

# "Moving Out or Moving Up? New Economists Sacrifice Job Opportunities for Proximity to Significant Others -- and Vice Versa"

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## I. Introduction

Couples who live together must agree on a location. Partners may disagree, however, about the best place to live and the location a couple chooses may be sub-optimal from the perspective of one or both partners. Mincer (1978) posits that conflicts over location most often reflect the geographic dispersion of job opportunities and that co-location constraints are of particular concern for dual-career couples -- especially couples in which both partners are career-oriented. He assumes that, when the preferences of the partners diverge, couples move to the location that maximizes their joint welfare.

Implicit in Mincer's analysis is an assumption that the career opportunities of men and women receive equal weight in the migration decisions of couples. Empirical studies of couple migration, however, have produced considerable evidence that migration and mobility benefit husbands and harm wives, even after accounting to observable differences in human capital between men and women.

In this paper, we use data from a unique survey of new economists -- all of whom have invested heavily in their human capital, nearly all of whom will move for their first job, and many of whom have highly educated partners -- to assess the severity and impact of the co-location problem among job seekers, for whom co-location constraints are likely to be especially severe. The survey combines information about the demographic characteristics, educational and professional accomplishments, and job market experiences of recent graduates of doctoral programs in economics with detailed information about their partners. The survey also includes direct questions about the co-location constraints facing new economists and the responses of the economists to those constraints.

We find, as expected, that co-location constraints influence the decisions of new economists about where to live and work. A small number of job candidates reject their first-choice job offer in order to accommodate their partners and, on average, accept jobs they view as less prestigious and less suited to their intellectual preferences. At the same time, compromise with respect to job opportunities is not common. Rather than forgo career advancement, a sizeable minority of job

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candidates adjust along a margin Mincer never considered: They live in different places and commute to see one another. We do not find evidence that women are more likely than men to sacrifice their best job opportunities on behalf of their partners, or that women are more likely to live apart from their partners.

## II. Theoretical background

Economists have long maintained that commitment to significant relationships constrains career-motivated migration and, conversely, that career-motivated migration puts pressure on significant relationships. In his seminal theoretical treatment of family migration, Mincer (1978) suggested that dual-career couples must agree on a location where both will live and work – or break up in order to pursue career opportunities in different locations. Mincer assumed that couples who live together choose the location that maximizes their joint utility, defined as the sum of their individual utilities from the career opportunities available to them and from the relationship. Formally, couples in Mincer’s model solve the following maximization problem:

$$\text{Max}_{x_A, x_B \in D} G_A^{x_A} + G_B^{x_B} + 1_{x_A=x_B} \cdot (M_A + M_B)$$

where

- $D$  is the set of possible locations,
- $x_i$  is the location of partner  $i$ ,
- $G_i^{x_i}$  is the career-related utility of partner  $i$  in location  $x_i$ ,
- $M_i$  is the utility partner  $i$  gains from the relationship, and
- $1_{x_A=x_B}$  is an indicator function that takes a value of one if the couple lives together.

This theoretical treatment points to a reciprocal relationship between career-motivated migration and significant relationships: Outcomes in each domain are jointly determined with outcomes in the other.

Mincer posited that conflicts over location arise most often and are most severe among highly educated dual-career couples. Because both partners in such couples have invested heavily in their human capital and are strongly attached to the labor force, the costs of forgoing job opportunities may be high. In addition, to the extent that the partners work in specialized, non-portable, occupations, the likelihood of finding suitable opportunities in the same location may be low.

Our paper focuses on new Ph.D. economists, and migration is the norm for those making the transition from graduate student to Ph.D. economist (McKinnish 2008). For the purposes of this paper, we shall assume that the net gains from moving are generally positive, because the first job out of graduate school is often a major determinant of an individual’s long term career path. Therefore, we will focus on understanding couples’ choices between different locations, as opposed to the decision to move at all. When choosing between various locations, the Mincer model asserts that a couple should choose the location which results in the highest net gain from the move.

Tied migration takes place when a couple moves to a location that is sub-optimal, from an individual perspective, for at least one partner. The Mincer model predicts that, even for an individual whose potential gains from a move outweigh those of their partner, having a partner results in a smaller average gain from migration than that individual’s optimal gain. That is, even in

a couple where one partner's career interests dominate those of the other, each partner is likely to be "tied," to some degree, by the other.

A couple's "migration tie" is the sum of losses to both partners when the highest net gain location is chosen, compared to the individuals' separately optimal locations. Both partners can be tied movers, meaning that a couple's chosen location need not coincide with either individual's optimal location. In many respects, couples can be expected to have common preferences over location characteristics such as region, presence of mountains or oceans, proximity to family or friends, or place size. However, particularly in the case of dual-career couples, the best option for each partner's career often differs from that which is best for the other partner. Thus, dual-career couples are likely to experience migration ties.

The probability of existence of a migration tie, as well as its magnitude, is likely to increase as a partner's preferences over job choices become less positively correlated with those of the other partner. Single-career couples need only consider the career options of one partner and the location preferences of both partners, while dual-career couples must also consider career preferences of a second partner. We expect dual-career couples to face more, and larger, ties compared to single-career couples because their career options are unlikely to be perfectly correlated over locations. Dual-career couples are therefore more likely than single-career couples to choose locations that are not individually optimal for both members of the couple.

As specialization in education or training increases, according to the Mincer model, there is likely to be more variability in gains from moving among a particular set of locations. The size of migration ties is therefore likely to be greater for individuals who face greater location constraints in their careers. Our paper uses data from a survey of a population with a very high degree of human capital attainment and specialization, and the career options of individuals in our sample vary greatly across locations. The Mincer model predicts that individuals like those in this population who want to live with their partners will often choose to move to locations that are not individually-optimal, especially as the degree of location constraint of their partners increases. Another implication of this model is that large cities would be disproportionately favored by dual-career couples facing large and variable potential migration ties, because such cities are likely to offer a greater concentration of job options for highly educated individuals.

Implicit in Mincer's model is the assumption that a couple must live together in order to maintain their relationship. As we will show, however, couples with strong commitments to one another and to their careers may avail themselves of a third option: They may accept jobs in different locations and maintain long-distance relationships. In this paper, we adapt Mincer's model to allow for long-distance relationships to explore the conditions under which conflicting migration opportunities induce couples to live apart.

### **III. Literature Review**

Since the 1970s, dozens of researchers have set out to test the implications of the Mincer model.<sup>2</sup> Most researchers have focused on quantifying the effects of migration on husbands' versus wives' labor force outcomes. Mincer expected that wives, because they were generally lower-skill and less attached to the labor market, were more likely to be tied movers than were husbands. The model predicts that tied individuals' career outcomes, including wages, employment status, and career

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<sup>2</sup> For a comprehensive recent literature review, see McKinnish (2008).

trajectory, will be worse than if they were not tied. His empirical analysis supported his theoretical framework.

Disparities in labor force participation rates and human capital investment between the sexes have declined since the 1970s. The Mincer model, which does not discuss gender roles or power balance within couples, predicts that families will weigh the careers of both partners equally in location decision-making. That is, a couple is assumed to consider the value of each partner's potential earnings, properly discounted to account for the value of expected future job market participation, in the migration decision.

