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The "Business Climate" and Economic Inequality*

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While a fundamental goal of government policy is to encourage economic growth, the distribution of the resulting economic resources is also important, and policymakers must grapple with the potential tradeoff between promoting economic growth and promoting equity. States use a variety of policies to achieve these goals, and it is therefore obviously important to understand which policies promote equity and growth, and the tradeoffs they present.

There is a cottage industry that tries to capture or summarize state economic policies in "business climate indexes." These indexes arise commonly in arguments for lowering taxes and relaxing regulations in states that do poorly on indexes that emphasize these policies. Conversely, states that do well on such indexes – presumably because taxes, for example, are low – often tout these indexes or rankings in trying to attract businesses.

Prior analysis of these business climate indexes led to three main findings that motivate the present paper:

- First, business climate indexes largely fall into two clusters – indexes that capture policies related to productivity or quality of life, and indexes that capture policies related to taxes and other costs of doing business. States that rank highly on one tax-and-cost index tend to rank highly on all tax-and-cost indexes, and states that rank highly on one productivity/quality of life index tend to rank highly on all productivity/quality of life indexes. In contrast, state rankings on tax-and-cost indexes are often uncorrelated with rankings on the productivity indexes.
- Second, business climate indexes that emphasize taxes and costs predict economic growth; in particular, lower taxes and costs of doing business result in higher rankings, and higher rankings on the tax-and-cost indexes are associated with faster growth. Indexes that focus on productivity measures do not predict growth in employment, wages, or Gross State Product (GSP).
- Third, examination of sub-indexes of the tax-and-cost indexes suggests that an especially important factor that is associated with higher growth is lower welfare and transfer payments.

In this paper, David Neumark and Jennifer Muz turn to evidence on business climate indexes and the promotion of income equality. Examination of the components of the productivity-related indexes suggests that some of the policies captured in these indexes – such as education and health insurance coverage – may promote equality. Thus, the prior research may have found no role for the productivity-related indexes because of its narrow focus on economic growth. Thus, a state that tries to improve its ranking on the tax-and-cost indexes and discounts the policies captured in the productivity-related indexes may unwittingly end up prioritizing or over-emphasizing economic growth over equity.

Alternatively, the same tax-and-cost indexes that are associated with faster economic growth may be associated either with the promotion of economic equality or with increased inequality. This is also potentially significant, as the direction of these relationships could reveal the potential consequences of pursuing policies that are associated with faster economic growth.

Their analysis leads to two main findings:

- There is no consistent evidence that a high ranking on a productivity-related index is associated with reduced income inequality.
- There is evidence of a tradeoff between income equality and growth: those states that rank highly on the tax-and-cost indexes, and thus experience faster economic growth, also tend to experience faster growth in income inequality.

Analysis

Using data drawn from the Current Population Survey Annual Social and Economic supplement, the analysis documents the relationships between business climate indexes and changes in income inequality. Data are also used from ten business climate indexes – five tax-and-cost and five productivity/quality of life indexes – for all available years from 1992 through 2008. The categories that are given the most weight in each type of business climate index are listed in Table1.

Table 1. Categories given the most weight in each type of business climate index

Taxes and costs of doing business	*Productivity/quality of life*
• Cost of doing business (excluding taxes) • Size of government • Tax rates and tax burden • Regulation and litigation • Welfare and transfer payments	• Quality of life • Equity • Employment, earnings, and job quality • Business incubation • Human capital • Infrastructure • Technology, knowledge, jobs, and digital economy

In the analysis, the authors employ regression models that relate scores on the business climate indexes to percentage point changes in the poverty rate, percent changes in the size of the income gap between high-income and poor families (90-10 differential), high-income and middle-income families (90-50 differential), and middle-income and poor families (50-10 differential), and percent changes in income for poor (10^{th} percentile), middle-income (50^{th} percentile), and high-income (90^{th} percentile) families. If, for example, the relationship between changes in the poverty rate and the index score is negative, this indicates that a higher ranking is associated with slower growth in poverty.

Results

Productivity/Quality of Life Indexes and Inequality

Regression results using scores from the productivity/quality of life business climate indexes are displayed in Table 2. Results that are considered statistically significant are marked by asterisks. Note that none of the indexes show an association between higher scores and slower growth in poverty. However, higher scores on the SNEI and DRCS-P indexes are associated with slower growth in the income differential between middle- and low-income families (50-10 differential).

To interpret the magnitudes, for example, the -1.046 estimate for the SNEI index implies that moving from the 10th to 40th in the state rankings is associated with a rate of growth in the 50-10 differential that is lower by 2.0 percentage points per year. This is large relative to the average growth rate of .305.

However, looking further down the table, we see that the lower growth in the 50-10 differential is not generally attributable to low-income families doing better. For the SNEI index, the relationship between income growth for poor families (10th percentile) and higher scores is positive, but not statistically significant. Higher scores on the DRCS-P index are negatively associated with income growth for middle-income families (50th percentile), and the estimate for poor families is negative as well.

Looking at the other income differentials (90-50 and 90-10), there is no evidence suggesting that the productivity/quality indexes are associated with less growth in inequality. None of the estimates are statistically significant, the signs vary, and many of the estimates are quite small.

Taken as a whole, the results in Table 2 do not show a clear indication that a higher ranking on the productivity/quality of life indexes is associated with slower growth in inequality.

Table 2: Results from Regressions for Productivity/Quality of Life Indexes

	Productivity/Quality of Life Indexes				
	State New Economy Index (SNEI)	**Development Report Card for the States - Performance (DRCS-P)**	**Development Report Card for the States - Development Capacity (DRCS-DC)**	**Development Report Card for the States - Business Vitality (DRCS-BV)**	**State Competitiveness Index (SCI)**
	(1)	(3)	(3)	(4)	(5)
Poverty	-0.071	0.054	0.045	-0.077	0.052
50-10 differential	-1.046**	-0.493*	-0.293	-0.236	-0.242
90 -50 differential	0.567	0.074	0.202	-0.19	-0.09
90-10 differential	0.033	-0.117	0.031	-0.209	-0.149
10^{th} percentile	1.356	-0.333	-0.79	-0.18	-0.565
50^{th} percentile	-0.431	-0.432*	-0.407*	-0.207	-0.297
90^{th} percentile	0.143	-0.134	-0.047	-0.196	-0.18

**Statistically significant at 5% level, *Statistically significant at 10% level

Tax-and-Cost Indexes and Inequality

Although the starting point for this study was asking whether the productivity/quality of life indexes were associated with less growth of inequality, it is also of interest to examine the relationship between the tax-and-cost indexes and changes in inequality. Recall that these indexes are generally associated with faster economic growth.

Regression results using scores from tax-and-cost indexes are displayed in Table 3. The strongest evidence in Table 3 emerges for the EFI index. Higher scores on the EFI index are positively associated with growth in the income differential between middle- and low-income families (50-10 differential) and high- and low-income families (90-10 differential).

To interpret the magnitudes, the 1.132 estimate for the 50-10 differential of the EFI index implies that moving from the 40th to 10th in state rankings is associated with a rate of growth in inequality that is 1.95 percentage points higher. This is large relative to the average growth rate of 0.305 percentage points per year. The 0.915 estimate for the 90-10 differential of the EFI index implies that moving from the 40th to 10th in state rankings is associated with a rate of growth in inequality that is 1.58 percentage points higher. The average growth rate here is 1.13 percentage points per year. Moreover, as the bottom panel of Table 3 shows, there is a positive and significant relationship between higher scores on the EFI index and income growth for high-income families (90th percentile). These estimates suggest that the EFI index could potentially account for large increases in the income gap between poor and high-income families (the 90-10 differential).

The evidence presented in Table 3 suggests that high scores on the tax-and-cost indexes are strongly associated with rising inequality.

Table 3: Results from Regressions for Tax-and-Cost Indexes

	Tax-and-Cost Indexes				
	State Business Tax Climate Index (SBTC)	**Small Business Survival Index (SBSI)**	**Cost of Doing Business Index (CDBI)**	**Economic Freedom Index (EFI)**	**Economic Freedom Index of North America (EFINA)**
	(1)	(2)	(3)	(4)	(5)
Poverty	-0.112	-0.015	-0.095	0.017	0.021
50-10 differential	0.364	0.107	0.14	1.132*	0.046
90 -50 differential	0.243	-0.005	-0.078	0.902	0.069
90-10 differential	0.272	0.037	0.013	0.915*	0.057
10th percentile	0.253	-0.026	0.619	-1.073	-0.074
50th percentile	0.314	0.084	0.244	0.568	0.037
90th percentile	0.269	0.034	0.058	0.708*	0.046

*Statistically significant at 10% level

Policy Implications

The authors conclude by stating that they find little consistent evidence that the policies captured by the productivity/quality of life indexes are associated with more moderate growth in inequality. While this might be viewed as discouraging for those who value the policies emphasized in these indexes, it should be kept in mind that these results do *not* imply that none of the policies captured in these indexes moderate the growth in inequality. Rather, the evidence presented here suggests that the agglomeration of the policies captured in these indexes are not associated with declining inequality. Nonetheless, this kind of evidence can inform policy debate about business climate indexes. Touting a state's high ranking on the productivity/quality of life indexes to argue that such a state might, for example, be spared from some of the rising inequality the United States has experienced is not warranted, but instead requires more explicit evidence on specific policies.

The authors do find, however, more direct and, in their view, more easily interpretable evidence of a policy tradeoff between promoting growth and promoting equity. Specifically, the same tax-and-cost related policies that are emphasized in the tax-and-cost indexes are associated with

faster economic growth *and* larger increases in inequality. These results suggest that policymakers – and society at large – have to make some tradeoffs when choosing policies affecting taxes and the costs of doing business; the policies that enhance growth are also associated with more rapidly increasing inequality.

In summary, the evidence implies that when tax-and-cost-related business climate indexes are touted as demonstrating a strong business climate in a state – as they often are – policymakers and voters should be aware that there is another side to the coin: although these business climate indexes are in fact associated with higher economic growth, they are also associated with rising inequality. This perspective should influence the way policymakers and the public think about the tax-and-cost-related business climate indexes that feature prominently in policy debate.

1. INTRODUCTION

While a fundamental goal of government policy is to encourage economic growth, the distribution of the resulting economic resources is also important, and policymakers must grapple with the potential tradeoff between promoting economic growth and promoting equity. States use a variety of policies to achieve these goals, and it is therefore obviously important to understand which policies promote equity and growth, and the tradeoffs they present.

There is a cottage industry that tries to capture or summarize state economic policies in "business climate indexes." As described in Kolko et al. (2013), these business climate indexes often serve other goals, as organizations with particular agendas create indexes that weight heavily the policies they think are most important – whether to encourage or to discourage state policymakers from using these policies. However, Kolko et al. also suggest that these business climate indexes can be interpreted as summary measures of a large number of state policies that cannot otherwise be studied simultaneously.

