HOW DO BUSINESS OWNERS PERCEIVE THE STATE BUSINESS CLIMATE?

Using Hierarchical Models to Examine Business Climate Perception and State Rankings

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"Americans are hooked on polls and rankings." (Erickson 1987, 62)

ABSTRACT

State business climate rankings are popular and can be influential in policymaking. Past academic studies have criticized those rankings for being based on some subjective criteria and on state-level data. However, in this article, we propose, first, that a business climate is an individual perception, and second, that a business climate is a case-specific condition depending on industries and stages of firm development. Thus, it is critical to measure the business climate at the decentralized, individual level. We employ a newly released survey of over 3,600 small business owners and conduct hierarchical models to control both individual and state variables, and to examine within and between state covariates. Regression results demonstrate that most state rankings are null even for individual perception of business climate, and in fact some rankings are negatively associated. Moreover, contrary to the conventional understanding, personal income, corporate income, and sales taxes are not reflected in the perception, but property taxes are. These findings suggest a need for fundamental reconsideration of how policymakers use business climate rankings.

Keywords: business climate, state rankings, small business owners, individual perception

INTRODUCTION

State rankings for the business climate are popular, or at least we have to acknowledge how widely such rankings receive attention. When the Tax Foundation released its latest state index in March 2012, the report was downloaded over 200,000 times and received over 50 media citations within a week (Anonymous, pers. comm., March 2012). Similarly, when thumbtack.com released the Small Business Friendliness Survey in May 2012, it received over 150 media citations within two weeks, including major media such as *The Washington Post*, *The Wall Street Journal*, the *Los Angeles Times*, FOX Business, and ABC News. Moreover, policymakers such as the Oklahoma governor and New York state legislators contacted them directly for the results and implications (Daniels, pers. comm., 2012). It is evident that one such ranking report can receive far more attention than conventional academic journal papers on economic development.

As a result, those rankings could be influential regardless of their methodology or objectivity. Ever since the economic war between states in the 1970s, policymakers used some selective state business climate rankings to justify their economic programs (Fisher 2005, 1). The impact of the rankings could be significant, particularly when the rankings are factored by direct policy tools, namely taxes, because state and local legislators use tax cuts in an effort to be competitive with other states and to create more jobs (Steinnes 1984, 68) and because virtually all states offer tax incentives for the economic development policy (Plaut and Pluta 1983, 101).

However, there is a parallel debate between state ranking reports and academic critique of those reports. In a nutshell, academics uncovered that those state rankings had little correlation with economic growth–related indicators at the state level (Fisher 2005; Kolko et al. 2011). In other words, the higher scores in those ranking reports do not reflect better economic performance. The organizations publishing the state ranking reports should consider those critiques and examine why such disparity exists and what those rankings really mean in the context of economy. In this article, we propose that academic debates about ranking reports created by associating business climate with aggregate state-level economic indicators, such as growth in gross state product and employment, are not most appropriate for two reasons. First, the business climate is not an objective concept, but a subjective perception by people. Debating which state-level indicators are correlated with rankings is not fruitful. Second, a business climate can be case-specific; that is, the same condition can indicate different business climates depending on types of industries and size of businesses even within a state. Thus, with these two analytical points, we should decentralize the measurement of business climate as much as possible, preferably to the individual or firm level.

We propose an entirely different approach to examine rankings and business climate. In this article, we not only use a large-scale survey of small business owners to analyze the perception of business climate at the individual level, but also conduct hierarchical models to incorporate both among and within states covariates to control for statewide economic performance indicators. More importantly, we test how individual perceptions about business climate are linked with state rankings. Our hierarchical linear models

demonstrate that two out of three state rankings are not important for business owners' perception of business climate. The third state ranking, the Economic Freedom Index, is negatively correlated, meaning that the higher in the ranking, the lower the perception of business climate. Analyzing taxes and the business climate, we find that corporate, individual, and sales taxes are not important, but property tax is.

These findings suggest that policymakers should not initiate, modify, or justify their state economic development programs based on the popular state rankings, at least not in the ways that those reports would seem to indicate. With the exception of property tax, lower corporate, individual, or sales taxes do not reflect a more positive perception of the business climate, either. State and local governments should therefore reconsider whether and how they provide tax reduction and exemption as a tool to promote a better business climate. While our sample is not a representative sample of all small businesses in the country, it has extensive coverage of the personal and business service sectors, which account for about 35 percent of all business establishments in the United States.

