

Migration, Economic Freedom, and Personal Freedom: An Empirical Analysis

Richard J. Cebula

Jacksonville University

J.R. Clark

University of Tennessee at Chattanooga

Abstract

Economic freedom increases market efficiency, growth, development, and individual prosperity. This study empirically investigates whether higher levels of economic freedom, as well as higher levels of personal freedom, act like magnets for persons residing in a free society to move. In other words, do the prospects of both greater economic and personal freedom in any given state vis-à-vis other states act to induce a greater influx of migrants? This empirical study of domestic migration between 2000 and 2008 finds clear evidence that migrants prefer to move to those states with greater economic freedom on the one hand and greater personal freedom on the other hand.

JEL Codes: P10, P12, O12

Keywords: Migration; Economic freedom; Personal freedom; Growth

I. Introduction

Greater economic and personal/political freedoms are conducive to a private enterprise environment that promotes greater economic development and growth. Indeed, these freedoms promote private enterprise in a variety of ways, and Ashby (2010) demonstrated that both economic and political freedom are significant determinants of migration between countries. Furthermore, the greater the success of freedom in promoting private enterprise, the greater the degree to which higher living standards, higher economic growth, and more extensive economic development are manifested (Ali, 1997; Cole, 2003; Dawson, 2003; Farr, Lord, and Wolfenbarger, 1998; Goldsmith, 1995).

The economic history of the United States essentially began with the immigration of people, principally from Europe, in search of freedom, with freedom broadly interpreted to include religious

freedom along with other forms of freedom. Arguably, the Revolutionary War was primarily based on a quest for greater political, personal, and economic freedom, and today the media abounds with examples of the extreme lengths to which individuals will go to gain those freedoms. Every day large numbers of illegal immigrants risk life and fortune, with significant numbers dying in the process, to cross international borders in search of a better life.

Freedom also significantly affects the decision to migrate between and among states. For example, as America was being settled and becoming home to increased numbers of persons seeking freedom in one form or another, movement to the West increased. After the Civil War, whose roots included varying perspectives on the issues of economic freedom (such as tariffs) and personal and political freedom (including slavery), migration to the West assumed greater proportions, initially taking the form of “pioneers” joining wagon trains and later promoted by the building of the railroad system into the West. The prospects of becoming economically independent and successful in an environment characterized by economic freedom and private enterprise such that one could reap the rewards of one’s hard work, risk-taking, and ingenuity was a powerful magnet for both descendants of immigrants and to some degree even new immigrants to move to the West. Thus, historically, it appears that both immigration to the United States and subsequent internal migration across the United States, which itself was expanding its borders and influence to the Pacific, ultimately under the banner of “manifest destiny,” was intimately linked to the interrelated phenomena of economic, personal, and political freedom and private enterprise (Vedder, 1976).

Migration determinants within the United States have been extensively researched, especially for the post World War II era (Percy, Hawkins, and Maier, 1995; Carrington, Detragiache, and Vishwanath, 1996; Nechyba, 2000; Conway and Houtenville, 1998, 2001; Chi and Voss, 2005; Cebula and Alexander, 2006; Partridge and Rickman, 2006; Francis, 2007; Landry et al., 2007; Schoolland, 2004; Subrick, Heap, and Mitchell, 2009). This continued research into migration can be attributed to a variety of factors, including concerns about gain or loss of tax base; increases or decreases in the demand for public schools, water and sewerage systems, and other public services; the identification of locations with better employment opportunities or better company expansion opportunities; and the

shift in political power resulting from emerging internal migration patterns. The factors considered within the context of *internal/domestic* migration determinants are extremely diverse. By and large, the mainstream migration literature finds migrants being attracted to areas with lower living costs, better employment and income prospects, lower state income taxes, and a warmer climate. However, Ashby (2007) demonstrated that states with higher relative economic freedom experience greater migration inflows through its direct impact on income and employment growth.

It is in the spirit of this diversity, and the 2007 contribution of Ashby, that the present study seeks to investigate whether contemporary domestic migration in the United States is influenced by the degree of economic freedom on the one hand and by the degree of personal freedom on the other hand. More specifically, using the indices of overall economic freedom and overall personal freedom developed by Ruger and Sorens (2009) within an otherwise standard econometric model, this study empirically investigates whether domestic net in-migration is positively impacted by higher levels of both economic and personal freedom. These two factors have not previously received formal attention for their potential migration impact.

During the past 15 years, numerous studies have been conducted to investigate the linkage between economic growth and economic freedom. Most of these studies conclude that there exists a positive impact of various measures of economic freedom on the rate of economic growth (Ali, 1997; Ali and Crain, 2001, 2002; Clark and Lawson, 2008; Dawson, 2003; De Haan and Siermann, 1998; De Haan and Sturm, 2000, 2007; Farr, Lord, and Wolfenbarger, 1998; Goldsmith, 1995; Gwartney, Holcombe, and Lawson, 2006; Heckelman, 2000; Heckelman and Stroup, 2000; Tortensson, 1994). Indeed, the study by Cole (2003, p.196) concludes that "...economic freedom is a significant factor in economic growth, regardless of the basic theoretical framework." Other studies have found that good governance and political freedom are significant to the process of economic growth (Lui, 1996; Zhao, Kim, and Du, 2003; Akcay, 2006; Brito-Bigott et al., 2008).

