

2016 THE KAUFFMAN  
INDEX

# startup activity

STATE TRENDS

Arnobio Morelix  
Robert W. Fairlie

E.J. Reedy  
Joshua Russell

AUGUST 2016



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## A Word about Ecosystems

What makes entrepreneurship grow? That is arguably the most important challenge in economics today. The Kauffman Index of Startup Activity is a critical piece to solving that puzzle.

The data suggest that something new is happening. For the second year in a row, key measures of new business creation in the United States point upward, rising 0.38 in 2016, according to this Index. This new positive trend comes just two years after the Index plunged to its lowest level in two decades. Entrepreneurship is finally recovering, with new business creation reaching close to the peak preceding the drop from the Great Recession.

Understanding this latest trend requires a close look at the underlying data for individual states and major metropolitan areas. That's what this report provides. It's a tool for policymakers, practitioners, and entrepreneur support organizations, among others, to understand developments in their areas—whether national, regional, or local—so that they can take needed steps to improve startup activity.

Entrepreneurship is up in many states and metropolitan areas, and the report highlights the biggest increases and declines. Recognizing how those ups and downs are concentrated geographically is particularly illuminating and instructive.

But why does entrepreneurship thrive in some places, not in others?

The answer matters because entrepreneurship has affected the well-being of every human on this tiny planet. Thus, entrepreneurship should not be a privilege of the few. Indeed, one of the most powerful things about entrepreneurship is its universality. All communities, cities, and states can become “ecosystems” of entrepreneurial innovation to generate new businesses and jobs. They can all connect ingredients to create environments that spawn businesses in new, impactful ways.

Our hypothesis is this. The key to building successful ecosystems is a culture that connects people and enables them to share unique experiences, skills, and insights in collaborative ways. That's why trust is so important. Trust girds the invisible infrastructure of a community. That's why diversity is so vital. Diversity leads to the serendipitous interactions that invigorate ecosystems. And that's why immigrants, and other “boundary crossers,” are so essential. Immigrants have played prominent roles in the development of so many high-growth companies in our nation. That beautiful mixing of backgrounds, knowledge, and perspectives—it's what feeds the dynamism of entrepreneurial communities everywhere.

These latest reports on startup activity in the United States and major metropolitan areas highlight those places where new business activity is especially vibrant and encourages us to understand their approaches further. But there's still not enough startup activity. The nation is below its peak of a generation ago. And far too many Americans are in need of work.

The good news is that every community has the capacity to increase startup activity. This report is an essential tool to understanding how new business creation is spreading across the nation. More importantly, it points the way forward. By measuring where strengths and weaknesses are happening, we hope to empower communities everywhere to make entrepreneurial success a universal, not a scarce, phenomenon.

Victor W. Hwang  
Vice President of Entrepreneurship  
Ewing Marion Kauffman Foundation

Ewing Marion  
**KAUFFMAN**  
Foundation

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## Foreword

John Hickenlooper  
Governor, Colorado

Entrepreneurs and the businesses they start are at the very core of the American economy. Startups and growing firms create most net new jobs in America, provide opportunities for workers to advance up the economic ladder, and drive innovation forward. There is little doubt startup activity is essential to the economic health of America.

Yet, what's easy to miss from this 30,000-foot view is how essential startup activity is to the communities that make up America—creating local jobs, vibrancy, a culture of innovation, and a better place for future generations. In many ways, all entrepreneurship is local. And we have experienced that reality in Colorado.

As a laid-off geologist in the 1980s, I partnered with group of colleagues to launch a startup—Colorado's first brewpub—in a downtown Denver neighborhood known as LoDo. The former warehouse district had fallen on tough times and was largely empty and abandoned. Together with other entrepreneurs, we invested in a neighborhood that we believed could become a vibrant hub for social interaction and business. Since then, we have seen businesses and startups continue to contribute to a downtown and regional renaissance—inspiring a change in a forgotten neighborhood.

It's clear from my experience and the experience of countless other entrepreneurs that startups shape their communities. But, it's a two-way street as communities also shape their startups. Day in and day out, much of what really matters for entrepreneurs is what is happening where they live and work—the connections they make, the leaders and mentors in the community, the skilled talent they access, the local infrastructure they use, and the quality of life in their community.

Colorado and many of its cities have consistently been among the top places in the nation for startup activity, and there are many reasons why. For one, the risk-taking of entrepreneurs is part of the spirit of Colorado and the West. Pushing the frontiers of innovation, technology, and job creation are part of our cultural

DNA. Moreover, our state has the talent, great quality of life, and collaborative spirit that people dream of when they are working to make their businesses a reality. We've worked purposefully to strengthen these qualities:

- **Strengthening the Entrepreneurial Community:** Now in its sixth year, the Colorado Innovation Network (COIN) is a public-private partnership, which has grown to a network of over 2,000 innovation leaders from industry, government, higher education, R&D, and the startup community who are defining the new frontiers on a global scale. The network connects entrepreneurs and innovators from across our state, from technology to aerospace and agriculture to outdoor recreation.
- **Supporting New and Growing Business:** Our Advanced Industries Accelerator Programs are designed to help grow burgeoning ideas and companies in industries with high potential for growth, such as technology and advanced manufacturing. The programs provide grant funds to support promising ideas with high potential for commercialization, supporting early-stage capital needs, and building infrastructure capacity and workforce in areas of high need.
- **Building Talent:** The Business Experiential-Learning Commission, known locally as the BEL Commission was created to explore and develop work-based learning that will support Colorado's ability to meet the demands of current and future businesses. The goal is to create a scalable, industry-driven framework for business engagement in education and workforce development. The shift toward talent is promising and offers the most valuable incentive available to high-growth companies.

All entrepreneurship is local. And the policymakers, entrepreneurship supporters, and communities that overlook this reality do so at their own peril. Keeping the pulse of our communities' startup activity is crucial to any state or city looking to become a better place to live, work, and raise a family. With the Kauffman Index of Startup Activity, the Kauffman Foundation provides the essential data and research that allow us to keep that pulse and leverage the insights we learn from the data to create a better future for our communities.

# About the Kauffman Index of Entrepreneurship Series

The Kauffman Index of Entrepreneurship series is an umbrella of annual reports that measures U.S. entrepreneurship across national, state, and metro levels. Rather than focusing on inputs, the Kauffman Index focuses primarily on entrepreneurial outputs—the actual results of entrepreneurial activity, such as new companies, business density, and growth rates. The Kauffman Index series consists of three in-depth studies—Startup Activity, Main Street Entrepreneurship, and Growth Entrepreneurship.

The Kauffman Index of Startup Activity is an early indicator of the beginnings of entrepreneurship in the United States, focusing on new business creation, market opportunity, and startup density. The Kauffman Index of Main Street Entrepreneurship measures business ownership and density of established, local small businesses. The Kauffman Index of Growth Entrepreneurship focuses on the growth of entrepreneurial businesses, as measured by growth in both revenue and employment.

In this release we present the Kauffman Index of Startup Activity, a comprehensive indicator of new business creation in the United States. The Startup Activity Index integrates several high-quality sources of timely entrepreneurship information into one composite indicator, relying on three components to measure startup activity:

- Rate of New Entrepreneurs
- Opportunity Share of New Entrepreneurs
- Startup Density

The Kauffman Index of Entrepreneurship series represents extensive research and attempts to present a balanced perspective on how to measure entrepreneurship. However, because we recognize that entrepreneurship is a complex phenomenon, we expect to further revise and enhance the Index in the coming years.

The specific indicators from each report help tell America's entrepreneurship story. National, state and local leaders can access all the reports, along with the data relevant to their locales, at [www.kauffmanindex.org](http://www.kauffmanindex.org).

## Startup Activity Executive Summary

The Kauffman Index of Startup Activity is a comprehensive indicator of new business creation in the United States, integrating several high-quality sources of timely entrepreneurship information into one composite indicator of startup activity. The Index captures business activity in all industries and is based on both a nationally representative sample size of more than a half million observations each year and on the universe of all employer businesses in the United States—which covers approximately five million companies. This allows us to look at both entrepreneurs and the startups they create.

This report presents trends in startup activity for the fifty United States and analyzes trends for states, looking at them in two cohorts: one for the twenty-five largest states by population and another for the twenty-five smallest states by population. Data on each state is benchmarked against the national average, with further detail available for metropolitan areas in the *Kauffman Index of Startup Activity | Metropolitan Area and City Trends* and trends and demographics at the national level in the *Kauffman Index of Startup Activity | National Trends*.

Startup activity rose in 2016—continuing an upward trend started in 2015. Only two years ago, the Startup Activity Index was at its lowest point in the last twenty years. Today it has gone up two years in a row, reaching close to the peak before the Great Recession drop, as show in Figure 1.

A principal driver of this year's uptick is the growth of opportunity entrepreneurship, accompanied by an increase in the rate of new entrepreneurs among women—covered in the *Kauffman Index of Startup Activity | National Trends*. High-performing metros include perennial favorites like Austin and San Francisco, as well as some less-highlighted places, such as Los Angeles and Houston—covered in the *Kauffman Index of Startup Activity | Metropolitan Area and City Trends*.

### State Trends in Startup Activity

#### Startup Activity and Rankings

- In the 2016 Startup Activity Index, thirty states had higher aggregate levels of new business activity when compared to the previous year. Smaller states felt more headwind in the most recent year, with eleven states contracting compared to contraction in just five larger states.
- Among the twenty-five largest states, the five states with the highest startup activity in the 2016 Index were Texas, Florida, California, New York, and

Colorado. Nineteen out of the twenty-five largest states had higher levels of startup activity in 2016 compared to last year.

- In the twenty-five smallest states, the five states with the highest startup activity in the 2016 Index were Montana, Nevada, Wyoming, Oklahoma, and Alaska. Eleven smaller states had higher Startup Activity Index measures this year.
- Among the twenty-five largest states, the three that experienced the biggest increase in ranks in 2016 were New Jersey, Michigan, and Minnesota. The three that experienced the biggest negative shifts in rank in 2016 compared to 2015 were Illinois, Louisiana, and South Carolina.
- Among the twenty-five smallest states, the three that experienced the biggest increase in ranks in 2016 were Oregon, Oklahoma, and North Dakota. The three that experienced the biggest negative shifts in rank in 2016 compared to 2015, with several ties, were Utah, Vermont, and Maine.

#### Rate of New Entrepreneurs

- Looking at the first component of the Startup Activity Index, the Rate of New Entrepreneurs varied widely across larger states in the 2016 Index, going from 180 new entrepreneurs for every 100,000 adults (Pennsylvania) in a given month to 390 new entrepreneurs for every 100,000 adults (California and Texas) in a given month.

- Among smaller states, the Rate of New Entrepreneurs ranged from a low in Iowa of 180 per 100,000 adults up to 500 new entrepreneurs per month for every 100,000 adults in Montana.

#### Opportunity Share of New Entrepreneurs

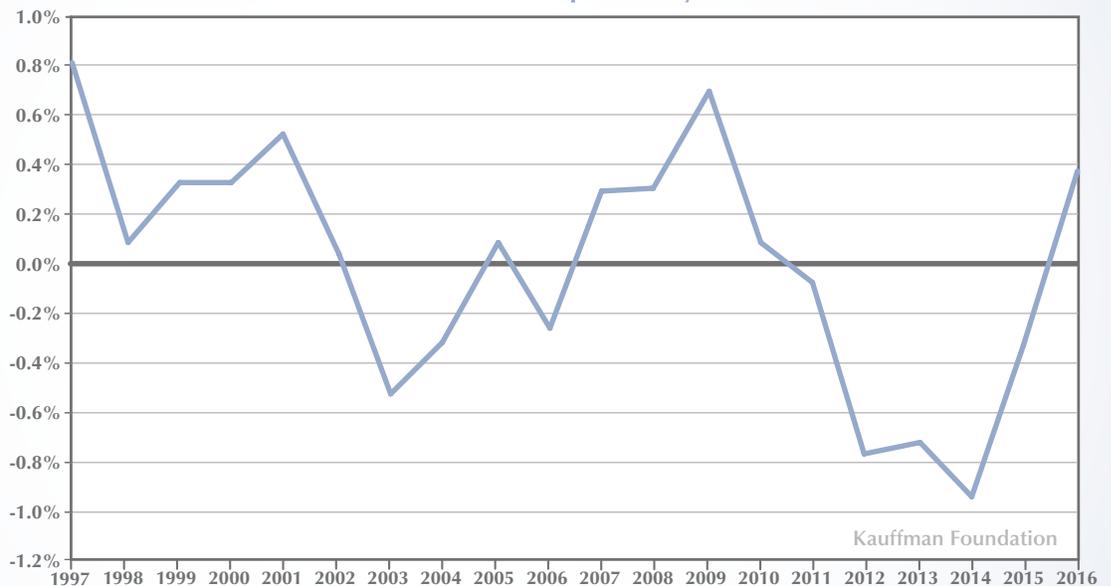
- Among larger states, the Opportunity Share of New Entrepreneurs—the second component of the Index—varied from 66.5 percent in Alabama to 90.7 in Ohio. This means that, in Alabama, approximately seven out of every twenty new entrepreneurs were previously unemployed, while in Ohio, about one out of every ten new entrepreneurs was previously unemployed.
- Narrowing in on the smaller states, the Opportunity Share of New Entrepreneurs ranged from 71.3 percent in Alaska to 90.8 percent in North Dakota.

#### Startup Density

- Startup Density—a component of the Index measuring larger startups that employ other people besides the founder—has high variation across larger states, ranging from 57.9 startups per 1,000 employer businesses in Wisconsin to 101.8 startups per 1,000 employer businesses in Florida.
- Among smaller states, Nevada topped out with 107.4 startups per 1,000 employer businesses, compared to West Virginia with 51.1 new employer businesses per 1,000 businesses.

The lowest levels of the Startup Activity Index occurred just two years ago for the 2014 Index.

Figure 1  
Kauffman Index of Startup Activity (1997–2016)



SOURCE: Authors' calculations using the CPS and the BDS. For an interactive version, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org)

- From 2006 to 2013, Startup Density declined at an average of 28 percent at the state level, indicating that larger startups, those that employ other people, remain precariously below historical norms.

## Understanding Startup Activity—A Look at the Indicators

The Kauffman Index of Startup Activity is a novel index measure of a broad range of startup activity in the United States—across national, state, and metropolitan-area levels. The index captures startup activity along three dimensions. First, it captures the Rate of New Entrepreneurs in the economy—the percentage of adults becoming entrepreneurs in a given month. Second, it captures the Opportunity Share of New Entrepreneurs, the percentage of new entrepreneurs driven primarily by “opportunity entrepreneurship” as opposed to “necessity entrepreneurship.” Third, it captures Startup Density, the rate at which businesses with employees are created in the economy. The combination of these three distinct and important dimensions of new business creation provides a broad view of startup activity in the country, across national, state, and metropolitan-area levels.

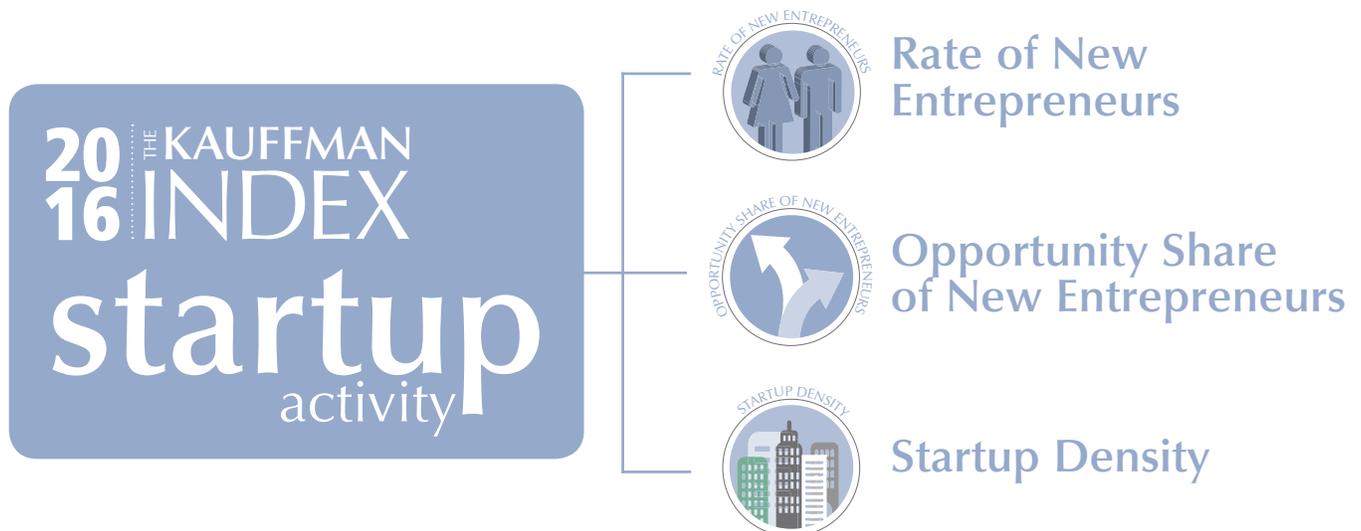
The Kauffman Index of Startup Activity is an early indicator of new business creation in the United States. Capturing new entrepreneurs in their first month and new employer businesses in their first year, the Index provides the earliest documentation of new business

development across the country. The Startup Activity Index captures all types of business activity and is based on nationally representative sample sizes of more than a half million observations each year or administrative data covering the universe of employer business entities. The separate components of the Index also provide evidence on potentially different trends in business creation created by “opportunity” business creation relative to unemployment-related (“necessity”) business creation over the business cycle. The Startup Activity Index improves over other possible measures of entrepreneurship because of its timeliness, dynamic nature, exclusion of “casual” businesses, and inclusion of all types of business activity, regardless of industry.

## The Components of the Kauffman Index of Startup Activity

The Kauffman Index of Startup Activity provides a broad index measure of business startup activity in the United States. It is an equally weighted index of three normalized measures of startup activity.<sup>1</sup> The three component measures of the Startup Activity Index are:

1. The **Rate of New Entrepreneurs** in the economy, calculated as the percentage of adults becoming entrepreneurs in a given month.
2. The **Opportunity Share of New Entrepreneurs**, calculated as the percentage of new entrepreneurs driven primarily by “opportunity” vs. “necessity.”



1. We normalize each of three measures by subtracting the mean and dividing by the standard deviation for that measure (i.e., create a z-score for each variable). This creates a comparable scale for including the three measures in the Startup Activity Index. We use annual estimates from 1996 to the latest year available (2012 or 2014) to calculate the mean and standard deviations for each component measure (see Methodology and Framework for more details).



## Rate of New Entrepreneurs

- Early and broad measure of business ownership.
- Measures the percent of the U.S. adult population that became entrepreneurs, on average, in a given month.
- Includes entrepreneurs with incorporated or unincorporated businesses, with or without employees.
- Data based on the Current Population Survey, jointly produced by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics.
- What the number means:
  - For example, the Rate of New Entrepreneurs was 0.33 percent for Colorado in the 2016 Index. That means that, on average, 330 people out of 100,000 adults became entrepreneurs in Colorado in each month.

3. The **Startup Density** of a region, measured as the number of new employer businesses, normalized by the business population.

Before presenting trends in the Startup Activity Index, we briefly discuss each component measure (see Methodology and Framework for more details).

First, the Rate of New Entrepreneurs captures the percentage of the adult, non-business-owner population

that starts a business each month. This component was formerly known as the Kauffman Index of Entrepreneurial Activity and was presented in a series of reports over about a decade (Fairlie 2014).<sup>2</sup> The Rate of New Entrepreneurs as measured here captures all new business owners, including those who own incorporated or unincorporated businesses and those who are employers or non-employers.<sup>3</sup> The Rate of New Entrepreneurs is calculated from matched data from the Current



## Opportunity Share of New Entrepreneurs

- Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities.
- Measures the percentage of new entrepreneurs who were not unemployed before starting their businesses (e.g., have been previously working for another organization or studying in school).
- This indicator is important for two reasons: 1) Entrepreneurs who were previously unemployed seem to be more likely to start businesses with lower growth potential, out of necessity. Thus, the Opportunity Share of New Entrepreneurs serves as a broad proxy for growth prospects. 2) This measure helps us understand changes in the Rate of New Entrepreneurs motivated by weak job markets, such as the one we had after the recent Great Recession. If the Rate of New Entrepreneurs goes up but the Opportunity Share of New Entrepreneurs is low, we can see that many new entrepreneurs are starting businesses coming out of unemployment, and arguably started their companies largely out of necessity.
- Data based on the Current Population Survey jointly produced by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics.
- What the number means:
  - For example, the United States Opportunity Share of New Entrepreneurs was 84 percent in the 2016 Index. That means that approximately eight out of every ten new entrepreneurs in this year started their businesses coming out of another job, school, or other labor market states. Meanwhile, two out of ten started their businesses directly coming out of unemployment.

2. See <http://www.kauffman.org/research-and-policy/kauffman-index-of-entrepreneurial-activity.aspx> for previous reports.

3. The U.S. Census Bureau notes that the definitions of non-employers and self-employed business owners are not the same. Although most self-employed business owners are non-employers, about a million self-employed business owners are classified as employer businesses. <http://www.census.gov/econ/nonemployer/index.html>.

Population Survey (CPS), a monthly survey conducted by the U.S. Census Bureau and the Bureau of Labor Statistics.

Another component measure of the Startup Activity Index is the percentage of new entrepreneurs driven by “opportunity entrepreneurship” as opposed to “necessity entrepreneurship.” The Rate of New Entrepreneurs includes businesses of all types, and thus cannot cleanly disaggregate between the creation of high-growth potential businesses and individuals starting businesses because of limited job opportunities.<sup>4</sup> One approximate method for disentangling these two types of startups is to examine the share of new entrepreneurs coming out of unemployment compared to the share of the new entrepreneurs coming out of wage and salary work, school, or other labor market statuses (Fairlie 2014). Individuals starting businesses out of unemployment might be more inclined to start those businesses out of necessity than opportunity (although many of those businesses eventually could be very successful).

The third component of the Startup Activity Index is a measure of the rate of creation of businesses with employees. These employer businesses are generally larger and have higher growth potential than non-employer businesses do. Startup Density is defined as the number of newly established employer businesses to the total employer business population (in 1,000s). Both numbers come from the U.S. Census Bureau’s Business Dynamics Statistics (BDS) and are taken from the universe of businesses with payroll tax records in the United States, as recorded by the Internal Revenue Service. Although new businesses with employees represent only a small share of

all new businesses, they represent an important group for job creation and economic growth.

In this report, we present estimates of the Startup Activity Index for the twenty-five largest U.S. states by population and the twenty-five smallest U.S. states by population. This includes rankings and maps. We then present trends in each of the component measures of the Index.

## A Big-Tent Approach to Entrepreneurship

The Kauffman Index of Entrepreneurship—the umbrella under which all Kauffman Index reports reside—attempts to view the complex phenomenon of entrepreneurship from many angles, each adding insight into the people and businesses that contribute to America’s overall entrepreneurial dynamism.

Entrepreneurship is not a monolithic phenomenon, and it includes many moving parts. Creating new businesses is a different economic activity from running small businesses, which in turn is different from growing businesses. The Kauffman Index attempts to measure concretely these different kinds of entrepreneurship—Startup Activity, Main Street Entrepreneurship, and Growth. The Kauffman Index of Startup Activity focuses on the beginnings of entrepreneurship, specifically new business creation, market opportunity, and startup density. The Kauffman Index of Main Street Entrepreneurship focuses on the prevalence of local, small business and



### Startup Density

- Number of startup firms by total employer firm population.
- Startup businesses here are defined as employer firms less than one year old employing at least one person besides the owner. All industries are included on this measure.
- Measures the number of new employer startup businesses normalized by the employer firm population of an area. Because companies captured by this indicator have employees, they tend to be at a more advanced stage than are the companies in the Rate of New Entrepreneurs measure.
- Data based on the U.S. Census Bureau’s Business Dynamics Statistics.
- What the number means:
  - For example, the 2016 Index Startup Density for the New York metropolitan area was 89.1 per 1,000 businesses. That means that, for every 1,000 employer businesses in the New York metro area, there were 89.1 employer startup firms that were less than one year old in this year.

4. See Fairlie (2011) for more evidence and discussion.

Table 1  
**Summary of Components Used Across Reports**

Startup Activity	Main Street Entrepreneurship	Growth Entrepreneurship
 <p><b>Rate of New Entrepreneurs</b>            The percentage of adults transitioning into entrepreneurship at a given point in time</p>	 <p><b>Rate of Business Owners</b>            The percentage of adults who are business owners in a locality at a given point in time</p>	 <p><b>Rate of Startup Growth</b>            The average growth of a cohort of new startups in their first five years</p>
 <p><b>Opportunity Share of New Entrepreneurs</b>            The percentage of new entrepreneurs driven primarily by “opportunity” vs. “necessity”</p>		 <p><b>Share of Scaleups</b>            The number of businesses that started small and grew to employ at least fifty people by their tenth year of operation as a percentage of all businesses ten years and younger</p>
 <p><b>Startup Density</b>            The number of new employer businesses, normalized by population</p>	 <p><b>Established Small Business Density</b>            The number of businesses older than five years with less than fifty employees, normalized by population</p>	 <p><b>High-Growth Company Density</b>            The number of fast-growing companies with at least \$2 million in annual revenue, normalized by business population</p>

local business ownership. The Kauffman Index of Growth Entrepreneurship focuses on growing companies. Together, these three indices present a more holistic view of entrepreneurship in America.

Each of the indices that make up the Kauffman Index is constructed to give a spectrum of entrepreneurship measures from an industry-agnostic perspective. Table 1 summarizes the approach we use across the reports.

While at first pass, one might expect that certain patterns that appear in the Startup Activity Index to be tied to patterns that appear in future years of the Main Street and Growth Entrepreneurship Indices, we have taken steps to mitigate direct relationships. Different locations will have different performances on each of the indices, and high (or low) levels of activity in any given index does not cause or imply high (or low) levels of activity in the others.

## State Trends in Startup Activity

The Kauffman Index of Startup Activity calculates a broad index measure of business startup activity across all fifty states of the United States.

Nationally, the 2016 Startup Activity Index rose for the second year in a row, as shown in Figure 1 on page 5, rebounding from its lowest point in almost twenty years.<sup>5</sup> Most states followed a similar positive trajectory in the 2016 Index, with thirty states experiencing an increase in startup activity. Six states saw little to no changes compared to the previous year, and fourteen saw their startup activity levels fall in the past year.

Throughout this report, to facilitate comparison across peer groups of states, we focus our analysis on looking at states in two groups: the twenty-five largest states by population and the twenty-five smallest states by population.<sup>6</sup> As such, the twenty-five smallest states have a median population of 1.8 million people, with resident populations ranging from 500,000 residents to 4.5 million residents. The twenty-five largest states have a median population of 6.9 million people, with resident populations ranging from 4.5 million to about 38 million.

While the states are grouped by population, they tend to share an additional similarity: larger states are overwhelmingly urban, while smaller states are less so. Among the twenty-five largest states, twenty-four have 65 percent or more urban population, and sixteen of them are among the twenty-five most urban states in the United States.<sup>7</sup> On the other hand, among the twenty-five smallest states, populations tend to be more dispersed, with twelve of them having fewer than 65 percent urban population and just nine of them among the twenty-five U.S. states with the highest share of urban population.

While most states experienced an increase in startup activity, changes in state rankings—which measure relative yearly performance across states, as opposed to performance relative to a state’s own startup activity rates in the previous year—were different. Nineteen states ranked higher than they did last year, nine experienced no changes in rankings, and twenty-two ranked lower. For complete rankings, see Table 2 for larger states rankings and Table 3 for smaller states rankings.

### Startup Activity—Trends in Larger States

For the twenty-five largest states in the country, Texas was top in startup activity, followed by Florida, California, New York, and Colorado. Among larger states, eleven ranked higher than they did last year, two experienced no changes in rankings, and another twelve ranked lower. Among the twenty-five largest states, the three that experienced the biggest increase in ranks in 2016 were:

Larger States with the Biggest Positive Shift in Rank—Kauffman Index of Startup Activity			
State	Rank 2016	Rank 2015	Change
New Jersey	7	18	11
Michigan	11	19	8
Minnesota	21	24	3

The three larger states that experienced the biggest negative shifts in rank in 2016 compared to 2015 were:

Larger States with the Biggest Negative Shift in Rank—Kauffman Index of Startup Activity			
State	Rank 2016	Rank 2015	Change
Illinois	19	10	-9
Louisiana	10	5	-5
South Carolina	14	9	-5

**Among the twenty-five largest states, twenty-four have 65 percent or more urban population, and sixteen of them are among the twenty-five most urban states in the United States.<sup>6</sup>**

5. A full discussion is available in the national report for the Kauffman Startup Activity Index.

6. We use the Bureau of Economic Analysis population data for 2012 to do this grouping.

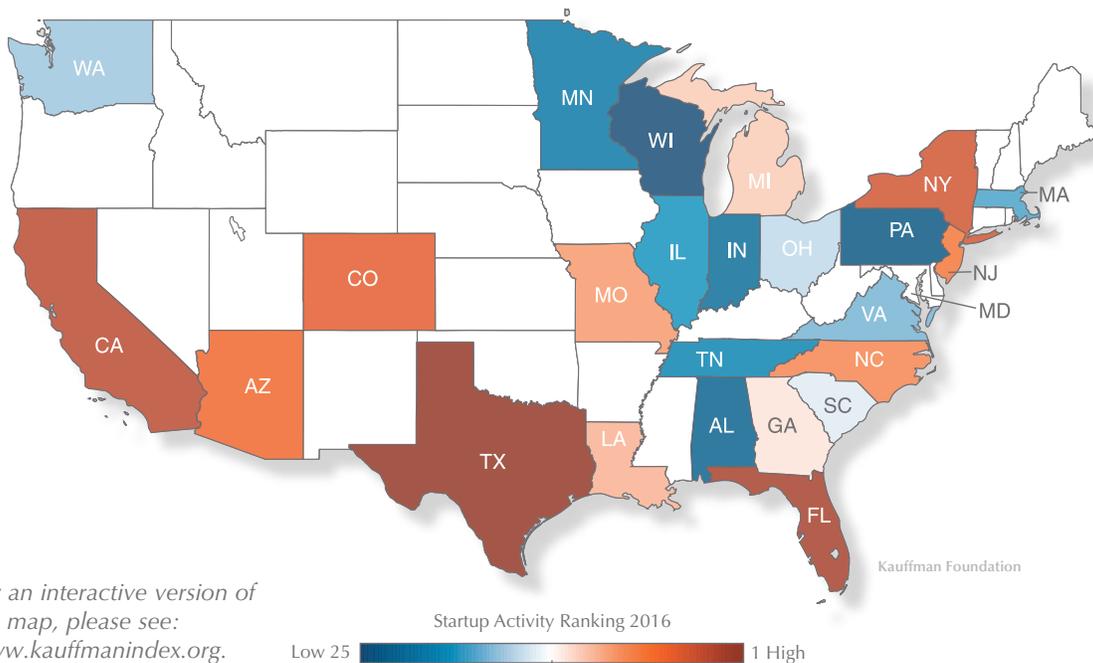
7. According to the U.S. Census Bureau data (<https://www.census.gov/geo/reference/ua/urban-rural-2010.html>).

