Location Decisions and Preferences for Home and Family

INCOMPLETE AND PRELIMINARY*

Patrick Coate†

Duke Economics

3/28/11

Abstract

This paper investigates the reason for the home bonus found in structural models of migration. Specifically, the goal is to disentangle preferences for a place as opposed to preference for family, particularly focusing on non co-resident parents. The other main goal of the

*This draft submitted for the PAA 2011 meeting.

†pec7@duke.edu

paper is to evaluate the impact migration and family have on wages. This includes foregone opportunities to increase wages from refusing to move and pass up the home (or family) bonus. The model also allows for average offered wages to differ in familiar locations or near family. Preliminary evidence suggests that family proximity does play an important role in what has been considered the home bonus, and the wage impact of staying in the home state is vastly different across education groups.

1 Introduction

Economists studies of internal migration in the United States naturally tend to focus on the labor market impact of mobility. Kennan and Walker (2011) is a recent example of this, finding that returns to migration are important both for the ability to move to a location with higher average wages and also for the possibility of obtaining a better wage match. When migration is considered at the level of the household, there are additional complications. What is best for one spouse may not be the best for the other, and in this case, there is a body of evidence (see Compton and Pollack (2004) and McKinnish (2008), among others) that migration decisions are most often made for the sake of the husbands career.

One interesting thing to note is that regardless of the unit of observation, moves are relatively infrequent. Cross-state migration is at its highest for people in their twenties and thirties and also rises with education, but even for a young, highly educated subsample annual migration rates are only about 3-5% over the past few decades as measured by the Current Population Survey (CPS). This is still a significant flow of millions of young Americans per year, but the vast majority do not cross state lines. Over their lifetimes, most Americans have never left their home state. With a long literature demonstrating the returns to mobility, an important question to the study of migration is why so many people forgo the apparent benefits to moving.

In this paper, I will present preliminary evidence that many people, especially low education workers, derive a wage benefit by staying in their home location. This is in contrast to two common explanations for this behavior in the existing literature: agents non-pecuniary preferences for home (as defined by location at some initial time period) and high moving costs. While I do not dispute that these factors contribute to the decision to stay home, I think that some of their previously measured effect may in fact be due to positive labor market outcomes in the home location.

The rest of the paper is structured as follows. First, I write down a formal model of household behavior, followed by a discussion of the intuition related to the wage structure. I then discuss the data construction and summary statistics, followed by the estimation strategy. At this preliminary stage, I will then leave the structural model to analyze wage regressions. Finally, I point in the direction of future work and discuss known data and modeling issues that exist at present.

2 Model

I develop a model in which individuals make location and marital decisions each period (corresponding to a calendar year). In the model, agents derive utility from income, location attributes, whether they are in their home location and/or parents current location[1], whether they are married or have children, and whether they work.

The overall flow utility equation for agent i in location j at time t is the following:

$$u_{ijt} = \alpha * Wage_{ijt} + Loc_{ijt} + NW_{ijt} + MC_{jk} + Mar_{ijt} + Child_{ijt}$$

[1]Locations are defined as US states, but I am in the process of acquiring restricted Geocode data to map this more precisely

where k is the previous period's location, and $MC_{jk} = 0$ if $j = k$.

I make the standard assumption of additively separable utility over time, so that agents maximize expected discounted lifetime utility according to a discount rate β. In the model, I allow for location and divorce to be choice variables. Other variables, most notably marriage, fertility and parents' status evolve stochastically based on state variables such as age and location. The reason I model divorce and not marriage directly is to avoid a full model of the marriage market, including choosing on characteristics; in the case of divorce, there is a binary choice based on an observable partner in the dataset.

I also make the stronger assumption, also standard among structural migration models, that wages enter utility linearly, with the constant marginal utility of income α.

I will consider the terms in order to show the structural parameters of the model. First, I take the wage equation. For this, I use a Mincer equation in which wage is a function of person, location and family characteristics.

$$Wage_{ijt} = f(age) + \gamma_1 * pars + \gamma_2 * pars * coll + \gamma_3 * home + \gamma_4 * home * coll + \mu_{jget} + \theta_{ij} + \eta_i$$

Agents' wages are determined by a function of age, whether they reside in their home state and/or their parents' state, which are each interacted with education. I also include a person fixed effect η_i, average wage level μ_{jget}, a person-location match quality θ_{ij}, and an idiosyncratic error term ε_t. The additional subscripts g and e on μ represent gender and education, respectively.

$$Loc_{ijt} = \delta_1 * home + \delta_2 * pars + \delta_3 * pars * kids + \delta_{jt}$$

Location attributes affect non-wage utility as well as wage levels. In addition to a location-time fixed effect, I assume that there are benefits to living in the home location as well as parents' location. The effect of living in parents' location is allowed to vary based on whether the household has children, although the model does not distinguish between monetary benefits of this, for instance that nearby grandparents could provide free day care or other investment in children, versus purely preferential reasons for this effect.