Moreover, irrespective of whether the indexes are a useful tool to summarize policy, it is a fact that policy debate often focuses on these business climate indexes. They arise commonly in arguments for lowering taxes and relaxing regulations in states that do poorly on indexes that emphasize these policies.[1] Conversely, states that do well on such indexes – presumably because taxes, for example, are low – often tout these indexes or rankings in trying to attract businesses.[2] Although debate often focuses on a particular ranking that supports one point of view – and our sense is that indexes emphasizing how high or low taxes are dominate the debate – actual characterizations of states' business climates are often more nuanced. Some states ranked poorly in terms of taxes are ranked favorably along other dimensions captured in different indexes, such as quality of life measures, including crime rates and health, or on education and human capital. Although these latter types of business climate indexes figure less prominently in policy debates,

[1] For recent example, see http://illinoispolicy.org/illinois-unfriendly-business-environment-killing-jobs-growth/ (viewed October 15, 2013).
[2] For recent examples, see http://www.texaswideopenforbusiness.com/business-climate/low-taxes.php (viewed October 15, 2013) and http://ded.mo.gov/financial-professional-services/why-missouri-/favorable-business-climate (viewed October 15, 2013).

states tout these rankings as well.[3] Thus, the factors emphasized by the indexes and how states rank on these factors can influence policy debate and, presumably, policy as well.

Prior empirical analysis of these business climate indexes (Kolko et al., 2013) led to three main findings that motivate the present paper. First, although there is a variety of business climate indexes, they largely fall into two clusters – indexes that capture policies related to productivity or quality of life, and indexes that capture policies related to taxes and other costs of doing business. Of the 11 indexes considered, five are in the productivity/quality of life cluster and five are in the tax-and-cost cluster. Indexes within these clusters are very highly correlated, and indexes in the different clusters are either uncorrelated or negatively correlated. Second, business climate indexes that emphasize taxes and costs predict economic growth, more so for the manufacturing sector; in particular, lower taxes and costs of doing business result in higher rankings, and higher rankings are associated with faster growth. Indexes that focus on productivity measures do not predict growth in employment, wages, or GSP. And third, examination of sub-indexes of the tax-and-cost indexes suggests that an especially important factor that is associated with higher growth is lower welfare and transfer payments.[4]

In this paper, we turn to evidence on business climate indexes and the promotion of income equality. Policies that are associated with slower growth – including welfare and transfer payments – might contribute to social welfare by promoting equity. Especially in a period of strongly rising earnings inequality without any offsetting increase in earnings mobility (Kopczuk et al., 2010), policymakers and the public may be willing to forgo some growth to improve income equality. Examination of the components of the productivity-related indexes suggests that some of the policies captured in these indexes – such as education and health insurance coverage – may promote equality.[5] Thus, the prior research may have found no role for the productivity-related indexes because of its narrow focus on economic growth. This is potentially significant because states that are ranked high on the tax-and-cost indexes are often ranked low on the

[3] See, for example, http://outreach.msu.edu/documents/newsrelease/NewsReleaseCCED_StateNewEconomyIndex.pdf?name=Documents&op=viewlive&sp_id=860 (viewed October 15, 2013).

[4] Examination of sub-indexes of the productivity-related indexes failed to reveal any relationship with growth, just like for the aggregate indexes.

[5] We recognize that health insurance coverage is partly a labor market outcome, and does not strictly reflect policy. Indeed a number of variables used in the productivity indexes are direct measures of equity-related outcomes. These clearly should not be treated as policies – an issue we return to below.

productivity indexes, and vice versa. Thus, a state that tries to improve its ranking on the tax-and-cost indexes and discounts the policies captured in the productivity-related indexes may unwittingly end up prioritizing or over-emphasizing economic growth over equity.

Alternatively, the same tax-and-cost indexes that are associated with faster economic growth may be associated either with the promotion of economic equality (a rising tide lifts all boats?) or with increased inequality. This is also potentially significant, as the direction of these relationships could reveal the potential consequences of pursuing the policies – as indicated by the prior research – that are associated with faster economic growth. Do these policies present tradeoffs with regard to promoting income inequality? Or do they also promote equality?

The analysis we present is a fairly straightforward extension of the prior work. It documents the empirical relationships between business climate indexes and economic outcomes, but in this case looking at changes in the income distribution, rather than economic growth. The evidence indicates that the productivity-related indexes that failed to predict economic growth also fail to predict changes in the income distribution. In contrast, the same tax-and-cost indexes that predict faster economic growth predict increases in income inequality. In that sense, our findings point to an equity-efficiency tradeoff with respect to state-level public policy, economic growth, and income inequality. The evidence that policies that promote growth also increase inequality are consistent with economic models. For example, a recent paper by Bertola (2013) shows that building in more redistributive mechanisms to protect people from economic uncertainty that leads to higher inequality also reduces investment and, hence, growth.

Two significant caveats bear discussing at the outset, to clarify the potential interpretations and limitations of this evidence. First, because the business climate indexes do not change appreciably over time, our identification comes largely from cross-state variation in the bundles of policies captured in business climate indexes. We therefore face problems similar to the research literature on cross-country growth regressions, which tries to understand sources of long-term economic growth as functions of a number of institutional, policy, and other factors. We think that the interpretation of the value of cross-country growth regressions applies equally well to our analysis. As a good example, Levine and Zervos (1993) note that, despite these (and other) problems, "Cross-country regressions … can be very useful. Along with other

analytical methods, demonstrating that certain policy-growth relationships hold well across countries will influence beliefs about policy and economic performance. Similarly, beliefs about policy and growth that are not supported by cross-county evidence will tend to be viewed skeptically" (p. 427).[6]

Second, there are two ways to think about the evidence from our regressions on business climate indexes. One is to view the indexes as potentially useful summary measures of the policy environment in a state, and hence to interpret the results as providing evidence on the effects of policies – although in this context these are the effects of broad policy environments. Viewed this way, the value of the approach lies in avoiding a focus on one or a small set of policies and ignoring the many others that may confound the effects of the policy being studied.[7] This comes at the cost of less rigorous estimation of the causal effects of policy and difficulty in identifying exactly which policies affect the outcomes of interest (although the analysis of sub-indexes can help). The second way to think about the evidence is that it simply assesses what the business climate indexes – which figure prominently in policy debate – predict about economic outcomes. Thus, for example, if state policymakers learn that their state's ranking on a particular index has plummeted, should they be concerned that this may predict increased or decreased inequality, or slower economic growth? Or should these indexes be ignored as not even passing the test of prima facie evidence of correlations with outcomes of interest? We do not take a stand on which of these interpretations of the evidence one should adopt, as we believe there are reasons that either interpretation could be supported, and help inform debate about state-level economic policy.

2. BUSINESS CLIMATE INDEXES

We collected data on 10 business climate indexes for all available years from 1992 through 2008.[8] We included indexes that have published rankings for multiple years and made their methods transparent, including providing a full list of the components that constitute the index.[9] For each of the 10 indexes we use

[6] There is additional discussion of potential limitations and merits of the general approach in Kolko et al. (2013), which we do not repeat here.
[7] See also Parent and LeSage (2012).
[8] Our sample period ends in 2008 but the dependent variables for the last year are measured as two-year changes to 2008, so in our main regressions we use indexes through 2006. However, some of the tables showing descriptive information on the indexes refer to the latest year for which an index was available.
[9] Kolko et al. (2013) also studied an 11th index – the Fiscal Policy Report Card on the Nation's Governors, published by the Cato Institute. It is excluded from this paper because this is the one index that did not fall neatly into either the productivity or tax-and-cost clusters of indexes, and it had no predictive power.

the index values rather than the ranking, which allows us to capture information on the magnitudes of the gap between states, which tend to be larger for states nearer to the tails of the distributions of the indexes. Because index definitions can change from year to year, we standardize each index for each year, subtracting off its mean and dividing by its standard deviation. The indexes are signed such that positive values correspond to what is intended to reflect a "better" business climate, based on the intention of the creators of each index (e.g., low taxes for the tax-and-cost indexes). To clarify, a higher value of an *index* implies a better rating of the business climate – so that the *ranking* is closer to one. In some cases, we used the underlying data to construct modified forms of the indexes, described later.

The first column of Table 1 lists the indexes included in our study and the institution that creates the index, as well as the years covered.[10] For consistency with the findings in Kolko et al. (2013) regarding growth, we use the same sample period. In particular, we only use data through 2008 at the latest; this also helps us avoid the confounding effects of the extreme changes that occurred during and after the Great Recession. The next two columns describe the focus of each index, and list the categories of policy variables covered by each index (out of 14 categories that Kolko et al. created based on the content of the indexes). It is clear that the indexes aim to capture different facets of the policy environment.

Table 2 gives more detail on the content of the indexes, grouping our 14 policy categories into three broad classes: taxes and costs; productivity and quality of life; and other. We then show the weights that each index puts on the 14 categories as well as the broad class. This table highlights sharp differences in the policies that indexes emphasize. For example, the tax-and-cost indexes focus heavily on taxes, costs, and regulation and litigation.[11] In contrast, the DRCS-P index emphasizes quality of life and equity measures,

[10] We also examined the American Legislative Exchange Council (ALEC)-Laffer State Economic Competitiveness Index, the California Economic Performance Card, created by the California Foundation for Commerce and Education, and Best States for Business created by Forbes Magazine. However, the first is available only for 2008 and 2009, the second only for 2008, and the third only from 2006 through 2009, hardly overlapping our sample period. In addition, there is not sufficient detail available for Forbes' Best States for Business, making it impossible to evaluate how the index was generated in terms of variables, sources, weights, and aggregation methods.

[11] Note that we group "welfare and transfer payments" with taxes and costs even though in general we think that the outcomes of these policies contribute to quality of life, and indeed sometimes appear as components of the productivity/quality of life indexes (although as outcomes these may not belong in the indexes– an issue to which we return later). Higher welfare and transfer payments imply more redistribution via taxes. The latter implies more deadweight loss from taxation, and more importantly more work disincentives, which can clearly lower the level of economic activity. This perspective is consistent with two of the last five indexes in Table 2 capturing both welfare and transfer payments and other measures of taxes or costs of doing business.

and the SNEI index emphasizes human capital, new businesses, and technology. More generally, all five of the productivity-related indexes capture elements of what we consider productivity of the workforce or quality of life factors; hence the label.[12] Table 2 also indicates that the productivity/quality of life business climate indexes include a wider variety of policies, which may make it harder to find associations with economic outcomes if many of these policies do not matter or have effects in opposite directions.

