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 who 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 endogenous search effort, allowing for differences in search efficiency and wage offer distributions between the employed and unemployed. The calibrated model does better in fitting the relevant facts than the standard job-ladder model and implies a reasonable flow value of unemployment.

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 force 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 involved. 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. This occurs along two margins of particular importance for

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[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).

theories of labor market search. First, the search effort of the unemployed appears to be less efficient than that of the employed. A high fraction of unsolicited job offers going to the employed is a nontrivial factor for the observed differences in search efficiency. Second, the unemployed seem to draw from a lower-quality job offer distribution than the employed. This holds even after controlling for observable characteristics of the worker and job, the prior earnings of the worker (a proxy for unobservable worker characteristics), and the state unemployment rate.

Specifically, we find that the unemployed exert the most effort, in both time spent searching and applications sent, yet yield fewer employer contacts and job offers per application sent. Many of these contacts and offers go to employed workers who report no active search efforts. We find that these individuals receive nearly one-quarter of all offers in our sample. This underscores the importance of informal recruiting mechanisms such as unsolicited employer contacts and hiring through referrals. Our estimates suggest that over 26 percent of job offers to the employed come from an unsolicited contact, while less than 13 percent of job offers to the unemployed come from an unsolicited contact.

When the non-employed receive a job offer, we find that it tends to pay a lower wage, offer fewer hours, and is considerably less likely to offer any benefits. Unconditionally, the wages offered to the non-employed are 42 percent lower than the wages offered to those employed full-time. After accounting for our controls, the average wage offered to the non-employed remains 24 percent lower. Despite the poor quality of these job offers, the non-employed are nearly twice as likely to accept them. The evidence suggests that this is because they are much more likely to be their only option, though we also find that the unemployed report significantly lower reservation wages. The non-employed are also far less likely to have bargained over the offer during the hiring process. 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. We

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also find that roughly one in seven of the employed received some form of counter-offer from their employer at the time.

Survey responses on the search process that led the hiring of those employed at the time of the survey reinforce this theme. Specifically, we that find those that were hired directly following a quit 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. We also find that those who quit directly to their current job had similar wages and hours in their prior jobs to those who were hired following a non-employment spell, suggesting that differences in employment status due to unobserved heterogeneity likely do not account for the finding. Consequently, when we condition out our controls, which include the wages and hours of the previous job, it only reduces the difference in starting wages between the two groups from 25 percent to between 15 and 18 percent of the quitting workers' average starting wage. The remaining difference is economically large and statistically significant.

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 (per unit of search effort) 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

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seeker differences that affect the job-finding probability and are not captured by our data. We compare a model of endogenous search effort with a standard model where search effort is exogenous and independent of labor force status. The model with endogenous effort does much better in matching the key moments from our empirical analysis, primarily because it allows for the large discrepancy in search efficiency between the employed and unemployed observed in the data. Based on our calibration, the employed are 2.6 times more efficient at search than the unemployed. The model also implies a flow value of unemployment consistent with the values previously estimated in the literature.

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 23 percent of the employed looking for work during our survey month. Second, and perhaps even 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] Through the lens of a standard labor search model, we show that this implies the employed are much more efficient in their job searches. Finally, we find that the job offer distributions potentially differ by labor force status. This is at odds with standard models of wage posting, such as Burdett and Mortensen (1998), and suggests unobserved factors that are unique to employment status (such as a stigma in the hiring of the unemployed) are an important part of the hiring process.

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[2] Models of hiring through referrals such as Galenianos (2013) are 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 job offers and reservation wages. Section 5 presents a model of on-the-job search with endogenous search effort, and its calibration to our findings. Section 6 concludes.

2. Data

Our data are an annual 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, and present results for a sample that pools all three years of data together. Our supplement asks 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 SCE 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, the survey asks questions about their wages, hours, benefits, and the type of work that they do, including questions on the characteristics of their workplace. For the non-employed, the survey asks a range of questions about their work history, including detailed questions on their most recent employment spell. The survey also asks questions related to the type of non-employment, including those related to retirement, school enrollment status, and any temporary layoff.

Regardless of employment status, the survey asks 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, the survey distinguishes between those searching for new work and those searching for 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, the survey asks a series of questions relating to their job search (if any), including the reasons for their decision to (not) search. It then asks an exhaustive set of questions on the types of effort exerted when seeking new work (e.g., updating resumes, searching online, contacting employers directly). It also asks about the number of job applications completed within the last four weeks and the number of employer contacts and job offers received. It also probes 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, the survey asks about a range of characteristics of the job offer, including the wage offered, the expected hours, its benefits, as well as the type of work to be done and the characteristics of the employer. It also asks 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, they survey asks 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 the survey's 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 designed the survey to ask the employed a range of retrospective questions about the search process that led to their current job, as well as questions about their previous job, including its wage paid, hours, and benefits. Most importantly, they survey asks

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.

We use an hourly estimate of wages. Respondents report this either directly as an hourly wage, or as a measure of weekly or annual earnings. In the latter cases, we measure the wage as earnings per hour, based on the reported usual hours worked. In all cases, we convert all wages used into real terms using the Consumer Price Index (CPI). Many of the survey questions follow a format similar to the Current Population Survey (CPS). We define labor force status in a manner similar to the CPS.[3] We have more detail on employment and search behavior, however, so we are able to split the employed into those seeking a new job, those seeking a job in addition to their current one, and those not looking for work. We are also able to split the unemployed into those who either specifically want work or are temporarily laid off and all others looking for work (e.g., students, the recently retired, homemakers, etc.)[4]

Our main sample focuses on all individuals aged 18 to 64 and includes just under 2,900 respondents pooled across 2013, 2014, and 2015. By design, the SCE only includes heads of household. The survey does not ask the self-employed about job search, so in the self-employed are generally excluded by construction throughout our job search analysis. In addition to our main sample, we also focus on two subsamples of the data. The first is the subsample of the currently employed (excluding the currently

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[3] Non-employed who actively looked for work in the last four weeks and are available within the next seven days to start work are classified as unemployed by the Bureau of Labor Statistics (BLS) definition. In the SCE survey, we classify those who actively looked for work as those that either sent at least one job application within the last four weeks or said they looked for work while reporting at least one 'active search' method—generally anything more than perusing job postings or updating one's resume—in the survey.

[4] 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 cyclicality of movements into and out of the labor force (Elsby, Hobijn, Şahin, 2013). The ability to distinguish the unemployed as we do here 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, though such an analysis is beyond the scope of this paper.

self-employed). After removing respondents with missing data, it includes 1,030 respondents. We use this subsample to examine the job search behavior that led to their hiring to their current jobs. The second is a subsample of all individuals who received a job offer within the last six months. By construction, some of these offers will reflect the respondent's current job. After removing offers with only partial data, we have just over 650 observations in this subsample. We use it to examine the characteristics of all job offers in addition to the subset of accepted job offers.

