The Professional Geographer

Internal Migration in Decline

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Internal Migration in Decline

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Internal migration rates in the United States have been steadily declining for at least twenty-five years: In 1984, 6.4 percent of the population moved between counties but by 2006—well before the most significant economic crisis since the Great Depression—annual intercounty migration rates had already declined to 4.7 percent and by 2010 to 3.5 percent. Despite the implications of the migration decline, it is poorly recognized and understood. The analysis shows that over the last thirty years, three broad trends have combined to pull migration rates dramatically lower: an increase in dual-worker couples, increased household indebtedness, and the widespread rise of information and communication technologies (ICTs). The first two are probably linked, as households have responded to decreasing real income over the last quarter-century through greater female labor force participation and maintaining current levels of consumption by borrowing ever more heavily from the equity in their homes. Thus, although this analysis shows that the decline in migration rates is not directly linked to the Great Recession, the migration decline is surely linked to the broader macroeconomic shifts that gave rise to it. With respect to the role of ICTs, it is not surprising that as ICTs have transformed nearly everything else across society, their use has affected migration rates. It is presumed that ICTs are providing new forms of mobility that are substituting for migration. **Key Words: dual-earner families, ICTs, information and communication technologies, internal migration, migration.**

美国境内内部迁徙的比率, 至少在近二十五年来持续下降中: 1984 年有百分之六点四的人口跨郡迁徙; 到了2006年—正好是大萧条之后的最重大经济危机发生之前—跨郡迁徙率已降至百分之四点七; 直至2010年更跌至百分之三点五。除了迁徙减少所带来的意涵之外, 我们对该现象仍缺乏充分的认识与理解。本分析显示, 过去三十年来, 有三大趋势共同造成迁徙率大幅的降低: 双薪配偶的增加、家户负债的成长、以及信息与通讯科技 (ICTs) 的普遍提升。前两造原因或许相互有关, 其中家户必须透过提高女性劳动力的参与, 以及加重房产抵押净值的借贷以维持当下的消费水平, 藉此因应过去二十五年来实质收入减缩的问题。本研究从而显示, 迁徙率虽与大萧条无直接相关, 但迁徙率的降低确实与大范围的总体经济变迁紧密连结, 该变迁导致了迁徙率的降低。至于信息与通讯科技的角色, 我们对其近乎改变了社会中的每个面向并不感到诧异, 因此科技的使用亦影响了迁徙率。我们推测, 信息与通讯科技提供了新型态的能动性, 用来取代实质的迁移。 **关键词: 双薪家庭, ICTs, 信息与通讯科技, 内部迁徙, 迁移。**

Las tasas de migración interna de los Estados Unidos han venido declinando consistentemente durante los pasados veinticinco años: Mientras en 1984 el 6.4 por ciento de la población se desplazó permanentemente entre los condados, en el 2006—mucho antes de la crisis económica más importante desde la Gran Depresión—las tasas anuales de migración entre condados había declinado al 4.7 por ciento; en el 2010 esa tasa había descendido al 3.5 por ciento. No obstante las implicaciones que tiene la declinación migratoria, ésta es pobremente reconocida y entendida. El análisis indica que durante los pasados treinta años se han combinado tres grandes tendencias para reducir dramáticamente las tasas de migración: el incremento de parejas que trabajan en equipo, el aumento del endeudamiento familiar y la proliferación generalizada de las tecnologías de la información y la comunicación (TICs). Las dos primeras probablemente están relacionadas entre sí en la medida en que los hogares han respondido a la disminución del ingreso real durante el último cuarto de siglo con una mayor participación de la fuerza laboral femenina, al tiempo que conservan los actuales niveles de consumo obteniendo mayores préstamos a expensas de la equidad del hogar. Por eso, aunque este análisis muestre que la declinación en las tasas migratorias no está directamente relacionada con la Gran Recesión, la reducción de la migración seguramente está relacionada con los mayores cambios macroeconómicos que la originaron. Respecto al papel desempeñado por las TICs, no es de sorprendernos que en cuanto esas tecnologías han transformado casi todo en el ámbito social, su uso también haya afectado las tasas de migración. Se presume que las TIC están proporcionando nuevas formas de movilidad que sustituyen el movimiento migratorio. **Palabras clave: parejas casados trabajadores, TICs, tecnologías de la información y la comunicación, migración interna, migración.**

