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The Role of Welfare and Space in the Migration of the Poor

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Abstract

This study investigates whether interstate differences in welfare benefits affected destination choices of low-income households in the United States during the 1985-90 period. It considers place-to-place migration decisions of poor single-parent females within a conditional logit framework. The research develops an array of variables that add a substantial spatial component to the analysis. The empirical results reconcile conclusions of recent academic literature with the views of state policy officials, but in a somewhat unexpected way. This study finds only modest evidence of a welfare magnet effect, and only for contiguous states. On the other hand, the study strongly confirms the importance of space and connections between places when explaining migration of the poor.

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1. INTRODUCTION

The welfare reform bill of 1996, formally known as the Personal Responsibility and Work Opportunity Reconciliation Act, placed the issue of welfare-induced migration, i.e., the "welfare magnet" effect, back in the forefront. Under the Temporary Aid to Needy Families (TANF) program, states have wide discretion in setting eligibility criteria and benefit levels. If welfare benefit differences induce migration, then states could encourage outmigration and discourage inmigration of the poor by reducing benefit levels (or tightening eligibility criteria). Some fear that states may ultimately participate in a "race to the bottom," competing to export their poverty burden to other states (see Brueckner, 2000).

The substantial interstate variation with respect to maximum AFDC/TANF benefits reveals the potential for welfare-induced migration. In 1996, when Congress passed the welfare reform bill, the maximum state-level monthly benefit for a three-person family ranged from $120 in Mississippi to $639 in Vermont.[1] Benefits varied much more than interstate cost-of-living differences can explain. Some states have closely scrutinized welfare-induced migration, especially high-benefit states such as Wisconsin. Wisconsin's maximum monthly benefit level of $517 in 1996 greatly exceeded neighboring Illinois' maximum of $377 for a three-person family. Wisconsin considered the welfare magnet hypothesis important enough that the state government established a special committee to study the issue.

In sharp contrast to anecdotal evidence from state policymakers, such as those in Wisconsin, the academic literature has taken a much weaker and more varied stance. Scholars have researched and debated the welfare magnet issue for more than three decades, without a consensus. The combination of different data sets, time periods, models, and methodologies have led to a variety of often-contradictory conclusions. The most recent work, with better data and more advanced methodologies, has generally found evidence of, at most, a weak welfare magnet effect.

This paper investigates interstate migration decisions of low-income individuals in the United States during the 1985-90 period – the last decennial census migration data available prior to the massive welfare reform approved in 1996. Though structured as a destination choice model, the research considers both movers and nonmovers, i.e., the choice set includes the option of remaining in the origin. Crucially, the research includes variables that add a substantial spatial component to the analysis, with particular emphasis on measures of distance between and contiguity of origin and destination choices. The model also incorporates return migration and attempts to capture family/friends effects. All of these may be particularly relevant for low-income households. The empirical results reconcile conclusions of recent academic literature with the views of state policy officials, but in a somewhat unexpected way. This study finds only modest evidence of a welfare magnet effect, and only for contiguous states. On the other hand, the study strongly confirms the importance of space and connections between places when explaining migration of the poor.

2. THE LITERATURE

Since 1970, scholarly journals have published several dozen empirical studies that purportedly consider how social welfare programs influence migration decisions of the poor. The first wave of studies focused on migration that occurred during the 1950s and 1960s (see Cebula, 1979; Moffitt, 1992; and Charney, 1993). This early literature suffered from several critical shortcomings, largely resulting from using highly aggregated data. Most importantly, aggregate data did not allow researchers to clearly identify the poverty population. Almost all studies used race as a proxy for poverty status, with blacks representing the poor and whites representing the nonpoor. In addition, most studies used relatively few variables to explain an inherently complex migration process, often omitting key measures of economic conditions or amenities that could characterize specific locations. A few studies used a single variable such as distance to account for spatial relationships among origins and/or destinations. Most had no accounting for space. Many early studies concluded that higher welfare benefits attracted the poor (blacks), but a variety of often-contradictory conclusions emerged.

Later studies avoided many pitfalls of the early research, primarily because of better access to disaggregated data, particularly microdata. Most importantly, they focused on the low-income population, rather than studying a crude proxy. Research during the 1980s (Blank, 1988; Cebula and Koch, 1989; Friedli, 1986; Gramlich and Laren, 1984; Peterson and Rom, 1989; and Southwick, 1981) strongly supported existence of a welfare magnet effect. Overall however, these studies still omitted potentially important explanatory factors, had little or no accounting for space, and sometimes employed crude dependent variables.

More recently, Frey et al (1996), Enchautegui (1997), Schram, Nitz, and Krueger (1998), Levine and Zimmerman (1999), Allard and Danziger (2000), and Gelbach (2004) modeled low-income migration. Schram, Nitz, and Krueger (1998) aggregated data from the 1990 Census Public Use Microdata Sample (PUMS) to develop a state-to-state migration model explaining the proportion of all poor single mothers with children under 18 in the state of origin who moved to each destination state. Levine and Zimmerman (1999), using data from the National Longitudinal Survey of Youth (NLSY), conducted a probit analysis of the decision to outmigrate from a state and the likelihood of being an inmigrant into a state. They focused on poor single women with children, comparing outcomes for this group (the treatment group) with those of various other low-income control groups. Frey et al (1996) conducted a nested logit analysis of aggregate state-to-state migration flows using data from the *1990 Census of Population and Housing*. They incorporated a more comprehensive set of explanatory variables than Schram, Nitz, and Krueger (1998) or Levine and Zimmerman (1999), including more spatial attributes. Allard and Danziger (2000), using data from the Panel Study of Income Dynamics (PSID) for 1968-1991, conducted a probit analysis of single-parent families' decisions to outmigrate from a state. These studies found little or no evidence of welfare migration.