Table 1 presents basic (sample-weighted) summary statistics from our survey and the October 2013, 2014, and 2015 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. 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 by labor force status. By construction, all unemployed search. Among the employed, just over 23 percent looked for new work in the last four weeks, with 20 percent applying to at least one job and a similar amount searching at least once in the last seven days. Of those searching on the job, 20.5 percent were searching for an additional job and not looking to leave their current job and 27.4 percent were only looking for work similar to their current job. In contrast, only 5.3 percent of the unemployed were only looking for work similar to their last job. Among the employed, just over 6 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 the employed and unemployed into more detailed 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 those who specifically want work or are on temporary layoff and all other unemployed (i.e., those who actively searched within the last four weeks and are available for work, but report themselves as students, retired, homemakers, etc.) The estimates are for all individuals excluding the self-employed. The unemployed send substantially more job applications and dedicate more hours to search than any other group. Those who want to work search more than twice as much as those who search but report some other non-employment status. The unemployed also put in roughly twice as much effort as the employed that actively look for work, whether that search is for a new job or for work in addition to their current job. Nevertheless, those employed and seeking new work receive the greatest number of employer contacts despite their lower search effort. They also receive the most unsolicited employer contacts and are the most likely receive a contact through a referral (through either a work associate or a personal contact). Employed individuals receive about one-quarter as many contacts as the unemployed despite the fact that they are not looking for work. Those actively seeking work generate about five times as many offers as those who are not actively searching. The majority of offers for those not looking are from unsolicited contacts, whereas unsolicited contacts only make up between 11 and 13 percent of offers for those who actively search (regardless of employment status).

There are also notable differences among job seekers within the employed and unemployed. Among the employed, those seeking new work exert roughly the same amount of search effort as those only seeking an additional job, but they receive more than twice as many total contacts and nearly twice as many unsolicited contacts. The two groups receive a comparable number of job offers, on average, however. As one might expect, those who are employed but not looking for work receive very few contacts or job offers, on average, but when they do, the majority are unsolicited. Among the

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unemployed, those who report that they want to work or are on temporary layoff report more than twice the search effort of the other unemployed. They also receive a higher amount of employer contacts but a similar amount of job offers.

The bottom four rows of Table 3 report job search outcomes conditional on whether an individual sent at least one job application. The employed have nearly double the contact yield (employer contacts per application sent) of the unemployed. They also have nearly four times as many unsolicited contacts and almost triple the amount of job interviews per application sent. The employed and unemployed have similar amounts of job offers per application sent, but this may be a misleading statistic because of the large number of job offers that go to the employed not looking for work.

Table 4 highlights this last point. It reports the distribution of respondents, job applications, and job search outcomes, including job offers, by labor force status. The unemployed make up just over 7 percent of our sample, but account for nearly 40 percent of all job applications sent. At the same time, they only receive 16 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 over 27 of all employer contacts and receive over 26 percent of all job offers. This is due, in part, to the fact that they also account for 44 percent of all unsolicited employer contacts and 26 percent of all referrals. Those actively searching on the job account for another 49 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 retrospectively 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 retrospective 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.[5]

Table 5 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 quit directly 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 than those who were hired directly following a quit. Furthermore, those who

were hired directly following a layoff fare somewhat better than those hired from non-employment as

well. The real starting wage of those hired from non-employment is about 25 percent lower than the

real starting wage of those hired following a quit, on average. When we condition on observable

characteristics of the worker and the job, the differences in wages fall somewhat, though the average

real starting wage of those hired from non-employment remains about 15 percent lower.[6] When we

additionally control for the (log) real wage and (log) hours of the worker's previous job, and the state

unemployment rate at the time of the hire (a proxy for the aggregate labor market state), the difference

actually rises somewhat, to just over 18 percent. Those differences also persist throughout the job until

the time of the survey: after applying all of our controls, the current real wages of those hired from non-

employment remain 17 percent lower than those hired following a quit. The last two rows of Table 5

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[5] 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.

[6] The individual characteristics that the residual wage measures control are for sex, age, age squared, marital status, marital status × sex, education, race, homeowner status, and number of household children. The job characteristics that the measures control for are the two-digit occupation, two-digit industry, job tenure, tenure squared, firm size, and an indicator for self-employment.

show why controlling for the prior job's wage and hours makes little difference. Despite the large differences in the wage and hours of the current job across the two labor force categories, the differences in the wages and hours of the previous jobs, once we control for observable characteristics and the state unemployment rate, are small and statistically insignificant.[7] Finally, we find that those hired from non-employment are significantly more likely to be looking for new work at the time of the SCE survey, with 39 percent reporting actively looking for work.

Figure 1 illustrates the wage differences between those who quit to their current job and those hired from non-employment for their full wage distributions. It plots the (log) differences in the real starting wage, relative to the real previous wage, for each group. The wage distribution of those hired from a quit stochastically dominates the distribution of those hired from non-employment. The figure also shows, however, that there is a sizable fraction of hires that quit to a lower wage and a sizable fraction of hires that receive a higher wage after non-employment. Nevertheless, after conditioning out our controls, those who quit receive a 7 log point increase in their wage, on average, while those who were non-employed receive a 13 log point *decrease* in their wage, on average.

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 had a non-employment spell prior to their hiring. If job-finding has a stochastic and idiosyncratic component to it, these individuals could be thought of as those who were stochastically

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[7] In unreported results, we find that the differences in the wages and hours of the previous job are also small and statistically insignificant unconditionally.

"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. Furthermore, the fact that those hired from non-employment are more likely to be looking for work at the time of the survey interview is consistent with a story where these individuals have received a negative employment shock and are looking to move back up the job ladder. We examine the notion that the non-employed draw from an inferior job offer distribution further in the next section.

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 that 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.

We now examine how the job offers themselves, including all offers and the subset of those that are accepted, differ by an individual's 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 a 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 represents 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 "for the type of work they are looking for." We also ask about their desired hours and their preferences on other aspects of the job (relocation, commuting, health benefits, and hours).