LITERATURE REVIEW

The business climate studies have their roots in the comparative cost analyses (Erickson 1987, 63), and the history of state business climate rankings goes back to the late 1970s. The first wave of state rankings began with the Fantus study (1975), commissioned by the Illinois Manufacturers' Association, and *A Study of Business Climates of the 48 Contiguous States of America*, developed by Alexander Grant and Company (1979). These ranking reports were published by location consultants—using methodology that was neither transparent nor rigorous, while they were generally known as anti-tax, anti-union, and anti–social safety net and favoring manufacturers in mature industries with low profit margins and orientation to low cost inputs (CFED 1986; Erickson 1987, 66; LeRoy 2005, 81). As a result, Southern states with lower wages and no right-to-work law received higher rankings. At about the same time, *Inc*. magazine (1981) published its *Report Card on the States*.

The second wave of state ranking studies took place in the late 1990s and early 2000s. The Tax Foundation produced *State Business Tax Climate Index*, Beacon Hill Institute published *State Competitiveness Report*, the Small Business and Entrepreneurship Council constructed the *Small Business Survival Index*, and the Pacific Research Institute proposed *Economic Freedom Index*, to name a few. Fisher (2005) counted eight of those annual or biannual rankings, and Kolko et al. (2011) found 11 of them. A list of those rankings and stated focus are summarized in Table 1.

Table 1
Summary of State Ranking Reports

Ranking	Organization	Stated Focus
Economic Freedom Index	Pacific Research Institute	Free enterprise and consumer choice, individual rights to pursue interests through voluntary exchange
State Competitiveness Index	Beacon Hill Institute	Long-term competitiveness for attracting and incubating new businesses and growth of existing firms
State Business Tax Climate Index	Tax Foundation	Tax rates
Small Business Survival Index	Small Business & Entrepreneurship Council	Government-imposed or government-related costs affecting investment, entrepreneurship, and business
State New Economy Index	Progressive Policy Institute	Compatibility of state's economy with "New Economy"
Cost of Doing Business Index	Milken Institute	Fundamental business costs, including labor, taxes, real estate, and electricity
Fiscal Policy Report Card	Cato Institute	Fiscal performance of governors in terms of restraining the growth of taxes and spending

Source: Modified from Kolko et al. (2011, p.33).

As the number of ranking reports surged, so did scholarly critics of those reports. First, the rankings vary substantially depending on criteria. Even within a similar theme of rankings, such as tax-based rankings, different weights, different criteria, and other unknown methodological differences yield entirely different rankings of states. Fisher (2005, viii) found that thirty-four of the fifty states could claim that they were in the top ten somewhere among the five business climate ranking studies. Kolko et al. (2011) analyzed nine ranking reports and identified seven number one states, four of them ranked as low as forty-sixth or forty-eighth in other rankings. Thus, it is unclear what each ranking means by the "business climate." Even worse, policymakers select the most convenient ranking to justify their preferred economic development initiatives.

Second, those ranking studies have had little correlation with the actual business outcomes or economic indicators of each state. Skoro (1988) analyzed Thornton and Inc. rankings and found no correlations with economic performance. Similarly, Fisher (2005) did not find any statistically significant and strongly positive correlations between the rankings and firm formation rate, job creation by the state economy, jobs created by fast-growing Inc. firms, the number of Initial Public Offerings (IPOs), or issued patents. While these two studies analyzed a simple correlation, Plaut and Pluta (1983)[1] and Kolko et al. (2011) conducted more sophisticated, multivariate analyses, and reached the same conclusion. Steinnes (1984) was one of the few studies to measure whether dynamic changes in the policy variables had affected the economic outcome. At any rate, the past scholarly studies have unanimously found little relationship between rankings and economic performance.

Third, Fisher (2005) challenged the internal validity of ranking studies. For instance, among the various rankings, the Small Business Survival Index had a relatively selective scope and was intended to measure how well a state creates a nurturing environment for entrepreneurial activity through public policies. However, of the twenty-three indicators they employed to measure "major government-imposed or government-related costs affecting investment, entrepreneurship, and business" (SBEC 2011, 5), they considered only lower taxes, a state's right-to-work status, a state minimum wage lower than the federal one, lower health care and electricity costs, a lower crime rate, and fewer government employees as sources of a better climate (Fisher 2005). Therefore, "state spending on infrastructure, the quality of the education system, small business development centers or entrepreneurial programs at public universities, technology transfer or business extension programs, business-university partnerships, small business incubators, state venture capital funding—none of these public activities are considered" (Fisher 2005, 8). Other, still more generic business climate rankings, which claim wide-ranging implications despite narrowly selected data, require little further examination.