Internal migration rates in the United States have been steadily declining for at least twenty-five years. For example, in 1984 6.4 percent of the population moved between counties, but by 2006—well before the most significant economic crisis since the Great Depression—annual intercounty migration rates had already declined to 4.7 percent and by 2010 to 3.5 percent. The migration decline has significant implications for the operation of labor and housing markets, for individual economic attainment, and for the well-being of places (see Molloy, Smith, and Wozniak 2011; Partridge et al. 2012). Moreover, the steady decline in migration rates since the mid-1980s represents an important shift in one of the dominant narratives of the American experience. This narrative speaks of a nation of immigrant descendants who moved ceaselessly to fill a vast country (e.g., de Tocqueville [1835/1840] 2005; Steinbeck 1939), contributing to the homogenization of the cultural landscape (e.g., Kunstler 1993) and poorly developed connections to place (e.g., Putnam 2000). The narrative of a hypermobile society has only been reinforced by the rise of new forms of mobility associated with the widespread adoption of information and communication technologies (ICTs; e.g., National Research Council 2010).

Despite the cultural, geographic, and economic implications of the migration decline, however, it is both poorly recognized and poorly understood. One reason is that the mobility narrative is such a powerful story (see Fischer 2002). This is aptly demonstrated in the recent National Research Council (2010) report, *Strategic Directions for the Geographical Sciences*, which states that the movement of people has been increasing yet relegates direct empirical evidence regarding the decline in migration to a mere footnote (National Research Council 2010, 75). The profound changes in the way people are connected to places through space as represented by the decline in migration are hardly parenthetical. Indeed, rather than rehearse tropes about the United States being an ever more mobile society, geographers should be seeking to understand both the causes and consequences of declining migration.[1] Thus, the purpose of this research is to provide solid empirical documentation of the migration decline and to explore the linkages between the migration decline and broader technological, demographic, geographic, and economic transitions over the past thirty years.

Background

Figure 1A shows annual intercounty migration rates over the entire post–World War II period based on the U.S. Census Bureau's Current Population Survey (CPS).[2] Figure 1A shows that since the mid-1980s, migration rates have generally declined—although there was a period of increasing migration rates around the turn of the century. The drop in migration rates since 2000 has been linked to the economic cycle and the decline, in particular, has been assumed to be due to the effects of the Great Recession (e.g., Frey 2009). A different picture emerges in Figures 1B and 1C, however. Kaplan and Schulhofer-Wohl (2012) have demonstrated that the Census Bureau changed its imputation methods in 1999 and again in 2006 and that this change introduced a positive bias to migration estimates.[3] Figure 1B highlights the estimated annual intercounty migration rates between 1999 and 2005 and these values do appear to have the same downward trajectory as observations before 1999 and after 2005 but with an upward bias. The exact impact of the change in imputation methods on migration estimates between 1999 and 2005 is unknown but—following Kaplan and Schulhofer-Wohl (2012)—the scale of the impact is shown in Figure 1C, which for the years 1999 through 2005 replaces the official estimates with unweighted, nonimputed variables. This lends a different interpretation to the data: Not only does it imply that the Great Recession had very little effect on migration rates, but it also appears that migration rates have been in steady decline since the mid-1980s. Figure 1D reflects this steady decline by plotting a smoothed line to the data excluding the 1999 through 2005 values. The smoothed line implies a peak in migration rates around 1970 and acceleration in the decline starting in the early 1980s. From the perspective of any of the four panels shown in Figure 1, the picture that emerges is a significant, and mostly steady, decline in migration rates since the mid-1980s.

Despite the dramatic change that the mobility decline represents, existing empirical research is extremely limited. Four empirical
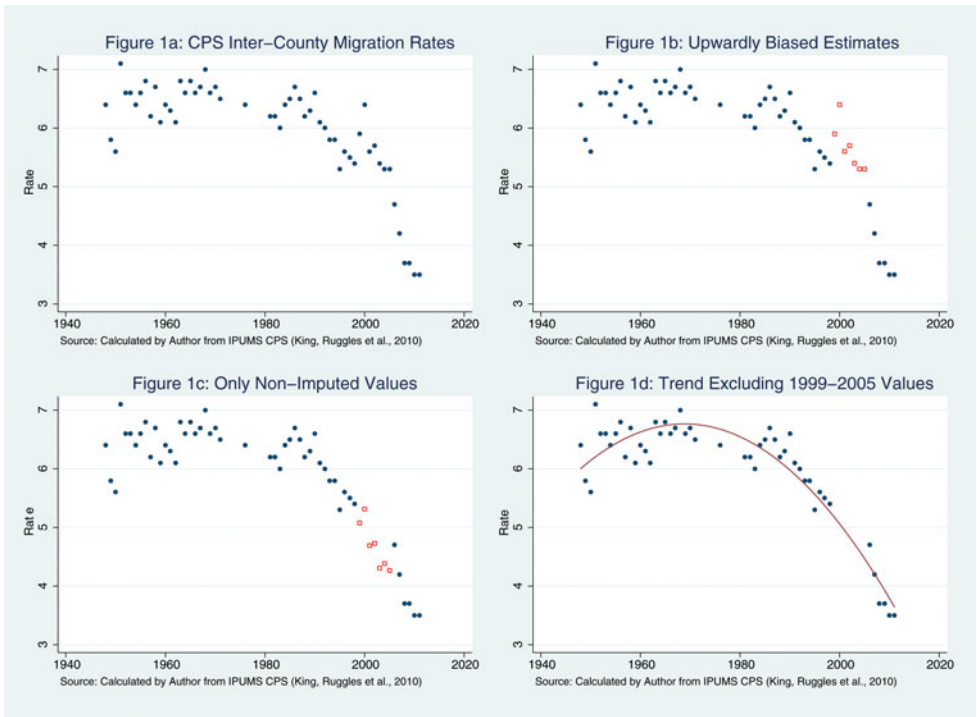
Figure 1 *Annual intercounty migration rates. IPUMS CPS = Integrated Public Use Microdata Series, Current Population Survey. (Color figure available online.)*