Table 6 presents the characteristics of all job offers received within the last six months 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. We do note, however, that those who were employed part-time receive offers that are worse than those received by the full-time employed, on average, but better than those received by the non-employed, on average, suggesting that the full-time versus part-time distinction is important. First, note that over 70 percent of job offers in our sample went to those that were already employed at the time of the offer. The remainder of the results can be summarized as consistently showing that the non-employed do worse in terms of their job offers than the full-time employed. Unconditionally, their average wage offer is 42 percent lower. Their hours are 20 percent lower and they are twice as likely to be offered no benefits. The full-time employed are 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 almost twice as likely to bargain over their offers, with 44 percent of their offers involving some bargaining, compared to 24 percent for the non-employed. Both the employed and non-employed had comparable knowledge of what their job offers would pay, with 54 percent of the full-time employed and 59 percent of the non-employed reporting that they had at least a "good

idea" of what the job would pay. Counter-offers by the current employer, defined as anything from matching the outside offer to offering a promotion, pay raise, or some added job benefit, occurred for just over 14 percent of the employed.

The bottom half of Table 6 shows that controlling for observable characteristics of the job and worker, the wage and hours of the previous job, and the state unemployment rate at the time of the offer can only account for a fraction of the observed differences in wages and hours offered to the employed versus the non-employed.[8] Controlling for observable worker and job characteristics reduces the differences between the full-time employed and non-employed from 42 percent of the full-time employed's wage to just under 24 percent of their wage. Adding controls for the prior job and the state unemployment rate reduces it slightly further to just over 22 percent of their wage. The remaining difference is economically sizable and is statistically significant.

Despite these relatively poor job offers, the non-employed are nearly twice as likely to accept them as the full-time employed, with 55 percent of offers accepted by the non-employed versus 29 percent by the full-time employed. Table 7 reports the characteristics of accepted job offers. Note that these are comparable to the starting wages of the currently employed reported in Table 5. Table 7 shows that, unconditionally, a higher degree of selectivity by the full-time employed generates even more stark differences between their accepted wages and those of the non-employed. The unconditional differences in accepted wage offers is nearly 54 percent of the full-time employed's wage. Much of the differences in both wages and selectivity are accounted for by our controls, however (i.e., by differences in worker and job offer composition, and by aggregate labor market conditions). The difference in accepted wages after accounting for these controls falls to 16 percent of the full-time

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[8] The prior wage and hours used in this sample are from the previous job for the currently employed and the most recent job of the non-employed.

employed's wage. The evidence in Table 7 also suggests that a primary reason that the non-employed are more likely to accept their relatively poorer job offers is a lack of alternative options. About 27 percent of the non-employed cite a lack of other alternatives as the main reason for accepting an offer, while only 2.5 percent of the full-time employed cite that as their primary reason. Figure 2 shows the differences in the full distributions of wage offers and accepted wage offers for the full-time employed and the non-employed after controlling for observable characteristics, the wage and hours of the prior job, and the state unemployment rate. The figure shows that, despite the fact that their average (log) accepted wage is notably higher than the average (log) offered wage, the non-employed both receive and accept lower wages across a wide distribution of job offers, relative to the full-time employed.

Finally, Table 8 shows another reason the non-employed are more likely to accept poor job offers: they have lower reservation wages. The table reports reservation job value estimates by labor force status at the time of the survey interview. Unconditionally, the real reservation wage of the unemployed is 33 percent lower, on average, than the real reservation wage of the employed. Despite this, both groups are generally looking for full-time work, with both groups preferring to work about 34 hours per week, on average. The evidence in Tables 6 and 7, however, shows that the employed are much more likely to find it. The reservation wage of the unemployed is only 18 percent lower after controlling for observable characteristics. Additionally controlling for the wages and hours of the previous job and the state unemployment rate reduces the difference further to just over 14 percent. With regard to other aspects of a job, the unemployed appear less willing to relocate for new work, with 52 percent saying they would not do it for any wage, compared to 40 percent of the employed who say the same. The employed are also somewhat more likely require health insurance.

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. The evidence also suggests that the unemployed draw

their wage offers from a lower-quality distribution even after controlling for a variety of factors. We now

turn to incorporating our evidence into a model of labor market search.

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

5.A. Model Setup

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.[9]

Outside offers arrive at Poisson rate $\lambda(s) = \alpha + \beta s$, where s is the endogenously chosen level

of search effort and λ is the job-offer arrival rate. The constant α reflects the possibility that individuals

may receive unsolicited offers even in the absence of any search effort. The job-offer arrival rate differs

by employment status, so that $\lambda_i(s) = \alpha_i + \beta_i s$ for $i \in \{e, u\}$.[10] 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

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[9] In future work we plan to extend our model to allow for differences in $F(w)$. Specifically, we plan to allow for $F_e(w) < F_u(w)$, which would be consistent with our evidence on starting wages and job offers.

[10] 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, β_i, since our data can separately identify the two.

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

This can be rewritten as

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

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

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

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

$$c'(s_e(w)) = \beta_e \int_w^{\bar{w}} [W(x) - W(w)]dF(x) = \beta_e \int_w^{\bar{w}} W'(x)[1 - F(x)]dx$$

$$\quad (2)$$

$$= \beta_e \int_w^{\bar{w}} \frac{[1 - F(x)]}{r + \delta + \lambda_e(s_e(x))[1 - F(x)]} dx,$$

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, individuals 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

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

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,

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

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,

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

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). If we set the constant

in the search production function to zero, then it will be the case that those employed at the reservation

wage will exert greater (less) search effort than the unemployed if $\beta_e > \beta_u$ ($\beta_e < \beta_u$). To see this, simply substitute (2) into (4) for the case where $w = R$ to obtain

$$c'(s_u) = \frac{\beta_u}{\beta_e} c'(s_e(R)). \qquad (6)$$

Since $c(s)$ is convex, $\beta_e > \beta_u$ will imply that $s_u < s_e(R)$. Note that if $\beta_e = \beta_u$, then $R = b$ and $s_u = s_e(R)$ and we have exactly the same condition as the model of Christensen et al. (2005). To understand how the reservation wage will respond to these differences, maintain the assumption that $\beta_e > \beta_u$ 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 $\beta_e > \beta_u$. That is to say, the option value of employment is the dominant effect on the reservation wage.

5.B. Calibration

We calibrate a discrete-time version of the model and set the time period to be monthly. We calibrate two versions of the model. The first is the standard job-ladder model without endogenous search effort, where we set the exogenous search effort to unity. The second extends to the standard model to include endogenous search effort and unsolicited job offers. The parameter choices of both calibrations are summarized in Table 11. We set the monthly discount factor to be 0.9966 to match an

annual interest rate of 4 percent. Following Christensen et al. (2005), we let the search effort cost

function be $c_i(s) = k_i s^{1+\frac{1}{\gamma}}$, and set the elasticity to their estimated value of $\gamma = 1.19$. We set the

monthly job separation rate to be 0.015, which matches the average E-to-U flow rate in the Current

Population Survey in recent years. We assume a log normal distribution of wage offers, normalize the

mean of the wage offers to zero and calibrate the standard deviation of the wage offer distribution to be

0.24 as in Hall and Mueller (2015).