It is also worth making explicit an assumption underlying this term. For now, I will assume that extended families do not make this location decision cooperatively. A household head takes into account parents' current locations and considers parents' moves to occur exogenously to his or her own decision, according to a transition process described in more detail in a later section. While families do have an incentive to coordinate moving decisions if it affects their welfare, I do not believe this abstraction is particularly damaging to the analysis. I am modeling younger household heads, who are considerably more likely to move than the older generation. In cases where elderly parents do move closer to their grown children, it is often for retirement or health reasons, which could legitimately be considered exogenous to their children's decision problem.

$$NW_{jt} = \psi_0 + \psi_1 * fem + \psi_2 * kids + \psi_3 * fem * kids +$$

$$\psi_4 * pars * kids + \psi_5 * fem * pars * k$$

Agents also receive a benefit in the model from not working in the labor market. This captures both disutility from working and also home production. Because of this, I allow for this utility to differ by the gender of the individual, whether the household has children, and interactions of children and gender and fertility status with parents' residence.

$$MC_{jt} = \alpha_0 + \alpha_1 * CD_{jk}$$

Moving costs are represented simply by a constant and whether the move is to another Census division.

$$Mar_{jt} = \phi_0 + \varepsilon_M$$

There is a constant flow value to marriage as well as an i.i.d. shock every period. In the model, these shocks contribute to marital instability. Migration also puts pressure on marriages; as has been noted by others, couples have to find the best joint match, whereas singles are free to pursue their own optimal location match. While I do not build in a direct gain to marriage duration, marriage surplus effectively increases over time. Migration lessens for older people, which lowers the migration instability to marriage, and longer-term couples are more likely to have children, which increases the marriage surplus.

$$Child_{ijt} = \mu_0 + \mu_1 * married$$

The value of having children is allowed to be different for married parents than for single parents. Thus, children are not only a public good in that both parents get the bonus if they remain married (and thus one household), but that the value even for the divorced parent with custody may be lower.

2.1 Model Intuition

One key feature of the model is that the home state and presence of parents are allowed to have separate wage and non-wage utility effects. In reduced-form work I will show in a later section, the home state in particular has a positive wage effect for some workers. This is important to the results because many other models, such as the previous structural work, implicitly assume that home and family factors are in opposition to labor market factors. Workers trade productivity for preferences for home and family. To the extent these aspects move in the same direction, we must incorporate it not to overestimate moving costs, non-monetary valuations of home and family and productivity loss due to these frictions.

If observed returns to mobility come through moves from low wage areas to high wage areas, it will be controlled for by differencing out the baseline wages and whether the current state is the home state should have no effect. If returns to mobility are due to more able people moving disproportionately, the individual fixed effect should account for personal quality and the current state should have no effect. If the returns to mobility are driven by workers moving to areas where they have better match qualities than their initial location, then we would expect a negative wage effect for those individuals who never move.

However, there are reasons we could also see a positive effect to staying home. Young workers may well have better information about or connections in their home labor market. [2] If this is true, then we would expect living in the home state to have a positive effect on wages. Further, if the value of information or networking decays over time, then those who leave their home state and later come back should have a smaller benefit than those who have stayed home continuously, if they still have any gain at all.

Education may also play a role in the relative value of these effects. Basker (2002) notes that migration probability increases with education, and that "conditional on migration, the probability that a worker moves with a job in hand (rather than moving to search for a job in the new location) also increases with education." This speaks directly to the idea of match quality affecting migration behavior. Since highly educated workers more likely to move for a specific job, they should be receiving better match quality signals and thus we are more likely to see a negative selection effect on staying home.

[2] Bayer et al (2008) find that people living in the same Census block are more likely to work together, and conclude that informal networks have a significant impact on labor market outcomes.

3 Data

For this project, I use a subsample of the Panel Study of Income Dynamics (PSID). The PSID is a longitudinal survey of US households beginning in 1968. One notable feature of the PSID's survey design is that it follows descendents of the orignal respondents. When a member of a 1968 household forms their own household, they carry the "PSID gene" and are followed as respondents in their own right for future waves. The same goes for the children off those splitoff members, and so on. Due to its genealogical nature, the PSID is particularly well-suited to study questions of home location favoritism. It is possible to observe entire histories not only of a respondents location decisions, but also histories of their family members decisions as well.

