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How Does Satisfaction Affect Migration Patterns Within the United States (2006-2009)

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by

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ABSTRACT

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This paper investigates whether or not aggregate state satisfaction plays a significant role in the movement of people across state borders. A person's decision on whether to migrate or not depends on the anticipated utility of the origin state compared to that of the destination state. If the utility of the destination state is greater than the utility of the origin state, the person will relocate, and if the utility of the destination state is lower than the utility of the origin state, the person will not relocate.

Utility includes both monetary and non-monetary costs and benefits. The monetary utility includes demand for labor, per capita income, costs of migration, and other monetary considerations. However, non-monetary utility is less easily quantified. Satisfaction also affects utility (Di Tella et al. 2006) and, thus, should also be a consideration of non- monetary utility.

Using data from the Behavioral Risk Factor Surveillance System, which presents satisfaction indices for all 50 states within the United States between 2005 and 2008, and the American Community Survey, a migration dataset from 2006 through 2009, this paper finds that satisfaction is a factor in people's decisions to migrate between states. Satisfaction is important in both of the participating states. Increased satisfaction in the origin state lowers the amount of

out-migration. Increased satisfaction in the destination state increases the amount of in-migration.

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CHAPTER ONE

INTRODUCTION

A. Migratory Decisions

According to economic theory, decisions on whether or not to migrate are made based on comparisons made between the utility of staying in the origin state and the utility of moving to a new destination state. This means that factors from the destination state and the origin state affect the flow of migrants across state borders. Most papers calculate basic factors of utility, such as income differential, costs of migration (calculated in distances), and differences in unemployment. The human capital model of migration compares an individual's anticipated future benefits and costs, discounted over time, of living in a defined geographic area. If the highest net benefit can be obtained in another geographic location, the individual will migrate to that location. If that area is the individual's current place of residence, he will not migrate (Sjaastad 1962). While many papers focus primarily on monetary utility, it is important to also account for other non-monetary forms of utility. One such form of non-monetary utility is life-satisfaction.

Just like income and other factors, satisfaction has a utility that can be calculated. Satisfaction is correlated with other factors that affect utility, such as income and unemployment, suggesting that satisfaction is meaningful while discussing utility (Di Tella and MacCulloch 2006). Migration decisions are made based on the net utility of relocating versus not relocating, and satisfaction is a

consideration in this utility. Therefore, satisfaction, as a measure of utility, is important in understanding migration.

B. Contributions of this paper

This paper examines the extent to which satisfaction utility affects migrant flows between state borders. Polgreen and Simpson (2010) have studied the utility of satisfaction on international migration, and this paper differs from that because I am focusing solely on domestic migration across state borders.

Controlling for income differential, origin state population, destination state population, distance, and unemployment differential, this paper finds that as the difference in satisfaction between the destination state and the origin state increases, migration from the origin state to the destination state also increases.

By understanding how satisfaction affects migration, this paper furthers migration literature by helping to isolate some of the forces that affect migration. This could lead to a better understanding of policy implications. Policy makers may use the results from this paper to better their understanding of migration and use satisfaction as a tool to retain or attract high-skill workers. The purpose of this paper is to examine the effect of satisfaction on migration data. More specifically, this paper studies the extent to which aggregate satisfaction affects the flow of migrants into and out of different states.

This paper is organized as follows. Chapter Two provides a review of existing satisfaction and migration literature. Chapter Three describes the econometric models used in this paper. Chapter Four provides a description of the

data sets used to assess the effect of satisfaction on migration. Chapter Five presents the results of the econometric analysis. Chapter Six provides conclusions.

CHAPTER TWO

A REVIEW OF MIGRATION AND SATISFACTION LITERATURE

A. Determinants of Migration

As stated above, migration decisions are made based on the difference in the utility between the destination state and the origin state. Income is an important factor in determining this utility. Literature on internal migration in the United States focuses on how wage differentials between regions determine both the size and direction of migration (Greenwood 1997). Empirical data supports the claim that migration is sensitive to income differential. Naskoteen and Zimmer (1980) find that a 10-percentage-point increase in the wage differential between states increases the probability of migration by about 7 percentage points.

