Small Business and State Growth: An Econometric Investigation

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For several years, the U.S. Census Bureau has produced firm-size data for the Office of Advocacy through its Statistics of U.S. Business (SUSB); see **www.sba.gov/advo/research/data.html.** With data spanning 1988 to more recent years, researchers willing to investigate linkages between small firm establishment births and deaths by state now have a sufficient number of observations to conduct their analysis.

The authors of this study utilize SUSB data to examine the effects of small firm establishment births and deaths on state-level changes in gross state product (GSP), state personal income (SPI), and total state employment for the years of 1988 to 2002.

Overall Findings

Small firm establishment births have a larger impact than any other factor examined on GSP, SPI, and total state employment. In fact, the authors find that small firm establishment birth rates and death rates have equal and opposite effects on state economic growth. This is a key finding, as it suggests that economic growth will be faster when the net small firm establishment birth rate is positive (i.e., when the birth rate exceeds the death rate).

The authors conclude that this general finding reveals that state efforts to promote small business formation will be more fruitful in terms of generating economic growth than virtually any other policy option in our models.

Highlights

• The authors find that increasing small business births by 5 percent would result in a 0.465 percent increase in GSP growth.

• The number of small firm establishments and the dollar value of small business payroll in neighboring states both have positive but small effects on own-state GSP growth.

• States with lower manufacturing shares of their GSP and states with a smaller share of their population between the ages of 45 and 64 (relative to the reference percentage of below age 25) have higher GSP growth.

• Faster state employment growth is associated with more large-firm activity, lower population density, fewer highly educated residents, a younger population, and a lower share of GSP from manufacturing. States without state-level inheritance, estate, or gift taxes also tend to have higher rates of employment growth. Similar trends emerge when analyzing changes in state personal income.

• The authors reached the same conclusions whether they defined a "small business" as less than 500 employees or as less than 100 employees.

Scope and Methodology

In this analysis, the authors explore the intricate relationships between small business activities and economic activity at the U.S. state level, using a panel of state data spanning the years 1988 to 2002. They examine a wide variety of indicators of state small business activity, including such things as simple counts of small business firms, establishments, employment, payroll, and the

number of small firm establishment births and deaths. Small business data are drawn from the U.S. Census Bureau's SUSB program, created from the annual County Business Patterns files with cooperation and partial funding from the Office of Advocacy.

To isolate the impact of small business activities on state economies, the authors control for other determinants of economic growth. The intent is to identify available policy instruments for state governments while controlling for as many possible determinants of economic growth as possible. A listing of data variables and sources can be found in Appendix Table 1 of the study.

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Executive Summary

Despite a large and growing literature on the economic importance of small businesses in a national or international context, much less is known about the contributions of small businesses to economic growth at the state level. Using a panel of data spanning the years 1988 through 2002 for the fifty U.S. states, we examine the impact of small business activity on overall state economic growth. Our small business measures include annual counts of small firms, establishments, and employees, and the dollar value of small business payroll. We supplement these with annual counts of births and deaths of establishments in small firms. Small business data are drawn from the U.S. Census Bureau's Statistics of U.S. Businesses program, created from the annual County Business Patterns files with cooperation and partial funding from the Office of Advocacy of the U.S. Small Business Administration. For overall growth measures, we focus on Gross State Product (GSP), state personal income (SPI), and total state employment. Growth data are drawn from Census or Bureau of Economic Analysis sources.

Our econometric approach harnesses the panel features of our data to account for the simultaneity of small business activity and overall growth. We also control for a variety of other determinants of economic growth, including a broad menu of state-level tax policy measures from a University of Tennessee Center for Business and Economic Research database. Another innovation in this study is our consideration of spatial influences of small business activity. For this, we include a measure of small business activity in neighboring states to account for possible cross-border spillover effects.

Key findings include the following:

1. After accounting for simultaneity of small business activity and state economic growth, we find that small business establishment births are the single-largest determinant of GSP, employment, and SPI growth.

2. Similarly, small business establishment deaths detract significantly from state economic growth.

3. The effects of births and deaths are statistically equivalent in absolute value terms, suggesting that overall economic growth will be faster when the net birth rate of new small firm establishments is positive.

4. Small business activity in neighboring states was not found to have a negative impact on a state's own rate of economic growth, and actually increases growth in several cases.

In terms of the policy options for economic growth available to state governments, we find that providing a strong environment for small business formation and survival is likely to be more effective than virtually any other option among those considered in our models.

1. Introduction

Few would question the notion that small businesses contribute significantly to economic growth. The Office of Advocacy of U.S. Small Business Administration (SBA) reports indicate that small businesses are the vast majority of employers, creating the lion's share of new jobs each year and more than half of all net new jobs in recessionary periods. This evidence has resulted in numerous efforts at the federal, state, and local levels to foster small business development. Interestingly, despite a large and growing literature on the economic importance of small businesses in a national or international context, very little is known about the contributions of small businesses to economic growth at the state level.

Observing common upward trends in small business activity and state economic growth does not necessarily mean that small business activity increases growth (or vice versa). Indeed, gaining a good sense of the magnitude of small business contributions to growth is not a trivial task. Econometric models must be sure to account for several potential problems. First, both small business activity and state economic growth have many common elements which must be controlled for in order to reduce the chance of omitted variable bias. Perhaps more importantly, models must account for the simultaneity of small business activity and economic growth, taking steps to determine causality rather than simple correlation between the trending series.

In this report, we explore the intricate relationships between small business activities and economic activity at the U.S. state level, using a panel of state data spanning the years 1988 to 2002. We examine a wide variety of indicators of state small business activity, including such things as simple counts of small business firms, establishments, employment, payroll, and the number of small firm establishment births and deaths. Small business data are drawn from the U.S. Census Bureau's Statistics of U.S. Businesses program, created from the annual County

Business Patterns files. [1] For economic activity, we focus on three of the most prominent

indicators of state economic health: Gross State Product (GSP), State Personal Income (SPI),

and total state employment. Growth data are drawn from Census or Bureau of Economic

Analysis (BEA) sources.

To isolate the impact of small business activities on state economies, we control for other

determinants of economic growth. In addition to standard economic controls such as education

levels and price indicators for inputs to production (namely energy prices and wage rates), we

also include a broad array of state policy variables in the spirit of Bruce and Deskins (2005).

Our intent here is to identify available policy instruments for state governments while controlling

for as many possible determinants of economic growth as possible in order to isolate the true

impact of small business activity above and beyond these other controls. State policy

information is drawn from a detailed tax database maintained by the University of Tennessee

Center for Business and Economic Research.

Our estimation strategy accounts for the simultaneity of small business activity and

economic growth by lagging all independent variables in a panel regression framework. This

enables us to more clearly determine the extent to which any relationships between small

business activities and state economic growth are causal. We also harness the panel features of

our data set to address correlations across states within each time period. As an added

innovation, we employ spatial econometric procedures to account for the possibility that state

economic growth is affected by small business activity in neighboring states.

The combination of these econometric advances and an elaborate state panel of data

permit us to make important contributions that are highly relevant to state and federal policy

discussions. Most importantly, our results shed light on the impact of small business activity on

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[1] Full source information for all data used in this study can be found in Appendix Table 1.

key measures of state economic health after controlling for a variety of other factors. We begin

by summarizing the key findings from a number of relevant bodies of economic literature. We

then lay out our specific testable hypotheses before describing our econometric model and

estimation strategy in detail. Following a discussion of our data set, we present our results and

discuss their policy implications.

2.   A Review of Related Literature

Many different factors are critical to the growth and development of an economy. As a

result, there has been extensive research on factors, both tax and non-tax, contributing to

economic growth among states in the U.S. Even though the contributions of small businesses to

economic development have received increasing attention by development officials in the states,

little research has been conducted measuring the empirical relationships between the dynamics of

entrepreneurship and economic growth at the state level. Several strands of the economics

literature are relevant to this issue.

Entrepreneurial Activity and Economic Growth. Dating back to Schumpeter (1911),

Knight (1921), and Baumol (1968), economic theorists have recognized the importance of

entrepreneurship to economic development. From these theoretical models, a literature has

developed to explain the relationship between entrepreneurial activity and economic growth,

primarily at the national level. The Global Entrepreneurship Monitor (GEM) has recently

conducted surveys in 37 countries in 2002 intended to collect data on the level of entrepreneurial

activity. Subsequent research has indicated that the effects of entrepreneurial activity on

economic growth vary across countries based on the income level. Developed countries display

a positive relationship between entrepreneurial activity and GDP growth (van Stel, et al, 2005).

The issue has received increasing interest lately as evidenced by a special issue of the journal *Regional Studies*,(Volume 38, Number 8, November 2004), devoted to empirical studies of entrepreneurship and economic development. This issue contains four articles on the effects of entrepreneurship, measured as new firm formation, on varying measures of economic development, ranging from employment growth to productivity increases. In the article that is perhaps the most relevant to our proposal, Acs and Armington (2004) find that entrepreneurship increases employment growth rates in labor market areas in the U.S. While these papers are important in increasing the understanding of how entrepreneurial activities might affect economic development, none of the studies are conducted at the state level.

One recent empirical study by Lowrey (2005) examines the relationship between state-level business activity and economic growth by focusing on the concept of business density, or the number of firms per capita.[2] Her analysis of a 1997 cross section of state data reveals that state business density is positively correlated with GSP and GSP growth and negatively associated with poverty and income inequality. Furthermore, her data show that states with higher business density tend to have more business start-ups and establishment births.

Determinants of State Economic Growth. To fully identify the effects of entrepreneurial activity on state economic growth, we must also consider what other variables encourage state growth as suggested by the prior empirical literature. Given that state economic growth is important to politicians, public policies—and especially tax policies—are often portrayed as fostering growth. Because of this, a substantial literature exists that explains the effects of tax policy on the location of economic activity. Fortunately, this literature is summarized by Bartik

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[2] Lowrey's (2005) analysis of density as business activity (e.g., the number of firms) per 1,000 residents extends the spatial density concepts (economic activity per square mile) analyzed by Ciccone and Hall (1996).

(1991) and Wasylenko (1997), who conclude that tax policies are generally a small but statistically significant determinant of economic activity.