In my analysis, I use PSID sample members born after 1952 into core families. This limits the sample to those who came of age after the original 1968 wave, which allows me to observe parental information. This is important because parents locations are a major factor in agents decision-making in the model.

I use the household as a unit of observation. I observe the number of people residing in the household as well as each of their ages, education, gender and familial relation to one another. For the head and spouse, I also observe wages and hours worked. The household's location by US state is also observed.

Because of the genealogical nature of the PSID, I also observe familial links between households in the same dynasty. It is possible to determine the relationship between any two members of a dynasty, but to correspond to the decision-makers I will code the relationship between households to be the relationship between the PSID-gened head or spouse of the observation household and the gened head of the related household.

3.1 Summary Statistics

The analysis sample was created as follows. First, the sample is limited to households headed by PSID gened individuals who were not heads or wives of 1968 households. In other words, I only use splitoffs. This is done in order to ensure that I have a measure of home location, defined as state of residence at age 14, and parental location decisions. Other parental information is stored as well. This cuts the sample size to 60,934 household-year observations.

The most important feature of the sample is the pattern of observed moves. There must be sufficient moves in the datasufficient for all types of education, family structure, and location relative to hometo draw meaningful inference. There are 2343 moves observed in the data out of a possible 49,984, or 4.7% of observations. This 4.7% is not an annual figure since the recent waves of the PSID are collected biannually. The possible moves figure is some 11,000 lower than the household-year observations, which is due mostly to the fact that I want to consider moves made by an existing head of household. The initial formation of the household is not considered a move, whether the respondent establishes a household in the same US state as the household they had lived in the previous year or not.

The sample is well diversified on a number of fronts. In the analysis sample, 60% of gened household heads are married, 57% have children and 49% have two living parents in the PSID. Approximately 40% of the sample has at least some college education.

Moving rates are higher among college educated households as well as those with no children. Single men have a much higher rate of moving than single women.

The first three tables are designed to give an idea of the nature of the location data. In the four parts of Table 1, I look at whether the household still lives in the gened members home state. About 80% of households do still live in this state. As predicted, a slightly higher proportion of single households are in the home state than married households. This is logical in that although I only observe one side of the family in the PSID, spouses from different states must choose between home locations. Among singles, women are likelier than men to be in the home state, as shown in Table 1.D.

The most striking result, which can be seen in Table 1.B, is the difference in location decisions made between those who are or are not college-educated. About 85% of households whose head was not college educated, compared to 71% of those who were, live in their home state. Later in the paper, I will spend some time discussing the apparent differences in the labor market faced by the two groups, which may help explain why these numbers are different.

In Table 2, I look at whether the household lives in the same state as the gened heads parents. This number is even higher than the total in home state, at about 82% for the whole sample. Once again, the biggest difference comes from education. College educated households are far more likely to locate away from their parents than others. Singles are more likely to live near parents than couples, and among singles women are more likely to live near parents than men. Households with children are also more likely to live near parents. Taken together, these facts imply that some married couples live away from their parents while childless and return once they have children, and that single mothers are particularly likely to locate near their own parents. Overall, the numbers suggest that for some reason, whether monetary or not, households value living near their parents more than their home state.

A natural question is how much the previous two tables are distinguishable from each other. Since many people, including parents, do not move, home state and parents' state is often measuring the same thing, as shown in Table 4. In 78% of cases in which a household has both parents living and in the same state, the household and their parents household are both located in the home state. However, there are still 641 observations where the household is in the home state but where the parents live elsewhere, and 1220 observations where the household and parents reside in the same state, but which not the home state. These phenomena are unusual, but not rare enough to make distinguishing the two factors hopeless.

After looking at the static locations, a logical next step is to consider moves. Table 3 breaks the sample in the same way as the previous two but tabulates total moves instead of locations of different types of households.

The results are as expected from the previous tables. Marriage and children correspond to lower mobility; education and bachelorhood correspond to higher mobility.

4 Estimation

I estimate the model using a two-step procedure from Arcidiacono and Miller (2010) and previously implemented in a similar setting by Bishop. In the first step, I estimate wages, transition probabilities of the stochastic variables, and conditional choice probabilities. Armed with these values, I estimate the structural parameters of the utility function.