Simpson and Sparber (2010) find that, among unskilled workers that immigrated from outside the United States, differences in long-run GDP correlates with an increase in a flow of those workers. They find that correlation is stronger with long-run GDP than short-run GDP, suggesting that it is the trend of growth as opposed to short-term fluctuations.

While income is an extremely important factor determining migration decisions, it does not fully explain migratory patterns. A recent migrant experiences little monetary return to migration in the short run (Masters 1972). Sjaastad (1962) states that costs and returns are so restricted and that measures of psychic cost of migration need to be included.

The income-maximizing model of migration assumes that labor should flow only in the direction of the highest-paying area. However, Puerto Rico is an example that illustrates that income opportunity does not fully explain migration patterns. Although the United States (US) is a very mobile country internally, this high volume of migration does not equalize wages across regions (Barro and Sala-i-Martin 1992, Blanchard and Katz 1992). For example, in 2003 citizens of Puerto Rico had an average annual compensation of $22,000 per worker and $51,000 in the United States (U.S. Department of Commerce 2006). Puerto Ricans are American citizens by birth, so there are no restrictions for them to migrate to the United States. Borjas (2008) finds that, while Puerto Rico does experience a large amount of out-migration, Puerto Rico also has a large amount of in-migration. The simultaneous presence of these opposing flows is problematic for the income-maximizing model of migration because, theoretically, all migrants should move to areas that will yield them the highest income (Borjas 2008). Clearly, other monetary factors, besides income, are affecting utility, such as cost of moving. As the distance traveled from origin state to destination state increases, which is used to determine the cost of moving, the probability of migration decreases (Schwarz 1973). However, other non-monetary factors, such as familial obligations and ties to community, are also considered.

Some studies expand the human capital model of migration to account for familial obligations (Mincer 1978, Sandell 1977). In this case, spouses calculate their own net benefits of living in a defined geographic area. The sum of each individual net benefit is the net family benefit to migration. Similarly to the

human capital model of migration for an individual, a family will migrate if the net benefit of another location is greater than the net benefit of its current location; otherwise the family will not migrate.

B. Satisfaction

Satisfaction is a factor that has its own psychic costs and benefits. Satisfaction also has an effect on utility and is correlated, although roughly, with other factors, such as unemployment, income, income inequality, and inflation (Di Tella and MacCulloch 2006).

However, satisfaction and income have a complicated relationship. Stevenson and Wolfers (2008) discovered that satisfaction and income have a positive relationship. There is a correlation between income and average satisfaction across countries. Satisfaction seems to be related to a person's level of income, but only to a certain extent. Studies have shown that income only affects satisfaction up until the point at which an individual's needs are met, such as shelter, food, and other necessities (Graham 2005). After that point, increases in GDP and Income do not directly increase levels of satisfaction. This is known as Easterlin's (1974) Paradox. For example, income (GDP per capita) in the United States have been steadily rising since the 1970's, but satisfaction has stayed constant (Graham 2005).

Due to Easterlin's (1974) Paradox, many economists question the validity of self-reported satisfaction data. The fact that income has been steadily rising in America but satisfaction has not, sheds doubt on the use of satisfaction data statistics. This claim, however, can be countered by considering unemployment.

Satisfaction is more highly correlated with unemployment than with income. Clark and Oswald (1994) write that individuals who are unemployed consistently report to be less happy than individuals who are employed, suggesting that self-reported satisfaction is somewhat reliable.

Recent economic studies have strived to find the best way to calculate satisfaction (Oswald and Wu 2010). The importance of Oswald and Wu's (2010) paper is that it provided a way to turn individual level data into data that could measure people's feelings of well-being on a state level.

Although there have been studies of happiness and international migration, there have been no studies, to my knowledge, that examine the effect of satisfaction on domestic migration within the United States. There is, however, at least one paper that discusses how happiness affects migration internationally. Polgreen and Simpson (2010) found that, with international migration, happiness has a U-Shaped association with emigration. Individuals from very happy countries and very unhappy countries are more likely to emigrate than individuals from the middle of the happiness distribution. However, the Polgreen and Simpson (2010) methodology has a few limitations that will not be a problem with domestic data. For example, movement between states is completely free, while movement between countries is not.

