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An Analysis of the Impact of Income Tax Changes on the Rate of Business Creation in the United States, 1992-2018
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## **Summary**

Political discourse in the United States, especially in conservative circles (House GOP and Senate GOP 2017), frequently includes claims that increases to the income tax rate will have chilling effects on businesses and entrepreneurship in the country and conversely that cuts to income taxes will function as "rocket fuel for [the] economy" (Horsley 2019). This paper seeks to determine what, if any, impact changes in the top statutory federal income tax rate have on the rate of business creation in the United States over time by using econometric analysis and multiple-least squares linear regression (MLS) of several predictors of business creation at the federal level.

This paper conducts a review of existing literature in tax policy and economics relating to business creation in order to ground and contextualize its findings. While research specifically examining historical trends in business creation at the federal level are scarce, studies exist at the state level with similar theoretical frameworks that provided insight and perspectives for model creation and testing. The paper then uses linear regression to evaluate the relationship between the quarterly rate of business establishment births and the above-stated factors. Results of the model suggest that a 1 percentage point increase in the top individual income tax rate corresponds to a 2.6% increase in the quarterly rate of business establishment births and a 1 percentage point increase in the top corporate income tax rate corresponds to a 0.96% decrease in the quarterly rate of business establishment births between 1992 and 2018.

This paper finally seeks to recommend areas for further examination and study that are beyond the scope of this project. A greater understanding of the real-world implications of tax policy is invaluable to both policymakers and to the constituents who elect them.

### Introduction

The creation of businesses in an economy is critical to the long-term viability and operation of that economy (Birch 1989). These businesses are often highly desired by policymakers and citizens alike in communities across the United States due to their perceived value as job creators, engines for heightened community revitalization, and as new sources of tax revenue (Haltiwanger, Jarmin, and Miranda 2013). Policymakers engage in various strategic tax policy actions to attract, retain, and encourage business growth in their jurisdictional boundaries. They are motivated, in part, by constituents who are themselves influenced by the relative tax rates of neighboring jurisdictions (Besley and Case 1992). Rork (2003) suggests that one such strategic action may be to tailor taxes in such a way as to maximize tax revenue while minimizing the risk of firm migration or closure. In this way, understanding the implications of tax rates on business creation are vitally important to policymakers and to their constituents.

The view that low taxes will incentivize business creation exists among policymakers at the local and federal level. National policymakers and their affiliated political parties have staked out a variety of positions on tax policy, including the position that low taxes may attract extant businesses to the United States and encourage the creation of new businesses domestically. While these positions may not always be grounded in empirical facts (Miler 2010), they and their ensuing policy actions are nonetheless highly relevant to the population of the United States as they can affect workers, corporations, and communities around the country.

This paper will examine how, if at all, the quarterly rate of business establishments in the United States between 1992 and 2018 was influenced by changes in the top national statutory tax rates for individuals and corporations. Individual income taxes are important to consider because

the majority of firms started in the United States each year are proprietorships or limited liability companies (U.S. Small Business Administration n.d.). The profits of these companies are passed through to the business owners as individual income at the federal level. Additionally, new businesses most frequently emerge from individual entrepreneurs, who may find changes in the individual tax rate to be a factor in their entrepreneurial decision, or as spin-offs of a preexisting company, which may find corporate tax rate changes to be important in determining the feasibility of a new venture (U.S. Small Business Administration 2020). Corporate tax rates are also considered, even though relatively few small businesses are taxed as such (U.S. Small Business Administration 2020), as they can still impact the mobility and feasibility of businesses (Rork 2003).

#### Literature Review

Research on the influence of tax policy on business creation is frequently concentrated at the local level, often examining state policies and their outcomes because analyzing national trends introduces a number of additional national and global variables that may influence business formation and thus increase the risk of omitted variable bias. Additionally, the majority of research in this area has a local focus in order to leverage greater variation between various subnational jurisdictions in order to produce a more meaningful analysis of results. Studies have found that states compete for businesses to form within their territory as opposed to neighboring states; frequently these competitions involve tax policy, with many policymakers viewing a low tax rate as inherently more attractive to prospective entrepreneurs (Deskins and Hill 2010a). While tax policy has been used strategically to entice entrepreneurs across state lines, it has also been used more broadly to encourage innovation and business creation within a state's own population (Rusu and Dornean 2019). This strategy of using low taxes to encourage business

creation is supported by business groups, many of which work closely with policymakers to promote their issues within the government (U.S. Chamber of Commerce 2017).