4.1 Wages

Because the PSID does not have sufficient observations to to estimate wage levels for every group in every location in every year, I bring in data from the CPS, a nationally representative survey of the US labor market. In the CPS, I estimate wage as a function of age and a set of fixed effects for US state, year, gender, and education level. The equation is therefore:

$$ln\omega_{CPS} = f(age) + \mu_{jget}$$

Using the results from this regression, I predict the wage for each PSID observation. I then regress the deviation in the PSID household head's wage from their prediction on home location and parents' location, alone and interacted with education level, and divide the unobserved portion into a person fixed-effect, person-location match quality, and idiosyncratic error. Using signal extraction methods developed by Kennan and Walker[3], I can estimate the standard deviations of each portion of the error term.

4.2 Transition Probabilities

The variables that transition stochastically in the model are average wages, parents' location, whether there is a parent household, marriage status of singles and fertility. Average wage transitions are estimated using an AR-1 process based on a constant term, lagged wage, and dummies for gender, education and state.

Parents' variables are are assumed to transition as a function of splitoff and parents' age and location. If a parent household is not observed in the current period, it is assumed that there is no further transition. Whether parents are observed is estimated by a logit specification, and their location

[3] See Bishop for a more complete explanation

by multinomial logit.

The probability of marriage is estimated as a logit function of year, age, gender, education, location, and fertility status.

4.3 Conditional Choice Probabilities

One complication of the model is that the choice set depends on the state. In order to abstract from matching on marriage characteristics, marriage for singles is considered to be stochastic. However, divorce in existing marriages is endogenous. Thus, a gened household head who is single chooses only among locations, but married heads make a joint choice of where to live and whether to remain married.

It is impossible with the data available to directly measure the conditional choice probability of making a given location or location/marital decision at every value of the state variables. Because of this, I use a flexible function of age, gender, education, wage, location and fertility status to estimate the choice probabilities by multinomial logit. The predicted values of these regressions are inputted as "data" in the maximization step of the estimation.

4.4 Estimating Equation

In this section, I derive the estimating equation I will use in the maximization step. For simplicity, I will work through the case for married agents remaining married, and then discuss the extension of the case to my model.

Under the assumptions of additively separable flow utility, discussed above, and Markovian updating of the state variables, which comes from my first step estimation of transition probabilities, then I only need conditional independence of the state variables x and error term ε in order to write the value of a choice l_{it} in a particular state as a Bellman equation:[4]

$$V_t(x_{it}, \varepsilon(l_{it})) = max[v_t(x_{it}, l_{it}) + \varepsilon(l_{it})]$$

In this equation, v_t represents the flow utility plus the discounted value of V_{t+1} (whose value is summed over state transitions and integrated over errors). A common strategy is to assume i.i.d Type I Extreme Value errors, which produces the functional form below.

$$v_t(x_{it}, l_{it}) = u_t(x_{it}, l_{it}) + \beta \sum_{x_{i,t+1}} ln[\sum_{j=1}^{J} exp(v_{t+1}(x_{i,t+1}, l_{i,t+1} = j)]q(x_{i,t+1}|x_{it}, l_{it})$$

This equation can be expanded by multiplying and dividing by the value

[4]This section closely follows Bishop, who goes through an enlightening step-by-step derivation of this process.

of making a particular choice of $l_{i,t+1}$. The expansion can be similarly expanded based on the value of a choice of $l_{i,t+2}$. This can be done any finite number of times until the current choice makes no difference to the last value term. Then the expanded values of any two contemporaneous choices can be differenced.

In the algebraically simplest case, consider a married agent choosing to remain married and locate in k. I will denote the decision to remain married as M, so the value term can be expanded as follows:

$$
\begin{aligned}
&v_t(x_{it}, l_{it} = k, M) = \\
&\quad u_t(x_{it}, l_{it} = k, M) \\
&\quad +\beta \sum_{x_{i,t+1}} ln[\sum_{j=1}^{J} exp(v_{t+1}(x_{i,t+1}, l_{i,t+1} = j) - exp(v_{t+1}(x_{i,t+1}, l_{i,t+1} = h, M)] \\
&\quad q(x_{i,t+1}|x_{it}, l_{it} = k, M) \\
&\quad +\beta \sum_{x_{i,t+1}} [u_{t+1}(x_{i,t+1}, l_{i,t+1} = h, M)]q(x_{i,t+1}|x_{it}, l_{it} = k, M) \\
&\quad +\beta^2 \sum_{x_{i,t+1}} \sum_{x_{i,t+2}} ln[\sum_{j=1}^{J} exp(v_{t+2}(x_{i,t+2}, l_{i,t+2} = j) - exp(v_{t+2}(x_{i,t+2}, l_{i,t+2} = g, M)] \\
&\quad q(x_{i,t+2}|x_{i,t+1}, l_{i,t+1} = h, M)q(x_{i,t+1}|x_{it}, l_{it} = k, M) \\
&\quad +\beta^2 \sum_{x_{i,t+1}} \sum_{x_{i,t+2}} [v_{t+2}(x_{i,t+2}, l_{i,t+2} = g, M)] \\
&\quad q(x_{i,t+2}|x_{i,t+1}, l_{i,t+1} = h, M)q(x_{i,t+1}|x_{it}, l_{it} = k, M)
\end{aligned}
$$

