

# **ECONOMIC FREEDOM IN AMERICA'S 50 STATES**

**A 1999 ANALYSIS**

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### **ASSESSING THE USEFULNESS OF THE INDEX**

How well does our index perform? Does it measure anything useful and meaningful? Intuitive inspection of the index suggests yes, but a more powerful way to address these questions is to inquire whether the index links to measurable economic activities. If people value freedom, we believe they do, if freedom cultivates success, we believe it does, if freedom creates an environment for economic growth, we believe it does, then there should be quantifiable links between our index and various measures of economic well being.

Our method is straightforward. We attempt to model economic growth using three different metrics: population in-migration, change in value-added in manufacturing, and change in per capita personal income. After we construct reasonable models of these economic variables, we ask the question, "Is there a scientific link between the economic variables and our index of economic freedom?"

### **The Economic Variables**

We employ three measures of economic well being, net migration, percent change in value added by manufacturing, and average annual growth in per capita disposable personal income.

#### **Population In-Migration**

According to the Tiebout hypothesis and other work on population migration, people move where opportunities present themselves. The hypothesis is that there should be a flow of population away from states where economic freedom is relatively restricted into states where economic freedom is relatively available. Hence, a statistical relation between population in-migration and our freedom index implies that our index has value as a state ranking tool.

#### **Value-Added in Manufacturing**

Value-added in manufacturing is a proxy for capital investment. Environments attracting increases in capital spending are havens of economic growth. We hypothesize that states with relatively high levels of economic freedom should experience greater growth in value added in manufacturing because capital investment and the assets produced by it are better protected from taxes, discriminatory regulation, and redistribution. If freedom begets growth, there should

be a negative relation between our index and this measure of economic health.<sup>1</sup>

### Growth in Per Capita Personal Income

In many ways, per capita disposable personal income is the best measure of economic success. Perhaps wealth would be better, but data sources on the latter are suspect and rare. Financial success and general social conditions typically go hand in hand. We use changes in the growth rate to better account for underlying economic fundamentals attributable to economic resource base and legacy. Again, we suspect that our index is negatively linked to changes in personal income.

### Some Simple Statistics

Table 4.1 reports some data on the individual states and simple statistics across the states. Over this period, New York and California lost the most citizens to out-migration on a percentage basis. Connecticut, Rhode Island, Hawaii, New Jersey, and Massachusetts were close behind. At the other end, net population percentage winners were all Western states, Nevada, Idaho, Arizona, Colorado, Oregon, and Montana. Figure 4.1 below reveals that there is a distinct regional pattern to population movements during the 1990s. Americans seem to be heeding the suggestion of Horace Greeley with more than a few stragglers thinking he said "South" too.

**Table 4.1**  
**Some Data on the States**

	Net Domestic Migration 1990-1996	Unempl. Rate 1994	Avg Annual Pay, 1993	Percent Pop. Metro. 1994	Pop. Den./sq. mi. 1996	Pop. 1996	In Migration per 100 Population
<i>Alabama</i>	91,200	6	\$22,786	67.5%	84.2	4,398,355	2.07%
<i>Alaska</i>	(11,200)	7.8	\$32,336	41.8%	1.1	676,753	-1.65%
<i>Arizona</i>	365,500	6.4	\$23,501	87.3%	39	4,446,234	8.22%
<i>Arkansas</i>	94,600	5.3	\$20,337	45.0%	48.2	2,563,372	3.69%
<i>California</i>	(1,806,900)	8.6	\$29,468	96.7%	204.4	32,472,824	-5.56%
<i>Colorado</i>	281,000	4.2	\$25,682	84.4%	36.9	3,841,290	7.32%
<i>Connecticut</i>	(169,500)	5.6	\$33,169	95.7%	675.8	3,746,635	-4.52%
<i>Delaware</i>	22,800	4.9	\$27,143	82.7%	370.8	888,437	2.57%
<i>Florida</i>	773,500	6.6	\$23,571	93.0%	266.7	15,982,798	4.84%
<i>Georgia</i>	433,600	5.2	\$24,867	68.1%	127	7,490,079	5.79%
<i>Hawaii</i>	(51,200)	6.1	\$26,325	74.2%	184.3	1,190,394	-4.30%
<i>Idaho</i>	110,000	5.6	\$21,188	30.7%	14.4	1,203,466	9.14%
<i>Illinois</i>	(356,400)	5.7	\$28,420	84.1%	213.1	12,342,326	-2.89%

<sup>1</sup> Remember that higher values of our index imply *less* freedom, hence the negative relation.