The decision to create a new business and determine the location in which that business begins is complex and includes national-level factors such as regulations, enforcement trends, industrial standards, the level of unemployment, GDP per capita, overall education level of the population, and interest rates (Misra et al. 2014). It is likely that additional variables are important, as an entrepreneur's decision to create a business can be influenced by quantitative and qualitative factors that may vary by location, time, and significance to each unique individual. Not only are there many factors to consider in forming a business, some of these factors can directly incentivize action, i.e., a period of economic recession often serves as a key motivator for individuals to create a new business venture (Fairlie 2011). The impacts of this effect, whereby business creation is effectively countercyclical, can be additionally understood as a reaction to fluctuations in the national unemployment outlook or unique business opportunities brought on by large shifts in the economic landscape (Koellinger and Thurik 2012).

While this paper is examining national trends of business creation relative to federal statutory tax rates, a similar framework of variables to those identified by Deskins and Hill in their research on business mobility in response to state tax changes is used for analysis (Deskins and Hill 2010b; 2010a). The model developed in this paper includes a variable for the secondary market rate of a six-month U.S. Treasury bill because research indicates that lending interest rates are important drivers of business formation as firms need access to capital in order to open and begin operating, suggesting a possibly negative coefficient in the model's results (Misra et al. 2014). Variables for unemployment and whether the U.S. is in a recession are included because business creation is often tied to the national unemployment rate and recessions or other

disruptive economic phenomena, implying a positive coefficient for these variables in the results of the model (Koellinger and Thurik 2012). A variable expressing the disposable income per capita of Americans is used in the model because greater disposable income means more cash on-hand for spending at businesses and thus an opportunity for new businesses to generate a profit (U.S. Chamber of Commerce 2014); based on the literature reviewed, a positive coefficient was expected in the model results. Additionally, the model incorporates a variable to represent the benefits derived by entrepreneurs from government amenities relevant to business creation: the annual budget of the U.S. Small Business Administration (Blanchard and Perotti 2002), expected to yield a positive coefficient in the results of the model.

#### Data

The econometric model used in this paper analyzes national data on business establishment births and predictors of business creation, as outlined in the literature review.

There are 106 observations across 8 variables, including the dependent variable, measured across time. The sources for the data are listed below and the raw data table used in statistical analysis and the codebook can be found in *Appendices I and II*, respectively.

Table I

Regressor Name	Source of Data
estab	Business Employment Dynamics, Bureau of Labor Statistics
ptax	Federal Reserve Economic Data (FRED), Federal Reserve Bank of St. Louis
ctax	Tax Policy Center
tbill	FRED, Federal Reserve Bank of St. Louis
unemp	FRED, Federal Reserve Bank of St. Louis
dispinc	National Income & Product Accounts, Bureau of Economic Analysis
reces	National Bureau of Economic Research
sba	U.S. Small Business Administration

In addition to the obvious variables for the rate of business establishment births, individual income tax rates, and corporate income tax rates, the model includes a number of potential explanatory variables to better clarify results and reduce the overall endogeneity and bias of the model by more carefully analyzing and presenting data to avoid correlation with the model's error term.

This paper uses linear regression to evaluate the relationship between the quarterly rate of business establishment births and the above-stated factors to identify the impact of tax changes on business establishment births. As the decision to create a business is very unique to each entrepreneur and their circumstances, the model developed in this paper does not include all possible drivers of business creation and potentially suffers from omitted variable bias as a result. Included variables in the model were selected for their inclusion as significant drivers of business creation in studies of business creation or tax policy. Additionally, simultaneity bias, a specific form of endogeneity, may be introduced in the model because the per-capita income of Americans may serve as a potential predictor of business creation while also being influenced by

business creation as more business startups could marginally affect the per-capita level of income in the US. Simultaneity may bias the model estimators to overestimate the impact of regressors on the rate of establishment births over time. This paper seeks to minimize this bias through thoughtful model specification, namely selecting regressors that reduce the overall endogeneity of the model.