In addition to tax policies, states are also able to influence the level of economic development through spending policies. Fisher (1997) concludes, after reviewing the literature, that there is a positive relationship between government spending (primarily spending on transportation and public safety) and economic development in states.

State policies that encourage economic development do so by either creating new economic activity or by enticing economic activity away from other states. As a result, it might be expected that economic activity in one state is correlated with economic activity in surrounding states. To account for this, researchers have employed spatial econometric techniques that account for any potential spatial correlation. The primary body of literature examining spatial correlations has examined the tendency for states to respond to other states when setting tax rates (Rork, 2003). In addition, a number of other empirical studies consistently find that the actions of one state affect surrounding states (Brueckner, 2003).

In addition to state policies, other variables have been shown to affect economic growth. The theoretical literature on economic growth has long recognized the importance of such factors as physical and human capital. A number of empirical studies have examined these factors. For example, human capital (measured by a poverty rate or some measure of educational attainment), public and private investments, cost factors, industry mix and national trends are all found to influence state economic growth (Barro and Sala-i-Martin, 1990; Goetz, et al, 1996; Munnell, 1990; and Terkla and Doeringer, 1991).

The literature described above, which will guide our analysis, is very informative and provides a number of key results for policy makers at all levels of government. It is important to note, for example, that the existing evidence suggests that entrepreneurial activity is an important

contributor to economic growth at the national and city levels. However, despite increasing attention by development officials in the states, additional research is needed to directly measure the empirical relationship between the dynamics of small business activities and economic growth at the state level.

3. Testable Hypotheses

Our primary goal in this study is to determine the importance of small business activities for state economic growth in an empirical framework. To this end, we test the following specific hypotheses that are based on the general finding from the literature that entrepreneurial activity increases economic activity:

I.   The *number of small businesses*, as measured by firms or establishments, has a significant positive effect on state GSP, SPI, and employment.

II.   *Small business employment*, as measured by employment or payroll, has a significant positive effect on state GSP, SPI, and employment.

III. *Small business establishment births and deaths* have significant effects on state GSP, SPI, and employment. Specifically, more small business births have positive effects while more deaths have negative effects.

4. Econometric Strategy

Our fundamental empirical structure consists of panel regressions of state economic variables (GSP, SPI, or employment) on measures of small business activities and other controls using annual data for all fifty U.S. states. Of utmost importance regarding the determination of causality within this framework is an assessment of the extent to which small business activities are endogenous. Specifically, it is highly likely that small business activity and state GSP, SPI,

and employment are simultaneously determined. In the case of endogeneity or simultaneity,

coefficients from regression analyses are likely to be biased (i.e., they will not be accurate

estimates of true parameters). Our preferred method for dealing with this, discussed in greater

detail below, is to simply lag all independent variables by one year, expressing economic activity

each year as a function of control variables (including small business measures) from the

previous year's data.[3]

A related issue in state panel regressions is the extent to which observations in the data

from one state are related to observations from another state or group of states. While small

business activity in a state can be posited to have a direct effect on economic growth within that

state, this activity will have an additional effect that must be controlled for in the estimation.

Such an indirect effect will involve the spillover that one state's activity could have on the

growth in other states. To properly account for this impact, known as spatial correlation, we

need to apply spatial econometric techniques to our standard panel estimation.

The intuition behind spatial correlation is very similar to that of the more well-known

serial autocorrelation. In serial correlation, observations are related by time, so that an

observation in one year may impact an observation in the following year. With spatial

correlation, observations are related by geography and their spatial relationship to one another.

Thus, an observation in Tennessee may be influenced by observations in a neighboring state such

as Alabama. As this relates to our question of the impact of small business activity and state

growth, it could be the case that a burst of small business activity in Tennessee may impact the

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[3] Another method involves the use of contemporaneous (rather than lagged) data while instrumenting for the endogenous variable in a first-stage regression. For example, if small business activity is endogenous in the GSP regression, we would need to estimate a first-stage regression of small business activity on (a) at least one instrumental variable (IV) and (b) all of the other exogenous variables in the GSP regression. The IV would be some factor that significantly affects small business activity but that does not have an independent influence on GSP. Given the obvious difficulty with finding suitable instrumental variables, we prefer the lag structure.

economic growth of Alabama, for example, if Tennessee businesses draw on labor from

Alabama or use inputs that are produced in Alabama. Failing to account for this possibility

could cause us to underestimate the total impact of entrepreneurial activity on state growth.

In order to properly model the interstate spillover, we need to determine the geographic

extent to which we believe the spillover will be contained. In other words, we must identify each

state's neighbor group. Because we envision the spillovers to be local in nature, we will limit

our definition of neighbor to be those states sharing a geo-political border. Thus, if we were

looking at Tennessee's economic growth, we would determine its neighbors to be the states of

Alabama, Arkansas, Georgia, Kentucky, Mississippi, Missouri, North Carolina, and Virginia.

Once neighbors are identified, we then assign weights in order to capture the relative

importance one state may wield over another. We experiment with four different weighting

schemes. The first is *contiguity*, in which all neighboring states are considered to wield equal

influence. For our Tennessee example, observations from each of the eight states listed above

would be given equal weights, whereas observations from California (as well as all other non-

border states) would be assigned a weight of zero. Because Virginia has a larger population than

Mississippi, it may be the case that Tennessee would be more concerned with what occurred in

Virginia than Mississippi. To account for this, our second weight is *population-contiguity*, in

which the weights are based on the populations of the bordering states. Thus, Virginia would be

given a higher weight than Mississippi.

Two other weighting schemes, *center* and *city*, depend on the physical distances between

bordering states. Laborers from Memphis may be willing to drive to Arkansas for employment,

but North Carolina is likely too far away. *Center* measures the distance from the center of one

state to the center of a neighboring state. It effectively measures the average distance a resident

of the home state would need to travel to cross borders. Because population is not uniform, we

also employ the weight *city*, which considers the distance between the largest city (in terms of

population) in the home state and the largest cities in each neighboring state.

It is common in the spatial literature to use row-standardized weights, meaning the sum

of weights equals one. In the case of the contiguity weights for Tennessee, each competitor

would be given a weight of one-eighth (or 0.125), since eight states border Tennessee. In

creating population-contiguity weights, we take the bordering state's population and divide it by

the population of all bordering states. For both center and city, we want to ensure that states

closer together get a higher weight. We therefore assign the inverse of the distance as the weight

for each state prior to row-standardization.

Our estimating equation takes the following form:

$$(1) \qquad \gamma_{i,t} = \alpha y_{i,t-1} + Z_{i,t-1}\beta + \theta \sum_{j=1}^{50} (w_{i,j} x_{j,t-1}) + \lambda_{t-1} + \varepsilon_{i,t-1}$$

In equation (1), $\gamma_{t\tau}$ represents the rate of economic growth for each of our measures of

economic activity of state i at time t, Z is our set of explanatory variables which includes

measures of small business activity, and the λ terms are fixed effects for each year of data. We

include the initial value of either GSP, SPI or employment, denoted $y_{i,t-1}$ in equation (1), to

account for the convergence hypothesis[4] which is included in growth models. Note that by

including the lag of the dependent variable on the right hand side, the state-level fixed effect is

captured in both the dependent variable and the lag, hence its exclusion from equation (1). The

term $\theta \sum_{j=1}^{50} (w_{i,j} x_{j,t-1})$ measures the combined spillover effects that the small business activity (x)

in each of the U.S. states has on observation i. The term w_{ij} represents the weight applied to

neighboring state j and is assigned as described above depending on the weighting scheme

utilized. Regression coefficients are denoted above by α, β, and θ. Finally, $\varepsilon_{i,t}$ represents a mean-zero disturbance with finite variance and the usual econometric assumptions.

5. Data

Our analysis makes use of a rich state panel of data developed and maintained by the University of Tennessee's Center for Business and Economic Research (CBER). The contents of this database are drawn mainly from publicly available economic data, along with a detailed portfolio of tax and other policy variables gathered by CBER staff from various tax-related publications and contacts with state tax officials. We supplement this data source with measures of small business activity as described in detail below, and other variables as needed.

Economic Activity Measures. We examine three measures of economic activity to provide a broad perspective as well as maximum robustness and reliability of our results. These are Gross State Product (GSP), State Personal Income (SPI), and total state employment.[5] Each of these variables enters our analyses in annual growth terms.[6]

Small Business Activity Measures. Since the effects of small business activity on state economic growth constitute the center of this study, we consider several alternative measures of small business activity, again, to provide for maximum robustness in our results and for a broad perspective. These measures were developed by the U.S. Small Business Administration (SBA) Office of Advocacy in cooperation with the US Bureau of the Census. The first measure is the number of small business firms in a state. Second, we consider the number of small business establishments in a state, i.e., the number of physical business locations that are associated with

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[4] The convergence hypothesis is the idea that wealthier states will grow more slowly than poorer states. The convergence hypothesis manifests itself as a negative coefficient on the initial level of economic activity.
[5] These data are published by the U.S. Bureau of the Census and the Bureau of Economic Analysis.
[6] Specifically, we calculate year-to-year growth as the natural log of (y_t/y_{t-1}). Results were nearly identical when growth was calculated as [(y_t - y_{t-1}) / y_{t-1}].

small businesses. Third, we examine the employment of small businesses, and fourth, the

payroll of small businesses. Finally, we study the numbers of small business establishment

births and deaths.[7]

In our baseline approach, we follow the SBA standard by defining a small business as

any business with less than 500 employees. To assess the sensitivity of our results to this

threshold, we also experiment with an alternative definition of small businesses as those with

fewer than 100 employees. In all cases, small business measures enter each model as (a) the

state's own measure and (b) the weighted average of the measures from bordering states.

To accurately assess the impact of small business activity on state growth, we must

control for as many other determinants of growth as possible. We divide these controls into non-

tax and tax factors and discuss each set in greater detail below. Additional descriptions and

source notes for all variables can be found in Appendix Table 1.