In the model without endogenous search effort, we set the β_i's to match the job offer arrival

rates for the employed and unemployed in the data.[11] In the model with endogenous effort, we

normalize the search effort of the unemployed to unity, calibrate the search cost parameters k_e and k_u

to match the relative average search effort of the employed and unemployed, and set β_i's to match the

job offer arrival rates for the employed and unemployed in the data, given the arrival rates of

unsolicited offers and the relative difference in search effort between the employed and unemployed.

The remaining parameter left to calibrate is the flow value of unemployment, b. One option

would be to assume that b is equal to a specific value as in Shimer (2005) or Hall and Milgrom (2008).

The issue is that there is little consensus of what the appropriate level of b is, except that it should not

be too low. We instead calibrate b to match the average acceptance rate of the unemployed. This allows

our model calibrations, by assumption, to match their job finding rate, as both the acceptance rate and

the offer rate of the unemployed are a target in the calibration. The key test then is whether the

different models can match the average acceptance rate of the *employed*.

5.C. Results

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[11] We set the offer arrival rates equal to the probability of receiving at least one offer over the course of the last four weeks. We measure search effort as the average number of applications sent over the last four weeks.

Table 11 shows the simulation results for both calibrations. The model with endogenous search predicts that the employed have a search efficiency parameter of 0.854, while the unemployed have a search efficiency parameter of 0.330, implying that the employed are 2.6 times more efficient in their search efforts. In contrast, the model with exogenous search suggests that the unemployed are nearly twice as efficient in search, since the identification comes solely off the empirical offer arrival rates.

Both models underpredict the acceptance rate of the employed, but the model with endogenous search effort does substantially better. The reason is that individuals at the bottom of the jobs ladder are substantially more likely to search and to receive and accept offers compared to those at the top of the ladder. This may be further improved upon by picking a different value for the elasticity of the search cost function. In particular, if the cost function is highly convex, then individuals at the top of the ladder are substantially less likely to search and receive offers, which would further increase the average acceptance rate among the employed.

Table 11 also shows the flow value of unemployment relative to the prior wage. Hornstein, Krusell and Violante (2011) advocate that any search model that aims at fitting transition rates and wage dispersion needs to back out the implied flow value of unemployment, as search models often imply very low or even negative flow values of unemployment. Our benchmark job-ladder model without search effort implies a flow value of unemployment of 0.44, which is at the lower end of parameters used in the literature. Note that the dispersion of wages used for this exercise is relatively modest, as in Hall and Mueller (2015). If we used a higher dispersion in wage offers instead, the benchmark model would fare worse, with a lower flow value of unemployment. The model with endogenous search effort does substantially better at producing a reasonable flow value of unemployment of between 0.67 and 0.72, depending on whether one nets out search costs.

Overall, we conclude from this exercise that the model with endogenous search effort does better at fitting the relevant facts (the acceptance rate) and produces a reasonable flow value of unemployment. In future work, we plan to use additional moments of the data on search effort, offer and acceptance rates by wage decile to pin down the elasticity of the search cost function. We also intend to calibrate a hybrid version of the two models, where workers receive unsolicited offers even if they don't search for a job at all. Finally, we plan to explore how much the fit of the model is improved if we allow for differing wage offer distributions of the employed and unemployed, which would be consistent with the evidence we presented in Section 4.

6. Conclusions

In this paper, we document new facts on the search effort and search outcomes of the employed and non-employed. We find that search among the employed is pervasive. Over 23 percent of the employed report actively looking for work within the past month. We also find that search is more efficient for the employed. They exert only a fraction of the effort of the unemployed yet receive more employer contacts and the same amount of offers per job application sent. Furthermore, a sizable fraction of job offers go to employed workers not even looking for work, underscoring the importance of unsolicited employer contacts in the job search process.

We also find that the employed are not only more efficient in their search, but they also tend to receive and accept better job offers. The differences in search outcomes persist even after controlling for observable characteristics of the worker and job, the prior wage and hours of the worker (our control for unobservable worker characteristics), and the state unemployment rate (a measure of the aggregate state of the labor market). Those receiving offers while employed tend to be offered higher wages, more hours, and better benefits. This is true of individuals who were hired to their current job following a quit, and of individuals who were employed at the time of receiving a job offer reported in

the survey. Individuals receiving a job offer while employed are also more likely to engage in bargaining over the offer, and 14 percent of the employed receive some counter-offer from their current employer. Nevertheless, those receiving an offer while non-employed are almost twice as likely to accept their relatively lower-quality offers. Our evidence suggests that this is because these offers are much more likely to be their only option. It is also partly because they have lower reservation wages, on average.

We calibrate our findings to a model with endogenous search effort and on-the-job search, as in Christensen et al. (2005). We extend the model to allow for differences in search efficiency between the employed and unemployed, as in Hornstein, Krusell, and Violante (2011), but extend the model to allow for unsolicited offers (i.e., offer arrivals independent of search effort). In future work, we will extend the model further to allow for differences in the offer arrival rate distribution. A basic calibration of the model suggests that the employed are about 2.6 times more efficient at search than the unemployed, after accounting for the arrival rates of unsolicited offers. A model with exogenous search effort suggests that the unemployed are actually more efficient at search because it fails to capture the differences in effort and relative importance of unsolicited offers. Thus, we conclude that accounting for differences in search effort, search efficiency, and, most likely, differing offer distributions between the employed and unemployed, are important for models of labor market search and matching that aim to reconcile the theory with the facts on job search, hiring outcomes, and wage dynamics.

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Table 1. Summary Statistics, SCE Labor Supplement vs. Current Population Survey

| | *SCE Labor* | *Current Population Survey* | | |
	(2013-15)	**Oct. 2013**	**Oct. 2014**	**Oct. 2015**
Labor Force Status				
Employment-Population Ratio	0.761	0.734	0.746	0.749
Unemployment Rate (BLS Definition)	8.0	4.7	3.6	3.3
Labor Force Participation Rate	82.7	78.1	78.3	78.2
Demographics				
Percent Male	48.9	51.4	51.4	51.3
Percent White	72.5	64.1	63.4	63.2
Percent Married	65.5	51.8	51.6	51.3
Percent with College Degree	32.9	33.5	33.9	35.1
Percent aged 18-39	35.0	38.5	39.1	39.0
Percent aged 40-59	49.7	50.1	49.8	49.1
Percent aged 60+	15.2	11.4	11.7	12.0

Note: Estimates come from authors' tabulations from the SCE Labor Supplement or the Current Population Survey (CPS) for October 2013, 2014, and 2015. Both samples are for heads of household ages 18 to 64.