CHAPTER THREE

DISCUSSION OF ECONOMETRIC MODEL

This section describes the econometric model that was used in this analysis. I base my equation on that of Simpson and Sparber (2010).

A. Econometric Model to Estimate Growth in the flow of Migration

$$Ln(Migration_{o,d,t+1}) = \beta_0 + \beta_1 Satisfaction\_Dif_{o,d,t} + \beta_2 Income\_Dif\_Exp_{o,d,t} + \beta_3 ln(Dest\_Pop_{o,d,t}) + \beta_4 ln(Orig\_Pop_{o,d,t}) + \beta_5 ln(Distance)_{o,d} + \beta_6 Unemploy\_Dif_{o,d,t} + e \quad (1)$$

Dependent Variable

$ln(Migration_{o,d,t+1})$	Natural Log of the growth in the flow of migrants from origin state *o* to destination state *d* at time *t + 1*

Independent Variables

$Satisfaction\_Dif_{o,d,t}$	Aggregate satisfaction of destination state d at time t minus aggregate satisfaction of origin state o at time t
$Income\_Dif\_Exp_{o,d,t}$	Income differential measured income per capita of destination state minus income per capita of the origin state at time *t* (all units converted to 2006 dollars)
$ln(Dest\_Pop_{o,d,t})$	Natural log of the population of destination state d at time t.
$ln(Orig\_Pop_{o,d,t})$	Natural log of the population of origin state o at time t.
$ln(Distance)_{o,d}$	Natural log of distance traveled from capital of destination state d to origin state o.
$Unemploy\_Dif_{o,d,t}$	Unemployment rate of destination state at time t minus unemployment rate of origin state at time t.
e	Error term

The dependent variable in this equation is Ln(Migration$_{o,d,t+1}$). As stated above, this tests for the change in the flow of migration from origin state, o, to destination state, d, at time t+1 for each of the 51 states (including District of Columbia) in comparison with time t. The natural log of migration is used in the equation in order to determine the percentage change in the flow of migrants as opposed to the nominal number of migrants.

Satisfaction_Dif is the main independent variable being tested in Equation 1. Satisfaction_Dif is the difference in satisfaction between the origin state and the destination state. By including the difference in satisfaction variable, Equation 1 will determine the importance of satisfaction differences between states on the migration between those states.

Classically, migration decisions are based on income differential between destination and origin state, accounting also for the costs of migration. Thus, it is important to include the difference in income between destination and origin state. Simpson and Sparber (2010) note that the uses of either aggregate income (GDP) or personal income (such as wages) are acceptable. This paper focuses on personal income, and more specifically, expected personal income. Expected income is used because migrants decide whether or not to move based on the amount of income that they expect to receive. Actual income numbers do not accurately represent expected income. All income numbers were converted into 2006 dollars in order to account for inflation.

Expected income was calculated as the predicted income of the following equation:

$$Y_t = a + b*t + e_t \quad (2)$$

This equation is run for each of the 51 States, where Y equals income, and time t equals 1, 2, 3, or 4 for each year 2006, 2007, 2008, or 2009, respectively. This gives a value for expected income over the four-year period which can be used to find the difference in expected income, Income_Dif_Exp.

The natural log of the population of the origin state, Ln(Orig_Pop), and the natural log of the population of the destination state, Ln(Dest_Pop), are also included. Population is included as a measure of the size of each state in terms of its population.

Ln(Distance) is included as a measure of migration costs. The further a migrant has to travel, the higher the migration costs will be. The distance between two states has an effect on a migrant's decision on whether or not to move.

Differences in state unemployment rates, Unemploy_Dif, are included as well because they capture the differences in labor demand from each state. Unemployment has a high correlation with income, but it is included as a measure of labor demand.