Economic growth at the *regional* level can derive from a variety of sources, including net in-migration. Indeed, the latter plays an extremely important role in the pattern of economic growth across the United States. In this study, the potential roles of economic

freedom (treated as an economic trait of each state) on the one hand and personal freedom (treated as a dimension of the “quality of life” in each state) on the other hand, on net state in-migration are investigated. In addition, the impact of certain standard economic and quality of life factors are included in this study; as stated above, such factors have commonly been found in previous research to significantly influence migration and thus cannot be ignored.

Interestingly, the index of economic freedom developed by Ruger and Sorens (2009) actually includes measures of local (municipal and county) taxes, expenditures, and debt in each of the 50 states; therefore, these factors are not expressly included in the study as *separate* variables because to do so would be to introduce redundancy. However, one factor that is not considered in the economic freedom index developed by Ruger and Sorens (2009) is the state income tax per capita; therefore, following certain previous migration studies as well as arguments in Tiebout (1956) and Tullock (1971), the state income tax per capita is expressly included in the empirical analysis among the economic variables. The adoption of *state-level data*, as opposed to city- or county- level data or pure micro-data, to investigate the impact of such a government policy and/or other factors on migration flows can be found in a number of previous studies (Sommers and Suits, 1973; Cebula and Belton, 1994; Saltz, 1998; Conway and Houtenville, 1998, 2001; Gale and Heath, 2000; Partridge and Rickman, 2006; Cebula and Alexander, 2006).

II. Economic Freedom and Personal Freedom

Before exploring the potential impacts of economic and personal freedom on contemporary migration, we briefly consider the measures of personal freedom and economic freedom developed by Ruger and Sorens (2009). Prior to Ruger and Sorens (2009), there were a number of efforts to develop economic freedom indices (and to a lesser degree, personal freedom indices) at the state level, including the recent studies by Byars, McCormick, and Yandle (1999), the Fraser Institute (2006), and the Pacific Research Institute (2004). Ruger and Sorens (2009) claim to have improved upon these earlier efforts to measure economic freedom as well as personal freedom.

Ruger and Sorens (2009, p.1) predicate their study ultimately on the definition of *individual freedom* as “...the ability to dispose of one’s own life, liberty, and justly acquired property however one sees fit, so long as one does not coercively infringe on another’s ability to do the

same.” Ruger and Sorens (2009) then proceed to develop a number of freedom indices, including an elaborate index of *overall economic freedom* and a separate elaborate index of *overall personal freedom*.

In part, the overall index of economic freedom consists of a fiscal policy dimension involving state sales and cigarette tax revenues; state, county, and municipal debt burdens in each state; and municipal and county tax collections and expenditures in each of the 50 states. This index of overall economic freedom also consists of a regulatory policy dimension, which considers labor regulation, health insurance mandates, occupational licensing, the tort system, eminent domain, and land and environmental regulation (Ruger and Sorens, 2009, p.8). The index of overall personal freedom reflects the “Paternalism” concept (Ruger and Sorens, 2009, p.9). Interestingly, regulations that have a primarily “paternalistic” justification, such as home- and private school regulations, are placed under this measure of freedom, along with citizen rights to educate their own children and to be free of unreasonable search and seizure. These indices are argued to be part of the continuing process of improvements in the measurement of economic freedom and personal freedom (Ruger and Sorens, 2009, p.6).

Ruger and Sorens (2009, p.1, Table, III, Table IV, Table V) argue that they improve on previous efforts to measure freedom across states in three ways. First, they include (as observed above) measures of personal and social freedoms such as the rights of peaceful citizens to educate their own children and to be free of unreasonable search and seizure. In addition, they include measures of the rights of peaceful citizens to be free of bans on smoking, to own and carry firearms, and to make free choices involving same-sex partnerships and marijuana consumption. Second, they include more variables as well as more complete data sets in their index construction process than do previous studies. Third, they adopt new and more accurate measures of key variables, including fiscal policies (tax, expenditure, and debt) by county and municipal governments in each state. In sum, Ruger and Sorens (2009, p.6) claim their report “...not only provides a broader framework for understanding the state of freedom in the American states, but also more carefully measures the economic components of freedom.”

Since the Ruger and Sorens (2009) study is alleged to provide more dependable, more accurate, and more robust economic freedom indices and personal freedom indices than heretofore

available, the Ruger and Sorens (2009) *overall* economic freedom and personal freedom indices are adopted as the freedom measures in the present study of determinants of domestic migration in the United States. The reader is encouraged to research the Ruger and Sorens (2009) study for a fuller detailing of their overall freedom measures and their other more narrowly defined measures of freedom at the state level.