<i>Indiana</i>	76,700	4.9	\$24,109	71.7%	162.8	5,929,176	1.29%
<i>Iowa</i>	(1,000)	3.7	\$21,441	44.0%	51	2,870,076	-0.03%
<i>Kansas</i>	(17,200)	5.3	\$22,430	54.9%	31.4	2,583,655	-0.67%
<i>Kentucky</i>	73,400	5.4	\$22,170	48.3%	97.7	3,948,155	1.86%
<i>Louisiana</i>	(83,900)	8	\$22,632	75.1%	99.9	4,960,135	-1.69%
<i>Maine</i>	(12,700)	7.4	\$22,026	35.9%	40.3	1,359,762	-0.93%
<i>Maryland</i>	(25,700)	5.1	\$27,684	92.7%	518.8	6,379,684	-0.40%
<i>Mass.</i>	(209,300)	6	\$30,229	96.1%	777.3	7,183,029	-2.91%
<i>Michigan</i>	(144,800)	5.9	\$28,260	82.5%	168.9	16,333,475	-0.89%
<i>Minnesota</i>	64,600	4	\$25,711	69.4%	58.5	5,086,166	1.27%
<i>Mississippi</i>	31,200	6.6	\$19,694	35.0%	57.9	2,795,759	1.12%
<i>Missouri</i>	73,900	4.9	\$23,898	68.1%	77.8	5,423,360	1.36%
<i>Montana</i>	51,200	5.1	\$19,932	23.8%	6	882,276	5.80%
<i>Nebraska</i>	6,300	2.9	\$20,815	50.7%	21.5	1,663,197	0.38%
<i>Nevada</i>	290,100	6.2	\$25,461	85.3%	14.6	1,614,278	17.97%
<i>N. Hampshire</i>	2,700	4.6	\$24,962	59.6%	129.6	1,203,077	0.22%
<i>N. Jersey</i>	(274,300)	6.8	\$32,716	100.0%	1076.7	8,845,091	-3.10%
<i>N. Mexico</i>	96,000	6.3	\$21,731	56.6%	14.1	1,714,532	5.60%
<i>N. York</i>	(1,251,800)	6.9	\$32,919	91.7%	385.1	20,791,164	-6.02%
<i>N. Carolina</i>	360,900	4.4	\$22,770	66.6%	150.3	7,916,602	4.56%
<i>North Dakota</i>	(18,900)	3.9	\$19,382	42.1%	9.3	657,547	-2.87%
<i>Ohio</i>	(66,800)	5.5	\$25,339	81.2%	272.8	12,229,078	-0.55%
<i>Oklahoma</i>	37,200	5.8	\$22,003	60.2%	48.1	3,362,334	1.11%
<i>Oregon</i>	220,400	5.4	\$24,093	70.1%	33.4	3,244,209	6.79%
<i>Pennsylvania</i>	(115,000)	6.2	\$26,274	84.7%	269	12,389,602	-0.93%
<i>Rhode Island</i>	(52,000)	7.1	\$24,889	93.8%	947.6	1,166,496	-4.46%
<i>S. Carolina</i>	47,400	6.3	\$21,928	69.7%	122.8	3,830,009	1.24%
<i>S. Dakota</i>	6,900	3.3	\$18,613	33.0%	9.7	748,074	0.92%
<i>Tennessee</i>	271,200	4.8	\$23,368	67.8%	129.1	5,441,049	4.98%
<i>Texas</i>	378,000	6.4	\$25,545	84.1%	73	19,511,221	1.94%
<i>Utah</i>	80,900	3.7	\$22,250	77.3%	24.3	2,063,167	3.92%
<i>Vermont</i>	4,500	4.7	\$22,704	27.2%	63.6	611,514	0.74%
<i>Virginia</i>	63,400	4.9	\$25,496	77.7%	168.6	7,136,164	0.89%
<i>Washington</i>	310,100	6.4	\$25,760	82.9%	83.1	5,869,935	5.28%
<i>West Virginia</i>	19,400	8.9	\$22,373	41.8%	75.8	1,836,710	1.06%
<i>Wisconsin</i>	84,100	4.7	\$23,610	67.9%	95	6,222,405	1.35%
<i>Wyoming</i>	5,400	5.3	\$21,745	29.8%	5	489,090	1.10%



## The Models

### Population In-Migration

We believe that total area in square miles of the state may influence migration. This controls for people seeking larger (or smaller) areas in which to live. Perhaps people are generally repelled by or attracted to states that have large populations, and we speculate that this effect may be nonlinear, and so we include the square of population. Temperature may matter. Normal daily mean temperature is the fourth independent variable. People may be moving because they like warm (or cold) places. In the same line of reasoning, the percent of days that are sunny is added. Grey places may be depressing and hazardous to health. Sixth is the crime rate. People may seek safer areas. Finally, public high school graduation rate is included as a proxy for educational quality and human capital. Families want their children to be smart, and to be around productive people. So the model of migration included allowances for other indicators of quality of life such as weather, space, safety, and education in addition to economic freedom.

Table 4.2 reports the OLS regression parameter estimates for the dependent variable population in-migration. Area is positively related to in-migration but not in a statistically meaningful way. Population and population squared are related. More populous states have larger in-migration.<sup>6</sup> Warmer and sunnier days are positively linked but not statistically significantly. The same applies to crime and the level of education. Our index is negatively related to in-migration. And since lower values of our index imply *more* freedom, this means that people are moving into states with high levels of freedom and out of states with low freedom, as measured by our index.

