Economic Freedom and Mobility Dynamics: Recursive and Spatial Evidence from U.S. States

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Abstract

This paper examines how economic freedom affects interstate migration in the United States and through which mechanisms its effects operate. Using a panel data set of bilateral state-to-state migration flows from 2002 to 2021, we develop a recursive spatial framework that links economic freedom to migration by examining its impact on state-level economic fundamentals, including income, employment, and population growth. We find that higher economic freedom significantly increases migration inflows and net migration but has little direct effect on outflows. Once economic fundamentals are included, the direct effect of economic freedom on migration diminishes, indicating that its influence operates primarily through improved economic performance. These findings are also robust to excluding transfer income. Spatial dependence also plays an important role in this process. Migration flows exhibit strong regional clustering and competitive dynamics, suggesting that states compete for migrants within nearby geographic areas rather than acting independently. Overall, the results indicate that economic freedom primarily affects migration by strengthening local economic conditions rather than by directly inducing people to move away from less-free states.

Introduction

Understanding the determinants of internal migration has long been central to both economic theory and policy. Tiebout's (1956) classic "voting with feet" framework emphasized that individuals reveal their preferences for local public goods by moving to jurisdictions that best match their desired fiscal and service bundles. Subsequent empirical research extended this intuition by highlighting how economic fundamentals—such as relative income, employment opportunities, and population size—shape interstate mobility decisions (Davies, Greenwood, & Li, 2001). More recent work underscores that both individual and contextual factors—human capital, co-ethnic networks, and state-level economic conditions—jointly explain variations in mobility patterns across the United States (Gurak & Kritz, 2000). Even though migration is important for regional change, overall U.S. internal migration rates have declined since the 1980s, while mobility remains high by international

standards (Molloy, Smith, & Wozniak, 2011). These developments call for a closer look at what forces are shaping contemporary migration dynamics.

Parallel to this literature, scholars have increasingly examined how institutional quality—often proxied by indices of economic freedom—affects regional performance and mobility. Economic freedom, as captured by the Economic Freedom of North America (EFNA) index, reflects the extent to which state policies and institutions support market-oriented activity through limited government spending, lower taxation, and flexible labor markets (Stansel, Torra, & McMahon, 2014). Studies such as Ashby (2007), Shumway and Davis (2016), and Arif et al. (2020) show positive associations between higher economic freedom and migration inflows, while Hall, Lacombe, and Shaughnessy (2019) highlight the importance of spatial dependence in explaining how institutional environments influence state-level outcomes. However, the mechanisms by which economic freedom shapes migration remain unclear: does economic freedom directly attract movers, or does it act indirectly by improving local economic conditions that make states more appealing? Moreover, whether economic freedom functions symmetrically—both attracting and repelling population flows—remains an open question.

This study addresses that question using a recursive spatial framework and a new panel of U.S. state-to-state migration flows from 2002 to 2021. We examine both the direct and indirect channels through which economic freedom influences migration and explicitly assess whether its effects are symmetric across inflows and outflows. To further isolate the economic mechanisms linking institutions and mobility, we construct an additional measure of per capita personal income net of current personal transfers, which removes redistributive effects embedded in government spending (Area 1) and allows us to distinguish between market-driven income growth and transfer-driven redistribution. Specifically, we analyze net migration, outflows, and inflows, while also modeling how economic freedom affects four key fundamentals—income growth, income net of transfers growth, employment growth, and population growth—that, in turn, shape mobility.

Our findings reveal an apparent directional asymmetry in how economic freedom shapes migration. Economic freedom exerts a strong and significant influence on inflows and net migration but has little effect on outflows. This indicates that freedom primarily affects migration by fostering stronger economic environments in freer states rather than by directly prompting people to leave less-free ones. At the same time, weaker economic conditions can indirectly encourage outmigration by constraining income and employment growth, prompting residents to seek better opportunities elsewhere.

Once state-level fundamentals are included, the direct effect of economic freedom diminishes, suggesting that its influence operates mainly through income, employment, and population growth. When spatial effects are omitted, the significance of freedom weakens. At the same time, fundamentals remain robust, underscoring that spatial interdependence is a key transmission channel through which institutional quality shapes regional mobility.

By integrating economic freedom with economic fundamentals within a recursive, spatially dependent framework, this paper provides new evidence for the literature on internal migration and institutional economics. It underscores that economic freedom matters not simply for where people move, but for the economic conditions that make such movements possible. Migration thus reflects a two-tiered process: individuals respond to immediate economic opportunities, while those opportunities themselves are shaped by economic freedom that enables growth, competition, and demographic vitality.

The remainder of the paper proceeds as follows. Section 2 reviews the literature on migration, economic freedom, and regional growth. Section 3 details the data and empirical framework. Section 4 presents the results for net, inflow, and outflow migration. Section 5 concludes by summarizing the contributions and outlining directions for future research.