III. Framework for Migration

In this study, the consumer is treated as regarding the migration decision as an investment. As such, the decision to migrate from one location to another location requires that the consumer's expected net benefits of moving from the present location to the other location be positive. In addition, the actual migration destination must reflect the maximum value that could be expected from moving from the present location to *any other* known and plausible alternative destination.¹

Following in principle the standard migration investment model (Riew, 1973), the migration decision focuses on two sets of broad considerations, namely:

1. Economic conditions, including economic freedom [a factor overlooked by Riew (1973) and previous related studies]; and
2. Environmental and quality-of-life factors, including personal freedom [another factor overlooked by Riew (1973) and previous related studies].

In the initial empirical estimate, to measure migration, $NETMIGRAT_j$, the net number of in-migrants to state j over the 2000–2008 time period, is adopted. A positive net in-migration indicates that more migrants entered the state than left the state

¹Alternatively stated, the migration decision is treated as an investment such that one's decision to migrate from area i to area j requires the net discounted present value of migration from area i to area j , DPV_{ij} , be (a) positive and (b) the maximum net discounted present value that can be expected from moving from area i to *any other* known, plausible alternative destination. Thus, migration will flow from area i to area j only if:
 $DPV_{ij} > 0$; $DPV_{ij} = \text{MAX for } j$, where $j = 1, 2, \dots, x$
 where x represents all of the known plausible alternative destinations for the consumer/household.

during the time frame studied. A negative net in-migration means that more migrants left the state than entered it over the period. A second empirical estimate expresses the net migration rate in natural log form.

Five economic factors are considered in this analysis. The first economic factor is $MEDFAMINC_j$, the median family income in state j . This variable is adopted as a measure of income prospects in state j . Other things held the same (*ceteris paribus*), higher income states should be more attractive to migrants because with a higher income people have higher living standards. The second variable, $COSTOFLIV_j$, measures the overall cost of living in state j for the average four-person family. This variable is expressed as an index, with the mean of this variable being $COSTOFLIV_j = 100.00$. The expected impact of a higher cost of living on migration is negative. This is because, *ceteris paribus*, a higher overall cost of living would reduce a family unit's purchasing power and hence its living standard. The variable $EMPLOYGR_j$ is the percentage growth rate of employment in non-farm establishments from 1996-2000. This variable is adopted as a measure of overall *expected future* employment prospects in state j (Vedder, 1976; Vedder, Gallaway, Graves, and Sexton, 1986). Presumably, the greater the past employment growth rate in a state, the better the future job prospects in that state and hence the more appealing it would be to move to that state (*ceteris paribus*). The variable $STINCTAXPC_j$ is the per capita level of the state income tax in state j in the year 2000. The higher the state income burden in a state, the lower the level of disposable family income, *ceteris paribus*, and hence the less appealing the state is as a migration destination (Saltz, 1998; Conway and Houtenville, 2001; Cebula and Alexander, 2006).²

The last economic variable in the analysis, but the economic variable of greatest interest in this study, is the measure of economic

² The choice of variables such as $MFINC_j$ and, increasingly, the choice of a variable such as $COST_j$, are standard in empirical migration studies, whereas inclusion of the variable $EMPLGR_j$ is based on findings in Vedder (1976), Vedder, Gallaway, Graves, and Sexton (1986), and Cebula and Alexander (2006) that recent past employment growth is a "magnet" for migrants. According to the conventional wisdom, net in-migration is expected (under *ceteris paribus*) to be an increasing function of $MFINC$ and $EMPLGR$ and a decreasing function of $COST$. The fiscal variable considered has often been overlooked in studies of a Tiebout (1956)-Tullock (1971) framework, although it has been considered more often in more recent years.

freedom, *ECONFREE_j*. This variable is expressed in the form of an index, and it endeavors to quantify the degree of economic freedom in state *j*. The values of this variable vary widely across states can lie in the range of (-1), which would correspond to the lowest possible degree of economic freedom, to (+1), which would correspond to the highest possible degree of economic freedom. The formal role of *ECONFREE_j* *per se* in a migration analysis appears to be essentially unstudied (Ruger and Sorens, 2009, p.2). According to that study, net domestic in-migration should be an increasing function of economic freedom, *ceteris paribus*, as a reflection of the desirability of greater economic freedom.

To measure environmental and quality-of-life conditions in state *j*, we consider four factors. The first is *AVEJANTEMP_j*, the average daily temperature in January in state *j* (1971–2000), as a measure of climatic conditions. It is common to hypothesize and to find empirically that migrants on average prefer residence in warmer climates (Clark and Hunter, 1992; Cebula and Belton, 1994; Saltz, 1998; Conway and Houtenville, 1998, 2001; Gale and Heath, 2000; Cebula and Alexander, 2006). Thus, domestic in-migration is expected to be positively related to *AVEJANTEMP_j*, other things held the same. To reflect environmental quality, the variable *PCTOXICHEMREL_j* is adopted. Variable *PCTOXICHEMREL_j* is defined as the number of pounds per capita in state *j* of toxic chemical releases (year 2000). Presumably, for health reasons, migrants would prefer residence in states with lower levels of toxic chemical releases, *ceteris paribus* (Saltz, 1998; Conway and Houtenville, 1998, 2001; Gale and Heath, 2000; Cebula and Alexander, 2006). Next, the variable *POPDENS_j* is defined as the population density in state *j* (persons per square mile, 2000). This variable is commonly used as a measure of congestion and crowding. Based on previous migration studies, to the extent that greater population density implies greater congestion (crowding), migrants can be hypothesized to prefer residence in less densely populated states, *ceteris paribus* (Clark and Hunter, 1992; Cebula and Belton, 1994; Saltz, 1998; Conway and Houtenville, 1998, 2001; Gale and Heath, 2000; Milligan, 2000; Cebula and Alexander, 2006).