A small subset of papers examining couple migration has found evidence that women's potential wage gains are equally weighted in the migration decision (Rabe 2006; Jacobsen and Levin 2000). However, most existing studies have found evidence that couples are significantly more likely to move for a husband's job than for a wife's; many have found signals that women are more tied movers—lower employment rates, wages and labor force participation in their new locations, compared to better labor market outcomes for their husbands (Lichter 1980, Bailey and Cooke 1998, Cooke 2001, Jacobsen and Levin 1997, McKinnish 2008, Sandell 1977, Shauman and Noonan 2007, Shihadeh 1991; and many others). Some of these studies attempted to isolate the effects of tied migration by comparing tied movers' employment outcomes with these individuals' own employment histories or with observably similar non-moving couples. However, comparisons of moving couples with non-moving couples (especially in datasets like the Census, which lack a rich set of covariates) likely suffer from biases due to unobservable differences between moving couples and non-moving couples. Furthermore, the studies that avoid this issue by using individuals' employment histories to estimate potential earnings (Cooke 2001, Jacobsen and Levin 1997) still fail to account for different career/earnings trajectories of men versus women, and measurement error may also be an important source of bias.

A few recent papers have begun to focus more on the effects of human capital differences, and whether husbands' careers still drive migration decisions after controlling for education (Compton and Pollak 2007) and occupation (McKinnish 2008, Shauman and Noonan 2007). These studies also are not able to fully explain the differences between husbands and wives in migration decisions and labor market outcomes. As with much of the other tied migration literature, their findings suggest that couples are more likely to move for gains in husbands' careers than gains in wives' careers. However, they are unable to control directly for the reason of a couple's move, relying instead on the relationship between partners' characteristics (education or earnings, respectively) and moving. A strength of our paper is that we understand the impetus for most couples to consider moving (one partner is finishing their Ph.D.), and we have much more information about the actual career prospects partners face than any previous study.

Thus, our study represents yet another attempt to isolate and measure the extent to which dual-earner migration patterns are due purely to differences in career potential. Because we use a population in which both men and women display high labor force attachment and have equally high and specialized human capital attainment, we have a unique opportunity to try to separately identify gender effects from the impact of purely career-related location constraints.

Prior research on couple migration has faced challenges due to low migration rates in survey data, measurement of career potential and mobility, and an inability to control for unobservable differences between movers and non-movers. Our study uses data that give us several advantages over previous research for testing the Mincer model. At the root of these advantages is that our

entire sample was participating in the same job market during winter 2008 or winter 2009. Men and women in this market have nearly-identical stocks of human capital (Ph.D.s in economics) and are highly attached to the labor force, so we expect their potential earnings to be extremely comparable. Furthermore, all of our respondents have few to no career options in most locations, so they expect to move and the career options this population faces are highly variable in quality. Both of these imply that migration ties might be particularly binding.

#### IV. Theoretical motivation

To explore the conditions under which conflicting migration opportunities induce couples to live apart, we adapt Mincer's model (see above) to allow for long-distance relationships. In particular, we decompose the utility each partner gains from the relationship,  $M_i$ , into a component that accrues no matter where the partners live,  $R_i$ , and a component that accrues only if the partners live together,  $C_i$ . We assume that  $C_i$  and  $M_i$  are always positive, but that  $R_i$  may be positive or negative.<sup>3</sup> We also allow couples to break up and forgo all utility from their relationship. As in Mincer's model, couples in our model choose their locations and their relationship status to maximize the sum of their individual utilities. Formally, couples in our model solve the following maximization problem:

$$\text{Max}_{r \in \{0,1\}; x_A, x_B \in D} G_A^{x_A} + G_B^{x_B} + r \cdot (R_A + R_B) + r \cdot 1_{x_A=x_B} \cdot (C_A + C_B)$$

where

- $D$  is the set of possible locations,
- $x_i$  is the location of partner  $i$ ,
- $r$  takes a value of one if the couple maintains their relationship,
- $G_i^{x_i}$  is the career-related utility of partner  $i$  in location  $x_i$ ,
- $R_i$  is the utility partner  $i$  gains from the relationship tie,
- $C_i$  is the utility partner  $i$  gains from cohabitation, and
- $1_{x_A=x_B}$  is an indicator function that takes a value of one if the couple lives together.

A key difference between our adapted model and Mincer's original model is the decision most directly affected by the pull of conflicting migration opportunities. In Mincer's model, couples who find it optimal to pursue career opportunities in different locations break up. In our model, in contrast, many couples who find it optimal to live in different locations maintain long-distance relationships. Indeed, couples in our model break up only when their combined utility from the

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<sup>3</sup> These assumptions describe a situation where (1) in the absence of conflicting migration opportunities, couples always maintain their relationships (2) couples always prefer cohabitation to long-distance relationships, and (3) some couples would rather maintain their relationships over distance than break up, while others would prefer the reverse. Because we are interested in relationship stability only to the extent that it is influenced by conflicting migration opportunities, the first point is innocuous. Similarly, while a small minority of couples may prefer long-distance relationships to cohabitation, we are interested in the tradeoffs between career advancement and living arrangements among couples for whom such a tradeoff exists. We believe that the third point is realistic, in that some couples would find a long-distance relationship worthwhile, while others would prefer to break up and search for partners closer to home.

relationship tie,  $R_A + R_B$  is *negative*. As we will show below, most new economists are probably in relationships where the partners' utility from the relationship tie is positive. For this reason, we will focus on the choice between living together and living apart and will assume that couples find it optimal to maintain their relationships.

Leaving aside the possibility of breakups, the central implication of the model is intuitive: The larger the proportion of relationship utility that derives from cohabitation, the more willing is the couple to forgo career opportunities in order to live together.

## V. Data

### *Overview*

This paper is an early product of a new survey project that collects data relevant to questions of gender and migration causes and outcomes. We field unique surveys about a population with extremely high human capital investments. In particular, this project focuses on the early career decisions and outcomes of doctoral-level economists on the junior Ph.D. job market. This paper uses data from the 2007-08 and 2008-09 cohorts of job seekers-- that is, our respondents sought jobs for which it is likely that they interviewed at the 2008 and 2009 AEA Annual Meetings. Several characteristics of this population, and of the junior Ph.D. market for economists, make new economists a good population in which to study couple migration and the associated problem of co-location. These are described in detail below. We then discuss our survey process, response rates and sample selectivity, and the specific survey items used in this paper.

### *Advantages of our survey project*

First, a major advantage of our survey project is that we are able to clearly define our population, and create a list sample of our population of interest: job candidates who are listed on the job placement pages of institutions on the "Job Market Candidates" webpage of the National Bureau of Economic Research (NBER).<sup>4</sup> Each fall, we use publicly available job candidate websites to gather the names, e-mail addresses, and curricula vitae of all of the candidates listed. We have 880 individuals on our list of 2007-08 job market cohort of Ph.D. economists from United States and Canadian universities, and 887 individuals on our list from the 2008-09 job market cohort. We believe that these lists encompass virtually the entire universe of interest: seekers of junior-level PhD jobs in economics and related fields from programs who were listed on the NBER site who expected to complete at least some interviews at the American Economic Association meetings.

Second, the job market for new economists is highly structured. Job candidates receive offers for interviews, fly-outs, and jobs, and make decisions about which of these to accept, during well-defined time periods. From late November until late December, prospective employers invite job candidates to a first round of interviews at the annual meetings of the Allied Social Science Associations. These interviews take place in January. From early January until late February, employers invite their favored candidates to follow-up interviews at the hiring institutions. At the same time, and continuing into March, employers extend job offers and new economists decide where they will work.

Third, the job market for doctoral-level economists is geographically diffuse. Whereas previous studies of couple migration have relied on samples containing relatively few movers, almost ninety

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<sup>4</sup> We used the list of institutions available at <http://www.nber.org/candidates/>.

percent of graduates of doctoral programs in economics migrate after graduation. We are thus able to observe a large number of co-location decisions at relatively low cost.