Literature Review

The relationship between economic freedom and migration has attracted attention for some time. Ashby (2007) was among the first to examine this link using the Economic Freedom of North America (EFNA) index, finding that U.S. states with greater economic freedom attract more migrants. Subsequent research reinforced this finding, showing that higher levels of economic freedom are positively associated with net migration flows (Cebula, 2014; Mulholland & Hernández-Julián, 2013). Important migration studies, such as Davies, Greenwood, and Li (2001), emphasized that relative income, employment, distance, and population size are central determinants of interstate mobility —highlighting the economic fundamentals through which institutions may exert influence. Adding to this, Shumway and Davis (2016) demonstrated that economic freedom contributes to income gains via migration, while Arif, Hoffer, Stansel, and Lacombe (2020) found that a 10% relative increase in a destination metropolitan area's level of economic freedom corresponds to a 27.4% increase in net migration from each origin. Together, these studies highlight that institutional conditions matter for population mobility, but they also suggest that the effects of economic freedom may operate through fundamental economic channels.

Other studies have linked economic freedom to broader measures of economic performance. Early contributions by

Easton and Walker (1997) and Dawson (1998) documented positive associations between economic freedom and income growth, while the development of the EFNA index (Stansel, Torra, & McMahon, 2014) enabled systematic analysis within countries. Hall, Lacombe, and Shaughnessy (2019) further demonstrated that states with higher economic freedom tend to achieve higher income levels, and that spatial dependence plays a significant role in transmitting institutional effects across neighboring regions. Comprehensive reviews also conclude that freedom is generally associated with stronger growth, prosperity, and well-being (De Haan, Lundström, & Sturm, 2006; Hall & Lawson, 2014).

At the same time, scholars have noted that measures of income growth, including government transfers, may obscure the market component of economic performance. Transfer payments, such as unemployment insurance, Social Security, and other redistributive benefits, tend to be larger in less free states, where government activity is greater. As Ashby and Sobel (2008) argue, the inclusion of transfers can bias results downward because higher levels of economic freedom are typically associated with smaller government transfer sectors. They note that "data excluding transfers would likely have a slope coefficient that was larger (more positive)," since including transfer income makes it less likely to observe a positive impact of freedom on lower incomes. Removing transfers from personal income, therefore, provides a clearer view of the relationship between institutions and market-driven income, isolating productive from redistributive growth channels.

Meanwhile, the literature on internal migration identifies several important contextual trends. Molloy, Smith, and Wozniak (2011) document a persistent decline in U.S. interstate mobility since the 1980s, even as mobility remains relatively high by international standards. These trends highlight the need to understand how institutional and economic conditions jointly shape migration dynamics in the modern U.S. economy.

Despite these advances, several key gaps remain. Much of the existing research analyzes either the direct relationship between economic freedom and growth or the direct link between economic freedom and migration, leaving the indirect channels between them largely unexplored. Few studies systematically assess how economic freedom shapes migration by influencing the underlying fundamentals—income, employment, and population growth—that drive individuals' relocation decisions. Moreover, most studies focus on net migration as the aggregate outcome, overlooking potential differences between inflows and outflows. This aggregate perspective implicitly assumes that economic freedom influences movement in both directions symmetrically. Likewise, while spatial dependence has been incorporated into studies of economic growth, it has received far less attention in the context of interstate migration, where spatial spillovers are likely to be especially relevant.

This study contributes to filling these gaps by integrating insights from both literatures within a recursive spatial framework. Using panel data on U.S. state-to-state migration flows from 2002 to 2021, we estimate both the direct effects of economic freedom on migration outcomes and the indirect effects transmitted through economic fundamentals. By distinguishing between inflows, outflows, and net migration, the analysis also captures potential directional asymmetries in how economic freedom affects mobility. This approach provides a more complete understanding of how economic freedom shapes population movements—demonstrating that economic freedom influences migration not merely by making states more attractive in isolation, but by generating the economic conditions that motivate people to move.

Method and Data

The empirical analysis employs a recursive spatial framework that links economic freedom to migration through its effects on economic fundamentals. In the first stage, state-level income growth, income net of current personal transfers growth, employment growth, and population growth are modeled as functions of current economic freedom, with both state and year fixed effects:

$$\mathrm{IncG}_{s,t} = \alpha_{inc} + \delta_{inc}\mathrm{EF}_{s,t} + \mu_s^{inc} + \tau_t^{inc} + \nu_{s,t}^{inc}$$

$$\mathrm{GNBIG}_{s,t} = \alpha_{gnbi} + \delta_{gnbi}\mathrm{EF}_{s,t} + \mu_s^{gnbi} + \tau_t^{gnbi} + \nu_{s,t}^{gnbi}$$

$$\mathrm{EmpG}_{s,t} = \alpha_{emp} + \delta_{emp}\mathrm{EF}_{s,t} + \mu_s^{emp} + \tau_t^{emp} + \nu_{s,t}^{emp}$$

$$\mathrm{PopG}_{s,t} = \alpha_{pop} + \delta_{pop}\mathrm{EF}_{s,t} + \mu_s^{pop} + \tau_t^{pop} + \nu_{s,t}^{pop}$$

These regressions test whether states with higher current economic freedom experience higher income (both total and net of transfers), employment, and population growth. Economic freedom is measured using the Economic Freedom of North America (EFNA) index compiled by the Fraser Institute, which aggregates measures of government spending, taxation, and labor market regulation. The variable $\mathrm{GNBIG}_{s,t}$ (income net of current personal transfers) is constructed by subtracting per-capita current personal transfer receipts from total per-capita personal income, both obtained from the Bureau of Economic Analysis (BEA).