Table 3 shows how the 50 states rank, on average, on the two types of business climate indexes. We first average each index's ranking across the years for which the index is available. Then in the second and third and the fifth and sixth columns we report the average of these averages for the five productivity-related indexes and the five tax-and-cost-related indexes. Table 3 shows that states can be ranked quite differently on these two types of indexes. For example, California has an average rank of 15.3 on the productivity indexes, versus 45.6 on the tax-and-cost indexes. Similarly, the corresponding numbers for Massachusetts are 4.4 and 35. So these two states are ranked as having very good business climates on the productivity indexes, but bad business climates on the tax-and-cost indexes. In contrast, Mississippi has an average rank of 47.8 on productivity, but 16.4 on taxes and costs. And South Dakota's averages are 30.1 for productivity and 3.7 for taxes and costs.

We already know from the prior research that a low rank on the tax-and-cost indexes is associated with slower growth. To provide a magnitude, Kolko et al. find that for the EFINA index, in their preferred specification, moving a state from the 10th to the 40th place in the rankings is associated with an annual rate of growth of employment that is slower by 0.36 percentage point – a substantial increase compared with the mean employment growth rate of 1.61 percent. But many states with low rankings on the tax-and-cost indexes – such as California and Massachusetts as just noted – are ranked very high on the productivity-

[12] Kolko et al. also constructed a much more detailed list of the variables within each of the 14 categories that go into each index (available from the authors upon request). This, too, is informative for interpreting the indexes. For example, the SBTC index weighs a broad range of tax rates, while the CDBI index tries to summarize all of this information in a single tax burden. Similarly, the list reveals the kinds of variables used to capture quality of life (such as crime rates and infant mortality) and equity (such as the poverty rate, and inequality in the income distribution).

One problem highlighted by this more-detailed look at the composition of the indexes is that the productivity/quality of life indexes often include variables that are outcomes. Below, we discuss analysis of modified versions of these indexes that strip out the outcome-related measures.

related indexes.[13] The question, then, is whether these latter types of states are doing more to increase equality – or perhaps more appropriately given what has happened in recent years, experiencing more modest increases in inequality.

3. INEQUALITY MEASURES

Inequality Measures

We use data from the Current Population Survey Annual Social and Economic supplement from 1992 to 2008 and measure changes in inequality by looking at two-year changes in state family poverty rates and family income distributions; we focus on two-year changes but also look at changes over different windows. Both of these measures of inequality are based on total family income, taking into account cash transfers (but excluding in-kind transfers and payments from the Earned Income Tax Credit). We focus on family income because many of the tax-and-cost and productivity measures that are incorporated into the business climate indexes affect the collective resources available to all members of a family, such as income tax rates, welfare transfers, and employment and job quality. In addition, this income measure is in accordance with the established method of defining poverty rates in the United States.

The first measure of inequality looks at annualized two-year changes in the poverty rate by state. This allows us to test whether the state policies that cause the state to have a favorable ranking on a particular business climate index are associated with positive or negative impacts at the lower-end of the family income distribution. Two dimensions of the poverty rate make it more informative than simply looking at incomes at the lower-end of the family income distribution. First, the poverty rate is intended to tell us the fraction of families below some predetermined level of the income needed to satisfy a given level of needs, based on three times the "Economy Food Plan" calculated by Oshansky (1963) and intended to capture an adequate diet for a family. Second, the poverty rate is based not only on family income, but also on family size and structure, with the family income threshold for being considered poor rising with the number of people in the family, and depending on their ages (with children and people aged 65 and over treated as having lower income "needs").

[13] As Kolko et al. show, other factors also are associated with cross-state differences in growth. They show, for example, that despite California's low ranking on tax-and-cost indexes, the state has about average economic performance because the state has advantageous weather and baseline industry composition.

In addition to looking at changes in the lower end of the income distribution, we also measure changes in inequality at different parts of the income distribution. Changes at the lower end of the income distribution in isolation imply changes between points in the family income distribution. There are many ways to measure the inequality of family income, but common metrics are the differences between the median and the 10th percentile, the 90th percentile and the median, and the 90th and 10th percentiles. The difference between the median and the 10th percentile (50-10 differential or gap) tells us about the gap between the middle of the income distribution and the lower end. The difference between the 90th percentile and the median (90-50 differential) tells us about the gap between the top end and the middle. And the difference between the 90th and 10th percentiles (90-10 differential) tells us about the gap between the top and bottom ends of the income distribution. Because we are interested in whether the business climate indexes capture policies that are delivering increases or decreases in inequality, we focus on growth in these differentials (annualized two-year growth rates). Because negative growth in a family income differential could result from a decrease in in the top percentile or an increase in the bottom percentile, we also look at annualized two-year growth rates in the income percentiles themselves.[14]

Descriptive Information on Changes in Inequality

Descriptive statistics on the inequality measures are reported in Table 4. While poverty rates were decreasing over the period, averaging a decline of 0.115 percentage points, the differentials in real family income percentiles were increasing across the board. The 90-50 differential increased the most over the period, averaging an annualized two-year growth rate 1.48 percent; this increase was due to much higher growth in the 90th percentile than the 50th percentile. Similarly, the 90-10 differential averaged 1.13 percent growth.

We also report descriptive statistics for the economic growth measures used in the earlier research and briefly in this paper. Employment growth averages 1.63 percent annually by state (unweighted). The rate of growth of GSP and is higher because it is measured in current dollars (nominal growth is removed in the regressions by including year dummy variables).

4. BUSINESS CLIMATE INDEXES AND CHANGES IN INEQUALITY

[14] For more details on the data and the construction of variables, see Kolko et al. (2013) and Neumark and Muz (2013).

Methods

We estimate state-level regressions, over time, for the following measures of changes in income inequality: the percentage point change in the poverty rate; the percent change in the differential between the 50^{th} and 10^{th} percentiles of family income (50-10 differential), the 90^{th} and 50^{th} percentiles of family income (90-50 differential), and the 90^{th} and 10^{th} percentiles of family income (90-10 differential). As mentioned, we also report results for the percent changes in the 10^{th}, 50^{th}, and 90^{th} percentiles to illuminate the nature of changes in the income percentile differentials. We estimate the relationships between the business climate indexes and changes in inequality measures, rather than levels of inequality, for two reasons. First, we want to capture the dynamic effects of the policies captured in the indexes. And second, we are interested – tying this paper to the prior research – in understanding the competing effects of the policies captured in the business climate indexes on economic growth and growth (or declines) in income inequality. If we estimated models using levels of income inequality, we would not necessarily learn anything about these tradeoffs; a set of policies might be related to economic growth because of contemporaneous effects on growth, but related to the level of inequality because of a long-term status quo that those policies helped to establish. In contrast, evidence that, for example, a particular set of policies is associated with higher growth but rising income inequality might help inform policymakers about the consequences and tradeoffs those policies pose.

Given that the business climate indexes are typically available only for a subset of years (see Table 1) and that there is often not much overlap between the years available for different indexes, for the most part we study one index at a time for the years for which that index is available. Because inter-temporal correlations of the indexes are generally very high, exceeding 0.7 or 0.8 even for observations eight or nine years apart, we would be unlikely to get very different answers if we had the index values for other years.

Our specifications define the index at time t, and the average annual change from t to t+2. We used the two-year change to avoid undue influence of shorter-term movements, but we also explored the sensitivity of the results to varying the length of the interval over which growth is measured, from one to three years. The results were always qualitatively very similar, but in some cases the two-year changes yielded statistically stronger evidence.

All specifications include year fixed effects to capture the aggregate business cycle or other common

influences over time, so that we identify the effects of the policies captured by state business climate rankings on how state growth or changes in inequality differ from the aggregate. It is natural to think about estimating these regression models with state-specific fixed effects to try to identify the effects of changes in the policies captured by a state's business climate index while avoiding the confounding influence of time-invariant state characteristics that affect income inequality. However, the high inter-temporal correlations within nearly all of the indexes imply that there is little to learn from regression models with fixed state effects.[15] At the same time, we do not want to ignore the possibility that there are other differences across geographic regions (including states) that could affect the evolution of income inequality, such as more or less progressive policies, attitudes, or other influences that generate differential income growth in different parts of the income distribution. We therefore include dummy variables for the four broad Census regions. We also note that because we estimate models for changes in income inequality, it is less likely that unmeasured difference across states (or regions) play an important role than if we estimated models for levels. Indeed the results were not very sensitive to excluding the Census region fixed effects, although they were a bit stronger with these controls included.

We also include other control variables common in the urban and regional literature. First, we use weather variables from Mendelsohn et al. (1994), capturing both temperature and precipitation. These were originally calculated at the county level; we use county-population-weighted state averages based on 2006 Census population estimates. We define "Mild" as the negative of the absolute value of the difference between monthly average temperature and 20 degrees Celsius, summed over January, April, July, and October, and "Dry" as the negative of the average monthly precipitation for those four months, in centimeters. Second, we use "Proximity," defined as the negative of the average distance from the state's county centroids, weighted by county population, to the nearest coast, Great Lake, or major river (Rappaport and Sachs, 2003). With the multiplication by −1, higher values of these measures reflect milder weather, drier weather, and closer proximity to navigable water. Third, we define population density as the tract-weighted population density across the state (and use this in natural logarithms), based on 1990 Census data

[15] Moreover, within-state variation in the indexes over time may reflect a good deal of measurement error, given the numerous subjective and somewhat ad hoc decisions that go into constructing the indexes, as well as actual errors in measurement.

(Glaeser and Kahn, 2004). Kolko et al. (2013) find that some of these were associated with economic growth, so we also want to control for their influence on inequality (perhaps via growth).

Finally, we construct a measure of the state-specific "shift-share" or "industry composition effect" attributable to the baseline industry mix of the state and national growth by industry. This variable captures the extent to which a state's industry mix was or was not poised to gain from industries that grew strongly on a national level, which can also affect the evolution of inequality. For example, a state with a large initial manufacturing base might have lost more middle-income jobs owing to the downward national trend in manufacturing employment.