Enchautegui (1997) used a sample of women, stratified by family status, education, and race, from the 1980 Census PUMS. For movers, her binary probit model compared characteristics at the origin with those of the chosen destination, ignoring all other alternatives. Nonmovers compared origin characteristics with an average of characteristics of all potential destinations. Enchautegui more strongly supported a welfare magnet effect than the four studies discussed above, but in most cases found a relatively modest impact.

Unlike other recent published research, Gelbach (2004), using 1980 and 1990 Census PUMS data, found substantial evidence of welfare migration for single mothers most likely to gain by moving. First, Gelbach determined that, on average, never-married mothers who changed state of residence moved to states with higher welfare benefits compared with their origin state (this was not true for other mothers). Second, he showed that origin state welfare benefits had a significant effect on the decision to migrate from the origin for never-married mothers. For 1980, results showed little or no evidence of a welfare effect for other women. For 1990, he found substantial effects for some other women, which suggested that something else was at work at least for that time period.

Though benefiting from better data and more sophisticated methodologies, the recent welfare migration literature can be further advanced. Some lacked critical explanatory variables such as measures of employment opportunities or climate. Only Allard and Danziger (2000) made any attempt to account for family/friends effects, while no studies considered the role of return migration. Only Frey et al (1996) modeled space substantially, though not even their model had sufficient spatial content to adequately capture a Chicago-Milwaukee type of migration connection that has spurred scrutiny by officials in Wisconsin. Others either did not account for space or used crude measures. The migration literature has thoroughly documented the importance of family/friends, return migration, and spatial factors as determinants of migration. As discussed below, these factors may hold even greater importance for low-income individuals. Finally, only the aggregate migration models of Frey et al (1996) and Schram, Nitz, and Krueger (1998) considered the choice among all destinations, jointly comparing characteristics of all destinations, and only Frey et al (1996) jointly considered the decision to move and destination choice. The microdata analyses were all structured in binary choice frameworks.

A few published studies have approached the welfare migration issue indirectly, by focusing on outcomes that imply that welfare migration occurred. Berry, Fording, and Hanson (2003) rejected the notion of welfare migration based on their finding that a state's poverty rate does not jump significantly when its welfare payments outpace benefits in neighboring states. McKinnish (2005) compared the size of welfare programs in counties at or close to state borders relative to interior counties. She found that border counties on the high-benefit side of state borders with a large welfare benefit differential have higher welfare expenditures per capita relative to interior counties, with the opposite true for border counties in the lower-benefit state. She considered this as evidence of welfare migration, though moderate in magnitude.

McKinnish's focus on state borders is very pertinent for the research discussed below.

3. THE WELFARE MAGNET EFFECT AND SPACE

Since welfare benefits serve as a potential source of income for low-income individuals (or those at risk of having low income), it makes sense that generous welfare benefits would attract at least some rational low-income people. We need to know more, however, regarding the magnitude of the welfare magnet effect. Though usually neglected in the literature, distance (space) may play an important role. If distance correlates with the monetary and psychic costs of migration, as well as with information about alternative locations, it may disproportionately inhibit migration of low-income people. It may discourage long distance moves and make such moves more risky, i.e., more likely to result in failure. This could prove critical when looking for a welfare magnet effect.

Typically, welfare benefit levels have exhibited regional similarity, as shown in Figure 1. For the most part, low-benefit states cluster around other low-benefit states and high-benefit states cluster around other high-benefit states. If Figure 1 were a three-dimensional (3-D) map, it would have fairly smooth contours, with no extraordinarily high cliffs and only a few moderately high cliffs. As a result, the inhibiting effects of distance could well cover up any welfare magnet effect. The costs and risks would be high for the long-distance moves typically necessary to reap a large welfare-benefit gain. The small welfare-benefit gains from most short-distance moves may rend even low-cost moves of little value. In short, we are unlikely to find much of a welfare-magnet effect for the low-income population – precisely the outcome of most recent studies.

Figure 1 suggests one important condition for finding a significant welfare-magnet effect.

We should look for combinations of proximity and large differences in welfare benefits – high cliffs if this were a 3-D map. For a state-level analysis, we need a second important condition: significant concentration of population, including poor people, near the border of contiguous states. Few poor people migrate from Idaho to Washington State, despite contiguity and a 27 percent welfare benefit premium in Washington relative to Idaho. Not many poor people (or even nonpoor people) reside in Idaho close to the Washington border, making it unlikely that a substantial migration path would be established. With only a moderate-size city (Spokane) in Washington close to the border with Idaho, Washington has relatively little to attract poor migrants from Idaho.

On the other hand, consider the potential for low-income migration from Illinois to Wisconsin. The Milwaukee-Racine and Madison metropolitan areas, with combined population of about two million in 1990, lie just north of the border, the Chicago metropolis, with more than 800,000 poor people in 1990, lies just south of the border, and Wisconsin paid a 33 percent welfare benefit premium. The combination of substantial population concentrations near the border and a large welfare benefit difference may lead to the statistically and practically significant welfare-induced migration that Wisconsin policymakers claim exists.

4. METHODOLOGY

This analysis considers state-to-state migration. Key characteristics of the underlying migration model ultimately lead to the choice of econometric methodology. First, this study employs microdata to focus on individuals' decisions. This calls for a discrete-choice framework such as logit or probit analysis. Second, unlike most microdata analyses of migration, I do not just consider individual migration decisions in a binary choice framework, e.g., "move" versus "don't move." Instead, the model incorporates each individual's choice from among 49 potential locations – remain in the initial home state or move to any of the other 48 contiguous states (with Washington, DC considered as a separate choice). The model relates migration choice to the location-specific characteristics of each of these 49 locations.