TABLE 2  
**Kauffman Index of Startup Activity—Twenty-Five Largest U.S. States by Population**

Rank 2016	Index 2016	State Name	Rank 2015	Change in Rank	Rate of New Entrepreneurs	Opportunity Share of New Entrepreneurs	Startup Density
1	1.30	Texas	3	2	0.39%	80.95%	91.4
2	1.01	Florida	1	-1	0.36%	79.54%	101.8
3	0.95	California	4	1	0.39%	78.49%	88.1
4	0.73	New York	6	2	0.35%	82.96%	85.7
5	0.69	Colorado	2	-3	0.33%	85.08%	87.2
6	0.27	Arizona	7	1	0.33%	80.78%	87.7
7	0.25	New Jersey	18	11	0.32%	85.22%	76.9
8	0.09	North Carolina	8	0	0.33%	82.56%	75.5
9	-0.09	Missouri	10	1	0.29%	83.00%	88.3
10	-0.59	Louisiana	5	-5	0.28%	86.36%	65.1
11	-0.85	Michigan	19	8	0.29%	82.00%	66.1
12	-0.87	Georgia	14	2	0.29%	76.72%	83.5
13	-0.89	Maryland	12	-1	0.28%	82.30%	69.1
14	-0.90	South Carolina	9	-5	0.29%	79.80%	72.1
15	-0.92	Ohio	13	-2	0.24%	90.68%	59.3
16	-1.22	Washington	17	1	0.24%	81.32%	81.3
17	-1.33	Virginia	16	-1	0.24%	82.49%	73.7
18	-1.48	Massachusetts	15	-3	0.29%	75.67%	66.6
19	-1.55	Illinois	10	-9	0.23%	82.22%	72.2
20	-1.66	Tennessee	21	1	0.25%	78.20%	72.2
21	-2.24	Minnesota	24	3	0.25%	75.24%	62.8
22	-2.55	Indiana	20	-2	0.23%	74.98%	63.5
23	-3.08	Alabama	22	-1	0.25%	66.45%	64.8
24	-3.30	Pennsylvania	23	-1	0.18%	75.56%	61.5
25	-3.40	Wisconsin	25	0	0.19%	74.19%	57.9

For an interactive version of the rankings, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

Figure 2  
**2016 Larger States Rankings for the Kauffman Index of Startup Activity**



### Startup Activity—Trends in Smaller States

For the twenty-five smallest states in the country, Montana was top in startup activity, followed by Nevada, Wyoming, Oklahoma, and Alaska. Among smaller states, eight ranked higher than they did last year, seven experienced no changes in rankings, and another ten ranked lower. Among the twenty-five smallest states, the three that experienced the biggest increase in ranks in 2016 were:

Smaller States with the Biggest Positive Shift in Rank— Kauffman Index of Startup Activity			
State	Rank 2016	Rank 2015	Change
Oregon	15	22	7
Oklahoma	4	8	4
North Dakota	7	11	4

The three smaller states that experienced the biggest negative shifts in rank in 2016 compared to 2015, with several ties, were:

Smaller States with the Biggest Negative Shift in Rank— Kauffman Index of Startup Activity			
State	Rank 2016	Rank 2015	Change
Utah	10	6	-4
Vermont	14	10	-4
Maine	20	16	-4

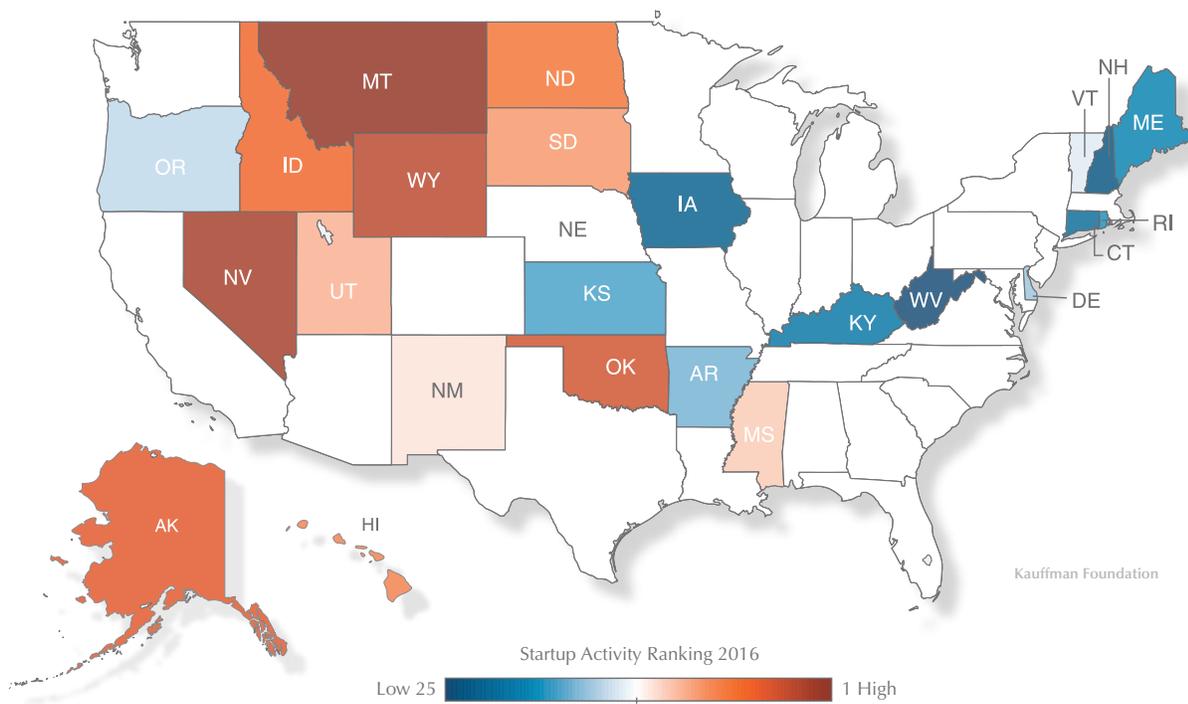
TABLE 3

### Kauffman Index of Startup Activity—Twenty-Five Smallest U.S. States by Population

Rank 2016	Index 2016	State Name	Rank 2015	Change in Rank	Rate of New Entrepreneurs	Opportunity Share of New Entrepreneurs	Startup Density
1	2.69	Montana	1	0	0.50%	84.12%	71.7
2	2.28	Nevada	2	0	0.38%	87.40%	107.4
3	1.63	Wyoming	5	2	0.39%	89.48%	73.3
4	1.30	Oklahoma	8	4	0.40%	84.72%	73.5
5	1.11	Alaska	3	-2	0.48%	71.32%	72.4
6	0.63	Idaho	4	-2	0.32%	89.36%	75.6
7	0.47	North Dakota	11	4	0.28%	90.84%	85.5
8	0.30	Hawaii	7	-1	0.33%	88.69%	61.7
9	0.27	South Dakota	9	0	0.35%	84.37%	65.4
10	-0.02	Utah	6	-4	0.28%	83.62%	93.5
11	-0.37	Mississippi	13	2	0.33%	81.25%	64.8
12	-0.44	New Mexico	12	0	0.32%	81.06%	67.9
13	-0.74	Nebraska	15	2	0.25%	90.29%	61.7
14	-0.81	Vermont	10	-4	0.36%	75.71%	53.8
15	-0.93	Oregon	22	7	0.31%	75.83%	74.5
16	-0.98	Delaware	14	-2	0.24%	86.22%	72.6
17	-1.13	Arkansas	19	2	0.27%	81.37%	69.2
18	-1.33	Kansas	17	-1	0.27%	81.25%	62.7
19	-1.37	Rhode Island	21	2	0.23%	87.30%	61.0
20	-1.45	Maine	16	-4	0.29%	77.68%	60.7
21	-1.48	Kentucky	18	-3	0.28%	75.86%	71.0
22	-1.51	Connecticut	20	-2	0.29%	76.30%	63.7
23	-2.04	Iowa	23	0	0.18%	89.59%	55.8
24	-2.26	New Hampshire	24	0	0.24%	77.61%	59.1
25	-2.84	West Virginia	25	0	0.21%	78.77%	51.1

For an interactive version of the rankings, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

Figure 3  
2016 Smaller States Rankings for the Kauffman Index of Startup Activity



For an interactive version of the map, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

TABLE 4  
 Combined All States List—Kauffman Index of Startup Activity

Index 2016	State Name	Rate of New Entrepreneurs	Opportunity Share of New Entrepreneurs	Startup Density
2.69	Montana	0.50%	84.12%	71.7
2.28	Nevada	0.38%	87.40%	107.4
1.63	Wyoming	0.39%	89.48%	73.3
1.3	Oklahoma	0.40%	84.72%	73.5
1.3	Texas	0.39%	80.95%	91.4
1.11	Alaska	0.48%	71.32%	72.4
1.01	Florida	0.36%	79.54%	101.8
0.95	California	0.39%	78.49%	88.1
0.73	New York	0.35%	82.96%	85.7
0.69	Colorado	0.33%	85.08%	87.2
0.63	Idaho	0.32%	89.36%	75.6
0.47	North Dakota	0.28%	90.84%	85.5
0.3	Hawaii	0.33%	88.69%	61.7
0.27	South Dakota	0.35%	84.37%	65.4
0.27	Arizona	0.33%	80.78%	87.7
0.25	New Jersey	0.32%	85.22%	76.9
0.09	North Carolina	0.33%	82.56%	75.5
-0.02	Utah	0.28%	83.62%	93.5
-0.09	Missouri	0.29%	83.00%	88.3
-0.37	Mississippi	0.33%	81.25%	64.8
-0.44	New Mexico	0.32%	81.06%	67.9
-0.59	Louisiana	0.28%	86.36%	65.1
-0.74	Nebraska	0.25%	90.29%	61.7
-0.81	Vermont	0.36%	75.71%	53.8
-0.85	Michigan	0.29%	82.00%	66.1
-0.87	Georgia	0.29%	76.72%	83.5
-0.89	Maryland	0.28%	82.30%	69.1
-0.9	South Carolina	0.29%	79.80%	72.1
-0.92	Ohio	0.24%	90.68%	59.3
-0.93	Oregon	0.31%	75.83%	74.5
-0.98	Delaware	0.24%	86.22%	72.6
-1.13	Arkansas	0.27%	81.37%	69.2
-1.22	Washington	0.24%	81.32%	81.3
-1.33	Kansas	0.27%	81.25%	62.7
-1.33	Virginia	0.24%	82.49%	73.7
-1.37	Rhode Island	0.23%	87.30%	61.0
-1.45	Maine	0.29%	77.68%	60.7
-1.48	Kentucky	0.28%	75.86%	71.0
-1.48	Massachusetts	0.29%	75.67%	66.6
-1.51	Connecticut	0.29%	76.30%	63.7
-1.55	Illinois	0.23%	82.22%	72.2
-1.66	Tennessee	0.25%	78.20%	72.2
-2.04	Iowa	0.18%	89.59%	55.8
-2.24	Minnesota	0.25%	75.24%	62.8
-2.26	New Hampshire	0.24%	77.61%	59.1
-2.55	Indiana	0.23%	74.98%	63.5
-2.84	West Virginia	0.21%	78.77%	51.1
-3.08	Alabama	0.25%	66.45%	64.8
-3.3	Pennsylvania	0.18%	75.56%	61.5
-3.4	Wisconsin	0.19%	74.19%	57.9

For an interactive version of the rankings, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

In the following sections, we discuss state-level trends for each component of the Startup Activity Index: 1) Rate of New Entrepreneurs, 2) Opportunity Share of New Entrepreneurs, and 3) Startup Density.



## State Trends in Rate of New Entrepreneurs

The Rate of New Entrepreneurs component of the Kauffman Index is a broad measure of startup activity capturing the percentage of the adult population starting a new business each month—regardless of incorporation status and how many people the business employs, if any. We use the U.S. Census Bureau Current Population Survey as the data source for this rate, a source with a nationally representative sample with more than a half million observations each year. The Rate of New Entrepreneurs is calculated on a three-year moving average for states, from 1998 to 2015—the latest year with data available.

The Rate of New Entrepreneurs provides a very early measure of startup activity—when someone first starts working on a business as his or her main job.

The Rate of New Entrepreneurs varies across states, and does so at a wider range for smaller states than for larger states.

### Rate of New Entrepreneurs—Trends in Larger States

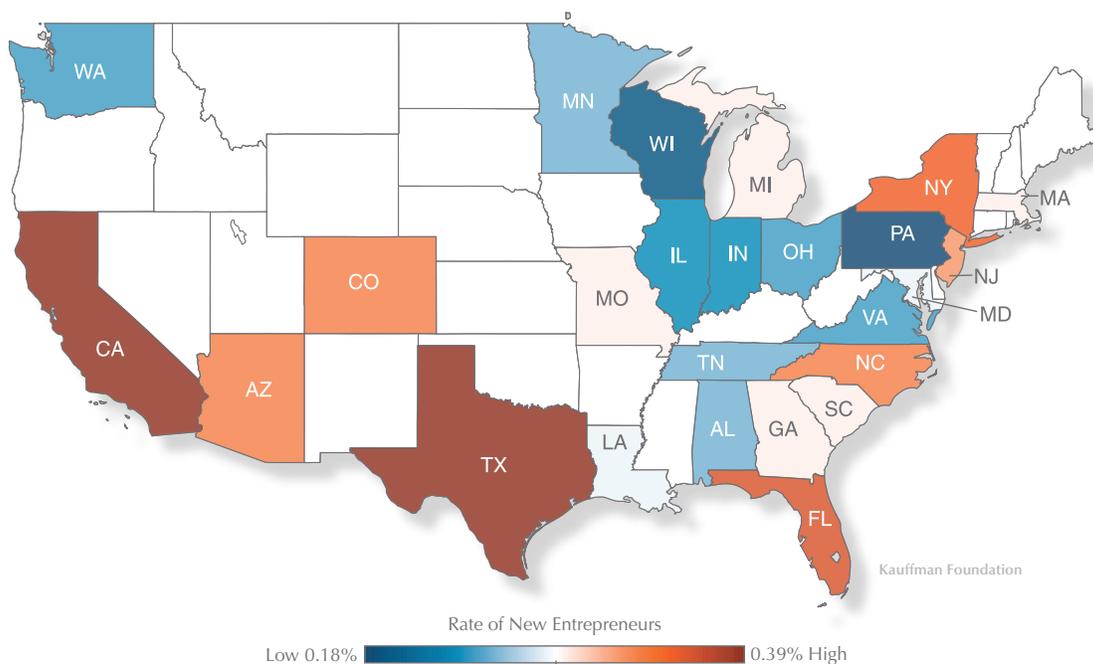
Among the twenty-five largest states, the Rate of New Entrepreneurs ranged from 0.18 percent in Pennsylvania to 0.39 percent in Texas and California. On the lower end of the spectrum, Pennsylvania’s Rate of New Entrepreneurs of 0.18 percent means that 180 out of every 100,000 adults became entrepreneurs per month in the state. On the high end of the spectrum, the Texas and California rates of 0.39 percent means that 390 out of every 100,000 adults became entrepreneurs per month in each of these states.

Of the twenty-five largest states in the country, Texas, California, Florida, and New York fared particularly well on this component of the Kauffman Index of Startup Activity.



Figure 4

### Rate of New Entrepreneurs by State | Twenty-Five Largest U.S. States by Population 2016 Kauffman Index of Startup Activity



For an interactive version of the map, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

### Rate of New Entrepreneurs— Trends in Smaller States

Among the twenty-five smaller states, the Rate of New Entrepreneurs ranged from 0.18 percent in Iowa to 0.50 percent in Montana. On the lower end of the spectrum, Iowa's Rate of New Entrepreneurs of 0.18 percent means that 180 out of every 100,000 adults

became entrepreneurs per month in the state. On the high end of the spectrum, Montana's rate of 0.50 percent means that 500 out of every 100,000 adults became entrepreneurs per month in the state.

Of the twenty-five smallest states in the country, Montana, Alaska, Oklahoma, Wyoming, and Nevada fared particularly well on this component of the Kauffman Index of Startup Activity.

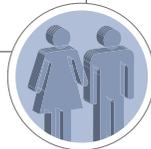
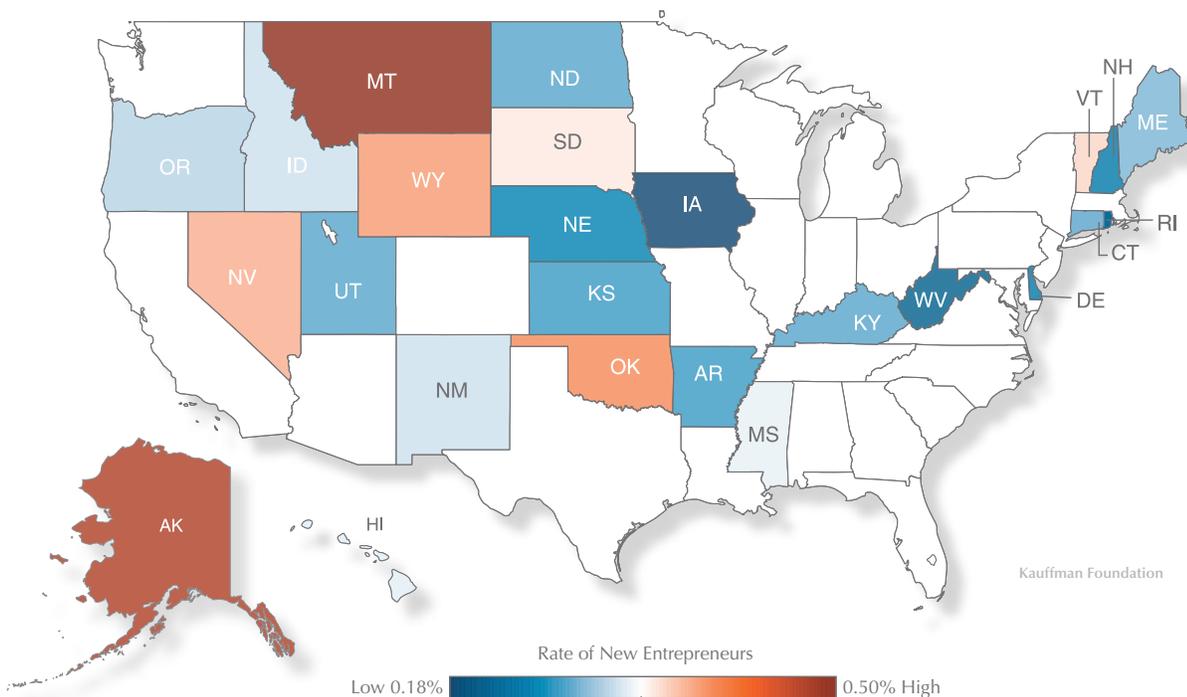


Figure 5  
Rate of New Entrepreneurs by State | Twenty-Five Smallest U.S. States by Population  
2016 Kauffman Index of Startup Activity



For an interactive version of the map, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).



## State Trends in Opportunity Share of New Entrepreneurs

The Opportunity Share of New Entrepreneurs component of the Kauffman Index of Startup Activity measures the percentage of the new entrepreneurs—measured by Rate of New Entrepreneurs described in the previous section—not coming out of unemployment. For each state, we calculate Opportunity Shares of New Entrepreneurs on a three-year moving average, from 1998 to 2015, the latest year with data available. The data source for this indicator is the U.S. Census Bureau Current Population Survey.

The Opportunity Share provides us additional nuance to understand the Rate of New Entrepreneurs. Entrepreneurs coming from unemployment are more likely to start new companies for necessity reasons rather than for opportunity reasons; thus, Opportunity Share is a broad proxy used to identify the new businesses more likely to grow. Of course, entrepreneurs coming out of unemployment also can achieve high growth,

but Opportunity Share can give us an early indicator of potential. Moreover, the Opportunity Share helps us understand changes in the Rate of New Entrepreneurs that potentially are driven by weak job markets.

As with other Startup Activity indicators, there is high variance on Opportunity Share across areas of the country.

### Opportunity Share of New Entrepreneurs—Trends in Larger States

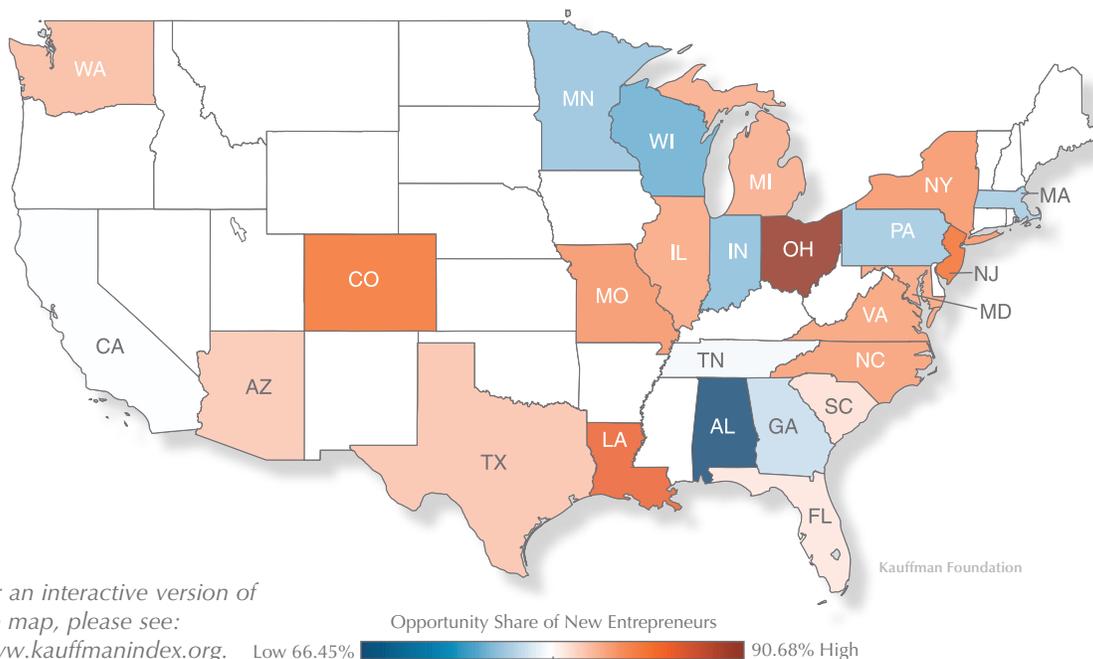
Among the twenty-five largest states, the Opportunity Share of New Entrepreneurs ranged from 64.5 percent in Alabama to 90.7 percent in Ohio. On the lower end of the spectrum, Alabama’s Opportunity Share of New Entrepreneurs of 64.5 percent means that out of every 100 new entrepreneurs in Alabama, approximately thirty-six came directly from unemployment. On the high end of the spectrum, Ohio’s share of 90.7 percent means that only nine out of every 100 new entrepreneurs in the state came directly from unemployment—or just under one in ten.

Of the twenty-five largest states in the country, Ohio, Louisiana, New Jersey, and Colorado fared particularly well on this component of the Kauffman Index of Startup Activity.



Figure 6

### Opportunity Share of New Entrepreneurs by State | Twenty-Five Largest U.S. States by Population | 2016 Kauffman Index of Startup Activity



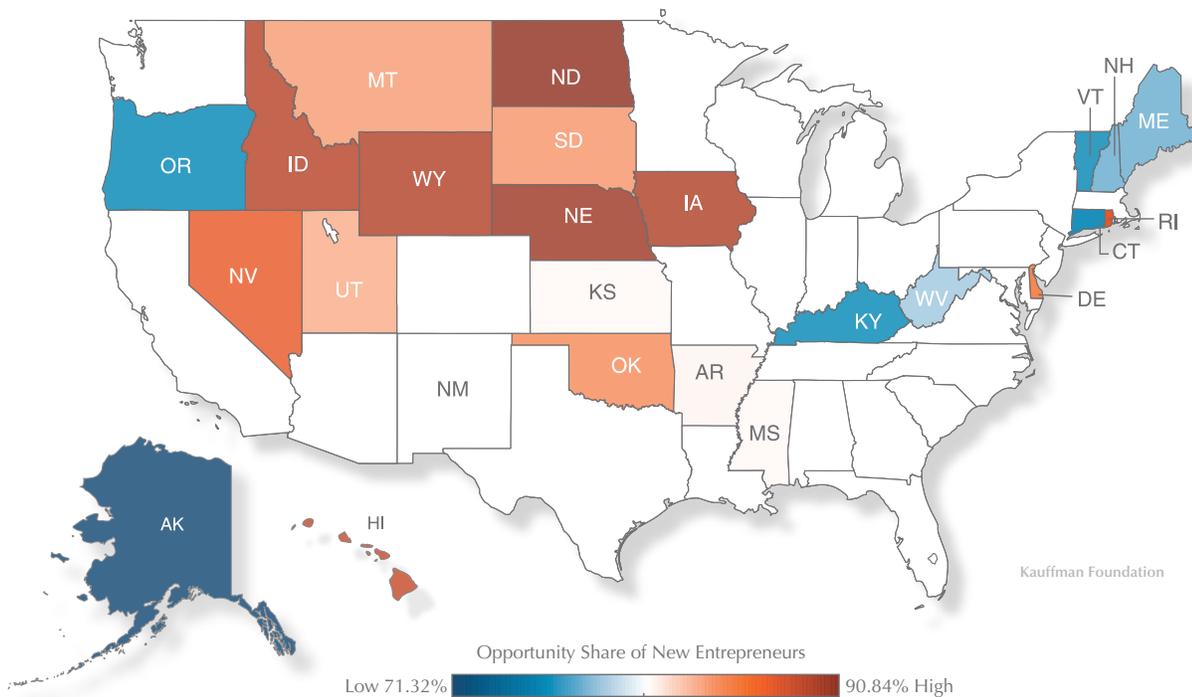
### Opportunity Share of New Entrepreneurs—Trends in Smaller States

Among the twenty-five smallest states, the Opportunity Share of New Entrepreneurs ranged from 71.3 percent in Alaska to 90.8 percent in North Dakota. On the lower end of the spectrum, Alaska's Opportunity Share of New Entrepreneurs of 71.3 percent means that out of every ten new entrepreneurs in Alabama, approximately three came directly from unemployment.

On the high end of the spectrum, Alaska's share of 90.8 percent means that only one out of every ten new entrepreneurs in the state came directly from unemployment.

Of the twenty-five smallest states in the country, North Dakota, Nebraska, Iowa, Wyoming, and Idaho fared particularly well on this component of the Kauffman Index of Startup Activity.

Figure 7  
Opportunity Share of New Entrepreneurs by State | Twenty-Five Smallest U.S. States by Population | 2016 Kauffman Index of Startup Activity



For an interactive version of the map, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).



## State Trends in Startup Density

The Startup Density component of the Kauffman Index measures the number of startups per 1,000 employer businesses. Here, we define startups as firms that are less than one year old and employing at least one person. This is a yearly measure calculated from the U.S. Census Bureau’s Business Dynamics Statistics—a dataset covering more than five million companies, the universe of employer businesses in the United States.

We present this indicator going back from 1977 to 2013, the latest year for which the data are available. This measure differs from the Rate of New Entrepreneurs in two key ways:

1. The Rate of New Entrepreneurs tracks the percentage of individuals starting new businesses, while the Startup Density indicator tracks the new businesses themselves; and
2. The Rate of New Entrepreneurs is a very early and broad measure of startup activity, including all entrepreneurs, regardless of how many people their businesses employ, if any.

Startup Density only includes businesses employing at least one person—thus being a slightly more mature measure of startup activity.

Both researchers and entrepreneurs have suggested density as a key indicator of vibrancy in entrepreneurial ecosystems, and there is high variation on this indicator across U.S. states (Stangler and Bell-Masterson 2015 and Feld 2012).

### Startup Density—Trends in Larger States

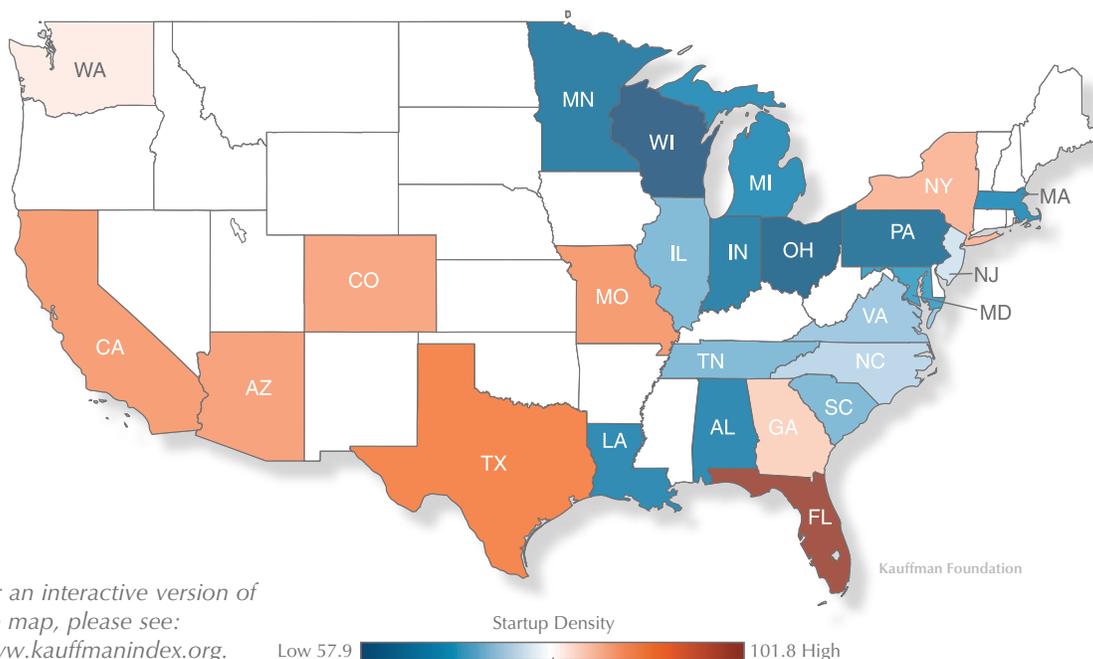
Among the twenty-five largest states, the Startup Density ranges all the way from the lower end of 57.9 startups per 1,000 employer firms in Wisconsin to the higher end of 101.8 startups per 1,000 employer firms in Florida. This means that the density of startups in Florida is 76 percent higher than the density of startups in Wisconsin.

Compared to the U.S. Startup Density of 80.4 startups per 1,000 employer businesses for the latest year with data available, nine of the twenty-five largest states had higher density rates. Florida, Texas, Missouri, and California did particularly well on this indicator among the largest states.



Figure 8

### Startup Density by State | Twenty-Five Largest U.S. States by Population 2016 Kauffman Index of Startup Activity



### Startup Density—Trends in Smaller States

Among the twenty-five smallest states, the Startup Density ranges all the way from the lower end of 51.1 startups per 1,000 employer firms in West Virginia to the higher end of 107.4 startups per 1,000 employer firms in Nevada. This means that the density of startups in the Nevada area is more than twice as high as the density of startups in West Virginia.

Compared to the U.S. Startup Density of 80.4 startups per 1,000 employer businesses for the latest year with data available, three of the twenty-five smallest states

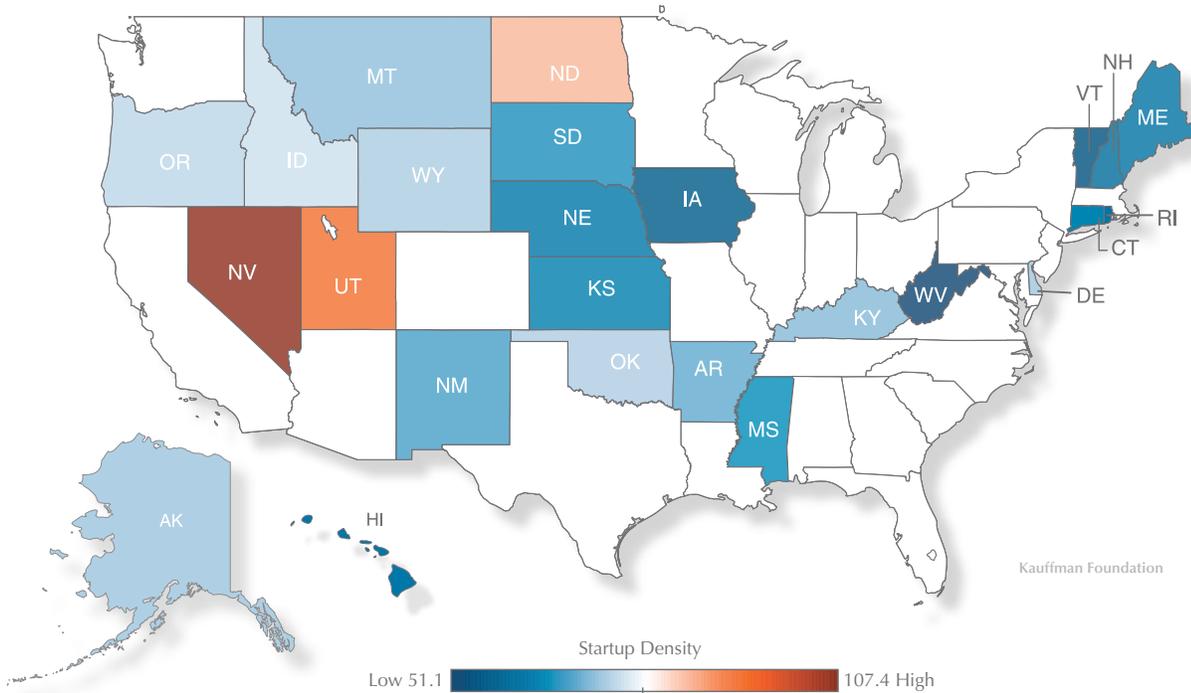
had higher density rates. Nevada, Utah, and North Dakota did particularly well on this indicator among the smallest states.

Startup Density in the United States overall has been stuck roughly 20 percent lower than pre-Great Recession levels for the last four years and has trended downward for some time. A similar downward trend holds for states, with larger startups, those that employ other people, remaining precariously below historical norms.

Forthcoming research by the Kauffman Foundation will explore these trends at the state and metro levels.



Figure 9  
Startup Density by State | Twenty-Five Smallest U.S. States by Population  
2016 Kauffman Index of Startup Activity



For an interactive version of the map, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

# Longer Term Trends and Going Beyond the Forty Largest Metros by Population

by Derek Ozkal

The Kauffman Index of Startup Activity uses new data available each year to capture the most recent annual change in the rate of new entrepreneurs, the opportunity share of new entrepreneurs, and startup density. It uses these three key metrics to provide a snapshot of startup activity in the United States overall, in each state, and in the forty largest metropolitan areas. This approach provides substantial detail on very recent trends and shows positive year-over-year changes in startup activity at a national level and in the majority of the forty most populous metropolitan areas.

A forthcoming report by the Kauffman Foundation, Ozkal & Russell (2016), uses some of the same data found in this Kauffman Index report, but considers a longer time period in order to understand more about the impact of the Great Recession on new business creation. Ozkal & Russell (2016) focuses on entrepreneurship data in three different time periods: before the Great Recession, during the Great Recession, and after the Great Recession. In each of these time periods, the report considers the number of new startups each year, the firm creation rate, and employment in startups at the national, state, and metro levels. Ozkal & Russell (2016) also incorporates statistics on firm deaths in order to evaluate changes in economic dynamism during these time periods, as well.

In contrast to the optimistic picture presented by the short-term growth in the Kauffman Index, Ozkal & Russell (2016) find cause for concern. Looking over a longer term, this report indicates that firm dynamism in the post-recessionary period does not show a recovery to pre-recessionary levels for most metros. In some recent years, firm births were lower than firm deaths, and employment gains in startups were lower than employment losses through firm deaths. In short, despite the recent growth in startup activity identified in this Kauffman Index report, firm dynamism over the long term, especially outside the forty most populous metropolitan areas, has not recovered to pre-recessionary levels. The two reports complement each other, offering different perspectives and context for the same metrics

# Appendix 1:

## STATE STARTUP ACTIVITY PROFILES, ORDERED BY RANK

### 25 LARGEST STATES BY POPULATION

TABLE 2  
Kauffman Index of Startup Activity—Twenty-Five Largest U.S. States by Population

Rank 2016	Index 2016	State Name	Rank 2015	Change in Rank	Rate of New Entrepreneurs	Opportunity Share of New Entrepreneurs	Startup Density
1	1.30	Texas	3	2	0.39%	80.95%	91.4
2	1.01	Florida	1	-1	0.36%	79.54%	101.8
3	0.95	California	4	1	0.39%	78.49%	88.1
4	0.73	New York	6	2	0.35%	82.96%	85.7
5	0.69	Colorado	2	-3	0.33%	85.08%	87.2
6	0.27	Arizona	7	1	0.33%	80.78%	87.7
7	0.25	New Jersey	18	11	0.32%	85.22%	76.9
8	0.09	North Carolina	8	0	0.33%	82.56%	75.5
9	-0.09	Missouri	10	1	0.29%	83.00%	88.3
10	-0.59	Louisiana	5	-5	0.28%	86.36%	65.1
11	-0.85	Michigan	19	8	0.29%	82.00%	66.1
12	-0.87	Georgia	14	2	0.29%	76.72%	83.5
13	-0.89	Maryland	12	-1	0.28%	82.30%	69.1
14	-0.90	South Carolina	9	-5	0.29%	79.80%	72.1
15	-0.92	Ohio	13	-2	0.24%	90.68%	59.3
16	-1.22	Washington	17	1	0.24%	81.32%	81.3
17	-1.33	Virginia	16	-1	0.24%	82.49%	73.7
18	-1.48	Massachusetts	15	-3	0.29%	75.67%	66.6
19	-1.55	Illinois	10	-9	0.23%	82.22%	72.2
20	-1.66	Tennessee	21	1	0.25%	78.20%	72.2
21	-2.24	Minnesota	24	3	0.25%	75.24%	62.8
22	-2.55	Indiana	20	-2	0.23%	74.98%	63.5
23	-3.08	Alabama	22	-1	0.25%	66.45%	64.8
24	-3.30	Pennsylvania	23	-1	0.18%	75.56%	61.5
25	-3.40	Wisconsin	25	0	0.19%	74.19%	57.9

For an interactive version of the rankings, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

## Startup Activity Rank Larger States

2016	2015
<b>1</b>	<b>3</b>

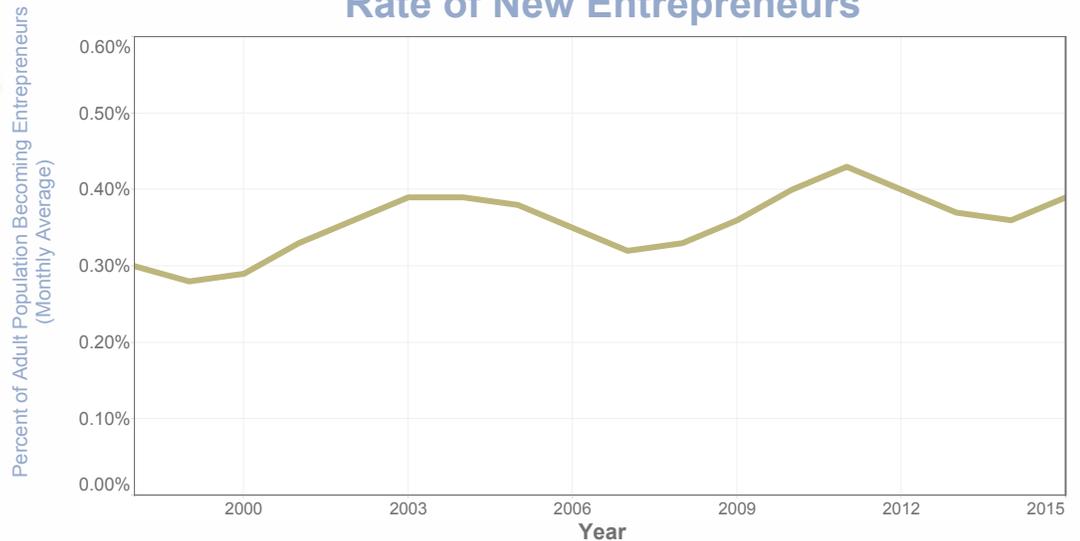
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.39%</b>	<b>0.36%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