We start with the industry composition of employment in each state in 1992 (our base year), and calculate how employment would have grown had employment in each industry in the state grown at the average rate of growth of the industry's employment in the other 49 states. This calculation is done at the level of 3-digit NAICS industries. Letting *EIS* denote the industry composition effect, *E* denote employment, the subscripts *i* and *j* denote states, and the subscript *k* denote industry, this variable is defined as:

$$EIS_i = \frac{{}_k E_{ik,1992} \cdot \frac{{}_{j\neq i} E_{jk,2006} - {}_{j\neq i} E_{jk,1992}}{{}_{j\neq i} E_{jk,1992}} + 1 \quad - E_{i,1992}}{E_{i,1992}} \cdot 100. \tag{1}$$

Turning to the regressions we estimate, let ΔY_{it} denote the changes in income inequality measures for state *i* in year *t*, BC_{it} denote the index, X_{it} denote the controls, D_t denote the year fixed effects, and C_i denote the Census region dummy variables. We estimate regression models of the form:

$$\Delta Y_{it} = \alpha + \beta BC_{it} + X_{it}\gamma + \quad {}_t \theta D_t + \quad {}_i \tau C_i + \varepsilon_{it} \, . \tag{2}$$

As usual, there are questions of the endogeneity of policy, because policies may be affected by economic activity, especially when looking at outcomes and policies at the same jurisdictional level. For example, in response to increases in inequality, states may adopt policies to tax high-income families, try to increase skills among the less advantaged, etc. Note that the latter type of policies would imply a higher business climate ranking on the productivity indexes, and a lower ranking on the tax-and-cost indexes. Thus, this type of political economy response that entails causality going in the reverse direction would tend to bias the results towards one of two types of findings: a higher ranking on the productivity indexes increases inequality; or a lower ranking on the tax-and-cost indexes increases inequality. Given that our findings do

not conform to either of those stories, we are confident that endogeneity of this sort is not driving our results, although it is possible that the results would be stronger absent such endogeneity.

A more troublesome alternative is that rising inequality begets policies that generate further inequality – for example, by creating more financial and political support for lowering taxes on the rich when the share of income earned by the rich increases. Given that our main finding is that higher business climate rankings on tax-and-cost indexes are associated with increases in inequality, we cannot as easily dismiss this alternative scenario or mechanism as an explanation for our results. We do not believe there are compelling instrumental variables to solve this problem, though others have tried to predict changes in specific policies using political-cycle events like term-end behavior (Besley and Case, 1995) or determinants of political influence related to an area's political representatives (Hanson and Rohlin, 2010). The problem is particularly difficult because business climate indexes captures a number (and often a very large number) of policies. One could think about using economic development policies in neighboring states, but given the possibility of inter-jurisdictional competition (e.g., Brueckner, 2003) the exogeneity of neighboring states' policies is questionable. However, we present some additional analysis below to address the possibility of reverse causality.

Prior Results on Business Climate Indexes and Economic Growth

Before turning to the inequality measures, Table 5 provides a succinct summary of the key results from Kolko et al. (2013) on the relationships between business climate indexes and economic growth.[16] The top panel reports results for employment growth as measured by the Quarterly Census of Employment and Wages (QCEW). For all of the productivity indexes the estimated relationship between the index and QCEW employment growth is small and not statistically significant, with a central tendency of about zero, and in one case (for DRCS-BV) anomalously negative and significant. In contrast, the estimated coefficients of all five tax-and cost indexes are positive and statistically significant. Recall that the indexes are standardized, so the coefficients reflect the estimated effect of a one-standard deviation increase in the index. We also report, in square brackets, the change in the growth rate of employment associated with a move in

[16] Note that this table is not exactly from Kolko et al. (2013) because we use annualized two-year growth and include Census region dummy variables, more consistent with what we do in this paper. However, the qualitative conclusions are very similar.

the rankings from the 40th to the 10th state – a substantial "jump up" in the rankings – based on the average values of the index for the included years. For example, looking at column (6), for the SBTC index, the estimate of 0.265 implies that moving a state from the 40th to the 10th place in the rankings of this index would increase the rate of employment growth by 0.379 percentage point – a substantial increase compared with the mean employment growth rate of 1.63 percent over the sample period.

The bottom panel reports estimates for GSP growth. The findings are similar to those for employment growth, though less strong statistically. None of the productivity indexes has a positive, statistically significant relationship with either outcome when we include controls. The point estimates for the tax-and-cost indexes are similar to those for employment growth, as are the implied effects from moving from 40th to 10th place in the rankings. However, only for the CBDI and EFINA indexes are the estimated positive relationships statistically significant.[17]

Thus, all of the indexes for which there is evidence of a positive relationship between the index and employment growth are in the tax-and-cost cluster. Conversely, none of the indexes in the productivity cluster has a positive relationship with employment growth. Thus, the principal finding that is our jumping off point is that states with policies that lead them to be ranked better on the tax-and-cost-focused indexes – meaning lower taxes, lower regulatory costs, etc. – have faster employment growth. We now turn to the analysis of whether the productivity indexes appear to deliver better equity outcomes despite being unrelated to economic growth, or alternatively whether the same tax-and-cost indexes that are related to faster economic growth have a systematic relationship with changes in income inequality.

Inequality Regressions

Table 6 reports the key results from our specifications. Each panel of the table going down the rows reports results for different dependent variables, and each column reports estimates for a different business climate index. Looking first at the productivity/quality of life indexes in columns (1)-(5), there is some evidence pointing towards higher rankings on these indexes being associated with declines in inequality. There is no such evidence for poverty, where the estimates signs alternate, and none are significant.

[17] Kolko et al. (2013) describe a number of sensitivity analyses and robustness checks, which do not undermine these findings. Because our focus is on business climate indexes and inequality, we do not repeat these here, but instead describe robustness and sensitivity analyses for our analyses of inequality.

However, the SNEI and DRCS-P indexes are associated with statistically significant declines in the 50-10 income differential. To interpret the magnitudes, for example, as reported in square brackets, the −1.046 estimate for the SNEI index implies that moving from 40th to 10th in the state rankings is associated a rate of growth in the 50-10 differential that is lower by 2.00 percentage points per year. This is large relative to the mean growth rate of 0.305.

However, looking further down the table, we see that the lower rate of growth in the 50-10 differential is not generally attributable to the bottom doing better. For the SNEI index it is, as the estimated effect on the growth of income at the 10th percentile is positive (1.356) but not significant. But the DRCS-P index is significantly negatively associated with growth at the 50th percentile, and the point estimate for the 10th percentile is negative, not positive. Note that there is no reason the difference between the separate estimated coefficients for the 10th and 50th percentiles need to equal the estimated coefficient for the 50-10 differential, given that these estimates are for regressions with many other controls.

Looking at the other income differentials (90-50 and 90-10), there is no evidence suggesting that the productivity/quality of life indexes are associated with less growth of inequality (or declines in inequality). None of the estimated coefficients is significant, the signs vary, and many of the estimated coefficients are quite small. Recall our earlier comment that this may be in part because of the wide variety in the types of policies (and other factors) captured in these indexes.

Although the starting point for this paper, to some extent, was asking whether the productivity/quality of life indexes were associated with less growth of inequality, it is also of interest to examine the relationship between the tax-and-cost indexes and changes in inequality. Recall from Table 5 that these indexes are generally associated with faster economic growth. The strongest evidence in columns (6)-(10) of Table 6 emerges for the EFI index, which is significantly positively associated with growth in the 50-10 differential and the 90-10 differential. Moreover, as the bottom panel of the table shows, there is a positive and significant relationship with the 90th percentile of family income. Although the EFI index was not significantly related to GSP growth (Table 5), it was significantly related to employment growth, and the related EFINA index was significantly positively associated with both, with estimated coefficients of similar magnitude.

Relative to the mean, the implied magnitude is not as large for 90-10 differential as the 50-10 differential. Moving from 40th to 10th ranking on the EFI index is associated with 1.95 percentage points faster rate of growth in the 50-10 differential, relative to the mean growth rate of 0.305 percent. For the 90-10 differential, the effect is 1.58 percentage points, versus a mean of 1.13. Nonetheless, the estimates suggest that this tax-and-cost index could (if the entire effect were causal) potentially account for large increases in the 90-10 differential. We do not find significant evidence in this (or the opposite) direction for any of the other tax-and cost indexes, and the point estimates are generally much smaller.

Table 7 presents additional evidence from these types of specifications. First, the models from Table 6 are re-estimated using one- and three-year annualized changes in the inequality measures instead instead of two-year changes. Then, Table 7 collects the results, showing – for each index and each inequality measure – the mean of the three estimates, the range, and the number of significant positive or significant negative estimates (the maximum of either is three, including the estimates from Table 6). The shaded rows provide summary measures for the mean and the counts of positive or negative and significant coefficient estimates.

For the productivity/quality of life indexes, aside from the two significant coefficients relating the SNEI and DRCS-P indexes to reductions in the growth of the 50-10 differential (column (2)), the evidence actually points in the other direction. In particular, there is one estimate for which the DRCS-P index is positively associated with growth in poverty, and one estimate for which the SNEI index is positively associated with growth in the 90-10 differential (as well as the 90th percentile of family income). Thus, there is not a clear indication that a higher ranking on the productivity/quality of life indexes is associated with slower growth of inequality.

For the tax-and-cost indexes, in contrast, the evidence points more strongly in one direction. One estimate for the SBSI index, and two for the EFI index, point to increases in the 50-10 differential, and two estimates for the EFI index point to increases in the 90-10 differential. Moreover, these tend to come from increases in either the 50th or the 90th income percentiles. The message, then, is that the same indexes that are associated with faster economic growth are also associated with rising inequality.

Sensitivity Analysis

We carried out several sensitivity tests or additional analyses to assess the validity of the results.

Table 8 shows a summary of the results from these sensitivity analyses, paralleling the shaded areas in Table 7. First, because some of the productivity/quality of life indexes include components that we consider outcomes rather than policy factors that affect outcomes, we re-calculate these indexes and generate modified indexes stripped of the outcome components.[18] Our regression results changed little with these modified indexes, which is perhaps not surprising since the indexes in the productivity cluster generally showed no positive relationships with changes in inequality.

Second, we re-ran our baseline models substituting some continuous control variables for the Census region dummy variables. This gives us richer variation within regions that is more interpretable. In particular, we used the share of the population with a high-school degree or more (from the 1990 Census), the share of the state's U.S. House delegation in 1991 that was Democratic, and the Democratic share of the presidential vote in the state in 1992. The first captures baseline skill or education differences, and the latter two capture baseline political ideology that may shape policy in ways not captured by the indexes. We did not include these controls in our core models because they may, to some extent, reflect policy, and hence over-control for the policies captured in the business climate indexes. The Democratic vote share and the education variables are generally associated with declines in inequality along at least some metrics.[19] For the productivity/quality of life indexes, there are more significant effects of the indexes once these controls are included, but the sign pattern is still inconsistent, giving no clear indication that higher rankings on these indexes are associated with declining inequality. For the tax-and-cost indexes, the evidence that higher rankings are associated with rising inequality is weakened, with only one significant estimate for the 50-10 differential remaining (compared with three for the 50-10 differential and two for the 90-10 differential in

[18] Examples are: the employment growth measures, unemployment rate, involuntary part-time employment, and pay measures in the DRCS-P index. We were able to generate the three DRCS indexes omitting the outcome components. We were unable to construct a modified SNEI index because we could not fully reconstruct the index from the reported sub-indexes, and it is the sub-indexes from which components are stripped out before re-aggregating to a modified index. We were also unable to construct a modified SCI index because data on sub-indexes or underlying components are not available.