The $\sum\limits_{x_{i,t+1}} ln[\sum\limits_{j=1}^{J} exp(v_{t+1}(x_{i,t+1}, l_{i,t+1} = j) - exp(v_{t+1}(x_{i,t+1}, l_{i,t+1} = h, M)]$ term is the inverse of the choice probability of choosing (h, M) conditional on $x_{i,t+1}$.

To get the normalized value, the same equation shown for choosing (k, M) can be written for an alternate choice (a, M). Since there is no memory in the model, the value of moving in period $t + 2$ from h to g does not depend on the initial choice. Therefore, subtracting the equations and substituting in the choice probability yields:

$$
\begin{aligned}
&v_t(x_{it}, l_{it} = k, M) - v_t(x_{it}, l_{it} = a, M) = \\
&\quad u_t(x_{it}, l_{it} = k, M) - u_t(x_{it}, l_{it} = a, M) \\
&\quad +\beta \sum_{x_{i,t+1}} ln[P(l_{i,t+1} = h|x_{i,t+1})^{-1}]q(x_{i,t+1}|x_{it}, l_{it} = k, M) \\
&\quad -\beta \sum_{x_{i,t+1}} ln[P(l_{i,t+1} = h|x_{i,t+1})^{-1}]q(x_{i,t+1}|x_{it}, l_{it} = a, M) \\
&\quad +\beta \sum_{x_{i,t+1}} [u_{t+1}(x_{i,t+1}, l_{i,t+1} = h, M)]q(x_{i,t+1}|x_{it}, l_{it} = k, M) \\
&\quad -\beta \sum_{x_{i,t+1}} [u_{t+1}(x_{i,t+1}, l_{i,t+1} = h, M)]q(x_{i,t+1}|x_{it}, l_{it} = a, M)
\end{aligned}
$$

This equation only includes utilities, choice probabilities and transition probabilities. Since the latter two are estimated in a first stage, I can find the structural parameters in the utility equation that maximize the likelihood of the observed choices in the PSID.

The equations for singles, or for marrieds choosing to divorce and become singles, are similar but more complex to the one above. Instead of requiring two periods in the final equation, there will be three. Since marriage is probabilistic, the path for singles has to account for this change in marriage status. In the current period, a location choice k could result in the single in (k, M) or (k, S). In $t+1$, I use the value of (h, S) for those in (k, M) (since coming from M they make both choices), and value h for those from (k, S), who themselves may marry. Thus, the agent has some known probability of being in (h, M) and (h, S) in period $t+1$. When normalizing against some other initial choice a,the location with a higher marriage rate will actually have a lower probability of finishing $t+1$ in (h, M). For $t+2$, I assign everyone to stay in location h. I can then choose a proportion of agents in (h, M) to remain married such that the $t+2$ ratio of being married to single is the same regardless of whether the initial path was through k or a. Thus, the value function of any choice in $t+3$ will not depend on the initial choice.

5 Preliminary Results

5.1 Wages

In this section, I take an in-depth look at the wage equation to show that home state has an impact on wages. Along with variables previously defined, I classify households' current location choice into the mutually exclusive categories "always home," "returned home" and "away from home." The always home category includes those gened heads who have lived in their home state in every period from household formation to the present. Returned home includes all gened heads currently in their home state, but who have lived as a gened head in another state in a previous period. Away from home is everyone living in a state which is not their home state.

For movers, I also use self-reported information on the reason for moving. The PSID has several codes for the types of moves, and I code these into three categories. The first is "purposive productive reasons", which I will call "work moves." The second category is defined as a response to outside events, or involuntary moves. The third is a catch-all of the other reasons, which include wanting more or less living space, being in a different neighborhood, and ambiguous responses. For anyone who has ever made a cross-state move, I will create a “reason for last move” variable. In my specifications, I will use the response to outside events as my omitted category.