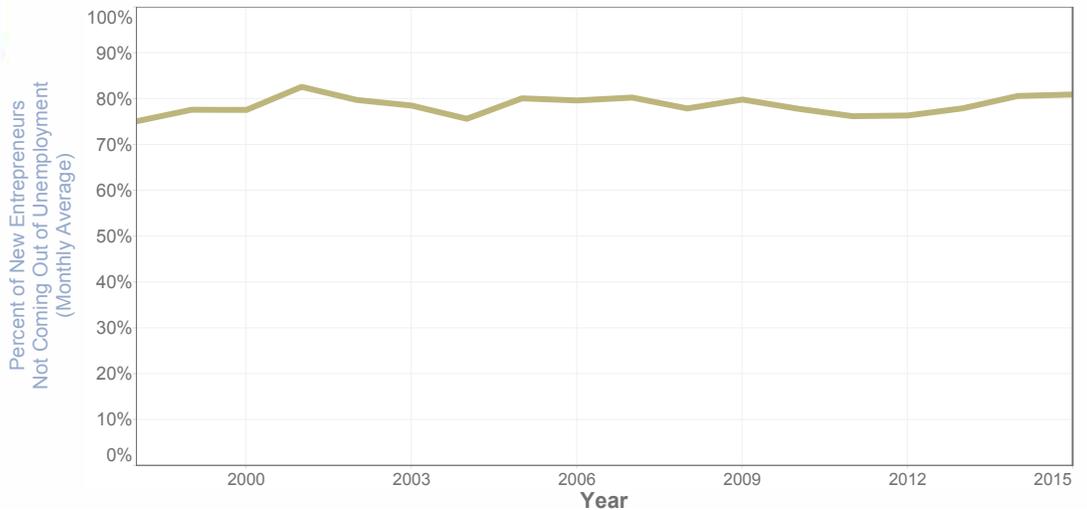
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>80.95%</b>	<b>80.63%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



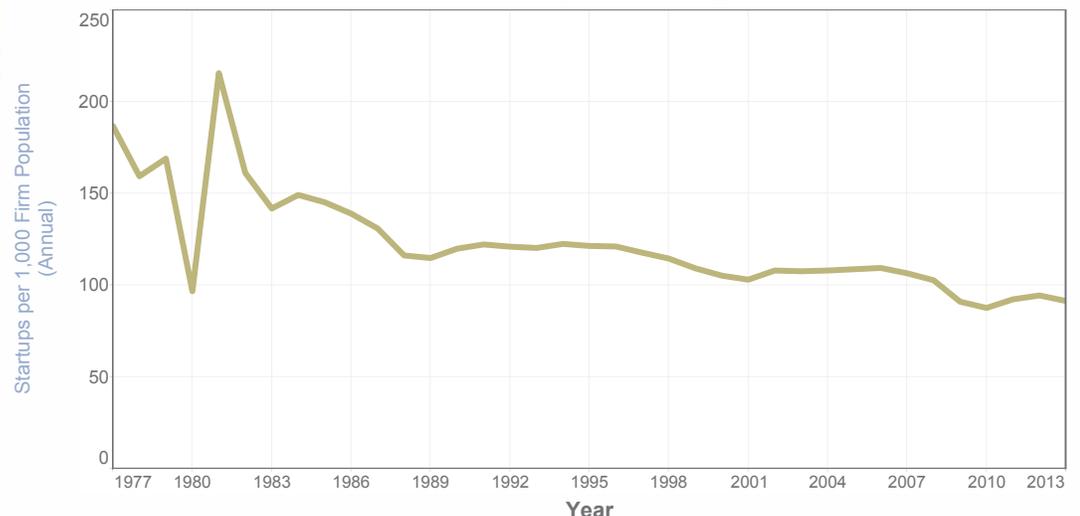
### Startup Density

2016 Component	2015 Component
<b>91.4</b>	<b>94.4</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>2</b>	<b>1</b>

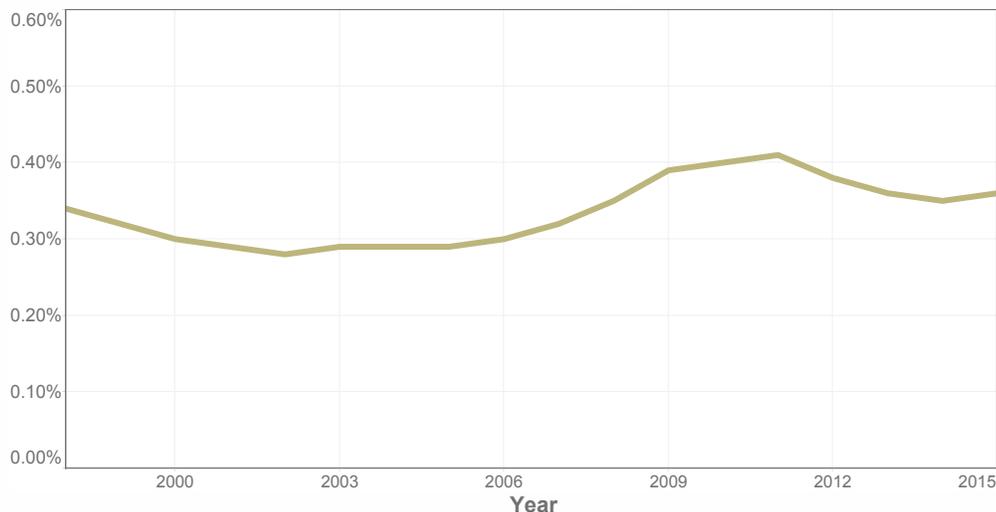
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.36%</b>	<b>0.35%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Opportunity Share of New Entrepreneurs

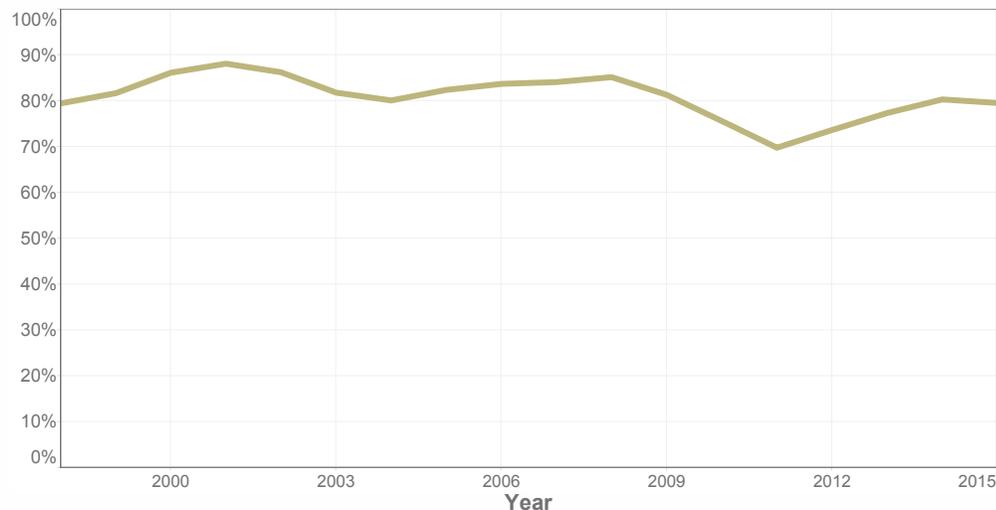
2016 Component	2015 Component
<b>79.54%</b>	<b>80.31%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Startup Density

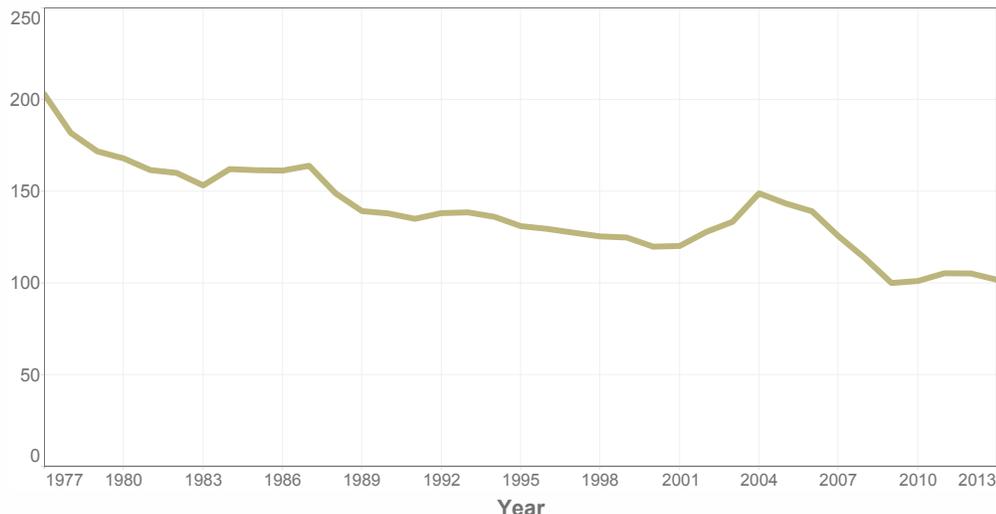
2016 Component	2015 Component
<b>101.8</b>	<b>105.3</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density

Startups per 1,000 Firm Population (Annual)



## Startup Activity Rank Larger States

2016	2015
<b>3</b>	<b>4</b>

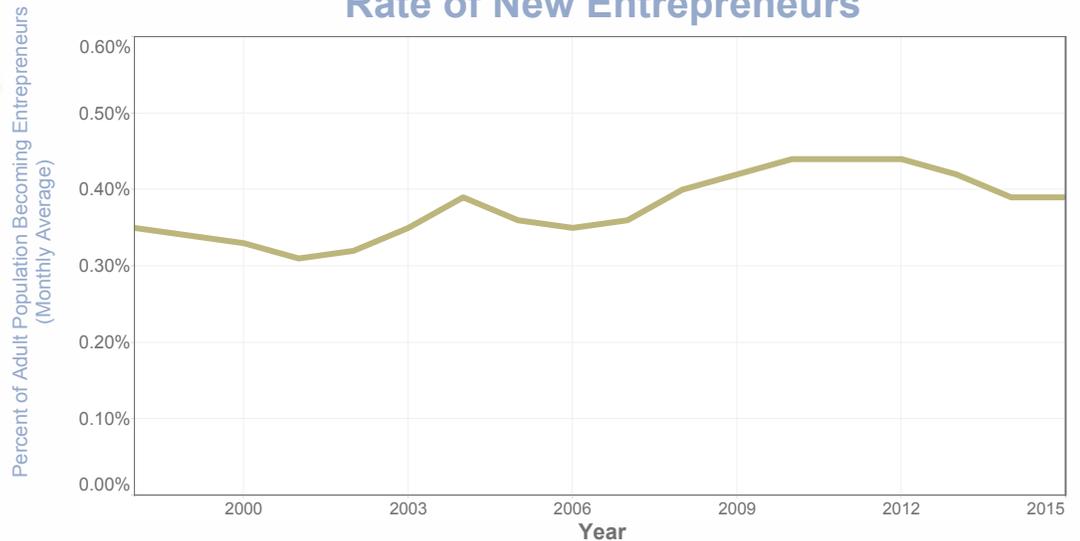
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.39%</b>	<b>0.39%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



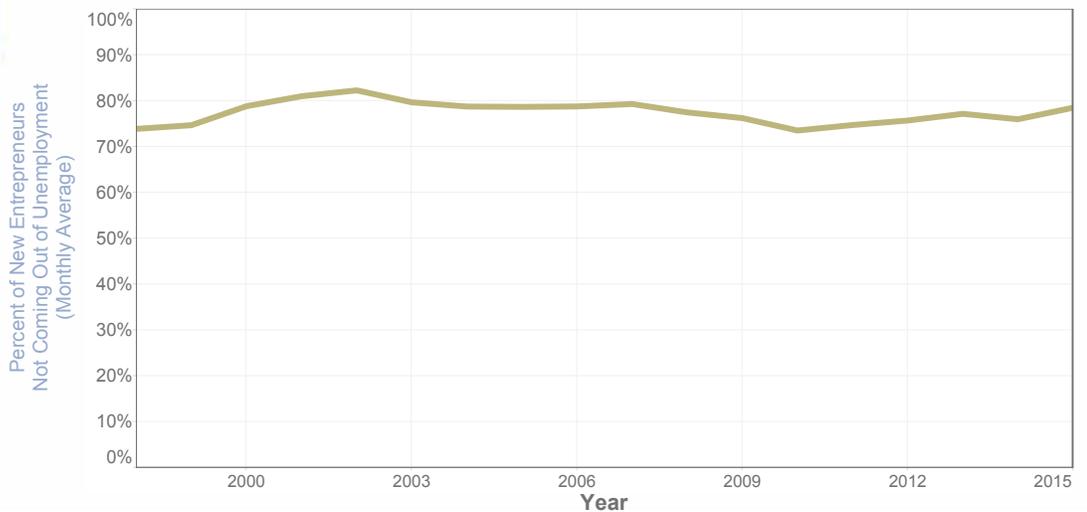
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>78.49%</b>	<b>75.99%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



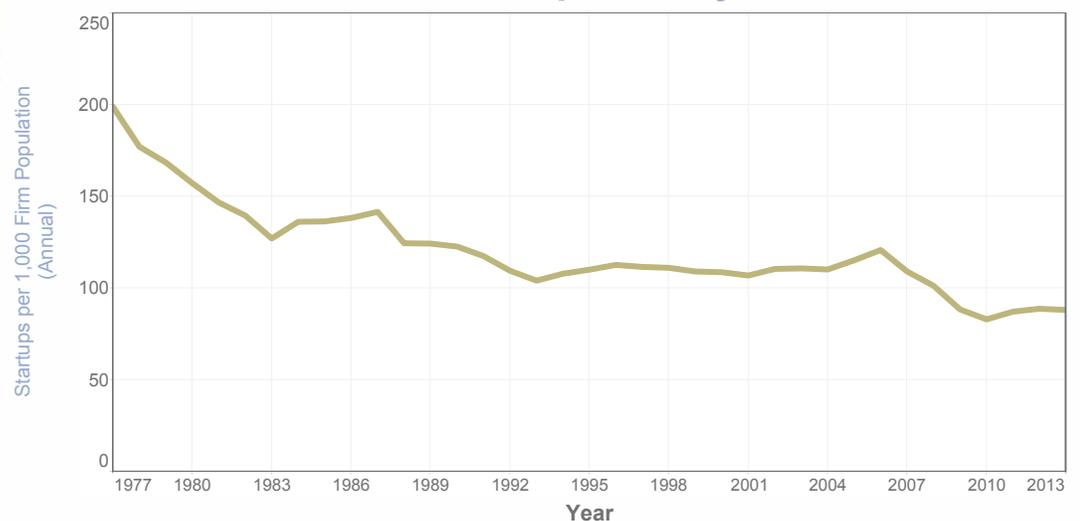
### Startup Density

2016 Component	2015 Component
<b>88.1</b>	<b>88.8</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>4</b>	<b>6</b>

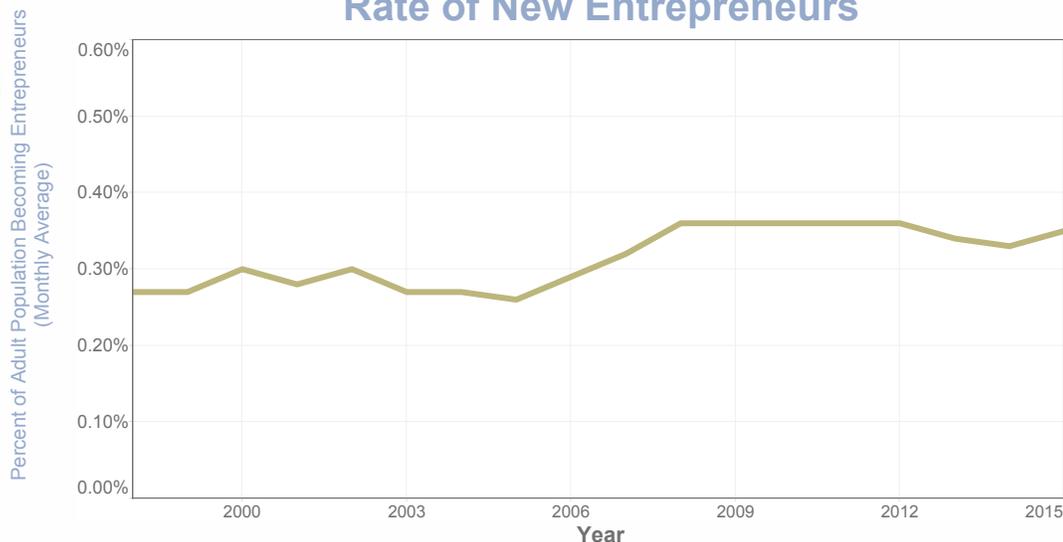
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.35%</b>	<b>0.33%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



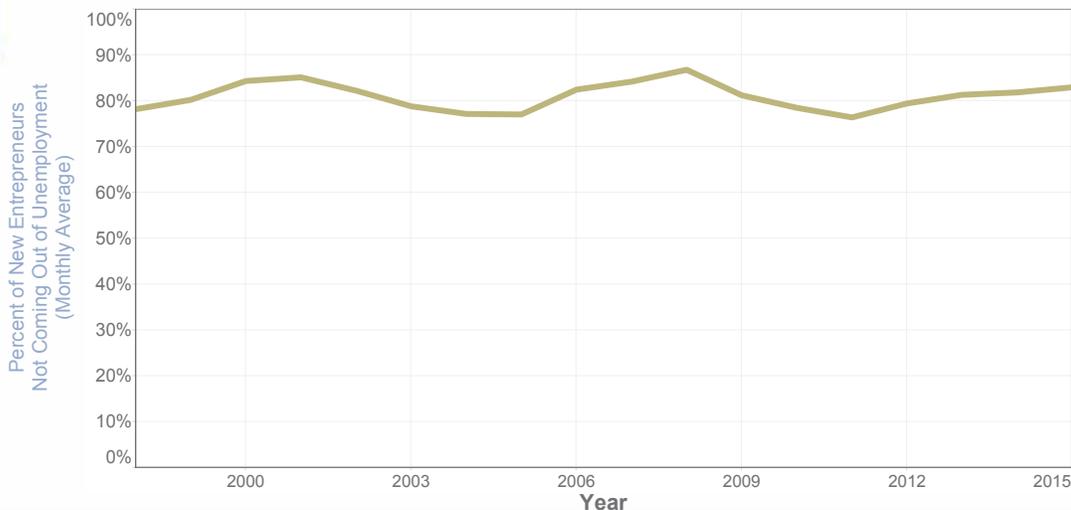
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>82.96%</b>	<b>81.84%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



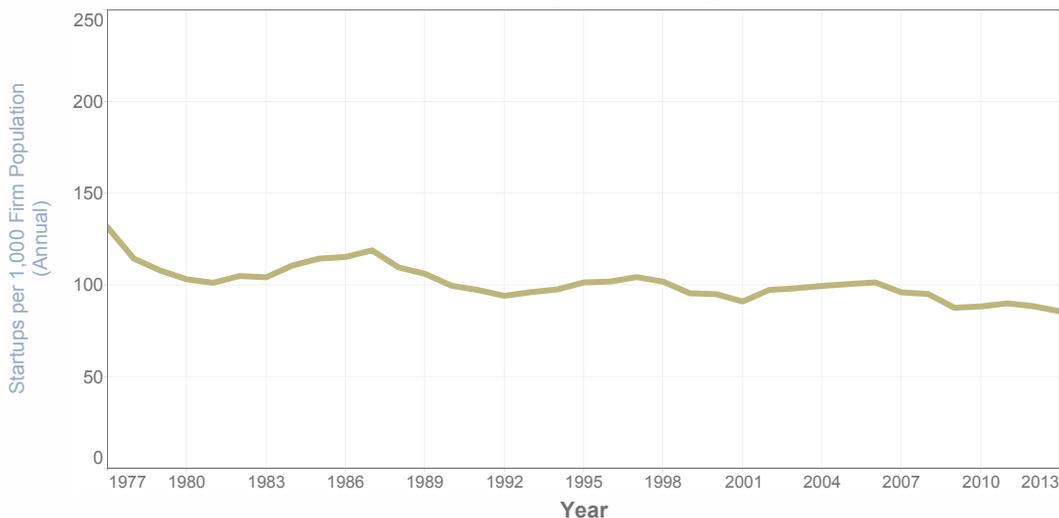
### Startup Density

2016 Component	2015 Component
<b>85.7</b>	<b>88.5</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>5</b>	<b>2</b>

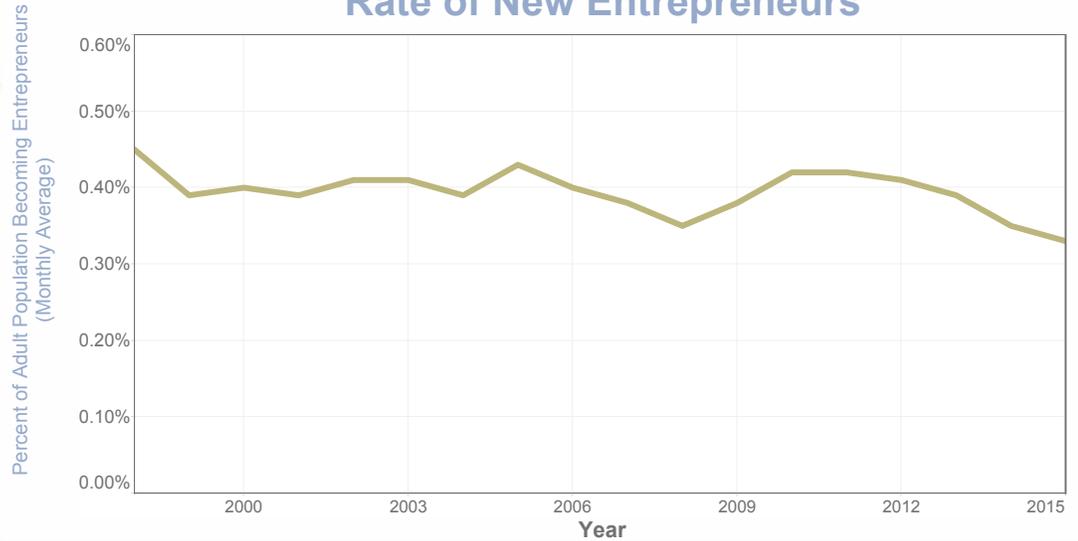
## Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.33%</b>	<b>0.35%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

## Rate of New Entrepreneurs



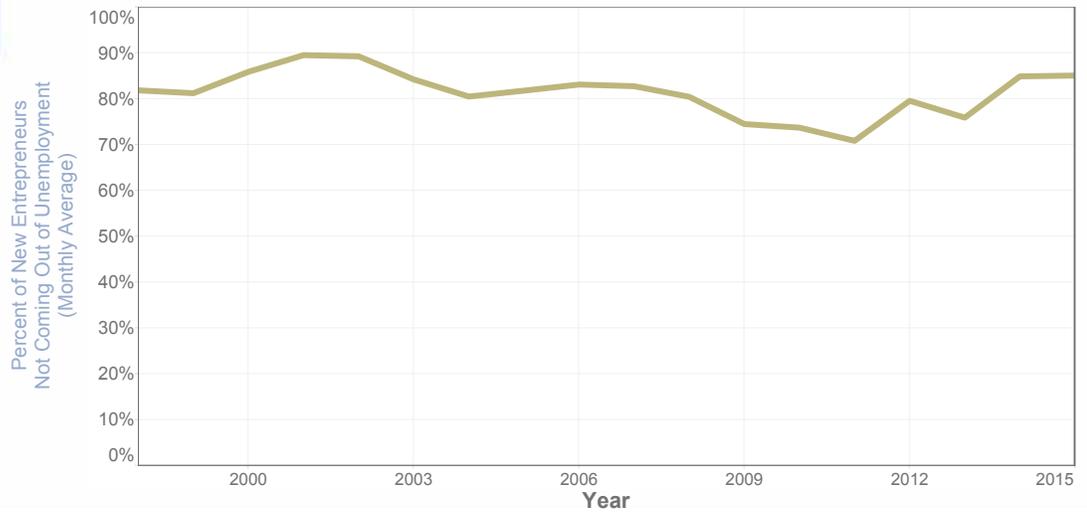
## Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>85.08%</b>	<b>84.90%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

## Opportunity Share of New Entrepreneurs



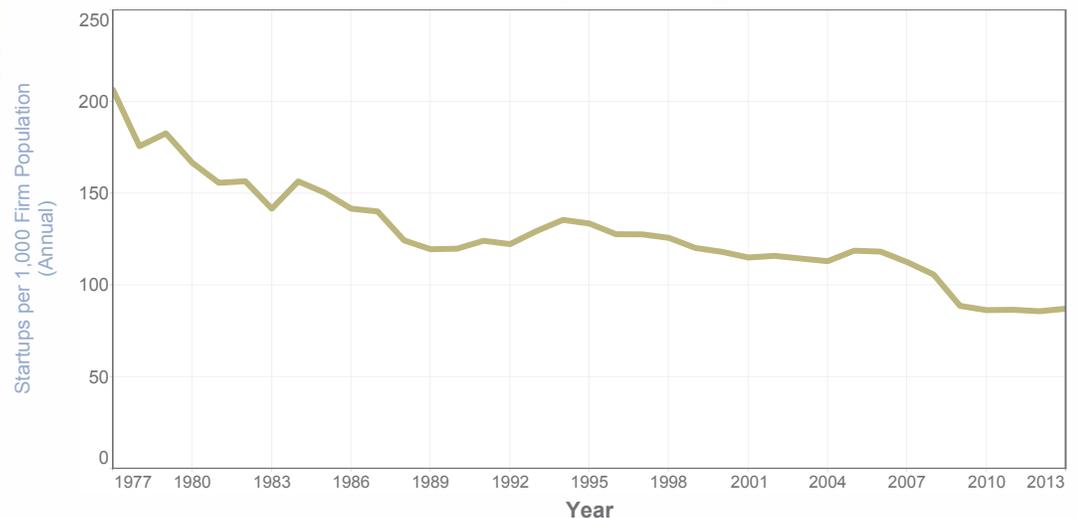
## Startup Density

2016 Component	2015 Component
<b>87.2</b>	<b>85.8</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

## Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>6</b>	<b>7</b>

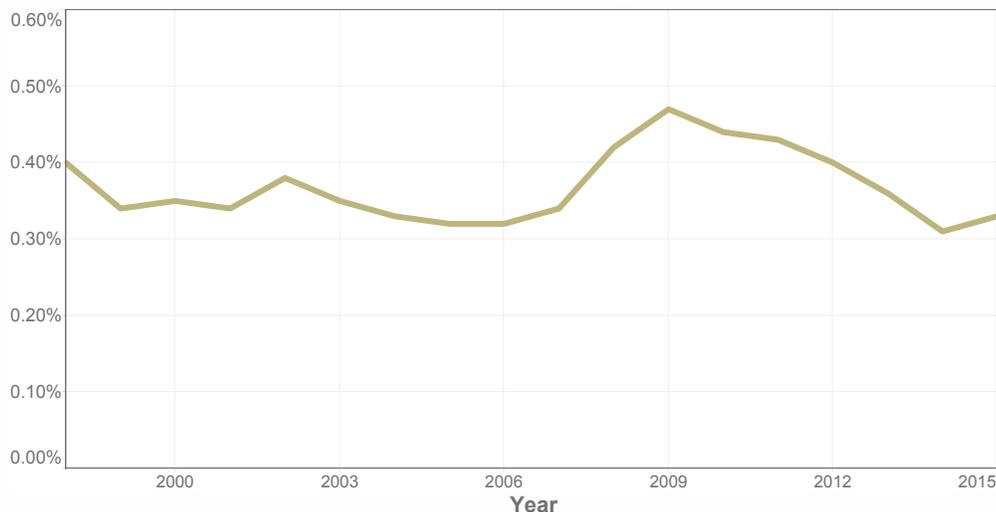
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.33%</b>	<b>0.31%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



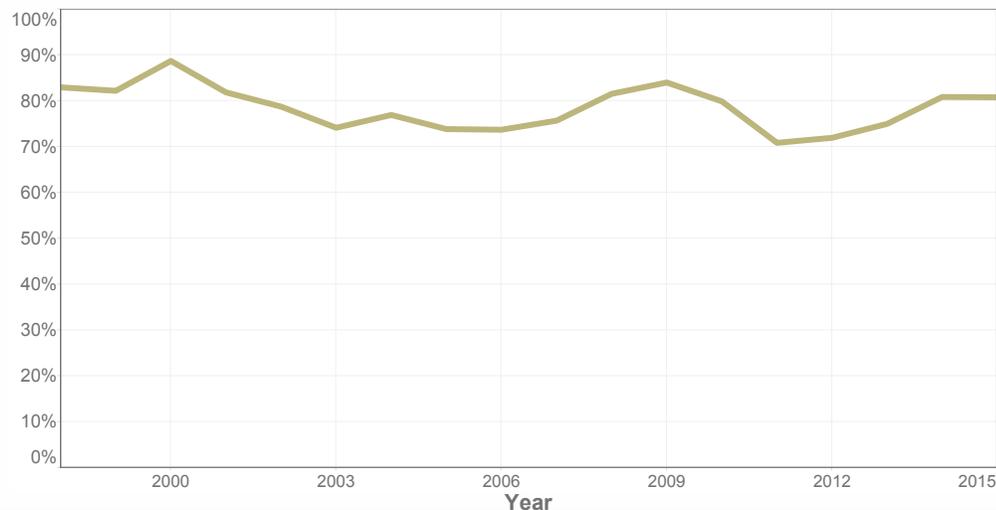
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>80.78%</b>	<b>80.85%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



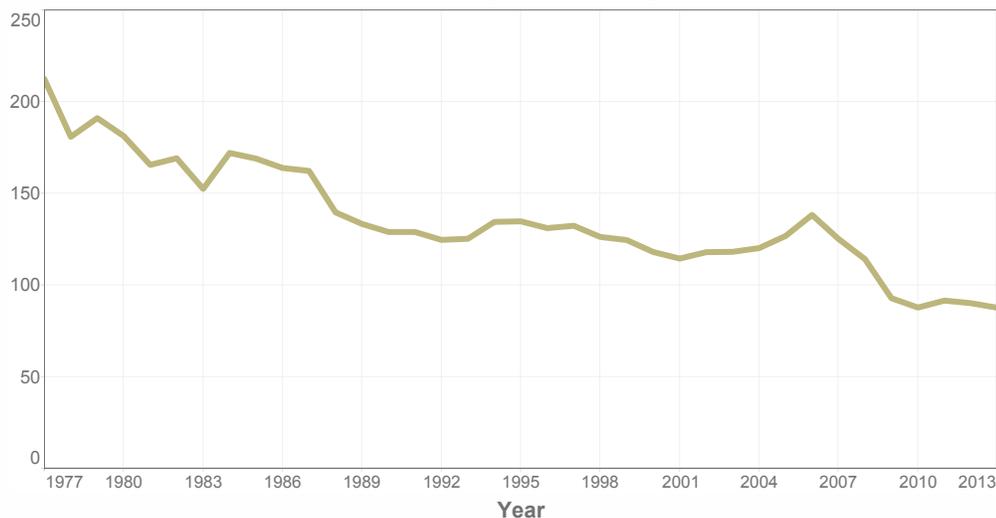
### Startup Density

2016 Component	2015 Component
<b>87.7</b>	<b>90.2</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



## Startup Activity Rank Larger States

2016	2015
<b>7</b>	<b>18</b>

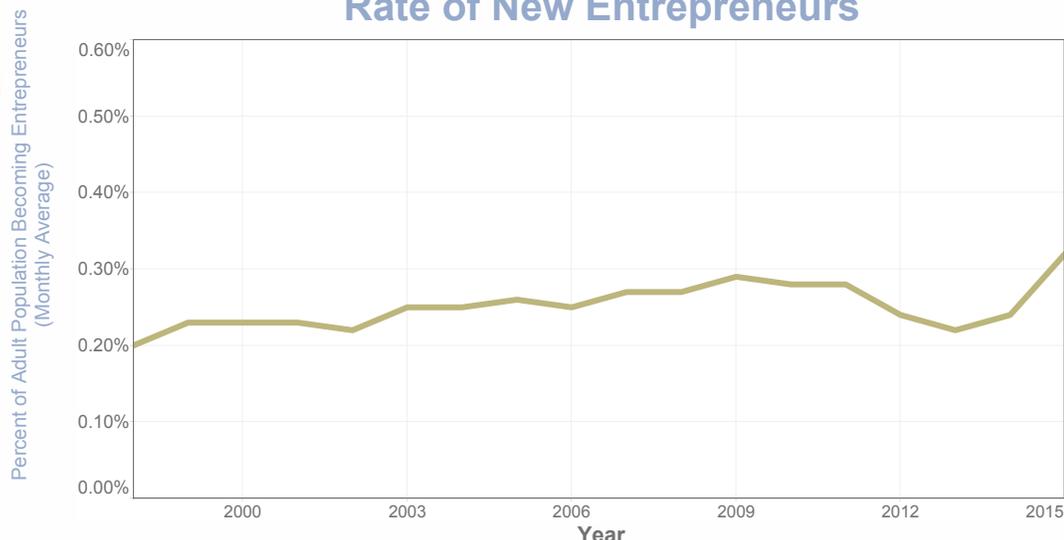
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.32%</b>	<b>0.24%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



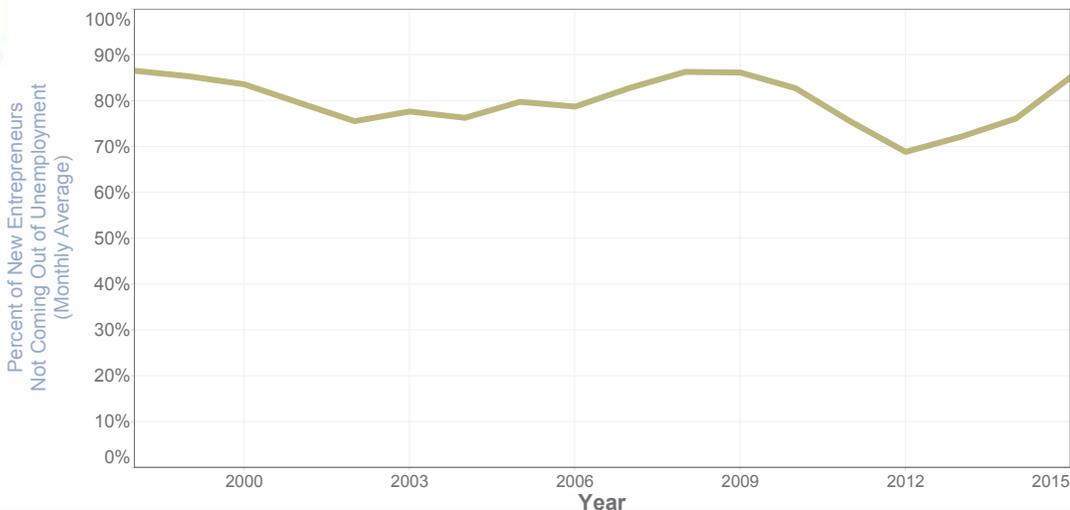
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>85.22%</b>	<b>76.14%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