[19] For example, in the regressions with annualized two-year changes in poverty, the average coefficient on the Democratic share of the House delegation across all business climate index specifications is −0.012, and the coefficient is statistically significant for the DRCS-DC index. The Democratic vote share has an average coefficient of −0.612 in the regressions with the two-year change in the 90-50 gap; this coefficient is statistically significant in the specifications with the SNEI and the CDBI indexes. The education control tends to have a negative relationship with changes in the 90-10 gap, with an average coefficient of −0.059 across specifications. Outside of this, education does not have a consistent sign across the multiple specifications for each of the seven equity outcomes.

Table 7).

The smaller positive effects of the tax-and-cost indexes when including the Democratic share variables is consistent with a negative correlation between the indexes and the Democratic shares, so that a low Democratic share is likely associated with other policies and factors that lead to rising inequality. Since business climate indexes are clearly imperfect measures of the bundle of relevant policies, we do not want to interpret the effect of "policy" as only the effect of the business climate indexes conditional on the controls we have added. Perhaps the more important point is that the results line up with what we might expect the relationship to be between political culture, policy, and changes in inequality.

Third, we re-ran our baseline models including state fixed effects. As expected from the high correlation of business climate indexes for states over time, standard errors increased considerably and some of the estimates were implausibly large. Nonetheless, there is still quite a bit of evidence that higher rankings on the tax-and-cost indexes are associated with growth in the 50-10 differential.

Fourth, we estimated the models dropping the controls for geographic factors and industry composition. The inclusion of these variables is more clearly motivated in the analysis of economic growth, although there is some rationale for including them in the models for changes in inequality, and there was some value in seeing estimates for comparable specifications across the growth and equality outcomes. Interestingly, dropping the controls leads to stronger evidence that higher rankings on the productivity/quality of life indexes reduce inequality. However, the evidence also suggests that this occurred mainly through reductions in the 50^{th} and 90^{th} percentiles of income. And even more so, dropping these controls strengthens the evidence that higher rankings on the tax-and-cost indexes are associated with faster growth in inequality, with far more specifications (10) now point in that direction with statistically significant evidence, and none in the opposite direction. In addition, this appears to come through declines in the 10^{th} percentile of income, and increases in the 50^{th} and 90^{th} percentiles. We are reluctant to draw strong conclusions regarding the productivity/quality of life indexes based on these specifications, given the results from the specifications with the controls. The stronger conclusion, we think, is that these specifications further cement the conclusion that the tax-and-cost indexes are associated with faster growth in inequality.

Finally, one concern in interpreting the evidence is that the causality could go the other way,

especially for the tax-and-cost indexes. To assess this, we estimated regressions asking whether the policies captured by the indexes respond to earlier growth in inequality. For each index, we divided the years available (as closely as possible into half) into "early" and "late" years. We then estimated regressions of the average values of the index for the late years, in each state, on the average values for the early years, and the change in inequality measure (annualized) over those same early years. If the policies captured by the indexes are endogenous, we might expect significant coefficients on early increases in inequality – for example, with earlier increases leading to lower taxes in the future, providing an alternative explanation of our main result. There was no case in which the estimated coefficient of the early change in inequality was statistically significant, and seven out of the ten estimates were negative, suggesting that – if anything – increases in inequality lead to higher taxes (a lower ranking on tax-and-cost indexes), implying a bias against our finding.[20]

EFI Sub-indexes and Changes in Inequality

We can try to get a bit more specific about the policies associated with changes in inequality by looking at sub-indexes of the indexes. There are sub-indexes for some of the productivity/quality of life indexes, but since we did not find consistent relationships between these indexes and changes in inequality we do not explore these. In contrast, we find quite consistent evidence that the tax-and-cost indexes are associated with changes in inequality. Fortuitously, the strongest evidence was for the EFI index, and there are sub-indexes for this index. The five sub-indexes of the EFI index are explained in Table 9.[21] A priori, we might expect the welfare spending sub-index, which includes many redistributive measures, to be most strongly associated with changes in inequality.

Estimates of the same regressions as before, but substituting the sub-indexes of the EFI index for the parent index, are reported in Table 10. We present results for the baseline specification. We indeed find that a higher ranking on the the welfare-spending sub-index – which recall generally means less redistribution – is associated with rising inequality measured by the 90-50 and 50-10 differential. We also find some significant evidence for the government size sub-index, although the signs are inconsistent – reducing

[20] These results are available from the authors upon request.
[21] The sub-indexes aggregate up to the "parent" index, so when we substitute the full set of sub-indexes for the index, we do not omit other policies included in the index (although the weighting of specific policies is fixed).

poverty but increasing the 50-10 differential. Thus, our takeaway from this analysis is that less generous welfare is likely what is driving the relationship between a higher ranking on the EFI tax-and-cost index and faster growth of inequality, which seems a quite reasonable interpretation.

If there is reverse causality in this case, it should be in the opposite direction, with rising inequality (at least if it is due to declines at the bottom) leading to more welfare spending, holding policy parameters fixed. One possible exception, however, is if policy responds to the greater expenditures by reducing program generosity to cut spending. But we would suggest that this is not the principle explanation of cross-state differences in the generosity of welfare spending in our sample period. The differences in this generosity across states seem to have more to do with long-standing political differences than with shorter-term reactions whereby generosity in some states was decreased because of high expenditures. To some extent, that is, we are less concerned about reverse causality because we use across-state rather than within-state variation to identify the effects of the policies captured by the business climate indexes. Endogeneity bias is likely reduced by avoiding reliance on short-term changes in state economic conditions that could affect some of the policy variables.

Summary of Key Evidence

Figure 1 provides a convenient summary of our main conclusion that states that rank higher on tax-and-cost business climate indexes experience faster economic growth but also rising inequality. The figure displays evidence for the EFI index, for which we found the strongest and most consistent evidence. In each of the three figures we plot a regression line relating GSP growth to the change in inequality (for the 50-10, 90-50, and 90-10 differential). The horizontal axis is measured as the negative of the increase in inequality, so that the negative slope implies that where GSP growth was higher, inequality increased by more.[22] The slope is negative for each inequality measure.

We then plot, for each state, its value for these two outcomes, as well as its ranking on the EFI index averaged over the years for which it is available. And in the corner of each quadrant – defined in terms of medians – we list the mean rank and the number of observations. What we see is two things. First, especially for the 50-10 differential, more observations are in the upper-left and lower-right quadrants,

[22] We word it this way because inequality rose in most states for all measures.

indicating that it is more likely to see high growth and more rapidly rising inequality or lower growth and more moderately rising inequality than a mix of either high growth and more moderate growth in inequality, or vice versa. Second, and more relevant to the business climate indexes, the mean ranking of states in the upper-left quadrant is always the highest and the mean ranking of states in the lower-right quadrant is always lowest (with the rankings for the other two quadrants intermediate). This reflects our main finding: states that rank high on this tax-and-cost index have higher growth but larger increases in inequality, while states that rank low have lower growth but more moderate increases in inequality.

5. CONCLUSIONS AND DISCUSSION

Past research showed that business climate indexes that emphasize taxes and costs predict economic growth, with lower taxes and costs as measured by the indexes associated with faster growth. In contrast, indexes that focus on policies related to productivity and the quality of life do not predict growth in employment, wages, or GSP. If we only cared about economic growth, and we could interpret these relationships as causal, the implication would be clear. States should mimic the policies that generate high ratings on tax-and-cost business climate indexes, thus achieving higher growth, and they can ignore the policies emphasized by the productivity/quality of life indexes.

But policymakers (and voters) also care about the distribution of economic resources. This raises the question of how the policies captured by the business climate indexes are associated with changes in inequality. We find little consistent evidence that the policies captured by the productivity/quality of life indexes are associated with more moderate growth in inequality. This might be viewed as discouraging for those who value the policies emphasized in these indexes, which include health, human capital, and related measures. On the other hand, the productivity/quality of life business climate indexes include so many policies that might have rather disparate effects that it is hard to draw firm conclusions. Moreover, our results do *not* imply that none of the policies captured in these indexes moderate the growth in inequality, but rather that the agglomeration (and weighting) of the policies captured in these indexes are not associated with declining inequality. Nonetheless, this kind of evidence can inform policy debate about business climate indexes. Touting a state's high ranking on the productivity/quality of life indexes to argue that such a state might, for example, be spared from some of the rising inequality the United States has experienced is not

warranted, but instead requires more explicit evidence on specific policies.

We do find, however, more direct and in our view more easily interpretable evidence of a policy tradeoff between promoting growth and promoting equity. Specifically, the same tax-and-cost related policies that are emphasized in the tax-and-cost indexes are associated with faster economic growth *and* larger increases in inequality. Moreover, our sense is that the policies captured in the tax-and-cost indexes are somewhat less disparate and hence the indexes are more easily interpretable. The results suggest, then, as economic models would predict, that policymakers – and society at large – have to make some tradeoffs when choosing policies affecting taxes and the costs of doing business; the policies that enhance growth are also associated with more rapidly increasing inequality (in our sample period, when inequality is generally increasing). Moreover, there is some evidence that the tax-and-cost-related policies that spur greater inequality and faster growth are less generous welfare and transfer programs.

To reiterate the qualifications stated at the outset, the research in this paper does not represent rigorous causal analysis of particular policies. Rather, it reflects cross-sectional associations between changes in inequality (and economic growth) and the broad characterizations of policy captured by existing business climate indexes. As a consequence, the implications may be more important for policy debate than for economic analysis. Specifically, the evidence implies that when tax-and-cost-related business climate indexes are touted as demonstrating a strong business climate in a state – as they often are – policymakers and voters should be aware that there is another side to the coin: although these business climate indexes are in fact associated with higher economic growth, they are also associated with rising inequality. This perspective should influence the way policymakers and the public think about the tax-and-cost-related business climate indexes that feature prominently in policy debate.