Finally, considerable information about the background of new economists is publicly available. In particular, we are able to obtain the curricula vitae of the universe of new economists each year.

The result of these advantages is that we are able to look much more directly at the factors involved in migration decision making and gain a better understanding of career outcomes after migration than previous research on couple migration.

### *Survey contents and fielding*

We exploit the structure of the economics job market in the pre-post design of our job market surveys. Using our list sample of each academic year's job market cohort, we invite participants to complete web-based surveys.<sup>5</sup> We approach job candidates about their expectations and preferences beginning in late December. Our aim is for information obtained from this "pre-market survey" to be relatively unaffected by any achievements and disappointments candidates experience on the job market. We follow up with our sample after the job market has ended and after most new economists have accepted jobs with our "post-market survey."

Our first pre-market survey was fielded from late December 2007 through March 2008, with a majority of responses submitted by the end of the first week in January. Our second pre-market survey, fielded in December 2008, received over half of the eventual responses before the AEA meetings. The pre-market questionnaires gather information about respondents' demographic characteristics; relationship status and quality; cohabitation status and plans; educational background and careers of partners; preferences regarding the attributes and location of their future jobs; decisions during the initial stages of their job search and the influence relationships on these decisions; and dates of survey login and completion.

Our post-market surveys are fielded each fall, several months after the general job market in economics has closed. The first post-market survey, fielded in 2008, contained questions about relationship status and characteristics; partners' education and career plans; respondents' decisions during the later stages of their job search, including interviews, fly-outs, offers and job acceptance stages; the influence of respondents' partners on their decisions; respondents' satisfaction with their best and second-best job offers; location of respondents' and partners' high schools; location of respondents' and partners' mothers; and key pre-market questions for respondents who had not responded to the pre-market survey. The post-market survey, fielded in late 2009, was expanded to include questions about partners' labor supply, potential and expected earnings, fertility expectations, and more questions about work-life balance issues.

From job candidates' curricula vitae, we have also assimilated data about respondents' gender, nationality, and a proxy for age (year undergraduate degree awarded); undergraduate and pre-Ph.D. educational background; Ph.D. institution; research and teaching fields; teaching experience; presentations and publications; and academic honors and fellowships. The resulting "CV dataset" includes information about all of the economists in our sample — including those who did not complete the surveys. Data from the curricula vitae is a unique and innovative feature of our study, and will eventually enable us to control for selection bias in our analyses. This dataset already allows us to understand something about non-respondents and selection into our survey dataset;

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<sup>5</sup> For details on protection of the confidentiality of respondents, please see the Appendix.

however, the benefits of the CV dataset have not yet been incorporated into the analyses in this paper.

As we continue to combine data from successive cohorts, our dataset will give us increasingly strong identification opportunities and statistical power to quantify and examine the effects of gender differences in sex-role attitudes, preferences and decision making about location and migration that continue to exist at the upper-end of the human capital spectrum.

### ***Response rates***

#### *Job market cohort 2007-08*

Our list sample for the 2007-08 cohort was composed of 880 job candidates in economics and related fields. There were 356 completed surveys for wave one (40.45 percent response rate), and 340 completed wave two surveys (38.64 percent response rate). Of those 356 respondents who completed wave one, 233 (65.45 percent) completed wave two. Of those 524 respondents who did not complete wave one, 107 (20.43 percent) completed wave two. Just over twenty-six percent of our list sample completed both waves of the survey. Additionally, we have been able to incorporate data from the curricula vitae of 838 job market candidates (95.11 percent) into our dataset.

#### *Job market cohort 2008-09*

The 2008-09 survey list was composed of 887 job candidates in economics and related fields. There were 461 completed surveys for wave one (52 percent response rate), and 297 completed wave two surveys (33.5 percent response rate). Of those completing the wave two survey, 221 (over 95 percent) had also completed the wave one survey. Approximately twenty-five percent of our list sample completed both waves of the survey. Additionally, we were able to incorporate data from the curricula vitae of 874 job market candidates (98.5 percent) into our dataset.

### ***Sample selectivity***

As previously mentioned, a particular strength of our research design is that we will use the CV data to understand and eventually mitigate the bias from sample selection in our study. Overall, preliminary analyses show that the survey samples very closely match the CV sample, with a few exceptions. We feel that selection on these observables is likely a small but relevant issue. However, we have chosen not to correct for it in the current draft of this paper, due to timing constraints.

### ***Relevance of sample to couple migration***

We chose to use this population to study couple migration because all members of this group have accumulated extremely high levels of highly-specialized human capital. Having at least one partner who has variable career options by location makes the Mincer model, and migration ties, more likely to bind, compared to populations in which both partners' careers are flexible. Our population is also one which is very likely to include a large proportion of dual-career couples, increasing the likely "bite" of migration ties. Some summary statistics about relationship status and commitment level can be seen in Table 1. Over three-quarters of respondents in each cohort were not single, and over three-quarters of those in relationships were married or in marriage-like relationships. Our respondents' partners were also likely to be highly educated: over forty percent of partners holding or expecting a doctorate, and an additional thirty-three percent of partners have master's degrees or other professional degrees.



## VI. Results and discussion

The options available to couples in our extension of Mincer's migration model, to move to a location together or to move to separate locations and commute to see one another, carry implications that can be tested using our uniquely rich dataset. In the first part of this section, we address the decisions couples make about whether to (potentially) relationship outcomes attain better career outcomes. In the second part of the section, we will examine job outcomes to see what aspects of their careers partnered job candidates might be sacrificing for their relationships.

### *Moving together*

First, consider that the maximization problem in the theoretical motivation section. This problem implies that a couple will move to a location together if the joint utility of the couple is higher from living in a location together than from living separately in any two different locations.

In our data, non-cohabitation of even married couples is not uncommon. Table 2 shows descriptive statistics about the cohabitation status of partnered job market candidates in January of the job market year and their expected cohabitation status in March after the job market year. This table shows that the candidates who cohabit tend to have longer relationship histories and more committed relationship status (a vast majority are married or in marriage-like relationships) than those who do not cohabit. However, a non-negligible proportion – about half – of partnered, but non-cohabiting, job market candidates are also married. (The differences between men and women are not different after accounting for the education level of their partners: women are much more likely to have PhD partners, and PhD partners are the group most likely to face large variation in career-related utility.)

Table 3 considers only partnered job market candidates who completed the post-market survey. It breaks the candidates down by job market cohort,<sup>6</sup> and shows job market (January of job market year) and post-market (March of job market year) cohabitation status, as well as how cohabitation status changed between the job market and post-market years. We take the frequency of non-cohabitation as suggestive evidence that many couples face constraints that affect their decision to cohabit.

### *The utility value of cohabitation*

The expression  $C_1+C_2$  is the utility the couple derives from cohabitation. As described in the theoretical motivation, this is separate from  $R_1+R_2$ , which represents the utility to the couple from being in the relationship, regardless of cohabitation status. Holding all else constant, an increase in  $C_1+C_2$  increases the likelihood that a couple will find it optimal to live together.

We have the unique ability to use data about factors that may be related to the utility the couple derives from cohabitation to examine the relationship between  $C_1+C_2$  and a couple's decision to cohabit. We hypothesize that factors such as the presence of children, relationship tenure and commitment status, and a history of cohabitation increase the couple's utility from cohabitation. As  $C_1+C_2$  increases, the total expected utility of living together increases relative to living apart, making it less likely that the partners will choose to live apart.

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<sup>6</sup> While missing data are a concern for the 2007-08 data, all results in this section are robust to inclusion of both cohorts, or either one separately.