These past critiques are well taken, and the ranking study developers should reconsider what their rankings mean and how they are constructed. However, in this article, we address more fundamental and conceptual limitations of the debate between the ranking reports and scholarly critiques. The main purpose of ranking critiques was to either connect or disconnect the highly subjective measures of business climate rankings with more objective measures of economic performance. However, we then must ask the question: What exactly is a state's business climate? Scholars often took the rankings on face value and tried to measure economic outcome indicators related to economic growth. As mentioned, the commonly used indicators were changes in employment or establishment, and gross state product. Yet, do they really represent the business climate? The answer depends purely on how "business climate" is defined.

The authors of the ranking reports would argue that they had measured a specific aspect of the business climate, which may not necessarily have had a high correlation with those growth-related indicators. Then, some scholars additionally attempted to specify indicators and narrowed them down to changes in employment in manufacturing and services (Steinnes 1984). However, they still did not detect the correlation. The ranking reports further claimed the specificity of their measures, sometimes including highly qualitative dimensions such as "economic freedom." The gap between these opposing viewpoints has not narrowed, and we hardly have gotten closer to what should represent the core of the "business climate."

The gap between these debates is, in a sense, similar to the dialogue among authors who discussed the rankings of metropolitan areas in relation to measuring high-tech activity in a special issue in the *Economic Development Quarterly*. Chapple et al. (2004) proposed measuring high-tech activity based on occupational data instead of traditional industry-based data, and provided a new ranking of high-tech metropolitan areas. Cortright and Mayer (2004) cautioned that any ranking analysis, often based on a single measurement criterion, could undermine the nuanced models of regional development.

Gottlieb, who was involved in the construction of the Metropolitan New Economy Index, defended the position that each ranking had different purpose and different measure (2004). Any discussion of which ranking presented a better description of the "new economy" could not advance further.

In this article, we argue that it is not fruitful to discuss which ranking is better, or to empirically test the association of the business climate with generic economic growth indicators at the state level. Therefore, we will not delve into the debate of which indicators could be the most objective measures of the business climate or subsequent economic performance. Instead, we start with an assumption that a business climate is a case-specific condition and a subjective perception by individuals. Therefore, we propose that the measurement of the business climate should be decentralized as much as possible. In other words, we investigate *how individuals perceive the business climate* by controlling for the previously debated business climate factors and economic performance indicators at the state level, rather than asking what the best business climate is or which state has the better environment, based on data aggregated by states.

Moreover, a business climate can be case-specific. A good business climate for one industrial sector could mean little for others. For instance, deductions or sales taxes can have different impacts for labor-intensive assemblers or capital-intensive component suppliers. A breakdown by industrial category may be only one dimension. The business climate may vary even within the same industry. For example, many states have a progressive scale for corporate taxes, but the highest corporate tax rate matters little for small businesses. Thus, the business climate can also be different for businesses of different scale and scope, and it is more appropriate to measure the business climate at the individual level by controlling industry and firm factors.

There have been only two groups to conduct studies concerning individual perception of business climate. Reynolds and White (1997) used the Wisconsin Entrepreneurial Climate Study, and Carter et al. (2004) used the Panel Study of Entrepreneurship Dynamics. However, the objective of both studies was to conduct principal component factor analysis to select and categorize "entrepreneurial climate" variables into groups. They provided no multivariate analysis to identify what individual, firm, or state-level factors are associated with the perception of the business climate.

Our study is straightforward in asking what business owners consider to be a state's overall friendliness toward starting or running companies. To our knowledge, this is the first study to investigate the perception of business climate at the individual level and control both individual and state-level variables. Furthermore, we conduct hierarchical models to control among states and within state covariates. If we do not detect any correlations between business climate rankings and individual perceptions of business climate, the specificity argument of those rankings is fundamentally weakened.

This decentralized measure of how individuals perceive the business climate is crucial for policy context because, at the end of the day, what policymakers care most about is

perception. Governors would lower tax rates, for example, not really because they want to fare better in state rankings, but because they want to show business owners and the general public that they created a better environment for businesses. What pursuing state business climate rankings or lowering taxes achieves (or does not achieve) will be imminently meaningful to policymakers, if such policy change does not affect the perception of the business climate.