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Table 1: Business Climate Indexes

Index, institution, and years	Stated focus of index	Policy categories
Productivity/quality of life		
SNEI: State New Economy Index, Progressive Policy Institute (1999, 2002) , Information, Technology and Innovation Foundation and Kauffman Foundation (2007, 2008)	Compatibility of state's economy with "New Economy"	Business incubation; human capital; technology, knowledge jobs, and digital economy, and external sector
DRCS-P: Development Report Card for the States─Performance, Corporation for Enterprise Development (2000-2007)	Opportunities for employment, income, and improving quality of life	Quality of life; equity; employment, earnings, job quality, and resource efficiency/environment
DRCD-DC: Development Report Card for the States─Development Capacity, Corporation for Enterprise Development (2000-2007)	Capacity for future development	Cost of doing business (excl. taxes); quality of life; business incubation; human capital; infrastructure; technology, knowledge jobs, and digital economy, and resource efficiency/ environment
DRCS-BV: Development Report Card for the States─Business Vitality, Corporation for Enterprise Development (2000-2007)	Dynamism of the state's large and small businesses	Business incubation; technology, knowledge jobs, and digital economy, and external sector
SCI: State Competitiveness Index, Beacon Hill Institute (2001-2008)	Long-term competitiveness for attracting and incubating new businesses and growth of existing firms	Cost of doing business; size of government; tax rates and burden; quality of life; welfare and transfer payments; employment, earnings, and job quality; business incubation; human capital; infrastructure; technology, knowledge jobs, and digital economy, resource efficiency/environment, and external sector
Taxes and costs of doing business		
SBTC: State Business Tax Climate Index, Tax Foundation (2003-2009)	Tax rates	Tax rates and tax burden
SBSI: Small Business Survival Index, Small Business and Entrepreneurship Council (1996-2008)	Government-imposed or government-related costs affecting investment, entrepreneurship, and business	Cost of doing business (excl. taxes); size of government; tax rates and tax burden; regulation and litigation; quality of life; infrastructure
CDBI: Cost of Doing Business Index, Milken Institute (2002-2007)	Fundamental business costs, including labor, taxes, real estate, and electricity	Cost of doing business (excl. taxes); tax rates and tax burden
EFI: Economic Freedom Index, Pacific Research Institute (1999, 2004, 2008)	Government favors free enterprise and consumer choice; individual rights to pursue interests through voluntary exchange of private property under rule of law	Cost of doing business (excl. taxes); size of government; tax rates and tax burden; regulation and litigation; welfare and transfer payments
EFINA: Economic Freedom Index of North America, The Fraser Institute / National Center for Policy Analysis (1992-2005)	Restrictions on economic freedom imposed by governments: takings and discriminatory taxation; size of government; and labor market freedom	Cost of doing business (excl. taxes); size of government; tax rates and tax burden; welfare and transfer payments

For the SNEI index, the author of all four reports is the same (Robert Atkinson). The DRCS indexes go back earlier, but only the information beginning in 2000 was available on-line. The second column lists the focus of the index as stated by the creating institution. The third column gives our (more objective) categorization, although they are often the same as those used by the institutions that create the indexes.

Sources (for latest version of each index):

SNEI: http://www.kauffman.org/uploadedfiles/2008_state_new_economy_index_120908.pdf (viewed November, 2008); DRCS-P, DRCD-DC, and DRCS-V4: http://www.cfed.org/focus.m?parentid=2&siteid=2346&id=2346 (viewed November, 2008); SCI: http://www.beaconhill.org/compete08/BHIState08-FINAL.pdf (viewed November, 2008); SBTC: http://www.taxfoundation.org/files/bp58.pdf (viewed November, 2008); SBSI: http://www.sbecouncil.org/uploads/sbsi%202008%5B1%5D1.pdf (viewed December, 2008); CDBI: http://www.milkeninstitute.org/pdf/2007CostofDoingBusiness.pdf (viewed November, 2008); EFI: http://special.pacificresearch.org/pub/sab/entrep/2008/Economic_Freedom/map.html (viewed November, 2008); EFINA: http://www.freetheworld.com/efna2008/EFNA_complete_Publication.pdf (viewed November, 2008).

Table 2: Distribution of Weights of Components of Business Climate Indexes (%)

	Productivity/quality of life					Taxes and costs of doing business				
	SNEI	**DRCS-P**	**DRCS-DC**	**DRCS-BV**	**SCI**	**SBTC**	**SBSI**	**CDBI**	**EFI**	**EFINA**
Taxes and costs	*0.0*	*0.0*	*4.0*	*0.0*	*20.9*	*100.0*	*94.1*	*100.0*	*100.0*	*100.0*
Cost of doing business (excluding taxes)			4.0		9.3		8.8	80.0	1.3	22.2
Size of government					7.0		8.8		14.7	22.2
Tax rates and tax burden					2.3	100.0	47.1	20.0	19.2	33.3
Regulation and litigation							29.4		40.5	
Welfare and transfer payments					2.3				24.3	22.2
Productivity/quality of life	*90.4*	*80.0*	*92.0*	*75.0*	*65.1*	*0.0*	*5.9*	*0.0*	*0.0*	*0.0*
Quality of life		20.0	12.0		23.3		2.9			
Equity		20.0								
Employment, earnings and job quality		40.0			4.7					
Business incubation	25.1		20.0	52.5	9.3					
Human capital	3.4		20.0		7.0					
Infrastructure			20.0		2.3		2.9			
Technology, knowledge jobs, and digital economy	61.8		20.0	22.5	18.6					
"Other"	*9.6*	*20.0*	*4.0*	*25.0*	*14.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
Resource efficiency / environment		20.0	4.0		7.0					
External sector	9.6			25.0	7.0					

See notes to Table 1 for more details on the indexes; the categories listed here correspond to the third column of that table. To get the percentages shown, we began with the list of variables in each index and assigned to each variable a weight according to each index's methods. SBSI weights each variable equally in the index, and CDBI and SNEI each assign different weights to each variable in the index. The other indexes create sub-indexes: variables are weighted equally in each sub-index, and then the sub-indexes are either weighted equally (DRCS-P, DRCS-DC, DRCS-BV, SCI, and EFINA) or are assigned different weights (EFI) in the final index. Even within an index with equally weighted sub-indexes containing equally weighted variables, each variable's weight in the final index depends on the number of variables in its sub-index. All of the SNEI variables fall under the "tax rates and tax burden" category, making it unnecessary to replicate the index's weighting scheme for this table.

Table 3: Average State Ranks by Index, 1992-2009

State	Average rank across productivity/quality of life indexes	Average rank across tax-and-cost indexes	State	Average rank across productivity/quality of life indexes	Average rank across tax-and-cost indexes
Alabama	38.4	14.2	Montana	33.4	22.7
Alaska	34.3	28.9	Nebraska	23.5	25.1
Arizona	30.1	20.6	Nevada	32.4	13.3
Arkansas	42.0	23.2	New Hampshire	11.9	13.1
California	15.3	45.6	New Jersey	15.6	43.3
Colorado	6.4	13.5	New Mexico	36.8	34.5
Connecticut	8.9	38.4	New York	21.6	48.2
Delaware	10.4	18.3	North Carolina	29.5	28.6
Florida	28.9	14.6	North Dakota	29.9	21.8
Georgia	25.6	19.1	Ohio	28.8	38.2
Hawaii	39.3	38.9	Oklahoma	37.6	19.1
Idaho	22.4	20.4	Oregon	17.8	27.7
Illinois	23.3	27.6	Pennsylvania	19.3	30.3
Indiana	31.9	14.9	Rhode Island	23.7	45.7
Iowa	26.2	27.2	South Carolina	34.5	15.0
Kansas	23.6	22.2	South Dakota	30.1	3.7
Kentucky	37.5	27.9	Tennessee	33.1	12.9
Louisiana	45.5	26.1	Texas	24.8	12.6
Maine	28.0	39.1	Utah	11.2	15.5
Maryland	12.7	29.1	Vermont	18.1	39.6
Massachusetts	4.4	35.0	Virginia	9.8	13.8
Michigan	25.2	29.4	Washington	11.5	26.1
Minnesota	6.7	40.6	West Virginia	47.8	33.5
Mississippi	47.8	16.4	Wisconsin	20.2	32.6
Missouri	29.0	15.8	Wyoming	28.1	11.2

We first average each index across years, and then average these averages to get the numbers reported in the second, third, fifth, and sixth columns.

Table 4: Descriptive Statistics for Inequality Measures

Variable	Source	N	Mean	Std. dev.	Min.	Max.
Percentage Point Change						
Poverty	CPS ASEC	720	-0.115	0.973	-5.59	3.65
Growth Rates in Inequality Measures						
50-10 Differential	CPS ASEC	720	0.305	4.42	-15.31	16.55
90-50 Differential		720	1.48	5.30	-17.14	20.28
90-10 Differential		720	1.13	3.81	-10.41	15.29
10^{th} Percentile		720	-0.417	8.23	-27.73	26.44
50^{th} Percentile		720	0.218	3.46	-11.03	11.92
90^{th} Percentile		720	1.01	3.44	-8.93	13.60
Economic growth measures (rates)						
Employment	BLS-QCEW	720	1.63	1.55	-2.17	8.26
Gross State Product (GSP)	BEA	480	5.14	1.96	0.717	13.44

Change in poverty rates are annualized-two year percentage point changes and income differential and percentile growth rates are annualized two-year percent changes (2011 dollars based on the CPI), in all cases multiplied by 100. The descriptive statistics in this table cover 1992-2008 for all outcomes. In the regressions in tables that follow, subsets of the observations are used, depending on the years in which an index is available. Alaska and Hawaii are excluded from the descriptive statistics as well as the regressions that follow because some of the control variables are unavailable; however, they are included in the industry composition effect calculation. "Mean" refers to the unweighted average of state values for each variable.

Table 5: Regressions for Annualized Two-Year Changes in QCEW Employment and GSP Growth

	Productivity/quality of life indexes					**Tax-and-cost indexes**				
	SNEI	**DRCS-P**	**DRCS-DC**	**DRCS-BV**	**SCI**	**SBTC**	**SBSI**	**CDBI**	**EFI**	**EFINA**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
QCEW employment	-0.067	0.026	0.036	-0.163	0.076	0.265***	0.155**	0.338**	0.222*	0.275***
growth, 1992-2008	(0.120)	(0.096)	(0.094)	(0.112)	(0.104)	(0.090)	(0.063)	(0.159)	(0.125)	(0.062)
	[-0.114]	[0.050]	[0.070]	[-0.291]	[0.131]	[0.379]	[0.279]	[0.424]	[0.382]	[0.484]
R^2	0.587	0.617	0.617	0.625	0.628	0.539	0.703	0.563	0.624	0.726
N	96	240	240	240	288	144	528	240	96	672
GSP growth, 1997-2008	-0.23	-0.259	-0.232	-0.543***	0.032	0.276	0.212	0.503*	0.225	0.222*
	(0.220)	(0.194)	(0.173)	(0.178)	(0.160)	(0.231)	(0.133)	(0.279)	(0.273)	(0.123)
	[-0.437]	[-0.479]	[-0.446]	[-0.981]	[0.055]	[0.394]	[0.381]	[0.632]	[0.388]	[0.390]
R^2	0.455	0.454	0.452	0.488	0.422	0.49	0.376	0.448	0.481	0.398
N	96	240	240	240	288	144	480	240	96	432

Business climate indexes are standardized by year. The DRCS indexes have reconstructed from those in Kolko et al. (2013). The methodology for constructing the indexes changed in 2003, so the 2001and 2002 indexes were recalculated to reflect the updated methodology. The unit of observation is the state and year. The dependent variables are the two-year growth rates in QCEW employment levels and Gross State Product (GSP). All models include year fixed effects and Census Region fixed effects. In addition, all regressions include the following baseline controls: industry composition, population density, climate, and proximity to navigable water. Population density is entered in logs. Standard errors clustered by state are used for statistical inference, and ***,**, and * indicate significance at the 1-percent, 5-percent or 10-percent level. The square brackets show the estimated coefficients multiplied by the difference between the 10^{th} and 40^{th} state rankings for each variable. Hawaii and Alaska are excluded.

