6.66 (1.23)	0.61 (0.41)	0.29 (0.20)
Mean contacts received	2.60 (0.54)	0.87 (0.15)	0.34 (0.05)	2.04 (0.67)	0.97 (0.20)	0.13 (0.04)	0.25 (0.06)
Mean unsolicited contacts	1.04 (0.23)	0.46 (0.11)	0.29 (0.04)	0.87 (0.42)	0.26 (0.10)	0.04 (0.02)	0.20 (0.06)
Pct. with contact from a referral	26.2 (2.7)	17.1 (3.4)	4.4 (0.6)	21.3 (6.0)	23.8 (7.0)	2.5 (1.1)	4.2 (1.6)
Mean offers	0.36 (0.04)	0.46 (0.11)	0.10 (0.01)	0.48 (0.16)	0.33 (0.21)	0.07 (0.02)	0.13 (0.04)
<i>N</i>	271	124	1,040	48	38	189	160

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and 2014, restricted to individuals aged 18-64. Standard errors are in parentheses.

Table 4. Search Effort and Outcomes by Labor Force Status, Conditional on Job Search

	<i>Employed</i>		<i>Unemployed</i>	<i>OLF</i>
	Wants New Job	Wants Addl. Job		
Hours spent searching, last 7 days	4.53 (0.37)	5.05 (0.47)	10.40 (1.04)	2.99 (0.85)
Pct. only seeking PT work	3.8 (1.3)	43.0 (4.6)	8.7 (3.1)	57.8 (7.8)
Pct. only seeking similar work (to most recent job)	33.5 (3.1)	18.6 (3.6)	6.0 (2.6)	10.0 (4.7)
<i>Job Search over Last Four Weeks</i>				
Mean applications	4.71 (0.67)	3.40 (0.46)	8.95 (1.37)	3.40 (1.93)
Mean contacts	2.76 (0.62)	0.91 (0.16)	1.55 (0.38)	0.58 (0.16)
Mean unsolicited contacts	0.96 (0.24)	0.51 (0.12)	0.59 (0.24)	0.09 (0.05)
Mean offers	0.30 (0.04)	0.47 (0.12)	0.41 (0.13)	0.25 (0.07)
Contacts per application	0.585	0.266	0.173	0.172
Interviews per application (2014 Only)	0.074	0.073	0.034	0.048
Offers per application	0.064	0.138	0.046	0.073
<i>N</i>	236	115	86	41

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and 2014, restricted to individuals aged 18-64. Standard errors are in parentheses.

Table 5. Search Effort and Outcomes by Labor Force Status

	Wants New Job	<i>Employed</i> Wants Addl. Job	Not Looking	<i>Unemployed</i>	<i>OLF</i>
Pct. of population	11.6	7.3	56.3	5.0	19.7
<i>Job Search over Last Four Weeks</i>					
Pct. of total applications	42.9	17.8	0.0	32.3	7.0
Pct. of contacts received	47.2	10.0	25.1	12.2	5.4
Pct. of unsolicited contacts	35.6	9.9	39.9	8.8	5.9
Pct. of referrals (2014 only)	39.4	9.8	30.4	12.5	7.9
Pct. of offers received	26.3	21.2	28.1	13.1	11.3

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and 2014, restricted to individuals aged 18-64.

Table 6. Characteristics of Current and Previous Job, by Labor Force Status at Time of Hire