In Table 4, I regress wage deviations only on current state and the persons fixed effect, both for the sample as a whole and for subsamples broken down by gender, education and marital status. I divide education into two groups, in which low education received a high school education or less and high education means the respondent had at least some college education. For the low education group, always home had a positive wage effect for both men and women. For the high education group, always home had a negative effect on men and no significant effect on women, although the results were actually positive for married women.

These results are broadly consistent with the intuition. It is reasonable that always home would impact wages more strongly than returns home, and that staying home is relatively more beneficial for the low education group than for the high education group. However, it is worth pausing to consider what exactly is being measured in this specification. The positive and negative results are compared to living in another state, which combines any positive effects to staying in the home state, such as informal networks, with any foregone positive effects from moving. While it is interesting that the positives to staying may outweigh the negatives for the average low education worker, we would also like to measure the levels of the positives by accounting for the direct returns to migration, if possible.

In my next specification, I try to take a step towards this adjustment. In Table 5, I regress wage deviations on current state and the reason for last move. My hope is that the reason for the last move, along with the average wage by location that is built into the dependent variable, will capture the wage effects of moving. If this is true, the remaining effect will be the difference in the wages earned living in the home state versus living in some other state that was not selected for the value of the wage match.

Again, for the low education group the wage effect is positive. For women, the effect is not statistically significant, but it is still positively signed. For the high education males, the effect of always home is close to zero, and it is slightly positive for women. The effect of living in a state in which the last move was made for work reasons is positive in almost all cases, although for the low education group the estimates are smaller and usually not statistically significant. Single men are a notable exception; while one might expect single men to be the most mobile and have the biggest gains from moving, the estimated gain is enough higher to warrant closer scrutiny.

For the high education group, the gains are large and significant for everyone except married women, which is in line with the well-studied result that even highly educated women are very likely to be the "trailing spouse" in a work-related household move. The fact that the high education group sees larger gains from moving for work fits with the job-in-hand explanation, as well as any more general story in which the variance in wages is higher for that group.

Overall, the numbers show a consistent wage benefit to staying home for the low education group. For both men and women, this average value is estimated to be about twice as large as the benefit to making a previous move for work reasons. For the high education group, the effect is found to be near zero once the reason for moves is accounted for. In both cases, there is no strong pattern to the wage effect of moving back home after the gened head has left.

6 Discussion and Direction

There are two dimensions in which I would like to further understanding of the internal migration decision. In one, I would like to embed the interaction between parents and grown children into a dynamic model with life cycle considerations. It seems likely that the value to proximity these parents and children place on each other will depend on factors such as marital status and particularly the presence of grandchildren. This is very generally supported by simple averages - households with children are more likely to live in the same state as their parents - but the estimation of the model should help me be more concrete about this effect.

Secondly, I want to show that there is a home effect on wages. This effect can be difficult to measure because it is masked by positive returns to moving for the selection of people who move, but the PSID's questions about reasons for moving help adjust for the selection and show a consistent positive effect of the home location on wages for low education workers.

This result could provide a little extra insight into the mobility gap between workers in the different education groups; not only do high education workers have more gains to moving for work reasons, but low education workers have more gains to staying home.

This is very clearly still a work in progress, and there are several avenues through which I am currently working to improve the paper. First, I need to complete estimation of the structural model laid out in the paper. I hope that the work I have done on the wage equation will help me better estimate the value of unobserved wage offers that are not taken, and therefore create better estimates of the parameters of the model that determine the value of moving.

Also important is my forthcoming access to restricted Geocode data in the PSID. While I currently am using cross-state moves, I ideally want to observed moves between labor markets. With better data, I will be able to identify moves between, for instance, Dallas and Houston while not counting moves from, for instance, Washington, D.C. to Northern Virginia. I also would then be able to construct a continuous measure of distance to parents. To the extent that parents affect location decision through preferences, it may matter whether they live a mile or twenty miles away within the same state or MSA, or if they live in a different state or MSA whether it is an easily driveable distance or requires flying or an overnight trip.

Thus far, I believe I have some evidence of interesting behavior in the location decision. The value of a location seems to be influenced by non co-residing parents. Single households tend to respond differently than married couples, which demonstrates that a dynamic model would benefit from insight into the process by which one type becomes the other. The labor market effects of migration depends on education, and may be separable into the effects of staying in the home state and also effects of moving for different reasons. I think my model can build on and contribute to previous work on each of these factors and help explain household decisions to move as well as the even more common decision to stay in place.