studies emphasize the behavioral and life course aspects of the migration decline since the mid-twentieth century. Fischer (2002) explored whether the decline in migration rates is due to changing migration behavior across differing demographic categories defined by age, race or ethnicity, education, and housing tenure; Wolf and Longino (2005) focused specifically on whether there have been any shifts in age-migration profiles; and Molloy, Smith, and Wozniak (2011) explored the effects of both changes in subgroup migration rates and changing population composition across a wide variety of categories including sex, age, education, race and ethnicity, nativity, housing tenure, employment status, presence of children, and number of working adults in the household. These three bivariate studies all reach similar conclusions: "The decrease in migration does not seem to be driven by demographic or socioeconomic trends, because migration rates have fallen for nearly every

subpopulation and the composition of the population has not shifted in a way that would affect aggregate migration appreciably" (Molloy, Smith, and Wozniak 2011, 11). Similarly, the one multivariate analysis attributes only about 17 percent of the decline in migration rates over the last decade to demographic changes such as the aging of the population (Cooke 2011).[4]

It is unwise, though, to dismiss the behavioral and life course components of the migration decline based on these four studies, especially considering that three of the studies are largely descriptive, and the one multivariate study is restricted to the decline in migration over the last decade. In particular, four important demographic trends each have significant migration dimensions that need to be included in any explanation for declining migration: the aging of the population, increasing rates of homeownership, increasing number of dual-earner households, and increased education levels. Migration declines with both age and homeownership

(see Clark [1986] for a discussion of the behavioral and life course determinants of migration), and migration rates are lower for dual-earner as opposed to single-earner households due to the difficulty in conducting a spatial job search for two individuals simultaneously (see Cooke [2008] for a review of the family migration literature). As the composition of the population has shifted into these less migratory categories, aggregate migration rates should have declined. Counteracting these trends are the effects of increasing education levels: Migration rates are higher for the well-educated (see Clark 1986), and as the composition of the population has shifted into this more migratory category, aggregate migration rates should have increased.

Nonetheless, the aforementioned empirical studies all point toward longer term structural processes—in addition to any demographic processes—driving migration downward. For example, Fischer (2002, 193) concluded that "[t]he social forces that have encouraged stability . . . must be deep and pervasive." Most important, households have responded to the decline in real wages due to decades of economic restructuring by working more and borrowing more (Reich 2010). These processes have implications for aggregate migration rates. First, in terms of working more, the primary outcome is an increase in female labor force participation and a consequent rise in dual-earner couples. The impact of the rise of dual-earner couples on aggregate migration rates has already been discussed. Second, migration is associated with immediate financial expenses that a more highly indebted household is unable to afford (see Sjaastad 1962; Ferreira, Gyourko, and Tracy 2010): As debt levels have risen in the United States, aggregate migration rates should have declined. Third, the decline in real wages should have also driven migration rates downward: Decreasing real wage rates have marginalized greater numbers of workers who both lack opportunity in their own labor market and see no opportunity in distant labor markets (Frey 2009).

This last point implies a leveling of place-specific utility differences that should result in reduced internal migration rates. Traditionally high rates of American migration can be viewed as due to very large differences in place utility that were not fully capitalized into housing costs or wages (Greenwood et al. 1991;

Greenwood 2005). The past several decades of interregional migration from low-amenity to high-amenity regions, however, have resulted in an increase in the cost of living in high-amenity regions and a decrease in the cost of living in low-amenity regions (Chen and Rosenthal 2008), suggesting that utility differences between places might have begun to be capitalized into labor and housing markets (DiCecio and Gascon 2010). If true, migration rates should have declined, but Partridge et al. (2012) found little evidence in this regard.