Non-tax Control Variables. Among the more important control variables in our

regressions are indicators of *non*-small-business activity. For example, in models where we

focus on the number of small firms (those with fewer than 500 employees), we also include the

number of firms with 500 or more employees as a separate variable. This allows us to assess the

impact of an additional small firm while holding the number of large firms constant.[8] To be

sure, our inclusion of large firm counts is also based on the notion that large firms contribute

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[7] The U.S. Bureau of ther Census defines births as establishments that have zero employment in the first quarter of
the initial year and positive employment in the first quarter of the subsequent year. Similarly, deaths are
establishments that have positive employment in the first quarter of the initial year and zero employment in the first
quarter of the subsequent year. Small business establishment births and deaths are only available for March 1989
through March 2001 while other small business measures are available for 1988-2002. It should therefore be noted
that births and deaths are technically lagged by 1.75 years since those data pertain to activity between March of the
current year and March of the prior year. We prefer to enter births and deaths as two separate variables in our
models such that effects of births may differ than effects of deaths. A single measure of net growth or turnover
would be too restrictive in this sense. We return to this issue in our discussion of the results below.

significantly to state economic growth, much more so than small firms in terms of percentages of output produced. In all models, non-small-business measures parallel the small business measures (e.g., counts of large firm establishments are included in models with counts of small firm establishments, and so on).

Our list of determinants of economic growth includes a set of variables that represent key determinants of business production decisions. We account for input price effects by including an index of the price of energy in the state and the average wage for manufacturing workers in a state, as high input prices may suppress economic growth.[9] Human capital is viewed to have a positive impact on state growth, hence a measure of the educational attainment of the state's population (the share of the state's population that has a bachelor's degree or more education) is included. Moreover, firms are more likely to locate in states with an educated workforce. State unemployment rates are used to proxy the general economic health of the state, whereas population density (residents per square mile of land area) helps capture in-state market density.

Measures of the intensity of the agricultural and manufacturing sectors (e.g., the share of a state's GSP that is in the agricultural and manufacturing sectors) are added to control for the differential impacts each sector has on the state economy. Finally, because different parts of the population may have differing impacts on state growth, we account for the age distribution of a state's population by including three variables to denote the percentage of a state's population that is between the ages of 25 and 44, between the ages of 45 and 64, and over the age of 65.[10]

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[8] Without controlling for the number of large firms, the measured impact of a new small firm would not be the same as the likely impact of a *new* small firm. In this sense, the measured impact would not be able to distinguish between the effect of a truly new small firm and a formerly large firm that shrinks in size into the small firm category.

[9] The energy price index represents the cost of producing one million BTUs of energy based on a weighted average of the cost of energy from different sources such as coal, natural gas, nuclear, etc., in each state.

[10] We view these age distribution measures as more illustrative than the mean or median of a state's population.

All panel regressions also include year fixed effects to account for unobserved heterogeneity within time periods across states.[11]

State Tax Policy Variables. Our regressions also include several measures of state tax structures in an effort to increase the policy relevance of our results. We begin with a consideration of the top statutory tax rates for each state's corporate income tax (CIT), personal income tax (PIT), and sales tax. Higher tax rates have potentially conflicting effects on economic growth. First, higher tax rates may increase business costs, and thus, drive economic activity out of a state. However, while higher income tax rates reduce the returns to risky ventures, they also insure against risk if rates are progressive and if a loss offset component is available, and might therefore be attractive to risky business start-ups.[12] In addition, higher tax rates may also signal a larger state government overall, and correspondingly, the provision of more government services that may attract businesses.

Our inclusion of taxes that are not normally associated with businesses is supported by Cline, et al. (2003a and 2003b), who show that many state and local taxes, including the sales tax, are very important business taxes. Indeed, Ring (1999) shows that businesses are responsible for a significant share of state and local sales taxes. Further, state sales tax rates have grown slightly in recent years as sales tax bases have eroded (Bruce and Fox, 2000), and this pattern could have influenced state economic growth if it represents a net increase in business taxes.

We consider a number of other aspects of state tax policies that may also have large effects on economic growth and have received significant attention in the policymaking arena. Beginning with state CIT structures, we go beyond statutory tax rates and also include the sales

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[11] These time fixed effects also account for inflationary growth in the (logged) nominal variables in our models.
[12] See Bruce and Deskins (2005) and Bruce and Gurley (2005), and the references therein, for more discussion of these issues.

factor weight in each state's CIT apportionment formula, dummies for the presence of a

combined reporting requirement, a throwback rule, and legislation allowing limited liabilities

corporations (LLCs). Each of these is discussed in greater detail below.

Corporate profits for multi-state firms are apportioned for tax purposes to the states in

which they have a nexus. The apportionment formulas used by states typically consider the

share of the firm's payroll, property, and sales. Equal weights were traditionally placed on the

three factors, but many states have opted to increase the weight on sales in order to shift the CIT

burden from multi-state businesses that manufacture within a state to those that manufacture out-

of-state. Thus, higher sales factor weights may bring more economic activity within a state's

borders (see Edmiston, 2002; Bruce, Deskins, and Fox, Forthcoming).

Combined reporting requirements are set up to force multi-unit firms to file a single CIT

return rather than separate returns for each unit of the firm. These rules are intended to keep

multi-unit firms from shifting taxable profits out of a state. Similarly, throwback rules are

designed to ensure that all income is taxed somewhere. If a multi-state firm is able to locate

profits in a state that does not tax corporate income or in which the firm does not have nexus,

income which is not taxed (known as "nowhere income") is "thrown back" to the home state if

that state has a throwback rule. Both of these rules have become popular as states have

attempted to restore shrinking CIT bases in recent years. Both of these rules could have the

undesirable effect of driving economic activity away from states because they raise effective tax

rates for many businesses. In addition, states that allowed LLCs first (since all states allowed

LLCs by the end of 1997) may have experienced an increase in economic growth because of the

attractiveness of the LLC organizational form to many businesses.

To expand our focus beyond corporate taxes, we also include counts of the number of tax

and non-tax incentive programs that states offer to encourage economic development. Tax

incentive programs include such policies as tax exemptions for business inventory, corporate

income tax deductions, credits, special treatment, tax credits for goods in transit, tax exemptions

for industrial machinery and equipment, and investment tax credits. Non-tax incentive programs

include direct state loan programs, industrial development bond programs, loan guarantees, and

umbrella bonds. Individuals and firms might respond to tax and non-tax incentive packages

offered by government for business development, thus affecting economic growth.

The imposition of an inheritance, estate, or gift tax above the federal tax in a given year

might affect economic growth in a state since they may affect the overall tax burden that

individuals face, and thus may raise the overall cost of doing business in a state.[13] Furthermore,

an inheritance, estate, or gift tax may reduce economic growth by reducing the size of small

businesses upon passage from an owner to an heir. With this, we include a dummy variable for

the presence of a state-level inheritance, estate, or gift tax above the federal tax.

An Initial Look at the Data. Figure 1 displays annual averages across the 50 U.S. states

for our key economic growth measures: GSP, SPI, and Employment. All three measures exhibit

relatively strong upward trends throughout our analysis period. While employment displays

slightly more volatility than GSP and SPI, all three are relatively smooth. Turning to Figures 2

and 3, we observe more volatility in 50-state averages of our small business measures over time.

Despite a relatively flat small business employment trend (Figure 2), the counts of small business

firms, establishments, and payroll rise fairly consistently throughout the period of analysis. In

contrast to most of our other measures, small firm establishment birth and death counts display

considerable volatility (Figure 3). Note that births exceed deaths on average in each year,

contributing to the overall growth in small firm establishments observed in Figure 2.

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[13] By 2001, most states had eliminated their inheritance, estate, and gift taxes. Instead, they rely on a "pick-up" tax, which captures a portion of federal tax liability and does not affect the overall tax liability on the estate. See Conway and Rork (2004) for an excellent discussion of these taxes.

Table 1 provides additional summary statistics for our measures of small and large business activity. Given our panel data, we provide means and standard deviations across the 50 states for the first and last year of our data (1988 and 2002). A few findings from Table 1 are worth noting. First, the average number of small firms far exceeds the average number of large firms at both endpoints of the panel. While all small and large business indicators increased between 1988 and 2002, increases in the large-firm variables are larger in percentage growth terms. Birth and death counts indicate that there are many more of both among small firm establishments, and the net increase in small firm establishments is roughly four times the net increase in large establishments in both endpoints.

Table 2 provides similar information for our control variables. To no surprise, GSP, SPI, and employment were all growing faster toward the beginning of our panel (a time of robust economic expansion) than toward the end of our panel (in or near the most recent recession). Energy prices and wages increased between the first and last endpoints, while agriculture and manufacturing became relatively less important. The share of state populations with at least a college degree increased dramatically during this time, while changes in age distributions over time reflect the aging of the baby boom generation. While most of the tax policy measures remained relatively stable between 1988 and 2002, the data in Table 2 reveal that sales factor weights in state CIT formulas increased substantially. States also increased the availability of non-tax incentive programs. Finally, while no state allowed the LLC organizational form in 1988, all had done so by 2002.

In keeping with the growth literature, and to correspond with our logged-growth dependent variables, all control variables in our regression models (with the exception of all tax variables) are entered as natural logs. This gives estimated coefficients the interpretation of elasticities of growth rates with respect to the control variables.

6. Results

Our baseline regression results are presented in Tables 3 through 5. The dependent variables for these tables are GSP growth, employment growth, and SPI growth, respectively. Beginning with Table 3, we observe that most measures of small business activity do not have statistically significant impacts on GSP growth; states with more small business firms, establishments, employment, or payroll do not tend to have higher rates of GSP growth when other factors are controlled for. That said, we do find that the number of small firm establishments and the dollar value of small business payroll in *neighboring* states both have positive but small effects on GSP growth.

More importantly, results also reveal that the number of small firm establishment births adds dramatically to GSP growth. Specifically, we find that increasing small business births by 5 percent (which would be an increase of about 445 new establishments from the sample median of 8,908 births) would result in a 0.465 percent increase in state GSP growth. To illustrate, such an increase in small firm establishment births would increase GSP growth from its median of 5.385 percent in our sample to a new GSP growth rate of 5.410 percent. Small firm establishment deaths detract from GSP growth to a similar degree. In fact, we cannot reject the null hypothesis that the effects of small firm establishment births and deaths are equal in absolute value terms. This is an important result, as it suggests that when the net small firm establishment birth rate is positive (i.e., when the birth rate exceeds the death rate), GSP grows at a faster rate.[14]

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[14] Indeed, in more restrictive models in which the two separate small firm establishment birth and death variables were replaced with a net growth measure (specifically, births minus deaths), the effect of net growth was generally positive and statistically different from zero but very small in magnitude. This result is consistent with those in our baseline models.