	<i>Hired from Employment</i>		<i>Hired from Non-Employment</i>
	Quit	Laid Off	
Share of Employment	56.5	14.5	29.0
<i>Characteristics of Current Job</i>			
<i>Raw Estimates</i>			
Current Wage	\$ 30.17 (1.30)	\$ 22.53 (1.54)	\$ 19.32 (1.02)
Starting wage	\$ 22.13 (1.24)	\$ 16.19 (1.07)	\$ 15.50 (0.95)
Usual hours	43.22 (0.45)	36.14 (1.19)	36.53 (0.84)
Mean tenure (mos.)	94.97 (5.10)	78.14 (7.87)	50.46 (4.60)
Pct. with no benefits	11.4 (1.6)	25.4 (4.4)	32.8 (3.5)
<i>Conditional on Observable Characteristics¹</i>			
Current Wage	\$ 23.28 (0.78)	\$ 18.49 (0.76)	\$ 18.59 (0.66)
Starting wage	\$ 17.78 (0.69)	\$ 14.52 (0.79)	\$ 13.97 (0.48)
Usual hours	40.03 (0.50)	34.27 (1.05)	36.67 (0.82)
<i>Conditional on Observable Characteristics, Previous Job Wages and Hours¹</i>			
Current Wage	\$ 23.66 (0.76)	\$ 20.54 (0.87)	\$ 18.75 (0.54)
Starting wage	\$ 17.14 (0.61)	\$ 15.58 (0.86)	\$ 13.77 (0.41)
Usual hours	40.17 (0.45)	36.50 (1.12)	36.95 (0.82)
<i>Characteristics of Previous Job</i>			
<i>Raw Estimates</i>			
Ending wage	\$ 21.28 (1.45)	\$ 16.50 (1.28)	\$ 19.57 (1.97)
Usual hours	40.51 (0.53)	35.31 (1.09)	39.07 (0.73)
<i>Conditional on Observable Characteristics¹</i>			
Ending wage	\$ 17.55 (0.89)	\$ 14.33 (0.75)	\$ 17.28 (1.17)
Usual hours	39.54 (0.58)	34.19 (0.98)	39.16 (0.70)
<i>N</i>	400	99	184

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and October 2014. Standard errors are in parentheses. "Most recent" wage refers to the current wage for the employed, and the last wage earned for the non-employed.

1. Wage estimates use a residual wage that conditions on observable job seeker characteristics.

Table 7. Characteristics of Job Search among the Employed, by Labor Force Status at Time of Hire

	<i>Hired from Employment</i>		<i>Hired from Non-Employment</i>
	Quit	Laid Off	
<i>Search for Current Job</i>			
Weeks spent searching for current job	7.76 (0.84)	5.47 (1.07)	19.32 (2.00)
Unsolicited contacts per week of search	0.26 (0.04)	0.13 (0.05)	0.07 (0.02)
Pct. with contacts from a referral	41.6 (2.7)	47.6 (5.7)	21.5 (3.3)
Applications per week of search	1.30 (0.15)	1.87 (0.23)	1.62 (0.18)
Offers per week of Search	0.60 (0.04)	0.67 (0.11)	0.29 (0.04)
Percent Currently Looking for Work, Last Four Weeks	21.0 (2.0)	26.7 (4.4)	41.8 (3.6)
<i>N</i>	400	99	184

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and October 2014. Standard errors are in parentheses. Note that "Did Not Search" includes those that had no non-employment spell between jobs (regardless of actual search) in 2013.

Table 8. Characteristics of Best Job Offer by Labor Force Status

	Employed, Full-Time	Employed, Part-Time	Non-Employed
<i>Raw Estimates</i>			
Mean wage of job offer	\$ 27.43 (2.12)	\$ 16.06 (1.22)	\$ 15.11 (1.13)
Mean hours of job offer	38.99 (0.87)	27.18 (1.58)	30.49 (1.17)
Pct. of offers with no Benefits	30.6 (2.8)	71.4 (5.0)	61.2 (4.5)
Pct. of offers through an unsolicited contact	27.6 (2.7)	25.7 (4.8)	13.8 (3.2)
Pct. of offers through a referral	46.2 (3.0)	41.4 (5.4)	39.8 (4.2)
Pct. of offers that involved bargaining	45.1 (3.0)	24.9 (4.8)	20.7 (3.8)
Pct. of job offers accepted	27.2 (2.7)	46.4 (5.5)	57.5 (4.6)
<i>Conditional on Observable Characteristics¹</i>			
Mean wage of job offer	\$ 19.83 (0.80)	\$ 17.14 (0.94)	\$ 15.04 (0.63)
Mean hours of job offer	36.46 (0.92)	28.17 (1.51)	30.75 (1.10)
<i>Conditional on Observable Characteristics, Prior Job's Wage, and Prior Job's Hours¹</i>			
Mean wage of job offer	\$ 17.56 (0.68)	\$ 17.89 (1.08)	\$ 14.64 (0.76)
Mean hours of job offer	34.42 (1.04)	31.01 (2.31)	31.26 (0.98)
<i>N</i>	275	83	116