There are also mounting labor market rigidities that might reduce levels of internal migration. None of these are operating on a very large scale but together might have had a marginal impact on aggregate migration rates. First, state occupational licensing requirements have increased, making it more difficult for professionals in one state to migrate to another state (e.g., Kleiner, Gay, and Greene 1982). Second, health insurance and retirement benefits are increasingly tenuous: Employees who enjoy these employer-sponsored benefits might be less likely to search for a new job because it might involve a lapse, denial, or absence of benefits in a new job (e.g., Meyer, Matthews, and Sommers 2001; "The road not taken" 2009).

Finally, new forms of mobility have emerged in the last twenty-five years associated with the widespread adoption of ICTs and improvements in transportation networks (see Hannam, Sheller, and Urry 2006; Sheller and Urry 2006), which might serve as substitutes for long-distance migration (Green, Hogarth, and Shackleton 1999). The primary impact of these technological developments is that a job change is no longer synonymous with a change in residence. Rather, individuals can commute by regional airlines to another city, state, or country (see Button and Vega 2008) or work more regularly from home with the assistance of ICTs but then travel intermittently, perhaps for several days or weeks at a time, to a distant central workplace (see Hardill and Green 2003). In this sense, ICTs and improved transportation networks might be enhancing some types of mobility while allowing for greater residential rootedness (see Hannam, Sheller, and Urry 2006; Sheller and Urry 2006).

To summarize, the migration decline marks a transition away from a traditionally mobile society toward secular rootedness (Cooke 2011),

but exactly why migration rates have been declining for over a quarter-century remains largely unknown. It is most likely that the migration decline is a combination of several converging trends: Demographic processes such as the aging of the population, increased homeownership, and the rise of dual-earner couples all point toward declining migration rates (although increased levels of education might counter some of these trends). More structural hypotheses concern the possibility that the decline in migration rates is affected by the convergence in regional housing and labor markets, the substitution of new forms of mobility for migration, growing labor market rigidities, increased levels of debt, and increasing economic inequality.

Data and Methods

To specify how these trends are connected to the decline in migration rates, this research estimates logistic time series regressions from 1981 through 2010. Specifically, the logit of the annual intercounty migration rate (p) among all civilians aged one year or over is estimated through ordinary least squares regression as a function of a vector of independent variables (X_{it})[5]:

$$\ln \left(\frac{p_{t+1}}{1 - p_{t+1}} \right) \equiv \beta X_{it}$$

Note that all independent variables, with one exception discussed later, are lagged one year behind the dependent variable such that the value of the independent variable in year t has an effect on the value of the dependent variable in year $t + 1$. Unless otherwise specified in the notes to Figures 2 through 4, data were calculated by the author from the Integrated Public Use Microdata Series (IPUMS) version of the CPS (King et al. 2010):

IPUMS-CPS is an integrated set of data from 48 years (1962–20[10]) of the March Current Population Survey (CPS). The CPS is a monthly U.S. household survey conducted jointly by the U.S. Census Bureau and the Bureau of Labor Statistics. Initiated in the 1940s in the wake of the Great Depression, the survey was designed to measure unemployment. A battery of labor force and demographic questions, known as the "basic monthly survey," is asked every month. Over time, supplemental inquiries on special topics have been added for particular months. Among these supplemental surveys, the March Annual Demographic File and Income Supplement (hereafter referred to as the March CPS) is the most widely used by social scientists and policymakers, and it provides the data for IPUMS-CPS. To make cross-time comparisons using the March CPS data more feasible, variables in IPUMS-CPS are coded identically or "harmonized" for 1962 to 20[10].

The analysis includes four sets of independent variables. The first is a dummy variable equal to one if the observation is between 1999 and 2005 inclusive, and equal to zero otherwise. This is included to estimate the impact of the upwardly biased rates for these years. This is the only independent variable that is not lagged. The second set of variables included in the analysis is intended as controls for macroeconomic conditions: the percentage change in gross domestic product (GDP; Figure 2A), the unemployment rate (Figure 2B), and the labor force participation rate (Figure 2C).

The third set of independent variables reflects the demographic and behavioral factors behind the migration decline: age (percentage of the population aged eighteen to thirty), homeownership (percentage of the population living in owner-occupied housing), dual-worker couples (percentage of the population living in a household in which both spouses are in the labor force), and education (percentage of the population over the age of twenty-four with a college degree). Figures 2D through 3C show, respectively, the trends in these variables over time and with respect to the migration decline. One point is worth noting: Homeownership rates have not been uniformly increasing over the study period. Rather, they decreased through the mid-1990s, increased up to the start of the Great Recession, and have declined since then. This contradicts the implied assumption behind the hypothesis that increasing rates of homeownership have contributed to a decline in migration rates.