METHOD

To answer the question of individuals' perception of the business climate, we collected data from a survey conducted by thumbtack.com, an online marketplace for local business and personal services. Launched in December 2009, thumbtack.com lists more than 260,000 businesses of various kinds, including home improvement, event planning, teaching/tutoring for children and adults, graphic design, customer service, marketing, legal services, and software and business development. Approximately 5,000 new businesses sign up each week. The survey targeted businesses that registered with thumbtack.com in November and December 2011. While we received over 6,000 responses, we omitted those that did not answer key questions from this analysis, yielding about 3,600 responses. The response rate is approximately 12 percent.[2]

The dependent variable is a summation of three questions related to the perception of the state business climate:

1) In general, how would you rate your state's support of small business owners?
2) Would you discourage or encourage someone from starting a new business in your state?
3) How difficult or easy do you think it is to start a business in your state?

Note that these questions are highly neutral and allow each respondent to formulate what the business climate means to them, in contrast to the state ranking reports which start with normative and subjective criteria of what the business climate should mean. Responses to each question are given on a scale from one to five, with five indicating perception of a more supportive business climate. We combine these three items to form our dependent variable, which we refer to as the overall perception score. This additive dependent variable theoretically ranges from three (lowest) to fifteen (highest).[3]

To account for variation in the perception of business climate, we introduce explanatory variables at two separate levels, namely, at the individual firm level and the state level. Ordinary Least Squares (OLS) regression assumes individuals are identically and independently distributed. This assumption is violated, as individuals residing in the same state would face the same business regulation and macroeconomic environment. Hence, using OLS to estimate coefficients for covariates measured at state level would lead to incorrect standard errors. We employ a hierarchical linear model instead. Following Bryk and Raudenbush's (1992) notation, the equation can be expressed as follows:

$$Perception_{ij} = \beta_{0j} + \beta_{1j}X_{ij} + \varepsilon_{ij}$$
$$\beta_{0j} = \gamma_{00} + \gamma_{01}Z_j + u_{0j}$$
$$\beta_{1j} = \gamma_{10}$$

These three equations can be simplified as follows:

$$Perception_{ij} = \gamma_{00} + \gamma_{10}X_{ij} + \gamma_{01}Z_j + \varepsilon_{ij} + u_{0j}$$

The subscript *i* represents a survey respondent and *j* represents the state in which he or she resides. We conducted the survey in all 50 states plus the District of Columbia. As we have only one respondent in Wyoming with an incomplete survey, we excluded that respondent in the analysis. Hence, we have 50 separate states/jurisdictions in the model.[4] This combined equation indicates that for each individual business owner, perception of business climate is a function of individual characteristics, collectively refers to as *X*, and of the state-level characteristics, which are referred to as *Z* in the equation.[5]

Let us elaborate on the covariates in the model. At the individual firm level, we control for the basic demographic information about the company, such as the employment level, ownership type (whether the respondent is the owner, the manager, or both owner and manager), the company's financial performance level, its revenue level, and its charging rate to customers compared to one year before. We also include respondents' prior experience in running a company, gender, age, political orientation (liberal or conservative), and educational attainment.

Providing health insurance is considered a major additional cost for employers, so we ask whether the respondent provides health insurance to their employees. We then ask whether respondents are aware of networking or training programs provided by the state or local government (a dummy variable of 1 for "Yes, aware" and 0 for "No"). Additionally, we ask questions about how respondents view the regulatory environment in the areas of health, labor, licensing, environment, and zoning (5 = *the best environment*, and 1 = *the worst environment*). Based on these regulatory variables, we can test which regulatory environment can affect the overall perception of business climate.

At the state level, we examine variables that can potentially affect individual owners' perception of the business environment. These variables include two state-level economic performance indicators: changes in the total establishment between 2007 and 2009, and changes in employment between 2008 and 2010,[6] the latest available years from County Business Patterns.

We also account for variation in physical climate as previous studies find that better weather is relevant to economic growth (Glaeser, Kolko, and Saiz 2001; Kolko et al. 2011). We use the average number of sunny days annually and the comfort index in each state's capital city[7] as proxies for favorability of physical climate.

We also extend our analysis to include three popularly cited state rankings: the Economic Freedom Index, which intends to measure free enterprise and consumer choice, the State Competitiveness Index, which claims to measure "policies and conditions that ensure and sustain a high level of per capita income and its continued growth" (Beacon Hill Institute 2010, 6), and the report provided by the Tax Foundation, which is based on tax rates (Tax Foundation 2012, 1). Each ranking is composed of several subcomponents. For example, the Economic Freedom Index has fiscal, regulatory, judicial, government size, and welfare spending subcomponents. Since each ranking has high correlations with its subcomponents, we tested the overall scores of the three rankings in one model and their subcomponents in other models.