Table 2. Basic Job Search Statistics by Labor Force Status

	Employed	**Unemployed**	**Out of Labor Force**
Percent that actively searched for work	23.3 (0.9)	99.5 (0.6)	2.1 (0.7)
Percent that actively searched and available for work	14.2 (0.7)	99.5 (0.6)	0.0 (0.0)
Percent reporting no active search or availability, but would take job if offered	6.1 (0.5)	0.3 (0.4)	6.0 (1.1)
Percent applying to at least one vacancy in last four weeks	19.8 (0.8)	92.3 (2.1)	1.8 (0.6)
Percent with positive time spent searching in last seven days	20.5 (0.8)	85.3 (2.8)	2.6 (0.8)
Percent only seeking part-time work, conditional on active search	20.5 (1.8)	22.9 (3.3)	
Percent only seeking similar work (to most recent job), conditional on active search	27.4 (2.1)	5.3 (1.8)	
No. of Observations	2,302	165	430

Note: Estimates come from authors' tabulations from the SCE survey, for all individuals aged 18-64 by labor force status. Standard errors are in parentheses.

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

	Employed				Unemployed			Out of LF
	Looking for New Work	Looking for Addl. Work	Not Looking	All	Wants Work or Temp LO	All Other	All	
Measures of Search Effort								
Hours spent searching, last 7 days	3.76 (0.36)	5.33 (0.49)	0.05 (0.01)	1.18 (0.09)	10.84 (0.96)	4.02 (0.88)	8.40 (0.74)	0.07 (0.04)
Mean applications sent, last 4 weeks	5.07 (0.68)	3.65 (0.41)	0.00 (---)	1.22 (0.13)	9.60 (1.63)	5.37 (1.74)	8.08 (1.23)	0.08 (0.06)
Job Search Outcomes, Last 4 Weeks								
Mean contacts received	2.29 (0.40)	1.05 (0.18)	0.34 (0.04)	0.74 (0.08)	1.59 (0.33)	0.71 (0.18)	1.27 (0.23)	0.11 (0.03)
Mean unsolicited contacts	0.93 (0.17)	0.50 (0.09)	0.30 (0.03)	0.43 (0.04)	0.63 (0.23)	0.19 (0.09)	0.47 (0.15)	0.09 (0.03)
Pct. with contact from a referral	28.6 (2.4)	22.6 (3.5)	3.9 (0.5)	9.9 (0.7)	22.9 (4.0)	12.0 (4.5)	19.0 (3.1)	1.5 (0.6)
Mean offers	0.41 (0.04)	0.46 (0.09)	0.08 (0.01)	0.18 (0.01)	0.38 (0.10)	0.36 (0.10)	0.38 (0.08)	0.08 (0.03)
Mean unsolicited offers	0.05 (0.01)	0.04 (0.02)	0.05 (0.01)	0.05 (0.01)	0.05 (0.02)	0.04 (0.03)	0.05 (0.02)	0.05 (0.02)
Contacts per application, conditional on > 0 applications	0.804 (0.140)	0.379 (0.086)		0.661 (0.101)	0.350 (0.063)	0.262 (0.060)	0.321 (0.047)	
Unsolicited contacts per application, conditional on > 0 applications	0.509 (0.136)	0.197 (0.075)		0.404 (0.097)	0.136 (0.053)	0.059 (0.028)	0.111 (0.038)	
Job interviews per application, conditional on > 0 applications[1]	0.187 (0.026)	0.191 (0.039)		0.188 (0.022)	0.083 (0.025)	0.050 (0.035)	0.068 (0.020)	
Job offers per application, conditional on > 0 applications	0.148 (0.019)	0.210 (0.037)		0.169 (0.017)	0.142 (0.081)	0.204 (0.056)	0.162 (0.058)	
N	367	148	1,513	2,028	112	53	165	430

Note: Estimates come from authors' tabulations from the SCE survey, for all individuals aged 18-64, excluding the self-employed, by detailed labor force status. Standard errors are in parentheses.

1. Job interview data are only available for 2014 and 2015.

Table 4. Distribution of Search Effort and Outcomes by Labor Force Status

	Employed				Unemployed			Out of LF
	Looking for New Work	Looking for Addl. Work	Not Looking	All	Wants Work or Temp LO	All Other	All	
Pct. of population	12.9	6.7	54.0	73.6	4.7	2.7	7.4	19.0
Job Search over Last Four Weeks								
Pct. of total applications	43.2	16.3	0.0	59.5	30.1	9.4	39.5	1.0
Pct. of contacts received	44.6	10.7	27.4	82.6	11.4	2.8	14.2	3.2
Pct. of unsolicited contacts	32.6	9.2	43.8	85.7	8.2	1.4	9.6	4.8
Pct. of referrals	43.0	13.6	26.1	82.6	10.8	4.6	15.4	2.1
Pct. of interviews (2014-15 only)	52.8	22.2	0.0	75.1	17.4	4.4	21.8	3.2
Pct. of offers received	30.5	18.2	26.5	75.2	10.6	5.6	16.3	8.5

Note: Estimates come from authors' tabulations from the SCE survey, for all individuals aged 18-64, excluding the self-employed, by detailed labor force status.

Table 5. Characteristics of Current and Previous Job, by Labor Force Status at Time of Hire

	Hired from Employment		*Hired from Non-Employment*
	Quit	**Laid Off**	
Share of Employment	58.5	13.8	27.7
Characteristics of Current Job			
Raw Estimates			
Real Current Wage	$ 30.05	$ 23.85	$ 20.16
	(0.95)	(1.54)	(0.90)
Real Starting wage	$ 21.38	$ 16.76	$ 16.00
	(0.75)	(1.03)	(0.80)
Usual hours	42.86	37.02	37.18
	(0.37)	(0.94)	(0.68)
Mean tenure (mos.)	85.53	77.14	51.35
	(3.86)	(6.38)	(3.97)
Pct. with no benefits	13.0	27.1	32.2
	(1.4)	(3.7)	(2.8)
Percent Actively Searched for Work, Last Four Weeks	27.0	28.6	39.0
	(1.8)	(3.8)	(3.0)
Conditional on Observable Characteristics			
Real Current Wage	$ 28.07	$ 25.06	$ 23.78
	(0.78)	(1.08)	(0.75)
Real Starting wage	$ 24.15	$ 20.45	$ 20.44
	(0.82)	(0.92)	(0.72)
Usual hours	41.56	38.15	38.21
	(0.33)	(0.74)	(0.56)
Conditional on Observables, Previous Job Wages and Hours, and State Unemployment Rate			
Real Current Wage	$ 27.24	$ 24.89	$ 22.59
	(0.73)	(1.07)	(0.72)
Starting wage	$ 24.28	$ 21.66	$ 19.75
	(0.73)	(0.79)	(0.66)
Usual hours	40.33	39.08	37.80
	(0.30)	(0.70)	(0.54)
Characteristics of Previous Job, Conditional on Observables and State Unemployment Rate			
Real Ending wage	$ 21.81	$ 20.43	$ 22.42
	(0.89)	(1.49)	(1.41)
Usual hours	39.52	34.49	38.80
	(0.40)	(0.84)	(0.57)
N	616	143	271