B. Estimation Methods

This paper estimates the migration model (Equation 1) using Ordinary Least Squares (OLS). An OLS regression, however, contains fewer observations because it does not account for circumstances in which there were zero migrants who moved from one state to another. In order to account for the zero migrant flows, I add one to migration before taking its natural log known as a scaled OLS

(SOLS) (Simpson and Sparber 2010). I also use net migration, which accounts for the difference between the numbers of people that move from state X to state Z from the number of people that move from state Z to state X.

CHAPTER FOUR

DATA

This chapter provides a description of the Behavioral Risk Factor Surveillance System (BRFSS) and the American Community Survey (ACS). This study uses time-series cross-sectional data for both the ACS and the BRFSS.

A. Overview of the American Community Survey

The ACS is a survey of households in every county of the United States. The data used in this paper is the ACS 1-year estimate, which means that it represents population characteristics over a 1-year data collection period, for the years 2006, 2007, 2008, and 2009. The ACS gives data for current place of residence of the respondents and whether or not they resided in that residence one calendar year ago. If the respondent moved into that residence within that year, the survey asks where the place of residence was in the previous year. These two questions provide me with the population of each state, the number of people who migrated into that state in the previous year, and where those people came from. ACS also includes variables for income and for population, which are both necessary independent variables in Equation 1.

The ACS sample size in the US in 2006 is 189,641. The sample size in the US in 2007 is 187,012. The sample size in the US in 2008 is 186,862. The sample size in the US in 2009 is 198,808.

B. Overview of the Behavioral Risk Factor Surveillance System

The BRFSS is a telephone health survey system that tracks health conditions and risk behaviors in the United States. The BRFSS can be used to measure the satisfaction of each state from 2005 to 2008. For this paper, I use the method that was used in Oswald and Wu (2010) that calculates satisfaction of each state. Since 2005, BRFSS has included a question asking, "How satisfied are you with your life?" and asks the respondent to reply with one of four answers, "Very Satisfied, Satisfied, Unsatisfied, and Very Unsatisfied." A life-satisfaction regression was used to find state-level satisfaction. Using an OLS model for each of the 4 possible satisfaction responses I was able to find residual satisfaction. The dependent variable is coded for each of the four different answers; Very Satisfied, Satisfied, Unsatisfied, and Very Unsatisfied are coded 4, 3, 2, and 1, respectively. The independent variables used were seven banded variables for household income, variables for the respondents age, age-squared, gender, five ethnic type variables, level of education, marital status, employment status (self-employed, retired, student, unemployed, or homemaker). For this equation, I only included people who were between the ages of 18 and 85 (Oswald and Wu 2010).

C. Overview of data collected for other variables

Unemployment was found for each state and every year from the Bureau of Labor Statistics (BLS). Distance was calculated using Google™ Maps driving directions. I used the driving distance between each state capital to each other

state capital.[1,2] Driving distance more accurately depicts costs of migration than simply finding the straight-line geographical distance from one state capital to another. Years 2006, 2007 and 2008 are included as time dummy variables.

D. *Selection of the Sample and Descriptive Statistics*

The full sample used in this paper, except for Migration, Net Migration, Ln(Migration) and Ln(Net Migration), contains 10,200 observations.[3] Migration and Ln(Migration) drop observations that have zero migration flows, and thus only observe 8,818 cases. Net Migration and Ln(Net Migration) account for the difference in migration between state X to Z and between state Z to X. All negative values are dropped, resulting in half the number of observations, 5,100.

Table 1 displays the descriptive statistics. Migration refers to the number of migrants that relocate across state borders. The mean migration, over the four years, was about 2,793 people. The minimum is 0 meaning that, in some cases, there are zero migration flows. In order to account for this, we add 1+Migration, so that when we take the natural log, all observations are included. Residual happiness for origin and destination state are listed. The Satisfaction minimum for both the destination state and the origin state are negative, denoting unhappy states. The mean for satisfaction is positive. The expected income for both the origin states and destination states are listed in thousands of dollars. The mean expected income is around $30,000 in 2006 dollars. Distance refers to the

[1] Distance between Juneau, Alaska, and other state capitals include roads that travel through Canada and, thus, are not part of US territory.
[2] Distance between Honolulu, Hawaii, and other state capitals include a straight line path over the Pacific Ocean to Neah Bay in Washington State, followed by the driving distance, from there, to each state capital.
[3] 10,200 is the expected number of observations for migration when multiplying 51 origin states (including D.C.) to 50 destination states, over a four year period.

distance, in miles, between the origin state capital and the destination state capital. Unemployment rates range from 2.6% to 13.4%, with a mean value of 5.6%.