We use probit regressions to explore the relationship between cohabitation and the factors that we think may affect the value of cohabitation.<sup>7</sup> See table 4 for the results of these analyses. Column (1) shows the results of the regression of a dummy variable indicating “has at least 1 child as of post-market survey.” For all probits in this analysis, finite differences are reported for 0/1 variables, and the derivative at the mean of the independent variables are reported for all other variables. We find that having children is, indeed, positively related to cohabiting in the year after the job market.

Column (2) introduces dummy variables for relationship tenure to the regression. The excluded category is the lowest category, a tenure of zero to two years. Particularly long relationship tenures are positively related to cohabiting in the year after the job market.

The next column, column (3), introduces a dummy variable for whether the job market candidate described his/her relationship status as married or “marriage-like,” as opposed to a “dating” or “committed” relationship. Highly committed couples are much more likely to live together after the job market year. Also note that introduction of this variable causes the sign on the relationship tenure variables to switch. Our interpretation of this sign switch is that, because relationship tenure and commitment status are highly correlated, the individuals who are less committed despite long relationship tenure may place less value on cohabitation.

Finally, in column (4) we introduce a dummy variable indicating whether a couple cohabited during the job market year. This point estimate is imprecise. Alone on the right-hand-side, however, this variable is statistically significant and positive, indicating that past cohabitation is positively related to a decision to continue cohabitation after the job market candidate finds a job.

#### *Importance of partners' career-related utility*

The analysis above illustrates that, at least as measured by the variables described above, the utility value of cohabitation does not appear to be the only factor important to the cohabitation decision. This is consistent with our extension of the Mincer model, because the career-related utility differences between locations should also factor in the cohabitation decision.

Holding all else constant, as  $G_1^{xA}$  increases relative to other locations, the total expected utility of living in location  $A$  increases relative to the utility from living in any other location, either together or apart. Because the job market candidates in our sample have very similar career commitment and earnings potential the difference between a couple's career-related utility in the location that is best for the couple as a whole, and the sum of each partner's career-related utility in his/her individual-best location, is highly dependent on the relative magnitudes and dispersions of the partners' career options. If a partner expects not to work, or has low potential earnings, the best location choice for the economist is also likely to be the best choice for the couple as a whole.

However, if we assume that the career-related utilities of both partners are of similar magnitude because both are career-oriented and have similar potential earnings, and if the career-related utilities are not highly and positively correlated across locations, it is far from certain that the best location for the economist's career is also the best for the partner's career.<sup>8</sup> If the best location for the couple as a whole is not the best location for each partner's career individually, one or both partners will sacrifice career-related utility to cohabit, or the partners will choose to live apart. In other words, as a partner's earnings potential or career-orientation increases, we expect that either

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<sup>7</sup> Linear probability and logistic regressions yield almost identical results.

<sup>8</sup> In the case of dual-academic couples, in which each partner's opportunities might be related to the other's opportunities if the couple conducted a “joint search,” this assumption is unlikely to hold.

(1) one or both members of the couple will experience worse career outcomes, or that (2) their career outcomes will be unaffected, but the couple will live apart.

We next consider the relationship between the magnitudes and dispersion of the career-related utility of the partner and a couple's decision to cohabit. In many existing studies of couple migration, education is employed as an indication of career-attachment and location constraint. We hypothesize that the partner's education level and labor force attachment are positively related to the magnitude of the partner's career-related utility. We also expect that the partner's career-related utility at the job market candidate's new job's location is related to the quality of the partner's job opportunities in that location. Furthermore, because we use relative measures like "good", "fair" and "poor," for a partner to have "poor" options in one location implies that he/she has better options elsewhere. Therefore, the quality of partners' job opportunities, especially "fair" or "poor," may also function as a measure of variability of job opportunities across locations. Table 5 reports the results of probit regressions of cohabitation status on factors related to the magnitude and variability of partners' career-related utility.

Columns (1) and (2) examine the relationship between partner education and cohabitation status, using dummy variables for partner education level. The excluded category of partner education is "Bachelor's degree or less." We find that dual-PhD couples are much less likely to live together than couples with other combinations of education. Columns (3) and (4) use an indicator of labor force attachment, whether the job market candidate expects his/her partner to work "at least 40 hours per week for most of the next ten years."<sup>9</sup> This variable, too, implies that respondents with more career-attached partners are less likely to live together.

The next two columns, (5) and (6) show the relationship between partner career opportunities and the respondent's post-market location. Respondents were asked "At the time you accepted your job, how would you have rated your significant other's job opportunities in the area?," with answer options "good," "fair," "poor," and "not applicable." The last of these was chosen by respondents with partners who did not plan to work. The large, negative relationship between "fair" or "poor" partner opportunities and cohabitation status illustrates that partners with much to lose from cohabiting in the respondent's location are unlikely to cohabit.

Columns (7) and (8) combine variables from the first several columns, and show that signs and magnitudes of the estimates are quite stable.

#### *Importance of variability of respondents' career-related utility*

While the magnitude of the career-related utility is likely to be comparable across similar job candidates and locations, the variability in job quality among actual job offers is more likely to differ across candidates. This variability likely contains some random component, as the average candidate submits over 100 job applications, and the selection process by employers is based on noisy signals. In the Mincer model, larger variation of the job market candidate's career-related utility across locations makes it less likely that his/her best job option coincides with that of his/her partner. Using differences between the accepted job and the next-best offer as measures of variability, we examined the relationship between this variability and cohabitation status.

Columns (1) and (2) look at the spread between log(salary) at the respondents' top two job offers. It appears unrelated to cohabitation status. This is not surprising, because new PhD economists are

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<sup>9</sup> This variable is based on a conditional probability question, asked only in the 2008-09 survey, about the likelihood the partner will work full-time. A "1" is assigned only if the respondent gave a probability greater than 75%.

often still investing in their human capital, and do not appear to be concerned with maximizing earnings. Columns (3) and (4), and (5) and (6), examine the relationship between the spread in (satisfaction with) prestige and intellectual fit of the job market candidate's top two job offers. Satisfaction with prestige and intellectual fit were measured on a 1-6 scale, from "Extremely dissatisfied" to "Extremely satisfied." The measures of spread were calculated to be the absolute value of the difference between the ratings for the top two job offers. In all cases, these measures were not closely related to cohabitation status. Although not shown in this paper, the (signed) differences also did not display a clear relationship to cohabitation status. We are somewhat puzzled by this, and plan to revisit this analysis, or the hypotheses behind it, in the future.

### ***Job outcomes***

Mincer (1978) assumes that, when individual preferences diverge, couples choose the location that maximizes their joint welfare. He notes that this location may be the first choice of one partner or of neither. In keeping with these observations, we expect that some of the job seekers in our sample -- all of whom have a doctoral degree and many of whom have a highly-educated partner -- will reject their first-choice job offer in order to accommodate the preferences of their partner. An advantage of our data over other data that have been used to study couple migration is the availability of direct questions about the co-location problem. To assess the extent to which co-location constraints influenced the job choices of job candidates in our sample we asked the following question:

*Please think about the set of jobs from which you chose, including all of your formal offers and any offers you are certain you could have received, but did not formally receive.*

*Cohort 2007-08: If you had considered only your own preferences, and had ignored the preferences of your partner, would you have accepted the same job, or would you have accepted a different job?*

*Cohort 2008-09: If your partner would have been equally happy with any outcome of your job search, would you have accepted the same job, or would you have accepted a different job?*

Most job candidates chose between multiple job offers. Of the 476 partnered candidates who provided information about their job offers and whether they accepted a job, 81 percent received more offers than they accepted (a majority of respondents accepted only one job, but some respondents accepted both a temporary position, like a postdoc, and a permanent position).