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<sup>6</sup> This holds over all ranges of the relevant data. Population is everywhere positively linked to in-migration.

**Table 4.2**  
**Population In-Migration**

Independent Variable	Intercept	Total Area	Pop.	Pop.2	Temp.	Sun Days	Crime	H.S. Grads	Index
Parameter Estimate	49786	0.520	0.047	-3.02E-009	4713	-475.6	54.92	1595	-138739
<i>t ratio</i>	0.076	1.219	3.207	-5.508	0.789	-0.101	1.46	0.315	-3.306
Adjusted R <sup>2</sup>	0.694								

For every increase of one in the index score of a state, between 174,437 and 259,483 people have left between 1990 and 1996.<sup>7</sup> This is consistent with the hypothesis that economic freedom is an important component in decisions of where people move, and there is a Tiebout effect as citizens shop for the state that best suits their desires and tastes. Most importantly, it implies that our index is capturing the effect we desire; it is measuring economic freedom.

### Value Added In Manufacturing

We use three control variables to model value added in manufacturing. They are all measures of the level of human capital in a state with the idea that investments will be made where the workers are expected to be most productive. These independent variables are the public high school graduation rate, the percent of the population graduated from college, and the number of people per patent issued. So the model of percentage change in the value added by manufacturing, which was used as a proxy for investment, takes account of human and physical capital, and with our index, economic freedom.

The results of OLS estimation of the model parameters are reported in Table 4.3.

<sup>7</sup> The use of a range derives from using additional, unreported here, estimates of the index. The range covers the five most important indexes that we reported earlier, in Table 2.2.

**Table 4.3**  
**Value Added in Manufacturing**

Independent Variable	Intercept	Percentage of Citizens Graduated High School	Percentage of Citizens Graduated College	Patents Issued per capita	Index
Parameter Estimate	3.104	0.0596	-4.2753	-0.00347	-24.352
<i>t ratio</i>	317.03	0.058	-1.656	-1.284	-2.185
Adjusted $R^2$	0.1091				

Again, we find a negative and significant relation between our measure of economic freedom, the index, and a measure of economic well being, value added in manufacturing. More freedom is negatively associated with more value added.

In a sense odd, the more patents and college graduates, the less value added in manufacturing. However, both are of marginal statistical significance.

This result on manufacturing activity adds additional weight to the hypothesis that investment is less likely to be made in states where assets are subject to relatively more taxes, redistribution, and other obstructions of economic freedom. For every increase of one in the index score at the national average, 5.39, (a 18.6 percent increase) for a state, the state will suffer between a 23.1 and 35.2 percent reduction in the growth of value added by manufacturing over the period 1987 to 1995.<sup>8</sup> In the terms of economists, the economy is elastic to freedom. The economy is responsive to changes in freedom.

### Growth In Per Capita Disposable Income

We use four independent variables to model average annual percent growth in per capita disposable income. Table 4.4 reports the OLS regression parameter estimates for income growth.

<sup>8</sup> Again, we use a range to reflect the fact that we have used other, robust, measures of freedom, the other indexes, and the range derives from the various alternative index parameter estimates.

**Table 4.4**  
**Average Annual Increase in Disposable Personal Income**

Independent Variable	Intercept	Percentage of Citizens Graduated High School	Percentage of Citizens Graduated College	Patents Issued per capita	Value Added by Manufacturing per Manufacturing Worker	Index
Parameter Estimate	21.0295	0.0869	-0.3945	0.0002	0.0000	-0.5670
<i>t ratio</i>	4.87	2.303	-4.30	1.979	1.654	-1.431
Adjusted $R^2$	0.5086					

High school graduation rates and the percentage of the population that has graduated from college are statistically significant. Oddly enough, the model indicates that while high school graduation rates have a positive effect on increase in income, college graduation has a negative effect. This may be a convergence effect. If college graduation is an indication of higher income, it may also mean that when more affluence is obtained, people develop a taste for policies that restrict income growth. People per patent is significant but barely. Value added per worker is positive, but it too has marginal statistical significance. So human capital, to a certain extent, is important in income growth as expected. The coefficient on the freedom index is negative, but its statistical significance is marginal.

For every increase of one standard deviation in the index score of a state, a 0.83 increase or a 15 percent increase, there is a 1.46 percent to 2.01 percent decrease in the average annual percent change in disposable per capita income over the period 1990-1994. This is consistent with the hypothesis that states with relatively more economic freedom enjoy higher rates of growth in disposable personal per capita income. This is because individuals in those states are allowed to keep more of their income, and thus the market place can more efficiently determine the allocation of resources.

### Summary

Using three different metrics of economic health, we find, in each case, a relation between our measure of economic freedom and prosperity. Given this finding we believe that our index and the rankings that it provides are useful measures of economic freedom that can be used by policy makers and other analysts for a wide variety of purposes and ends.