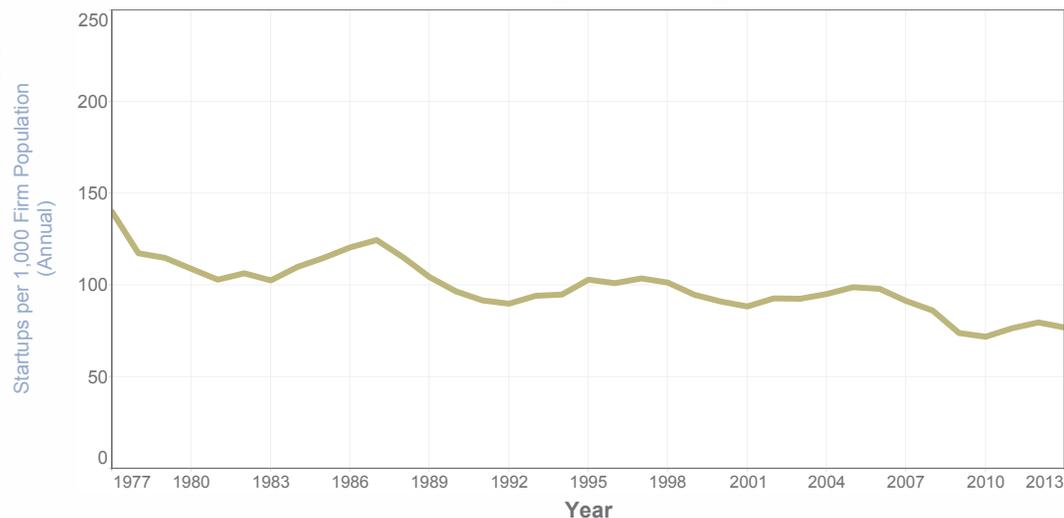
### Startup Density

2016 Component	2015 Component
<b>76.9</b>	<b>79.7</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>8</b>	<b>8</b>

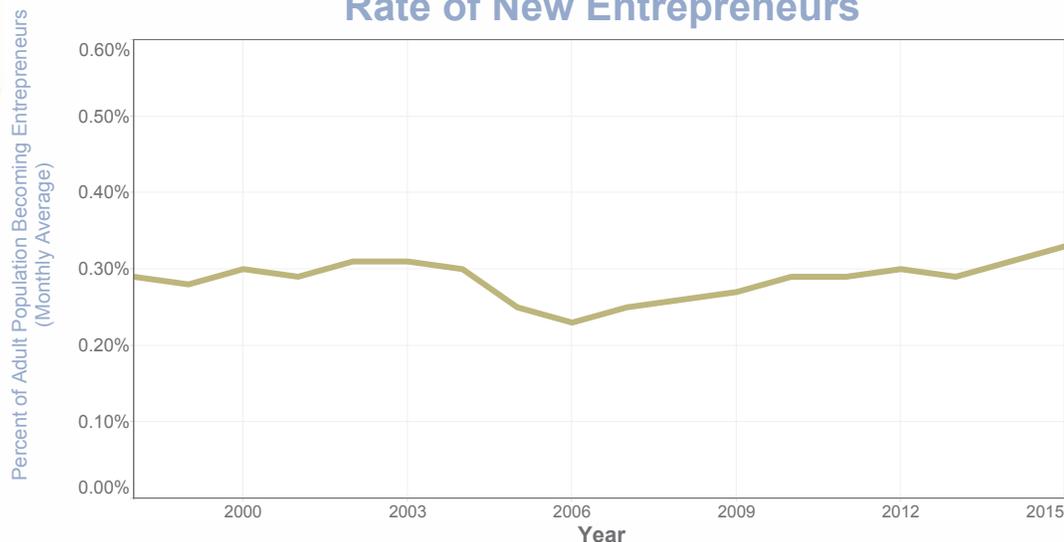
## Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.33%</b>	<b>0.31%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

## Rate of New Entrepreneurs



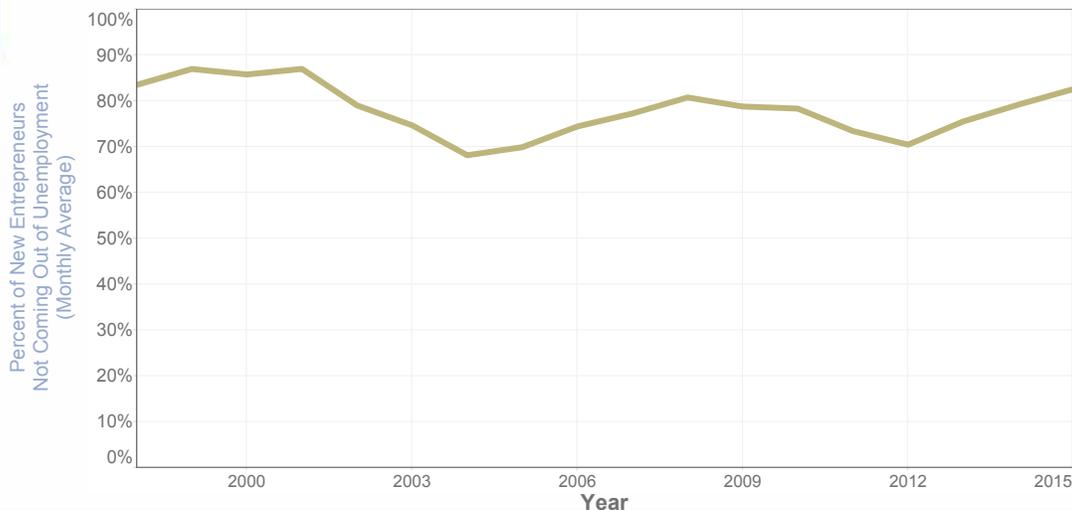
## Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>82.56%</b>	<b>79.16%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

## Opportunity Share of New Entrepreneurs



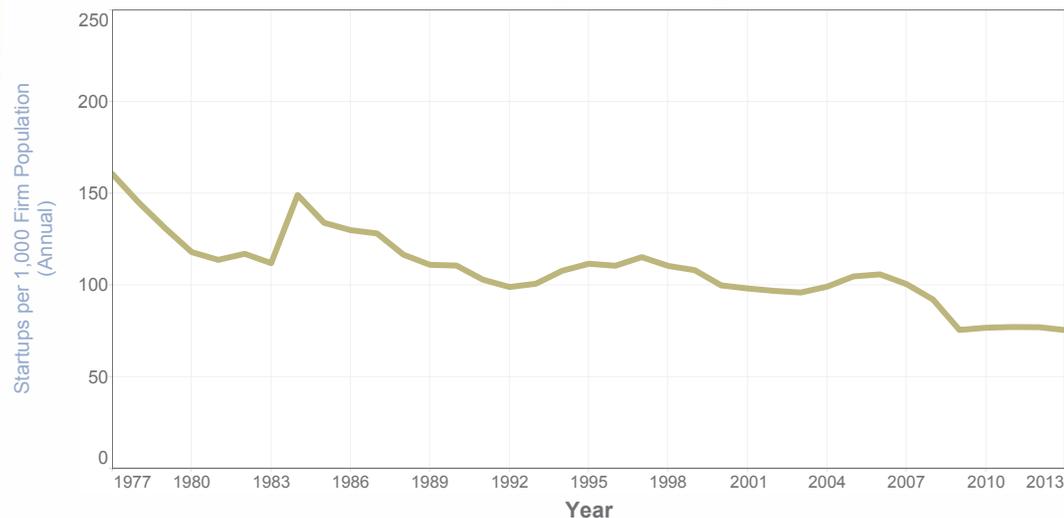
## Startup Density

2016 Component	2015 Component
<b>75.5</b>	<b>77.1</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

## Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>9</b>	<b>10</b>

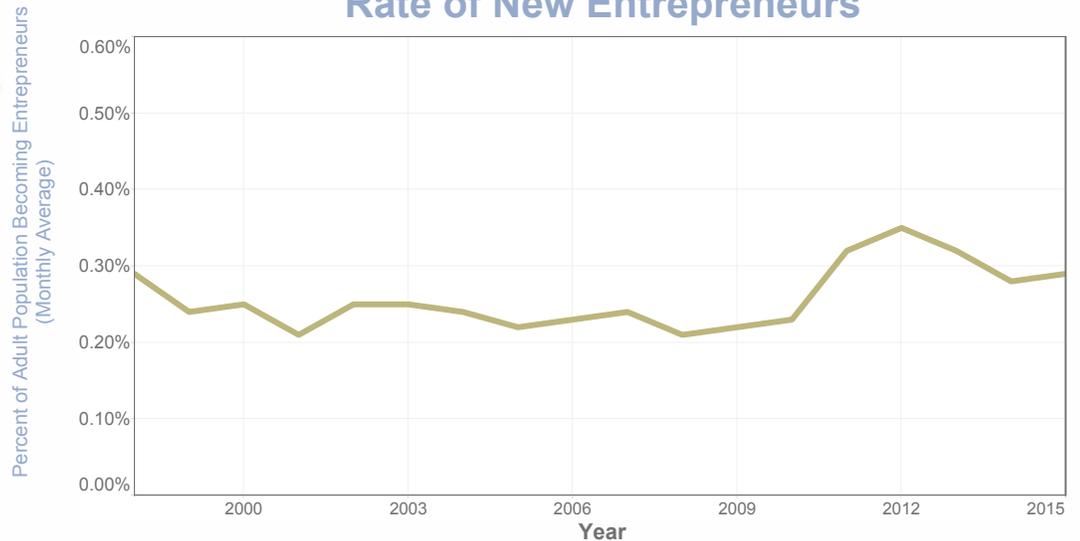
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.29%</b>	<b>0.28%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



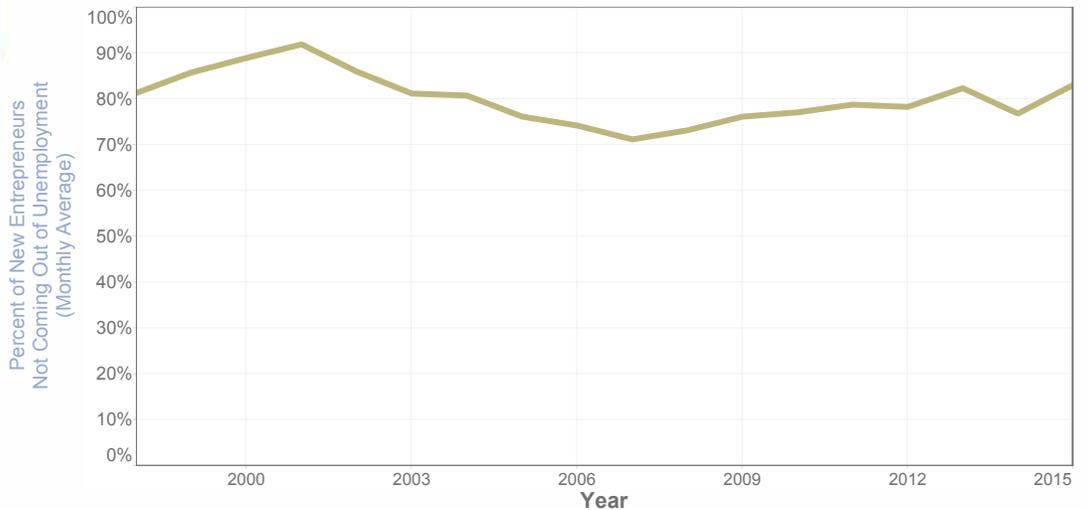
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>83.00%</b>	<b>76.79%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



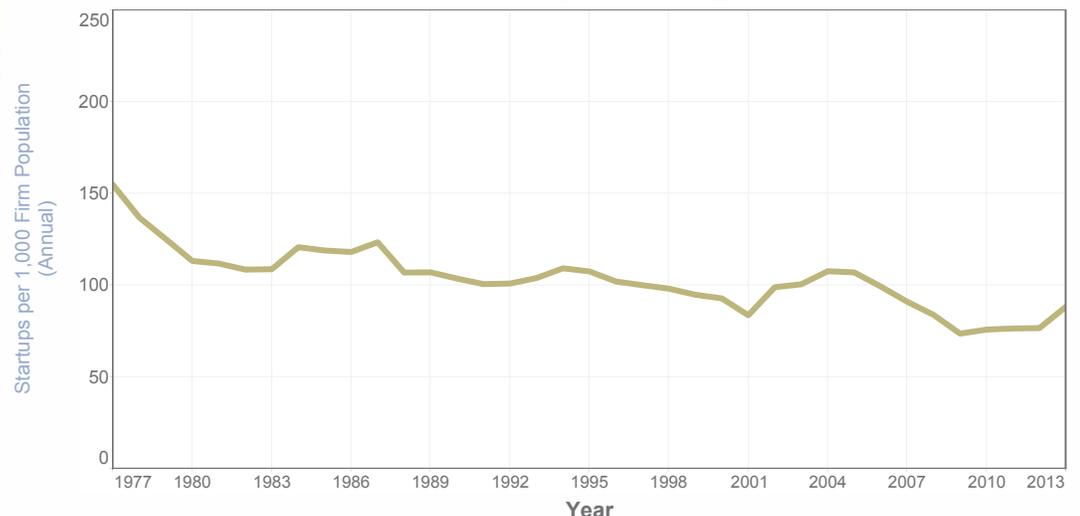
### Startup Density

2016 Component	2015 Component
<b>88.3</b>	<b>76.6</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>10</b>	<b>5</b>

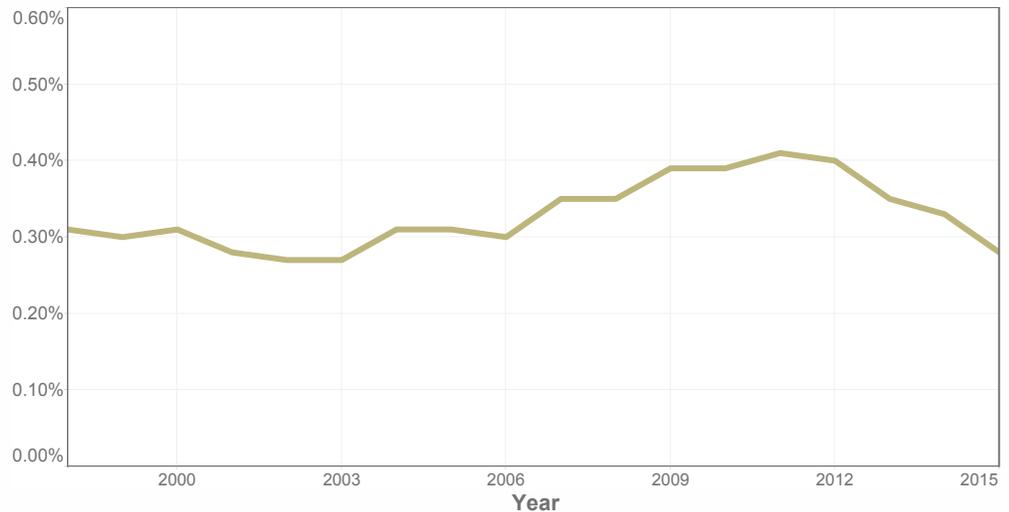
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.28%</b>	<b>0.33%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

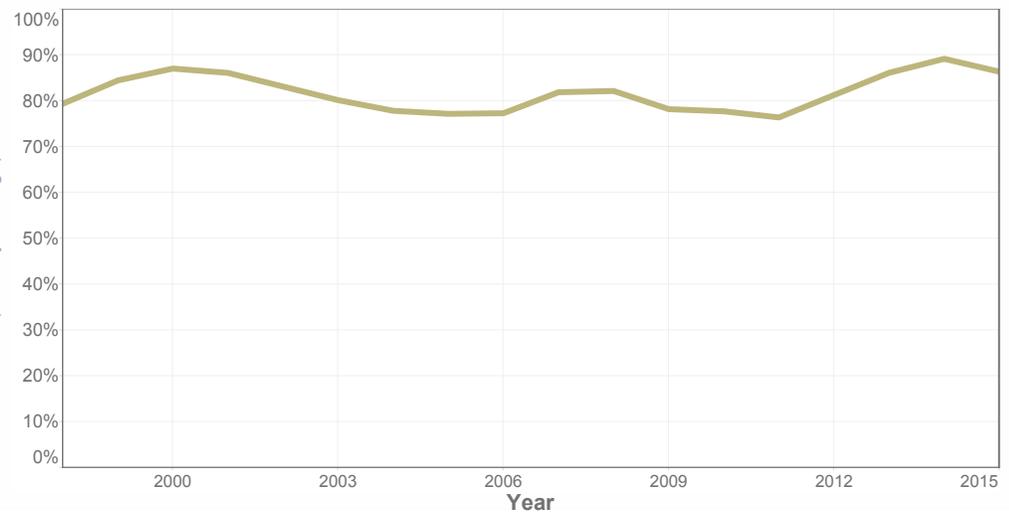
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>86.36%</b>	<b>89.17%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

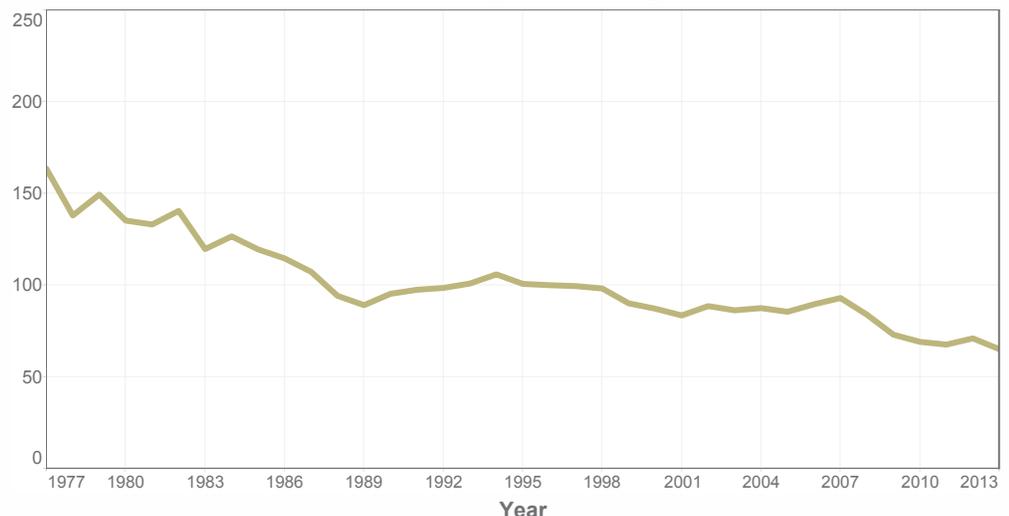
### Startup Density

2016 Component	2015 Component
<b>65.1</b>	<b>71.0</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Larger States

2016	2015
<b>11</b>	<b>19</b>

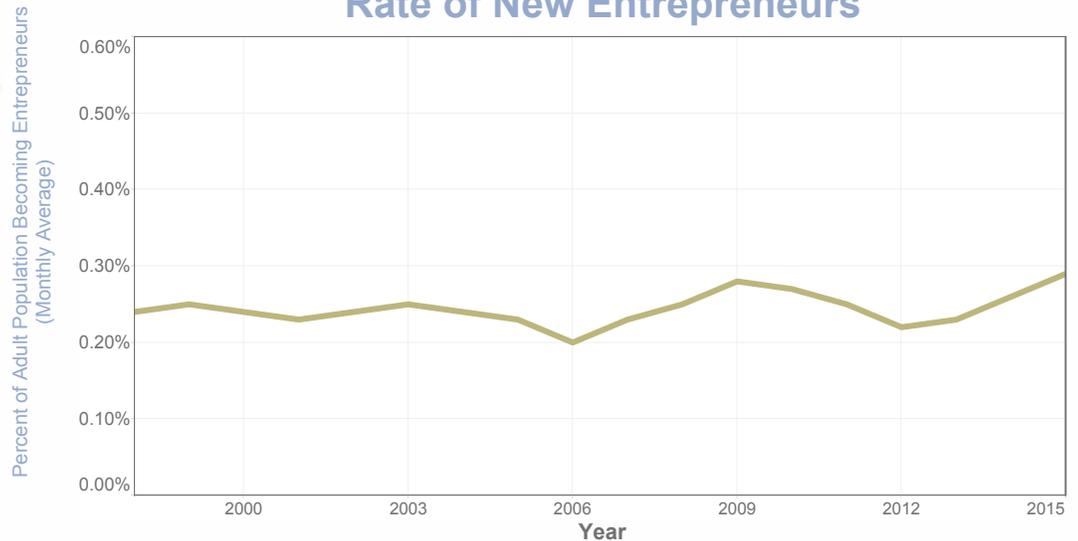
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.29%</b>	<b>0.26%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



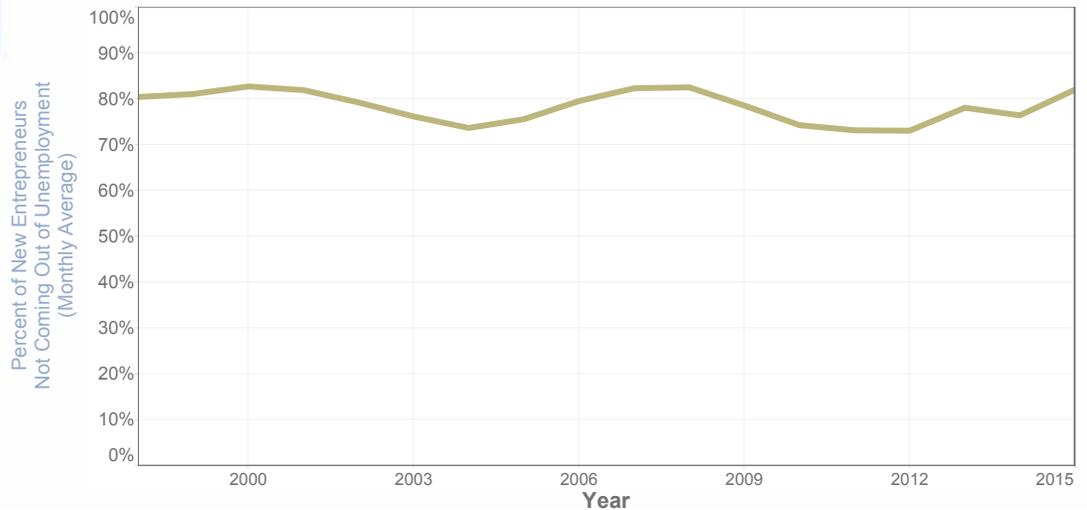
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>82.00%</b>	<b>76.40%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



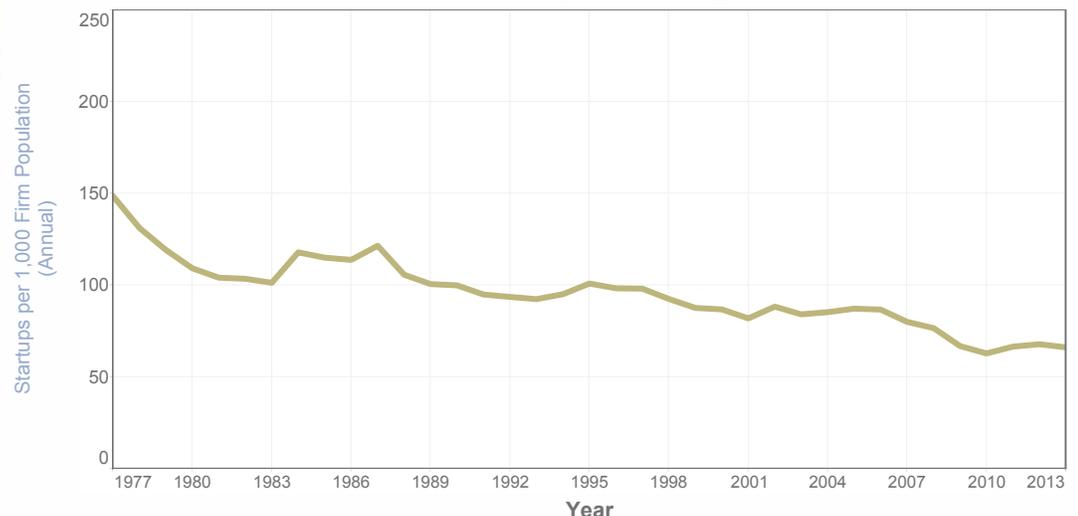
### Startup Density

2016 Component	2015 Component
<b>66.1</b>	<b>67.8</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>12</b>	<b>14</b>

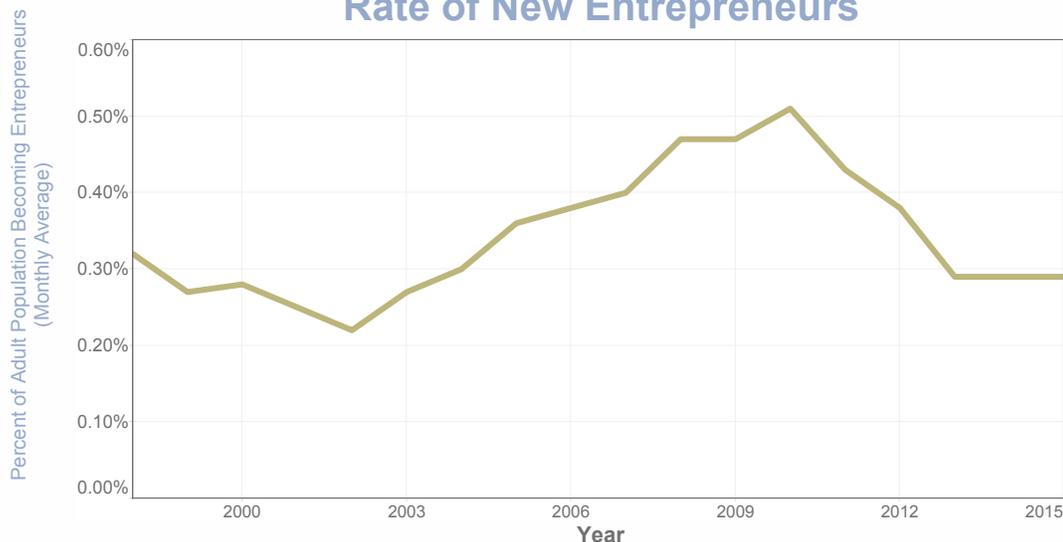
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.29%</b>	<b>0.29%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



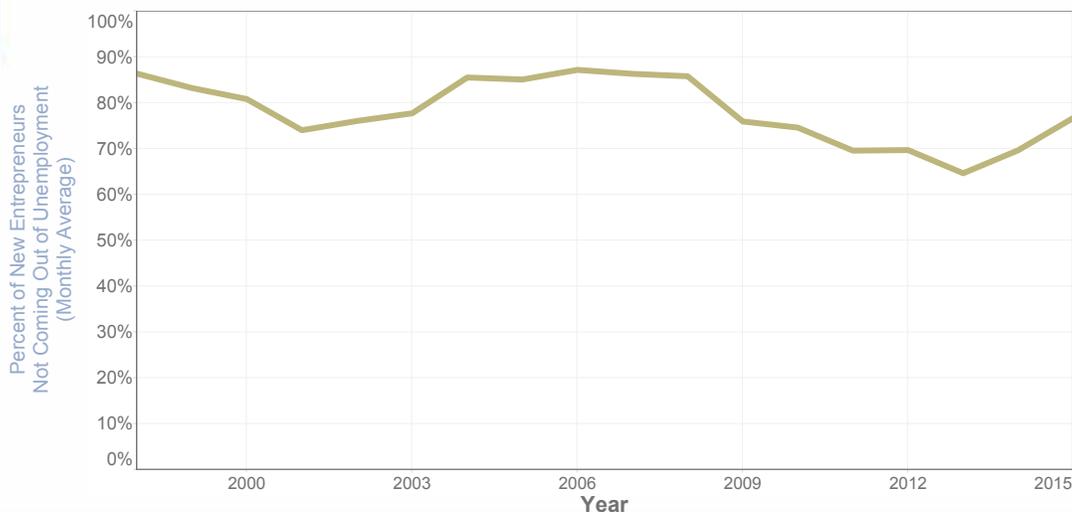
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>76.72%</b>	<b>69.67%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



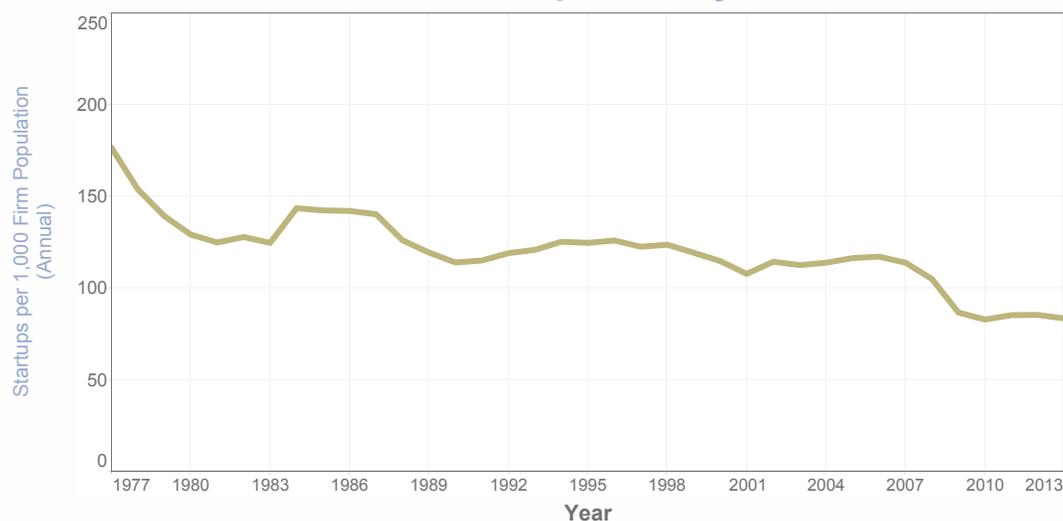
### Startup Density

2016 Component	2015 Component
<b>83.5</b>	<b>85.4</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>13</b>	<b>12</b>

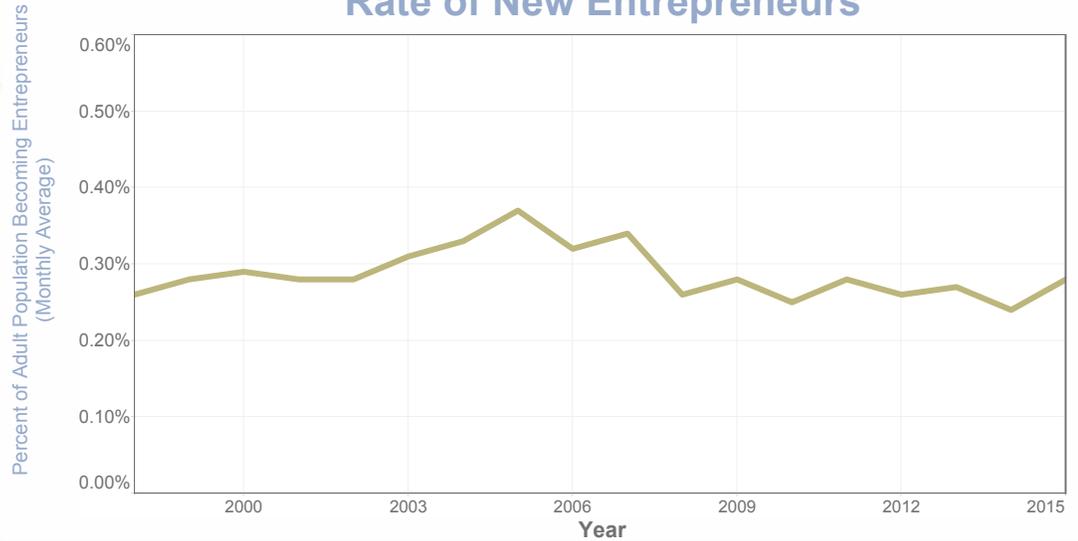
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.28%</b>	<b>0.24%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



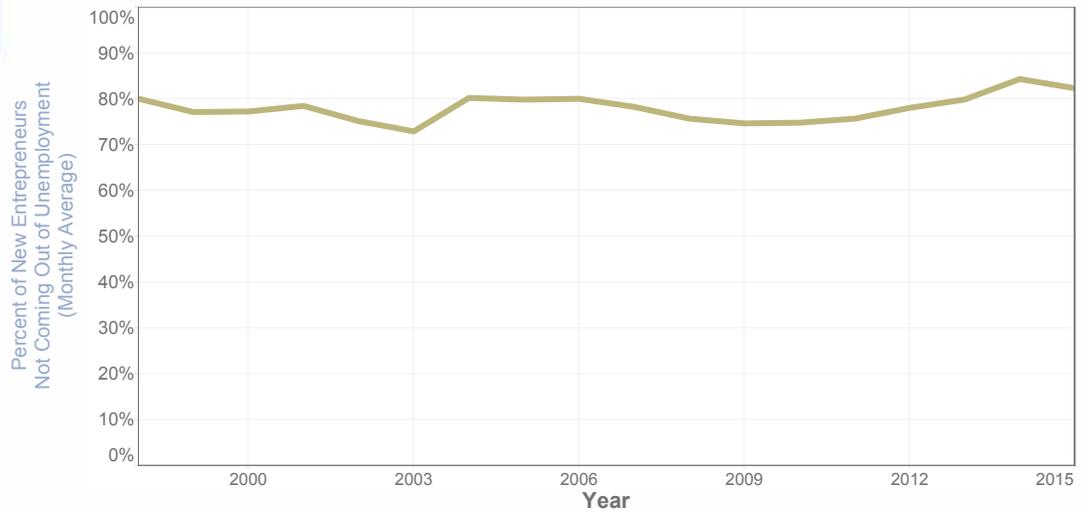
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>82.30%</b>	<b>84.32%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



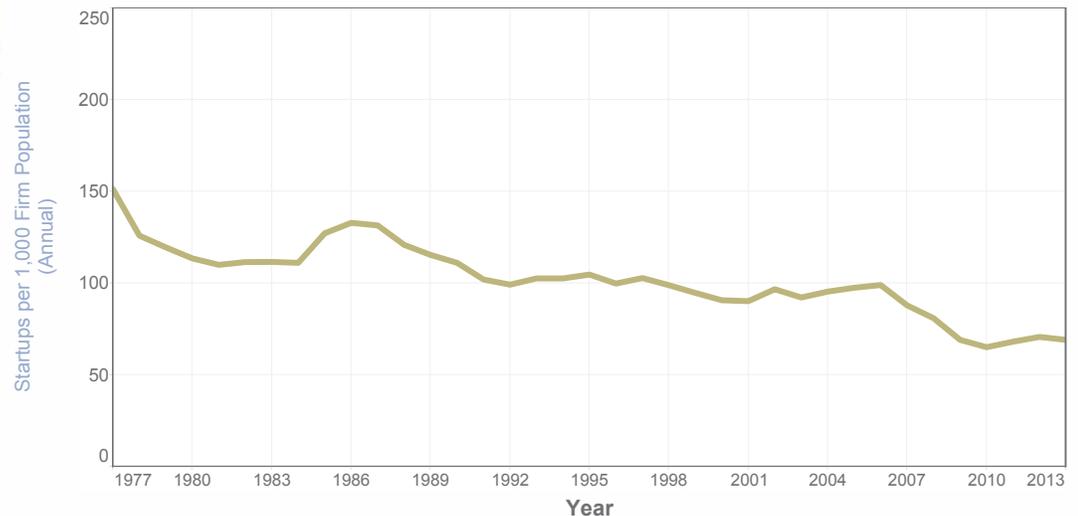
### Startup Density

2016 Component	2015 Component
<b>69.1</b>	<b>70.7</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>14</b>	<b>9</b>

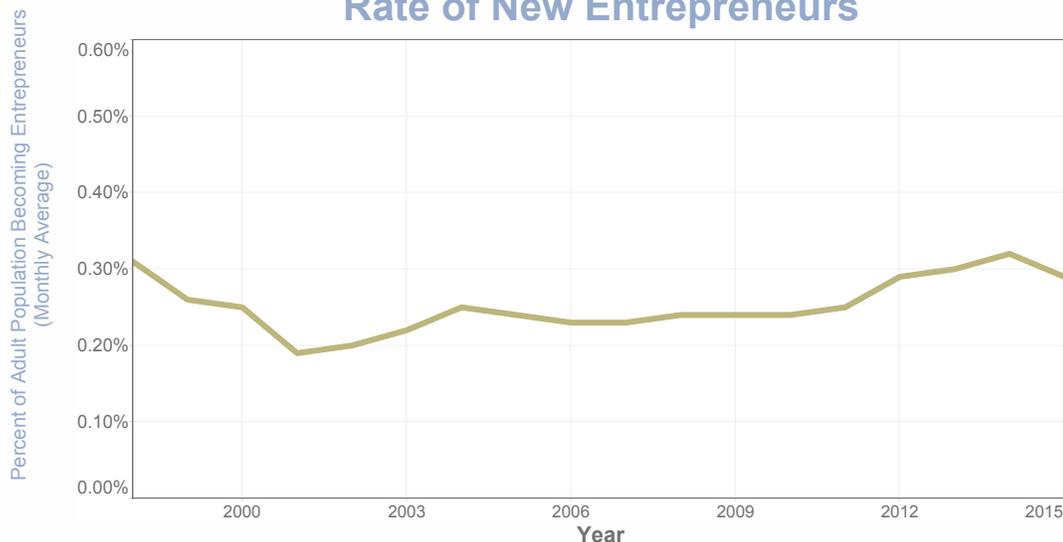
## Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.29%</b>	<b>0.32%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