Of the partnered job candidates who received more job offers than they accepted -- and were therefore in a position to accept a less desirable offer if their first-choice offer was in a location unfavorable to their partner -- 85 percent reported that they had accepted their first-choice offer. Just 15 percent of the candidates who could have accommodated their partner reported that they had, in fact, done so.

*Job choice by partner education and job opportunities (based on cohort 2007-08 data only)*

Mincer (1978) posits that the co-location problem facing dual career couples grows more severe as the educational attainment and career commitment of the partners increase. Our findings are consistent with this idea. Table 6 describes the likelihood that a job candidate rejected his or her first choice job offer by the education level of the candidate's partner. Although the trend is not statistically significant, job candidates with more highly educated partners were more likely to

reject their first-choice offer due to their partner's preferences. The percentage of candidates who rejected their first-choice offer was 10 percent among those whose partners had a bachelor's degree or less, 14 percent among those whose partners had a master's or professional degree, and 20 percent among those whose partners had or were working towards a doctoral degree.

When we consider co-location constraints directly, we find a statistical association between the likelihood that a job candidate rejects his or her first-choice job offer and the variability of his or her partner's job opportunities across the locations where the candidate had interviews -- but no clear association between the candidate's job choice and the overall quality of the partner's job opportunities. Table 7 summarizes these results. The importance of variability is apparent in the responses to two survey items.

First, job candidates who indicated that their partner had good job opportunities in some, but not all, of the locations where they had interviews were most likely to reject their first-choice job offer. Among candidates whose partners had good opportunities in some interview locations, but not others, 24 percent rejected their first-choice offer. Among candidates whose partners had good opportunities in all or most interview locations, or in few or no interview locations, the percentage who rejected their first-choice offer was considerably lower: 10 percent of those whose partners had mostly good opportunities and 11 percent of those whose partners had few good opportunities.

Second, the fewer the interview locations in which a job candidate's partner had fair job opportunities, the more likely was the candidate to reject his or her first-choice job offer. Among candidates whose partners had fair opportunities in few or none of the locations where they had interviews, 24 percent rejected their first-choice offer. Among candidates whose partners had fair opportunities in some of those locations, but not others, 18 percent rejected their first-choice offer. Finally, among candidates whose partners had fair opportunities in all or most of the locations where they had interviews, just 4 percent rejected their first-choice offer.

There is a straightforward intuition for these results. If a job candidate's partner had good options everywhere, there was no need for the candidate to reject his or her first-choice job offer; the partner was likely to find a good job in whatever location the candidate chose. If, on the other hand, a job candidate's partner had good options nowhere, there was no reason for the candidate to reject his or her first-choice offer; the partner was unlikely to find a good job no matter what location the job candidate chose. Similarly, if a job candidate's partner had mostly modest opportunities, the gain to the partner from accommodation, or the loss from lack of accommodation, was likely to be minimal.

There was no economically or statistically significant relationship between the proportion of interview locations in which a job candidate's partner had poor job opportunities and the likelihood that the candidate rejected his or her first-choice job offer.

#### *Consequences of rejecting the first-choice job offer (based on cohort 2007-08 only)*

We do not find evidence that accommodation of partners led job candidates to forgo academic jobs in favor of non-academic jobs -- or vice versa. Table 11 compares the settings of the accepted and first-choice jobs of candidates who rejected their first-choice offer. For 20 of these 27 candidates, both of the jobs were academic or both were non-academic. While the number of candidates who accepted a non-academic job when they would have preferred an academic job was higher than the number who did the reverse (five settled for a non-academic job, while two settled for an academic job), the pattern was not statistically significant.

Turning to compensation, it does not appear that job candidates sacrificed salary in order to accommodate their partners. Table 12 presents the salary distributions of the accepted and first-choice jobs. Among candidates who rejected their first-choice job offer, the median salary of the accepted job was higher than the median salary of the first-choice job (\$88 thousand for the accepted job versus \$85 thousand for the first-choice job). This difference does not suggest a tradeoff between compensation and accommodation and, in any case, is not statistically significant.

Nor do we do find evidence that job candidates sacrificed perks in order to accommodate their partners. The number of accepted jobs that provided research funds, a reduced teaching load, summer support, computer funds, and a moving allowance was comparable to the number of first-choice jobs that provided these perks. Indeed, the only statistically significant difference with respect to perks was an advantage of the accepted jobs over the first-choice jobs: While five accepted jobs provided a housing subsidy, just one first-choice job did so. Table 13 summarizes these results.

If job candidates who rejected their first-choice job offer enjoyed comparable work settings, salaries and perks at the jobs they accepted, what did they sacrifice in order to accommodate their partners? Put differently, why did these job candidates prefer their first-choice offers to the offers they ultimately accepted? Responses to our satisfaction items suggest that, while the accepted jobs were as good as the first-choice jobs in terms of compensation and tangible resources, they offered less desirable academic and professional environments. In particular, job candidates who accommodated their partners were less satisfied with the prestige of their accepted jobs than they would have been with the prestige of their first-choice jobs and reported that their first-choice jobs would have suited them better, intellectually.

We should note that most job candidates were satisfied with both their accepted job and their first-choice job. The differences in satisfaction with prestige and intellectual fit reflect distinctions between levels of satisfaction (extremely satisfied, very satisfied, and somewhat satisfied), rather than distinctions between satisfaction and dissatisfaction. What is more, candidates who rejected their first-choice job offer reported that, with regard to salary, expected work load, mix of teaching and research, and social fit, the job they accepted was just as good.

While we observe some tradeoffs between job characteristics and partner accommodation, job candidates who rejected their first-choice offer were more -- not less -- satisfied with the locations of the jobs they accepted job than they would have been with the locations of their first-choice jobs. In particular, candidates indicated that, relative to their first-choice jobs, their accepted jobs had superior natural and cultural amenities, and were in communities of a more desirable size. There were no statistically significant differences in the satisfaction of the candidates with the racial and ethnic diversity of the two locations, or with the proximity of the locations to their friends and family. Table 14 presents satisfaction ratings for the accepted and first-choice jobs.

That job candidates lived in more desirable locations when they rejected their first-choice job offer than when they accepted it suggests that candidates agreed with their partners about the best places to live -- but that they would have been willing to forgo living in these places in order to obtain a better job. This finding is consistent with Mincer's (1978) observation that couples are likely to share preferences regarding location and that co-location constraints most often reflect the geographic dispersion of employment opportunities.

## VII. Conclusions

Our analysis is broadly consistent with our extension of Mincer's (1978) model of couple migration. Among recent graduates of doctoral programs in economics, concerns about the preferences and opportunities of their partners led some job candidates to reject their first-choice job offer; other job candidates chose to live apart from their significant others.

Our findings indicate that, among new economists, flexible relationship arrangements offer an alternative margin of adjustment, compared to the Mincer model, for couples coping with severe co-location constraints. In particular, couples who do not wish to forgo their best job opportunities may live in different places. A considerable number of job candidates reported that they planned to be living in a different location from their partner during the year after their job market year. The prevalence of living apart among new economists offers a partial explanation for the lower than expected likelihood of rejecting their first-choice job offer.

The prevalence of living apart also suggests that, just as significant relationships may compromise careers, careers may also compromise significant relationships. While job candidates likely view living apart as a temporary arrangement, the arrangement is a sacrifice for most couples. Partners who live apart must bear the expense and inconvenience of traveling to see one another and cannot be together on a daily basis. What is more, living apart may place couples at a higher risk of breaking up.