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and 2014, restricted to individuals aged 18-64. Standard errors are in parentheses. "Most recent" wage refers to the current wage for the employed, and the last wage earned for the non-employed.

1. Wage estimates use a residual wage that conditions on observable job seeker characteristics, or observable job seeker characteristics with the (log) previous job's wage and (log) previous job's hours, where previous job is the most recent job for the non-employed and the ending wage of the last job for the employed.

Table 9. Characteristics of Accepted Job Offers by Labor Force Status

	Employed, Full-Time	Employed, Part-Time	Non-Employed
<i>Raw Estimates</i>			
Mean wage of accepted offer	\$ 33.60 (6.20)	\$ 17.91 (1.81)	\$ 13.53 (1.66)
Mean hours of accepted offer	39.26 (2.09)	21.81 (2.32)	30.49 (1.68)
Pct. of accepted offers with no Benefits	24.9 (4.9)	70.4 (7.4)	49.4 (6.3)
Pct. of offers accepted as only option	2.3 (1.7)	12.6 (5.1)	30.2 (5.8)
<i>Conditional on Observable Characteristics¹</i>			
Mean wage of accepted offer	\$ 20.90 (2.10)	\$ 17.11 (1.43)	\$ 15.33 (0.89)
Mean hours of accepted offer	33.72 (1.80)	22.28 (1.80)	30.55 (1.62)
<i>Conditional on Observable Characteristics, Prior Job's Wage, and Prior Job's Hours¹</i>			
Mean wage of accepted offer	\$ 17.87 (1.21)	\$ 18.45 (1.46)	\$ 15.58 (1.39)
Mean hours of accepted offer	29.39 (1.66)	28.08 (3.26)	31.63 (1.61)
<i>N</i>	78	43	63

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and October 2014. Standard errors are in parentheses. "Most recent" wage refers to the current wage for the employed, and the last wage earned for the non-employed.

1. Wage estimates use a residual wage that conditions on observable job seeker characteristics, or observable job seeker characteristics with the (log) previous job's wage and (log) previous job's hours, where previous job is the most recent job for the non-employed and the ending wage of the last job for the employed.

Table 10. Reservation Job Values by Labor Force Status, Conditional on Job Search

	<i>Employed</i>			
	Wants New Job	Wants Addl. Job	<i>Unemployed</i>	<i>OLF</i>
<i>Raw Estimates</i>				
Reservation Wage (\$)	\$ 25.60 (1.03)	\$ 18.36 (1.29)	\$ 15.72 (1.02)	\$ 16.48 (1.64)
Desired Hours	40.24 (0.40)	24.17 (0.84)	36.67 (0.95)	24.37 (1.55)
Pct. that would not relocate at any wage	30.1 (2.8)	58.8 (4.6)	55.0 (5.6)	60.4 (7.6)
Pct. that would not double commute at any wage	14.2 (2.2)	23.4 (3.9)	18.0 (4.4)	33.0 (7.3)
Pct. that would not incr. hours at any wage	11.5 (2.0)	11.3 (2.9)	5.8 (2.6)	15.8 (5.7)
Pct. that require health insurance at any wage	25.3 (2.7)	10.2 (2.8)	18.0 (4.3)	5.9 (3.7)
<i>Estimates Conditional on Observable Characteristics¹</i>				
Reservation Wage (\$)	\$ 21.67 (0.63)	\$ 20.17 (1.19)	\$ 16.22 (0.73)	\$ 18.56 (1.31)
Desired Hours	38.74 (0.47)	24.38 (0.84)	37.91 (1.13)	25.48 (1.51)
<i>N</i>	259	117	79	42
<i>Estimates Conditional on Observable Characteristics, Prior Job's Wage, and Prior Job's Hours¹</i>				
Reservation Wage (\$)	\$ 21.35 (1.26)	\$ 22.23 (1.51)	\$ 14.92 (0.50)	\$ 18.20 (1.20)
Desired Hours	38.26 (0.53)	24.71 (0.88)	37.76 (1.10)	25.63 (1.33)
<i>N</i>	208	82	79	42