## Rate of New Entrepreneurs



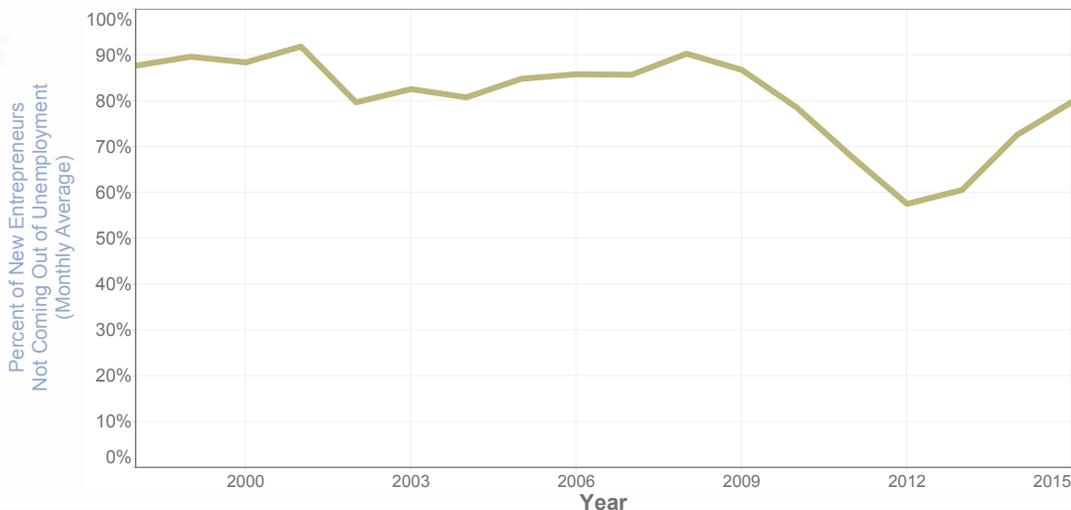
## Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>79.80%</b>	<b>72.59%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

## Opportunity Share of New Entrepreneurs



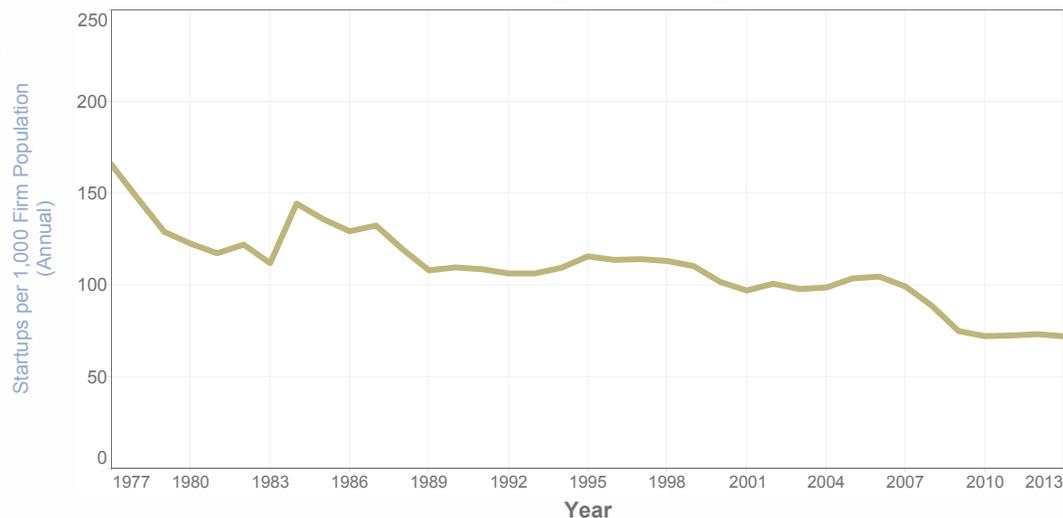
## Startup Density

2016 Component	2015 Component
<b>72.1</b>	<b>73.3</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

## Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>15</b>	<b>13</b>

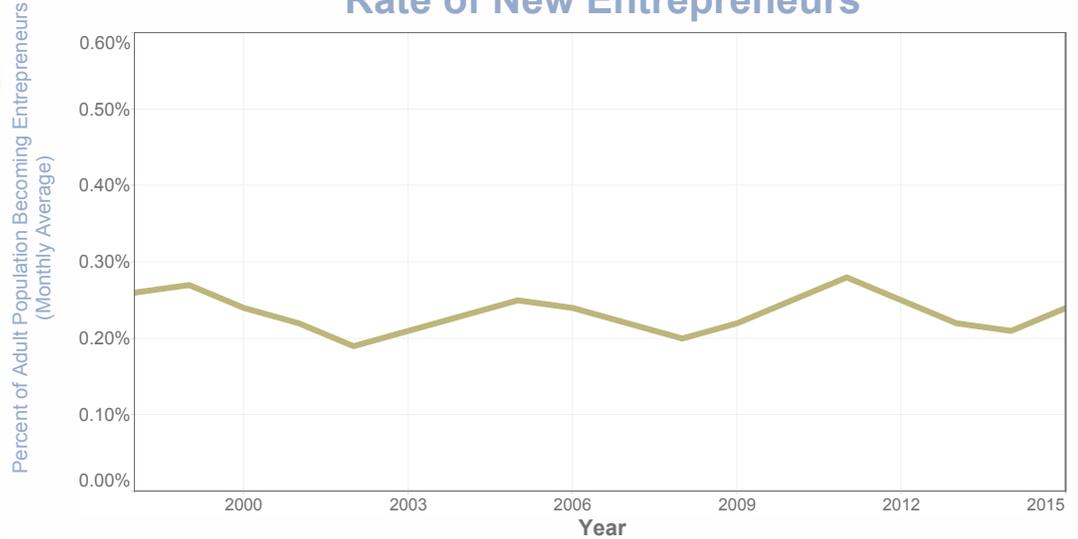
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.24%</b>	<b>0.21%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



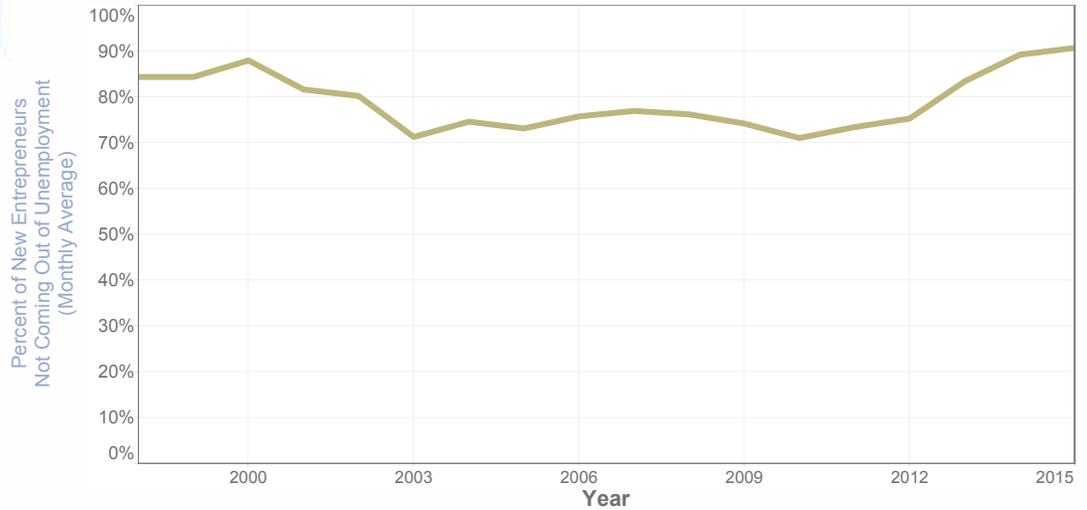
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>90.68%</b>	<b>89.19%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



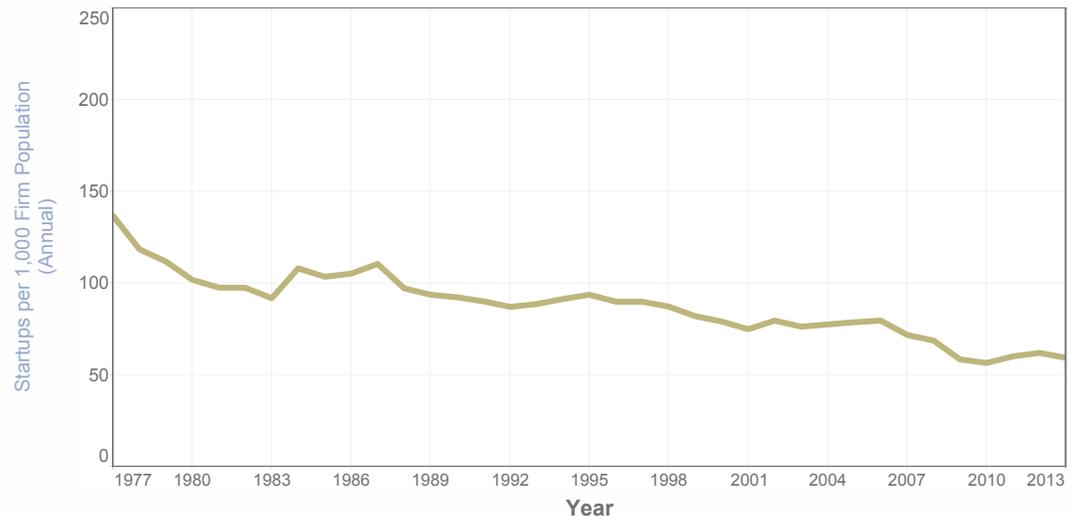
### Startup Density

2016 Component	2015 Component
<b>59.3</b>	<b>62.0</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>16</b>	<b>17</b>

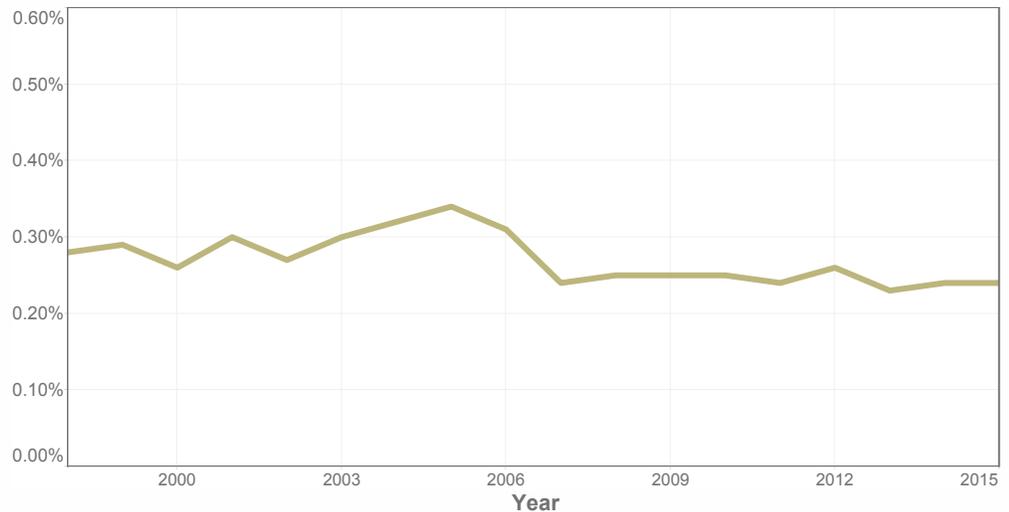
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.24%</b>	<b>0.24%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

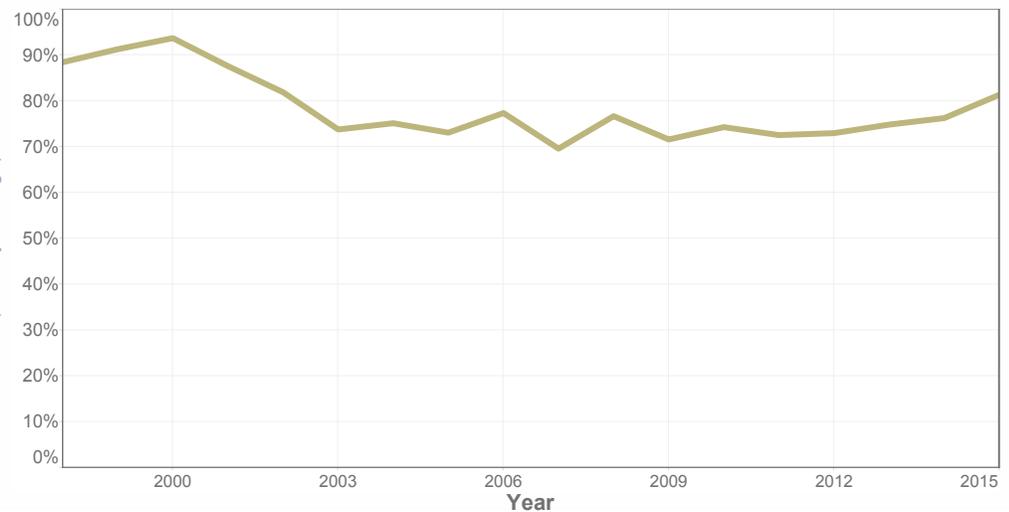
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>81.32%</b>	<b>76.24%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

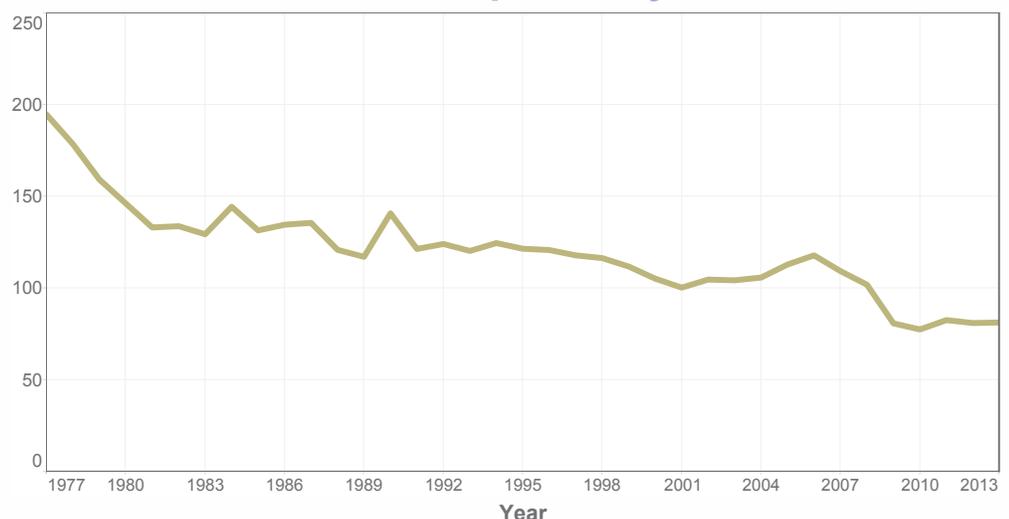
### Startup Density

2016 Component	2015 Component
<b>81.3</b>	<b>81.0</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Larger States

2016	2015
<b>17</b>	<b>16</b>

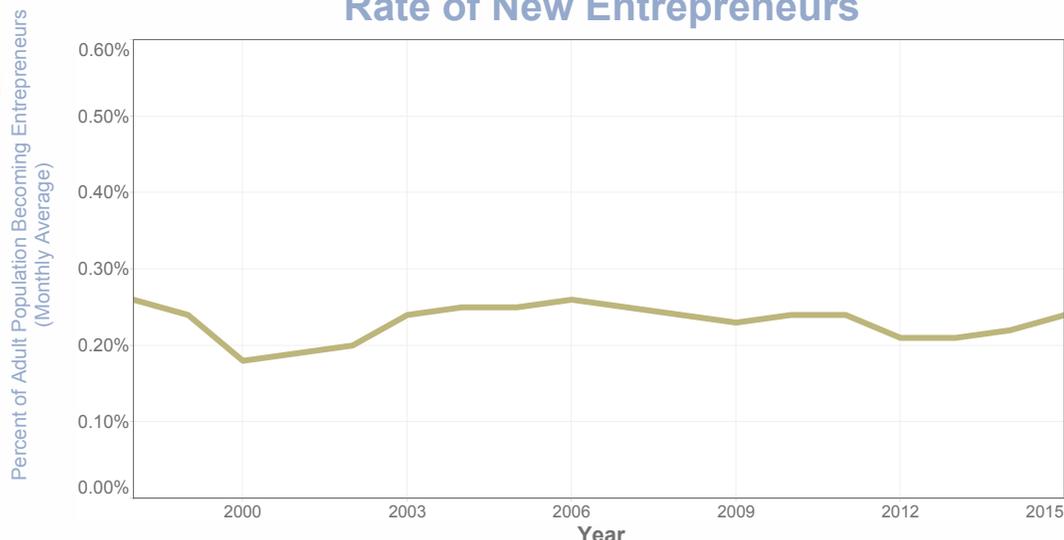
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.24%</b>	<b>0.22%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



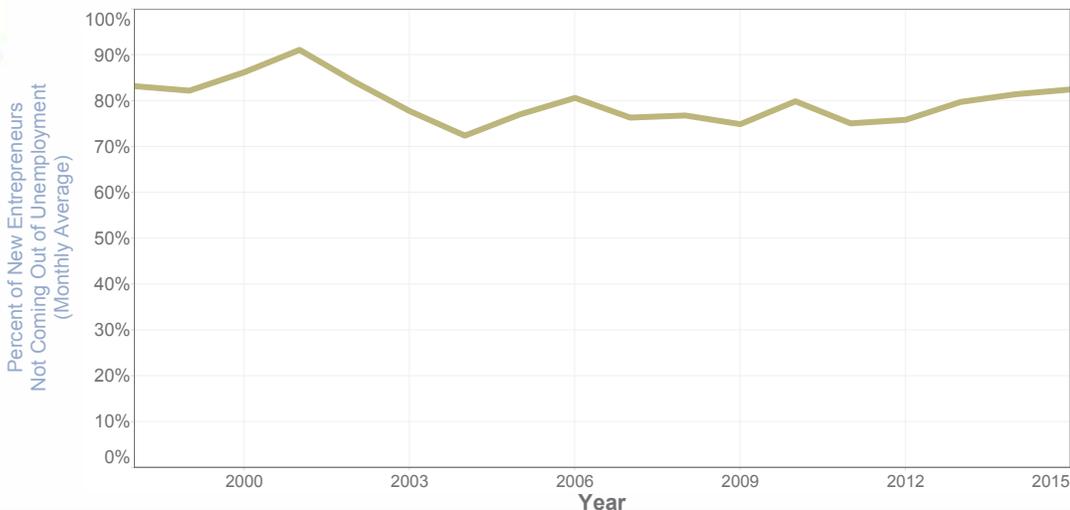
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>82.49%</b>	<b>81.45%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



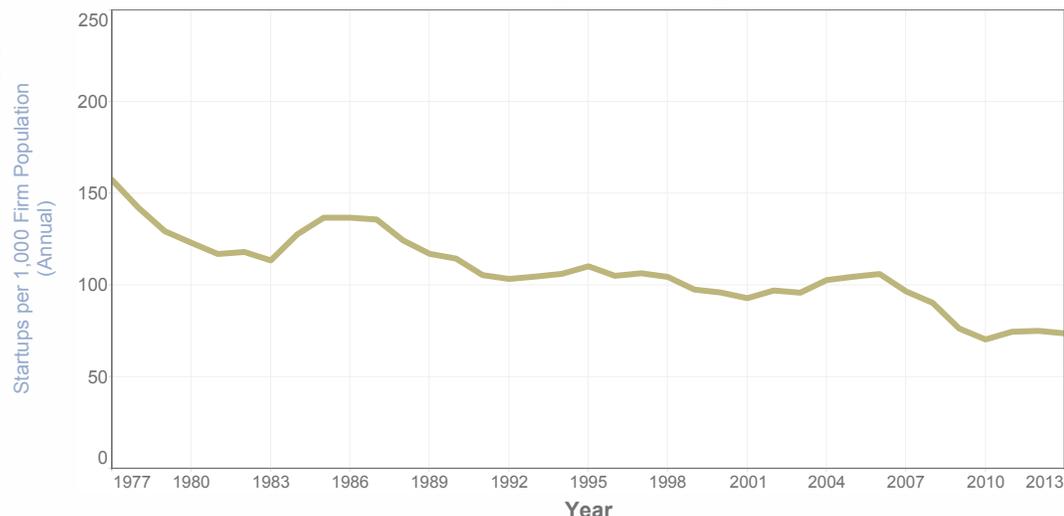
### Startup Density

2016 Component	2015 Component
<b>73.7</b>	<b>75.1</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>18</b>	<b>15</b>

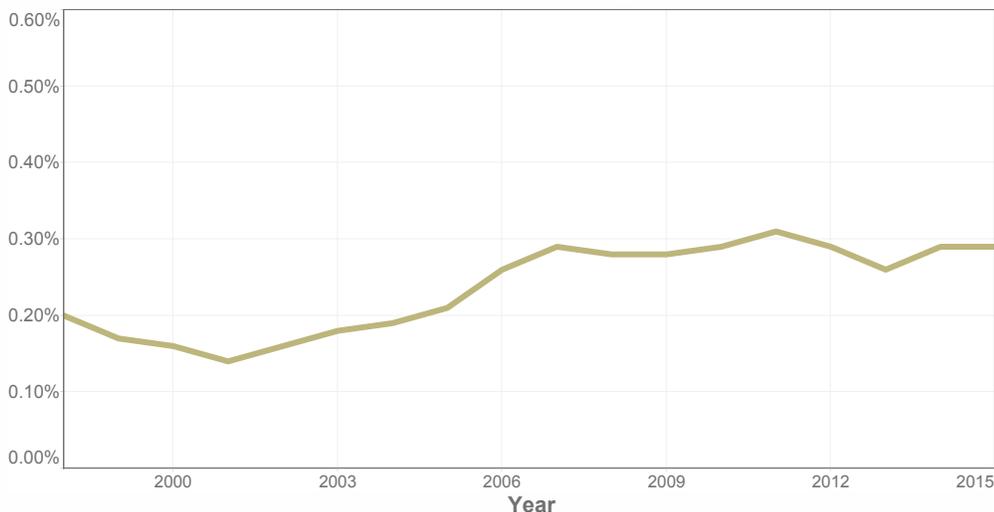
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.29%</b>	<b>0.29%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



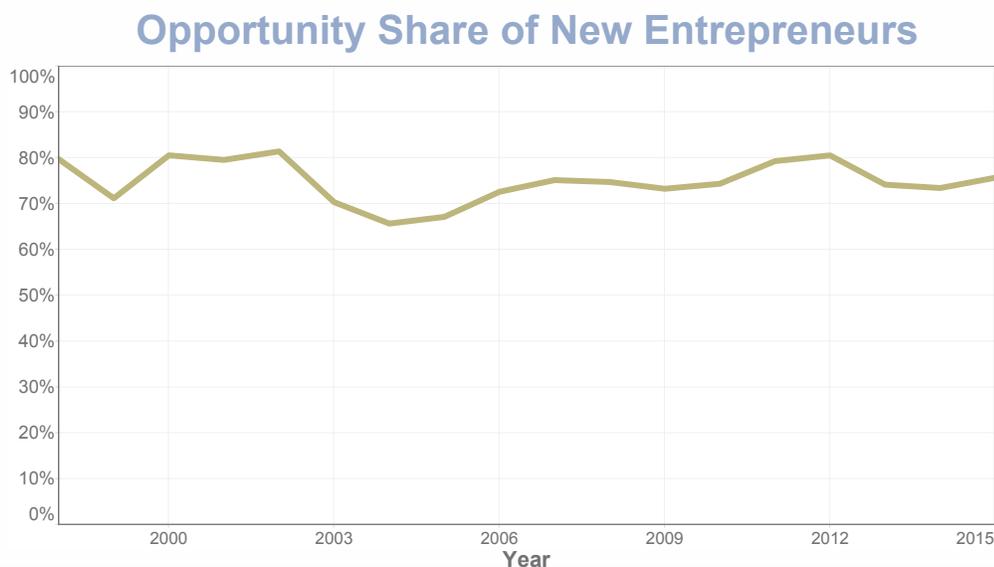
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>75.67%</b>	<b>73.42%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



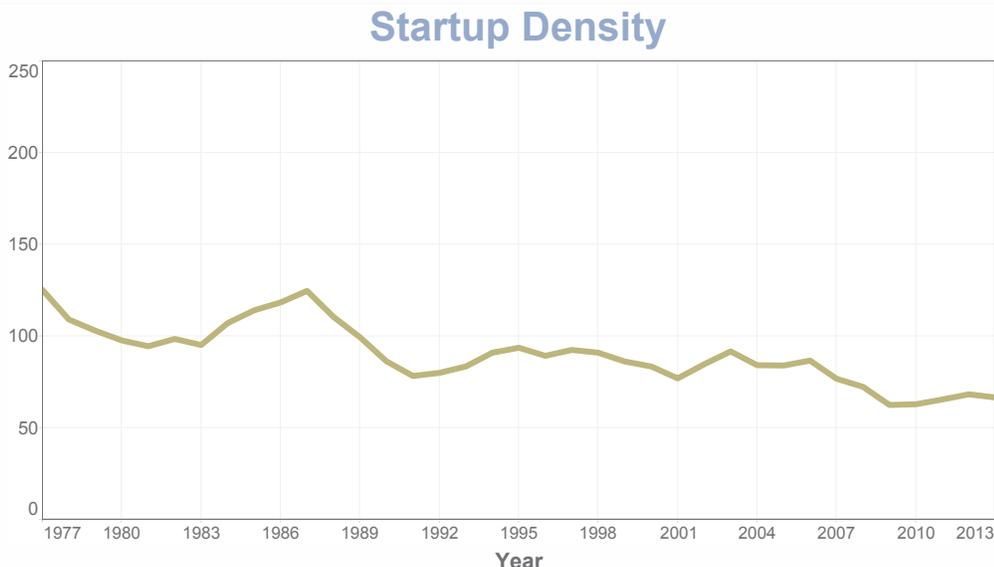
### Startup Density

2016 Component	2015 Component
<b>66.6</b>	<b>68.3</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



## Startup Activity Rank Larger States

2016	2015
<b>19</b>	<b>10</b>

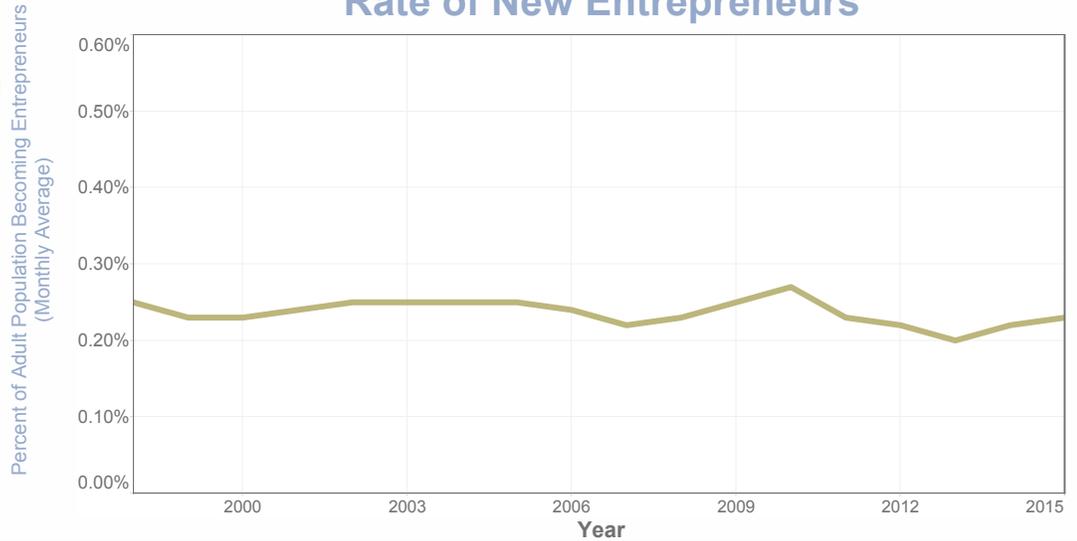
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.23%</b>	<b>0.22%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



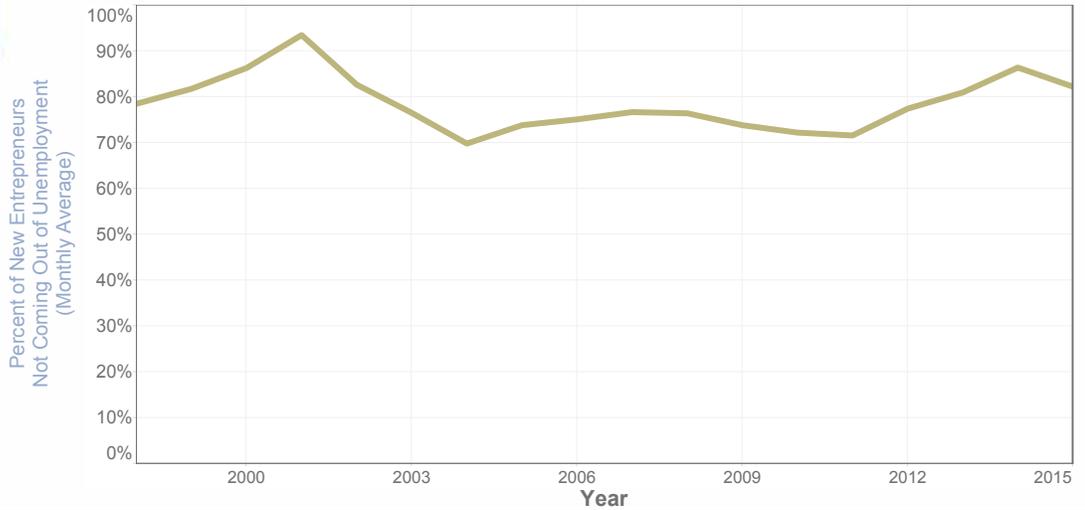
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>82.22%</b>	<b>86.39%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



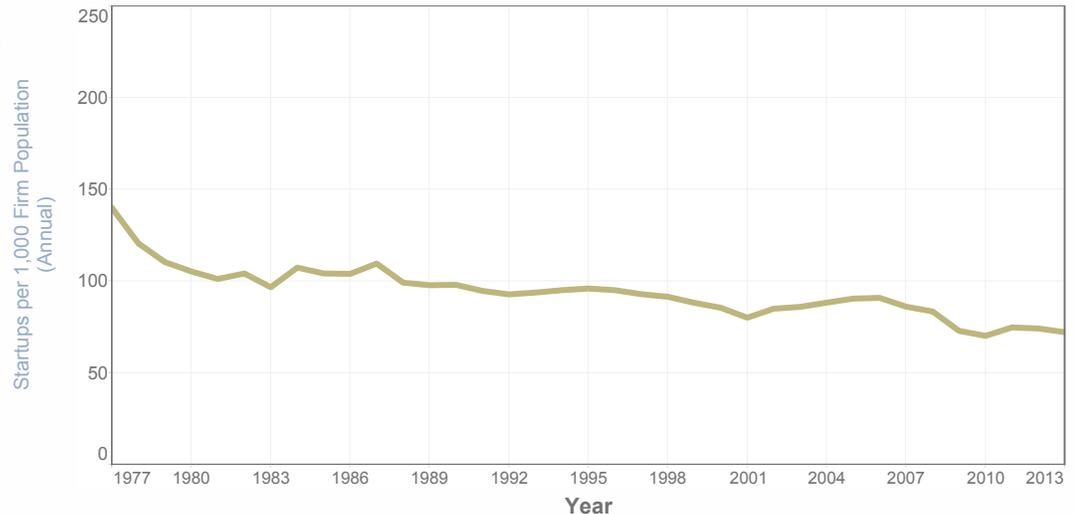
### Startup Density

2016 Component	2015 Component
<b>72.2</b>	<b>74.2</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>20</b>	<b>21</b>

2016 KAUFFMAN INDEX

## Tennessee State Profile

startup activity

### Rate of New Entrepreneurs

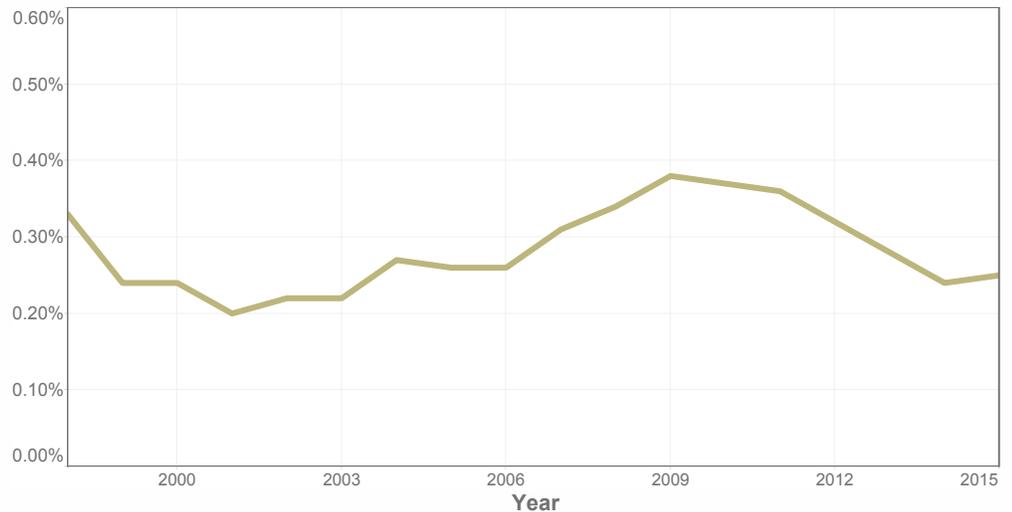
2016 Component	2015 Component
<b>0.25%</b>	<b>0.24%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)

### Rate of New Entrepreneurs



### Opportunity Share of New Entrepreneurs

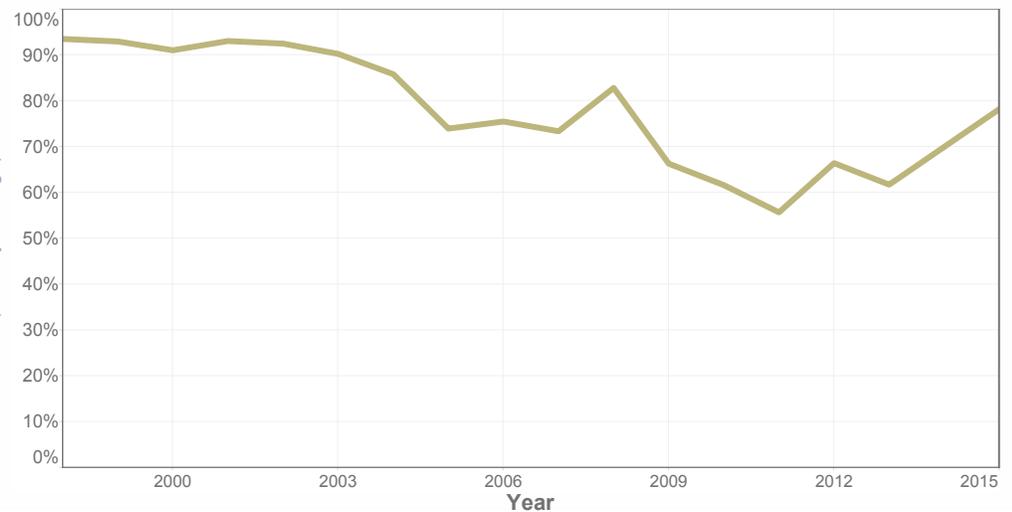
2016 Component	2015 Component
<b>78.20%</b>	<b>69.97%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)