While we do observe choices that are consistent with Mincer's (1978) analysis, we were surprised to find that compromise with respect to job opportunities was not common among new economists. Just 15 percent job candidates reported that they had rejected their first-choice job offer due to their partner's preferences. The reluctance of job candidates to sacrifice their own career opportunities on behalf their partners may reflect the extreme variability of their opportunities across locations. Because holders of doctoral degrees are likely to have poor job opportunities -- or no job opportunities -- in many places, they may suffer considerable losses when they agree to live in a sub-optimal location.

Also consistent with the theory of couple migration is our finding that job candidates who rejected their first-choice job offer sacrificed job characteristics they valued in order to accommodate their partners. In particular, job candidates who rejected their first-choice offer were less satisfied with the prestige and intellectual environment of the jobs they accepted than they would have been with these characteristics of their first-choice jobs. This result is noteworthy because the prestige of an economist's first job and his or her intellectual fit with colleagues may be important determinants of the economist's long-term career trajectory.

On the other hand, job candidates who accommodated their partners did not report that they had sacrificed compensation in order to do so. This finding suggests that studies concerned with career development among academics should assess both objective and subjective job outcomes. Studies that focus on job outcomes that are easy to measure -- such as salary and perks -- and ignore less tangible outcomes may overlook important aspects of job quality.

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**Appendix: A word about confidentiality**

Confidentiality concerns have shaped the survey from the time we began planning through the data analysis stage. Because our survey respondents are our peers, we have implemented many measures to prevent identification of individuals. We have dropped variables that clearly identified individual respondents -- including names, contact information, and university -- from the data to which we have routine access. We have also recoded variables that could potentially be used to identify respondents. Race, ethnicity, and citizenship have been grouped into broad categories. We have used geographic variables to determine whether a job candidate has moved, whether the candidate cohabits with his or her partner, and how far the candidate lives from his or her degree-granting institution and from his or her partner. We have dropped more detailed geographic variables from the data. We have separated open-ended responses from the rest of the survey data and view them only without identifiers. The complete dataset, which includes identifying information, is stored on a secure server at the Survey Research Center. We do not have independent access to this dataset.

**Table 1: Relationship status and type**

	Job market cohort 2007-08		Job market cohort 2008-09	
	N	%	N	%
<b>Married</b>	173	50.9%	137	48.6%
<b>In a marriage-like relationship</b>	23	6.8%	31	11.0%
<b>In a committed relationship</b>	43	12.7%	34	12.1%
<b>In a dating relationship</b>	18	5.3%	15	5.3%
<b>Total in relationships</b>	257	75.6%	217	77.0%
<b>Single</b>	74	21.8%	64	22.7%
<b>Not given</b>	9	2.7%	1	0.4%
<b>Total</b>	340		282	

**Table 2: Descriptive statistics about respondents' relationships, by gender and cohabitation status**

	All respondents		Male respondents		Female respondents	
	Cohabiting	Not cohabiting	Cohabiting	Not cohabiting	Cohabiting	Not cohabiting
<b>In January of the job market year</b>						
Number of	265	102	199	73	66	29
Percentage	72.2%	27.8%	73.2%	26.8%	69.5%	30.5%
Mean tenur	81 months	49.9 months	81.8 months	49 months	78.8 months	51.9 months
Median ten	77 months	36.5 months	78.5 months	35 months	76 months	38 months
Percent mā	83.8%	33.3%	86.9%	32.8%	74.2%	34.5%
Percent mā	94.0%	50.0%	94.4%	52.0%	92.4%	44.8%
<b>In March following the job market year</b>						
Number of	286	89	216	57	70	32
Percentage	76.3%	23.7%	79.1%	20.9%	68.6%	31.4%
Mean tenur	76.7 months	56.2 months	77.9 months	57.1 months	73.1 months	54.7 months
Median ten	76 months	45 months	77 months	45 months	70 months	47.5 months
Percent mā	75.50%	37.1%	78.20%	36.8%	67.10%	37.5%
Percent mā	87.80%	47.2%	89.40%	49.1%	82.90%	43.8%

\* Number of partnered respondents who completed the "post-market" survey and for whom cohabitation and relationship status are known. Relationship tenure is known for 88% of partnered respondents, and we know relationship status of over 93% of respondents.

**Table 3: Cohabitation status of partnered respondents**

	<b>Job market cohort 2007- Job market cohort 2008-</b>			
	<b>N</b>	<b>% (known only)</b>	<b>N</b>	<b>% (known only)</b>
<b>Job market</b>				
<b>Cohabiting</b>	129	75.9%	138	66.3%
<b>Not cohabiting</b>	34	20.0%	69	33.2%
<b>Total known</b>	163		207	
Unknown	94		10	
<b>Post-market</b>				
<b>Cohabiting</b>	123	72.4%	166	79.8%
<b>Not cohabiting</b>	47	27.6%	42	20.2%
<b>Total known</b>	170		208	
Unknown	87		9	
<b>Changes between waves</b>				
<b>Switched to non-cohabi</b>	15	15.31%	15	7.54%
<b>Switched to cohabitatio</b>	14	14.29%	41	20.60%
<b>Non-cohabitation both</b>	8	8.16%	23	11.56%
<b>Cohabitation both wave</b>	61	62.24%	120	60.30%
<b>Total known</b>	98		199	
Unknown	159		18	

**Table 4: Probit regressions on cohabitation status I**

	(1) Children	(2) Relationship tenure	(3) Commitment status	(4) All
<b>Has at least 1 child</b>	0.201*** [0.0397]	0.147*** [0.0462]	0.106** [0.0508]	0.0971* [0.0527]
<b>Relationship tenure</b>				
<b>[2-4) years</b>		0.0515 [0.0605]	-0.12 [0.0907]	-0.277** [0.124]
<b>[4-6) years</b>		0.0114 [0.0687]	-0.192* [0.105]	-0.276** [0.137]
<b>[6-8) years</b>		0.122** [0.0542]	-0.0743 [0.0988]	-0.185 [0.136]
<b>8 years or longer</b>		0.122** [0.0572]	-0.0476 [0.0836]	-0.17 [0.112]
<b>Married or marriage-like</b>			0.408*** [0.0833]	0.379*** [0.112]
<b>Cohabited in January of job market year</b>				0.068 [0.0641]
<b>Observations</b>	381	336	336	272
<b>Pseudo R-squared</b>	0.0416	0.0565	0.142	0.152

Standard errors in brackets; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Excluded category: Relationship tenure: <2 years

**Table 5: Probit regressions on cohabitation status II**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<u>Partner education</u>		<u>Partner FT</u>		<u>Partner opportunities</u>		<u>Combine 4 + 5</u>	<u>All</u>
<b>Cohorts</b>	<b>Both</b>	<b>Both</b>	<b>Cohort 2</b>	<b>Cohort 2</b>	<b>Both</b>	<b>Both</b>	<b>Cohort 2</b>	<b>Cohort 2</b>
<b>Included relationship tenure controls?</b>	yes	yes	yes	yes	yes	yes	yes	yes
<b>Has at least 1 child</b>		0.0525 [0.0560]		0.125** [0.0541]		-0.00305 [0.0671]	0.09 [0.0645]	0.0748 [0.0644]
<b>Married or marriage-like</b>		0.398*** [0.117]		0.343** [0.143]		0.380** [0.148]	0.439** [0.192]	0.461** [0.199]
<b>Cohabited during job market year</b>		0.112* [0.0673]		0.115 [0.0774]		0.0398 [0.0679]	0.0418 [0.0767]	0.0805 [0.0864]
<b>Partner education: MA or professional</b>	-0.0251 [0.0608]	-0.0194 [0.0653]				-0.0599 [0.0729]		-0.0583 [0.0955]
<b>Partner education: Doctorate</b>	-0.264*** [0.0616]	-0.240*** [0.0783]				-0.238*** [0.0892]		-0.153 [0.113]
<b>Partner will have full-time career</b>			-0.200*** [0.0519]	-0.109** [0.0543]			-0.126** [0.0559]	-0.117** [0.0531]
<b>Partner opportunities: Fair</b>					-0.173*** [0.0654]	-0.171** [0.0727]	-0.215** [0.0962]	-0.197** [0.0949]
<b>Partner opportunities: Poor</b>					-0.469*** [0.0964]	-0.521*** [0.143]	-0.455** [0.186]	-0.450** [0.192]
<b>Partner opportunities: N/A</b>					-0.0654 [0.0946]	-0.0723 [0.117]	-0.0525 [0.151]	-0.0886 [0.168]
<b>Observations</b>	357	271	187	166	309	232	131	131
<b>Pseudo R-squared</b>	0.0781	0.224	0.0639	0.259	0.0894	0.287	0.306	0.327