To explore the underlying mechanisms, the overall EFNA index is decomposed into its three major components—government spending (Area 1), taxation (Area 2), and labor-market freedom (Area 3):

$$\mathrm{IncG}_{s,t} = \alpha + \beta_1\mathrm{Area1}_{s,t} + \beta_2\mathrm{Area2}_{s,t} + \beta_3\mathrm{Area3}_{s,t} + \gamma_t + \mu_s + \varepsilon_{s,t}$$

$$\mathrm{GNBIG}_{s,t} = \alpha + \beta_1\mathrm{Area1}_{s,t} + \beta_2\mathrm{Area2}_{s,t} + \beta_3\mathrm{Area3}_{s,t} + \gamma_t + \mu_s + \varepsilon_{s,t}$$

$$\mathrm{EmpG}_{s,t} = \alpha + \beta_1\mathrm{Area1}_{s,t} + \beta_2\mathrm{Area2}_{s,t} + \beta_3\mathrm{Area3}_{s,t} + \gamma_t + \mu_s + \varepsilon_{s,t}$$

$$\mathrm{PopG}_{s,t} = \alpha + \beta_1\mathrm{Area1}_{s,t} + \beta_2\mathrm{Area2}_{s,t} + \beta_3\mathrm{Area3}_{s,t} + \gamma_t + \mu_s + \varepsilon_{s,t}$$

These specifications allow us to identify whether fiscal (Areas 1–2) or regulatory (Area 3) dimensions of freedom drive distinct aspects of state-level economic performance.

In the second stage, following Ashby (2007), migration outcomes are estimated within a spatial autoregressive framework that allows for both spatial lag and spatial error dependence. While the model shares the same broad structure as prior studies, it differs in two ways: it explicitly models the

recursive influence of economic freedom through multiple fundamentals, including income net of transfers. It excludes distance and density controls to isolate economic fundamentals as the primary mediating mechanisms.

Bilateral state-to-state migration flows are modeled as functions of lagged differences in fundamentals and contemporaneous differences in economic freedom. Let denote the number of migrants moving from origin to destination in year . To handle zero flows, a small positive constant (0.5) is added before taking logarithms. Three dependent variables are constructed:

$$y_{ij,t}^{\text{net}} = \ln\left(\frac{M_{ij,t} + \varepsilon}{M_{ji,t} + \varepsilon}\right)$$

$$y_{ij,t}^{\text{out}} = \ln\left(\frac{M_{ij,t} + \varepsilon}{\text{Pop}_{i,t}}\right)$$

$$y_{ij,t}^{\text{in}} = \ln\left(\frac{M_{ij,t} + \varepsilon}{\text{Pop}_{j,t}}\right)$$

The main explanatory variables are lagged differences in fundamentals and contemporaneous differences in economic freedom between destination and origin states:

$$\Delta\text{IncG}_{ij,t-1} = \text{IncG}_{j,t-1} - \text{IncG}_{i,t-1}$$

$$\Delta\text{GNBIG}_{ij,t-1} = \text{GNBIG}_{j,t-1} - \text{GNBIG}_{i,t-1}$$

$$\Delta\text{EmpG}_{ij,t-1} = \text{EmpG}_{j,t-1} - \text{EmpG}_{i,t-1}$$

$$\Delta\text{PopG}_{ij,t-1} = \text{PopG}_{j,t-1} - \text{PopG}_{i,t-1}$$

$$\text{EFgap}_{ij,t} = \text{EF}_{j,t} - \text{EF}_{i,t}$$

Additional controls include climatic and demographic ratios:

$$\text{Retirement Ratio}_{ij,t} = \frac{\text{Ret}_{j,t}}{\text{Ret}_{i,t}}$$

$$\text{Heat Ratio}_{ij,t} = \frac{\text{Heat}_{j,t}}{\text{Heat}_{i,t}}$$

$$\text{Precipitation Ratio}_{ij,t} = \frac{\text{Prec}_{j,t}}{\text{Prec}_{i,t}}$$

Migration is then modeled in two versions:
(1) Using total income growth:

$$y_{ij,t}^{k} = \rho(Wy^{k})_{ij,t} + \beta_{EF}EFgap_{ij,t} + \beta_{inc}\Delta IncG_{ij,t-1} + \beta_{emp}\Delta EmpG_{ij,t-1} + \beta_{pop}\Delta PopG_{ij,t-1} + \beta_{ret}RetRatio_{ij,t} + \beta_{heat}HeatRatio_{ij,t} + \beta_{prec}PrecRatio_{ij,t} + u_{ij,t}$$

(2) Using income net of transfers:

$$y_{ij,t}^{k} = \rho(Wy^{k})_{ij,t} + \beta_{EF}EFgap_{ij,t} + \beta_{gnbig}\Delta GNBIG_{ij,t-1} + \beta_{emp}\Delta EmpG_{ij,t-1} + \beta_{pop}\Delta PopG_{ij,t-1} + \beta_{ret}RetRatio_{ij,t} + \beta_{heat}HeatRatio_{ij,t} + \beta_{prec}PrecRatio_{ij,t} + u_{ij,t},$$
$$u_{ij,t} = \lambda(Wu)_{ij,t} + \varepsilon_{ij,t}, k \in \{net, out, in\}.$$

Spatial dependence is modeled through the matrix ω, which is row-standardized and based on first-order contiguity among the 48 contiguous states (excluding Alaska, Hawaii, and the District of Columbia). Because the data are organized by origin–destination pairs, the matrix is constructed in a block-diagonal form, where each block corresponds to an origin and links its potential destinations based on geographic adjacency. Within each block, neighbors of a destination receive positive weights while non-neighbors receive zeros, and rows are normalized to sum to one. This structure preserves the square form required for spatial estimation while ensuring that spillovers are only captured among geographically relevant destinations. The coefficient ρ measures spatial lag dependence, indicating whether migration into one destination is correlated with

migration into its neighbors, while λ measures spatial error dependence, reflecting omitted regional shocks such as policy diffusion or common labor-market dynamics.