7 References

Arcidiacono, P. and R. Miller (2010) "CCP Estimation of Dynamic Discrete Choice Models with Unobserved Heterogeneity," Working Paper.

Basker E. (2002) "Education, Job Search and Migration," U. Missouri-Columbia Working Paper.

Bayer P., S. L. Ross and G. Topa (2008) "Place of Work and Place of Residence: Informal Hiring Networks and Labor Market Outcomes," Journal of Political Economy 116(6), 1150-1196.

Bishop, K. (2008) "A Dynamic Model of Location Choice and Hedonic Valuation." Working Paper.

Blanchard, O. and L. Katz (1992) "Regional Evolutions." Brookings Papers on Economic Activity, 1. 1-37.

Bourguignon, F., Browning, M. and Chiappori, P.-A. (2009), "Efficient Intra-Household Allocations and Distribution Factors: Implications and Identification," Review of Economic Studies, 76: 503528.

Browning, M. and P-A. Chiappori (1998) "Efficient Intra-Household Allocations: A General Characterization and Empirical Tests," Econometrica 66 (6), 1241-1278.

Compton J. and RA Pollak (2007). "Why are power couples increasingly concentrated in large metropolitan areas?" Journal of Labor Economics 25: 475512.

Cooke, T. (2008) "Migration in a Family Way," Population, Space and Place, 14: 255265.

Cooke, T. and A. Bailey (1996) "Family Migration and the Employment of Married Women and Men," Economic Geography 72(1), 38-48.

Costa, D. and M. Kahn (2000) "Power couples: changes in the locational choice of the college educated, 19401990," Quarterly Journal of Economics 115: 12871315.

Dahl, G (2002) "Mobility and the Return to Education: Testing a Roy Model with Multiple Markets," Econometrica, 70, 2367-2420.

Gemici, A. (2008) "Family Migration and Labor Market Outcomes."

Working Paper.

Greenwood, M. (1997) "Internal migration in developed countries," Handbook of Population and Family Economics, Vol. 1 Part 2, 647-720.

Hotz, V.J. and R. Miller (1993) "Conditional Choice Probabilities and the Estimation of Dynamic Models," Review of Economic Studies, 60(3), 497-529.

Keane, M. and K.I. Wolpin (1993) "Career Decisions of Young Men," Journal of Political Economy, 105, 473-522.

Kennan, J. and J. Walker. (2009) "The Effect of Expected Income on Individual Migration Decisions." NBER Working Paper.

Konrad, Kai A, Harald Knemund, Kjell Erik Lommerud, Julio R Robledo. (2002) "Geography of the Family." American Economic Review 92:4, 981-998.

McElroy, M. and M.J. Horney (1981) "Nash Bargained Household Decisions: Toward a Generalization of the Theory of Demand," International Economic Review, 22, 333-350.

McKinnish, T. (2008) "Spousal Mobility and Earnings," Demography 45(4) 829-849.

Mincer, J. (1978) "Family Migration Decisions," Journal of Political Economy 86(5), 749-773.

Shauman, K. 2010. “Gender Asymmetry in Family Migration: Occupational Inequality or Interspousal Comparative Advantage” Journal of Marriage and Family 72:375-392.

Topel, R. (1986) “Local Labor Markets.” Journal of Political Economy. 94(3), S111-S143.

Table 1

Table 1.A

	HH has children?			
Lives in home state?	No	Yes	Total	Pct with Children
No	5,834	6,131	11,965	51.2%
Yes	20,053	28,505	48,558	58.7%
Total	25,887	34,636	60,523	57.2%
Pct in home state	77.5%	82.3%	80.2%	

Table 1.B

	Is HH head college educated?			
Lives in home state?	No	Yes	Total	Pct College Educated
No	5,195	6,770	11,965	56.6%
Yes	31,421	17,137	48,558	35.3%
Total	36,616	23,907	60,523	39.5%
Pct in home state	85.8%	71.7%	80.2%	

Table 1.C

	HH head's marital status?			
Lives in home state?	Single	Married	Total	Pct Married
No	4,169	7,796	11,965	65.2%
Yes	20,155	28,403	48,558	58.5%
Total	24,324	36,199	60,523	59.8%
Pct in home state	82.9%	78.5%	80.2%	

Table 1.D

	Gender of single HH heads:			
Lives in home state?	Male	Female	Total	Pct Female
No	1,981	2,188	4,169	52.5%
Yes	7970	12185	20,155	60.5%
Total	9,951	14,373	24,324	59.1%
Pct in home state	80.1%	84.8%	82.9%	