Note: Estimates come from authors' tabulations from the SCE Labor Supplement for October 2013 and October 2014. Standard errors are in parentheses. "Most recent" wage refers to the current wage for the employed, and the last wage earned for the non-employed.

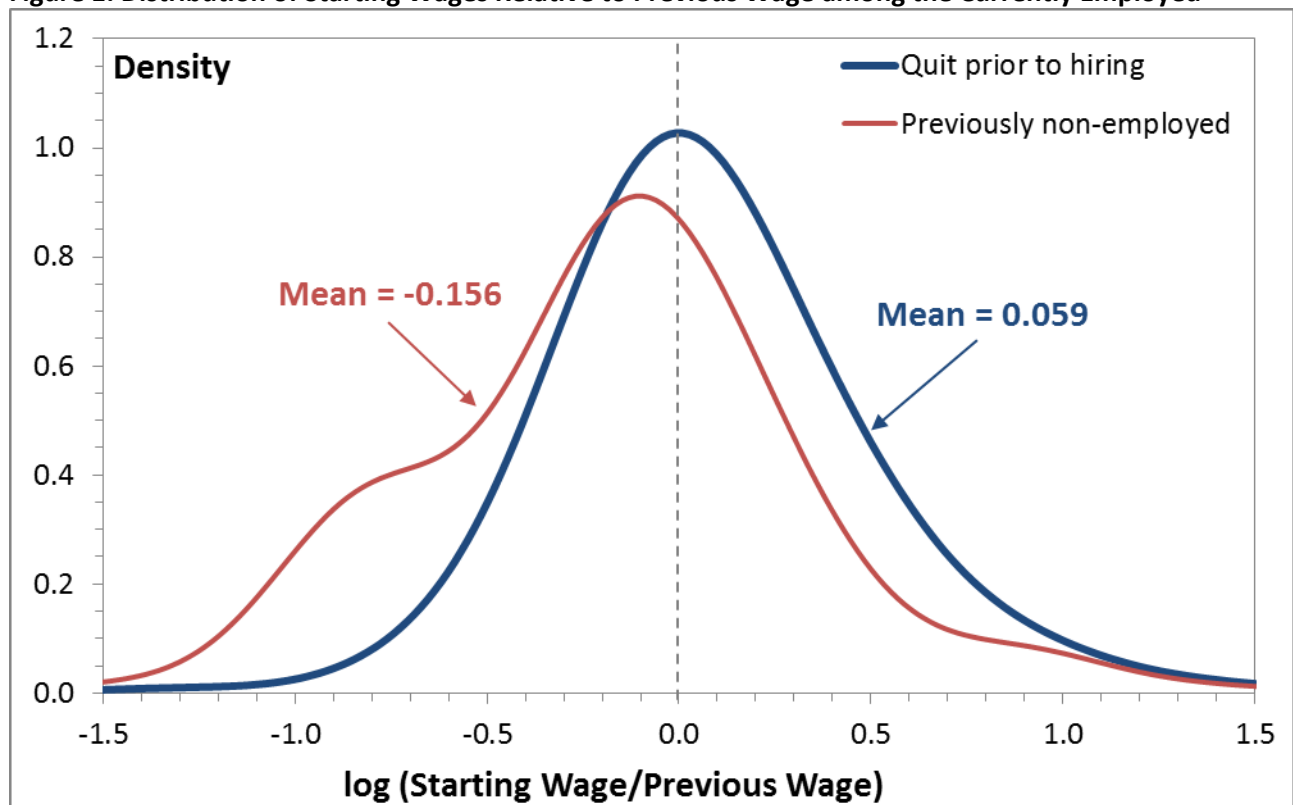
1. Wage estimates use a residual wage that conditions on observable job seeker characteristics, or observable job seeker characteristics with the (log) previous job's wage and (log) previous job's hours, where previous job is the most recent job for the non-employed and the ending wage of the last job for the employed.