Table 6: Regressions for Annualized 2-year Changes in Poverty, Income Percentile Differentials, and Income Percentiles, 1992-2008

	Productivity/quality of life indexes					**Tax-and-cost indexes**				
	SNEI	**DRCS-P**	**DRCS-DC**	**DRCS-BV**	**SCI**	**SBTC**	**SBSI**	**CDBI**	**EFI**	**EFINA**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Poverty	-0.071	0.054	0.045	-0.077	0.052	-0.112	-0.015	-0.095	0.017	0.021
	(0.089)	(0.064)	(0.065)	(0.069)	(0.041)	(0.097)	(0.040)	(0.077)	(0.110)	(0.027)
	[-0.136]	[0.101]	[0.084]	[-0.139]	[0.091]	[-0.166]	[-0.026]	[-0.118]	[0.029]	[0.037]
R^2	0.133	0.0762	0.0755	0.0791	0.0995	0.133	0.160	0.110	0.134	0.132
50-10 differential	-1.046**	-0.493*	-0.293	-0.236	-0.242	0.364	0.107	0.140	1.132*	0.046
	(0.477)	(0.274)	(0.220)	(0.265)	(0.227)	(0.273)	(0.132)	(0.359)	(0.577)	(0.123)
	[-2.00]	[-0.926]	[-0.546]	[-0.425]	[-0.422]	[0.538]	[0.189]	[0.174]	[1.95]	[0.081]
R^2	0.118	0.0978	0.0927	0.0924	0.0912	0.0939	0.103	0.0810	0.267	0.0700
90 -50 differential	0.567	0.074	0.202	-0.190	-0.090	0.243	-0.005	-0.078	0.902	0.069
	(0.546)	(0.276)	(0.283)	(0.276)	(0.235)	(0.366)	(0.125)	(0.501)	(0.766)	(0.105)
	[1.08]	[0.139]	[0.376]	[-0.342]	[-0.157]	[0.359]	[-0.009]	[-0.097]	[1.55]	[0.121]
R^2	0.167	0.0655	0.0665	0.0667	0.0687	0.0812	0.132	0.0770	0.0975	0.0981
90-10 differential	0.033	-0.117	0.031	-0.209	-0.149	0.272	0.037	0.013	0.915*	0.057
	(0.349)	(0.192)	(0.210)	(0.199)	(0.166)	(0.250)	(0.092)	(0.359)	(0.467)	(0.077)
	[0.063]	[-0.220]	[0.058]	[-0.376]	[-0.26]	[0.402]	[0.065]	[0.016]	[1.58]	[0.100]
R^2	0.213	0.109	0.109	0.112	0.119	0.122	0.203	0.132	0.145	0.144
10^{th} percentile	1.356	-0.333	-0.790	-0.180	-0.565	0.253	-0.026	0.619	-1.073	-0.074
	(0.878)	(0.637)	(0.550)	(0.536)	(0.449)	(0.665)	(0.188)	(0.702)	(1.194)	(0.191)
	[2.59]	[-0.626]	[-1.472]	[-0.324]	[-0.985]	[0.374]	[-0.046]	[0.769]	[-1.859]	[-0.130]
R^2	0.0864	0.130	0.134	0.129	0.119	0.122	0.159	0.0800	0.0817	0.123
50^{th} percentile	-0.431	-0.432*	-0.407*	-0.207	-0.297	0.314	0.084	0.244	0.568	0.037
	(0.378)	(0.239)	(0.207)	(0.220)	(0.193)	(0.192)	(0.110)	(0.301)	(0.407)	(0.108)
	[-0.824]	[-0.812]	[-0.758]	[-0.373]	[-0.518]	[0.464]	[0.148]	[0.303]	[0.979]	[0.065]
R^2	0.111	0.139	0.137	0.132	0.128	0.170	0.218	0.135	0.266	0.141
90^{th} percentile	0.143	-0.134	-0.047	-0.196	-0.180	0.269	0.034	0.058	0.708*	0.046
	(0.318)	(0.175)	(0.186)	(0.190)	(0.163)	(0.235)	(0.084)	(0.321)	(0.410)	(0.075)
	[0.273]	[-0.252]	[-0.088]	[-0.353]	[-0.314]	[0.398]	[0.06]	[0.072]	[1.22]	[0.081]
R^2	0.216	0.142	0.141	0.144	0.150	0.174	0.271	0.168	0.149	0.184
N	96	240	240	240	288	144	528	240	96	672

Business climate indexes are standardized by year. The unit of observation is the state and year. The dependent variables are the two-year percentage point change in poverty rates; the 2-year percent change in the differential between the 50^{th} and 10^{th} percentiles of family income (50-10 differential), the 90^{th} and 50^{th} percentiles of family income (90-50 differential), and the 90^{th} and 10^{th} percentiles of family income; and the 2-year percent change in the 10^{th}, 50^{th}, and 90^{th} percentile of family income. All models include year fixed effects and Census Region fixed effects. In addition, all regressions include the following baseline controls: population density, climate, and proximity to navigable water. Population density is entered in logs. Standard errors are clustered by state, and ***, **, and * indicate statistical significance at the 1-percent, 5-percent, and 10-percent level, respectively. The square brackets show the estimated coefficients multiplied by the difference between the 10^{th} and 40^{th} state rankings for each variable. Hawaii and Alaska are excluded.

Table 7: Summary of Regressions for Changes in Poverty, Income Percentile Differentials, and Income Percentiles, Different Windows for Dependent Variables

		Poverty	**50-10**	**90-50**	**90-10**	**10th**	**50th**	**90th**
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
SNEI	Mean	-0.030	-0.213	0.637	0.353	0.471	-0.014	0.357
	Range	[-0.071,0.041]	[-1.046,0.268]	[0.197,1.146]	[0.033,0.859]	[-0.759,1.356]	[-0.431,0.446]	[0.079,0.848]
	Sig. (+)/Sig. (-)	0/0	0/1	0/0	1/0	0/0	0/0	1/0
DRCS-P	Mean	0.072	-0.396	0.106	-0.064	-0.519	-0.412	-0.104
	Range	[0.023,0.139]	[-0.493,-0.297]	[0.05,0.193]	[-0.117,0.037]	[-1.042,-0.181]	[-0.485,-0.32]	[-0.134,-0.064]
	Sig. (+)/Sig. (-)	1/0	0/1	0/0	0/0	0/0	0/1	0/0
DRCS-DC	Mean	0.045	-0.208	0.184	0.050	-1.012	-0.394	-0.061
	Range	[0.042,0.047]	[-0.293,-0.107]	[-0.141,0.490]	[-0.176,0.296]	[-1.193,-0.790]	[-0.407,-0.379]	[-0.261,0.126]
	Sig. (+)/Sig. (-)	0/0	0/0	0/0	0/0	0/1	0/2	0/0
DRCS-BV	Mean	-0.058	-0.008	-0.167	-0.114	-0.332	-0.086	-0.131
	Range	[-0.101,0.004]	[-0.236,0.159]	[-0.190,-0.132]	[-0.209,-0.025]	[-0.651,-0.166]	[-0.207,0.067]	[-0.196,-0.036]
	Sig. (+)/Sig. (-)	0/0	0/0	0/0	0/0	0/0	0/0	0/0
SCI	Mean	0.053	-0.215	-0.113	-0.156	-0.521	-0.273	-0.185
	Range	[0.042,0.065]	[-0.308,-0.096]	[-0.264,0.014]	[-0.216,-0.104]	[-0.641,-0.358]	[-0.366,-0.157]	[-0.227,-0.147]
	Sig. (+)/Sig. (-)	0/0	0/0	0/0	0/0	0/0	0/1	0/0
Productivity/quality of life indexes	Mean	0.016	-0.208	0.129	0.014	-0.383	-0.236	-0.025
	Sig. (+)/Sig. (-)	1/0	0/2	0/0	1/0	0/1	0/3	1/0
SBTC	Mean	-0.102	0.131	0.173	0.162	0.305	0.155	0.175
	Range	[-0.128,-0.065]	[-0.031,0.364]	[-0.255,0.530]	[-0.151,0.366]	[-0.057,0.719]	[0.056,0.314]	[-0.130,0.385]
	Sig. (+)/Sig. (-)	0/0	0/0	0/0	0/0	0/0	0/0	0/0
SBSI	Mean	0.003	0.182	-0.033	0.041	-0.100	0.118	0.030
	Range	[-0.015,0.031]	[0.104,0.334]	[-0.131,0.036]	[-0.049,0.134]	[-0.202,-0.026]	[0.073,0.198]	[-0.047,0.102]
	Sig. (+)/Sig. (-)	0/0	1/0	0/0	0/0	0/0	0/0	0/0
CDBI	Mean	-0.037	0.342	-0.126	0.033	-0.049	0.235	0.015
	Range	[-0.095,0.074]	[0.14,0.516]	[-0.222,-0.078]	[0.013,0.067]	[-1.345,0.619]	[0.052,0.410]	[-0.120,0.106]
	Sig. (+)/Sig. (-)	0/0	0/0	0/0	0/0	0/0	1/0	0/0
EFI	Mean	0.094	1.036	0.723	0.786	-1.904	0.243	0.491
	Range	[0.017,0.167]	[0.099,1.877]	[0.204,1.063]	[0.142,1.302]	[-3.584,-1.054]	[-0.218,0.568]	[0.009,0.756]
	Sig. (+)/Sig. (-)	0/0	2/0	0/0	2/0	0/1	0/0	1/0
EFINA	Mean	0.017	0.063	0.043	0.044	-0.053	0.041	0.031
	Range	[0.012,0.021]	[0.046,0.089]	[0.019,0.069]	[0.033,0.057]	[-0.095,0.011]	[0.024,0.061]	[0.021,0.046]
	Sig. (+)/Sig. (-)	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Tax and cost indexes	Mean	-0.005	0.351	0.156	0.213	-0.360	0.158	0.148
	Sig. (+)/Sig. (-)	0/0	3/0	0/0	2/0	0/1	1/0	1/0

Notes from Table 6 apply. This table summarizes information for the specifications in Table 6, and two alternative specifications defining the windows for the calculation of the changes in the inequality measures to 1-year and 3-year windows. For each inequality measure and index, the table reports the mean of the point estimates of the coefficient of the business cycle index over these three specifications, the range of the estimates, and the number of significant positive or negative estimates (at the 10-percent level or less). The shaded rows collect the results for the productivity indexes, and the tax-and-cost indexes. The bold entries are those where there is at least one significant estimate, and the estimates are all of the same sign.