The coefficient on $EFgap_{ij,t}$ identifies the direct effect on migration flows. The indirect effect operates through the fundamentals: current economic freedom influences income, income net of transfers, employment, and population growth in Stage 1, and these fundamentals in turn influence migration in Stage 2. Thus, the indirect channel is captured by the product of the Stage 1 coefficients on EF and the corresponding Stage 2 coefficients on each fundamental.

Economic freedom measures are not lagged because the EFNA index is constructed from policy indicators that evolve slowly and are measured using historical administrative data. Consequently, the published scores already reflect institutional environments relevant to earlier decision periods, aligning naturally with the timing of migration decisions without requiring additional lagging.

As a robustness check, we also re-estimate the Stage 2 model using income net of current personal transfers (GNBIG) in place of total income. This alternative specification removes redistributive effects embedded in government spending (Area 1) and ensures that the estimated migration–income relationship reflects market-driven rather than transfer-based income growth. This specification verifies that the observed relationships are not sensitive to the inclusion of transfer-based components in state income measures.

Data for these variables are drawn from widely used public sources. State-to-state migration flows are obtained from the Internal Revenue Service's Statistics of Income (SOI), which provides annual counts of individuals (exemptions) who move between states. Per capita personal income and current personal transfer receipts are from the Bureau of Economic Analysis (BEA), employment levels (in thousands) from the Bureau of Labor Statistics (BLS), and population from the Federal Reserve Bank of St. Louis's FRED database. Economic freedom scores are obtained from the 2024 edition of the Fraser Institute's Economic Freedom of North America (EFNA) index at the subnational level. Additional controls include heating degree days and precipitation, sourced from the National Centers for Environmental Information, and the share of residents aged 65 and over, from the U.S. Census Bureau. These controls account for climate-driven migration and retirement-related flows.

Results

Stage 1: Economic Freedom and State-Level Fundamentals

The Stage 1 regressions examine how economic freedom affects state-level economic fundamentals—including total personal income growth, income growth net of transfers, employment growth, and population growth—using a fixed-effects framework with current EF scores as predictors. The results are summarized in Table 1.

The overall EF index has a positive, statistically significant effect on all fundamentals. In the total income growth regression, EF shows a positive coefficient of 6.96 ($p = 0.021$), indicating that higher economic freedom is associated with faster income growth. When income is measured net of current personal transfers (GNBIG), the coefficient becomes slightly larger (7.38; $p = 0.042$), suggesting that the positive relationship between economic freedom and income growth strengthens once transfer-related components are excluded, consistent with the idea that freedom promotes market-based gains rather than redistributive income effects. Employment growth and population growth also respond positively to EF, with coefficients of 4.50 ($p = 0.040$) and 3.26 ($p = 0.016$), respectively. These results confirm that states with higher economic freedom tend to experience stronger labor-market performance and faster demographic expansion.

To further disentangle which economic freedom dimensions drive these effects, EF was decomposed into its three core areas: government spending (Area 1), taxation (Area 2), and labor-market freedom (Area 3). The component-level results are reported in Table 2. For all measures, a higher score represents greater economic freedom. Specifically, a higher score in Area 1 indicates smaller government size and lower public spending relative to GDP; a higher score in Area 2 reflects lower tax burdens; and a higher score in Area 3 denotes greater labor-market flexibility and less regulation of employment practices.

For total income growth, less government spending (Area 1) exerts a positive and highly significant effect ($\beta = 0.89$, $p < 0.01$), while lower taxation (Area 2) is marginally significant and positive ($\beta = 0.40$, $p \approx 0.08$). Labor-market freedom (Area 3) is small and statistically insignificant. When income net of transfers is used, the government-spending component remains positive and significant ($\beta = 1.09$, $p < 0.01$), whereas taxation and labor-market freedom are not significant.

The employment-growth regression yields a somewhat different pattern: only government spending (Area 1) approaches significance ($\beta = 0.34$, $p = 0.06$), while taxation and labor-market freedom remain insignificant. For population growth, the coefficient on Area 1 remains positive and significant ($\beta = 0.22$, $p = 0.023$), reinforcing the idea that leaner, more efficient public spending environments support demographic dynamism.

Overall, the Stage 1 results demonstrate a consistent positive relationship between economic freedom and all three fundamentals —income, employment, and population growth—across both total and net-of-transfer income measures. Among the EF components, the government-spending dimension emerges as the most robust and stable predictor. These findings suggest that economic freedom enhances economic and demographic vitality primarily by limiting the government's ability to substitute for private market activity, with the effect persisting even after accounting for redistributive transfers.