We pay special attention to the association between various state rankings and the perception of business climate. First, based on claims by those state ranking reports, we would expect that the higher score in each of the three state ranking results, the better perception of business climate (see Model 2). Furthermore, we would expect that the higher score in each subcomponent in the Economic Freedom Index (from fiscal to welfare factors) would also result in a better perception of business climate (see Model 3). Also, as the Tax Foundation, Small Business Economic Council, and other organizations incorporating tax rates have long argued, a higher score in various subcomponents of tax-related factors (from corporate to property tax factors) should result in a better perception of business climate. We first employed the subcomponent scores provided by the Tax Foundation in Model 4. While the Tax Foundation integrated the tax rates into their subcomponent scores, we do not know the exact methodology or its effect on the distribution in each of the subcomponents. Therefore, we additionally tested using the actual tax rates in Model 5. Note that the scores from the Tax Foundation are higher if the tax rates are lower. We therefore expect the opposite direction of regression coefficients in Model 4 and Model 5.

The survey respondents are owners and managers of small businesses: 95.5 percent had ten or fewer employees, and 92.8 percent were owners and managers. The provided services ranged widely, from business services to personal care, and the Appendix presents a descriptive table.

FINDINGS

Table 2 presents the results from the hierarchical linear model.[8] With regard to the basic demographics, the education level is not statistically significant, and neither are types of business ownership, regardless of whether the survey respondents are managers, owners, or both. Men tend to have a negative perception about the state business climate, which is consistent with Carter (1997), who found more positive perception by women. While most age ranges are not significant, the oldest cohort (age 65 and above) has the most optimistic business perception. Interestingly, people who consider themselves politically conservative or liberal both turn out to have a better perception of the business climate, suggesting that people who are more "in the middle" politically have a lower perception.

Table 2

Regression Results

		Model 1		Model 2		Model 3		Model 4		Model 5	
		Coefficient		Coefficient		Coefficient		Coefficient		Coefficient	
	(Intercept)	4.582		7.877		6.292		3.766		5.840	
Insurance	Offer insurance to employees	-0.128		-0.123		-0.118		-0.123		-0.124	
Regulations	Health	0.204	** *	0.214	** *	0.212	** *	0.206	** *	0.205	** *
	Labor	0.237	** *	0.235	** *	0.239	** *	0.239	** *	0.240	** *
	Tax	0.250	** *	0.241	** *	0.240	** *	0.243	** *	0.251	** *
	Licensing	0.423	** *	0.413	** *	0.417	** *	0.423	** *	0.425	** *
	Environmental	0.033		0.034		0.032		0.029		0.026	
	Zoning	0.071		0.072		0.069		0.070		0.063	
Govt programs	Aware of gov't training programs	0.438	** *	0.437	** *	0.432	** *	0.437	** *	0.438	** *
	Aware of gov't network programs	0.339	** *	0.336	** *	0.344	** *	0.346	** *	0.341	** *
Firm performance	Revenue compared to 1-yr ago	0.220	** *	0.224	** *	0.226	** *	0.222	** *	0.223	** *
	Rate charge	0.042		0.033		0.036		0.040		0.037	
	Finance compared to 1-yr ago	0.420	** *	0.416	** *	0.415	** *	0.413	** *	0.418	** *
	Employment size	-0.110	*	-0.111	*	-0.115	**	-0.111	*	-0.110	*
Demographic data	Owner but not manager	-0.519		-0.512		-0.504		-0.516		-0.519	
	Serial entrepreneur	0.037		0.033		0.032		0.032		0.035	
	Male	-0.218	**	-0.208	**	-0.211	**	-0.216	**	-0.221	**
	Age 65+	0.613	**	0.591	**	0.583	**	0.595	**	0.603	**
	Politically conservative	0.257	** *	0.253	** *	0.250	** *	0.239	** *	0.243	** *
	Politically liberal	0.231	**	0.245	**	0.244	**	0.244	**	0.234	**
	Education: college	0.072		0.083		0.085		0.072		0.075	
Industry sector	Health, beauty & wellness	-0.360	**	-0.361	**	-0.356	**	-0.364	**	-0.353	**
	Vehicle	-0.738	**	-0.408	*	-0.410	*	-0.452	*	-0.444	*
State econ	Employm't change: 2008-10			3.711		2.333		0.888		-1.213	
Weather	Sunny Days			-0.002		0.000		-0.003		-0.001	
	Comfort Index			-0.009	** *	0.002		-0.015	** *	-0.005	
Other ranking scores	Economic Freedom Index			-0.105	** *						
	State Competitiveness Index			-0.033							
	Tax Foundation Index			0.029							
Economic Freedom sub-index	Fiscal score					-0.023					
	Regulatory score					-0.010					
	Judicial score					-0.039	**				
	Government score					0.025	**				