# Methodology

In order to evaluate how changes in the highest statutory income tax rates for individuals and corporations in the United States have impacted the rate of businesses created in the years 1992 to 2018, it is necessary to identify relevant variables that may contribute to the rate of businesses created in a given year to include in an econometric model. The model used in this paper was developed using a similar variable framework to that used by Deskins and Hill, with additional variables included based on additional studies.

This paper uses an econometric model expressing the number of businesses created in the United States in a given year between 1992 and 2018 as a linear function of variables, given below:

$$\tilde{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

for  $X_1$  = top statutory individual income tax rate,  $X_2$  = top statutory corporate income tax rate,  $X_3$  = the quarterly average secondary market rate of a six-month Treasury bill,  $X_4$  = the amount of federal funding given to the Small Business Administration each year,  $X_5$  = quarterly disposable income per capita, and  $X_6$  = whether the U.S. was in a recession

This model was evaluated with multiple-least squares (MLS) linear regression for significance at the 95% level using R to conduct statistical testing and analysis.

#### Results

The results of the final MLS regression showed that the top individual income tax rate has statistically significant impacts on the quarterly rate of business establishment births at the 95% confidence level. Additionally, the quarterly secondary market rate of six-month Treasury bills was found to be statistically significant at the 90% confidence level. The model had a multiple R<sup>2</sup> of 0.3003, meaning that the model explains 30% of the relationship between business creation and the remaining variables in the model.

Linear regression of the model indicated that a 1 percentage point increase in the top individual income tax rate would correspond with a 2.6% increase in the rate of quarterly rate of business establishment births *ceteris paribus*. Although not statistically significant, it is interesting to note the model shows that a 1 percentage point increase in the top corporate income tax rate would correspond with a -0.96% decrease in the rate of business establishment births *ceteris paribus*. It is important to note, however, that the precision of these results may be impacted by the limited number of observations available for all regressors in the model, as well as by the sheer number of variables that may otherwise impact national business trends that were not included in the final model due to data and timing constraints.

Table II

Regressor	Estimate	P-value
Intercept	0.03122	0.000482
ptax	0.02611	0.047970
ctax	-0.009614	0.462430
tbill	0.03741	0.069744
reces	-0.001076	0.281110
dispinc	-0.0000001585	0.109550
sba	-0.000001402	0.186186

#### Discussion

The results of the linear regression support previous research that shows business creation is not a simple function of tax policy and nothing else, but is rather a calculation based on numerous economic, social, and personal factors for would-be entrepreneurs (Borchers, Deskins, and Ross 2016). The positive coefficient for the variable "tbill" indicates that this variable may be a positive indicator of an increased rate of business establishment births. Many of the other variables in the model show negative coefficients of various magnitudes, suggesting that a coefficient unit-increase in these variables may lead to a unit-decrease equal to the coefficient in the rate of business establishment births.

None of the other regressors were found to be statistically significant, due at least in part to issues with variation in the source data. The data on the federal corporate income tax rate had only two changes in the observed period, whereas the individual income tax rate had six changes in the same period; low variation in the data would make it more challenging to identify a statistically significant impact on the dependent variable. Additionally, this variable may not have been statistically significant because of the somewhat tenuous connection between the statutory tax rate and the effective tax rate paid by many corporations. The data used in this model documented all business births in the economy, and small businesses tend to not be organized as corporations per the Small Business Administration (2020), so it is not unreasonable to infer that relatively few firms measured by this dataset are subject to the federal corporate income tax. For those firms that would be subject to the corporate income tax rate, it is possible to paying the statutory tax rate in whole or in part through tax planning (Borchers, Deskins, and Ross 2016).

With a limited number of firms paying the statutory rate, there may have been insufficient data for the analysis to return a significant result. Regressors for recession, disposable income, and expenditure may not be statistically significant in this model due to biases previously identified in the data section or because there is still a relatively small number of observations relative to the sheer number of factors that can influence business formation at the national level.

An interesting feature of this model is a positive coefficient for the "ptax" variable; this finding is not congruent with existing literature in this field, rather most research has found that individual income tax rates can discourage business creation because most firms started by individuals are pass-through companies that are taxed at the individual rate in the United States for federal tax purposes. This unusual result can potentially be explained by the biases identified previously in the data section or because tax rates are often raised when the economy is performing well and thus businesses may be expanding (while new businesses are often created in recessionary periods, the measure of establishment births includes secondary locations or franchises of existing firms which can begin during periods of relative economic stability). There is insufficient data to definitively identify the reason for the incongruence of the model's result with preexisting literature and more research and analysis would be required to fully understand this unusual finding.