Stage 2 Results: Migration Responses to Economic Freedom and Economic Fundamentals

The Stage 2 regressions link differences in economic freedom and underlying economic fundamentals to bilateral migration flows. Tables 3 and 4 present the spatial regression results that incorporate all economic fundamentals and control variables, using total income growth (INC) and income net of transfers (GNBIG) as alternative measures of state-level income performance. To further illustrate the mechanisms through which economic freedom affects migration, Table 5 (INC specification) and Table 6 (GNBIG specification) decompose the total effect into its direct and indirect components based on the recursive model structure. The direct effect represents the immediate impact of economic freedom differences (EFgap) on migration, whereas the indirect effects are calculated as the product of the Stage 1 coefficients of economic freedom on each fundamental (income, income net of transfer, employment, and population growth) and the corresponding Stage 2 coefficients of these lagged differences on migration. Table 7 presents a benchmark specification excluding fundamentals. All models control for climate and demographic factors and incorporate spatial dependence according to diagnostic tests.

In net-migration (ynet) models, both economic freedom and the underlying fundamentals exert strong, statistically significant effects on interstate mobility. When total income growth is used, the coefficient on the economic-freedom gap (EFgap) is positive and highly significant ($\beta = 0.43$, $p < 0.01$), indicating that migrants systematically move from less-free to more-free states. Lagged income, employment, and population growth differences are all positive and significant at the 1 percent level, confirming that faster-growing economies attract more in-migrants.

As a robustness check, we replace total income growth with income net of transfers (GNBIG). The results remain highly consistent across all specifications: EFgap and the main fundamentals—income, employment, and population growth—retain their positive and significant effects. The coefficient on income net of transfers is slightly smaller than that for total income, indicating that transfer-related income plays only a minor role in shaping migration patterns. This suggests that migration responds primarily to market-driven economic opportunities—those arising from production and labor market activity—rather than to redistributive transfers. These results reinforce the interpretation that economic freedom promotes mobility mainly through its impact on underlying economic fundamentals, rather than through fiscal redistribution.

Diagnostic tests for spatial dependence indicated that the spatial-error term (λ) was not statistically significant in the net-migration model, whereas the spatial-lag term (ρ) was highly significant. Accordingly, we estimated a spatial-autoregressive (SAR) specification that includes only the lag dependence. The estimated $\rho \approx 0.47$ is positive and statistically significant at the 1 percent level, indicating that states within

the same region tend to experience similar net migration outcomes. This suggests regional clustering in population movements, where states share common migration gains or losses rather than acting independently.

Tables 5 and 6 decompose the total impact of economic freedom on net migration into direct and indirect channels. In both specifications—using total income and income net of transfers—the direct effect of the economic-freedom gap (EFgap) is positive and highly significant, while all indirect effects transmitted through income, employment, and population growth are also positive. The direct effect (0.429 under total income; 0.409 under net-of-transfers) exceeds the total indirect effect (0.204 and 0.199, respectively), indicating that roughly one-third of the overall influence of freedom on net migration operates through its enhancement of economic fundamentals. Among these, the income channel dominates, followed by population and employment growth, confirming that economic freedom stimulates mobility primarily by strengthening market-driven economic performance.

The similar results across both income measures further show that these effects are rooted in productive, market-based activity rather than redistributive transfers. Overall, economic freedom promotes net migration through a dual mechanism: it directly attracts movers to freer institutional environments and indirectly amplifies these movements by fostering the economic growth that sustains them.

The outflow regressions evaluate how differences in economic fundamentals influence residents' decisions to leave their home states. When total income growth is used, the coefficient on EFgap is positive but statistically insignificant ($\beta = 0.112$, $p = 0.164$) and remains insignificant when income net of transfers replaces it ($\beta = 0.100$, $p = 0.214$). In both models, however, income, employment, and population growth show robust, highly significant positive effects. Positive and significant coefficients on income, employment, and population growth differences indicate that when economic conditions in the destination outperform those in the origin, outmigration from the origin increases. In other words, individuals are more likely to leave when destination states offer stronger growth prospects.

The magnitudes of the coefficients on income are very similar—about 0.0093 under the total-income specification and 0.0088 under the net-transfer specification—implying that transfer payments do not materially alter outflow dynamics.

These results indicate that outmigration is driven more by economic opportunities in destination states than by differences in economic freedom alone. While the direct effect of economic freedom (EFgap) is statistically insignificant, the decomposition results in Tables 5 and 6 show that its indirect effects through economic fundamentals are substantial. In the total-income specification, the indirect effect is about 64 percent larger than the direct coefficient, and in the

net-of-transfers specification, it is nearly 87 percent higher. These strong indirect channels —operating primarily through income and population growth—suggest that lower economic freedom indirectly increases outmigration by weakening local economic performance.

In this sense, economic freedom itself does not directly push residents away; rather, insufficient freedom constrains income, employment, and demographic growth, which in turn encourages residents to seek better opportunities elsewhere. The close consistency of results across both income measures confirms that these effects are rooted in market-driven fundamentals rather than redistributive transfers.