Table 11. Search Efficiency by Labor Force Status, Model Calibration

	<i>Applications</i> s_i	<i>Offers</i> $s_i \lambda_i$	<i>Search Efficiency</i> λ_i
Unemployed	1.000	0.410	0.410
Employed, all	0.125	0.175	0.780
Employed, conditional on search	0.469	0.366	1.400

Note: Table reports search effort, measured by applications sent in the last four weeks, offers received, and search efficiency, which is measured as offers per application based on our model. Search effort is normalized relative to the search effort of the unemployed. See text for more details.

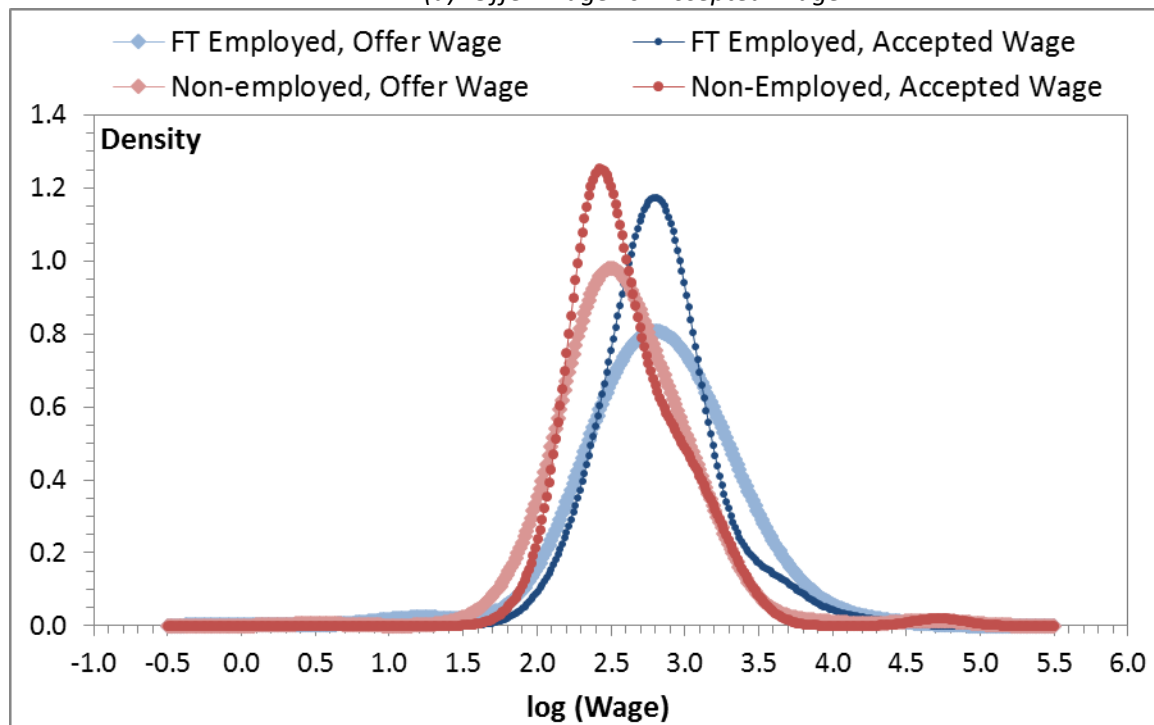
Figure 1. Distribution of Starting Wages Relative to Previous Wage among the Currently Employed