The fourth set of variables consists of proxies for each of the structural components of
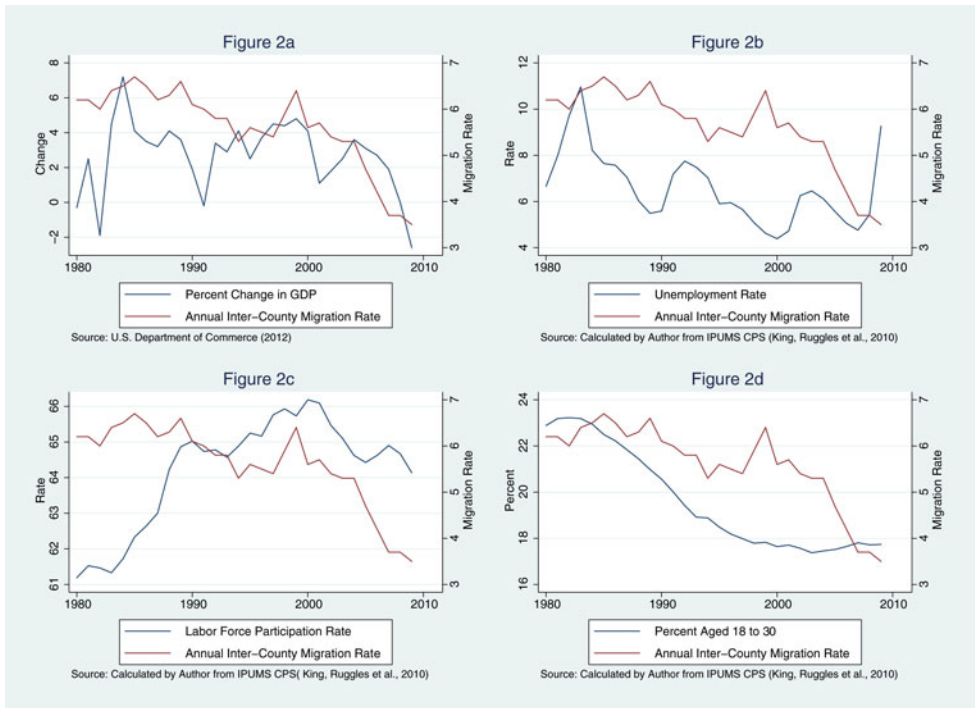
Figure 2 *Trends associated with the migration decline. IPUMS CPS = Integrated Public Use Microdata Series, Current Population Survey. (Color figure available online.)*

the migration decline. These are shown in Figures 3D through 4D. First, the hypothesized effect of increased indebtedness on aggregate migration rates is measured through aggregate home equity levels. Figure 3 shows that household debt levels have been consistently increasing for the whole study period in near lockstep with aggregate migration rates. Second, the Gini coefficient of income inequality is included to measure the effect of growing economic marginality on migration rates. A common measure of inequality (see Allison 1977), the Gini coefficient ranges from 0 (complete income equality) to 1 (complete inequality; i.e., one individual earns all of the income). Figure 4A shows that as income inequality has increased migration rates have declined. Third, the Gini coefficient of state per capita income inequality is included to capture whether there has been any economic convergence over the study period and whether it is correlated with aggregate migration rates. This is a common