Looking to the remaining control variables in Table 3, we find several consistent determinants of GSP growth. First, states with more large firm activity in the previous year tend to have higher GSP growth in the following year. This is not surprising, as large firms generally contribute more to output than small firms on a per-firm basis. State GSP growth is also found to be fairly persistent, with greater prior-year growth associated with higher current-year growth. We also observe higher GSP growth in states with lower manufacturing shares of their GSP and in states with a smaller share of their population between the ages of 45 and 64 (relative to the reference percentage of below age 25). In terms of state policy variables, states without throwback rules or state-level inheritance, estate, or gift taxes tend to have higher GSP growth in most models. States with higher sales tax rates are also found to have lower GSP growth (employment and payroll models only).

We find generally similar small business results in the employment growth models in Table 4, although in these models we do not find a significant effect of small business activity in neighboring states. Small firm establishment birth and death counts continue to exhibit significant and large impacts on employment growth, with coefficient magnitudes indicating that a 5 percent increase in small business births (again, approximately 445 new small firm establishments given our sample median) results in an increase in the employment growth rate of 0.435 percent. This would correspond to an increase in the employment growth rate from the median of 1.795 percent to a new growth rate of 1.803 percent. Although these numbers are smaller in absolute terms when compared to GSP growth, recall that the rate of employment growth has been significantly smaller than GSP growth.

In terms of the other control variables in Table 4, we find faster employment growth in states with more large-firm activity, lower population density, fewer highly-educated residents, fewer residents between the ages of 45 and 64 (again relative to below 25), or a lower share of

GSP from manufacturing. We also find faster employment growth in states with higher energy prices or wages. States without state-level inheritance, estate, or gift taxes also tend to have higher rates of employment growth. Higher sales tax rates have a negative effect on employment growth in the employment and payroll models only.

These general trends continue in our SPI growth models in Table 5. While small business activity does not appear to have significant impacts on personal income growth, we again find that small firm establishment births and deaths have large and significant effects. Given that median SPI growth was 5.525 percent during our sample, our results indicate that a 5 percent increase in births (again, approximately 445 new establishments) would result in an estimated increase in SPI growth of 0.405 percent, thereby increasing the SPI growth rate from the sample median of 5.525 percent to a new growth rate of 5.547 percent. States with more large-firm activity, lower population density, a smaller manufacturing share of GSP, and without state-level inheritance, estate, or gift taxes are again characterized by higher SPI growth. We also find in all five models in Table 5 that higher unemployment rates reduce personal income growth.

To summarize, while the number of small firms, establishments, or employees and the dollar value of small business payroll do not appear to have statistically significant effects in our multivariate models, we consistently find evidence that small firm establishment births and deaths are very important determinants of GSP growth, employment growth, and SPI growth at the state level. These results indicate that simply having a lot of small business activity is less important to state growth than having *increasing* amounts of small business activity. Further, our results indicate that small firm establishment births are much more critical to state economic growth than large firm establishment births (or, in fact, large firm activity in general). Both of these themes indicate that dynamic activity among small firm establishments is better able to

contribute directly to overall economic growth. This is perhaps not surprising when we recall

from Table 1 that small firm establishment births outnumber large firm establishment births by

up to ten-to-one in our data.

To take this a step further, a common theme across all of our baseline models is that the

effects of small firm establishment births are *larger than any other factor*. This general finding

reveals that state efforts to promote small business formation will be more fruitful in terms of

generating economic growth than virtually any other policy option in our models, including such

things as tax rates and rules. Again, this is perhaps less surprising if we can assume that small

firm establishment births are the most direct measure of entrepreneurial activity (or a fruitful

entrepreneurial climate) at the state level.

Another important theme from our baseline results is that small business activity in

neighboring states generally does not influence a state's own rate of economic growth. In the

two cases in which the neighbor variable is statistically significant, its sign is positive, thus

suggesting that more small business activity in bordering states might actually increase a state's

own rate of economic growth. This finding reveals that states need not be concerned about

losing small business activity to neighboring states, as we have no evidence that small business

activity across the border has any kind of negative effect on a state's own economic growth.

Robustness Checks. To assess the sensitivity of our findings, we estimated a number of

alternative versions of the baseline models in Tables 3, 4, and 5. Our first modification is

intended to address the concern that 500 employees might be too high a cutoff in the

determination of small versus large businesses. To this end, we replaced the baseline measures

of small and large business activity with equivalents that use 100 employees as the small-large

threshold value. Results, presented in Appendix Tables 2, 3, and 4, are virtually

indistinguishable from our baseline findings and are therefore not discussed in significant detail here.

A second set of alternative models addresses the possibility that our extensive specification might introduce multicollinearity. While we have reason to believe that each of our included control variables can have an impact on state economic growth (as discussed above) and are concerned primarily with omitted variable bias from leaving them out, the baseline results indicate that several of our variables are not statistically significant. To consider the extent to which the inclusion of so many controls yields multicollinearity (and associated inflated standard errors), we estimated parsimonious versions of our baseline models in which all tax policy variables were excluded. Again, results were nearly identical to our baseline findings in Tables 3, 4, and 5.[15]

In yet another series of robustness checks, we experimented with alternative weighting schemes (*population-contiguity*, *center*, and *city* as defined above) for the neighbor-state small business variables. Recall that our baseline models use a *contiguity* weighting scheme where each neighboring state is equally weighted. Consequently, this robustness check amounted to the estimation of three new regressions for every one of our baseline regressions. While different weighting methods yielded slightly different findings in a few cases, the general themes from our baseline results remained. Specifically, we continued to find that a state's own small business activity has little impact on economic growth while births and deaths have large and significant effects. It is also worth noting that in all cases in which small business activity in neighboring activities was found to have a statistically significant effect on own-state economic growth, the effect was found to be positive.

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[15] Unless otherwise noted, results from all robustness checks are suppressed for brevity but are available from the authors upon request.

7. Conclusion

Using a 50-state panel of data spanning the years from 1988 through 2002, we find that small business activity has very important impacts on overall state economic growth. Specifically, after accounting for simultaneity of small business activity and economic growth, we find that small firm establishment births are the single-largest determinant of growth in GSP, SPI, and employment. While we also find that small firm establishment deaths have an equally-large negative impact on economic growth, the effects of births and deaths are found to be statistically equivalent in absolute value terms. This is a key finding, as it suggests that economic growth is faster when the net small firm establishment birth rate is positive (i.e., when the birth rate exceeds the death rate).

Our estimation procedure accounts for cross-border spillover effects of small business activity by controlling for small business activity in neighboring states. While one might think that a greater amount of small business activity in neighboring states might detract from a state's own rate of economic growth, our results reveal just the opposite. In all cases in which neighbor-state small business activity is a statistically significant determinant of economic growth, its effect is positive. Given these potential positive spillovers, states need not worry about losing small business activity to other states because it does not appear that small business activity is a zero-sum game between neighboring states.

Our models also account for a broad menu of policy variables, including such things as tax rates and other features of state tax structures, in an attempt to gauge the economic growth prospects of several high-profile policy options. Our general finding is that states have few options in this area for enhancing GSP, SPI, and employment growth rates. Instead, our results indicate that the most fruitful policy option available to state governments is to establish and

maintain a fertile environment for new establishment formation. Every one of our models

indicates that states with more new small firm establishments grow at a higher rate over time,

even after we control for the level of economic activity and a variety of other factors.