The spatial parameters reveal additional insights. Both the spatial-lag (ρ) and spatial-error (λ) terms are large in magnitude and statistically significant. The negative coefficient on ρ (≈ −0.76) suggests spatial competition rather than complementarity: destinations compete for outmigrants from the same origin. Higher outflows toward one destination reduce flows toward neighboring destinations, reflecting spatial substitution among potential receiving states rather than anti-regional movement. The positive and significant λ term, in turn, indicates correlated unobserved regional effects—such as macroeconomic disturbances or shared policy trends—that influence outmigration patterns across contiguous states.

Turning to inflows, the results show that EFgap remains positive and statistically significant when controlling for economic fundamentals (β = 0.186, p = 0.016 with total income; β = 0.176, p = 0.022 with income net of transfers). All three fundamentals—income, employment, and population growth—show strong positive, highly significant effects across both models. States with faster income, employment, and population growth attract more migrants, confirming that individuals primarily respond to observed economic performance rather than economic freedom alone.

Replacing total income with income net of transfers leaves the overall results unchanged. The coefficients on income differences remain robustly positive (≈0.0086 for total income, ≈0.0079 for net income), indicating that transfer payments have only a minor influence on migration decisions. The slight decrease in coefficient magnitude for GNBIG suggests that transfer-related income plays only a minor role in migration decisions, implying that migration responds primarily to market-driven opportunities rather than to redistributive transfers.

The positive and significant EFgap coefficients in both models (around 0.18) contrast with the insignificance observed in the outflow equations. This implies that differences in economic freedom more strongly influence inflows—states with greater relative freedom tend to attract migrants—whereas outflows are more responsive to economic fundamentals. The negative ρ (≈ −0.75) again reflects competitive dynamics

among destinations, where an increase in inflows to one state is associated with reduced inflows to its neighboring states. Meanwhile, the positive λ (≈ 0.93) indicates shared regional shocks or unobserved similarities that jointly affect migration inflows across nearby states.

The decomposition results in Tables 5 and 6 further clarify this mechanism. Although the direct effect of economic freedom on inflows is significant, the indirect effects—operating through income, employment, and population growth—are nearly as large, differing by only 8 percent under the total-income specification and 5 percent under the net-of-transfers model. This balance suggests that migrants are not drawn to economic freedom per se, but to the stronger economic environment that freedom helps produce.

In models estimated without economic fundamentals, the coefficients on EFgap are notably larger than in the full models. This inflation reflects the fact that, once controls for income, employment, and population growth are removed, EFgap captures part of the variation previously explained by those fundamentals. This pattern aligns with the recursive model structure of this study: economic freedom first influences state-level fundamentals, which in turn affect migration decisions. When these intermediating fundamentals are omitted, the direct effect of EFgap on migration mechanically absorbs their indirect influence, yielding larger coefficients.

Additional robustness checks are conducted using non-spatial fixed-effects regressions that exclude spatial dependence and focus solely on within-state variation. In these models, the coefficients on EFgap shrink and lose statistical significance, confirming that spatial spillovers are central to the economic freedom–migration link. This finding reinforces the recursive and spatial logic of the framework: migration responses to freedom are shaped not only by local economic fundamentals but also by competitive regional dynamics, as neighboring states compete for migrants rather than share common opportunity effects.

Overall, the results strongly support the recursive structure of the analysis. Economic freedom primarily shapes migration by improving state-level income, employment, and population growth, rather than through a purely direct institutional channel. When these fundamentals are excluded, the apparent effect of economic freedom becomes larger, confirming that much of its influence operates indirectly through enhanced economic performance. The results also reveal a clear directional asymmetry: economic freedom differences significantly affect inflows and net migration but not outflows. This pattern suggests that freedom functions less as a direct magnet for movers and more as a framework that generates the economic vitality attracting them. In other words, individuals migrate not simply because states are freer, but because freedom fosters the productive, market-based environment that makes those states more dynamic and desirable destinations.

Conclusion

This paper examined how economic freedom shapes U.S. interstate migration using a recursive spatial framework. Linking economic freedom to mobility through their effects on state-level fundamentals, it provides new evidence on both the direct and indirect channels of influence. The results show that economic freedom exerts a selective but meaningful impact on migration: it is strongly associated with inflows and net migration, but not with outflows. This directional asymmetry indicates that freedom primarily operates by fostering economic conditions that attract migrants to freer, more dynamic regions.

Once economic fundamentals are accounted for, the direct effect of freedom essentially diminishes, underscoring that its influence on migration is realized mainly through income, employment, and population growth. States with higher levels of economic freedom experience stronger economic and demographic performance, which in turn attracts new residents. This recursive structure highlights that individuals respond less to economic freedom per se and more to the tangible opportunities that freedom helps create.

This recursive structure highlights that individuals respond less to economic freedom per se and more to the tangible opportunities that freedom helps create. Spatial dependence complements this mechanism: migration flows exhibit regional clustering consistent with spatial competition, in which neighboring states compete for migrants based on their relative economic performance rather than on shared spillovers.

The findings carry several implications for both researchers and policymakers. For scholars, they underscore the importance of treating institutions and economic performance as interdependent rather than separate drivers of migration. For policymakers, the evidence highlights the importance of maintaining fiscal environments that support private-sector growth and efficient resource allocation. Policies that foster efficient governance, responsible budgeting, and flexible labor markets can therefore indirectly stimulate in-migration by strengthening the market fundamentals that individuals respond to. In this way, economic freedom contributes to sustainable regional development not by pushing residents away from less-free areas, but by creating the productive conditions that attract people.