measure of regional inequality (see Yamamoto 2008), and in this case it ranges from 0 (all states have the same per capita income) to 1 (all states but one have a per capita income of 0). Figure 4B shows that state income inequality increased (diverged) up to 1990 and has been decreasing (converging) since then in correlation with the migration rate. Fourth, to capture the effects of ICTs on aggregate migration rates, the analysis includes the only available long-term measure of ICT use: cell phone subscriptions per 100 population. Figure 4C shows that ICT use has accelerated over time as migration rates have declined. Finally, as a measure of growing labor market rigidities, the percentage of workers covered by an employer-sponsored pension plan is included. Figure 4D shows that participation in employer-sponsored pension plans increased up to the early 2000s with the widespread adoption of 401k-style plans, but employers have begun to drop these plans since then.
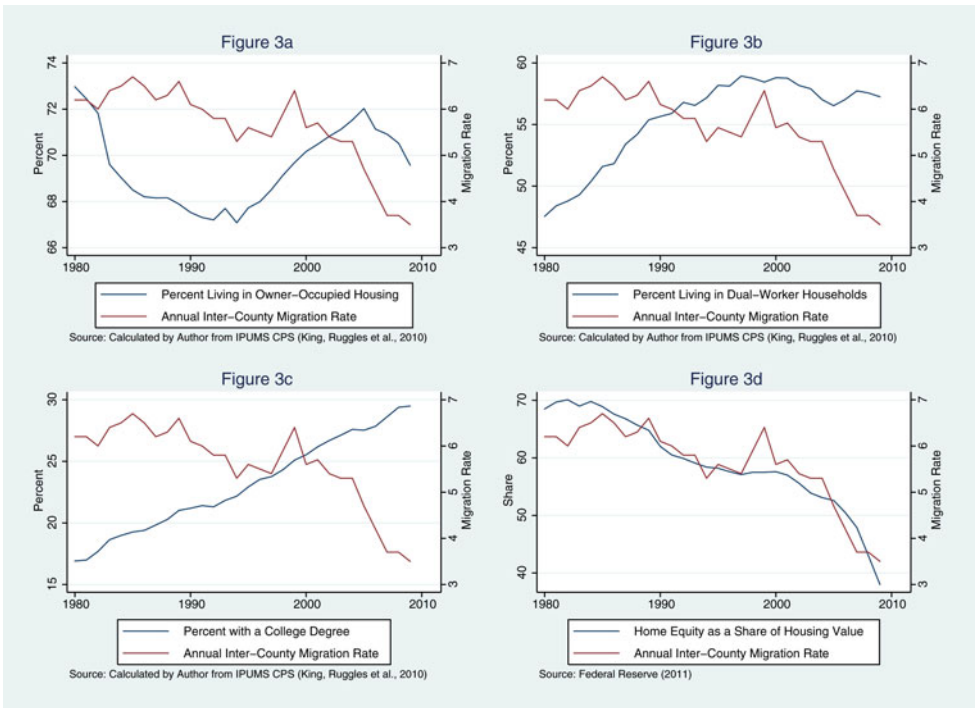
Figure 3 *Trends associated with the migration decline, continued. IPUMS CPS = Integrated Public Use Microdata Series, Current Population Survey. (Color figure available online.)*

Results

Column 1 of Table 1 shows the results for estimating the annual migration rate over the last thirty years against the full suite of independent variables. According to the Durban–Watson *d* test there is no indication of serial autocorrelation (Gujarati 1995). Two tests reject the presence of spurious autocorrelation: The R^2 exceeds the Durban–Watson *d* statistic and the Dickey–Fuller unit root test is statistically significant (see Granger and Newbold 1974; Gujarati 1995). Given that the model only has thirty observations it is not surprising that only a few of the variables are statistically significant. Indeed, the model shows classic signs of multicollinearity with a high R^2 and few significant variables. Focusing on just the more significant variables ($p \leq 0.10$) the results suggest that (1) migration rates are higher if the observation is between 1999 and 2005 independent of other variables, (2) increased ed-

ucation levels have caused migration rates to increase independent of other variables, (3) increasing numbers of dual-worker households have caused migration rates to decline independent of other variables, (4) decreasing access to employer-sponsored benefits have caused migration rates to decline independent of other variables, and (5) the widespread adoption of ICTs have caused migration rates to decline independent of other variables.