Table 8: Sensitivity Analyses of Regressions for Changes in Poverty, Income Percentile Differentials, and Income Percentiles

		Poverty	**50-10**	**90-50**	**90-10**	**10th**	**50th**	**90th**
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
A. Outcomes stripped from productivity/quality of life indexes								
Productivity/quality	Mean	0.024	-0.134	0.026	-0.028	-0.577	-0.240	-0.083
of life indexes	Sig. (+)/Sig. (-)	0/0	0/1	0/0	0/0	0/1	0/3	0/0
Tax and cost indexes	Mean	--	--	--	--	--	--	--
	Sig. (+)/Sig. (-)	--	--	--	--	--	--	--
B. Substituting education and Democratic vote share variables for Census region dummy variables								
Productivity/quality	Mean	-0.001	-0.071	0.199	0.107	-0.354	-0.127	0.062
of life indexes	Sig. (+)/Sig. (-)	0/2	2/2	2/0	0/0	0/0	0/3	0/0
Tax and cost indexes	Mean	-0.009	0.195	0.051	0.093	-0.340	0.060	0.044
	Sig. (+)/Sig. (-)	0/0	1/0	0/0	0/0	0/1	0/1	0/0
C. Include fixed state effects								
Productivity/quality	Mean	-0.023	0.301	-0.09	0.018	0.041	0.201	0.005
of life indexes	Sig. (+)/Sig. (-)	0/1	1/0	1/1	0/1	0/0	0/0	1/1
Tax and cost indexes	Mean	-0.118	1.756	-0.593	0.208	-1.818	0.878	0.023
	Sig. (+)/Sig. (-)	0/1	4/0	0/2	0/0	0/1	2/0	0/0
D. Drop geographic factors and industry composition variable								
Productivity/quality	Mean	0.006	-0.238	0.063	-0.042	-0.248	-0.232	-0.062
of life indexes	Sig. (+)/Sig. (-)	0/0	0/3	1/0	0/2	0/0	0/4	0/3
Tax and cost indexes	Mean	0.003	0.477	0.163	0.266	-0.24	0.293	0.209
	Sig. (+)/Sig. (-)	0/0	7/0	1/0	2/0	0/2	6/0	2/0

Notes from Tables 6 and 7 apply. Sensitivity analyses are described in more detail in the main text. For each specification, the same summary measures (although not the range) are reported as in Table 7. Specifications are as in Tables 6 and 7 with the exceptions noted in each panel.

Table 9: Economic Freedom Index (EFI) Sub-Indexes

	Description / variables included	Sub-index weight
Fiscal sub-index	Average days required for work to cover taxes; per capita state tax revenue; per capita state and local property tax revenue; tax burden on high income families; per capita state government death and gift tax revenue; per capita state government severance tax revenue; personal income taxes; sales taxes; excise taxes; license taxes; corporate taxes; state debt; tax exemptions	34.9
Regulatory sub-index	Licensing requirements for non-health professions; licensing requirements for health professions; continuing education requirements for selected professions; percent land owned by federal government; purchasing regulations; public school regulation; labor legislation; full-time-equivalent employees of state public utilities commissions; corporate constituency statutes; property rights legislation; strictness of state gun laws; state seat belt laws; state provisions for minimum age for driver's licenses; full-time-equivalent employees of insurance regulation organization; state legislation regarding environmental health	34.2
Welfare spending sub-index	Per capita state and local welfare spending; percent of population receiving public aid; Medicare benefit payments per enrollee; per capita Medicaid spending; average monthly Food Stamp benefit per recipient; monthly TANF benefit for family of three; average monthly benefit per participant for Women, Infants, and Children Special Nutrition Program; commodity costs of National School Lunch Program per participant	37.3
Government size sub-index	State and local total expenditures as a percent of GSP; size of government workforce; citizen representation (avg. of total number of government units, and legislators per million people)	6.3
Judicial	Number of resident active attorneys; Attorney General salary; judges' compensation; judges' terms; judges' selection method; state has Illinois Brick Repealer statutes (which restrict anti-trust suits); tort reform; medical-liability reform	-12.6

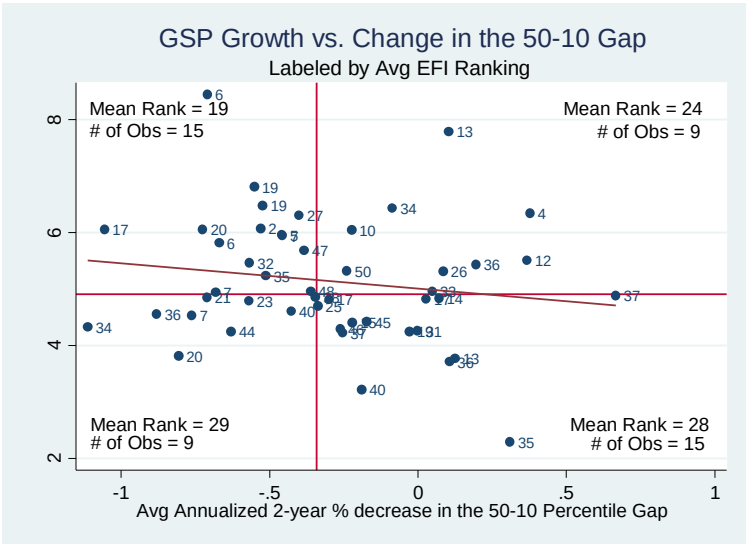
Sub-index weights described are for 2004; sub-index weighting was different in 1999. The sub-indexes are weighted according to a principal components analysis, and the negative weight on the judicial sub-index presumably reflects a weak or negative correlation with other EFI sub-indexes.

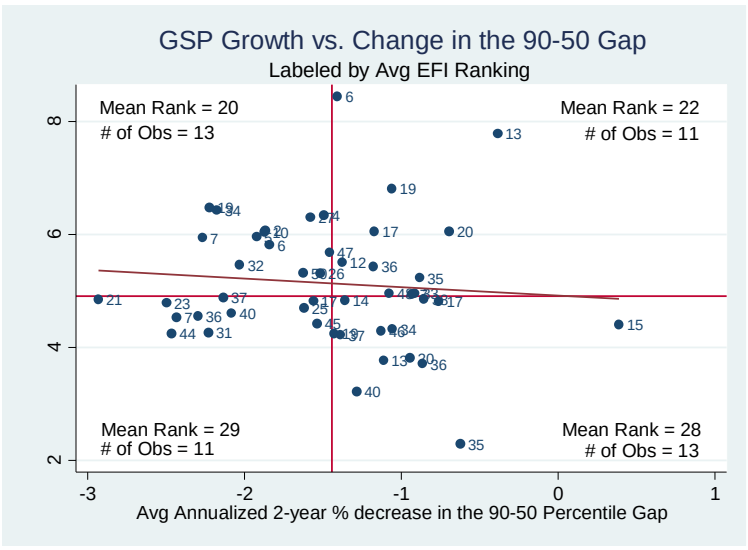
Table 10: Regressions for Changes in Poverty, Income Percentile Differentials, and Income Percentiles, on Sub-Indexes of Economic Freedom Index

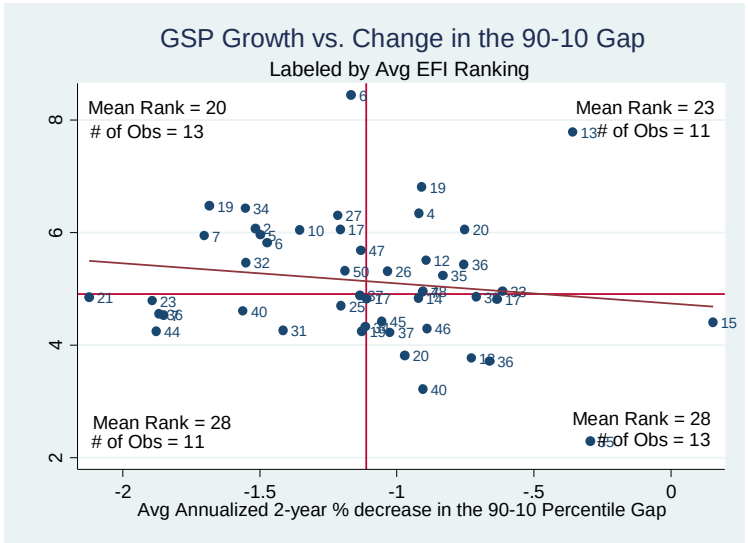
	Poverty	**50-10 Differential**	**90-50 Differential**	**90-10 Differential**	**10th Percentile**	**50th Percentile**	**90th Percentile**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Fiscal sub-index	0.115	0.917	0.777	0.837	-3.144**	-0.046	0.437
	(0.126)	(0.663)	(0.835)	(0.610)	(1.227)	(0.494)	(0.512)
	[0.197]	[1.573]	[1.333]	[1.436]	[-5.393]	[-0.079]	[0.750]
Regulatory sub-index	0.022	-0.308	-0.068	-0.157	0.382	-0.110	-0.093
	(0.094)	(0.499)	(0.740)	(0.440)	(1.376)	(0.408)	(0.388)
	[0.035]	[-0.484]	[-0.107]	[-0.247]	[0.601]	[-0.173]	[-0.146]
Welfare spending	0.088	0.287	1.308*	0.922*	0.486	0.365	0.890**
sub-index	(0.163)	(0.611)	(0.727)	(0.489)	(1.096)	(0.399)	(0.430)
	[0.130]	[0.424]	[1.933	[1.362]	[0.718]	[0.539]	[1.32]
Government size	-0.185*	0.878*	-0.655	-0.163	0.144	0.582	-0.173
sub-index	(0.097)	(0.504)	(0.460)	(0.323)	(0.836)	(0.360)	(0.266)
	[-0.307]	[1.457]	[-1.087]	[-0.270]	[0.239]	[0.966]	[-0.287]
Judicial sub-index	0.121	0.598	0.377	0.484	-1.456	0.058	0.255
	(0.103)	(0.591)	(0.609)	(0.376)	(0.885)	(0.422)	(0.319)
	[0.238]	[1.175]	[0.741]	[0.951]	[-2.860]	[0.114]	[0.501]
R^2	0.197	0.310	0.146	0.210	0.150	0.291	0.196
N	96	96	96	96	96	96	96

Notes to Table 6 and 9 apply.

Figure 1: Relationships between Economic Growth, Change in Inequality, and Rankings EFI Business Climate Index







GSP growth is computed over the 1992-2008 period. Index averages are computed over all available years in this period. Note that the horizontal axis is the negative of the increase in inequality. The plotting symbols are rankings in the indexes, with 1 being the highest ranked ("lowest taxes").