Choice of econometric methodology depends critically on assumptions regarding how individuals make migration decisions. Migration may be a sequential decision-making process. For example, an individual may first make the decision whether to move, followed by the choice of destination (for those who do move). This assumption underlies models considering the decision to move separately from destination choice (for example Herzog and Schlottmann, 1986; Cushing, 1993; Clark, Knapp, and White, 1996; Levine and Zimmerman, 1999; Allard and Danziger, 2000; and Gelbach, 2004), as well as models focusing only on destination choice of movers (Blank, 1988; Bartel, 1989). In the context of jointly modeling the decision to move and destination choice, an assumption of sequential decision-making leads to a nested logit framework, employed by Frey et al (1996).

Alternatively, Davies, Greenwood, and Li (2001) argued that the decision to move and choice of destination cannot be separated. Their logic leads to a conditional logit model. In practice, some individuals jointly make the decision to move and destination choice, while others follow a more sequential process, though the former seems likely to fit the majority of migration decisions. Like Davies, Greenwood, and Li (2001), this study applies a conditional logit model.

A random utility model motivates the conditional logit model.[2] For an individual initially in area i faced with j location choices, including remaining at the current location, suppose that the utility of choosing location j is

$$U_{ij} = \beta' x_{ij} + \varepsilon_{ij} ,$$

where x_{ij} is a vector of choice-specific attributes. If the individual chooses destination j, then we assume that U_{ij} is the maximum among the J locational choices. Thus, the statistical model is driven by the probability that an individual from i chooses location j, which is

$$\text{Prob}(U_{ij} > U_{ik}) \text{ for all other } k \neq j$$

The model is made operational by a particular choice of distribution for the disturbances. Let Y_i be a random variable that indicates the choice made. Based on McFadden (1973), if and only if the J disturbances are independent and identically distributed with the Weibull distribution, then the probability of an individual from i choosing area j (where $j = i$ for nonmovers) is

$$\text{Prob}(Y_i = j) = \frac{e^{\beta' x_{ij}}}{\sum_k e^{\beta' x_{ik}}}$$

With 49 possible locational choices, the log-likelihood function generated by the above model is

$$\log L = \sum_{i=1}^{49} \sum_{j=1}^{49} d_{ij} \log \text{Prob}(Y_i = j) \text{ ,}$$

where $d_{ij} = 1$ if $Y_i = j$ and 0 otherwise.

The x_{ij} vector includes choice-specific characteristics that influence individuals' migration decisions. These include economic and amenity characteristics, as well as variables reflecting the spatial relationship between locations. The nature of a conditional logit model requires some compromises in the variables included in this vector. The conditional logit model can only identify choice-specific attributes (those that vary across choices for a given individual), which eliminates characteristics of individuals, as well as origin-specific characteristics. The model could incorporate individuals' characteristics through a series of dummy variables and interaction terms. The coefficients of these terms would show whether an individual's personal characteristics affect his response to each choice specific attribute. Likewise, interacting origin characteristics with destination characteristics would indicate whether origin characteristics influence the effect of destination characteristics. Unfortunately, this would cause explosive growth in the number of parameters and computational complexity of an already large, computationally complex model.

Like Davies, Greenwood, and Li (2001), I retain the influence of origin characteristics by entering choice-specific attributes as a comparison of the destination attribute relative to the corresponding origin attribute. My model uses a mix of ratio variables and difference variables. While restrictive, these formulations capture the concept that individuals compare alternatives with their current situation.[3] Many studies have shown that personal characteristics greatly influence the decision to move, e.g., DaVanzo (1978). To capture this effect, I interact some personal characteristics with a dummy variable related to the "don't move"/"move choice," i.e., choosing to remain at the origin versus choosing one of the other 48 locations.

The conditional logit formulation inherently assumes independence of irrelevant alternatives (IIA). IIA follows from the underlying assumption that the stochastic terms in the utility functions are independent. Intuitively, this assumption requires that the relative probabilities between choices must be independent of other alternatives, e.g., the relative probability of a Connecticut resident moving to New Jersey vs. Pennsylvania must be independent of the alternative of choosing New York. Undoubtedly, some individuals naturally make migration choices in a way that satisfies the IIA assumption. As a general proposition, however, IIA may be problematic.

Davies, Greenwood, and Li (2001), undertook some limited testing of the IIA assumption, using the test proposed by Hausman and McFadden (1984). In turn, omitting Florida and Colorado, they could not reject IIA for their sample. A complete test of IIA in a model with 49 choices is impractical, since it would require thousands of tests. Most likely, some of these tests would reject the hypothesis of IIA, while others would not. The sample size for this study is very large, however, which means that almost any difference between models would be statistically significant.

Ultimately, comparing empirical results from different modeling methods would better reveal the true importance (or cost) of maintaining the IIA assumption. Such a comparative study has not been carried out for a model of internal migration. In a study of local residential choice (equivalent to intrametropolitan residential choice), Dahlberg and Eklöf (2003) found that as long as the model is not too parsimonious, the conditional logit model leads to exactly the same conclusions as models that relax the IIA assumption. This supports Train's (2003) suggestion that if the researcher specifies the observed variables sufficiently, then the remaining, unobserved, portion of utility is essentially "white noise." In this case, a conditional logit model would suffice. Alternative formulations that do not violate the IIA assumption, such as the Nested Logit model, would be extremely difficult to solve for such a large model with so many choices. For this paper, I accept the arguments presented by Davies, Greenwood, and Li (2001) in support of the conditional logit formulation, as well as the conclusions of Dahlberg and Eklöf (2003). In keeping with Train's (2003) discussion, the analysis uses a model with a wide array of explanatory variables. I defer more thorough consideration of the statistical and practical importance of the IIA assumption for a separate paper.