	Welfare score			-0.039	** *		
Tax Found'tn sub-index	Corporate tax					0.120	
	Individual tax					0.013	
	Sales tax					0.048	
	Property tax					0.248	** *
Tax rates	Top personal income tax						0.010
	Top personal capital gain tax						-0.029
	Top corporate income tax						-0.257
	Corporate capital gain tax						0.237
	Property tax						-0.161 **
	# of observations	3,581	3,563	3,563	3,581	3,581	
	# of groups	50	49	49	50	50	
	AIC	15,566 .8	15,496 .9	15,507 .3	15,591 .8	15,604 .8	

Whether the firm provides its employees health insurance is not significant. Four regulation variables correlate with business climate perception: health, labor, the tax code, and licensing. At the same time, the perception of the environmental and zoning regulatory environment does not affect the overall business climate perception. This finding contrasts with two earlier firm-based surveys (Kauffman Foundation 2008; NFIB 2001), which indicated high concerns in these two regulatory areas by small businesses.

Responses indicate that the awareness of networking or training programs provided by local governments positively affect the overall perception of business climate, suggesting that business owners and managers view these government-led programs as supportive of the business climate.

We move on to Model 2, which starts to include covariates at the state level. People tend to have a myopic view about the business climate in relation to economic performance. State-level changes in employment and establishment during the previous two years are not significant, but changes in the revenue or financial situation of their *own* companies do affect business climate perceptions. Therefore, even though we asked about "the business climate of your state," people tended to associate it with the performance at the micro, firm level. In the meantime, the level of change in employment at their own company is significant only at the 90 percent level, and we do not necessarily conclude that perception of business climate changes with a firm's employment size. Of the eight industrial sectors, the health, beauty, and wellness sector and the vehicle-related sector tend to have a negative perception of business climate, though the latter is significant only at the 90 percent level in most models.

Additionally, the number of sunny days is not significant, though the comfort index is statistically significant in Model 4 and Model 6, and weakly significant in Model 2. Conservatively speaking, we do not have a strong evidence to suggest that the physical climate conditions are statistically correlated with the business perception, in contrast to the findings by Kolko et al. (2011).

Model 2 further tests how the three state ranking reports affect the perception in business climate. Of the three rankings, only the Economic Freedom Index (EFI) is correlated, while rankings of the State Competitiveness Index and the Tax Foundation's Index are not significant. Thus, despite their claims to measure the conditions that ensure a high level of per capita income and income growth and their arguments that taxes are unbearable, government-imposed costs that impact small businesses and entrepreneurs (Small Business Economic Council 2011, 5), these factors are not important. More important, the EFI is negatively correlated, meaning that the higher a condition at the state level is measured by the EFI, the lower the perception in business climate. This seems a paradox, for the EFI indicator is supposed to measure "the right of individuals [and enterprises] to pursue their interests through voluntary exchange of private property under a rule of law" (PRI 2008, 7). Thus, the "economic freedom" defined by the EFI does not lead to a higher perception of business climate. We need to further investigate this factor.

Model 3 further decomposes the EFI score, which has five subcomponents. First, two of them—fiscal and regulatory factors—are not significant. Next, the score for government size is positively correlated, though only at the 95 percent level. According to the Pacific Research Institute, the higher score here should mean fewer units, employees, and expenditures by the state and local government. Therefore, the smaller government units and employees are associated with a better perception of business climate. The judicial score is negatively significant at the 95 percent level. However, it is hard to identify implications because we do not know what this indicator means. The score includes not only straightforward quantifiable indicators, such as the compensation and term of judges and the number of active attorneys, but also qualitative indicators, such as whether the state has had liability reform, class action reform, jury service reform, etc. In fact, the Pacific Research Institute itself admits that "it is not easy to interpret these indicators" (PRI 2008, 26). We do not spare debate with this factor.