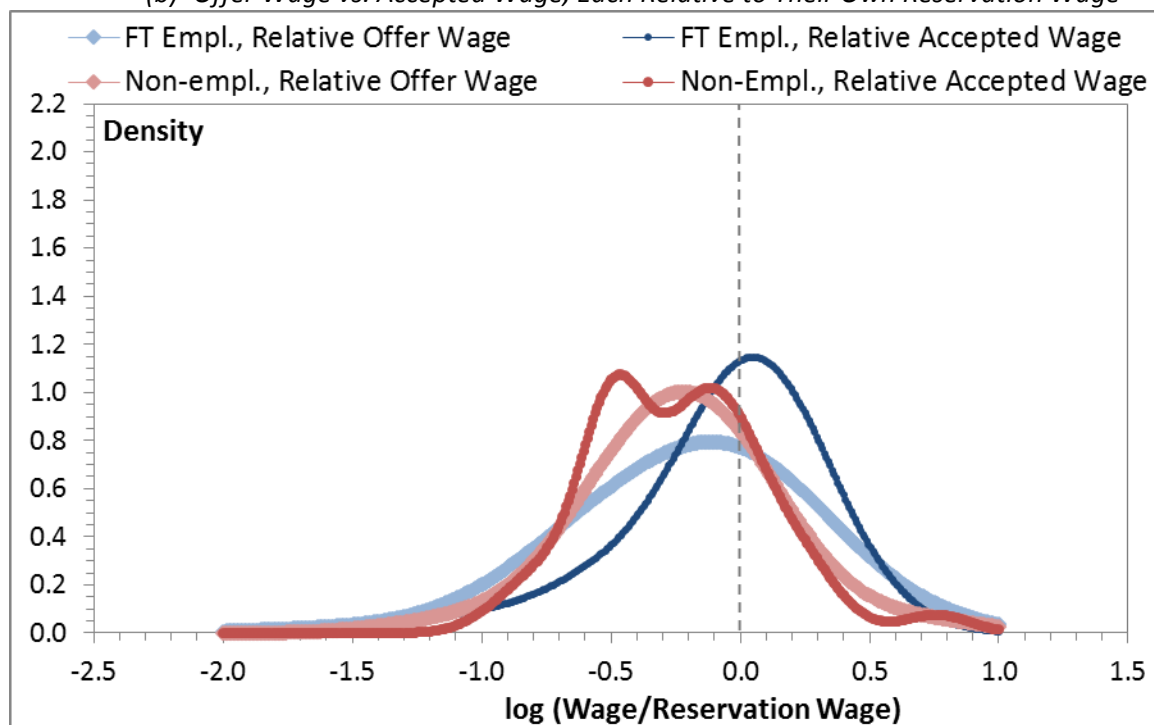
Note: Figure reports kernel density estimates of the $\log(\text{starting wage/previous wage})$, where the previous wage refers to final wage of the prior job. Both wage estimates use a residual measure that conditions on observable worker and job characteristics.

Figure 2. Distribution of Offer Wages and Accepted Wages Relative to the Reservation Wage

(a) Offer Wage vs. Accepted Wage



(b) Offer Wage vs. Accepted Wage, Each Relative to Their Own Reservation Wage



Note: Figure reports kernel density estimates of the $\log(\text{wage/reservation wage})$, where the numerator wage is either the wage of the job offer or of the accepted job offer. Both wage estimates use a residual measure that conditions on observable worker and job characteristics, as well as the prior wage and prior hours of the job seeker.