Note: Estimates are for either the current or prior job for the subset of SCE survey respondents that are currently employed (excluding the self-employed). Standard errors are in parentheses. See text for details on the observable worker and job characteristics conditioned out of the residual wage and hours estimates.

Table 6. Characteristics of Best Job Offer by Labor Force Status

	Employed			Non-Employed
	Full-Time	**Part-Time**	**All**	
Raw Estimates				
Percent of job offers	52.6	17.9	70.5	29.5
Mean wage of job offer	$ 27.11	$ 18.83	$ 25.01	$ 15.68
	(1.72)	(1.80)	(1.38)	(1.01)
Mean hours of job offer	38.65	28.04	35.95	31.06
	(0.72)	(1.78)	(0.72)	(0.95)
Pct. of offers with no Benefits	30.6	69.7	40.5	60.6
	(2.4)	(4.4)	(2.2)	(3.8)
Pct. of offers through an unsolicited contact	26.6	25.1	26.2	14.4
	(2.3)	(4.1)	(2.0)	(2.7)
Pct. of offers through a referral	43.7	44.6	43.9	37.5
	(2.6)	(4.7)	(2.2)	(3.8)
Pct. of offers that involved bargaining	43.8	24.2	38.8	24.4
	(2.6)	(4.1)	(2.2)	(3.4)
Pct. of respondents with at least 'good idea' of pay	53.9	56.4	54.6	58.8
	(2.6)	(4.7)	(2.2)	(3.8)
Pct. of offers with some counter-offer given	14.2	14.2	14.2	---
	(1.8)	(3.3)	(1.6)	
Pct. of job offers accepted	29.4	50.0	34.6	54.7
	(2.3)	(4.8)	(2.2)	(3.9)
Conditional on Observable Characteristics				
Mean wage of job offer	$ 23.90	$ 23.40	$ 23.77	$ 18.24
	(1.44)	(1.73)	(1.18)	(1.05)
Mean hours of job offer	36.35	31.48	35.14	33.00
	(0.60)	(1.31)	(0.56)	(0.79)
Conditional on Observables, Prior Job's Wage and Hours, and State Unemployment Rate				
Mean wage of job offer	$ 24.27	$ 23.54	$ 24.10	$ 18.84
	(1.37)	(2.14)	(1.17)	(0.96)
Mean hours of job offer	36.18	33.04	35.44	33.21
	(0.69)	(1.65)	(0.65)	(0.69)
N	378	111	489	165

Note: Estimates are for the best job offer for all respondents that received at least one job offer within the six months prior to the SCE survey by labor force status at the time of job offer. Standard errors are in parentheses. See text for details on the observable worker and job characteristics conditioned out of the residual wage and hours estimates.

Table 7. Characteristics of Accepted Job Offers by Labor Force Status

	Employed			Non-Employed
	Full-Time	**Part-Time**	**All**	
Raw Estimates				
Pct. of accepted offers	38.1	22.1	60.2	39.8
Mean wage of accepted Offer	$ 31.64 (4.35)	$ 21.33 (2.46)	$ 27.61 (3.05)	$ 14.69 (1.55)
Mean hours of accepted Offer	38.38 (1.60)	20.01 (1.93)	33.08 (1.37)	31.11 (1.40)
Pct. of accepted offers with no benefits	23.3 (4.0)	75.2 (5.6)	39.2 (3.8)	51.3 (5.4)
Pct. of accepted offers from unsolicited contact	15.7 (3.4)	20.2 (5.2)	15.7 (2.8)	5.9 (2.5)
Pct. of accepted offers from a referral	40.9 (4.6)	42.7 (6.4)	43.8 (3.8)	37.2 (5.2)
Pct. of offers that involved Bargaining	39.3 (4.6)	25.5 (5.7)	35.9 (3.6)	15.7 (3.9)
Pct. of respondents with at least 'good idea' of pay	72.9 (4.2)	74.4 (5.7)	74.5 (3.3)	71.9 (4.9)
Pct. of offers with some counter-offer given	18.0 (3.6)	7.9 (3.5)	15.1 (2.7)	---
Pct. of offers accepted as only option	2.5 (1.5)	14.5 (5.6)	7.2 (2.4)	26.9 (5.3)
Conditional on Observable Characteristics[1]				
Mean wage of accepted Offer	$ 27.84 (3.74)	$ 23.49 (2.56)	$ 25.95 (2.58)	$ 20.93 (1.41)
Mean hours of accepted Offer	35.60 (1.28)	27.27 (1.42)	32.76 (1.05)	33.01 (1.23)
Conditional on Observables, Prior Job's Wage and Hours, and State Unemployment Rate[1]				
Mean wage of accepted Offer	$ 25.32 (3.06)	$ 25.31 (3.81)	$ 24.67 (2.36)	$ 21.27 (1.36)
Mean hours of accepted Offer	35.85 (1.46)	28.59 (2.22)	35.65 (1.30)	33.77 (1.15)
N	114	60	174	86

Note: Estimates are for respondents that received at least one job offer and accepted it within the six months prior to the SCE survey, by labor force status at the time of job offer. Standard errors are in parentheses. See text for details on the observable worker and job characteristics conditioned out of the residual wage and hours estimates.