In addition, as observed in Ruger and Sorens (2009, p.2), the index of overall personal freedom in state *j*, *PERSFREE_j*, arguably a dimension of the quality of life, has been neglected in the migration literature. In the present study, the perspective adopted is one in

which households typically attribute value to a higher degree of personal freedom (Ruger and Sorens, 2009, p.2). To the extent that U.S. residents do in fact prefer greater personal freedom, they can be expected to be attracted to states with higher degrees of overall personal freedom, *ceteris paribus*.

The definitions and data sources for each of the ten variables described above are provided in Table 1. In addition, the means and standard deviations for each of the variables are provided in Table 2. Note that the mean value for the net number of domestic in-migrants among the 50 states, *NETMIGRAT_j*, equals 0. The mean value for the cost of living index, *COSTOFLIV_j*, equals 100.00. It may also be worth noting that the mean values for the economic freedom (*ECONFREE_j*) and personal freedom (*PERSFREE_j*) indices are +0.004 and +0.002, respectively. At first glance, these latter two averages may seem very low; however, in theory, these freedom indices *could* lie between -1.0 (for low) and +1.0 (for high).³ Thusly viewed, the average values for *ECONFREE_j* and *PERSFREE_j* do *not* seem extraordinarily low. The study includes all 50 states, reflecting the availability of data on economic freedom and personal freedom (Ruger and Sorens, 2009). The data source for the variable *NETMIGRAT_j* is the U.S. Census Bureau (2009, Tables 12, 15).

IV. Empirical Results

The emphasis in this study is the impact of economic freedom and personal freedom on domestic migration. As explained in the preceding section of this study, the migration decision is a complex one. Thus, although the roles of economic freedom and personal freedom in the migration decision can be stressed, it is nevertheless necessary to allow for the additional factors that influence migration. Indeed, based upon the framework developed above, migration (*NETMIGRAT*) is potentially influenced not only by economic freedom (*ECONFREE*) and personal freedom (*PERSFREE*), but also by the level of *MEDFAMINC*, the *COSTOFLIV*, the *EMPLOYGR*, the *STINCTAXPC*, the *AVEJANTEMP*, *PCTOXICHEMREL*, and *POPDENS*.

³ The reader may be interested in the fact that the *actual* high and low for the *ECONFREE_j* variable are 0.405 and -0.589, respectively, whereas the actual high and low for the *PERSFREE_j* variable are + 0.272 and -0.294, respectively.

Table 1: Definitions of Variables and Data Sources (in parentheses)

NETMIGRRAT_j = the net number of in-migrants into state *j* over the July 2000–July 2008 time period; *NETMIGRRAT_j* = the number of in-migrants to state *j* over the study period minus the number of out-migrants from the state over the study period (U.S. Census Bureau, 2010, Table 15)

MEDFAMINC_j = the median family income in state *j* in the year 2000 (U.S. Census Bureau, 2005, Table 572)

COSTOFLIV_j = average cost of living for a four-person family in state *j* in the year 2000 (ACCRA, 2001)

EMPLOYGR_j = the percent growth rate of employment in non-farm establishments in state *j* over the period 1996–2000 (U.S. Census Bureau, 2002, Table 602)

STINCTAXPC_j = the per capita level of *state* personal income taxes in state *j* in the year 2000 (U.S. Census Bureau, 2005, Table 455)

ECONFREE_j = an index measuring the level of economic freedom in state *j*, with the index lying in the range of -1.0 to +1.0 (Ruger and Sorens, 2009, p.47)

AVEJANTEMP_j = the average daily temperature in January in state *j* (over the 1971–2000 reference period), as a measure of warm climatic conditions in the state (U.S. Census Bureau, 2005, Table 378)

PCTOXICHEMREL_j = a measure of pollution, expressed in the form of the number of pounds per capita in state *j* of toxic chemical releases in the year 2000 (U.S. Census Bureau, 2005, Tables 376, 12)

POPDENS_j = a measure of population density and congestion in state *j* expressed as the number of resident people per square mile in state *j* in the year 2000 (U.S. Census Bureau, 2005, Table 13)

PERSFREE_j = an index measuring the level of personal freedom in state *j*, with the index lying in the range of -1.0 to +1.0 (Ruger and Sorens, 2009, p.47)

The results of the formal empirical analysis are provided in Table 3. In particular, in columns (a) and (b) of Table 3, the results of running regressions of migration, in levels as well as in semi-logarithmic form, on indices of economic freedom and personal freedom on the one hand and the set of “control variables” listed

above and discussed in the previous section of this study on the other hand, are summarized.⁴