#### **Conclusion**

The value of understanding the impact of statutory income tax rates on business creation over time lies in the benefits it can provide for informing future policy discussions. As the world considers paths forward from the economic uncertainty of the coronavirus pandemic, governments and policymakers will need to weigh the relative benefits of raising revenue to pay

off debts incurred during the pandemic and to invest in public health infrastructure with the costs that increased taxes may accrue in lost businesses. The relationship between taxes and business creation is a delicate balancing act, one that is shaped not only by purely fiscal and economic factors but also by additional social considerations.

This paper finds that changes in the top statutory federal income tax rate have statistically significant impacts on the quarterly rate of business establishment births in the United States between 1992 and 2018. There remain, however, opportunities to better understand the dynamics and precise interactions of variables at the individual actor level. Firm creation is often driven by personal factors unique to the experience of the proprietor; future inquiry on this topic could explore potential differences for proprietors of color or female entrepreneurs in the impact of taxes on firm creation.

A further examination of data regarding the impact of income tax rates on business creation may be valuable at a more localized level, analyzing how the conditions within individual states may affect business creation differently over time as local factors may alter the impact of certain variables within the model. Such a study would allow researchers to avoid issues with precision and bias that impact the model used in this paper; focusing on states allows for better model specification, reduced omitted variable bias, and increased likelihood of finding effective instrumental variables to address any endogeneity observed in datasets over time.

Appendix I: Observational Data

Period	estab	ptax	ctax	tbill	unemp	reces	dispinc	sba
1992Q3	0.03	0.31	0.34	0.03	0.08	0.00	27892.00	1652.10
1992Q4	0.03	0.31	0.34	0.03	0.07	0.00	27923.00	1652.10
1993Q1	0.04	0.40	0.35	0.03	0.07	0.00	27945.00	1208.10
1993Q2	0.03	0.40	0.35	0.03	0.07	0.00	27946.00	1208.10
1993Q3	0.03	0.40	0.35	0.03	0.07	0.00	27875.00	1208.10
1993Q4	0.03	0.40	0.35	0.03	0.07	0.00	27980.00	1208.10
1994Q1	0.03	0.40	0.35	0.03	0.07	0.00	28089.00	650.70
1994Q2	0.04	0.40	0.35	0.04	0.06	0.00	28289.00	650.70
1994Q3	0.04	0.40	0.35	0.05	0.06	0.00	28362.00	650.70
1994Q4	0.03	0.40	0.35	0.06	0.06	0.00	28681.00	650.70
1995Q1	0.03	0.40	0.35	0.06	0.05	0.00	28849.00	792.00
1995Q2	0.03	0.40	0.35	0.06	0.06	0.00	28849.00	792.00
1995Q3	0.03	0.40	0.35	0.05	0.06	0.00	29020.00	792.00
1995Q4	0.03	0.40	0.35	0.05	0.06	0.00	29100.00	792.00
1996Q1	0.04	0.40	0.35	0.05	0.06	0.00	29302.00	814.20
1996Q2	0.03	0.40	0.35	0.05	0.06	0.00	29487.00	814.20
1996Q3	0.04	0.40	0.35	0.05	0.05	0.00	29630.00	814.20
1996Q4	0.04	0.40	0.35	0.05	0.05	0.00	29692.00	814.20
1997Q1	0.04	0.40	0.35	0.05	0.05	0.00	29896.00	852.40
1997Q2	0.04	0.40	0.35	0.05	0.05	0.00	30075.00	852.40
1997Q3	0.03	0.40	0.35	0.05	0.05	0.00	30328.00	852.40
1997Q4	0.03	0.40	0.35	0.05	0.05	0.00	30679.00	852.40
1998Q1	0.04	0.40	0.35	0.05	0.05	0.00	31245.00	716.10
1998Q2	0.04	0.40	0.35	0.05	0.04	0.00	31588.00	716.10
1998Q3	0.03	0.40	0.35	0.05	0.05	0.00	31807.00	716.10
1998Q4	0.03	0.40	0.35	0.04	0.04	0.00	31962.00	716.10
1999Q1	0.03	0.40	0.35	0.04	0.04	0.00	32169.00	820.00
1999Q2	0.04	0.40	0.35	0.05	0.04	0.00	32154.00	820.00
1999Q3	0.03	0.40	0.35	0.05	0.04	0.00	32270.00	820.00
1999Q4	0.04	0.40	0.35	0.05	0.04	0.00	32657.00	820.00
2000Q1	0.04	0.40	0.35	0.06	0.04	0.00	33198.00	906.00
2000Q2	0.03	0.40	0.35	0.06	0.04	0.00	33482.00	906.00
2000Q3	0.04	0.40	0.35	0.06	0.04	0.00	33779.00	906.00
2000Q4	0.03	0.40	0.35	0.06	0.04	0.00	33810.00	906.00
2001Q1	0.03	0.39	0.35	0.05	0.04	1.00	34038.00	947.60
2001Q2	0.03	0.39	0.35	0.04	0.04	1.00	33899.00	947.60
2001Q3	0.03	0.39	0.35	0.03	0.05	1.00	34591.00	947.60