CHAPTER FIVE

ESTIMATION RESULTS

This section presents the results of the regression analysis. The first section models the flow of migrants from origin state to destination state. Table 2 represents the baseline results. Table 3 is similar to Table 1, but includes fixed state effects. The second subsection, including Tables 4 and 5, models whether migrants are being "pushed" out of the origin state or whether they are being "pulled" into the destination state.

A. The Effect of Satisfaction Differential on Migration

This paper models the annual flow of migrants from origin state to destination state. The baseline results are seen in Table 2. Each column considers three estimation techniques: in column 1, only non-zero migrant flows are estimated using a standard OLS model; Column 2 includes all immigrant flows by adding one to the flow variable before the natural log is taken, then the OLS is employed (SOLS); Column 3 uses net migration as the dependent variable, to study the difference in migrants that moved from one state to another at time, t.

It is important to note that the coefficients for the difference in income reflect what expected income is instead of what the actual income is. This represents what migrants expect the difference in income will be as opposed to what the difference in income actually is. Expected income is then divided by $1000 before being used in each regression.

Column 1 shows that for each 0.1 increase in the difference of the residual satisfaction of the destination state minus the origin state, there is an 8.6% increase in migration from the origin state to the destination state, holding all other variables constant. As expected, income also plays a role in a migrant's decision to move. For every increase of $1000 in expected earned income of the destination state minus the origin state, about 0.9% more migration occurs, holding all other variables constant. States with large populations send more migrants than states with small populations. States with large populations also attract more migrants than states with small populations. Distance has a negative correlation with migration. As distance increases, the number of migrants will decrease, holding all else equal. As the percentage of unemployment between the difference of the destination state and the origin state increase by 1%, total migration from the destination state to the origin state decreases by 1.5%, if all other variables are held constant. Column 1 does not include observations for when migration equals zero, limiting the number of observations to 8,818.

Column 2 accounts for when migration equals zero and thus contains a larger number of observations. This method provides a total of 10,200 observations. For every 0.1 increase in the difference of residual satisfaction, the result is an 18% increase in migration from the origin state to the destination state, holding all other variables constant. Accounting for zero migration flows has a substantial impact on the effect that satisfaction differentials has on migration. Column 1, which does not account for zero migration flows, has a satisfaction differential coefficient that is less than half that of Column 2. Every increase of

$1000 in expected earned income of the destination state minus the origin state, about 0.9% more migration occurs, holding all other variables constant. The coefficient for income differential is the same in both Column 1 and Column 2. In Column 2, states with large populations send more migrants than states with small populations. States with large populations also attract more migrants than states with small populations. As expected, as the distance between two states increases, migration decreases. However, the coefficient for distance drops dramatically from Column 1 to Column 2.

Column 3 uses the natural log of net migration as the dependent variable. This captures the difference in the number of migrants that move from state A to state B from the number of migrants that move from state B to state A. All negative values were dropped in order to not double count each pair of states, leaving 5,100 observations, half the number of observations as in Column 2. For this analysis, origin state refers to the state that sent a greater number of migrants to another state than it received from that state. Destination state refers to the state that received a greater number of migrants from another state than it sent to that state. Column 3 shows that for each 0.1 increase in the difference of the residual satisfaction of the destination state minus the origin state, there is an 18.6% increase in net migration from the origin state to the destination state, holding all other variables constant. The effect of satisfaction differential on net migration in Column 3 is more than double the effect of satisfaction differential in Column 1 and is slightly greater in Column 3 than it is in Column 2. For every increase of $1000 in expected earned income of the destination state minus the origin state,

about 1.5% more migration occurs, holding all other variables constant. Income differential increases in Column 3 from 0.9% in Column 1 and Column 2. Distance and unemployment both have negative effects on the number of migrants. As the percentage of unemployment between the difference of the destination state and the origin state increase by 1%, total migration from the destination state to the origin state decreases by 4.3% in Column 3, if all other variables are held constant.