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Figure 1: 50-State Averages of Economic Growth Measures, 1988-2002
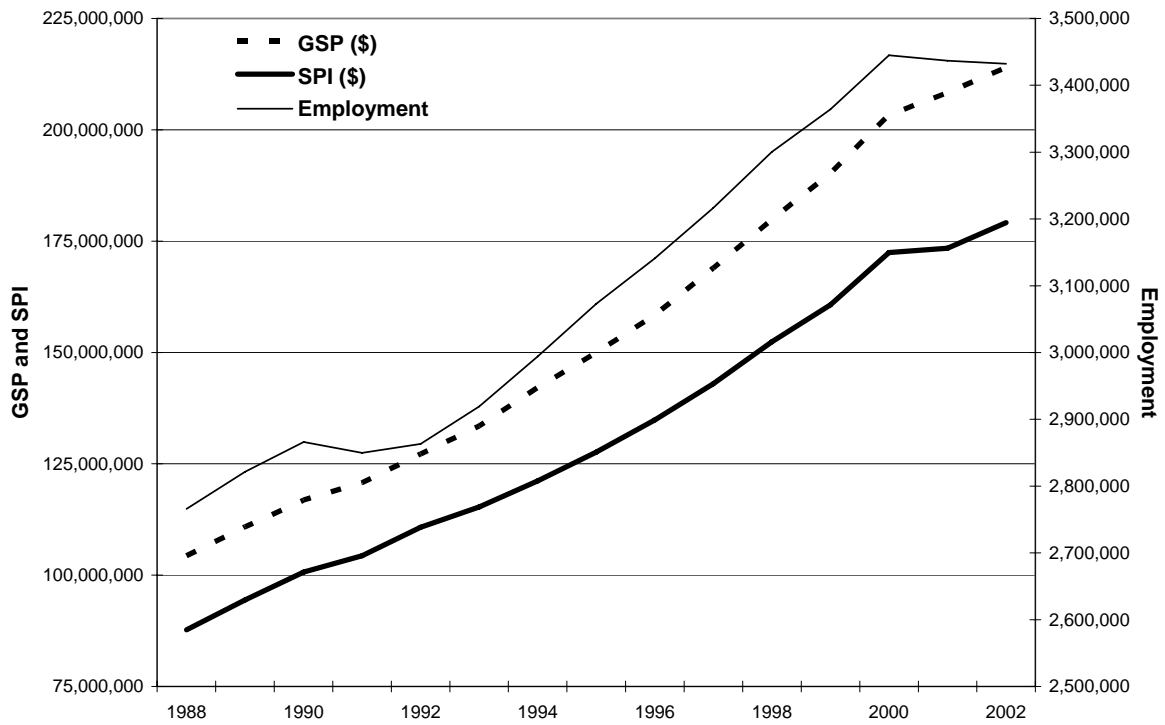
Figure 2: 50-State Averages of Small Business Measures, 1988-2002
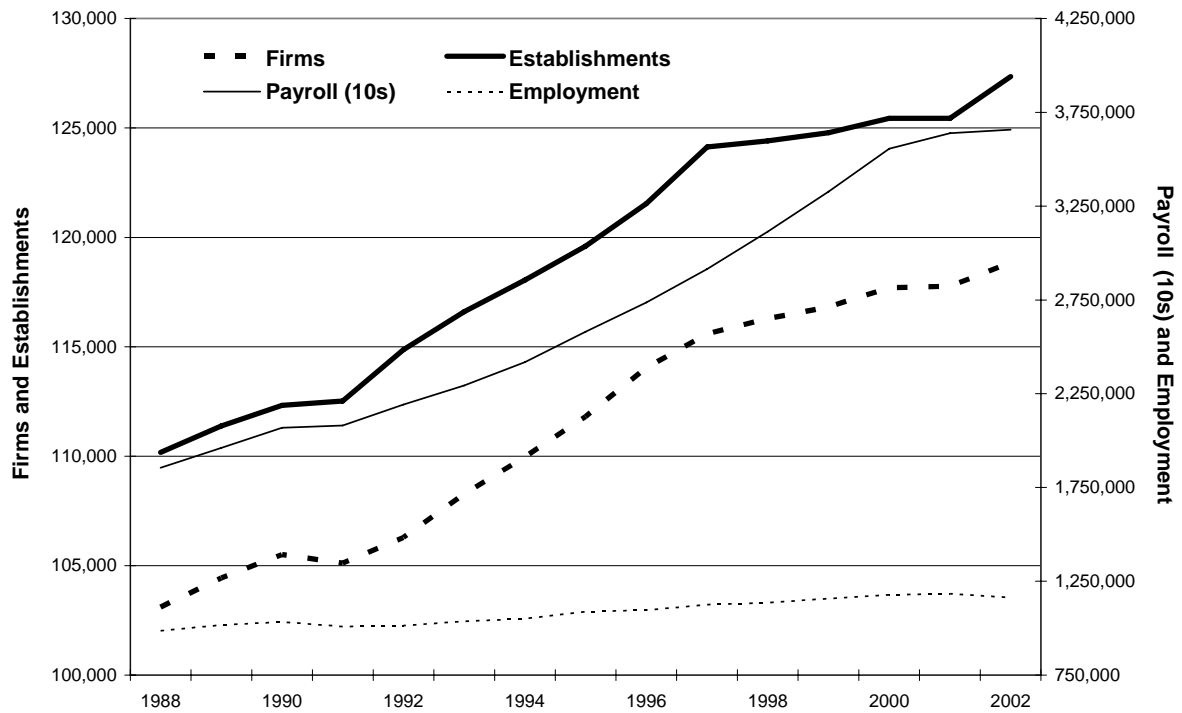
Figure 3: 50-State Averages of Small Establishment Births and Deaths, 1989-2001
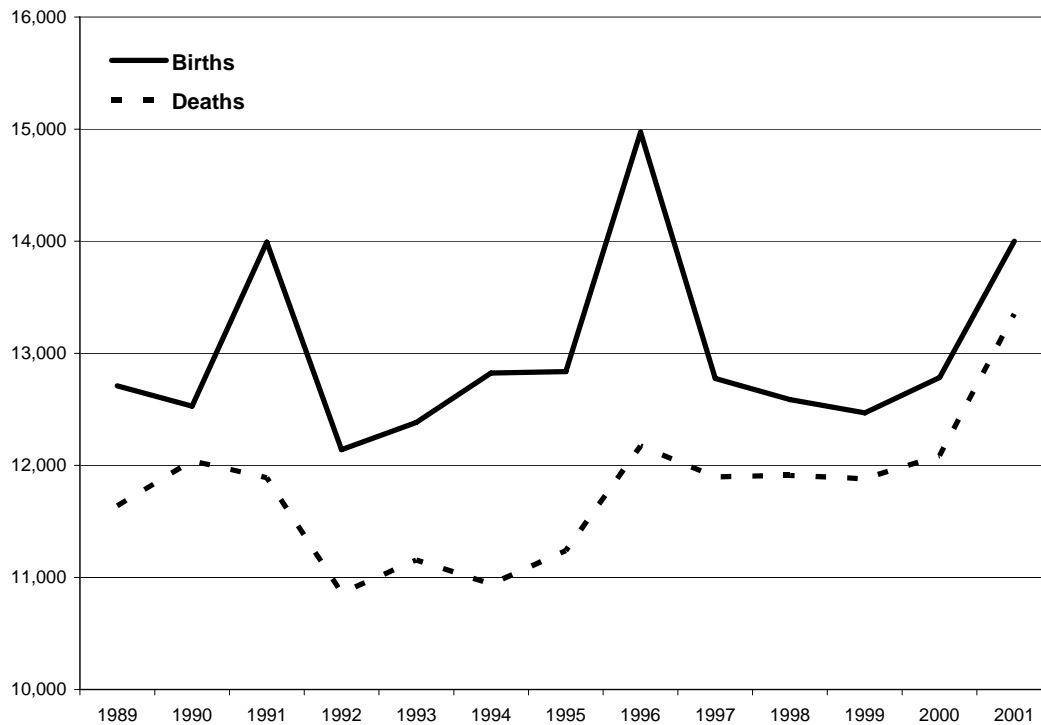
Table 1: Summary Statistics for Small and Large Business Measures

	1988		2002	
Variable	**Mean**	**Std.Dev.**	**Mean**	**Std.Dev.**
Small Business Firms	103,106	111,490	118,851	124,449
Small Business Establishments	110,171	118,749	127,354	132,642
Small Business Employment	987,171	1,078,275	1,162,183	1,220,967
Small Business Payroll	18,600,000	22,800,000	36,600,000	43,200,000
Small Business Births	12,711	14,894	13,999	15,567
Small Business Deaths	11,638	13,323	13,350	14,527
Large Business Firms	1,684	966	2,287	1,199
Large Business Establishments	13,883	14,641	21,216	21,206
Large Business Employment	823,646	906,409	1,157,158	1,210,000
Large Business Payroll	19,700,000	23,800,000	44,700,000	52,200,000
Large Business Births	1,325	1,444	2,242	2,435
Large Business Deaths	1,005	1,066	2,064	2,173
Neighboring Small Business Firms	101,266	49,341	116,024	52,942
Neighboring Small Business Est	108,163	52,255	124,357	56,245
Neighboring Small Business Emp	975,469	493,976	1,141,082	524,492
Neighboring Small Business Payroll	18,300,000	10,700,000	35,900,000	18,800,000
Neighboring Small Business Births	12,177	6,001	13,483	6,277
Neighboring Small Business Deaths	11,301	5,590	12,939	5,991

Note: For this table, small businesses are those with fewer than 500 employees and large businesses are all others. Birth and death data are for 1989 and 2001.

Table 2: Summary Statistics for Other Regression Variables

Variable	1988		2002	
	Mean	**Std.Dev.**	**Mean**	**Std.Dev.**
Gross State Product Growth Rate (%)	6.38	2.13	3.46	4.07
State Personal Income Growth Rate (%)	7.82	1.68	3.68	1.16
Employment Growth Rate (%)	2.07	1.31	0.11	0.78
Population Density	167.48	237.38	189.33	258.96
Unemployment Rate (%)	5.46	1.84	5.35	0.99
Energy Price Index	7.44	1.04	11.55	2.11
College Degree (%)	19.59	4.13	25.99	4.61
Wage ($)	10.01	1.16	15.02	1.68
Agricultural Share of GSP (%)	2.49	2.09	1.41	1.37
Manufacturing Share of GSP (%)	19.01	7.07	13.26	5.17
Sales Tax Rate (%)	4.40	1.64	4.81	1.74
Top CIT Rate (%)	6.49	3.15	6.64	2.96
Top PIT Rate (%)	5.67	3.44	5.55	3.03
Sales Factor Apportionment (%)	34.42	17.80	43.64	22.94
Combined Reporting	0.19	0.39	0.25	0.44
Throwback Rule	0.47	0.50	0.44	0.50
Inheritance, Estate, and Gift Taxes	0.52	0.50	0.27	0.45
Tax Incentives	10.48	1.77	9.08	6.42
Non-Tax Incentives	5.38	2.14	12.88	8.82
LLC	0	0	1	0
Age 25-44 (%)	31.63	1.69	27.34	1.44
Age 45-64 (%)	18.47	1.11	25.06	1.46
Age 65 and over (%)	12.41	1.79	12.62	1.61

Note: GSP, SPI and total employment growth rates listed for 1988 are actually for 1989.