Table 2: Descriptive Statistics

Variable	Mean (Arithmetic Average)	Standard Deviation
<i>NETMIGRRAT_j</i>	0.00	433,969
<i>MEDFAMINC_j</i>	40,401	5,899
<i>COSTOFLIV_j</i>	100.00	10.41
<i>EMPLOYGR_j</i>	4.29	3,596
<i>STINCTAXPC_j</i>	388.95	647.45
<i>ECONFREE_j</i>	0.004	0.2237
<i>AVEJANTEMP_j</i>	32.709	12.646
<i>PCTOXICHEMREL_j</i>	7.42	9.79
<i>POPDENS_j</i>	253.97	343.55
<i>PERSFREE_j</i>	0.002	0.108

In column (a) of Table 3, each of the nine estimated coefficients exhibits the expected signs (+ or -); furthermore, each of these nine coefficients is statistically significant at the five percent level or beyond.⁵ In fact, six coefficients are statistically significant at the one percent level, and three are statistically significant at the five percent

⁴ The basic reduced-form equation to be estimated by OLS is given by:

$$\begin{aligned} \log(\text{NETMIGRRAT}_j) = & a_0 + a_1 \text{MEDFAMINC}_j + a_2 \text{COSTOFLIV}_j + a_3 \text{EMPLOYGR}_j \\ & + a_4 \text{STINCTAXPC}_j + a_5 \text{ECONFREE}_j + a_6 \text{AVEJANTEMP}_j + a_7 \\ & \text{PCTOXICHEMREL}_j + a_8 \text{POPDENS}_j + a_9 \text{PERSFREE}_j + u \end{aligned}$$

where a_0 = constant term and u = the stochastic error term. The following coefficient signs are hypothesized: $a_1 > 0$, $a_2 < 0$, $a_3 > 0$, $a_4 < 0$, $a_5 > 0$, $a_6 > 0$, $a_7 < 0$, $a_8 < 0$, $a_9 > 0$. The semi-log form of the above equation that is estimated by OLS is $\log(\text{NETMIGRRAT}_j) = b_0 + a_1 \text{MEDFAMINC}_j + b_2 \text{COSTOFLIV}_j + b_3 \text{EMPLOYGR}_j + b_4 \text{STINCTAXPC}_j + b_5 \text{ECONFREE}_j + b_6 \text{AVEJANTEMP}_j + b_7 \text{PCTOXICHEMREL}_j + b_8 \text{POPDENS}_j + b_9 \text{PERSFREE}_j + u'$ where $\log(\text{NETMIGRRAT}_j)$ is the natural log of net migration, *NETMIGRRAT_j* (Cebula and Alexander, 2006).

⁵ A coefficient that is statistically significant at the one percent level permits rejection of the null hypothesis H_0 , which states that no significant relationship between the specified variables exists, at the 99 percent confidence level. Statistical significance at the five percent level implies the null hypothesis can be rejected at the 95 percent confidence level. Finally, statistical significance at the ten percent level implies H_0 can be rejected at the 90 percent confidence level. Rejection of H_0 at the 99 or 95 percent confidence level is typically interpreted as an indication of a significant statistical relationship.

level. Furthermore, with a coefficient of determination (R^2) equal to 0.78, the statistical analysis explains nearly four-fifths of the variation

Table 3: Empirical Results

Dependent Variable	$NETMIGRRAT_j$	$Log\ NETMIGRRAT_j$
Variable\Coefficient	(a)	(b)
<i>Constant</i>	377,070.3	5.032
<i>MEDFAMINC</i>	15.328** (2.09)	0.00001** (2.04)
<i>COSTOFLIV</i>	-12,734.67*** (-2.62)	-0.0137** (-2.07)
<i>EMPLOYGR</i>	20,441.5** (2.36)	0.0562*** (3.61)
<i>STINCTAXPC</i>	-417.32*** (-8.97)	-0.00026*** (-2.56)
<i>ECONFREE</i>	421,792.2*** (3.29)	0.432*** (2.63)
<i>AVERJANTEMP</i>	13,670.55*** (3.69)	0.0095* (1.85)
<i>PCTOXICHEMREL</i>	-0.00009** (-2.22)	-7516.49* (-1.81)
<i>POPDENS</i>	-224.85*** (-2.68)	-0.00019* (-1.75)
<i>PERSFREE</i>	480,843.1*** (2.70)	1.216*** (2.71)
R^2	0.78	0.61
$adjR^2$	0.73	0.53
F	15.96***	7.08***

Terms in parentheses are t-values. ***indicates statistically significant at the one percent level; **indicates statistically significant at the five percent level; and *indicates statistically significant at the ten percent level.

in net state migration that occurred over the 2000-2008 study period.⁶

Most pertinent to the focus in this study, when examining the actual data on migration and its determinants, is the strong statistical support for the following hypotheses regarding the potential impacts of economic and personal freedom:

1. Net migration is positively related to economic freedom; that is, the higher the degree of economic freedom in a state, other things held the same, the greater the net number of in-migrants;
2. Net migration is positively related to personal freedom; that is, the higher the degree of personal freedom in a state, other things held the same, the greater the net number of in-migrants.