B. Destination and Origin Fixed State Effects

Table 2 does not include destination or origin fixed effects. Table 3 includes a full set of fixed effects for the 51 destination states (including D.C.) and the 51 origin states (including D.C.).

In the presence of fixed state effects, none of the models find any evidence for the importance of satisfaction on migration. One reason for this could be that fixed state effects absorbs permanently high levels of satisfaction and there is not much variation in satisfaction within each state over the four year period. Income was also insignificant in all of the regressions. The same reasoning for satisfaction can be applied to income as well. The only consistently significant variable was distance.

C. *Push v. Pull Factors*

Until now, I assume that the coefficients of the destination and origin states are the same. However, this restriction is not necessary. Below is an equation that separates these effects:

$$ln(Migration_{d,o,t+1}) = \beta_0 + \beta_1 Dest\_Satisfaction_{d,t} - \beta_2 Orig\_Satisfaction_{o,t} + \beta_3 Dest\_Income\_Exp_{d,t} - \beta_4 Orig\_Income\_Exp_{o,t} + \beta_5 ln(Distance_{d,o}) + \beta_6 ln(Orig\_Pop_{t,d}) + \beta_7 ln(Dest\_Pop_{t,o}) + e \quad (3)$$

This equation can differentiate between push and pull factors for Satisfaction variables. Coefficients for β_2 will determine if Satisfaction of the origin state is pushing migrants out, while estimates for β_1 will determine whether Satisfaction in the destination state is pulling migrants in. Table 4 reports these results without fixed state effects, while results in Table 5 include them.

Table 4 shows that both Satisfaction of the destination state and Satisfaction of the origin state are significant. In all of the columns, the "pull" of the destination state is slightly higher than the "push" from the origin state, but both play an important role nonetheless. The coefficients for Satisfaction of the destination state are positive in each case, suggesting that happy states increase in-migration. Coefficients for Satisfaction of the origin state are negative in each case, suggesting that happy states reduce out-migration. The income for both the origin state and the destination state are significant. In absolute terms, the origin state coefficient for income is greater in all three columns. Coefficients for income of the destination state are positive, suggesting that states with higher expected income increase in-migration and decrease out-migration. In Column 3,

destination income is not significant while origin income is, suggesting that net migration is affected by the income of the origin state.

Table 5 uses the same framework for push versus pull, but includes fixed state effects. In each of the columns, satisfaction is not significant for either the destination state or the origin state. The only variable that is consistently significant is distance, which is expected. In Column 1, destination income and ln(Orig_Pop) are significant. For every increase of $1000 in expected earned income of the destination state, about 4% more migration occurs, holding all other variables constant.

CHAPTER SIX

CONCLUSIONS

This paper adds to the literature on the determinants of migrant flows across the United States. This paper employs several estimation techniques, including SOLS, and uses satisfaction as its key independent variable. To my knowledge, this is the first paper to examine how satisfaction affects internal migration within the United States. I find that satisfaction is an important contributor for domestic migration. A satisfied state has less out-migration and more in migration than a less satisfied state.

Satisfaction differentials are significant determinants of the flow of migrants across state borders. However, these results are insignificant when fixed state effects are included. This paper also adds to the literature by accounting for push and pull effects. Both the satisfaction of the origin state and the satisfaction of the destination state are important factors in determining migration.

This paper has a few limitations. Movement across state borders does not capture the full picture in terms of internal migration. For example, an individual who lives in the metropolitan area of New York City may elect to move further north in the state. Because of the size of New York State, the distance traveled could be further than if the individual had moved to a contiguous state, such as New Jersey. Also, the unemployment rates could be drastically different in different parts of the state. This paper, however, does not account for those migrants who moved within state.