5. THE DATA AND HYPOTHESES

The migration data come from the five percent Public Use Microdata Sample (PUMS) from the *1990 Census of Population and Housing*. The PUMS data provide information on place of residence in April 1985 (beginning of period) and April 1990 (end of period). PUMS supplies a very large sample size and good geographic detail. This study restricts the sample to low-income (below the official poverty level) single-parent, female householders, aged 25 to 60 years old in 1990 (aged 20 to 55 at the beginning of the migration period). It excludes those serving in the military or attending school. The restrictions help the study focus on those making migration decisions (excludes children), those who should be most attracted to welfare benefits (low-income, single-parent females of working age), and those making "normal" migration choices (not dominated by a prior choice to serve in the military or attend school). The sample consists of 10,966 individuals. Of these, 958 (8.7 percent) resided in a different state at the end of the period then at the beginning (movers). In this conditional logit model, with 49 choices, the data include 49 rows for each of the 10,966 individuals in the sample (one row per state) – 537,334 rows of data. The dependent variable, d_{ij}, equals 1 for the state of residence at the end of the period (1990) and equals zero otherwise.

To explain migration choices, I primarily employ an array of place characteristics that should affect the utility of residing in any particular location. Dummy variables and interaction terms capture effects of some personal characteristics. The place characteristics cover four key categories of explanatory factors: (1) measures of economic opportunity, (2) demographics, (3) amenities/disamenities, and (4) spatial relationships. Migrants should prefer locations with better opportunities, all else equal. Economic opportunity measures include (with expected sign in parentheses) 1980-1988 employment growth rate (+), average annual unemployment rate between 1984 and 1988 (-), 1986 average weekly wage for department store workers (+), and maximum combined AFDC and Food Stamp benefit for a family of three (average of 1985 and 1990 levels) (+).[4] The wage and welfare benefit data are adjusted for interstate cost-of-living differences provided by McMahon and Chang (1991).

The model includes two location-specific amenities: average January temperature (+) and average July temperature (?).[5] Numerous studies have found that people are attracted to places with warmer winters, all else equal, while evidence regarding summer heat is more varied. Poor people may give relatively less weight to amenities. If energy costs impose a relatively great burden on low-income families, then the temperature variables could also capture cost-of-living effects – increasing the attraction to warm winters, but making hot summers less desirable.

Demographic variables include 1985 population (?) and 1985 population density (?). These likely capture some advantages (more diverse opportunities, stronger support network, better information, better public transportation, larger population of similar people) and some costs (higher crime, more congestion, greater likelihood of a slum) of larger, more densely populated locations. Previous research suggests that population size will tend to reflect advantages of large agglomerations and density will capture more of the disadvantages.

These first eight variables compare destination characteristics with origin characteristics. Population and population density, which contain large numerical values, enter as a ratio of destination value relative to origin value. Intuitively, potential migrants are likely to be more aware of relative values than numerical differences of such characteristics. The other six characteristics enter in difference form (destination minus origin value). As a side benefit, using difference rather than ratio forms for most variables virtually eliminates potentially severe multicollinearity.

Several variables model the spatial relationship or connection between origins and potential destinations. This study employs the standard measure of distance (-): highway mileage between principal cities of the origin and each destination state. Greater distance imposes monetary, informational, and psychic costs on potential migrants. By itself, the distance variable is too aggregated to capture the increased propensity to migrate for those who reside close to the border of a neighboring state. The PUMS data provide information on location down to the level of the Public Use Microdata Area (PUMA). PUMAs include at least 100,000 individuals and, except in New England, are defined on a county basis. For this analysis, DPUMA (+) equals 1 if the origin PUMA is within 100 miles of the potential destination state; equals zero otherwise.[6] The model includes a migrant stock variable (+) similar to that used by Greenwood (1969) and others. It is the number of persons born in origin state *i* but residing in destination state *j* in April 1985, as a percentage of the 1985 population of state *i*. Scholars have debated whether a positive migrant stock impact represents a family, friends, and information effect or whether it simply reflects temporal stability in migration patterns, thus diminishing the estimated effects of other variables. Since low-income, poorly educated individuals may rely more heavily on this type of information, I retain migrant stock. A return migration variable captures another aspect of the relationship between origins and destinations. The migration literature has documented the importance of return migration. For this study, 34 percent of the sample resided outside of their state of birth in 1985. Of these "nonnatives," 18 percent (6 percent of the full sample) resided in a different state in 1990 than in 1985 (movers). Of these movers, 46 percent returned to their state of birth. I include a binary dummy variable, Movehome (+), which equals 1 when the origin state differs from the state of birth ***and*** the potential destination state is the state of birth.

Welfare benefits tend to cluster by region, e.g., low-benefit states tend to be surrounded by similarly low-benefit states. On the other hand, low-income people are less able to afford migration costs (monetary, information, and psychic), so that distance may be too great a barrier to take advantage of higher welfare benefits in a far-off state. Welfare-induced migration more likely occurs when a potential migrant resides close to a state that offers significantly higher welfare benefits. The combination of higher welfare benefits in a potential destination state and proximity to that state's border should yield more information and lower monetary and psychic costs of taking advantage of the higher benefits, thus leading to greater likelihood of migration. To capture this effect, the model includes a variable that interacts DPUMA with the welfare benefit variable. The coefficient of the interaction variable will be positive if those initially residing close to a potential destination state are more likely than others to have welfare benefit differentials influence their choice between the two states.[7]

Finally, the empirical model includes a binary dummy variable for the potential choice of remaining at the origin (STAY = 1 for the choice of remaining at the origin), as well as three interactions with this dummy variable. As discussed in Davies, Greenwood, and Li (2001), the choice not to move (remain in the origin) differs greatly from all other choices. The decision to remain at the current location avoids the presumably substantial, unobserved costs of moving. This bias toward inertia should result in a positive coefficient for STAY. Like return migration, repeat migration, i.e., the higher propensity to migrate for those who have already migrated at least once, has been well documented. In the data used here, of those who resided in their state of birth in 1985, just 4 percent resided in a different state in 1990. As noted above, of those who resided outside of their state of birth in 1985, 18 percent resided in a different state in 1990. The model includes an interaction between STAY and a binary dummy for potential repeat migration (REPEAT = 1 if the origin state differed from the state of birth). A negative coefficient for the STAY*REPEAT coefficient would indicate a lower likelihood of remaining at the origin (greater mobility) for those not born in the origin. Strong theoretical and empirical bases support the proposition that age and educational level influence mobility. The STAY*COLLEGE variable interacts STAY with a binary dummy variable that equals 1 for a person with at least a bachelor's degree. A negative coefficient would indicate a lower likelihood of remaining at the origin for the highly educated. STAY*AGE interacts STAY with an individual's age. Since the minimum age in the sample is 25 years, AGE is normalized to zero by computing AGE = (age-25). A positive coefficient would indicate that likelihood of remaining at the origin increases with age.