Thus, as hypothesized, the greater the economic and personal freedom that exist in a state, i.e., the higher the indices of economic freedom and personal freedom, the more attractive that state is to would-be migrants. In fact, upon further inspection, it is observed that the coefficients in column (a) on the variables *ECONFREE* and *PERSFREE* not only are positive but also statistically significant at the one percent level, implying that the findings are *statistically very robust*.⁷

In addition, from the remaining results shown in column (a), one can also infer the following impacts of the control variables on migration:

1. the higher the median family income in a state, other things held the same, the greater the net number of in-migrants;
2. the higher the cost of living in a state in a state, other things held the same, the smaller the net number of in-migrants;
3. the higher the percentage employment growth rate in a state, other things held the same, the greater the net number of in-migrants;

⁶ The coefficient of determination (R^2) indicates the percentage of the variation in the dependent variable (migration, in the present study) explained by the independent variables (combined).

⁷ “Statistically very robust” implies that the variables in question have coefficients that reject the null hypothesis at a very high confidence level, in this case, at the 99 percent confidence level.

4. the higher the per capita state income tax burden in a state, other things held the same, the smaller the net number of in-migrants;
5. the higher the average daily January temperature in a state, other things held the same, the greater the net number of in-migrants;
6. the higher the number of pounds per capita in state j of toxic chemical releases, other things held the same, the smaller the net number of in-migrants; and
7. the higher the number of persons per square mile living in a state in a state, other things held the same, the smaller the net number of in-migrants.

Next, we consider the results of estimating the model with the migration variable expressed in natural log form, a common statistical framework for studying migration determinants; indeed, expressing migration flows in logarithmic form has been practiced for a number of years (Cebula, 1974; Falaris, 1979; Justman, Levy, and Gabriel, 1988; Carlos, 2002; Cebula, 2009). In any event, these empirical results are provided in column (b) of Table 3. Not surprisingly, estimates (a) and (b) are *qualitatively* very similar to one another. This is because both statistical estimates are dealing with the same explanatory variables and only the dependent variable (migration) is expressed differently. In column (b), all nine of the estimated coefficients exhibit the expected signs, with four statistically significant at the one percent level, two statistically significant at the five percent level, and three statistically significant at the ten percent level. The R^2 of 0.61 indicates that the model explains in excess of three-fifths of the net in-migration rate variation.

Of course, the most relevant of the results shown in column (b), in terms of the focus in this study, is the additional strong statistical support for the following hypotheses regarding the impacts of economic and personal freedom on domestic migration:

1. migration is positively related to economic freedom; that is, the higher the degree of economic freedom in a state, other things held the same, the greater the net in-migration rate (as measured, i.e., in natural log form); and
2. migration is positively related to personal freedom; that is, the higher the degree of personal freedom in a state, other things

held the same, the greater the net in-migration rate (as measured, i.e., in natural log form).

Thus, as hypothesized in this study and also supported statistically in column (a) of Table 3, in the statistical estimation shown in column (b) of this study, it is found that the higher the values of the economic and personal freedom indices that exist in a state, the more attractive that state is to would-be migrants. In fact, upon further inspection, it is observed that the coefficients in column (b) on the variables *ECONFREE* and *PERSFREE* not only are positive but also statistically significant at the one percent level, implying that the findings are statistically very robust. Aside from these observations, the interested reader can verify that the remaining results shown in column (b) are very similar to their counterparts in column (a).

V. Conclusion

This study has statistically investigated the impacts of economic freedom and personal freedom on net domestic migration at the state level in the United States. The results of the formal empirical analysis are provided in Table 3. In particular, in columns (a) and (b) of Table 3, the results of running regressions of migration, in levels as well as in natural log form, on indices of economic freedom and personal freedom on the one hand and a set of “control variables” on the other hand are summarized.

From the viewpoint of the objective of this study, the most germane statistical finding is that net domestic in-migration is positively impacted by higher levels of both economic freedom and personal freedom, as suggested in Ruger and Sorens (2009). Thus, there is evidence strongly suggesting that states offering higher levels of economic freedom and personal freedom can be expected to experience higher net in-migration rates and hence higher population and economic growth rates, *ceteris paribus*. The challenges faced by many states appear obvious. Indeed, this study offers a word of advice to state legislatures and governors: “to the victor go the spoils”—because households “vote with their feet” in seeking economic and personal freedom. Alternatively stated, given the significance of freedom to the promotion of successful private enterprise, it is not surprising that this study reveals that the *market for freedom per se* works.