### Opportunity Share of New Entrepreneurs



### Startup Density

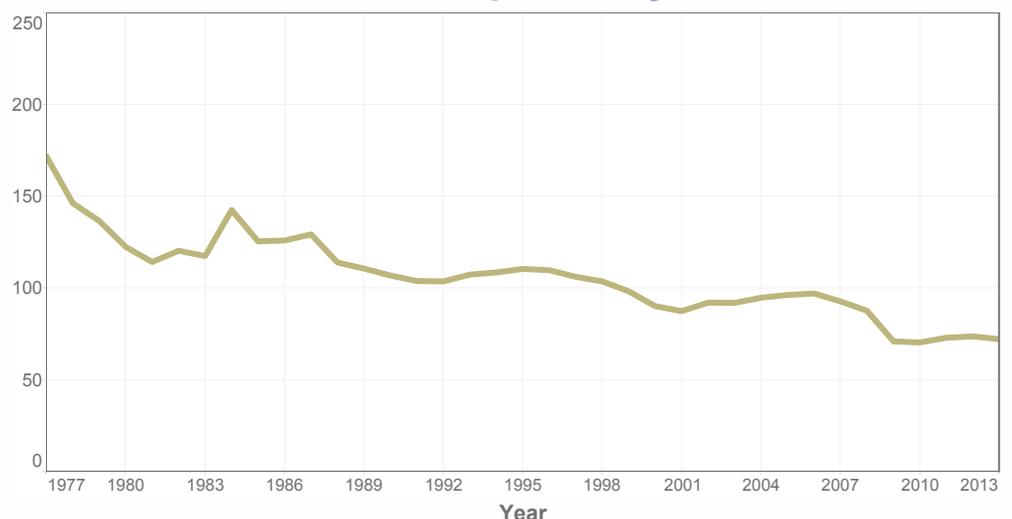
2016 Component	2015 Component
<b>72.2</b>	<b>73.7</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>21</b>	<b>24</b>

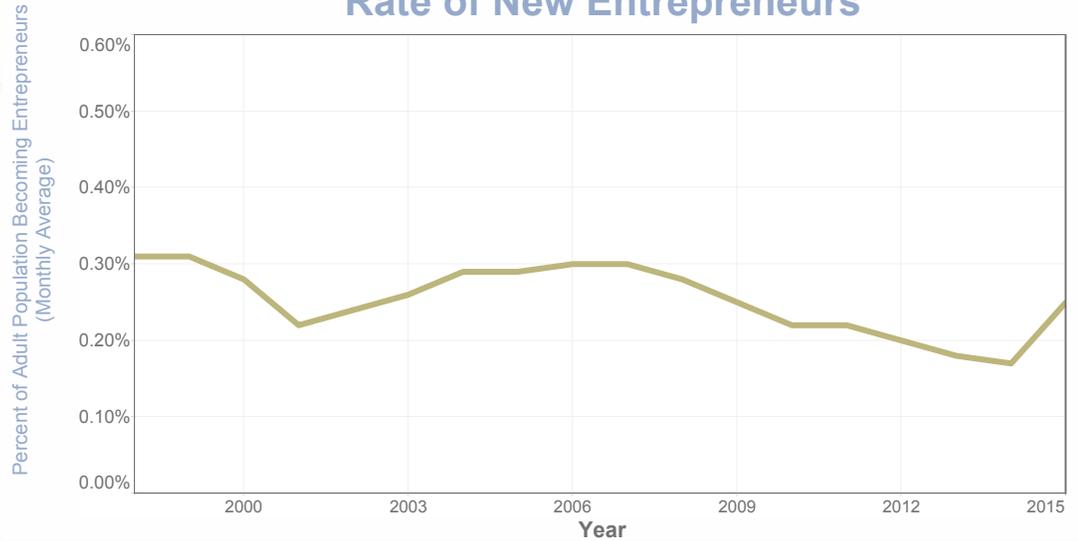
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.25%</b>	<b>0.17%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



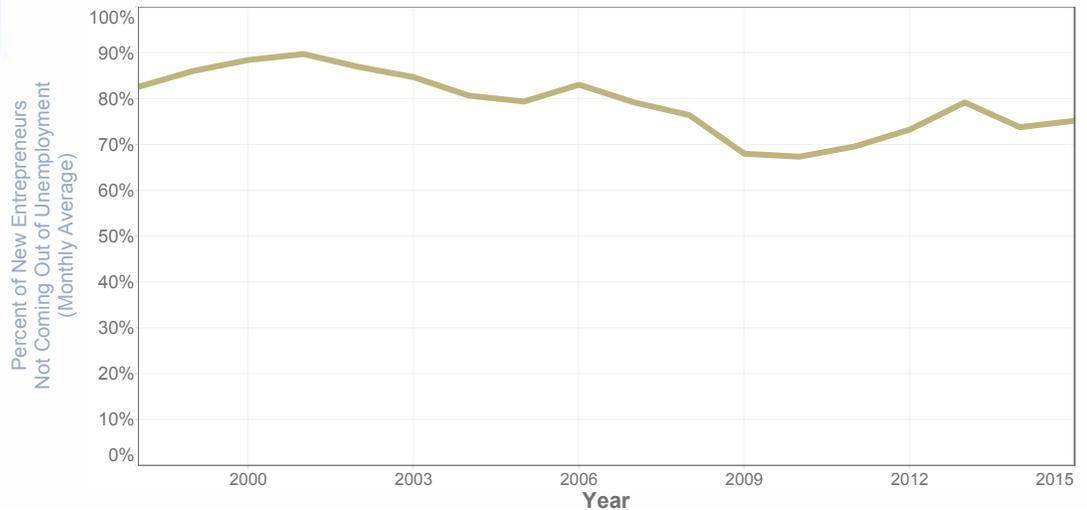
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>75.24%</b>	<b>73.82%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



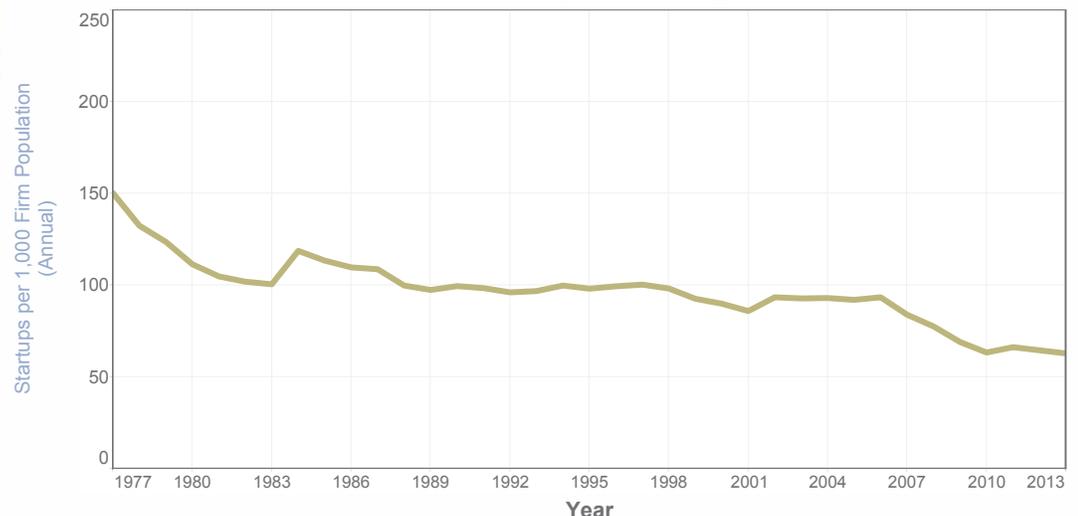
### Startup Density

2016 Component	2015 Component
<b>62.8</b>	<b>64.5</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>22</b>	<b>20</b>



## Indiana State Profile



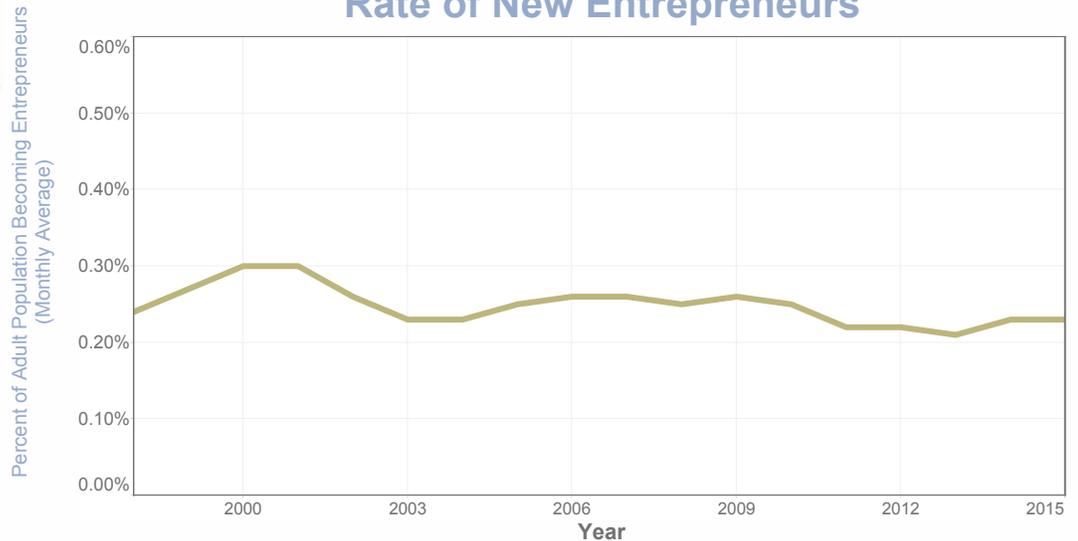
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.23%</b>	<b>0.23%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



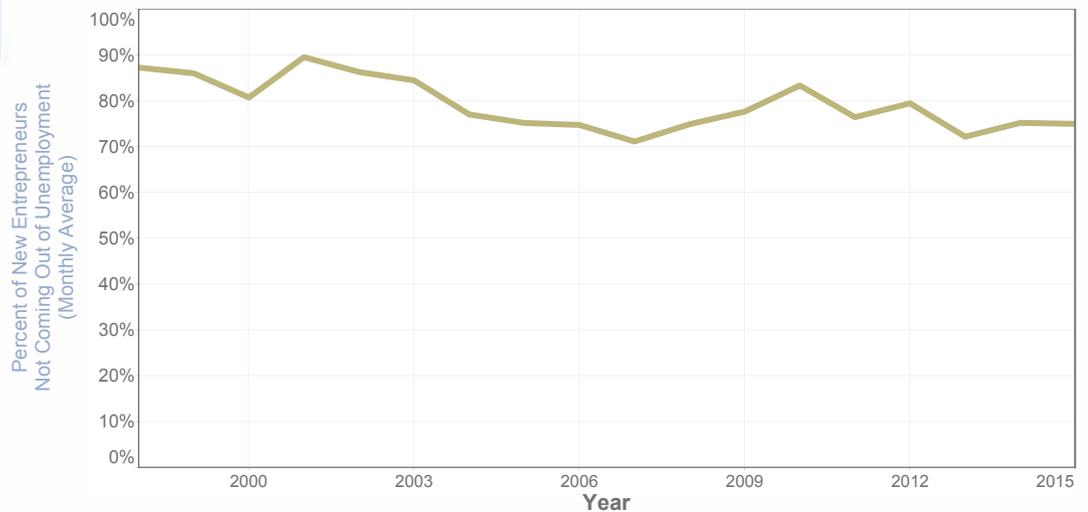
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>74.98%</b>	<b>75.20%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



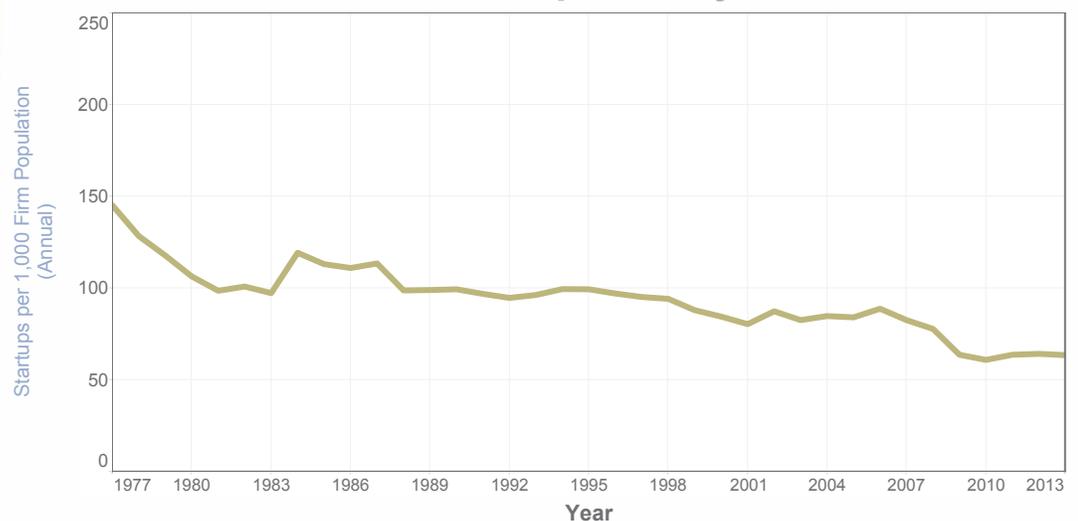
### Startup Density

2016 Component	2015 Component
<b>63.5</b>	<b>64.2</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>23</b>	<b>22</b>

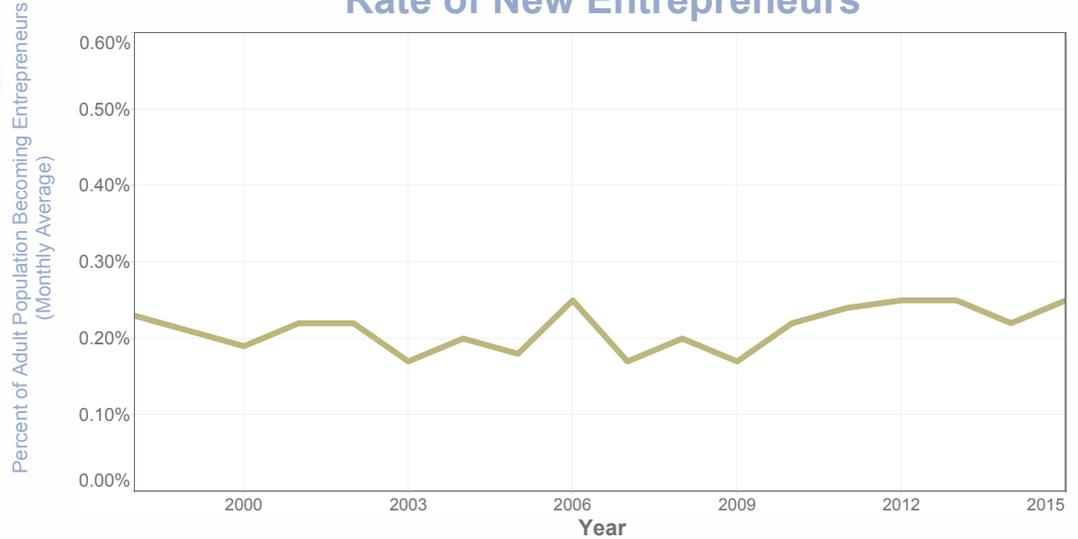
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.25%</b>	<b>0.22%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



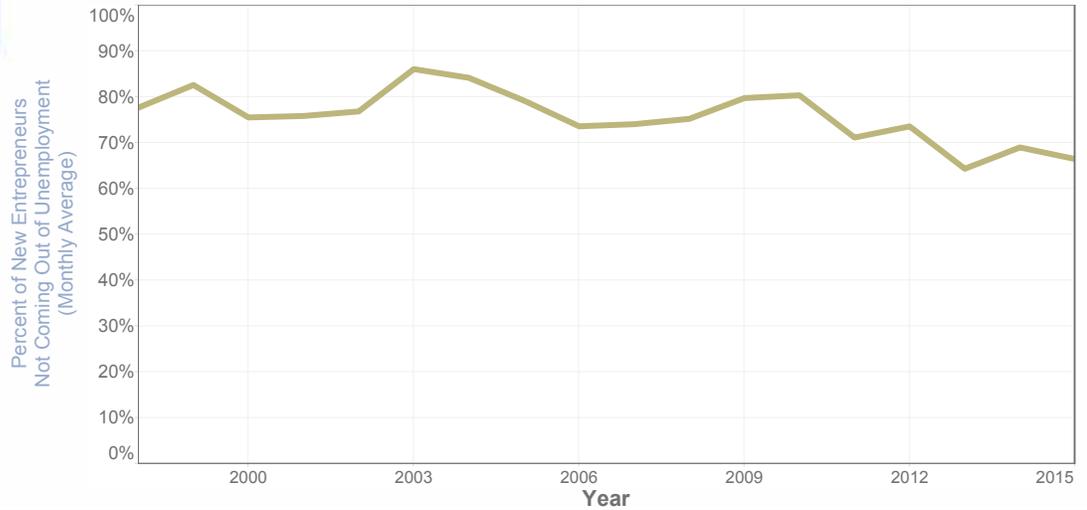
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>66.45%</b>	<b>68.97%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



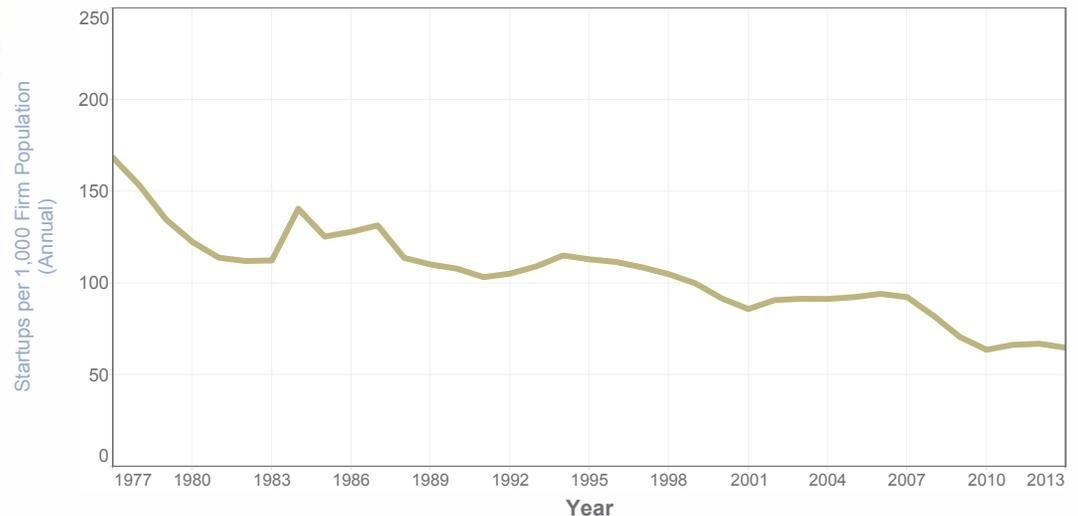
### Startup Density

2016 Component	2015 Component
<b>64.8</b>	<b>67.0</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>24</b>	<b>23</b>

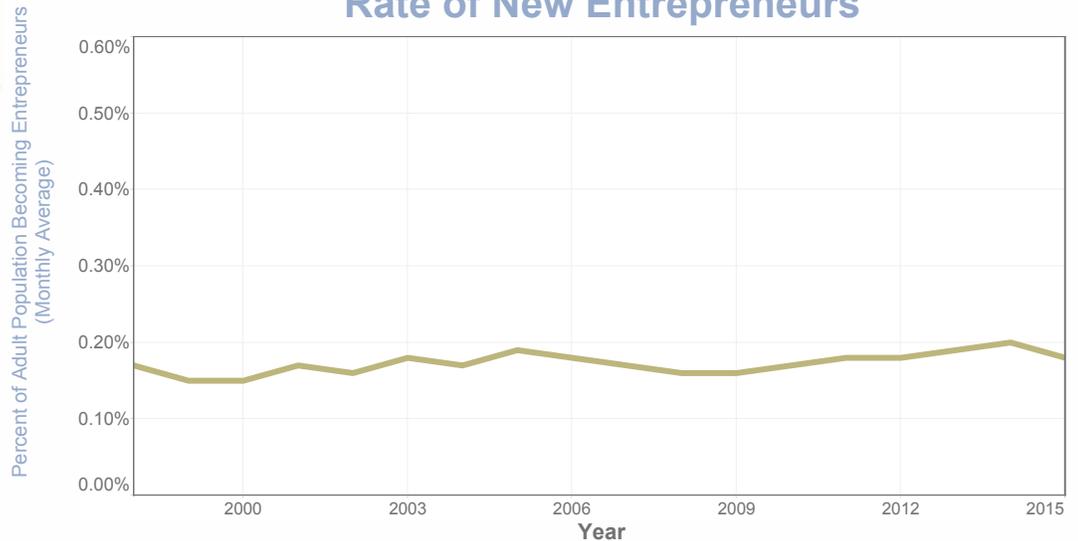
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.18%</b>	<b>0.20%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



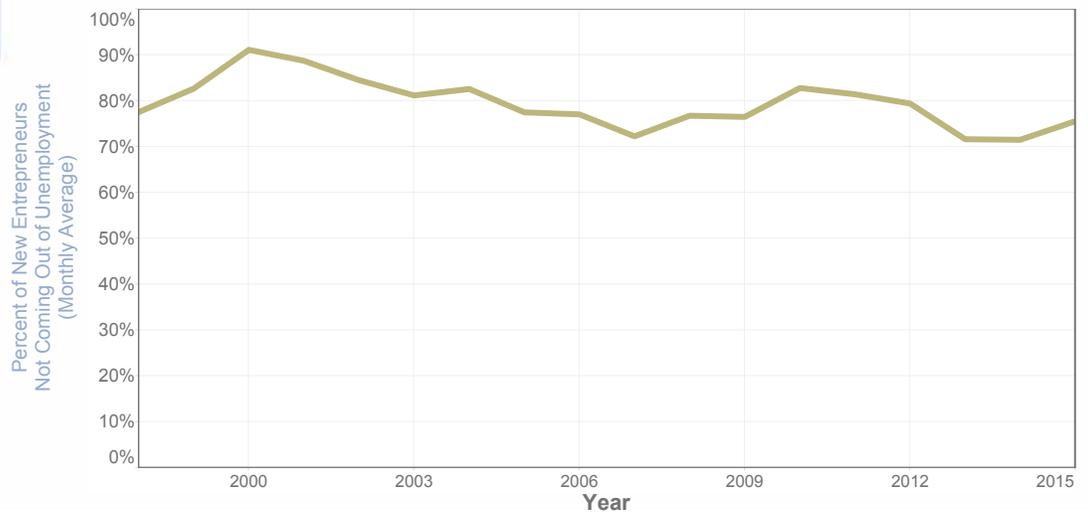
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>75.56%</b>	<b>71.51%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



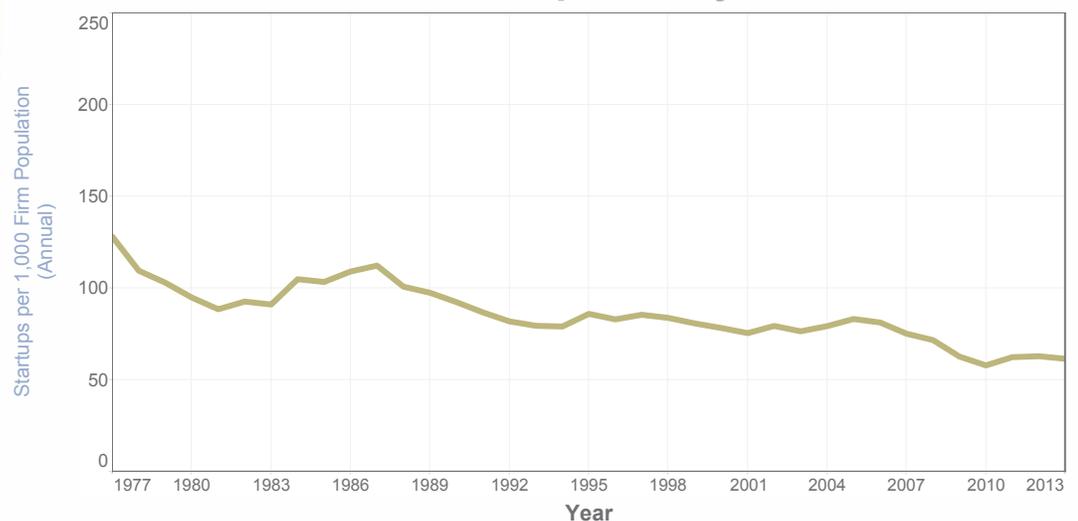
### Startup Density

2016 Component	2015 Component
<b>61.5</b>	<b>62.9</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Larger States

2016	2015
<b>25</b>	<b>25</b>

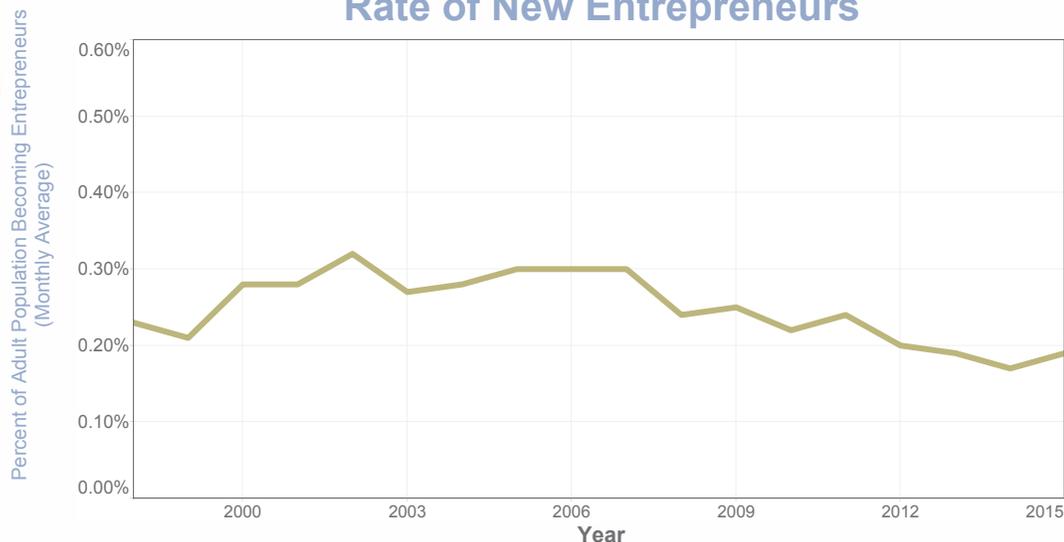
## Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.19%</b>	<b>0.17%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

## Rate of New Entrepreneurs



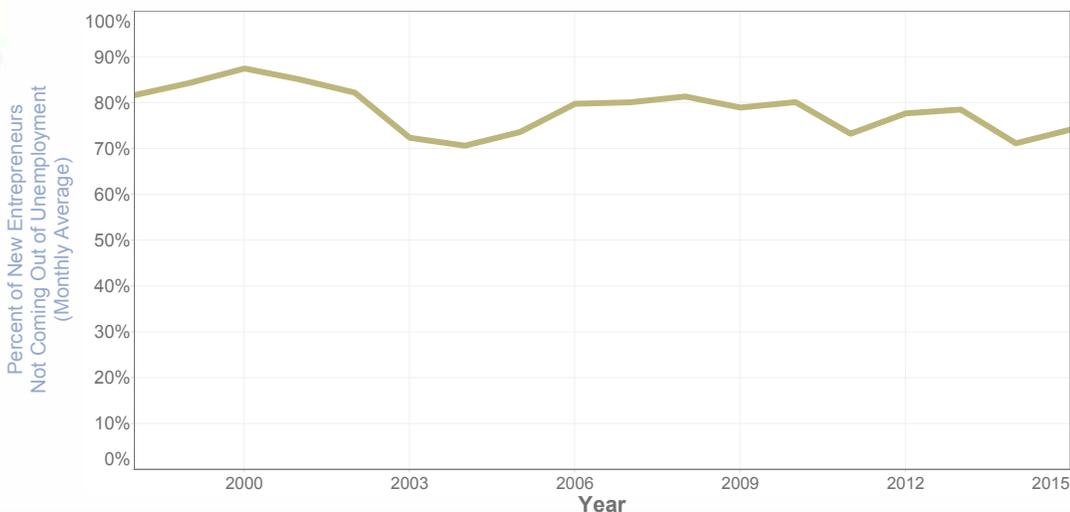
## Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>74.19%</b>	<b>71.18%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

## Opportunity Share of New Entrepreneurs



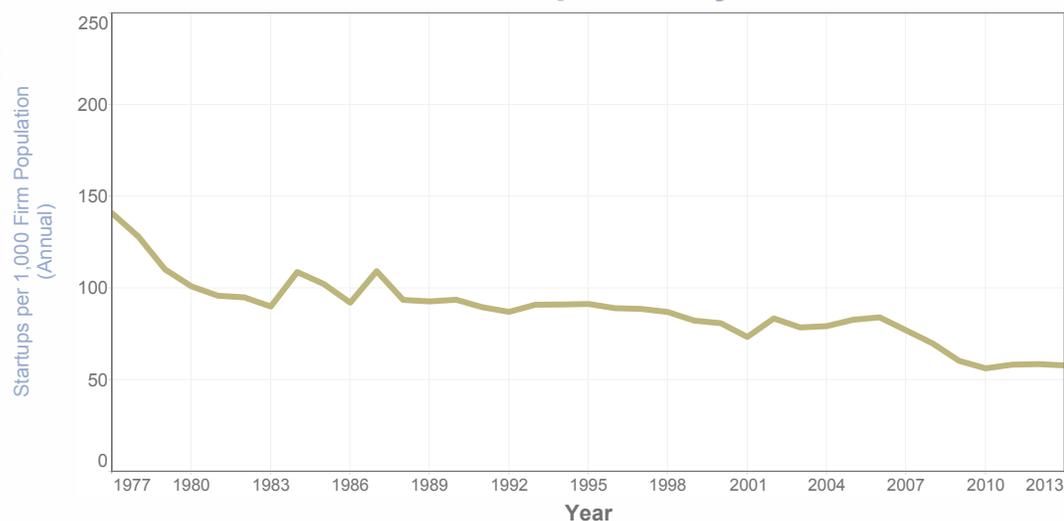
## Startup Density

2016 Component	2015 Component
<b>57.9</b>	<b>58.6</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

## Startup Density



## Appendix 2:

# STATE STARTUP ACTIVITY PROFILES, ORDERED BY RANK

## 25 SMALLEST STATES BY POPULATION

TABLE 3  
Kauffman Index of Startup Activity—Twenty-Five Smallest U.S. States by Population

Rank 2016	Index 2016	State Name	Rank 2015	Change in Rank	Rate of New Entrepreneurs	Opportunity Share of New Entrepreneurs	Startup Density
1	2.69	Montana	1	0	0.50%	84.12%	71.7
2	2.28	Nevada	2	0	0.38%	87.40%	107.4
3	1.63	Wyoming	5	2	0.39%	89.48%	73.3
4	1.30	Oklahoma	8	4	0.40%	84.72%	73.5
5	1.11	Alaska	3	-2	0.48%	71.32%	72.4
6	0.63	Idaho	4	-2	0.32%	89.36%	75.6
7	0.47	North Dakota	11	4	0.28%	90.84%	85.5
8	0.30	Hawaii	7	-1	0.33%	88.69%	61.7
9	0.27	South Dakota	9	0	0.35%	84.37%	65.4
10	-0.02	Utah	6	-4	0.28%	83.62%	93.5
11	-0.37	Mississippi	13	2	0.33%	81.25%	64.8
12	-0.44	New Mexico	12	0	0.32%	81.06%	67.9
13	-0.74	Nebraska	15	2	0.25%	90.29%	61.7
14	-0.81	Vermont	10	-4	0.36%	75.71%	53.8
15	-0.93	Oregon	22	7	0.31%	75.83%	74.5
16	-0.98	Delaware	14	-2	0.24%	86.22%	72.6
17	-1.13	Arkansas	19	2	0.27%	81.37%	69.2
18	-1.33	Kansas	17	-1	0.27%	81.25%	62.7
19	-1.37	Rhode Island	21	2	0.23%	87.30%	61.0
20	-1.45	Maine	16	-4	0.29%	77.68%	60.7
21	-1.48	Kentucky	18	-3	0.28%	75.86%	71.0
22	-1.51	Connecticut	20	-2	0.29%	76.30%	63.7
23	-2.04	Iowa	23	0	0.18%	89.59%	55.8
24	-2.26	New Hampshire	24	0	0.24%	77.61%	59.1
25	-2.84	West Virginia	25	0	0.21%	78.77%	51.1

For an interactive version of the rankings, please see: [www.kauffmanindex.org](http://www.kauffmanindex.org).