Period	estab	ptax	ctax	tbill	unemp	reces	dispinc	sba
2001Q4	0.03	0.39	0.35	0.02	0.06	1.00	34067.00	947.60
2002Q1	0.03	0.39	0.35	0.02	0.06	0.00	34759.00	973.50
2002Q2	0.04	0.39	0.35	0.02	0.06	0.00	34916.00	973.50
2002Q3	0.03	0.39	0.35	0.02	0.06	0.00	34798.00	973.50
2002Q4	0.03	0.39	0.35	0.01	0.06	0.00	34919.00	973.50
2003Q1	0.03	0.35	0.35	0.01	0.06	0.00	34928.00	893.60
2003Q2	0.03	0.35	0.35	0.01	0.06	0.00	35276.00	893.60
2003Q3	0.03	0.35	0.35	0.01	0.06	0.00	35783.00	893.60
2003Q4	0.03	0.35	0.35	0.01	0.06	0.00	35792.00	893.60
2004Q1	0.03	0.35	0.35	0.01	0.06	0.00	35887.00	808.60
2004Q2	0.03	0.35	0.35	0.01	0.06	0.00	36219.00	808.60
2004Q3	0.03	0.35	0.35	0.02	0.05	0.00	36365.00	808.60
2004Q4	0.03	0.35	0.35	0.02	0.05	0.00	36733.00	808.60
2005Q1	0.03	0.35	0.35	0.03	0.05	0.00	36225.00	907.70
2005Q2	0.03	0.35	0.35	0.03	0.05	0.00	36491.00	907.70
2005Q3	0.03	0.35	0.35	0.04	0.05	0.00	36506.00	907.70
2005Q4	0.03	0.35	0.35	0.04	0.05	0.00	36881.00	907.70
2006Q1	0.03	0.35	0.35	0.04	0.05	0.00	37516.00	2308.00
2006Q2	0.03	0.35	0.35	0.05	0.05	0.00	37523.00	2308.00
2006Q3	0.03	0.35	0.35	0.05	0.05	0.00	37523.00	2308.00
2006Q4	0.03	0.35	0.35	0.05	0.04	0.00	37921.00	2308.00
2007Q1	0.03	0.35	0.35	0.05	0.05	0.00	38160.00	1053.60
2007Q2	0.03	0.35	0.35	0.05	0.05	0.00	38172.00	1053.60
2007Q3	0.03	0.35	0.35	0.04	0.05	0.00	38107.00	1053.60
2007Q4	0.03	0.35	0.35	0.04	0.05	1.00	38036.00	1053.60
2008Q1	0.03	0.35	0.35	0.02	0.05	1.00	38058.00	928.20
2008Q2	0.03	0.35	0.35	0.02	0.05	1.00	38670.00	928.20
2008Q3	0.03	0.35	0.35	0.02	0.06	1.00	37765.00	928.20
2008Q4	0.03	0.35	0.35	0.01	0.07	1.00	38005.00	928.20
2009Q1	0.03	0.35	0.35	0.00	0.08	1.00	37766.00	980.80
2009Q2	0.03	0.35	0.35	0.00	0.09	1.00	38093.00	980.80
2009Q3	0.03	0.35	0.35	0.00	0.10	0.00	37576.00	980.80
2009Q4	0.03	0.35	0.35	0.00	0.10	0.00	37480.00	980.80
2010Q1	0.03	0.35	0.35	0.00	0.10	0.00	37615.00	966.70
2010Q2	0.03	0.35	0.35	0.00	0.10	0.00	38166.00	966.70
2010Q3	0.03	0.35	0.35	0.00	0.09	0.00	38363.00	966.70
2010Q4	0.03	0.35	0.35	0.00	0.10	0.00	38502.00	966.70
2011Q1	0.03	0.35	0.35	0.00	0.09	0.00	38831.00	1002.90
2011Q2	0.03	0.35	0.35	0.00	0.09	0.00	38684.00	1002.90