Another major limitation is the time frame used. The BRFSS became a reliable satisfaction indicator in 2005. My data only accounts for four years, which is not ideal. A study with a few decades of data would better represent the effect of satisfaction on migration. The BRFSS is limited in another way as well. It does not include other factors that might affect satisfaction, such as religious observance. Certain people may feel more isolated from society based on their religious beliefs, and the BRFSS does not account for this and could have a profound effect on satisfaction.

Future research should address the issue of in-state migration. Ideally, future research should use county level data for each county in the country to get a better and more accurate view of internal migration. In addition to this, future research should address the types of migrants who are most affected by satisfaction in order to help policy makers attract or repel labor.

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Table 1: Descriptive Statistics

Variable	Mean	Std. Dev.	Minimum	Maximum
Migration (# of Migrants)	2792.90	5552.13	0	79377
LN(Migration)	7.04	1.51	1.10	11.28
LN(1+Migration)	6.12	2.76	0	11.28
Distance (Miles)	1456.34	1083.02	31.5	6036.21
LN(Distance)	7.01	0.79	3.45	8.71
Net Migration (# of Migrants)	1177.39	2458.76	0	50406
LN (Net Migration)	6.25	1.48	0	10.83
Dest_satisfaction (Residual)	0.0087	0.0286	-0.0621	0.1052
Orig_satisfaction (Residual)	0.0087	0.0286	-0.0621	0.1052
Dest_income ($1,000)	30.043	4.608	21.938	45.359
Orig_income($1,000)	30.043	4.608	21.938	45.359
Destination Unemployment Rate (%)	5.62	2.17	2.6	13.4
Origin Unemployment Rate (%)	5.62	2.17	2.6	13.4
Origin Population	5990378	6689127	522830	37300000
LN(Orig_Pop)	15.10	1.04	13.17	17.44
Destionation Population (# of People)	5990378	6689127	522830	37300000
LN(Dest_Pop)	15.10	1.04	13.17	17.44

Observations for each variable were 10,200 except:
Net Migration and LN(Net Migration) had 5,100 observations
Migration and LN(Migration) had 8,818 observations

Table 2: The Effect of Satisfaction Differential on Migration

VARIABLES	1 Ln(Migration)	2 Ln(oneplusmigration)	3 Ln(net migration)
Satisfaction_dif	0.864***	1.804***	1.855***
	(0.3)	(0.56)	(0.499)
Income_dif_exp	0.009***	0.009**	0.014***
	(0.002)	(0.003)	(0.003)
Ln (Dest_pop)	0.705***	1.234***	0.512***
	(0.012)	(0.021)	(0.02)
Ln (orig_pop)	0.656***	1.122***	0.413***
	(0.012)	(0.021)	(0.019)
Ln(distance)	-0.569***	-0.028***	-0.331***
	(0.014)	(0.002)	(0.023)
unemploy_dif	-0.015**	-0.012	-0.043***
	(0.006)	(0.012)	(0.011)
yr2006	0.174	0.472	0.172
	(0.261)	(0.484)	(0.404)
yr2007	0.158	0.352	0.111
	(0.198)	(0.366)	(0.306)
yr2008	0.067	0.246	0.047
	(0.133)	(0.247)	(0.207)
Constant	-30.696	-151.061	-60.492
	(131.551)	(243.687)	(203.811)
Observations	8,818	10,200	5,100
R-squared	0.507	0.422	0.261

Note: The standard errors are presented in parentheses. The values in the table represent the coefficients for each independent variable.
*Statistically significant at the 0.10 level.
**Statistically significant at the 0.05 level.
***Statistically significant at the 0.01 level.

Table 3: The Effect of Satisfaction Differential on Migration Including Fixed State Effects