Table 8. Reservation Job Values by Labor Force Status, Conditional on Active Job Search

	Employed			Unemployed		
	Wants New Job	Wants Additional Job	All	Wants Work or Temp LO	All Other	All
Raw Estimates						
Real Reservation Wage ($)	$ 25.39	$ 18.93	$ 23.05	$ 16.16	$ 14.07	$ 15.41
	(0.93)	(1.19)	(0.75)	(0.93)	(1.32)	(0.76)
Desired Hours	39.26	24.21	33.81	37.33	28.61	34.20
	(0.37)	(0.85)	(0.49)	(0.75)	(1.44)	(0.77)
Pct. that would not relocate at any wage	31.6	54.3	39.8	52.1	50.9	51.7
	(2.4)	(4.2)	(2.2)	(4.9)	(7.1)	(4.0)
Pct. that would not double commute at any wage	16.1	21.8	18.2	16.1	26.7	19.9
	(2.0)	(3.5)	(1.7)	(3.6)	(6.3)	(3.2)
Pct. that would not incr. hours at any wage	10.4	13.0	11.4	5.0	14.7	8.5
	(1.6)	(2.8)	(1.4)	(2.1)	(5.1)	(2.2)
Pct. that require health insurance at any wage	23.8	12.8	19.8	15.1	5.1	11.6
	(2.3)	(2.8)	(1.8)	(3.5)	(3.2)	(2.6)
Conditional on Observable Characteristics						
Reservation Wage ($)	$ 22.54	$ 22.51	$ 22.53	$ 18.49	$ 18.64	$ 18.54
	(0.81)	(1.25)	(0.68)	(0.97)	(1.50)	(0.82)
Desired Hours	37.49	25.45	33.15	37.83	30.74	35.23
	(0.44)	(0.92)	(0.50)	(0.88)	(1.38)	(0.80)
Conditional on Observables, Prior Job's Wage and Hours, and State Unemployment Rate						
Reservation Wage ($)	$ 21.49	$ 24.76	$ 22.63	$ 18.22	$ 21.24	$ 19.35
	(0.91)	(1.79)	(0.84)	(1.05)	(1.57)	(0.88)
Desired Hours	36.64	25.83	32.86	37.86	31.80	35.60
	(0.52)	(1.17)	(0.58)	(0.92)	(1.26)	(0.88)
N	348	143	491	106	50	156

Note: Estimates are for all SCE survey respondents who reported actively searching for work in the last four weeks, by labor force status at the time of the survey. 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. See text for details on the observable worker and job characteristics conditioned out of the residual wage and hours estimates.

Table 9. Calibrated Parameter Values and Model Simulation Results

|	Moments in the data	Model with exogenous offer rates	Model with endogenous search effort
Targeted moments			
Average search effort of unemployed, s_u	1.000	---	1.000
Average search effort of employed, $E(s_e(w))$	0.151	---	0.151
Average monthly offer rate of unemployed	0.377	0.377	0.377
Average monthly offer rate of employed	0.175	0.175	0.175
Average monthly unsolicited offer arrival rate of the unemployed, α_u		---	0.047
Average monthly unsolicited offer arrival rate of the employed, α_e		---	0.046
Average acceptance rate of unemployed	0.547	0.547	0.547
Additional moments			
Average acceptance rate of employed	0.294	0.112	0.136
Average job-to-job transition rate	0.030	0.020	0.024
Average search cost of unemployed		---	0.23
Average search cost of employed		---	0.05
$b/E(w)$		0.36	0.72
$b/E(w)$ (net of search costs)		---	0.67
Mean-Min wage ratio		1.49	1.55
Chosen Parameter values			
γ		1.19	1.19
Mean offer wage, μ_w		0.00	0.00
Standard deviation of offer wages, σ_w		0.24	0.24
Calibrated Parameter values			
k_u		0.00	0.26
k_e		0.00	1.08
β_u		0.377	0.330
β_e		0.175	0.854

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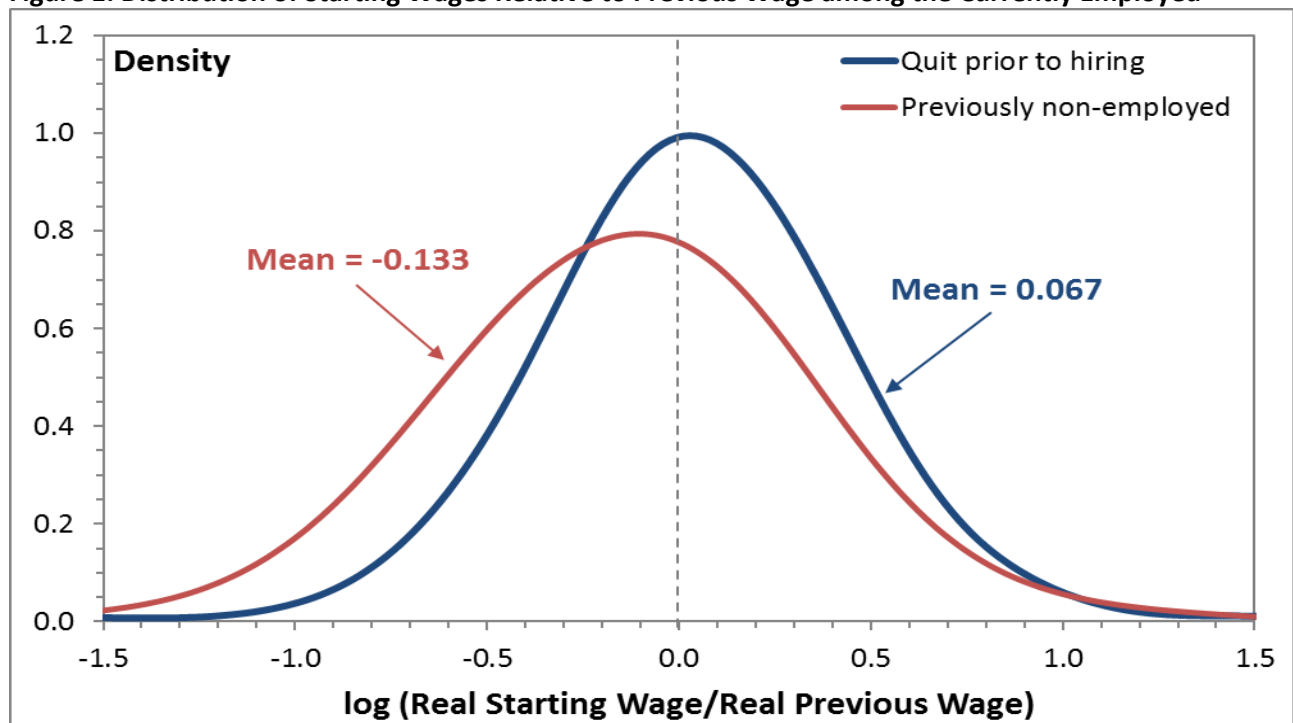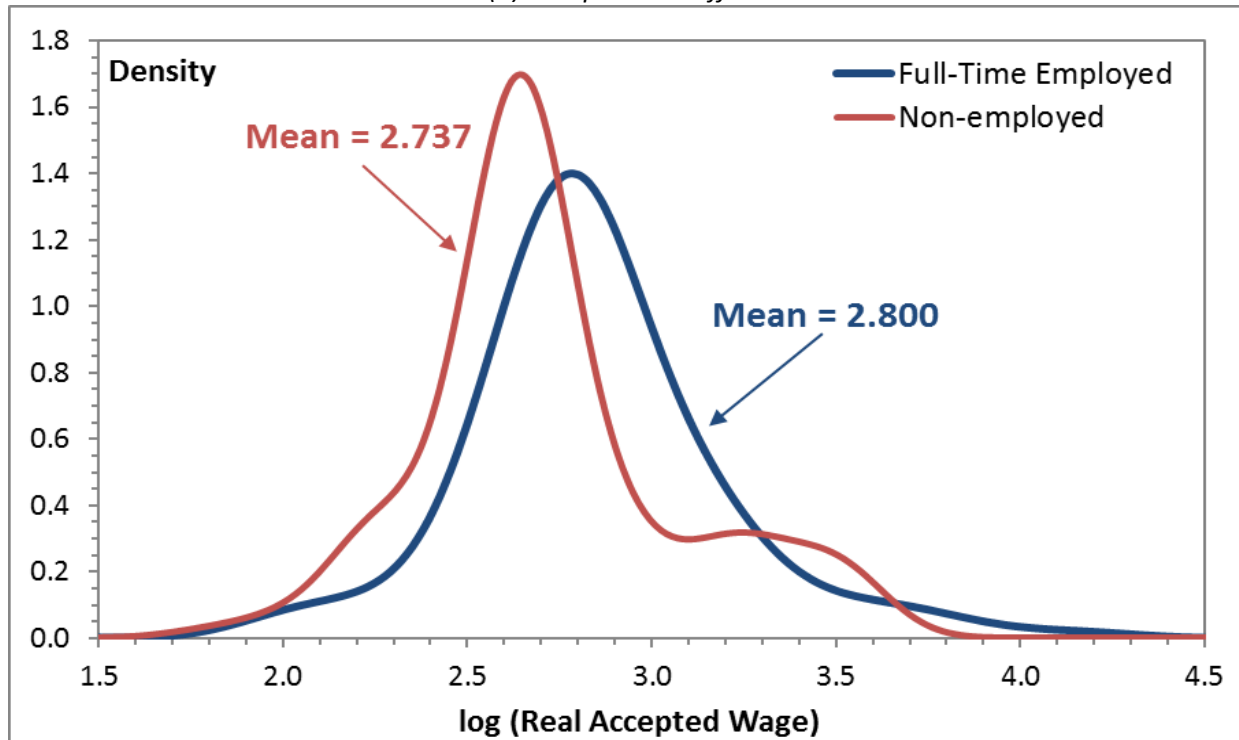