Period	estab	ptax	ctax	tbill	unemp	reces	dispinc	sba
2011Q3	0.03	0.35	0.35	0.00	0.09	0.00	38777.00	1002.90
2011Q4	0.03	0.35	0.35	0.00	0.09	0.00	38823.00	1002.90
2012Q1	0.03	0.35	0.35	0.00	0.08	0.00	39487.00	1039.30
2012Q2	0.03	0.35	0.35	0.00	0.08	0.00	39782.00	1039.30
2012Q3	0.03	0.35	0.35	0.00	0.08	0.00	39422.00	1039.30
2012Q4	0.03	0.35	0.35	0.00	0.08	0.00	40437.00	1039.30
2013Q1	0.03	0.40	0.35	0.00	0.08	0.00	38763.00	1375.00
2013Q2	0.03	0.40	0.35	0.00	0.08	0.00	38993.00	1375.00
2013Q3	0.03	0.40	0.35	0.00	0.07	0.00	39087.00	1375.00
2013Q4	0.03	0.40	0.35	0.00	0.07	0.00	39165.00	1375.00
2014Q1	0.03	0.40	0.35	0.00	0.07	0.00	39646.00	951.20
2014Q2	0.03	0.40	0.35	0.00	0.06	0.00	40119.00	951.20
2014Q3	0.03	0.40	0.35	0.00	0.06	0.00	40506.00	951.20
2014Q4	0.03	0.40	0.35	0.00	0.06	0.00	40960.00	951.20
2015Q1	0.03	0.40	0.35	0.00	0.06	0.00	41503.00	921.20
2015Q2	0.03	0.40	0.35	0.00	0.05	0.00	41554.00	921.20
2015Q3	0.03	0.40	0.35	0.00	0.05	0.00	41761.00	921.20
2015Q4	0.03	0.40	0.35	0.00	0.05	0.00	41918.00	921.20
2016Q1	0.03	0.40	0.35	0.00	0.05	0.00	42172.00	1058.10
2016Q2	0.03	0.40	0.35	0.00	0.05	0.00	42076.00	1058.10
2016Q3	0.03	0.40	0.35	0.00	0.05	0.00	42198.00	1058.10
2016Q4	0.03	0.40	0.35	0.01	0.05	0.00	42385.00	1058.10
2017Q1	0.03	0.40	0.35	0.01	0.05	0.00	42776.00	1123.00
2017Q2	0.03	0.40	0.35	0.01	0.04	0.00	43176.00	1123.00
2017Q3	0.03	0.40	0.35	0.01	0.04	0.00	43399.00	1123.00
2017Q4	0.03	0.40	0.35	0.01	0.04	0.00	43581.00	1123.00
2018Q1	0.03	0.37	0.21	0.02	0.04	0.00	44087.00	1828.70
2018Q2	0.03	0.37	0.21	0.02	0.04	0.00	44424.00	1828.70
2018Q3	0.03	0.37	0.21	0.02	0.04	0.00	44725.00	1828.70
2018Q4	0.03	0.37	0.21	0.02	0.04	0.00	44970.00	1828.70

# Appendix II: Codebook

Variable	Definition
estab	Quarterly rate of establishment births (BDS000000000000000120007RQ5)
ptax	Top federal statutory individual income tax rate
ctax	Top federal statutory corporate income tax rate
tbill	Quarterly average of the secondary market rate for a six-month U.S. Treasury bill
unemp	Quarterly average U.S. unemployment rate
dispinc	Quarterly per capita disposable personal income in chained 2012 \$
reces	0 = the U.S. is not in a recession in this quarter, $1 =$ the U.S. is in a recession in this quarter
sba	Annual budget appropriation for the U.S. Small Business Administration