## Startup Activity Rank Smaller States

2016	2015
<b>1</b>	<b>1</b>

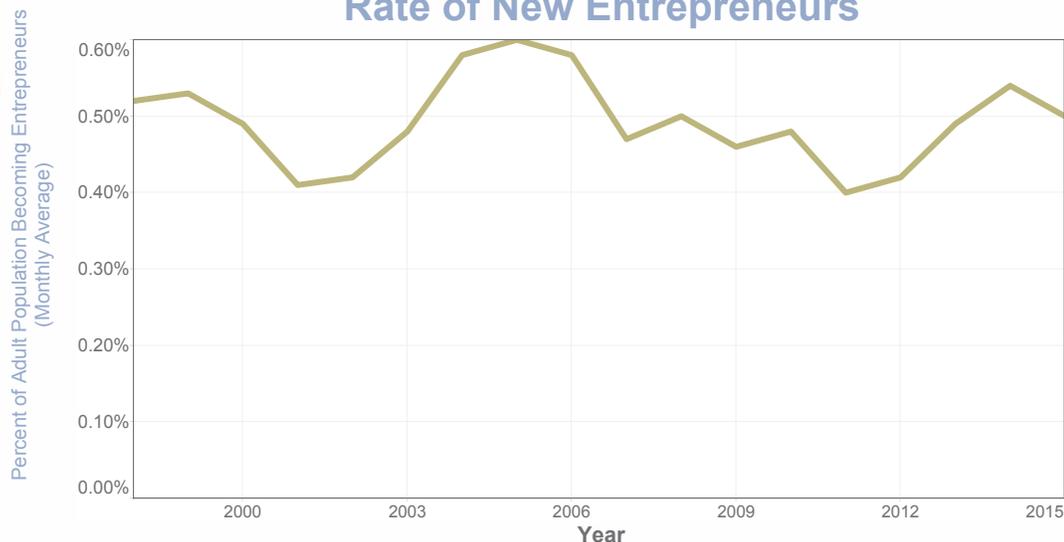
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.50%</b>	<b>0.54%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



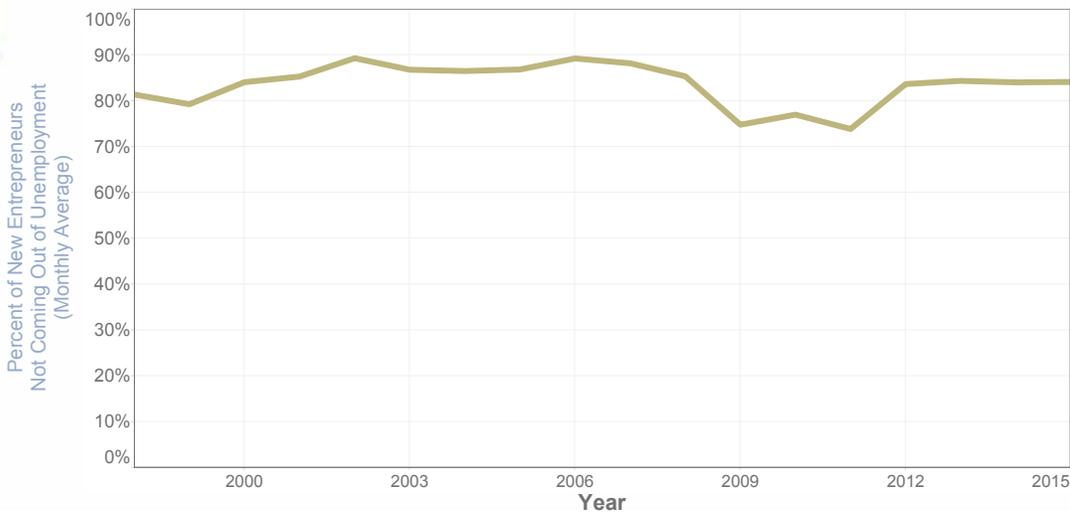
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>84.12%</b>	<b>84.03%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



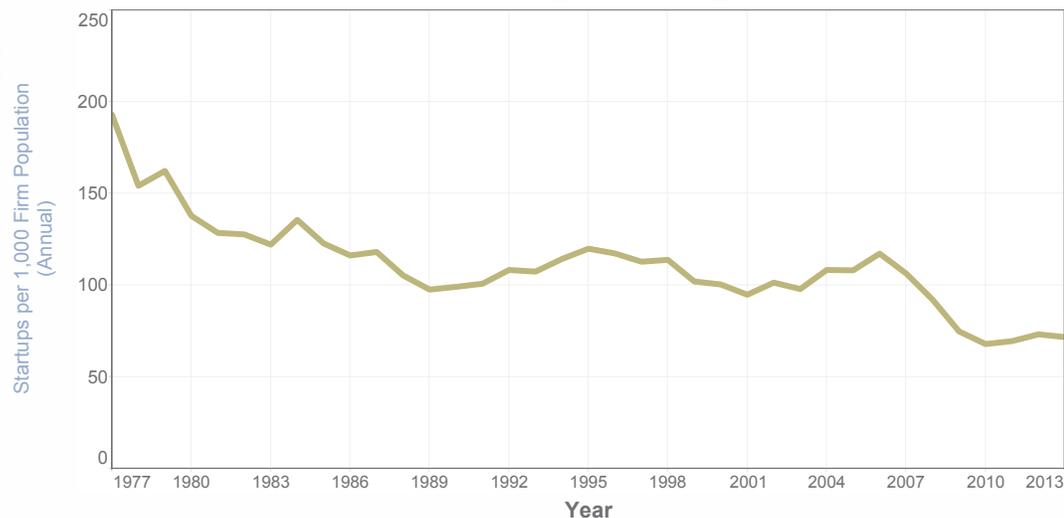
### Startup Density

2016 Component	2015 Component
<b>71.7</b>	<b>73.2</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>2</b>	<b>2</b>

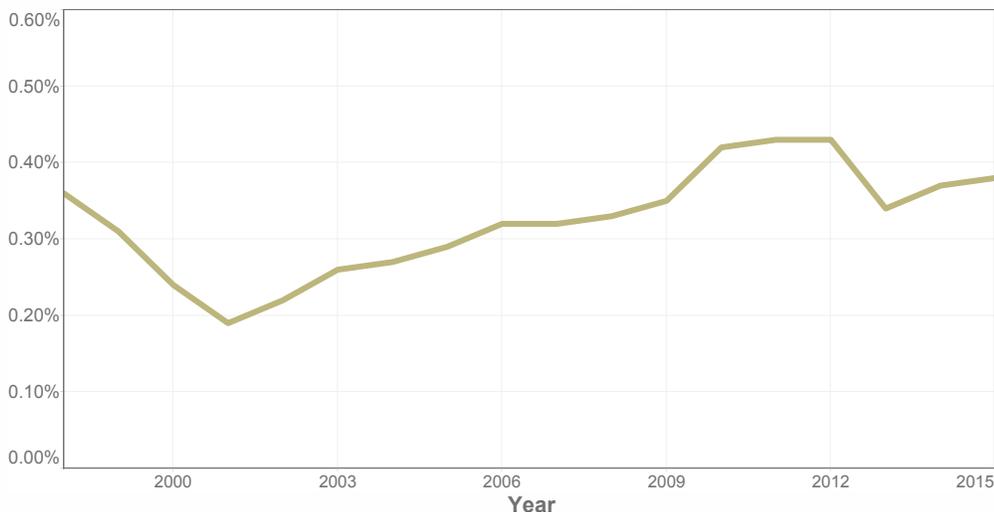
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.38%</b>	<b>0.37%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

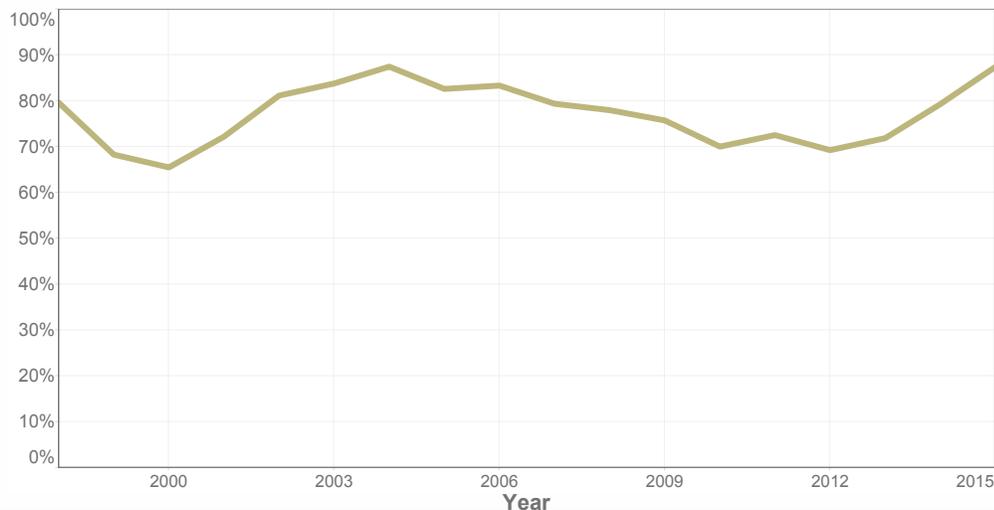
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>87.40%</b>	<b>79.27%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

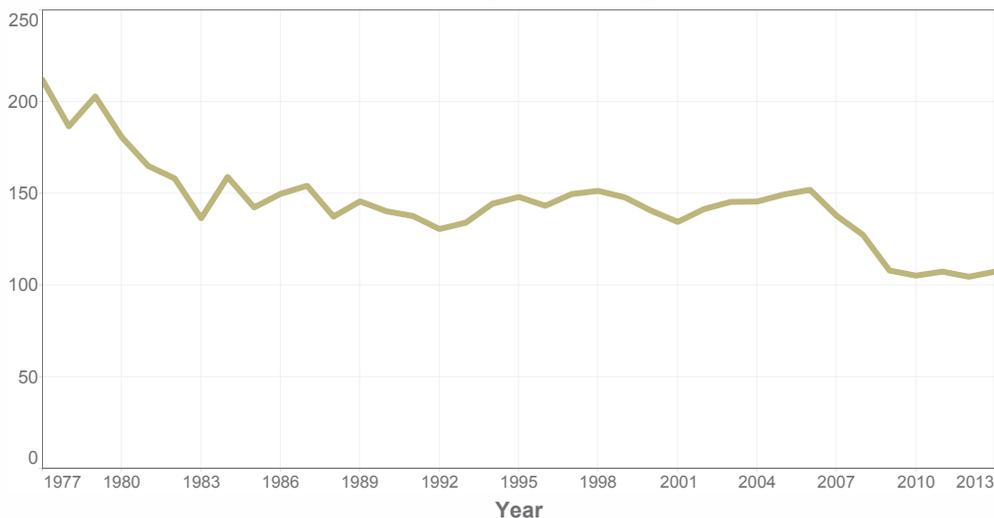
### Startup Density

2016 Component	2015 Component
<b>107.4</b>	<b>104.6</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Smaller States

2016	2015
<b>3</b>	<b>5</b>

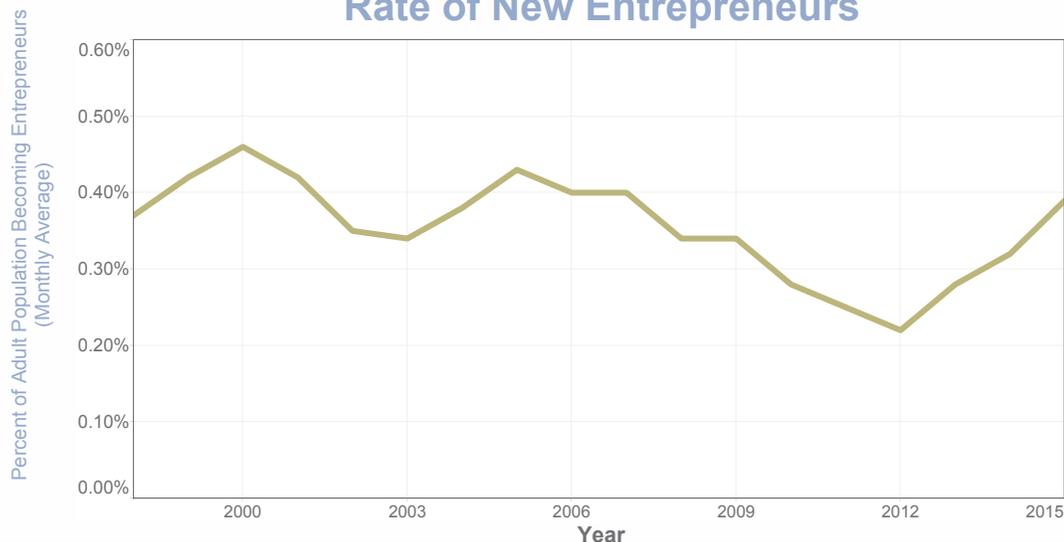
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.39%</b>	<b>0.32%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



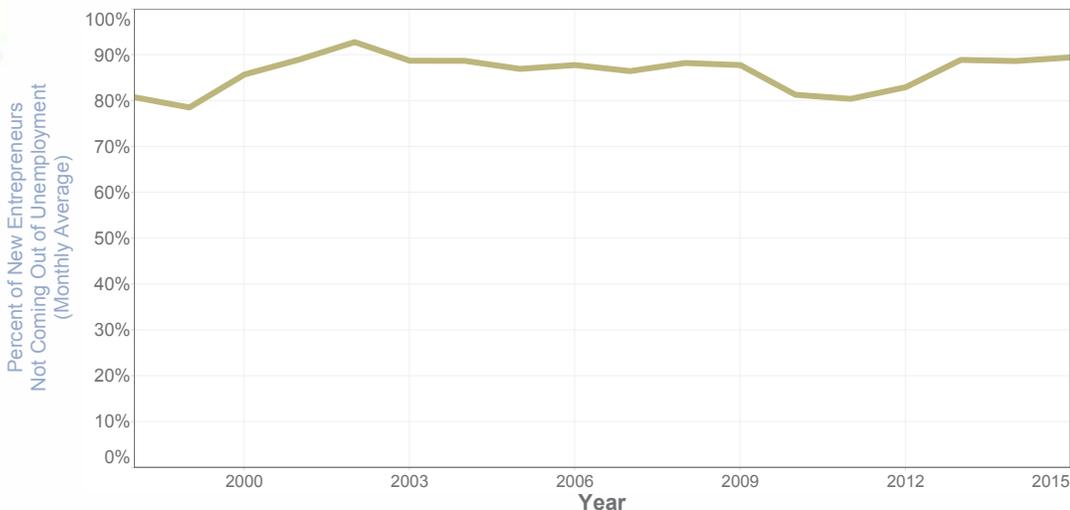
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>89.48%</b>	<b>88.69%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



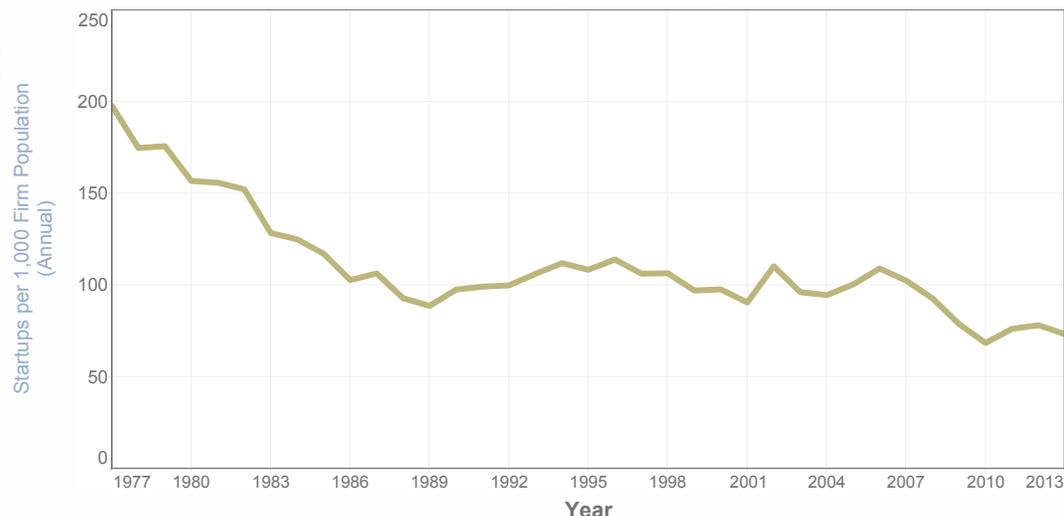
### Startup Density

2016 Component	2015 Component
<b>73.3</b>	<b>78.2</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>4</b>	<b>8</b>



## Oklahoma State Profile



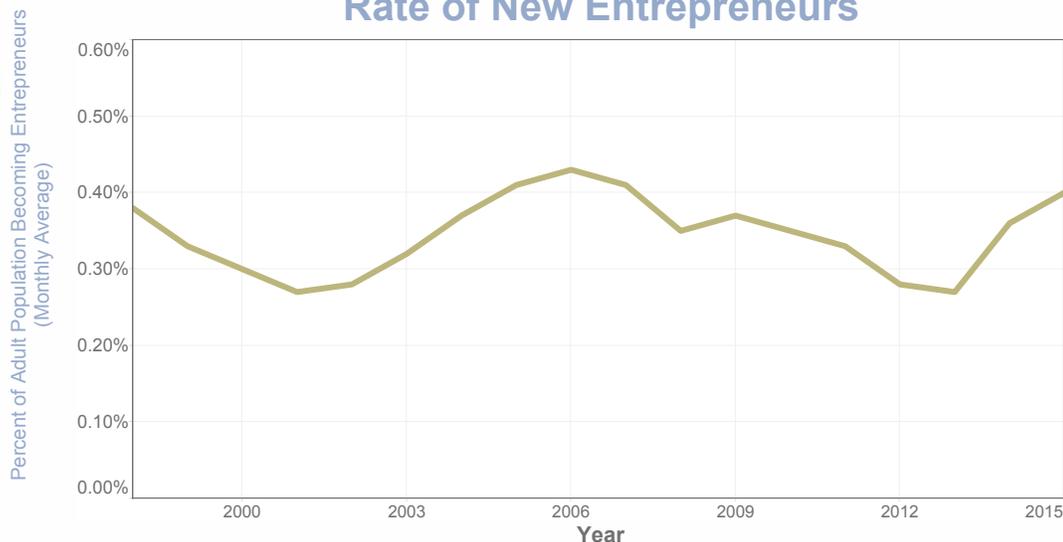
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.40%</b>	<b>0.36%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



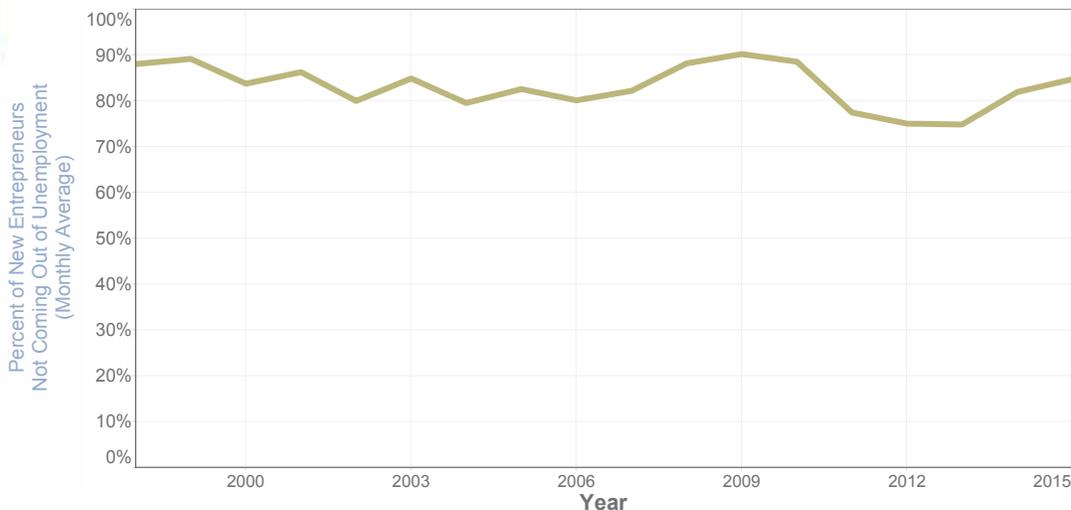
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>84.72%</b>	<b>81.92%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



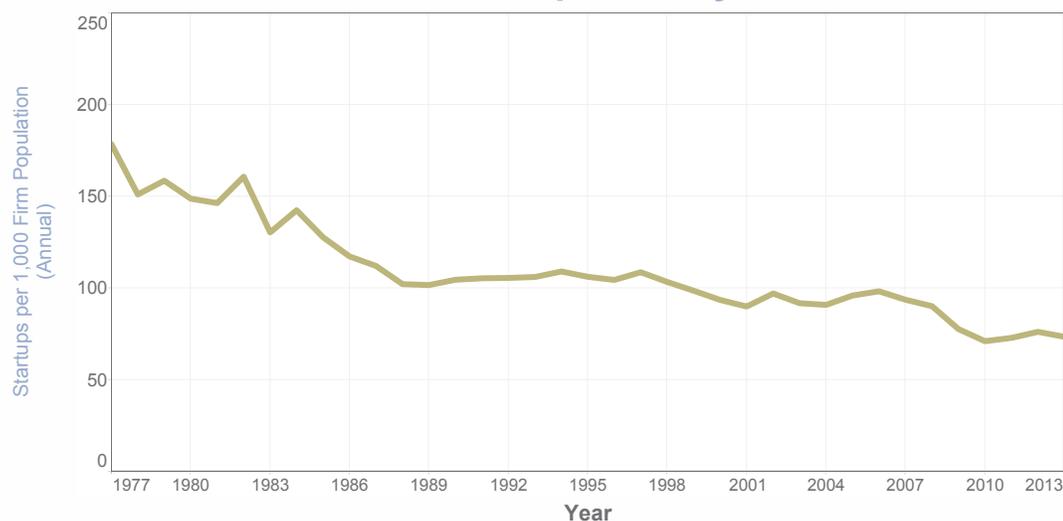
### Startup Density

2016 Component	2015 Component
<b>73.5</b>	<b>76.2</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>5</b>	<b>3</b>

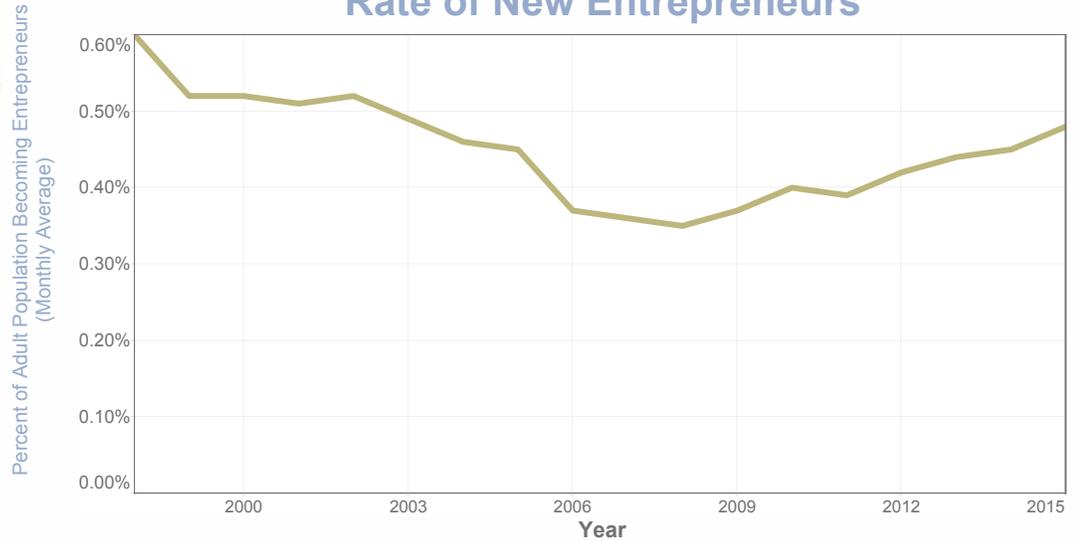
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.48%</b>	<b>0.45%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



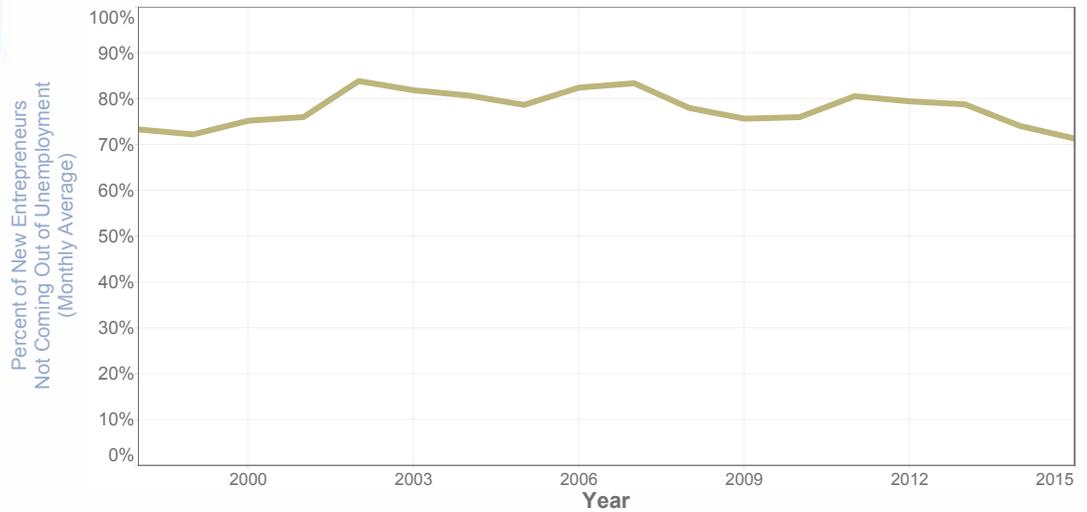
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>71.32%</b>	<b>74.10%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



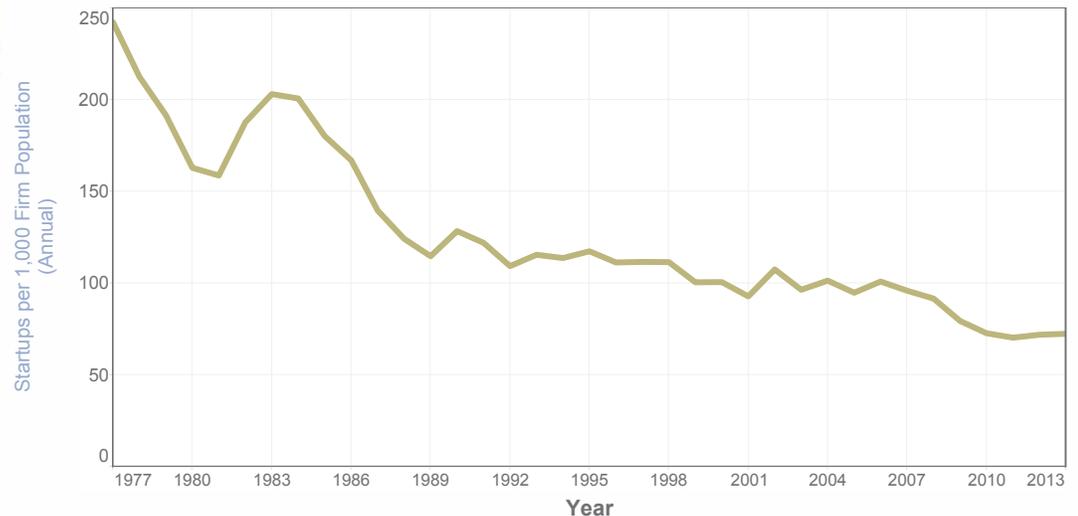
### Startup Density

2016 Component	2015 Component
<b>72.4</b>	<b>71.9</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>6</b>	<b>4</b>

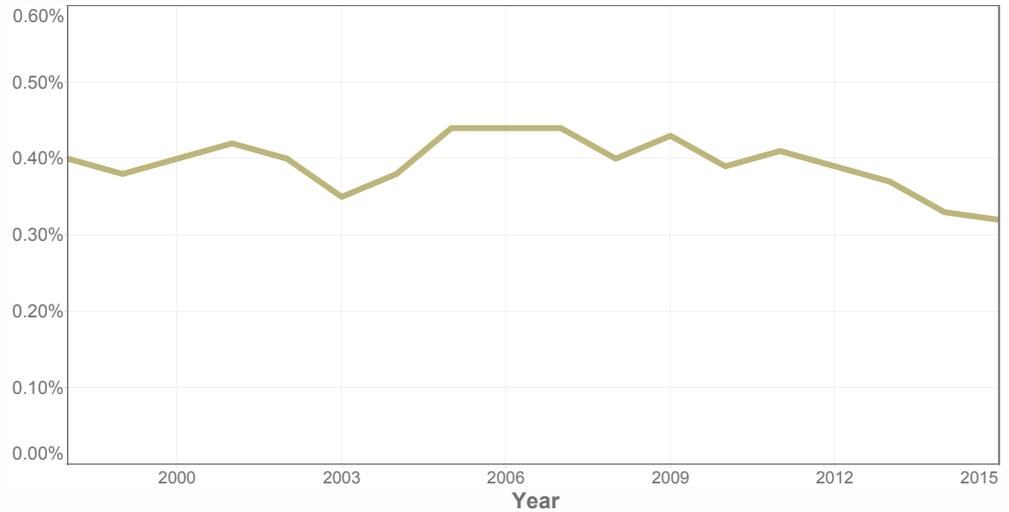
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.32%</b>	<b>0.33%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

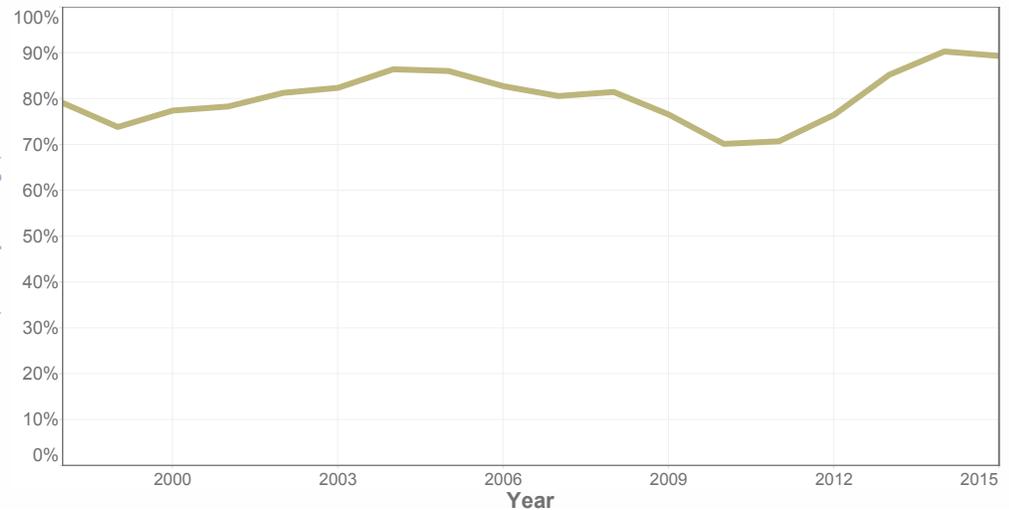
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>89.36%</b>	<b>90.33%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

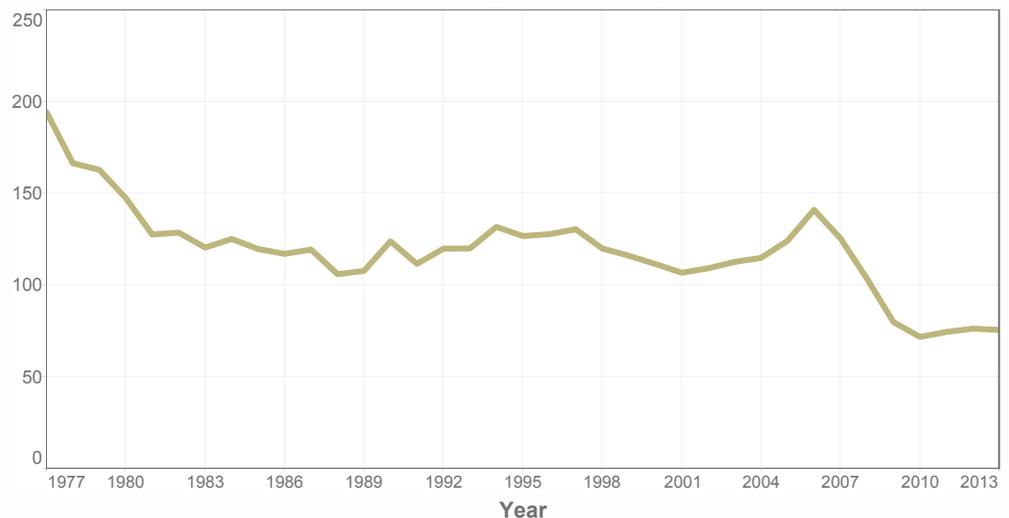
### Startup Density

2016 Component	2015 Component
<b>75.6</b>	<b>76.3</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Smaller States

2016	2015
<b>7</b>	<b>11</b>

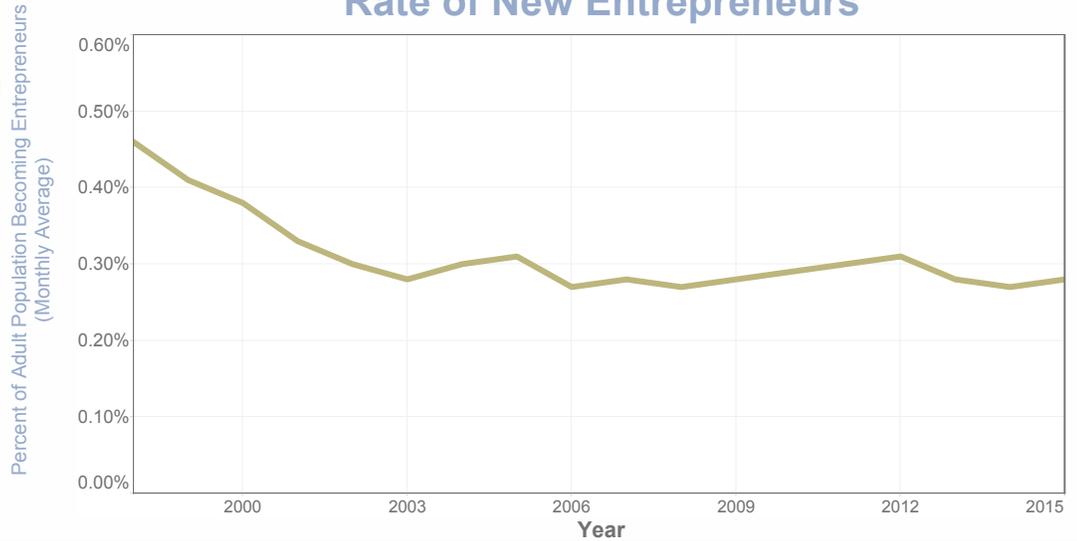
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.28%</b>	<b>0.27%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



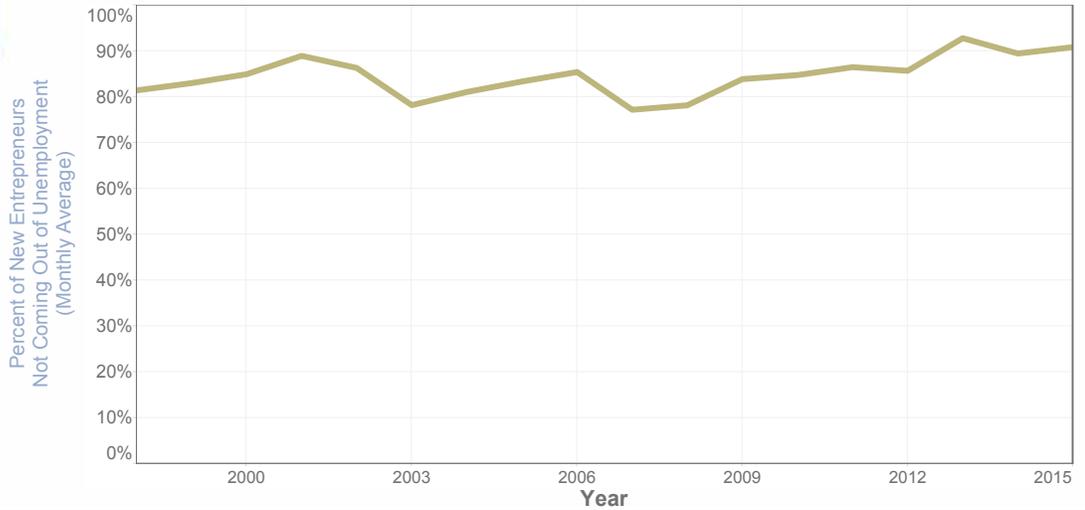
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>90.84%</b>	<b>89.45%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



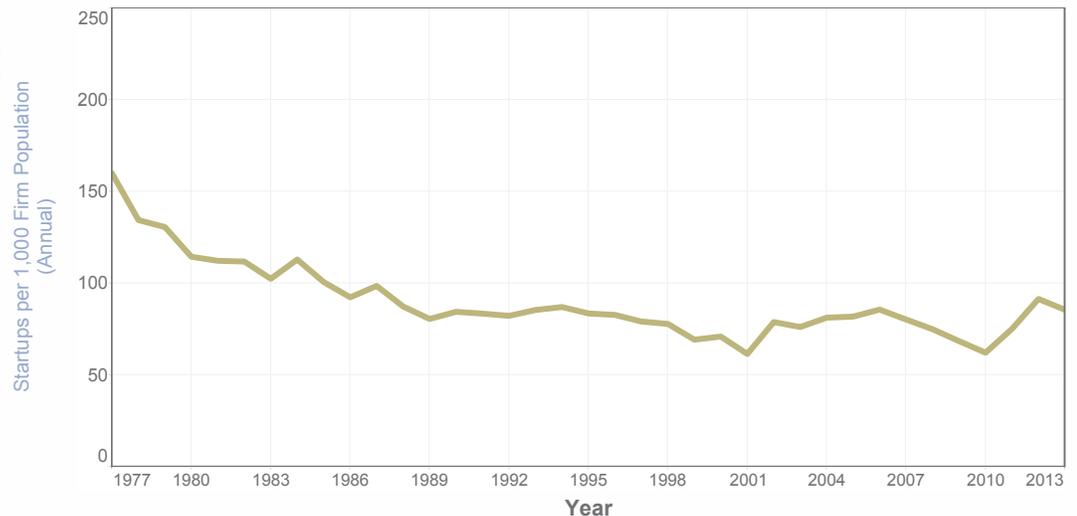
### Startup Density

2016 Component	2015 Component
<b>85.5</b>	<b>91.4</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>8</b>	<b>7</b>

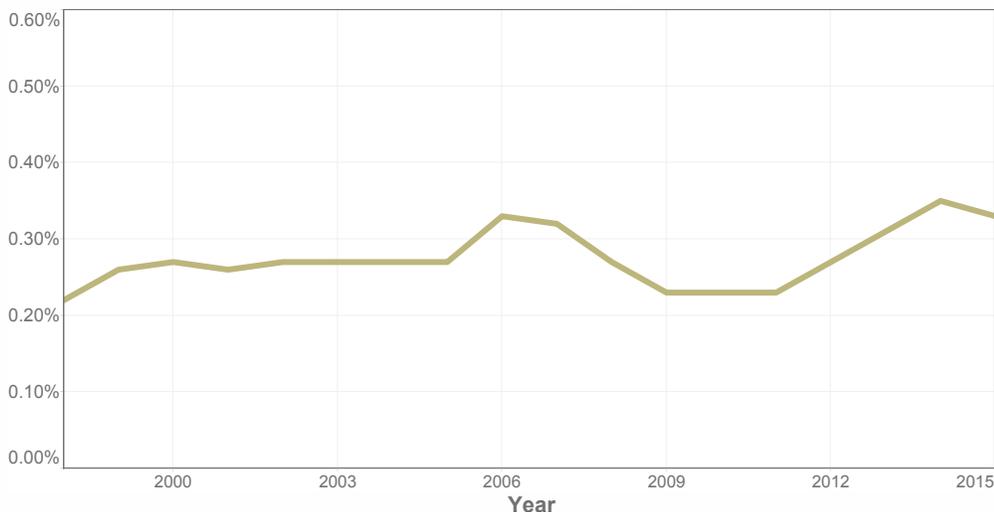
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.33%</b>	<b>0.35%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