Source: PSID

Table 2

Table 2.A

Same state as parents?	No	Yes	Total	% with Children
No	2,842	2,552	5,394	47.3%
Yes	10,991	13,453	24,444	55.0%
Total	13,833	16,005	29,838	53.6%
Pct in parents' state	79.5%	84.1%	81.9%	

Table 2.B

	Is HH head college educated?			% College
Same state as parents?	No	Yes	Total	Educated
No	2,010	3,384	5,394	62.7%
Yes	14,833	9,611	24,444	39.3%
Total	16,843	12,995	29,838	43.6%
% in parents' state	88.1%	74.0%	81.9%	

Table 2.C

	HH head's marital status?			
Same state as parents?	Single	Married	Total	% Married
No	1,615	3,779	5,394	70.1%
Yes	8,492	15,952	24,444	65.3%
Total	10,107	19,731	29,838	66.1%
% in parents' state	84.0%	80.8%	81.9%	

Table 2.D

	Gender of single HH heads:			
Same state as parents?	Male	Female	Total	% Female
No	849	766	1,615	47.4%
Yes	3877	4615	8,492	54.3%
Total	4,726	5,381	10,107	53.2%
% in parents' state	82.0%	85.8%	84.0%	

Source: PSID

Table 3

Table 3.A

Moved between waves?	HH has children? No	Yes	Total	% with Children
No	18,465	29,122	47,587	61.2%
Yes	1,243	1,099	2,342	46.9%
Total	19,708	30,221	49,929	60.5%
% Movers	6.3%	3.6%	4.7%	

Table 3.B

Moved between waves?	Is HH head college educated? No	Yes	Total	% College Educated
No	29,248	18,339	47,587	38.5%
Yes	1,129	1,213	2,342	51.8%
Total	30,377	19,552	49,929	39.2%
% Movers	3.7%	6.2%	4.7%	

Table 3.C

Moved between waves?	HH head's marital status? Single	Married	Total	% Married
No	18,382	29,205	47,587	61.4%
Yes	1,010	1,332	2,342	56.9%
Total	19,392	30,537	49,929	61.2%
% Movers	5.2%	4.4%	4.7%	

Table 3.D

Moved between waves?	Gender of single HH heads: Male	Female	Total	% Female
No	7,205	11,177	18,382	60.8%
Yes	494	516	1,010	51.1%
Total	7,699	11,693	19,392	60.3%
% Movers	6.4%	4.4%	5.2%	

Source: PSID

Table 4

Household Residence Home State?	Same state as parents? No	Yes	Total	% in Parents' State
No	4,753	1,220	5,973	20.4%
Yes	641	23,224	23,865	97.3%
Total	5,394	24,444	29,838	81.9%
% in Home State	11.9%	95.0%	80.0%	

Source: PSID

Table 5

Regression of State on Deviation in Log Wage

Dependent Variable: Observed Log Wage - CPS Predicted Log Wage

HS	All	Men	Women	Single Men	Married Men	Single Women	Married Women
Always Home	0.079***	0.095***	0.059*	0.105*	0.134***	0.015	0.168***
Returned Home	0.011	0.028	-0.013	-0.003	0.089**	0.004	-0.003
College							
Always Home	-0.077***	-0.196***	0.035	-0.117**	-0.213***	-0.034	0.091*
Returned Home	0.02	-0.008	0.05	0.006	-0.028	-0.033	0.113**

controls for individual FE

*** is significant at 1%, ** 5%, * 10%

Table 6

Regression of State and Reason for Move on Deviation in Log Wage

Dependent Variable: Observed Log Wage - CPS Predicted Log Wage

HS	All	Men	Women	Single Men	Married Men	Single Women	Married Women
Always Home	0.099***	0.132***	0.064	0.191***	0.101**	0.031	0.151**
Returned Home	0.005	0.018	-0.011	-0.073	0.094***	0.001	0.013
Last Move for Work	0.052	0.068	0.034	0.264***	-0.042	0.085	-0.002
College							
Always Home	0.042	-0.029	0.096**	-0.008	-0.053	0.127*	0.109*
Returned Home	-0.006	-0.058*	0.038	-0.031	-0.067	-0.048	0.107*
Last Move for Work	0.174***	0.242***	0.063	0.139**	0.241***	0.169**	0.01

controls for individual FE, other reasons for move

*** is significant at 1%, ** 5%, * 10%