VARIABLES	1 Ln(Migration)	2 Ln(oneplusmigration)	3 Ln(net migration)
Satisfaction_dif	-0.944*	-0.272	0.044
	(0.526)	(1.042)	(1.038)
Income_dif_exp	0.007	0.004	-0.044
	(0.02)	(0.039)	(0.04)
Ln (Dest_pop)	0.302	-0.428	0.395
	(1.093)	(2.147)	(2.2)
Ln (orig_pop)	2.903***	2.638	3.132
	(1.09)	(2.147)	(2.121)
Ln(distance)	-1.166***	-1.715***	-0.755***
	(0.014)	(0.028)	(0.028)
unemploy_dif	0.001	-0.028	-0.047
	(0.015)	(0.029)	(0.029)
yr2006	0.409**	0.444	0.472
	(0.205)	(0.404)	(0.384)
yr2007	0.326**	0.337	0.323
	(0.154)	(0.305)	(0.29)
yr2008	0.171*	0.236	0.177
	(4.623)	(0.204)	(0.194)
Constant	147.02	-134.402	-205.859
	(104.227)	(-204.311)	(192.548)
Observations	8,818	10,200	5,100
R-squared	0.718	0.621	0.395

Note: The standard errors are presented in parentheses. The values in the table represent the coefficients for each independent variable.
*Statistically significant at the 0.10 level.
**Statistically significant at the 0.05 level.
***Statistically significant at the 0.01 level.

Table 4: Push v. Pull Factors

VARIABLES	1 Ln(Migration)	2 Ln(oneplusmigration)	3 Ln(net migration)
Dest_satisfaction	7.537***	12.684***	6.559***
	(0.416)	(0.759)	(0.709)
Orig_satisfaction	-5.815***	-8.989***	-2.557***
	(0.42)	(0.759)	(0.707)
Dest_income	0.017***	0.031***	0.003
	(0.003)	(0.005)	(0.004)
Orig_income	-0.034***	-0.048***	-0.029***
	(0.003)	(0.005)	(0.004)
Ln(distance)	-0.622***	-0.885***	-0.364***
	(0.014)	(0.025)	(0.023)
Ln(dest_pop)	0.751***	1.280***	0.520***
	(0.011)	(0.02)	(0.019)
Ln(orig_pop)	0.717***	1.183***	0.477***
	(0.011)	(0.02)	(0.019)
yr2006	0.016	0.027	0.042
	(0.254)	(0.457)	(0.402)
yr2007	0.011	-0.027	-0.005
	(0.192)	(0.346)	(0.304)
yr2008	-0.037	-0.017	-0.035
	(0.13)	(0.234)	(0.206)
Constant	-58.116	-100.949	-66.199
	(127.69)	(230.23)	(202.308)
Observations	8,818	10,200	5,100
R-squared	0.536	0.484	0.272

Note: The standard errors are presented in parentheses. The values in the table represent the coefficients for each independent variable.
*Statistically significant at the 0.10 level.
**Statistically significant at the 0.05 level.
***Statistically significant at the 0.01 level.

Table 5: Push v. Pull Factors including Fixed State Effects.

VARIABLES	1 Ln(Migration)	2 Ln(oneplusmigration)	3 Ln(net migration)
Dest_satisfaction	-0.694	0.255	-0.023
	(0.743)	(1.471)	(1.466)
Orig_satisfaction	-1.196	-1.098	-0.434
	(0.75)	(1.473)	(1.476)
Dest_income	0.040**	0.047	0.054
	(0.02)	(0.039)	(0.04)
Orig_income	-0.026	-0.015	-0.047
	(0.02)	(0.039)	(0.039)
Ln(distance)	-1.166***	-1.715***	-0.754***
	(0.014)	(0.028)	(0.028)
Ln(dest_pop)	0.212	-0.263	0.674
	(1.091)	(2.142)	(2.196)
Ln(orig_pop)	2.809***	2.458	2.457
	(1.088)	(2.141)	(2.125)
yr2006	0.283	0.372	0.265
	(0.212)	(0.417)	(0.398)
yr2007	0.24	0.284	0.183
	(0.159)	(0.313)	(0.299)
yr2008	0.127	0.205	0.103
	(0.105)	(0.208)	(0.198)
Constant	-148.288	-133.37	-198.091
	(104.19)	(204.315)	(192.443)
Observations	8,818	10,200	5,100
R-squared	0.718	0.621	0.395

Note: The standard errors are presented in parentheses. The values in the table represent the coefficients for each independent variable.
*Statistically significant at the 0.10 level.
**Statistically significant at the 0.05 level.
***Statistically significant at the 0.01 level.