The next subcomponent, the welfare factor, becomes more controversial. The Pacific Research Institute explicitly states that welfare "is the most egregious violation of economic freedom: resources are forcibly transferred from one private individual to another without anything given in exchange and no tangible public asset produced. We include indicators measuring expenditures or payments for Food Stamps, Social Security, Medicare, and other programs." (PRI 2008, 27) However, this factor is statistically significant with a negative coefficient. In other words, the lower the score is (and thus, the higher welfare spending is), the better the perception is. Whatever freedoms may be violated, business owners perceive a better business climate with higher social welfare spending.

Model 4 examines how subcomponents provided by the Tax Foundation affect the business climate perception. Since Model 2 has demonstrated that the overall score of the Tax Foundation is null, this analysis requires closer attention. Although rather counterintuitive, factors that one would most straightforwardly associate with operation of business, such as corporate tax, personal income tax, and sales tax, are insignificant. On the other hand, the property tax subcomponent is positively correlated. So the higher this subcomponent (i.e. the lower the property tax rate), the better the perception of business climate.

So far, Model 3 reveals three statistically insignificant variables and one significant variable. The overall score by the Tax Foundation is composed of weighted factors of these four variables, and we assume that the weight calculation process makes the overall score of the Tax Foundation in Model 2 statistically insignificant.

We further test the tax elements in Model 5, which employs the actual rate of various state taxes. Again, neither personal tax, corporate tax, or personal or corporate capital gain tax are significant, but the property tax is negatively significant. In this case, the lower the property tax rate, the better the perception of business climate. This finding is consistent with Model 4. In sum, personal income and corporate, capital gains, and sales taxes are not important for the perception of business climate, but property tax is.

DISCUSSION

Our most significant finding is that state rankings do not matter for the perception of business climate, at least not in the way those rankings are supposed to mean. The State Competitiveness Index was null in the regression result. Even more puzzlingly, the Economic Freedom Index was negatively significant. In other words, business owners negatively perceive the conditions imposed by the Pacific Research Institute in order to measure the economic freedom of enterprises.

Moreover, regression results at the subcomponent level suggested a few more insights with regard to the EFI. The larger the government size, the lower the perception of business climate. More importantly, spending on social welfare had a better influence on the perception of business climate, given the higher statistical significance level and the coefficient, than that of government size in Model 3. The negative coefficient of the overall EFI in Model 2 suggests that the social welfare factor has the most influence. Welfare could be important for businesses perhaps because social welfare is closely associated with a "social safety net," and owners and managers of small businesses value such a safety net at the state level. We will not know what specific factors within welfare affect the business perception based on this category in the EFI, but this topic deserves further research. A fact that the government provides unemployment insurance could be a relief for business owners, particularly of small businesses. On a related note, we should not underestimate the role of the elderly in business ownership and entrepreneurship. Although business owners of age 65 or older shared only 3.1 percent in this thumbtack survey, the age distribution of business owners over the general population is extremely wide, and at least 10 percent of business owners are age 65 or older (SBA 2005).

The overall score provided by the Tax Foundation was not important, and neither were corporate, personal income, and sales taxes, yielding no evidence to support the argument that higher taxes are bad for businesses or lower taxes are better. Only property tax had an effect on the business climate perception. This may be because companies pay property taxes regardless of company size or profits, which could more negatively affect small businesses that are not profitable in their first few years (Bartik 1989, 1014). A simple solution could be to link property taxes to companies' profit levels. Nonetheless, we have known that companies can manipulate their corporate profits to avoid corporate taxes, given a fact that two-thirds of companies in this country do not pay corporate income taxes (GAO 2008). Therefore, such a profit-based classification for property taxation may simply add another loophole for avoiding taxes. A property tax exemption for start-up companies' first few years may be an alternative. Yet, given the fact that 49.6 percent of startups operate from their homes (Kauffman 2008, 8), such an exemption may create yet another loophole through the overlap of personal and corporate taxes. This is a highly complex issue, and further research is needed in this area.

It is true that business owners and managers may be shortsighted and that their overall perception of state business climate reflects their own business performance rather than

the state's economic performance. Nonetheless, business owners do value networking and training programs provided by governments. State and local government officials should consider those types of programs to promote a positive business climate. We should add that our questions focused on whether they were *aware* of training or networking programs. Therefore, this factor's importance is not whether state or local government provides those programs, but whether those programs are visible to business owners.