Table 3: Regression Results: GSP Growth on Small Business Activity

Variable	Firms	Establishments	Employment	Payroll	Births/Deaths
Small Business Measure, <500 Emp	0.018	-0.004	-0.001	0.019	0.015
	(0.012)	(0.013)	(0.012)	(0.012)	(0.023)
Business Measure, ≥500 Emp	**0.044***	**0.025***	**0.043***	**0.055***	0.008
	(0.009)	**(0.007)**	**(0.008)**	**(0.011)**	(0.013)
Neighboring Small Bus, <500 Emp	0.002	**0.005**	0.003	**0.003***	-
	(0.002)	**(0.002)**	(0.002)	**(0.002)**	-
Small Business Births, <500 Emp	-	-	-	-	**0.093***
	-	-	-	-	**(0.016)**
Small Business Deaths, <500 Emp	-	-	-	-	**-0.094***
	-	-	-	-	**(0.017)**
Business Births, ≥500 Emp	-	-	-	-	0.015
	-	-	-	-	(0.009)
Business Deaths, ≥500 Emp	-	-	-	-	0.0001
	-	-	-	-	(0.010)
Neighboring Births, <500 Emp	-	-	-	-	-0.006
	-	-	-	-	(0.017)
Neighboring Deaths, <500 Emp	-	-	-	-	0.012
	-	-	-	-	(0.016)
GSP	**-0.041***	**-0.020***	**-0.044***	**-0.076***	**-0.035***
	(0.013)	**(0.012)**	**(0.014)**	**(0.019)**	**(0.013)**
Population Density	-0.001	-0.002	-0.002	**-0.003***	-0.002
	(0.002)	(0.002)	(0.002)	**(0.002)**	(0.002)
Unemployment Rate (%)	-0.007	**-0.008***	0.003	0.005	-0.0002
	(0.005)	**(0.005)**	(0.005)	(0.005)	(0.005)
Energy Price Index	0.016	0.018	0.009	0.005	0.005
	(0.011)	(0.011)	(0.011)	(0.011)	(0.012)
College Degree (%)	-0.009	-0.001	0.009	-0.001	0.009
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Wage ($)	0.014	0.008	0.014	-0.017	-0.004
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Agriculture Share of GSP (%)	0.003	0.002	**0.006***	**0.008***	-0.001
	(0.003)	(0.003)	**(0.003)**	**(0.003)**	(0.003)
Manufacturing Share of GSP (%)	**-0.009***	**-0.006***	**-0.012***	**-0.015***	-0.003
	(0.003)	**(0.003)**	**(0.003)**	**(0.004)**	(0.004)
Sales Tax Rate (%)	-0.001	-0.001	**-0.002***	**-0.002***	0.0005
	(0.001)	(0.001)	**(0.001)**	**(0.001)**	(0.001)
Top CIT Rate (%)	-0.00002	-0.0004	0.0004	0.0003	0.0001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Top PIT Rate (%)	-0.0002	-0.00005	-0.0004	-0.0005	-0.0005
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Sales Factor Apportionment (%)	-0.00003	-0.0001	-0.0001	-0.0001	0.000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Combined Reporting	0.0001	0.002	-0.001	-0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Throwback Rule	**-0.006***	**-0.006***	**-0.006***	**-0.007***	-0.003
	(0.002)	**(0.002)**	**(0.002)**	**(0.002)**	(0.002)
Inheritance, Estate, and Gift	**-0.005***	**-0.005***	**-0.006***	-0.003	-0.001
	(0.002)	**(0.002)**	**(0.002)**	(0.002)	(0.002)
Tax Incentives	-0.0004	-0.0004	-0.0004	-0.0004	-0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Non-Tax Incentives	-0.0001	-0.0001	-0.0001	-0.0002	-0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
LLC	**-0.006***	-0.006	-0.005	-0.004	**-0.007***
	(0.004)	(0.004)	(0.003)	(0.003)	**(0.004)**
Age 25-44 (%)	**0.053***	0.049	0.035	0.027	**0.065***
	(0.032)	(0.032)	(0.031)	(0.031)	**(0.032)**
Age 45-64 (%)	**-0.082***	**-0.070***	**-0.057***	**-0.061***	**-0.061***
	(0.023)	**(0.024)**	**(0.023)**	**(0.023)**	**(0.025)**
Age 65 and over (%)	0.006	0.008	0.001	-0.004	0.019
	(0.013)	(0.013)	(0.013)	(0.012)	(0.015)
Constant	**0.310***	0.194	**0.263***	**0.360***	0.213
	(0.127)	(0.126)	**(0.117)**	**(0.121)**	(0.136)
R-squared	0.312	0.294	0.321	0.330	0.372

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

Entries are regression coefficients followed by standard errors in parentheses.

All variables except tax parameters are logged. All percentage variables range from 0 to 100. All independent variables are lagged one year.

Table 4: Regression Results: Employment Growth on Small Business Activity

Variable	Firms	Establishments	Employment	Payroll	Births/Deaths
Small Business Measure, <500 Emp	0.006	-0.009	-0.007	-0.005	-0.003
	(0.008)	(0.008)	(0.008)	(0.005)	(0.013)
Business Measure, ≥500 Emp	**0.021***	**0.012**	**0.017***	**0.012***	**0.014***
	(0.005)	**(0.006)**	**(0.006)**	**(0.004)**	**(0.007)**
Neighboring Small Bus, <500 Emp	0.0001	0.002	0.001	0.002	-
	(0.001)	(0.001)	(0.001)	(0.001)	-
Small Business Births, <500 Emp	-	-	-	-	**0.087***
	-	-	-	-	**(0.006)**
Small Business Deaths, <500 Emp	-	-	-	-	**-0.077***
	-	-	-	-	**(0.007)**
Business Births, ≥500 Emp	-	-	-	-	0.006
	-	-	-	-	(0.004)
Business Deaths, ≥500 Emp	-	-	-	-	**-0.012***
	-	-	-	-	**(0.004)**
Neighboring Births, <500 Emp	-	-	-	-	0.013
	-	-	-	-	(0.0080
Neighboring Deaths, <500 Emp	-	-	-	-	-0.01
	-	-	-	-	(0.008)
Employment	**-0.016***	-0.002	-0.009	-0.005	-0.013
	(0.010)	(0.012)	(0.012)	(0.007)	(0.012)
Population Density	**-0.004***	**-0.004***	**-0.004***	**-0.004***	**-0.004***
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	**(0.001)**
Unemployment Rate (%)	-0.003	-0.003	0.0003	-0.001	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Energy Price Index	**0.019***	**0.020***	**0.015***	**0.016***	**0.009**
	(0.004)	**(0.005)**	**(0.004)**	**(0.005)**	**(0.004)**
College Degree (%)	**-0.019***	**-0.014***	**-0.012***	**-0.015***	-0.003
	(0.004)	**(0.004)**	**(0.004)**	**(0.004)**	(0.003)
Wage ($)	**0.011**	**0.011**	**0.011**	0.005	0.001
	(0.005)	**(0.005)**	**(0.005)**	(0.006)	(0.004)
Agriculture Share of GSP (%)	0.002	0.002	**0.003**	**0.002***	-0.001
	(0.001)	(0.001)	**(0.001)**	**(0.001)**	(0.001)
Manufacturing Share of GSP (%)	**-0.006***	**-0.005***	**-0.007***	**-0.007***	**-0.003***
	(0.002)	**(0.002)**	**(0.002)**	**(0.002)**	**(0.001)**
Sales Tax Rate (%)	-0.0002	-0.0003	**-0.001**	**-0.001***	**0.001**
	(0.0003)	(0.0004)	**(0.003)**	**(0.0003)**	**(0.0003)**
Top CIT Rate (%)	-0.0003	-0.0004	-0.0002	-0.0003	0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)
Top PIT Rate (%)	0.0002	0.0001	0.0001	0.0001	-0.0002
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)
Sales Factor Apportionment (%)	-0.0001	-0.00002	-0.00003	-0.00003	**0.00004**
	(0.00003)	(0.00003)	(0.00003)	(0.00003)	**(0.00002)**
Combined Reporting	-0.001	0.0004	-0.001	-0.0002	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Throwback Rule	-0.002	-0.002	-0.001	-0.001	**0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	**(0.001)**
Inheritance, Estate, and Gift	**-0.002***	**-0.002**	**-0.002**	**-0.002***	0.001
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	(0.001)
Tax Incentives	-0.00004	-0.0001	-0.00004	-0.0001	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Non-Tax Incentives	-0.0001	-0.0001	-0.0001	**-0.0002***	-0.0001
	(0.0001)	(0.0001)	(0.0001)	**(0.0001)**	(0.0001)
LLC	0.0002	0.001	0.001	0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 25-44 (%)	0.011	0.009	0.005	0.008	**0.026***
	(0.016)	(0.016)	(0.016)	(0.016)	**(0.014)**
Age 45-64 (%)	**-0.043***	**-0.037***	**-0.032***	**-0.035***	**-0.025**
	(0.011)	**(0.011)**	**(0.011)**	**(0.011)**	**(0.010)**
Age 65 and over (%)	-0.003	-0.004	-0.005	-0.005	0.008
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Constant	**0.140***	0.097	0.103	0.077	-0.001
	(0.079)	(0.089)	(0.064)	(0.066)	(0.081)
R-squared	0.596	0.589	0.595	0.589	0.758

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

Entries are regression coefficients followed by standard errors in parentheses.

All variables except tax parameters are logged. All percentage variables range from 0 to 100. All independent variables are lagged one year.