References

- ACCRA. 2001. *Cost of Living Index*. Council for Community and Economic Research. Fairfax, VA: George Mason University.
- Ali, Abdiweli M. 1997. "Economic Freedom, Democracy and Growth." *Journal of Private Enterprise*, 13(1): 1–20.
- Ali, Abdiweli M., and W. Mark Crain. 2001. "Political Regimes, Economic Freedom, Institutions and Growth." *Journal of Public Finance and Public Choice*, 19(1): 3–22.
- Ali, Abdiweli M., and W. Mark Crain. 2002. "Institutional Distortions, Economic Freedom, and Growth." *Cato Journal*, 21(3): 415–26.
- Akçay, Selçuk. 2006. "Corruption and Human Development." *Cato Journal*, 25(1): 25–27.
- Ashby, Nathan J. 2007. "Economic Freedom and Migration Flows Between U.S. States." *Southern Economic Journal*, 73(3): 677–97.
- Ashby, Nathan J. 2010. "Freedom and International Migration." *Southern Economic Journal*, 77(1): 49–62.
- Brito-Bigott, Osmel, Hugo J. Faria, Jose Miguel Rodriguez, and Alejandro Sanchez. 2008. "Corruption and Complex Business Rules." *Journal of Private Enterprise*, 24(2): 1–15.
- Byars, John, Robert McCormick, and Bruce Yandle. 1999. "Economic Freedom in America's 50 States: A 1999 Analysis." <http://www.freedom.clemson.edu/full/htm>.
- Carlos, Ma. Reinaruth D. 2002. "On the Determinants of International Migration in the Philippines: An Empirical Analysis." *International Migration Review*, 36(1): 81–102.
- Carrington, William J., Enrica Detragiache, and Tara Vishwanath. 1996. "Migration and Endogenous Moving Costs." *American Economic Review*, 86(4): 909–30.
- Cebula, Richard J. 1974. "The Quality of Life and Migration of the Elderly." *Review of Regional Studies*, 4(1): 62–68.
- Cebula, Richard J. 2009. "Migration and the Tiebout-Tullock Hypothesis Revisited." *American Journal of Economics and Sociology*, 68(2): 151–61.
- Cebula, Richard J., and Gigi M. Alexander. 2006. "Determinants of Net Interstate Migration, 2000–2004." *Journal of Regional Analysis and Policy*, 27(2): 116–23.

- Cebula, Richard J., and Willie J. Belton. 1994. "Voting with One's Feet: An Analysis of Public Welfare and Migration of the American Indian." *American Journal of Economics and Sociology*, 53(3): 273–80.
- Chi, Guangqing, and Paul Voss. 2005. "Migration Decision-Making: A Hierarchical Regression Approach." *Journal of Regional Analysis and Policy*, 35(2): 11–22.
- Clark, David E, and William J. Hunter. 1992. "The Impact of Economic Opportunity, Amenities, and Fiscal Factors in Age-Specific Migration Rates." *Journal of Regional Science*, 32(3): 349–65.
- Clark, J.R., and Robert A. Lawson. 2008. "The Impact of Economic Growth, Tax Policy, and Economic Freedom on Income Inequality." *Journal of Private Enterprise*, 24(1): 23–31.
- Cole, Julio H. 2003. "The Contribution of Economic Freedom to World Economic Growth, 1980–99." *Cato Journal*, 23(2): 189–98.
- Conway, Karen Smith, and Andrew J. Houtenville. 1998. "Do the Elderly 'Vote with Their Feet?'" *Public Choice*, 97(1): 63–85.
- Conway, Karen Smith, and Andrew J. Houtenville. 2001. "Elderly Migration and State Fiscal Policy: Evidence from the 1990 Census Migration Flows." *National Tax Journal*, 54(1): 103–23.
- Dawson, John W. 2003. "Causality in the Freedom-Growth Relationship." *European Journal of Political Economy*, 19(3): 479–95.
- De Haan, Jakob, and Clemens L.J. Siermann. 1998. "Further Evidence on the Relationship Between Economic Freedom and Economic Growth." *Public Choice*, 95(3–4): 363–80.
- De Haan, Jakob, and Jan-Egbert Sturm. 2000. "On the Relationship Between Economic Freedom and Economic Growth." *European Journal of Political Economy*, 16(2): 215–41.
- De Haan, Jakob, and Jan-Egbert Sturm. 2007. "Handling Economic Freedom in Growth Regressions: A Reply to Cole and Lawson." *Economic Journal Watch*, 4(1): 79–82.
- Falaris, Evangelos M. 1979. "The Determinants of Internal Migration in Peru: An Economic Analysis." *Economic Development and Cultural Change*, 27(3): 327–42.
- Farr, W. Ken, Richard A. Lord, and J. Larry Wolfenbarger. 1998. "Economic Freedom, Political Freedom and Economic Well-Being." *Cato Journal*, 18(2): 247–62.