Note: Figure reports kernel density estimates of the residual of log(real starting wage/real previous wage), where the previous wage refers to final wage of the prior job and the starting wage is for the current job, and where the residual controls for observable characteristics of the worker and job, as well as the contemporaneous state unemployment rate. Estimates are for the sample of the currently employed (excluding self-employed).

Figure 2. Distribution of Job Offer Wages and Accepted Offer Wages

(a) All Job Offers
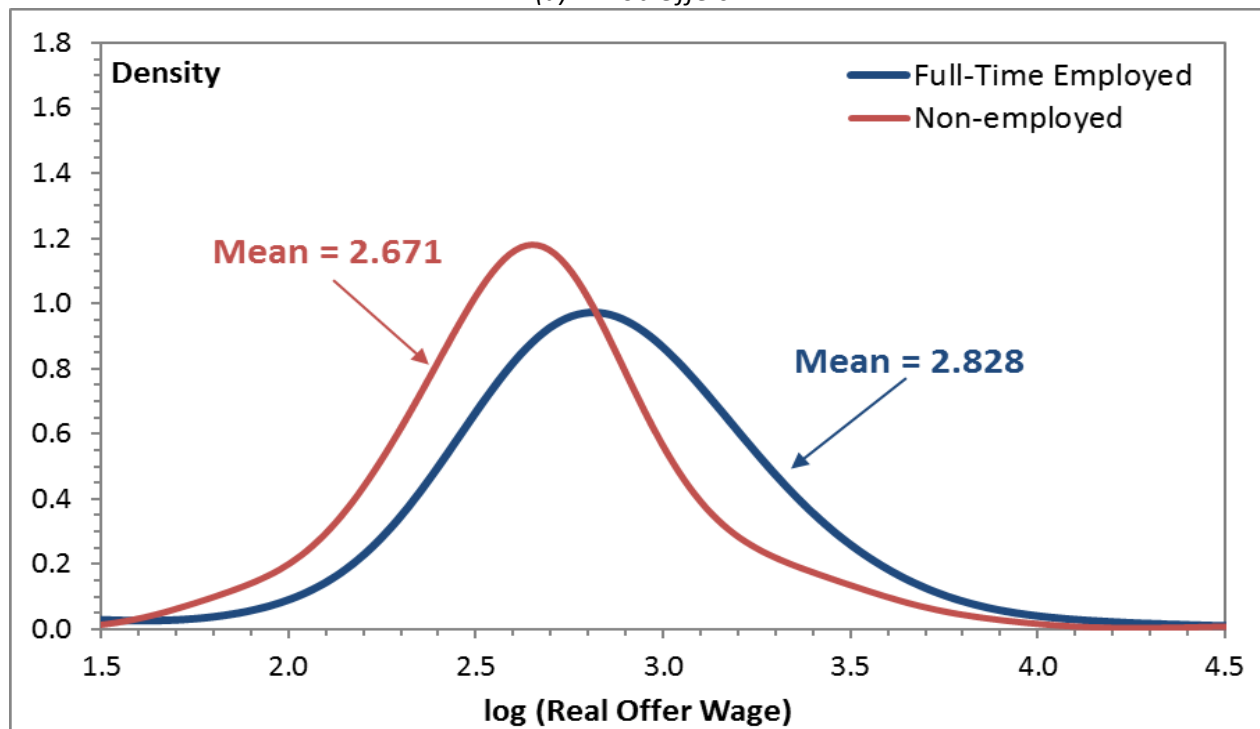
(b) Accepted Job Offers

Note: Figures report kernel density estimates of residual the log(real job offer wage) by labor force status after controlling for observable worker and job characteristics, the previous wage and hours of the worker, and the contemporaneous state unemployment rate.