6. EMPIRICAL RESULTS

Table 1 presents conditional logit estimation results for the sample of low-income single-parent, female householders, 25 to 60 years old. Model 1 does not include the proximity-welfare interaction variable, while Model 2 includes the interaction variable. For Model 1, 12 of the 16 estimated coefficients are significant at the one percent level with the expected sign; the unemployment rate coefficient is significant at the ten percent level. For Model 2, 12 of 17 estimated coefficients are significant at the one percent level, with unemployment rate and the welfare benefit interaction term significant at the ten percent level. For both regressions, the estimated coefficients of Population, the STAY*COLLEGE interaction, and Welfare are statistically insignificant. *????A third model included a second welfare interaction variable to capture the effect of a large population concentration in a potential destination state proximate to the border of the origin state. The additional variable had no perceptible influence on the empirical results. Also, I estimated all three models without a cost-of-living adjustment. The only noticeable changes in results were a decrease in the significance level of the unemployment rate coefficient to just under five percent and decreases in the size of the coefficients and t-*

statistics of the two welfare variables so that neither was even close to statistical significance. To save space, the additional results are not presented. ????

The insignificance of the coefficients of the standard welfare benefit variable conforms to the majority of recent findings, which conclude that welfare benefit differentials have little or no influence on migration decisions of the poor. The result for the welfare interaction variable, however, indicates presence of a welfare magnet effect for people who initially resided near the border of a higher benefit state. This supports McKinnish's (2005) general conclusion, which was based on patterns of welfare expenditures in counties on state borders compared with interior counties. Given the proximity of the Chicago metropolitan area to Wisconsin, it may also be consistent with claims of officials in Wisconsin who see migration of low-income individuals from Illinois as a serious problem. I have not yet considered whether the magnitude of this border-county welfare magnet effect was moderate, as suggested by McKinnish (2005), or large, as implied by state officials in Wisconsin.

To aid in interpreting results for welfare benefits and other variables, Table 2 presents the estimated direct probability elasticities (column 2), values for the explanatory variables (column 3), and estimated effects on the probability of migration, i.e., the proportional change in predicted migration (column 4) for the case of migration from Illinois to Wisconsin.[8,9] The elasticities are computed as

$$\frac{\partial log\ P_j}{\partial log\ x_{jm}} = \beta_m x_{jm}(-P_j),$$

where x_{jm} is attribute m of choice j. For an individual residing in Illinois within 100 miles of the Wisconsin border in 1985 (but not a native of Wisconsin), the model estimates a base probability of moving to Wisconsin equal to 0.0049. To put the results in perspective, the last column shows the effect that each variable has on migration between the two states by showing how predicted migration would change if the value of the characteristic for Wisconsin was changed to be equal to the value for Illinois, i.e., setting the value of a difference variable equal to zero or a ratio variable equal to 1.0.

The last column requires an estimate of the number of poor people in single-parent female-headed families residing in the 26 component counties of the Illinois PUMAs that fall within 100 miles of the Wisconsin border, for 1985. Combining *1990 Census of Population* county data on poverty rates and the family structure of poor families with *Current Population Survey* estimates of 1985 county population and changes in state-level poverty rates between 1985 and 1990, I derived an estimate of 416,667 poor persons living in female-headed families within these 26 "border" counties. Applying this estimate to the base probability noted above, the model predicts that 2044 poor people in female-headed families migrated from border counties in Illinois to Wisconsin between 1985 and 1990. ???[10]??? Several binary dummy variables and dummy interaction variables have values of zero (a value of 1.0 for DPUMA) for this specific case and will be considered in a more general context.

Based on the direct probability elasticities, none of the variables appears to have more than a moderate impact on migration from Illinois to Wisconsin. The wage variable, with an elasticity of 0.35 has the largest elasticity, followed by the two temperature variables and the welfare benefit interaction variable. All other elasticities are quite small.

The elasticity of 0.22 suggests that the effect of the welfare benefit interaction did not have a large impact on migration of the poor from Illinois to Wisconsin. We must consider columns 4 and 5, however, to more accurately gauge its practical importance. If monthly welfare benefits in Wisconsin were equal to those in Illinois, i.e., reduced by about $148 per month, giving the welfare benefit interaction term a value of zero, the model predicts that the probability of migration from Illinois to Wisconsin would decrease by about 20 percent from 0.0049 to 0.0039 and migration of individuals in poor female-headed families would decrease by about 405 from 2,044 to 1,639.[11] This result coincides with most recent studies, which find, at most, a modest welfare effect. It also supports McKinnish's (2005) focus on borders of states and her finding of a significant, but modest, welfare effect, even at the border, where the welfare magnet effect should be most evident.

The results for the welfare variables do not indicate much of a welfare magnet effect. The model, however, still suggests the possibility of at least a moderate amount of migration of the poor across borders when significant populations of the poor reside near the border, such as in the case of migration from Illinois to Wisconsin. The DPUMA variable captures the "pure border" effect. If DPUMA (and thus the welfare interaction variable also) is set equal to zero for the Illinois to Wisconsin example (if the potential migrant was not located within 100 miles of Wisconsin), the model suggests that the probability of migration would decrease by about 81 percent to 0.0010, decreasing migration from 2044 to just 396. This is more than three times as large as the welfare interaction effect.