Model 2 addresses the multicollinearity of Model 1 through the selective addition and subtraction of individual variables through a stepwise procedure in which variables are added to the model if they are statistically significant at the $p = 0.10$ level and removed if they are statistically insignificant at the $p = 0.10$ level. Note that the same results are reached if the selection criteria specify a much higher level for inclusion and exclusion of variables. In the stepwise procedure the variable indicating whether the observation is between 1999 and
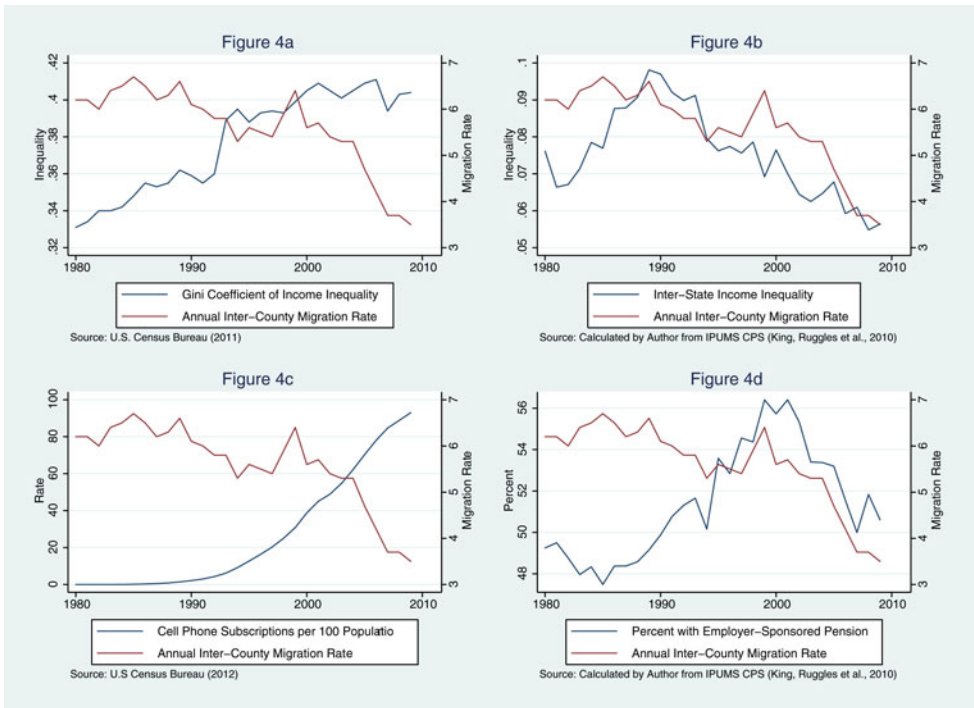
Figure 4 *Trends associated with the migration decline, continued. IPUMS CPS = Integrated Public Use Microdata Series, Current Population Survey. (Color figure available online.)*

2005 is forced to be included in all model specifications. In this case a more limited number of statistically significant variables are identified. The robustness of the results is suggested by the fact that there are only very small changes in the parameter estimates between Models 1 and 2 for those variables that are selected for inclusion in Model 2. As is the case with Model 1, there are no indications of either serial autocorrelation or spurious correlation.

Interpretation of the results for Model 2 is based on the exponentiated parameter estimates. Exponentiated parameter estimates are interpreted as the independent effect of a 1 percent change in the independent variable on the dependent variable. First, the dummy variable indicating whether an observation occurs between 1999 and 2005 suggests that migration rates are higher for those years than they would have otherwise been due to changes in census imputation techniques. Stated differently, estimated migration rates from 1999 through

2005 are about 10.3 percent higher than they would have otherwise been had the census not changed its imputation methods during that period. Second, migration rates are negatively related to the business cycle. In this case, migration rates are about 1.3 percent lower for each 1 percent increase in the unemployment rate, suggesting that the recent rise in unemployment from 4.8 percent in 2007 to 9.3 percent in 2009 caused a modest decrease in the migration rate of about 6.0 percent over this same time period, independent of all other variables. Third, the model indicates that the rise of dual-worker households has contributed to the decline in migration rates. The exponentiated parameter estimate shows that for every 1 percent increase in the number of individuals living in a dual-worker household, there is about a 3.9 percent decline in migration rates. Thus, independent of all other factors, the increase in the population living in dual-worker households from 47.5 percent in 1980 to 57.3 percent

Table 1 *Logistic regression of annual migration rate, 1981 to 2010*

Independent variables	Model 1			Model 2		
	Parameter estimate	Exponentiated parameter	*p* value	Parameter estimate	Exponentiated estimate	*p* value
Biased parameter estimate	0.0858	1.0896	0.0026	0.0980	1.1030	0.0002
Percentage of population age 18 to 30	0.0077	1.0077	0.8250			
Percentage of population living in owner-occupied housing	−0.0099	0.9901	0.6770			
Percentage of population living in a dual-worker household	−0.0416	0.9593	0.0641	−0.0393	0.9615	0.0037
Percentage of the population 24 and over with a college degree	0.0738	1.0766	0.0117	0.0887	1.0928	0.0005
Home equity as a share of housing value	0.0098	1.0098	0.1610	0.0093	1.0093	0.0216
Gini coefficient of income inequality	−0.2330	0.7922	0.8100			
Gini coefficient of state income inequality	2.4570	11.6697	0.1690			
Cell phone subscriptions per 100 population	−0.0083	0.9917	0.0188	−0.0114	0.9887	0.0000
Percentage of workers with employer-sponsored pensions	0.0181	1.0183	0.0551			
Annual change in gross domestic product	0.0032	1.0032	0.5010			
Unemployment rate	−0.0082		0.3740	−0.0133	0.9868	0.0466
Labor force participation rate	−0.0039		0.8840			
Constant	−2.8020	0.0607	0.3780	−2.8890	0.0556	0.0000
Observations		30			30	
R^2		0.982			0.975	
Durbin–Watson *d* Statistic		2.585			2.279	
Dickey–Fuller unit root test statistic		−7.148			−6.047	
MacKinnon approximate *p* value for $Z(t)$		0.000			0.000	