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Appendix

Table 1

Stage 1 results

	(1) IncG	(2) GNBIG	(3) EmpG	(4) PopG
ef	6.960**	7.378**	4.499**	3.263**
	(2.906)	(3.537)	(2.134)	(1.308)
2002.year	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
2003.year	1.843***	2.591***	-1.354***	-0.076**
	(0.251)	(0.279)	(0.483)	(0.028)
2004.year	3.288***	4.151***	-0.411	-0.048
	(0.279)	(0.321)	(0.492)	(0.059)
2005.year	3.663***	4.213***	0.398	0.369**
	(0.428)	(0.522)	(0.501)	(0.139)
2006.year	5.320***	6.278***	0.195	0.386***
	(0.380)	(0.434)	(0.423)	(0.122)
2007.year	4.052***	4.682***	-0.566	0.411***
	(0.442)	(0.514)	(0.456)	(0.126)
2008.year	4.599***	4.040***	-0.808	0.967***
	(0.975)	(1.167)	(0.719)	(0.351)
2009.year	-1.200	-2.447	-3.089***	1.607**
	(1.503)	(1.840)	(1.100)	(0.639)
2010.year	4.321***	4.447***	-0.770	1.084**
	(1.193)	(1.443)	(0.906)	(0.482)
2011.year	6.597***	8.673***	1.307	0.948*
	(1.189)	(1.440)	(0.846)	(0.476)
2012.year	4.136***	5.942***	0.367	0.616*
	(0.904)	(1.098)	(0.663)	(0.325)
2013.year	1.006	1.636	0.190	0.741*
	(0.858)	(1.069)	(0.779)	(0.394)
2014.year	4.416***	5.263***	0.765	0.545
	(0.769)	(0.932)	(0.625)	(0.332)
2015.year	3.479***	4.123***	0.832	0.462
	(0.726)	(0.917)	(0.596)	(0.299)
2016.year	1.588**	2.253**	0.379	0.443
	(0.726)	(0.912)	(0.621)	(0.292)
2017.year	3.701***	4.872***	0.441	0.296
	(0.587)	(0.735)	(0.565)	(0.266)
2018.year	4.621***	5.623***	0.164	0.315
	(0.676)	(0.812)	(0.580)	(0.283)
2019.year	4.630***	5.418***	0.661	0.386
	(0.746)	(0.919)	(0.651)	(0.313)
2020.year	7.500***	3.223**	-5.244***	1.278***
	(1.003)	(1.274)	(0.818)	(0.463)
2021.year	10.649***	11.382***	3.251***	0.766
	(1.184)	(1.457)	(0.878)	(0.488)
_cons	-57.128**	-61.490**	-35.986**	-26.512**
	(24.420)	(29.736)	(17.852)	(10.967)
N	960	960	960	960

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Appendix, Cont.

Table 2

Stage 1 area results

	(1) IncG	(2) GNBIG	(3) EmpG	(4) PopG
area1	0.894***	1.086***	0.344*	0.220**
	(0.222)	(0.260)	(0.178)	(0.094)
area2	0.398*	0.338	0.114	-0.135
	(0.223)	(0.261)	(0.225)	(0.148)
area3	-0.129	-0.180	0.117	0.102
	(0.187)	(0.214)	(0.139)	(0.107)
2002.year	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
2003.year	2.010***	2.771***	-1.300***	-0.066
	(0.270)	(0.302)	(0.483)	(0.040)
2004.year	3.712***	4.617***	-0.242	0.039
	(0.230)	(0.269)	(0.485)	(0.055)
2005.year	3.331***	3.881***	0.028	0.034
	(0.350)	(0.409)	(0.472)	(0.065)
2006.year	4.918***	5.854***	-0.219	0.015
	(0.347)	(0.423)	(0.410)	(0.144)
2007.year	3.690***	4.299***	-0.925**	0.086
	(0.345)	(0.416)	(0.454)	(0.092)
2008.year	2.989***	2.349***	-1.956***	0.077
	(0.384)	(0.457)	(0.496)	(0.080)
2009.year	-3.740***	-5.024***	-4.948***	0.197*
	(0.328)	(0.396)	(0.464)	(0.116)
2010.year	2.535***	2.681***	-2.116***	0.096
	(0.349)	(0.409)	(0.533)	(0.121)
2011.year	4.441***	6.460***	-0.166	-0.109
	(0.330)	(0.382)	(0.599)	(0.097)
2012.year	2.418***	4.150***	-0.766	-0.179*
	(0.316)	(0.365)	(0.477)	(0.094)
2013.year	-0.758**	-0.189	-1.070**	-0.195*
	(0.298)	(0.346)	(0.505)	(0.105)
2014.year	2.805***	3.597***	-0.344	-0.232**
	(0.276)	(0.314)	(0.461)	(0.088)
2015.year	2.131***	2.749***	-0.165	-0.247**
	(0.413)	(0.472)	(0.473)	(0.100)
2016.year	0.421	1.101**	-0.534	-0.203**
	(0.356)	(0.428)	(0.508)	(0.089)
2017.year	2.667***	3.863***	-0.384	-0.275***
	(0.312)	(0.364)	(0.429)	(0.098)
2018.year	3.238***	4.217***	-0.843*	-0.380***
	(0.292)	(0.336)	(0.480)	(0.091)
2019.year	3.036***	3.745***	-0.475	-0.454***
	(0.254)	(0.297)	(0.482)	(0.085)
2020.year	4.980***	0.603**	-6.951***	0.128
	(0.277)	(0.298)	(0.664)	(0.254)
2021.year	7.544***	8.107***	1.206**	-0.635***
	(0.299)	(0.349)	(0.506)	(0.155)
_cons	-6.979***	-8.623***	-2.176*	-0.601
	(1.691)	(2.031)	(1.232)	(0.758)
N	960	960	960	960