#### References

- Battaglini, Marco, Stephen Coate, Andrew Atkeson, Marina Azzimonti, Roland Benabou, Tim Besley, and Faruk Gul. 2008. "A Dynamic Theory of Public Spending, Taxation, and Debt." *American Economic Review* 98 (1): 201–36. https://doi.org/10.1257/aer.98.1.201.
- Besley, Timothy, and Anne Case. 1992. "Incumbent Behavior: Vote Seeking, Tax-Setting and Yardstick Competition." 4041. NBER Working Paper Series. Cambridge, MA.
- Birch, David L. 1989. "Change, Innovation, and Job Generation." *Journal of Labor Research* 10: 33–38.
- Blanchard, Olivier, and Roberto Perotti. 2002. "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output." *The Quarterly Journal of Economics* 117 (4): 1329–68. www.iue.it/Personal/Perotti.
- Borchers, Erin, John Deskins, and Amanda Ross. 2016. "Can State Tax Policies Be Used to Grow Small and Large Businesses?" *Contemporary Economic Policy* 34 (2): 312–35. https://doi.org/10.1111/coep.12149.
- Chu, Tianshu, and Qiang Wen. 2019. "Does College Education Promote Entrepreneurship in China?" *Journal of Labor Research* 40 (September): 463–86. https://doi.org/10.1007/s12122-019-09293-0.
- Deskins, John, and Brian Hill. 2010a. "Have State Tax Interdependencies Changed over Time?" *Public Finance Review* 38 (2). https://doi.org/10.1177/1091142110367856.
- ——. 2010b. "State Taxes and Economic Growth Revisited: Have Distortions Changed?"

  Annals of Regional Science 44 (2): 331–48. https://doi.org/10.1007/s00168-008-0266-3.

- Fairlie, Robert W. 2011. "Entrepreneurship, Economic Conditions, and the Great Recession."
- Haltiwanger, John, Ron S. Jarmin, and Javier Miranda. 2013. "Who Creates Jobs? Small versus Large versus Young." *Review of Economics and Statistics*. https://doi.org/10.1162/REST\_a\_00288.
- Horsley, Scott. 2019. "Trump Tax Cuts Have Failed To Deliver On GOP's Promises: NPR."

  National Public Radio. December 20, 2019. https://www.npr.org/2019/12/20/789540931/2-years-later-trump-tax-cuts-have-failed-to-deliver-on-gops-promises.
- House GOP, and Senate GOP. 2017. "Tax Cuts & Jobs Act Policy Highlights."
- Koellinger, Philipp D, and A Roy Thurik. 2012. "Entrepreneurship and the Business Cycle." Vol. 94. https://www.jstor.org/stable/23355346.
- Miler, Kristina C. 2010. Constituency Representation in Congress: The View from Capitol Hill.

  Book. Cambridge; New York: Cambridge University Press.
- Misra, Kaustav, Esra Memili, Dianne H.B. Welsh, and Shyamalendu Sarkar. 2014. "The Determinants of Venture Creation Time: A Cross-Country Perspective." *International Entrepreneurship and Management Journal* 10 (2): 253–76. https://doi.org/10.1007/s11365-012-0226-3.
- Rork, Jonathan C. 2003. "Coveting Thy Neighbors' Taxation." Journal. Vol. 56.
- Rusu, and Dornean. 2019. "The Quality of Entrepreneurial Activity and Economic Competitiveness in European Union Countries: A Panel Data Approach." *Administrative Sciences* 9 (2): 35. https://doi.org/10.3390/admsci9020035.

- Trostel, Philip A. 2004. "Returns to Scale in Producing Human Capital from Schooling." *Papers* 56 (3): 461–84. https://doi.org/10.1093/oep/gpfO54.
- U.S. Chamber of Commerce. 2014. "Increase in Disposable Income Is Positive Sign for Small Business | U.S. Chamber of Commerce." July 16, 2014.
  https://www.uschamber.com/above-the-fold/increase-disposable-income-positive-sign-small-business.
- U.S. Small Business Administration. 2020. "Frequently Asked Questions About Small Businesses."
- . n.d. "Sole Proprietorship." Accessed February 24, 2021. https://www.sba.gov/content/sole-proprietorship.