Standard errors in brackets; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Excluded categories: Relationship tenure: <2 years; partner education: BA or less; Partner career opportunities in new job location: good

**Table 6: Probit regressions on cohabitation status III**

Cohorts	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	<u>Salary spread</u>		<u>Prestige spread</u>		<u>Intellectual fit spread</u>		<u>All measures of spread</u>		
	Both	Cohort 2	Both	Cohort 2	Both	Cohort 2	Both	Cohort 2	Cohort 2
<b>Included relationship tenure controls?</b>	yes	yes	yes	yes	yes	yes	yes	yes	yes
<b>Has at least 1 child</b>	0.0679 [0.0522]	0.172*** [0.0610]	0.0703 [0.0516]	0.165*** [0.0638]	0.0619 [0.0530]	0.161** [0.0643]	0.0689 [0.0514]	0.185*** [0.0646]	0.164*** [0.0602]
<b>Married or marriage-like</b>	0.460*** [0.174]	0.215 [0.175]	0.520*** [0.172]	0.301 [0.191]	0.489*** [0.172]	0.243 [0.182]	0.457** [0.179]	0.22 [0.185]	0.231 [0.200]
<b>Lived together during job market year</b>	0.0397 [0.0708]	0.1 [0.105]	0.0307 [0.0694]	0.07 [0.0962]	0.0498 [0.0733]	0.094 [0.101]	0.0654 [0.0788]	0.121 [0.115]	0.15 [0.115]
<b>Partner education: MA or professional</b>	-0.146 [0.0938]		-0.147 [0.0961]		-0.154 [0.0957]		-0.149 [0.0942]		-0.198 [0.143]
<b>Partner education: Doctorate</b>	-0.319** [0.128]		-0.369*** [0.129]		-0.359*** [0.129]		-0.355*** [0.133]		-0.305* [0.165]
<b>Partner will have full-time career</b>		-0.101 [0.0647]		-0.0983 [0.0671]		-0.119* [0.0675]		-0.119* [0.0694]	-0.0722 [0.0625]
<b>Intellectual fit spread</b>					-0.0178 [0.0255]	-0.0545 [0.0412]	-0.036 [0.0258]	-0.0709 [0.0461]	-0.0760* [0.0427]
<b>Salary spread</b>	-0.000669 [0.00628]	0.00411 [0.00965]					-0.000991 [0.00648]	0.00366 [0.0105]	0.00185 [0.00881]
<b>Prestige spread</b>			0.035 [0.0252]	0.0169 [0.0359]			0.0437* [0.0265]	0.043 [0.0399]	0.0363 [0.0344]
<b>Observations</b>	174	109	181	109	180	109	166	104	104
<b>Pseudo R-squared</b>	0.212	0.23	0.242	0.208	0.237	0.223	0.249	0.255	0.305

Standard errors in brackets; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Excluded categories: Relationship tenure: <2 years; partner education: BA or less

**Table 6: Job choice by partner education**

		<b>Chose preferred job</b>	<b>Chose different job</b>	<b>Total</b>
<b>HS or Associate's degree</b>	N	35	4	39
	%	90	10	
<b>Master's or professional degree</b>	N	49	8	57
	%	86	14	
<b>Doctorate</b>	N	56	14	70
	%	80	20	
<b>Total</b>	N	140	26	166
	%	84	16	
<b>Pearson Chi-Squared</b>	1.97			
<b>D.F.</b>	2			
<b>Pr(x&gt;chi2)</b>	0.373			



**Table 7: Job choice by partner opportunity distribution**

		Proportion of interview locations where partner's job prospects are "good"			Proportion of interview locations where partner's job prospects are "fair"			Proportion of interview locations where partner's job prospects are "poor"		
		Chose preferred job	Chose different job	Total	Chose preferred job	Chose different job	Total	Chose preferred job	Chose different job	Total
<b>Few or none</b>	N	32	4	36	31	10	41	70	16	86
	%	88.89	11.11		75.61	24.39		81.4	18.6	
<b>Some</b>	N	47	15	62	65	14	79	29	6	35
	%	75.81	24.19		82.28	17.72		82.86	17.14	
<b>All or most</b>	N	57	6	63	24	1	25	15	3	18
	%	90.48	9.52		96	4		83.33	16.67	
<b>Total</b>	N	136	25	161	120	25	145	114	25	139
	%	84.47	15.53		82.76	17.24		82.01	17.99	
<b>Pearson Chi-Squared</b>		5.8163			4.5533			0.0604		
<b>D.F.</b>		2			2			2		
<b>Pr(x&gt;chi2)</b>		0.055			0.103			0.97		

**Table 11: Setting of accepted and first-choice job**

<b>Accepted Job</b>	<b>First-choice job</b>		<b>Total</b>
	<b>Academic</b>	<b>Non-academic</b>	
<b>Academic</b>	17	2	19
<b>Non-academic</b>	5	3	8
<b>Total</b>	22	5	27

**McNemar test:**

$$c^2 = 1.29$$
$$p = .2568$$

**Table 12: Salary distribution for accepted and first-choice job**

	<b>Accepted job</b>	<b>First-choice job</b>
<b>25th percentile</b>	\$ 71,000.00	\$ 73,000.00
<b>50th percentile</b>	\$ 88,000.00	\$ 85,000.00
<b>75th percentile</b>	\$ 120,000.00	\$ 107,500.00

**Wilcoxon signed-rank test**

$$z = 1.047$$
$$p = .2951$$

**Table 13: Perks at accepted and first-choice job**

<b>Research funds</b>				
	<b>First-choice job</b>			
<b>Accepted job</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>	<b>McNemar test</b>
Yes	9	4	13	$\chi^2 = 1.33$
No	8	5	13	$p = .2482$
Total	17	9	26	
<b>Reduced teaching load</b>				
	<b>First-choice job</b>			
<b>Accepted job</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>	<b>McNemar test</b>
Yes	6	3	9	$\chi^2 = .20$
No	2	5	7	$p = .6547$
Total	8	8	16	
<b>Summer support</b>				
	<b>First-choice job</b>			
<b>Accepted job</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>	<b>McNemar test</b>
Yes	3	3	6	$\chi^2 = .14$
No	4	6	10	$p = .7055$
Total	9	7	16	
<b>Computer funds</b>				
	<b>First-choice job</b>			
<b>Accepted job</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>	<b>McNemar test</b>
Yes	6	7	13	$\chi^2 = .00$
No	7	6	13	$p = 1.00$
Total	13	13	26	
<b>Housing subsidy</b>				
	<b>First-choice job</b>			
<b>Accepted job</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>	<b>McNemar test</b>
Yes	1	4	5	$\chi^2 = 4.00$
No	0	21	21	$p = .0455$
Total	1	25	26	
<b>Moving allowance</b>				
	<b>First-choice job</b>			
<b>Accepted job</b>	<b>Yes</b>	<b>No</b>	<b>Total</b>	<b>McNemar test</b>
Yes	13	5	18	$\chi^2 = .11$
No	4	4	8	$p = .7389$
Total	17	9	26	