in 2009 caused a 37.6 percent decline in migration rates between 1981 and 2010. Fourth, the decline in home equity levels is also linked to the migration decline. Independent of all other factors, the decrease in home equity levels from 68.5 percent in 1980 to 38.0 percent in 2009 caused a 28.5 percent decline in migration between 1981 and 2010. Fifth, the increase in cell phone use is strongly linked to the decline in migration rates. For example, the increase in cell phone use from 49.0 percent in 1999 to 93.0 percent in 2009 caused a decline in migration rates of 49.9 percent, independent of all other factors. Finally, counteracting these downward forces on migration rates is the positive effect of increasing education levels on migration rates.

The model suggests that migration rates increase by about 9.3 percent for each 1 percent increase in the percentage of the population twenty-four and older with a college degree. This means that as the college education rate has increased from about 16.9 percent in 1980 to 29.6 percent in 2009, migration rates would have increased by over 116 percent had other processes not intervened.

To summarize, then, Model 2 is consistent with previous research in that neither the aging of the population nor the presumed increase in homeownership is linked to the migration decline. Inconsistent with previous research, however, these results find that the rise of dual-worker households is a significant source of the

decline in migration rates. As this is the first analysis of the migration decline to consider how nondemographic factors affect the migration decline, these results are unique in linking the decline in migration rates to increasing household debt in the form of declining home equity and, especially, to the widespread adoption of ICTs in the form of cell phone use. Counteracting all of these trends are cyclical factors in the form of a negative effect of unemployment on migration rates as well as a general increase in migration rates due to increasing levels of education.

Conclusion

This analysis shows that over the last thirty years three broad trends have combined to pull migration rates dramatically lower: an increase in dual-worker couples, increased household indebtedness, and the widespread rise of ICTs. The first two are probably linked, as households have responded to decreasing real income over the last quarter-century through greater female labor force participation and maintaining current levels of consumption by borrowing ever more heavily from the equity in their homes. Thus, although this analysis shows that the decline in migration rates is not linked to the short-run economic crisis that gave rise to the Great Recession, the migration decline is surely linked to the broader macroeconomic shifts that gave rise to the Great Recession. With respect to the role of ICTs on migration rates, it is not surprising that broader changes in ICTs are transforming migration behavior just as they are transforming nearly everything else across society. Behind the presumed negative relationship between the migration decline and the widespread adoption of ICTs is that ICTs are providing new forms of mobility that are substituting for migration. This is the most provocative finding from this research and one deserving of further investigation.

None of these three trends—increased household indebtedness, rise of dual-worker households, and wider use of ICTs—is likely to change in the foreseeable future, and together they point to a transition toward a more secularly rooted society (Cooke 2011). The implications of a more rooted society are significant: The decline in mobility implies less flexible labor markets with implications for individual economic achievement; divergence in regional economies, cultures, and politics; and greater ties to places and communities. Thus, contrary to assumptions that the adoption of ICTs has launched an era of universally heightened mobility, it is more likely that America has entered an area of heightened daily and virtual mobility and increased residential rootedness. In all, this transition represents a cultural sea change in the geographic foundations of everyday life that opens up new and exciting areas of geographic research. ∎

Notes

[1] Attribution for the phrase related to tropes is due to Richard Wright, who helped in the clarification of this section.

[2] This analysis focuses on intercounty migration rates. Interstate migration rates over this same period are similar to intercounty rates but are slightly more muted.

[3] Like all surveys, not all respondents answer all questions. Kaplan and Schulhofer-Wohl (2012) report that the CPS is unable to directly infer the migration status of about 10 to 12 percent of respondents in any given year. Migration estimates produced from the sample of respondents would likely be biased. Thus, the census uses imputation procedures that allocate data from another respondent, who matches a census-defined profile of the respondent with missing data, to the missing data (see U.S. Census Bureau 2006; Kaplan and Schulhofer-Wohl 2012).

[4] Cooke (2011) attributes about 63 percent of the decline in migration rates between 1999 and 2009 to the Great Recession, but the analysis is based on 1999 CPS migration estimates that have now been shown to be upwardly biased (Kaplan and Schulhofer-Wohl 2012). The likely impact of this upward bias is to overestimate the effect of the Great Recession on the decline in migration rates.

[5] Estimated through ordinary least squares, this logistic regression will exhibit heteroscedasticity, which is then resolved through the estimation of robust standard errors in Stata (see Rogers 1993).

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