Table 5: Regression Results: SPI Growth on Small Business Activity

Variable	Firms	Establishments	Employment	Payroll	Births/Deaths
Small Business Measure, <500 Emp	0.015	-0.0002	-0.004	0.005	0.002
	(0.009)	(0.009)	(0.008)	(0.007)	(0.015)
Business Measure, ≥500 Emp	**0.022*****	**0.009***	**0.015*****	**0.016*****	-0.002
	(0.006)	**(0.005)**	**(0.005)**	**(0.005)**	(0.008)
Neighboring Small Bus, <500 Emp	0.001	0.002	0.001	0.001	-
	(0.002)	(0.002)	(0.002)	(0.001)	-
Small Business Births, <500 Emp	-	-	-	-	**0.081*****
	-	-	-	-	**(0.011)**
Small Business Deaths, <500 Emp	-	-	-	-	**-0.069*****
	-	-	-	-	**(0.012)**
Business Births, ≥500 Emp	-	-	-	-	0.002
	-	-	-	-	(0.005)
Business Deaths, ≥500 Emp	-	-	-	-	0.002
	-	-	-	-	(0.006)
Neighboring Births, <500 Emp	-	-	-	-	0.016
	-	-	-	-	(0.011)
Neighboring Deaths, <500 Emp	-	-	-	-	-0.013
	-	-	-	-	(0.011)
SPI	**-0.024****	-0.007	-0.009	**-0.020****	-0.014
	(0.011)	(0.010)	(0.010)	**(0.009)**	(0.011)
Population Density	**-0.004*****	**-0.004*****	**-0.004*****	**-0.005*****	**-0.004*****
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	**(0.001)**
Unemployment Rate (%)	**-0.009*****	**-0.009*****	**-0.006***	**-0.005***	**-0.006***
	(0.003)	**(0.003)**	**(0.003)**	**(0.003)**	**(0.003)**
Energy Price Index	**0.015****	**0.014***	0.011	0.011	0.004
	(0.007)	**(0.007)**	(0.007)	(0.007)	(0.006)
College Degree (%)	**-0.010****	-0.006	-0.003	-0.006	0.002
	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)
Wage ($)	0.003	-0.001	0.00001	-0.01	-0.011
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Agriculture Share of GSP (%)	-0.002	-0.002	-0.001	-0.001	**-0.005*****
	(0.002)	(0.002)	(0.002)	(0.002)	**(0.002)**
Manufacturing Share of GSP (%)	**-0.005****	-0.003	**-0.005***	**-0.006****	0.001
	(0.002)	(0.002)	**(0.003)**	**(0.003)**	(0.002)
Sales Tax Rate (%)	0.0003	0.0001	-0.0003	-0.0002	**0.001****
	(0.0005)	(0.0005)	(0.0004)	(0.0004)	**(0.0005)**
Top CIT Rate (%)	-0.0004	-0.001	-0.0003	-0.0004	-0.0003
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0003)
Top PIT Rate (%)	-0.0001	-0.00001	-0.0001	-0.0001	-0.0002
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Sales Factor Apportionment (%)	0.00002	0.000	-0.00001	0.000	0.0001
	(0.00004)	(0.000)	(0.00004)	(0.000)	(0.00004)
Combined Reporting	-0.0005	-0.0001	-0.001	-0.001	0.0003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Throwback Rule	-0.002	-0.002	-0.001	-0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Inheritance, Estate, and Gift	**-0.003****	**-0.003****	**-0.003****	**-0.002***	0.001
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	(0.001)
Tax Incentives	0.00001	-0.0001	-0.00004	-0.00003	0.0001
	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)
Non-Tax Incentives	-0.0001	-0.0001	-0.0001	-0.0002	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
LLC	.00001	0.001	0.001	0.001	0.0001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 25-44 (%)	**0.038***	0.035	0.029	0.026	**0.044****
	(0.021)	(0.021)	(0.021)	(0.021)	**(0.021)**
Age 45-64 (%)	**-0.024***	-0.021	-0.014	-0.012	-0.001
	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)
Age 65 and over (%)	-0.006	-0.007	-0.007	-0.007	0.003
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Constant	0.131	0.053	0.042	0.06	-0.008
	(0.091)	(0.092)	(0.076)	(0.074)	(0.099)
R-squared	0.644	0.637	0.641	0.641	0.698

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

Entries are regression coefficients followed by standard errors in parentheses.

All variables except tax parameters are logged. All percentage variables range from 0 to 100. All independent variables are lagged one year.

Appendix Table 1: Data Descriptions and Source Notes

Variable	Definition
Small Business Firms, <500 Emp	Number of firms with less than 500 employees. (1)
Small Business Establishments, <500 Emp	Number of physical locations associated with firms that have less than 500 employees. (1)
Small Business Employment, <500 Emp	Total employment of firms that have less than 500 employees. (1)
Small Business Payroll, <500 Emp	Totally payroll of firms that have less than 500 employees. (1)
Small Business Births, <500 Emp	Number of establishment births associated with firms that have less than 500 employees. (1)
Small Business Deaths, <500 Emp	Number of establishment deaths associated with firms that have less than 500 employees. (1)
Small Business …, <100 Emp	Equivalent measures - small business defined as those firms with less than 100 emp. (1)
Business …, ≥500 Emp/≥100 Emp	Equivalent business measures for those firms with more than 500/100 employees. (1)
Neighboring Small Business…	Equivalent small business measures for neighboring states. (1)
Gross State Product (thousands)	Gross State Product. (2)
State Personal Income	Total state personal income. (3)
Employment	Total state employment. (2)
Population Density	Population/square miles in a state. (4)
Unemployment Rate (%)	State unemployment rate. (3)
Energy Price Index	Index of energy costs for all forms of energy. (5)
College Degree (%)	Share of state population with a bachelor's degree or higher. (4)
Wage ($)	Average hourly wage for manufacturing workers. (6)
Agricultural Share of GSP (%)	State agricultural production as a share of total gross state product. (7)
Manufacturing Share of GSP (%)	State manufacturing production as a share of total gross state product. (7)
Sales Tax Rate (%)	General sales tax rate. (8)
Top CIT Rate (%)	Highest marginal corporate income tax rate. (8)
Top PIT Rate (%)	Highest marginal personal income tax rate. (8)
Sales Factor Apportionment (%)	Weight given to sales factor in the corporate income tax apportionment formula. (8)
Combined Reporting	1 if a state has a combined reporting requirement. (8)
Throwback Rule	1 if a state has a throwback rule. (9)
Inheritance, Estate, and Gift Taxes	1 if a state has an inheritance, estate, or gift tax. (10)
Tax Incentives	Number of tax incentive programs a state offers. (11)
Non-Tax Incentives	Number of non-tax incentive programs a state offers. (11)
LLC	1 if a state allows limited liability companies. (12)
Age 25-44 (%)	Share of state population between the ages of 25-44. (4)
Age 45-64 (%)	Share of state population between the ages of 45-64. (4)
Age 65 and over (%)	Share of state population over the age of 64. (4)

Notes:

1. Author's calculations based on data from *Statistics of U.S. Businesses*, U.S. Census Bureau, various years.
2. *Regional Economic Accounts*, Bureau of Economic Analysis, various years.
3. *Statistical Abstract of the United States*, U.S. Census Bureau, various years.
4. Authors' calculations based on data from *Statistical Abstract of the United States*, U.S. Census Bureau, various years.
5. *Energy Price Estimates by Source*, U.S. Department of Energy, various years.
6. *Employment and Wages*, U.S. Bureau of Labor Statistics, various years.
7. Authors' calculations based on data from *Regional Economic Accounts*, Bureau of Economic Analysis, various years.
8. *State Tax Handbook*, Commerce Clearing House, various years.
9. *State Tax Handbook*, Commerce Clearing House, various years and various state revenue departments.
10. Conway and Rork, 2003.
11. National Association of State Development Agencies, various years.
12. www.llcweb.com

Appendix Table 2: Regression Results: GSP Growth on Small Business Activity

Variable	Firms	Establishments	Employment	Payroll	Births/Deaths
Small Business Measure, <100 Emp	0.009	-0.006	-0.007	0.012	0.007
	(0.012)	(0.012)	(0.012)	(0.011)	(0.023)
Business Measure, ≥100 Emp	**0.058***	**0.027***	**0.049***	**0.064***	0.011
	(0.013)	**(0.009)**	**(0.010)**	**(0.013)**	(0.015)
Neighboring Small Bus, <100 Emp	0.003	**0.005**	0.003	**0.004***	-
	(0.002)	**(0.002)**	(0.002)	**(0.002)**	-
Small Business Births, <100 Emp	-	-	-	-	**0.093***
	-	-	-	-	**(0.016)**
Small Business Deaths, <100 Emp	-	-	-	-	**-0.091***
	-	-	-	-	**(0.017)**
Business Births, ≥100 Emp	-	-	-	-	0.015
	-	-	-	-	(0.010)
Business Deaths, ≥100 Emp	-	-	-	-	-0.00004
	-	-	-	-	(0.010)
Neighboring Births, <100 Emp	-	-	-	-	-0.006
	-	-	-	-	(0.017)
Neighboring Deaths, <100 Emp	-	-	-	-	0.012
	-	-	-	-	(0.016)
GSP	**-0.050***	-0.020	**-0.043***	**-0.078***	**-0.033***
	(0.015)	(0.012)	**(0.014)**	**(0.019)**	**(0.013)**
Population Density	-0.001	-0.001	-0.002	-0.003	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Unemployment Rate (%)	-0.004	-0.007	0.003	0.006	-0.0003
	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)
Energy Price Index	0.016	0.017	0.01	0.005	0.004
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
College Degree (%)	-0.006	-0.002	0.007	-0.003	0.009
	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)
Wage ($)	0.011	0.007	0.014	-0.017	-0.004
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
Agriculture Share of GSP (%)	0.003	0.002	**0.006**	**0.008***	-0.001
	(0.003)	(0.003)	**(0.003)**	**(0.003)**	(0.003)
Manufacturing Share of GSP (%)	**-0.009***	**-0.007**	**-0.013***	**-0.015***	-0.003
	(0.003)	**(0.003)**	**(0.004)**	**(0.004)**	(0.004)
Sales Tax Rate (%)	-0.001	-0.001	**-0.002***	**-0.002***	0.0004
	(0.001)	(0.001)	**(0.001)**	**(0.001)**	(0.001)
Top CIT Rate (%)	-0.0001	-0.0003	0.0004	0.0004	0.0001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Top PIT Rate (%)	-0.0003	-0.0001	-0.001	-0.001	-0.0005
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.001)
Sales Factor Apportionment (%)	-0.00001	-0.0001	-0.0001	-0.0001	0.000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Combined Reporting	-0.0005	0.002	-0.001	-0.002	0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Throwback Rule	**-0.007***	**-0.006***	**-0.007***	**-0.007***	-0.003
	(0.002)	**(0.002)**	**(0.002)**	**(0.002)**	(0.002)
Inheritance, Estate, and Gift	**-0.005**	**-0.005**	**-0.006***	-0.004	-0.001
	(0.002)	**(0.002)**	**(0.002)**	(0.002)	(0.002)
Tax Incentives	-0.0003	-0.0004	-0.0004	-0.0004	-0.0002
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Non-Tax Incentives	-0.0001	-0.0001	-0.0001	-0.0003	-0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
LLC	-0.005	-0.005	-0.004	-0.003	**-0.007***
	(0.003)	(0.004)	(0.003)	(0.003)	**(0.004)**
Age 25-44 (%)	0.040	0.043	0.026	0.020	**0.063***
	(0.032)	(0.033)	(0.032)	(0.031)	**(0.032)**
Age 45-64 (%)	**-0.072***	**-0.068***	**-0.056**	**-0.061***	**-0.059**
	(0.023)	**(0.024)**	**(0.023)**	**(0.023)**	**(0.025)**
Age 65 and over (%)	-0.0004	0.005	-0.004	-0.008	0.019
	(0.013)	(0.013)	(0.013)	(0.012)	(0.014)
Constant	**0.456***	**0.212***	**0.283***	**0.382***	0.212
	(0.144)	**(0.128)**	**(0.117)**	**(0.121)**	(0.134)
R-squared	0.308	0.292	0.316	0.326	0.371

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

Entries are regression coefficients followed by standard errors in parentheses.