**Table 14: Satisfaction with accepted and first-choice job**

	Accepted		First-choice		Wilcoxon signed-rank test results	
	N	%	N	%	z	p
<b>Overall satisfaction with job characteristics</b>					-1.414	0.1574
Extremely dissatisfied	0	0	0	0		
Very dissatisfied	0	0	0	0		
Somewhat dissatisfied	1	3.85	1	4.17		
Somewhat satisfied	7	26.92	3	12.5		
Very satisfied	15	57.69	15	62.5		
Extremely satisfied	3	11.54	5	20.83		
Total	26	100	24	100		
<b>Prestige</b>					-2.483	0.013
Extremely dissatisfied	0	0	1	4		
Very dissatisfied	1	3.7	0	0		
Somewhat dissatisfied	4	14.81	2	8		
Somewhat satisfied	12	44.44	1	4		
Very satisfied	7	25.93	11	44		
Extremely satisfied	3	11.11	10	40		
Total	27	100	25	100		
<b>Salary</b>					0.627	0.5308
Extremely dissatisfied	0	0	0	0		
Very dissatisfied	1	3.7	3	12		
Somewhat dissatisfied	4	14.81	2	8		
Somewhat satisfied	6	22.22	4	16		
Very satisfied	10	37.04	14	56		
Extremely satisfied	6	22.22	2	8		
Total	27	100	25	100		
<b>Perks</b>					-1.007	0.3139
Extremely dissatisfied	0	0	0	0		
Very dissatisfied	2	8.33	1	5.26		
Somewhat dissatisfied	2	8.33	1	5.26		
Somewhat satisfied	7	29.17	2	10.53		
Very satisfied	10	41.67	11	57.89		
Extremely satisfied	3	12.5	4	21.05		
Total	24	100	19	100		
<b>Expected work load</b>					-0.776	0.4379
Extremely dissatisfied	0	0	0	0		
Very dissatisfied	1	3.85	0	0		
Somewhat dissatisfied	1	3.85	2	8.7		
Somewhat satisfied	9	34.62	7	30.43		
Very satisfied	12	46.15	10	43.48		
Extremely satisfied	3	11.54	4	17.39		
Total	26	100	23	100		
<b>Mix of teaching and research</b>					-1.043	0.2967
Extremely dissatisfied	0	0	1	5.26		
Very dissatisfied	0	0	0	0		
Somewhat dissatisfied	0	0	0	0		
Somewhat satisfied	10	52.63	3	15.79		
Very satisfied	3	15.79	8	42.11		
Extremely satisfied	6	31.58	7	36.84		
Total	19	100	19	100		
<b>Intellectual fit</b>					-2.241	0.025
Extremely dissatisfied	1	3.7	0	0		
Very dissatisfied	0	0	0	0		
Somewhat dissatisfied	2	7.41	1	4		
Somewhat satisfied	4	14.81	3	12		
Very satisfied	14	51.85	11	44		
Extremely satisfied	6	22.22	10	40		
Total	27	100	25	100		

**Table 14: Satisfaction with accepted and first-choice job**

		Accepted		First-choice		z	p
		N	%	N	%		
<b>Social fit</b>						0.695	0.4868
	Extremely dissatisfied	0	0	0	0		
	Very dissatisfied	0	0	0	0		
	Somewhat dissatisfied	0	0	4	17.39		
	Somewhat satisfied	6	25	4	17.39		
	Very satisfied	12	50	10	43.48		
	Extremely satisfied	6	25	5	21.74		
	Total	24	100	23	100		
<b>Overall satisfaction with location characteristics</b>						1.923	0.0545
	Extremely dissatisfied	0	0	1	4.35		
	Very dissatisfied	0	0	1	4.35		
	Somewhat dissatisfied	2	8.33	4	17.39		
	Somewhat satisfied	7	29.17	7	30.43		
	Very satisfied	14	58.33	6	26.09		
	Extremely satisfied	1	4.17	4	17.39		
	Total	24	100	23	100		
<b>Natural amenities</b>						2.234	0.0255
	Extremely dissatisfied	0	0	1	4.17		
	Very dissatisfied	1	3.85	3	12.5		
	Somewhat dissatisfied	2	7.69	2	8.33		
	Somewhat satisfied	8	30.77	11	45.83		
	Very satisfied	9	34.62	3	12.5		
	Extremely satisfied	6	23.08	4	16.67		
	Total	26	100	24	100		
<b>Cultural amenities</b>						1.669	0.095
	Extremely dissatisfied	0	0	1	4		
	Very dissatisfied	0	0	1	4		
	Somewhat dissatisfied	3	11.11	4	16		
	Somewhat satisfied	6	22.22	6	24		
	Very satisfied	9	33.33	6	24		
	Extremely satisfied	9	33.33	7	28		
	Total	27	100	25	100		
<b>Racial and ethnic diversity</b>						0.527	0.598
	Extremely dissatisfied	0	0	1	4.35		
	Very dissatisfied	1	4	1	4.35		
	Somewhat dissatisfied	4	16	5	21.74		
	Somewhat satisfied	8	32	5	21.74		
	Very satisfied	10	40	6	26.09		
	Extremely satisfied	2	8	5	21.74		
	Total	25	100	23	100		
<b>Proximity to friends and family</b>						-0.76	0.447
	Extremely dissatisfied	5	19.23	3	13.04		
	Very dissatisfied	4	15.38	4	17.39		
	Somewhat dissatisfied	6	23.08	5	21.74		
	Somewhat satisfied	5	19.23	5	21.74		
	Very satisfied	5	19.23	3	13.04		
	Extremely satisfied	1	3.85	3	13.04		
	Total	26	100	23	100		
<b>Community size</b>						2.044	0.0409
	Extremely dissatisfied	0	0	1	4		
	Very dissatisfied	1	3.85	6	24		
	Somewhat dissatisfied	3	11.54	3	12		
	Somewhat satisfied	6	23.08	7	28		
	Very satisfied	13	50	4	16		
	Extremely satisfied	3	11.54	4	16		
	Total	26	100	25	100		

Note: All statistical tests in this table are Wilcoxon signed-rank tests.

**Table 17: Likely cohabitation status six months after wave two interview, by partner opportunity distribution**

Proportion of interview locations where partner's job prospects are:		Good			Fair			Poor		
		Not cohabiting	Cohabiting	Total	Not cohabiting	Cohabiting	Total	Not cohabiting	Cohabiting	Total
<b>Few or none</b>	N	12	19	31	7	29	36	11	58	69
	%	38.71	61.29		19.44	80.56		15.94	84.06	
<b>Some</b>	N	9	37	46	16	45	61	6	20	26
	%	19.57	80.43		26.23	73.77		23.08	76.92	
<b>All or most</b>	N	8	44	52	3	14	17	7	8	15
	%	15.38	84.62		17.65	82.35		46.67	53.33	
<b>Total</b>	N	29	100	129	26	88	114	24	86	110
	%	22.48	77.52		22.81	77.19		21.82	78.18	
<b>Pearson Chi-Squared</b>										
<b>D.F.</b>		6.4121			0.8942			6.8505		
<b>Pr(x&gt;chi2)</b>		2			2			2		
		0.041			0.639			0.033		