Though none of the migration numbers are large, combining this last result with the welfare magnet results reconciles much of the literature with perceptions of policymakers in Wisconsin. My results reveal no evidence of a general welfare magnet effect. My findings do indicate a welfare magnet effect when the case of two states having significantly different welfare benefits is combined with proximity of poor people in the lower benefit state to the border of the high benefit state. Together, the size of the proximate poor population in the low-benefit state and magnitude of the welfare benefit difference determine the practical importance of this effect. Even in the case of migration from Illinois to Wisconsin, however, where we should expect one of the strongest cases of welfare migration, the welfare magnet effect appears to be modest. Despite the welfare magnet findings, Wisconsin should expect to experience a significant amount of inmigration of poor people from Illinois simply because many poor people reside in Illinois close to the Wisconsin border. Because the monetary and psychic costs are much lower, we observe much more short-distance migration (including across state borders) compared with long-distance migration regardless of income level as people try to improve their situation.

The other three variables that capture spatial relationships and connections between states also have significant explanatory power regarding migration of poor, female-headed families, with the return migration variable playing a particularly important role. Distance, with an elasticity of -0.03, had only a small influence on Illinois-Wisconsin migration. Migration would have been about three percent greater (an additional 64 migrants) without the 91-mile distance separating the large cities of the two states. Distance becomes a much greater barrier for more distant states. Considering all origin-destination pairs, the mean elasticity is about -0.5. Using this mean elasticity, increasing the sample average distance of 1.170 (1,170 miles) by 50 percent (585 miles) would reduce migration by 25 percent. Distance elasticities tend to be much higher for the larger, more spatially isolated western states. Migrant Stock has a somewhat larger effect than distance for the Illinois-Wisconsin example. Predicted migration would be seven percent lower without a migrant stock effect. Migrant Stock's influence remains modest for most state pairings. A more precise family-friends measure would likely draw out this factor more effectively. Movehome only applies to those who resided outside their state of birth in 1985 and moved during the 1985-1990 period. For the Illinois-Wisconsin case, the model predicts that a low-income individual born in Wisconsin had a 13.3 percent probability of residing in Wisconsin in 1990 – 26 times more likely to move to Wisconsin than other poor people residing in the border counties of Illinois in 1985, all else equal. The Census of Population from 1980 and 1990 each show that about 170,000 Illinois residents were natives of Wisconsin. It is reasonable to assume that most of these Wisconsin natives resided in northern Illinois, probably many in the Chicago metropolis. This could significantly ratchet up migration of the poor from Illinois to Wisconsin. As other studies have concluded for the population in general, return migration is a potentially powerful factor for explaining migration of the poor.

Of the economic opportunity variables, weekly wages most strongly affected migration. As for almost all origin-destination pairs, its elasticity exceeds all others. For the Illinois-Wisconsin case, the model predicts that migration to Wisconsin would have been 42 percent higher had Wisconsin's real wage level matched that of Illinois. Though statistically significant, Employment Growth had almost no effect on low-income migration. Unemployment Rate had a much larger, but still modest, effect. These results may simply indicate information and mobility constraints, as well as greater reliance on spatial, family, and other connections to potential destinations. Climate (Mean January Temperature and Mean July Temperature) had a stronger effect than anticipated for low-income individuals, perhaps reflecting lower costs for items such as utilities and, in the case of winter temperatures, clothing – in addition to a more pleasant climate's normal amenity benefit. For the Illinois-Wisconsin case, only the wage variable influenced migration more than each of the two climate variables. In the end, the attraction of cooler Wisconsin summers nearly negated the repulsion of the colder winters, so that the net influence of climate was quite small. Population density had a very small effect on low-income migration from Illinois to Wisconsin (however, its effect varied widely across states, with moderate-to-high elasticities for the eastern coastal states that lie within the densely populated megalopolis between Washington, DC and Boston, MA.

Finally, we consider the dummy variable for the potential choice of remaining at the origin and its interaction with personal characteristics. Based on the coefficient of STAY, unobservable costs associated with moving make the probability of moving 98 percent lower than the probability of not moving for the poor, female-headed family population, i.e., about 49 times more likely to remain at the origin than to move. As expected, previous migration experience reduced this strong attachment to the origin, while aging strengthened the STAY effect. Those not residing in their state of birth in 1985 (potential repeat migrants) were only about 18 times more likely to remain at the origin than to move. An additional ten years of age yields a probability of moving 99 percent lower than the probability of not moving, i.e., about 62 times more likely to remain at the origin than to move.

7. CONCLUSION

Scholars have researched and debated the welfare magnet issue for more than three decades, without a consensus. With few exceptions, the most recent work, with better data and more advanced methodologies, has found evidence of, at most, a weak welfare magnet effect. This conclusion contrasts markedly with anecdotal evidence of a significant welfare magnet effect, cited by some state policymakers. This anecdotal evidence appears to have led to interstate competition to reduce welfare benefits, i.e., a “race to the bottom” with respect to setting benefit and eligibility standards.

In reconsidering the welfare magnet effect, this research develops an array of variables that add a substantial spatial component to the analysis. The empirical results do not support the existence of a general welfare magnet effect. The analysis supports the hypothesis of a more limited welfare magnet effect related to a combination of welfare differences and large low-income populations close to state borders. Specifically, if a state has a substantial low-income population close to the border of a nearby state **and** the nearby state offers significantly more generous welfare benefits, we can expect some migration of the poor from the low-benefit state to the higher-benefit state to take advantage of the welfare benefit differentials. The magnitude of this effect appears to be modest. This second finding only partly reconciles the largely weak empirical support for a welfare magnet effect with the strong perceptions of policy makers. A third result more effectively closes the gap between academic research and perceptions of some policymakers. If a state has a substantial low-income population close to the border of a nearby state, we can expect significant migration of the poor to that nearby state, regardless of welfare benefit differentials. Relatively short distance migration is much more prevalent than longer distance migration, and includes migration across state borders, often even within the same multi-state labor market area. This is more akin to traditional gravity models of migration. For example, Wisconsin provides welfare benefits substantially exceeding those in neighboring Illinois, while northern Illinois has a very large population agglomeration near the Wisconsin border, including the huge metropolis of Chicago. This study suggests that Wisconsin's generous welfare benefits will not attract low-income migrants from low-benefit, but distant, states such as Alabama. It may draw a moderate number of "welfare migrants," from northern Illinois. Most low-income migration from Illinois to Wisconsin, however, occurs simply because northern Illinois has a large poor population, for whom starting a new life in Wisconsin requires only a low-cost move.