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Appendix, Cont.

Table 3

Stage 2 Total Income results

	(1) ynet	(2) yout	(3) yin
main			
efgap	0.429***	0.112	0.186**
	(0.101)	(0.081)	(0.077)
dincg_lag1	0.014***	0.009***	0.009***
	(0.002)	(0.002)	(0.001)
dempg_lag1	0.005***	0.003**	0.003***
	(0.002)	(0.001)	(0.001)
dpopg_lag1	0.026***	0.033***	0.029***
	(0.006)	(0.005)	(0.005)
heat_ratio	-0.056	0.210**	0.213***
	(0.036)	(0.082)	(0.079)
prec_ratio	0.027*	0.001	0.007
	(0.015)	(0.022)	(0.021)
ret_ratio	0.098	-0.503***	-0.411***
	(0.112)	(0.090)	(0.086)
W			
ynet	0.472***		
	(0.035)		
yout		-0.761***	
		(0.056)	
e.yout		0.930***	
		(0.009)	
yin			-0.751***
			(0.056)
e.yin			0.933***
			(0.009)
sigma_e			
_cons	0.100***	0.073***	0.069***
	(0.002)	(0.002)	(0.002)
N	912	912	912

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Appendix, Cont.

Table 4

Stage 2 Net Transfer results

	(1) ynet	(2) yout	(3) yin
main			
efgap	0.409***	0.100	0.176**
	(0.101)	(0.080)	(0.077)
dgnbig_l~1	0.013***	0.009***	0.008***
	(0.002)	(0.001)	(0.001)
dempg_lag1	0.004**	0.003**	0.003**
	(0.002)	(0.001)	(0.001)
dpopg_lag1	0.026***	0.033***	0.029***
	(0.006)	(0.005)	(0.005)
heat_ratio	-0.053	0.205**	0.209***
	(0.036)	(0.082)	(0.078)
prec_ratio	0.027*	0.002	0.008
	(0.015)	(0.022)	(0.021)
ret_ratio	0.099	-0.499***	-0.405***
	(0.112)	(0.090)	(0.085)
W			
ynet	0.470***		
	(0.035)		
yout		-0.760***	
		(0.056)	
e.yout		0.930***	
		(0.009)	
yin			-0.750***
			(0.056)
e.yin			0.933***
			(0.009)
sigma_e			
_cons	0.099***	0.072***	0.069***
	(0.002)	(0.002)	(0.002)
N	912	912	912

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Appendix, Cont.

Table 5

Decomposition of Direct and Indirect Effects of Economic Freedom on Migration (Total Income Specification

Effect Type	ynet	yout	yin
Direct (EFgap)	0.429	0.112	0.186
Indirect via IncG	0.097	0.063	0.063
Indirect via EmpG	0.022	0.013	0.013
Indirect via PopG	0.085	0.108	0.095
Total Indirect Effect	0.204	0.184	0.171
Total Effect (Direct+Indirect)	0.633	0.296	0.357
Indirect vs Direct (%)	-52%	+64%	-8%

Table 6

Decomposition of Direct and Indirect Effects of Economic Freedom on Migration (Net of Transfers Specification)

Effect Type	ynet	yout	yin
Direct (EFgap)	0.409	0.1	0.176
Indirect via GNBIG	0.096	0.066	0.059
Indirect via EmpG	0.018	0.013	0.013
Indirect via PopG	0.085	0.108	0.095
Total Indirect Effect	0.199	0.187	0.167
Total Effect (Direct+Indirect)	0.608	0.287	0.343
Indirect vs Direct (%)	-51%	+87%	-5%

Appendix, Cont.

Table 7

Stage 2 without fundamentals results

	(1) ynet	(2) yout	(3) yin
main			
efgap	0.555***	0.163**	0.246***
	(0.099)	(0.083)	(0.079)
heat_ratio	-0.057	0.244***	0.247***
	(0.037)	(0.086)	(0.081)
prec_ratio	0.019	-0.006	-0.002
	(0.015)	(0.023)	(0.022)
ret_ratio	0.110	-0.534***	-0.450***
	(0.105)	(0.088)	(0.083)
W			
ynet	0.493***		
	(0.035)		
yout		-0.777***	
		(0.056)	
e.yout		0.924***	
		(0.010)	
yin			-0.761***
			(0.056)
e.yin			0.927***
			(0.010)
sigma_e			
_cons	0.103***	0.077***	0.073***
	(0.002)	(0.002)	(0.002)
N	960	960	960

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

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