The regulatory environment in the health, labor, tax code, and licensing areas is important for better perceptions of overall business climate. However, we must be cautious with the interpretation. What we asked was how unfriendly or friendly the state or local government is with regard to each type of regulation. Therefore, a "friendly" environment for each of these areas does not necessarily mean deregulation. The thumbtack survey also collected open-ended, qualitative inputs about business environment and, for instance, we found dozens of complaints regarding licensing, such as no enforcement mechanism to check licensed vs. unlicensed professionals, or cumbersome multiple license requirements by different cities or counties. Similarly, business owners complained about the difficulty to understand the tax codes. Thus, more regulations may be welcome in some areas, while simpler regulations could be essential in other areas. How each regulatory environment may contribute to a better perception of business climate is another research subject.

CONCLUDING REMARKS

Our hierarchical models have demonstrated that three popular state rankings are not related to business owners' perception of business climate through our sample of service-based businesses. Policymakers should not initiate or justify their economic development programs based on these popular state rankings. The Economic Freedom Index analysis results were particularly ironic, and one possible implication is that state policymakers should reverse the EFI's ranking order, celebrate all the previously low-ranked states, and reconsider what was wrong with all the previously high-ranked states. "Economic freedom" is not an interest, but a negative condition of business owners.

The regression results for taxes are rather counterintuitive and go against conventional economics, which assumes that anything that lowers production costs is good for companies. We need to exercise caution here. If we ask business owners in a standard survey whether lower taxes would help them, we already know the answer, and that answer is "yes" all the time. As Lichtenstein et al. have critically noted, the real "issue is whether the need represents a significant obstacle to the entrepreneur's success and development" (2004, 5). Our survey and regression results indicate that corporate and individual income tax rates per se are not an obstacle, at least not to shaping the perception of business climate. At the same time, the factors of tax codes and tax-related regulations were important. These results combined indicate that policymakers should consider creating a simpler regulatory environment for businesses, but not necessarily lower taxes.

The thumbtack survey had a relatively large sample, with over 3,600 responses from a variety of industries ranging from business services to personal care. We acknowledge, however, that our sample was skewed toward small firms within the personal and professional services, and do not argue that these results apply to the whole economy. In fact, generalization is the antithesis of this study's objective to analyze case-specific, individual perceptions of business climate. We encourage further research addressing different sectors of the economy within this framework of individual perception. Nonetheless, we would like to note that we have covered an important segment of the economy, since these service-based businesses comprise 35 percent of the U.S. economy. Moreover, these are the business sectors whose survival and growth the various ranking reports claim are significantly affected by the state business climate.

APPENDIX

Industry Breakdown

Industry Category	Examples	Count	Share
Home Maintenance & Repair	ACs, architects, landscaping, realty	1,827	30.3%
Events	Music, photography, party planning	1,215	20.2%
Health, Beauty & Wellness	Beauty, fitness, massage, health	755	12.5%
Business Services	Legal, sales & marketing, customer support	662	11.0%
Technology & Creative	Networking, software, web development	535	8.9%
Instruction	Academic subjects, creative arts, language	512	8.5%
Personal Care	Children, pets, senior services	286	4.7%
Vehicle	Repairing, detailing, transportation	172	2.9%
Writing, Editing & Translation	Editing, translating, writing	58	1.0%

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ENDNOTES

[1] Their work was criticized by Erickson (1987, 68), however, because they tried to correlate economic growth measures for periods prior to the time at which the business climate rankings were taken.

[2] The methodology explanation and anonymized raw data are publicly available (thumbtack, 2012).

[3]These three questions are moderately correlated (from 0.37 to 0.59). We ran a factor analysis on the three questions, and the three items fall along a single dimension. The first two items have a higher factor loading (0.73 and 0.82 respectively). The third item has the lowest factor loading (0.51). The three factors explained about half of the variance in responses. We compare our additive dependent variable with the one from factor analysis and find that they correlate at 0.95. Since the additive score is more intuitive, we decided to use that as our dependent variable.

[4] The Economic Freedom Index and the State Competitiveness Index do not rank the District of Columbia. That is why the models that include those indicators only have 49 states/jurisdictions.

[5] We use nlme package in R to estimate the model.

[6] The changes are computed by taking the difference between employment level in 2010 and 2008 and dividing the difference by the level in 2008.

[7] Data obtained from www.bestplaces.net.

[8]We omitted several other consistently insignificant variables from the table, though they were included in our models. Those variables are: 1) Changes in rates of charge compared to the year ago, 2) prior experience in entrepreneurship, 3) changes in employment at the state level, 4) the number of sunny days, 5) age factors (25–34, 35–44, 45–54, and 55–64), 6) ownership types (owner but not manager), 7) the levels of education (community or technical college, graduate school, or other), and 8) various industry types (care, event, home maintenance, instruction, technology, and writing sectors).