This research also illustrates other important factors related to space or connections between locations. Intuitively, income, information, and other constraints affecting mobility should make these particularly important for low-income individuals. I find strong evidence for the importance of distance, migrant stock, and, especially, the propensity for return migration. Replacing the broad migrant stock variable with a more precise measure of a "family/friends" effect would likely reveal a much greater influence of this factor.

Nothing in this study disputes concerns of officials, such as those from Wisconsin, that inmigration of poor people has driven up welfare roles and welfare expenditures during the past few decades. The study does dispute the notion of a strong welfare magnet. In general, states do not appear to "compete" with each other for poor people by means of welfare benefit levels. The welfare magnet is of practical importance only for proximate states that have significantly different benefit levels – even in this case the effect on migration is modest. From a purely budgetary perspective, reducing welfare benefits will reduce welfare expenditures, but other factors largely determine migration choices of the poor.

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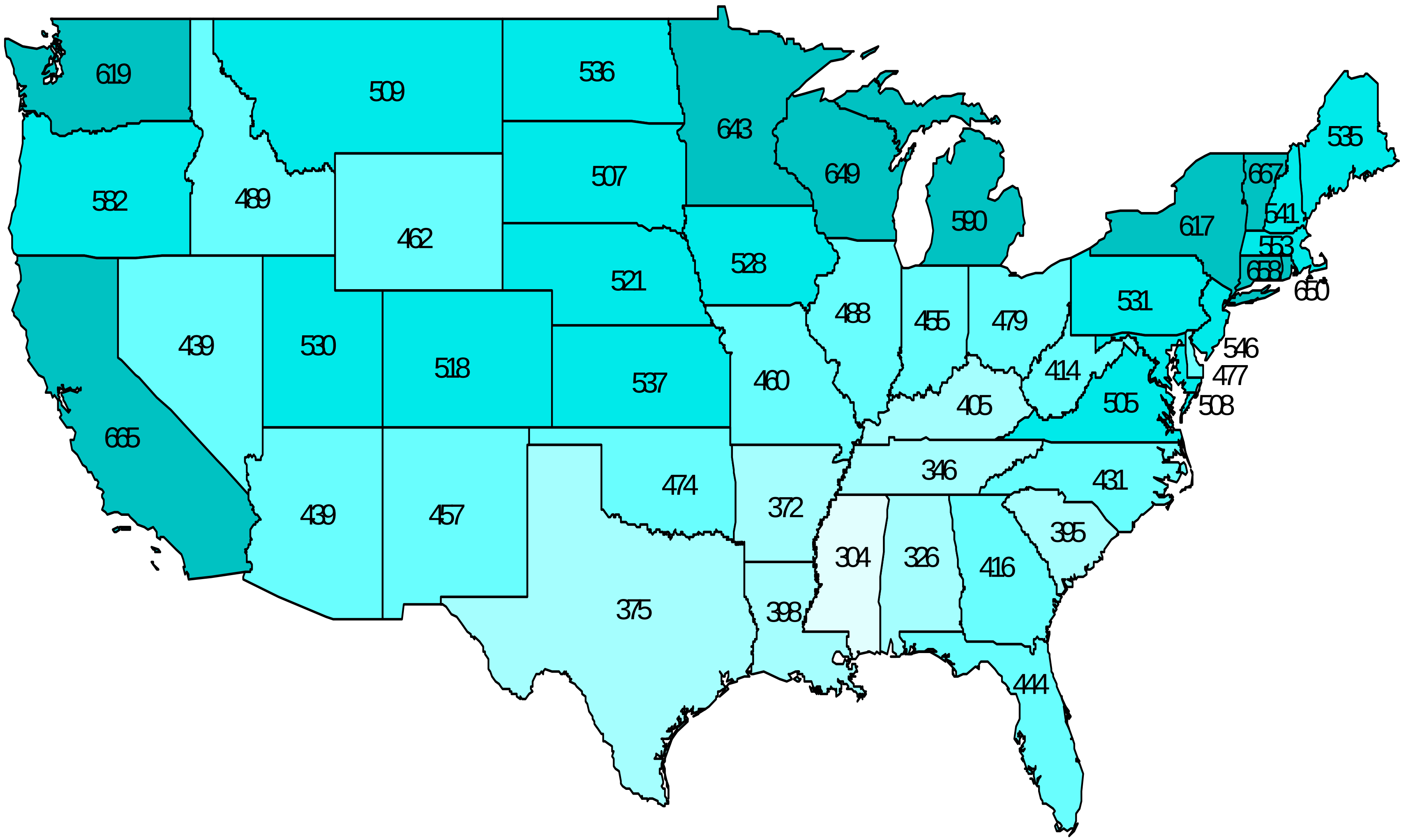
Figure 1: Maximum Monthly Combined Welfare and Food Stamp Benefit for a Family of Three, 1985



Source: US Congressional Research Service

Table 1 - Empirical Results for Conditional Logit Estimation of a Poor Person's Migration Decision – Female-Headed Families with Children