- Francis, John. 2007. "Asymmetries in Regional Labor Markets, Migration, and Economic Geography." *The Annals of Regional Science*, 41(1): 124–44.
- Fraser Institute. 2006. *Economic Freedom of North America 2006 Annual Report*. <http://www.fraserinstitute.org>.
- Gale, Lewis R., and Will Carrington Heath. 2000. "Elderly Internal Migration in the U.S. Revisited." *Public Finance Review*, 28(2): 153–57.
- Goldsmith, Arthur A. 1995. "Democracy, Property Rights and Economic Growth." *The Journal of Development Studies*, 32(2): 157–74.
- Gwartney, James D., Randall G. Holcombe, and Robert A. Lawson. 2006. "Institutions and the Impact of Investment on Growth." *Kyklos*, 59(2): 255–76.
- Heckelman, Jac C. 2000. "Economic Freedom and Economic Growth: A Short-Run Causal Relationship." *Journal of Applied Economics*, 3(1): 71–91.
- Heckelman, Jac C., and Michael D. Stroup, 2000. "Which Economic Freedoms Contribute to Economic Growth?" *Kyklos*, 53(4): 527–44.
- Justman, Moshe, Amnon Levy, and Stuart A. Gabriel. 1988. "Determinants of Interstate Migration in Israel: Expected Returns and Risks." *Applied Economics*, 20(5): 679–90.
- Landry, Craig Elliott, Okmyung Bin, Paul Hindsley, John C. Whitehead, and Kenneth Wilson. 2007. "Going Home: Evacuation Migration Decisions of Hurricane Katrina Survivors." *Southern Economic Journal*, 74(2): 326–43.
- Lui, Francis T. 1996. "Three Aspects of Corruption." *Contemporary Economic Policy*, 22(1):132–45.
- Milligan, Jim. 2000. "Migration and Age: The Effect of Age on Sensitivity to Migration Stimuli." *Regional Studies*, 34(4): 521–33.
- Nechyba, Thomas J. 2000. "Mobility, Targeting and Private-School Vouchers." *American Economic Review*, 90(1): 130–46.
- Nelson, Michael A., and Ram D. Singh. 1998. "Democracy, Economic Freedom, Fiscal Policy, and Growth in LDCs.: A Fresh Look." *Economic Development and Cultural Change*, 46(4): 677–96.
- Pacific Research Institute. 2004. *U.S. Economic Freedom Index: 2004*. <http://www.pacificresearch.org>.
- Partridge, Mark D. and Dan S. Rickman. 2006. "An SVAR Model of Fluctuations in U.S. Migration Flows and State Labor Market Dynamics." *Southern Economic Journal*, 72(4): 958–80.

- Percy, Stephen L., Brett W. Hawkins, and Peter E. Maier. 1995. "Revisiting Tiebout: Moving Rationales and Inter-jurisdictional Relocation." *Publius: The Journal of Federalism*, 25(2): 1–17.
- Renas, Stephen M. 1978. "The Cost of Living, Labor Market Opportunities, and the Migration Decision." *Annals of Regional Science*, 15(1): 95–104.
- Renas, Stephen M. 1983. "The Cost of Living, Labor Market Opportunities, and the Migration Decision: More on Problems of Misspecification and Aggregation Bias." *Annals of Regional Science*, 17(1): 98–110.
- Riew, John. 1973. "Migration and Public Policy." *Journal of Regional Science*, 12(2): 65–73.
- Ruger, William P., and Jason Sorens. 2009. *Freedom in the 50 States: An Index of Personal and Economic Freedom*. Fairfax, VA: Mercatus Center, George Mason University.
- Saltz, Ira S. 1998. "State Income Taxation and Geographic Labor Force Mobility in the United States." *Applied Economics Letters*, 5(5): 599–604.
- Schoolland, Ken. 2004. "Welfare: A Magnet for Migration or Not?" *Journal of Private Enterprise*, 19(2):104–7.
- Sommers, Paul M., and Daniel B. Suits. 1973. "An Analysis of Net Interstate Migration." *Southern Economic Journal*, 40(2): 193–201.
- Subrick, Robert, Philip Heap, and David Mitchell. 2009. "Economic Freedom and Immigration." Paper presented at the annual meeting of The Association of Private Enterprise Education, Guatemala City.
- Tiebout, Charles M. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy*, 64(1): 416–24.
- Tortensson, Johan. 1994. "Property Rights and Economic Growth: An Empirical Study." *Kyklos*, 47(2): 231–47.
- Tullock, Gordon. 1971. "Public Expenditures as Public Goods." *Journal of Political Economy*, 79(5): 913–18.
- U.S. Census Bureau. 2002. *Statistical Abstract of the United States, 2002*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Census Bureau. 2005. *Statistical Abstract of the United States, 2004–2005*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Census Bureau. 2009. *Statistical Abstract of the United States, 2009*. Washington, D.C.: U.S. Government Printing Office.
- Vedder, Richard K. 1976. *The American Economy in Historical Perspective*. Belmont, CA: Wadsworth.

- Vedder, Richard K., Lowell E. Gallaway, Philip E. Graves, and Robert Sexton. 1986. "An Historical Perspective on Interregional Migration in the United States." In *Housing and Migration*, ed. R.J. Krumm, 101–24. Mount Pleasant, MI: Blackstone Books.
- White, Halbert. 1980. "A Heteroskedasticity-Consistent Covariance Matrix and a Direct Test for Heteroskedasticity." *Econometrica*, 48(4): 817–38.
- Zhao, John Hongxin, S. Seung Kim, and Jianjun Du. 2003. "The Impact of Corruption and Transparency on Foreign Direct Investment: An Empirical Analysis." *Management International Review*, 23(2): 116–29.