All variables except tax parameters are logged. All percentage variables range from 0 to 100. All independent variables are lagged one year.

Appendix Table 3: Regression Results: Employment Growth on Small Business Activity

Variable	Firms	Establishments	Employment	Payroll	Births/Deaths
Small Business Measure, <100 Emp	-0.007	-0.010	-0.009	-0.004	-0.002
	(0.008)	(0.008)	(0.007)	(0.005)	(0.013)
Business Measure, ≥100 Emp	0.011	0.010	**0.019****	**0.012****	0.013
	(0.007)	(0.008)	**(0.008)**	**(0.005)**	(0.009)
Neighboring Small Bus, <100 Emp	0.001	0.002	0.001	0.002	-
	(0.001)	(0.001)	(0.001)	(0.001)	-
Small Business Births, <100 Emp	-	-	-	-	**0.083*****
	-	-	-	-	**(0.007)**
Small Business Deaths, <100 Emp	-	-	-	-	**-0.075*****
	-	-	-	-	**(0.007)**
Business Births, ≥100 Emp	-	-	-	-	**0.010***
	-	-	-	-	**(0.006)**
Business Deaths, ≥100 Emp	-	-	-	-	**-0.012*****
	-	-	-	-	**(0.004)**
Neighboring Births, <100 Emp	-	-	-	-	0.013
	-	-	-	-	(0.008)
Neighboring Deaths, <100 Emp	-	-	-	-	-0.010
	-	-	-	-	(0.008)
Employment	0.001	0.002	-0.01	-0.007	-0.016
	(0.011)	(0.013)	(0.012)	(0.007)	(0.013)
Population Density	**-0.004*****	**-0.003*****	**-0.004*****	**-0.004*****	**-0.004*****
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	**(0.001)**
Unemployment Rate (%)	-0.002	-0.002	0.001	-0.001	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Energy Price Index	**0.018*****	**0.019*****	**0.016*****	**0.016*****	**0.008****
	(0.005)	**(0.005)**	**(0.005)**	**(0.005)**	**(0.004)**
College Degree (%)	**-0.016*****	**-0.014*****	**-0.012*****	**-0.016*****	-0.003
	(0.004)	**(0.004)**	**(0.004)**	**(0.004)**	(0.003)
Wage ($)	**0.009***	**0.011****	**0.012****	0.004	-0.0002
	(0.005)	**(0.005)**	**(0.005)**	(0.006)	(0.004)
Agriculture Share of GSP (%)	0.002	0.002	**0.003****	**0.002***	-0.001
	(0.001)	(0.001)	**(0.001)**	**(0.001)**	(0.001)
Manufacturing Share of GSP (%)	**-0.006*****	**-0.006*****	**-0.007*****	**-0.007*****	**-0.003***
	(0.002)	**(0.002)**	**(0.002)**	**(0.002)**	**(0.001)**
Sales Tax Rate (%)	**-0.001***	-0.001	**-0.001****	**-0.001****	**0.001****
	(0.0003)	(0.0004)	**(0.0003)**	**(0.0003)**	**(0.0003)**
Top CIT Rate (%)	-0.0003	-0.0004	-0.0002	-0.0003	0.0001
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)
Top PIT Rate (%)	0.0001	0.0001	0.00001	0.00004	-0.0002
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0002)
Sales Factor Apportionment (%)	-0.00001	-0.00002	-0.00003	-0.00002	**0.00004***
	(0.00003)	(0.00003)	(0.00003)	(0.00003)	**(0.00002)**
Combined Reporting	-0.0002	0.0004	-0.001	-0.0003	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Throwback Rule	-0.002	-0.002	-0.002	-0.001	**0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	**(0.001)**
Inheritance, Estate, and Gift	**-0.003****	**-0.003****	**-0.003****	**-0.002***	0.001
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	(0.001)
Tax Incentives	-0.00004	-0.0001	-0.00003	-0.00005	0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Non-Tax Incentives	-0.0001	-0.0001	-0.0001	**-0.0002***	-0.0001
	(0.0001)	(0.0001)	(0.0001)	**(0.0001)**	(0.0001)
LLC	0.001	0.001	0.001	0.002	-0.0003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 25-44 (%)	0.006	0.006	-0.0001	0.005	**0.025***
	(0.017)	(0.016)	(0.016)	(0.016)	**(0.015)**
Age 45-64 (%)	**-0.036*****	**-0.036*****	**-0.032*****	**-0.035*****	**-0.024****
	(0.011)	**(0.011)**	**(0.011)**	**(0.011)**	**(0.010)**
Age 65 and over (%)	-0.006	-0.005	-0.008	-0.007	0.008
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Constant	0.098	0.092	**0.116***	0.089	0.029
	(0.085)	(0.095)	**(0.063)**	(0.066)	(0.089)
R-squared	0.586	0.586	0.592	0.587	0.757

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

Entries are regression coefficients followed by standard errors in parentheses.

All variables except tax parameters are logged. All percentage variables range from 0 to 100. All independent variables are lagged one year.

Appendix Table 4: Regression Results: SPI Growth on Small Business Activity

Variable	Firms	Establishments	Employment	Payroll	Births/Deaths
Small Business Measure, <100 Emp	0.007	-0.0003	-0.004	0.007	-0.001
	(0.009)	(0.008)	(0.008)	(0.007)	(0.015)
Business Measure, ≥100 Emp	**0.020****	0.007	**0.016****	**0.018*****	0.001
	(0.008)	(0.007)	**(0.007)**	**(0.006)**	(0.010)
Neighboring Small Bus, <100 Emp	0.001	0.002	0.001	0.001	-
	(0.002)	(0.002)	(0.002)	(0.001)	-
Small Business Births, <100 Emp	-	-	-	-	**0.080*****
	-	-	-	-	**(0.011)**
Small Business Deaths, <100 Emp	-	-	-	-	**-0.067*****
	-	-	-	-	**(0.012)**
Business Births, ≥100 Emp	-	-	-	-	0.002
	-	-	-	-	(0.006)
Business Deaths, ≥100 Emp	-	-	-	-	-0.001
	-	-	-	-	(0.006)
Neighboring Births, <100 Emp	-	-	-	-	0.017
	-	-	-	-	(0.010)
Neighboring Deaths, <100 Emp	-	-	-	-	-0.013
	-	-	-	-	(0.011)
SPI	**-0.020***	-0.005	-0.010	**-0.023****	-0.012
	(0.011)	(0.011)	(0.010)	**(0.009)**	(0.010)
Population Density	**-0.004*****	**-0.004*****	**-0.004*****	**-0.005*****	**-0.004*****
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	**(0.001)**
Unemployment Rate (%)	**-0.008*****	**-0.009*****	**-0.006***	**-0.005***	**-0.006***
	(0.003)	**(0.003)**	**(0.003)**	**(0.003)**	**(0.003)**
Energy Price Index	**0.014***	**0.013***	0.012	0.011	0.003
	(0.007)	**(0.007)**	(0.007)	(0.007)	(0.006)
College Degree (%)	-0.008	-0.007	-0.003	-0.007	0.003
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Wage ($)	-0.0003	-0.003	-0.0001	-0.01	-0.011
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Agriculture Share of GSP (%)	-0.002	-0.002	-0.001	-0.001	**-0.005*****
	(0.002)	(0.002)	(0.002)	(0.002)	**(0.002)**
Manufacturing Share of GSP (%)	**-0.004***	-0.003	**-0.005***	**-0.006****	0.001
	(0.002)	(0.002)	**(0.003)**	**(0.003)**	(0.003)
Sales Tax Rate (%)	0.0001	-0.0001	-0.0004	-0.0003	**0.001****
	(0.0005)	(0.0005)	(0.0004)	(0.0004)	**(0.0005)**
Top CIT Rate (%)	-0.0005	-0.0005	-0.0003	-0.0004	-0.0003
	(0.0004)	(0.00040)	(0.0004)	(0.0004)	(0.0003)
Top PIT Rate (%)	-0.0001	-0.00003	-0.0001	-0.0001	-0.0002
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
Sales Factor Apportionment (%)	0.000	0.000	0.000	0.000	0.0001
	(0.000)	(0.0004)	(0.00004)	(0.00004)	(0.00004)
Combined Reporting	-0.001	-0.0001	-0.001	-0.001	0.0003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Throwback Rule	-0.002	-0.002	-0.002	-0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Inheritance, Estate, and Gift	**-0.003****	**-0.003****	**-0.003****	**-0.002***	0.001
	(0.001)	**(0.001)**	**(0.001)**	**(0.001)**	(0.001)
Tax Incentives	0.000	-0.0001	-0.00003	-0.00002	0.0001
	(0.0002)	(0.0002)	(0.0002)	(0.0001)	(0.0001)
Non-Tax Incentives	-0.0001	-0.0001	-0.0001	-0.0002	-0.0001
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
LLC	0.001	0.001	0.001	0.001	0.00003
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Age 25-44 (%)	0.032	0.034	0.026	0.025	**0.047****
	(0.022)	(0.022)	(0.022)	(0.021)	**(0.020)**
Age 45-64 (%)	-0.018	-0.021	-0.014	-0.012	-0.002
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Age 65 and over (%)	-0.008	-0.008	-0.009	-0.009	0.004
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Constant	0.14	0.047	0.054	0.072	-0.026
	(0.098)	(0.094)	(0.074)	(0.073)	(0.097)
R-squared	0.639	0.636	0.639	0.640	0.698

*, **, *** indicate statistical significance at the 10%, 5%, and 1% levels respectively.

Entries are regression coefficients followed by standard errors in parentheses.

All variables except tax parameters are logged. All percentage variables range from 0 to 100. All independent variables are lagged one year.