Variable	Model 1	Model 2
Employment Growth Rate Difference^{+}	0.011*** (2.66)	0.011*** (2.72)
Unemployment Rate Difference^{+}	-0.038* (-1.52)	-0.039* (-1.56)
Weekly Wage Difference^{+} (hundreds of dollars)	0.553*** (4.25)	0.563*** (4.32)
Mean January Temperature Difference^{+}	0.035*** (8.72)	0.035*** (8.66)
Mean July Temperature Difference	-0.061*** (-6.29)	-0.064*** (-6.43)
Population Ratio	0.000 (0.02)	-0.000 (-0.02)
Population Density Ratio	-0.025*** (-3.36)	-0.025*** (-3.35)
STAY^{+}	4.139*** (19.66)	4.157*** (19.71)
STAY*AGE^{+}	0.034*** (7.36)	0.034*** (7.35)
STAY*REPEAT^{+}	-1.152*** (-13.56)	-1.150*** (-13.53)
STAY*COLLEGE^{+}	-0.186 (-0.89)	-0.186 (-0.89)
Migrant Stock^{+}	0.037*** (12.34)	0.037*** (12.26)
Movehome^{+}	3.431*** (40.36)	3.435*** (40.40)
Distance^{+} (ooo^{s} miles)	-0.344*** (-6.01)	-0.340*** (-5.94)
DPUMA^{+}	1.420*** (15.44)	1.423*** (15.45)
Welfare Benefit Difference^{+} (hundreds of dollars)	-0.030 (-0.52)	-0.063 (-1.00)
DPUMA*Welfare Benefit Difference^{+}		0.150* (1.38)

$^{+}$one-tail test of hypothesis

***statistically significant at the 1% level

**statistically significant at the 5% level

*statistically significant at the 10% level

Table 2 – Direct Probability Elasticities and Predicted Migration Effects for Border Counties, Origin=Illinois and Destination=Wisconsin[a,b]

	Model 2			
Variable	Direct Probability Elasticity	Sample Value of X	Percentage Δ in Probability of Migration[c]	Effect on Predicted Migration[d]
Employment Growth Rate Difference	**0.01**	**0.747**	**-0.8**	**-17**
Unemployment Rate Difference	**-0.07**	**-1.717**	**-6.4**	**-131**
Weekly Wage Difference (hundreds of dollars)	**0.35**	**-0.623**	**41.7**	**853**
Mean January Temperature Difference	**0.22**	**-6.300**	**24.7**	**504**
Mean July Temperature Difference	**-0.23**	**-3.700**	**-20.9**	**-426**
Population Ratio	-0.00	0.414	-0.0	0
Population Density Ratio	**-0.01**	**0.424**	**-1.4**	**-29**
STAY		**0**		
STAY*AGE		**0**		
STAY*REPEAT		**0**		
STAY*COLLEGE		0		
Migrant Stock	**0.07**	**1.943**	**-6.9**	**-141**
Movehome		**0**		
Distance (ooo[s] miles)	**-0.03**	**0.091**	**3.1**	**64**
DPUMA		**1.000**		
Welfare Benefit Difference (hundreds of dollars)	-0.09	1.476	9.7	198
DPUMA*Welfare Benefit Difference	**0.22**	**1.476**	**-19.8**	**-405**

[a]Border counties are component counties of Illinois PUMAs that are within 100 miles of the Wisconsin border.

[b]For difference variables, setting Wisconsin equal to Illinois means setting X=0. For ratio variables, setting Wisconsin equal to Illinois means setting X=1.0. For Distance and Migrant Stock, X is set equal to zero. Effects for statistically significant coefficients are in **bold**.

[c]Proportional change in the base probability of migration from Illinois to Wisconsin (0.0049) when the value for Wisconsin is set equal to the value of Illinois, holding values for all other variables constant.

[d]Change in the base level of predicted migration from Illinois to Wisconsin (2044) when the value for Wisconsin is set equal to the value of Illinois, holding values for all other variables constant.

[1] Does not include Alaska or Hawaii.
[2] See Greene (2003), Chapter 21 for a more complete description of the conditional logit model.
[3] Both formulations implicitly assume symmetric responses for changes in an origin state characteristic and the corresponding destination characteristic.
[4] Employment data come from the U.S. Bureau of Economic Analysis' REIS data series. Unemployment and wage data come from the U.S. Bureau of Labor Statistics. Welfare benefit data come from the U.S. Department of Health and Human Services. The family of three for the welfare benefit variable includes one adult and two children with no other source of income. Population data come from the U.S. Bureau of the Census.
[5] For each state, temperature data are a weighted average of cities >100,000 (or principal city if no cities >100,000). Data are 30-year means from the National Oceanic and Atmospheric Administration.
[6] If a PUMA straddled the 100 mile distance from the potential destination state, it was classified as "proximate" if a significant portion of its population resided within 100 miles of the destination state (indicating a reasonable likelihood that the individual resided within 100 miles of the potential destination state.
[7] An interaction variable is only developed for the welfare variable because it is the only explanatory variable that, by nature, has a discontinuity at the border of two states.
[8] These elasticities relate to an individual not born in Wisconsin, i.e., MOVEHOME=0.
[9] For each state, the conditional logit estimation also can provide estimated cross probability elasticities with every other state. A change in the probability of moving from state *i* to state *j* must affect the probability of moving from *i* to at least one other state (since probabilities must sum to 1.0). The large number of choices leads to very small cross elasticities.
[10] The CPS data refer to the total poverty population, while the regression focuses on poor working-age single-parent females. Thus, the estimated effects on predicted migration in column 5 should be viewed as ballpark estimates provided for illustrative purposes. The values in column 4 of Table 2, however, come from the regression results, thus are valid, regardless of the base poverty population used for the illustration.
[11] Since the coefficient of the regular welfare benefit variable is statistically insignificant, the computation ignores its effect. Because the insignificant coefficient is positive, including its effect would reduce the migration effect of equalizing welfare benefits to a decrease of a little more than 200 people.