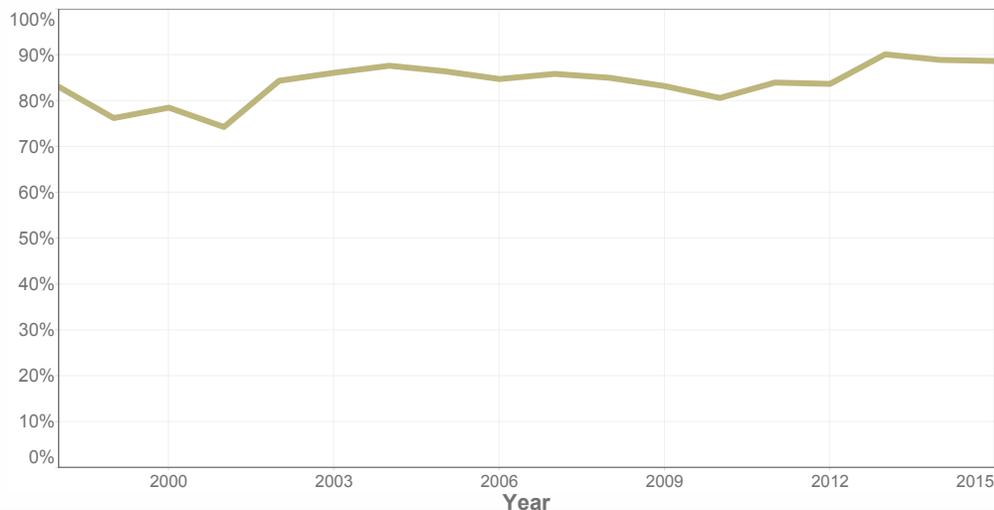
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>88.69%</b>	<b>88.93%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

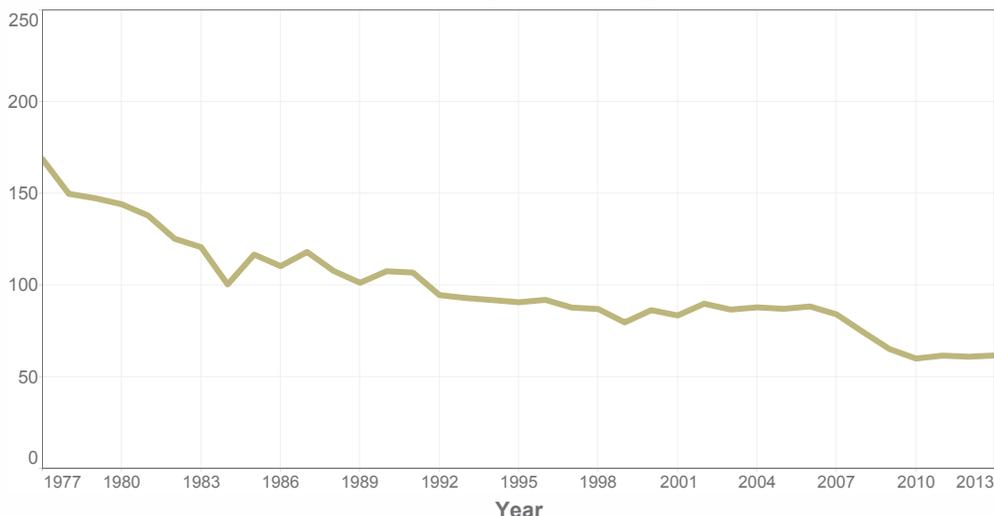
### Startup Density

2016 Component	2015 Component
<b>61.7</b>	<b>61.0</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Smaller States

2016	2015
<b>9</b>	<b>9</b>

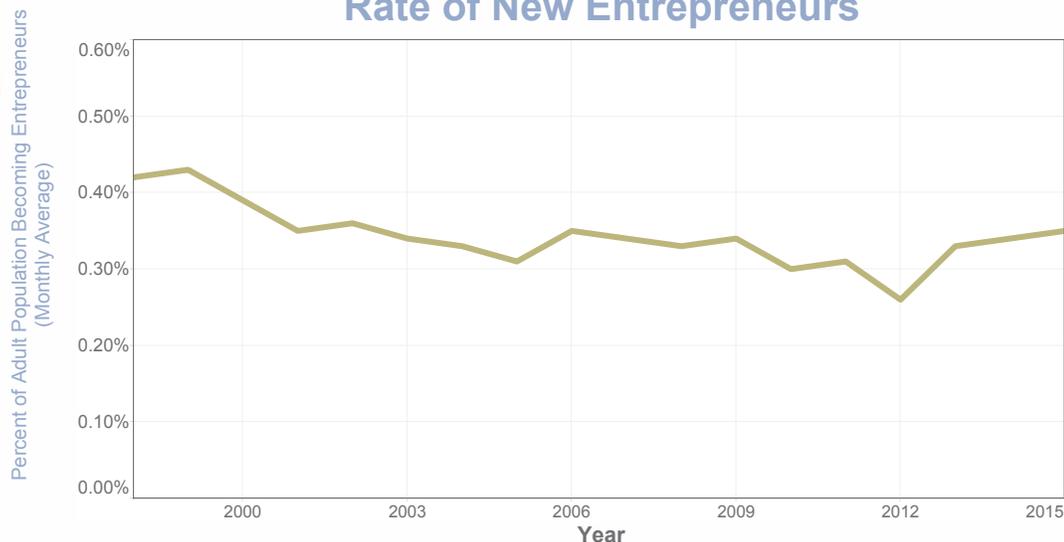
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.35%</b>	<b>0.34%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



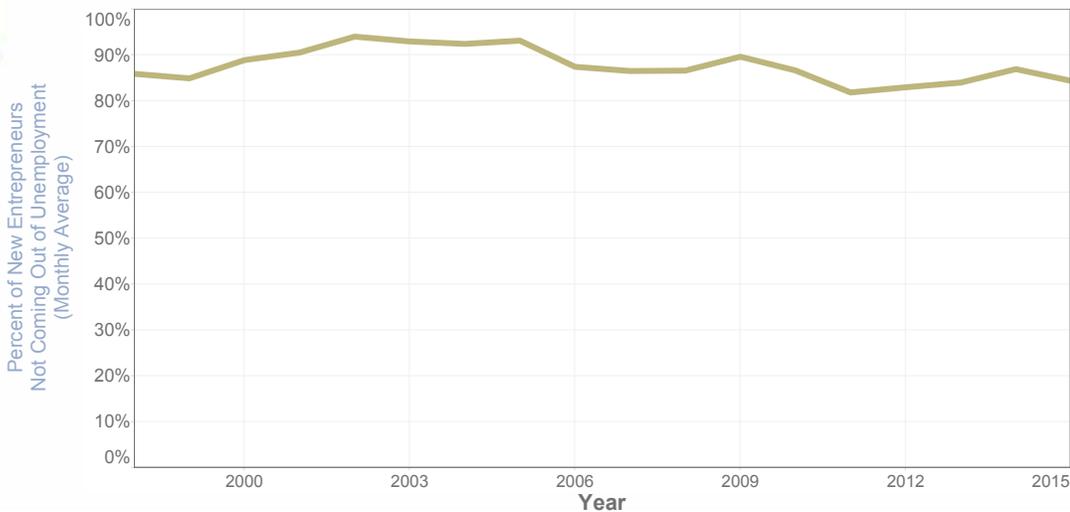
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>84.37%</b>	<b>86.92%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



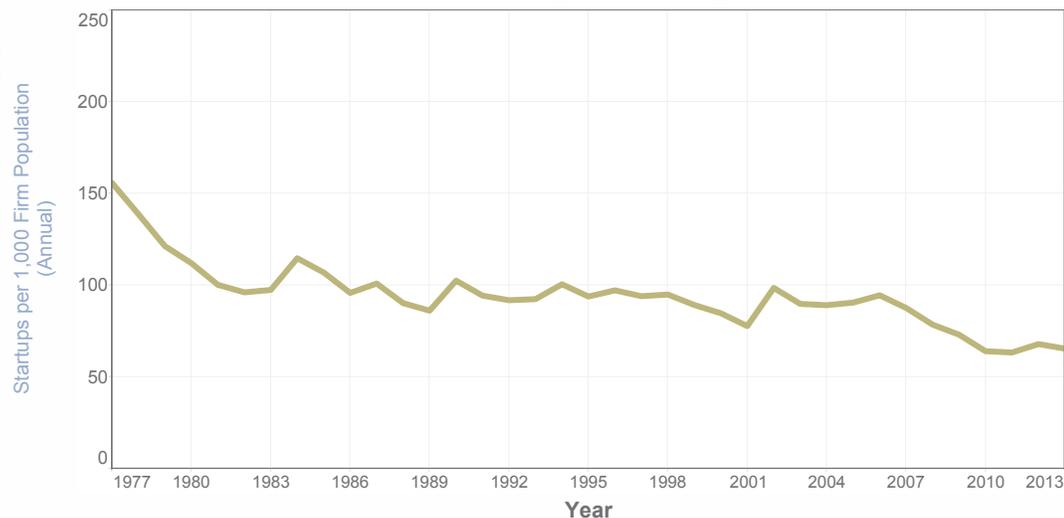
### Startup Density

2016 Component	2015 Component
<b>65.4</b>	<b>67.9</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>10</b>	<b>6</b>

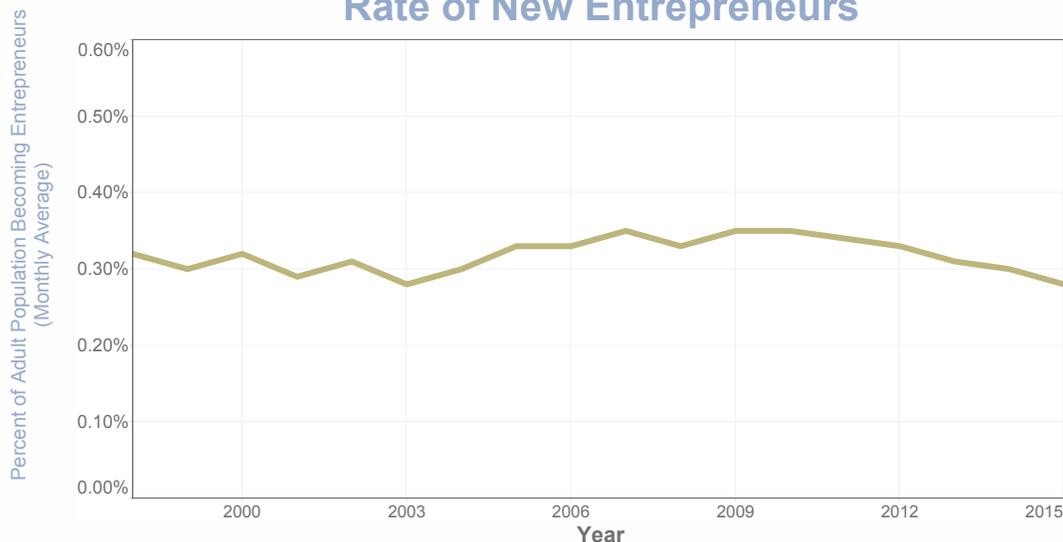
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.28%</b>	<b>0.30%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



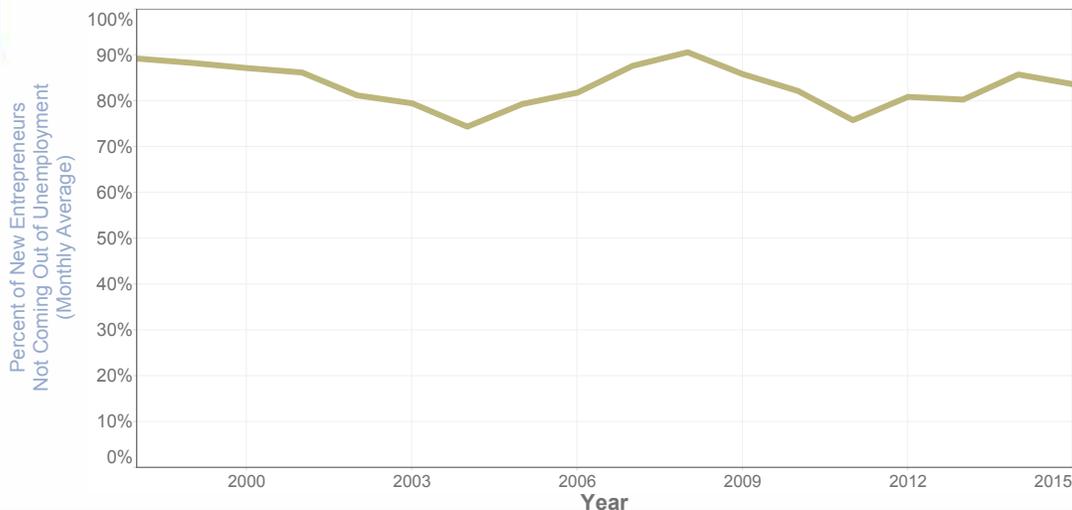
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>83.62%</b>	<b>85.75%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



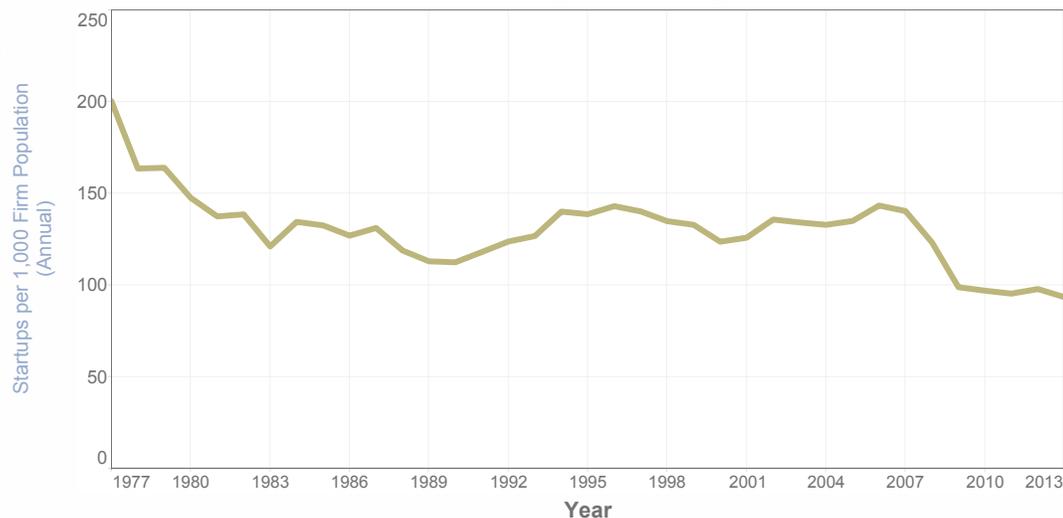
### Startup Density

2016 Component	2015 Component
<b>93.5</b>	<b>97.9</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>11</b>	<b>13</b>

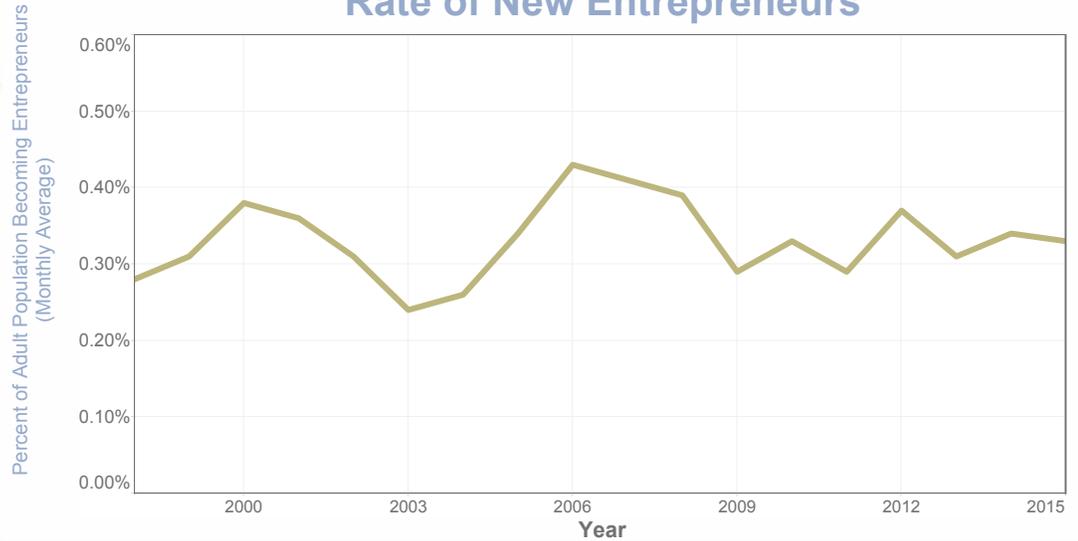
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.33%</b>	<b>0.34%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



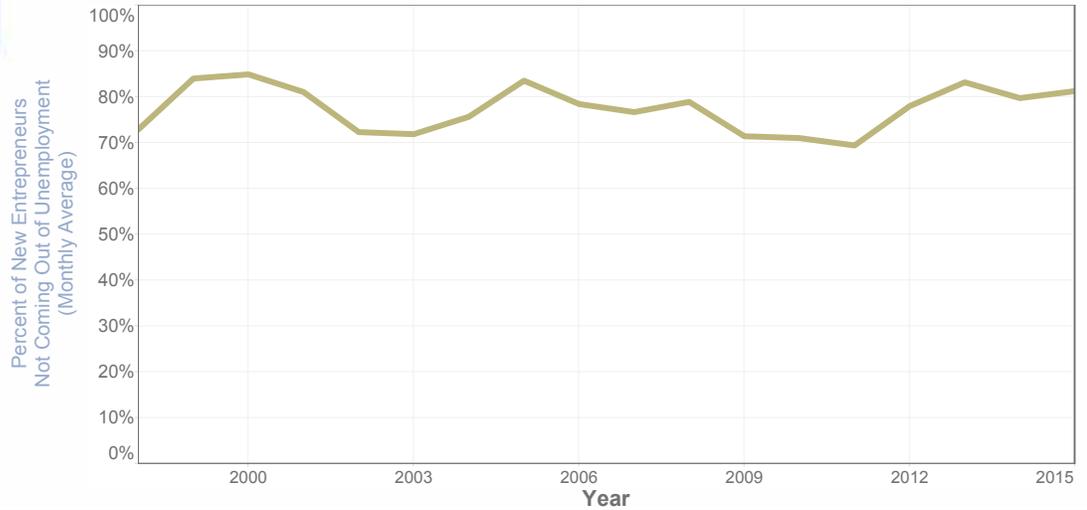
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>81.25%</b>	<b>79.73%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



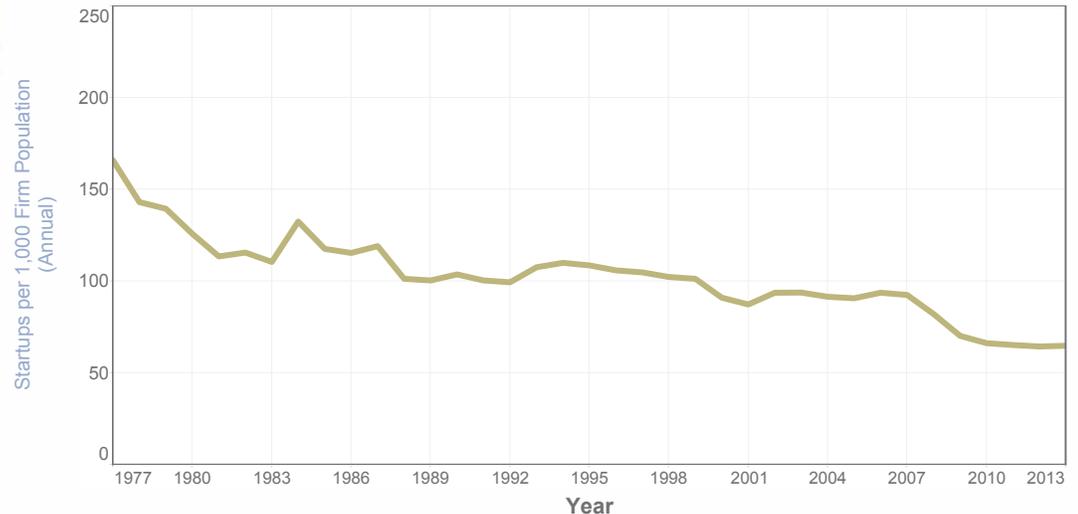
### Startup Density

2016 Component	2015 Component
<b>64.8</b>	<b>64.4</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>12</b>	<b>12</b>

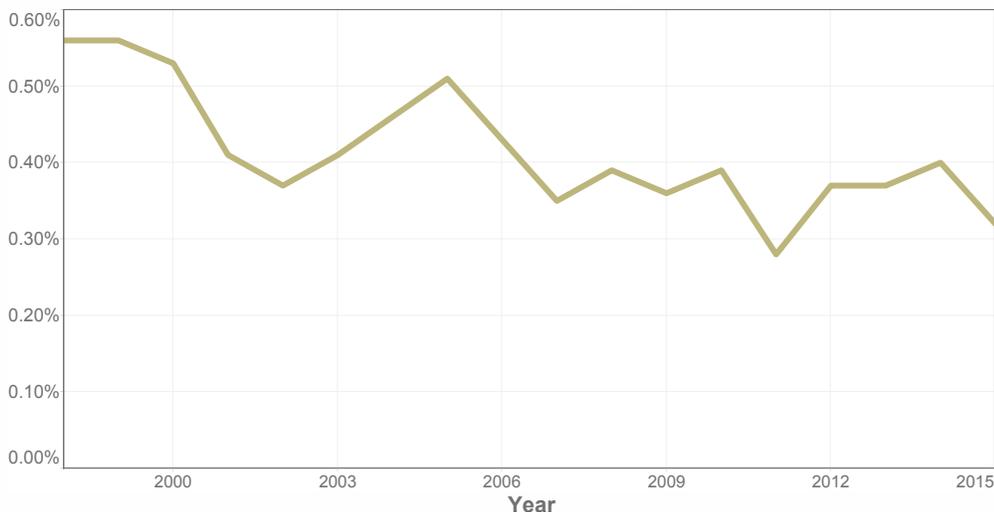
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.32%</b>	<b>0.40%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



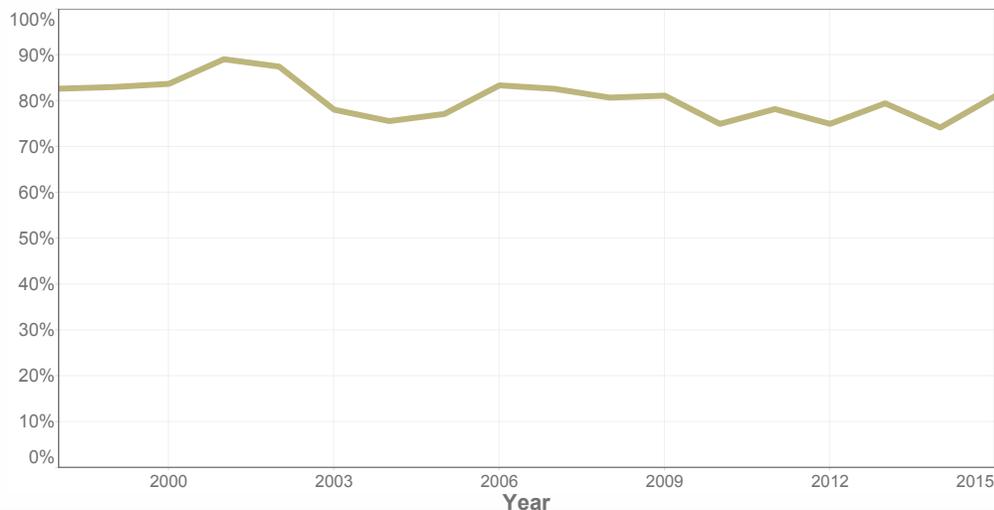
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>81.06%</b>	<b>74.18%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



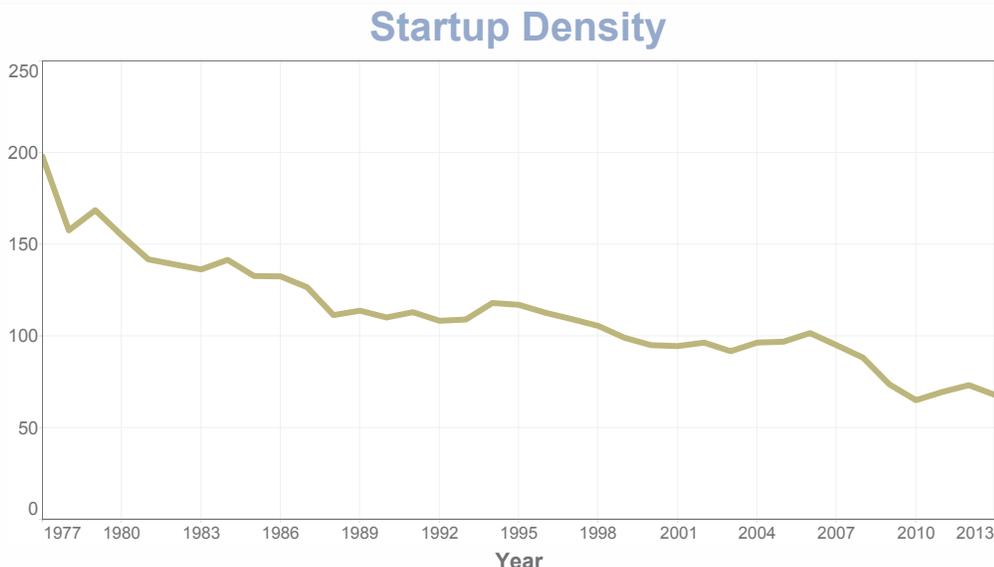
### Startup Density

2016 Component	2015 Component
<b>67.9</b>	<b>73.3</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



## Startup Activity Rank Smaller States

2016	2015
<b>13</b>	<b>15</b>

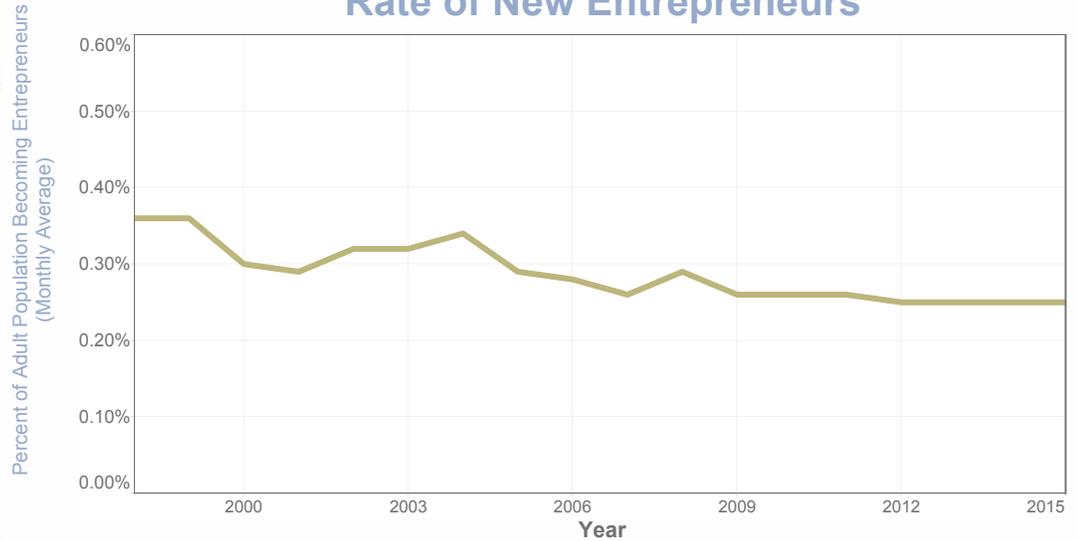
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.25%</b>	<b>0.25%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



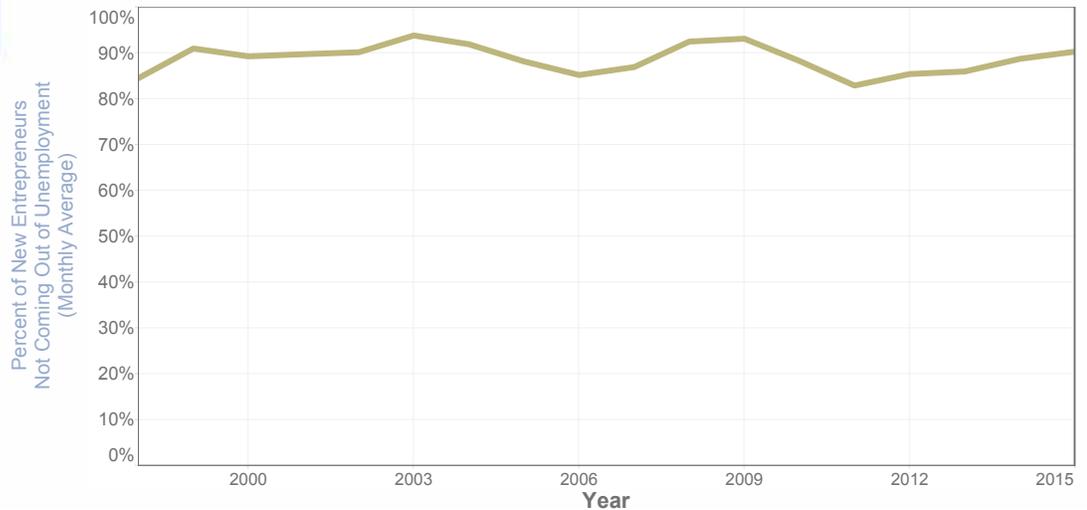
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>90.29%</b>	<b>88.73%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



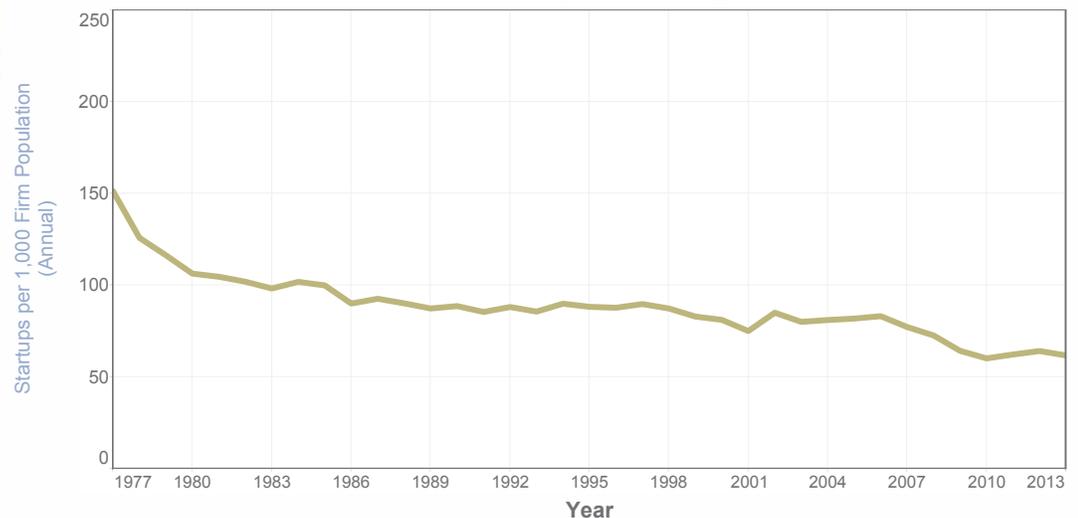
### Startup Density

2016 Component	2015 Component
<b>61.7</b>	<b>64.1</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>14</b>	<b>10</b>

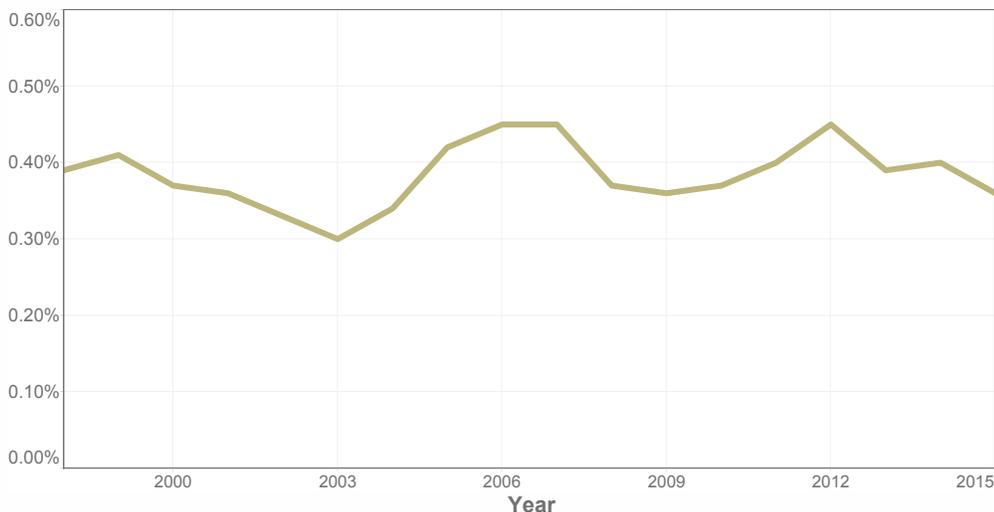
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.36%</b>	<b>0.40%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

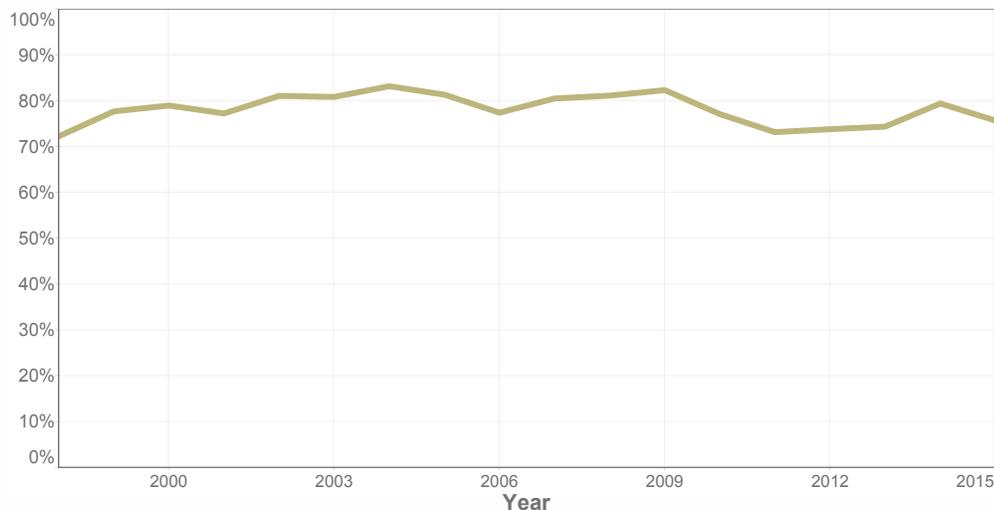
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>75.71%</b>	<b>79.43%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

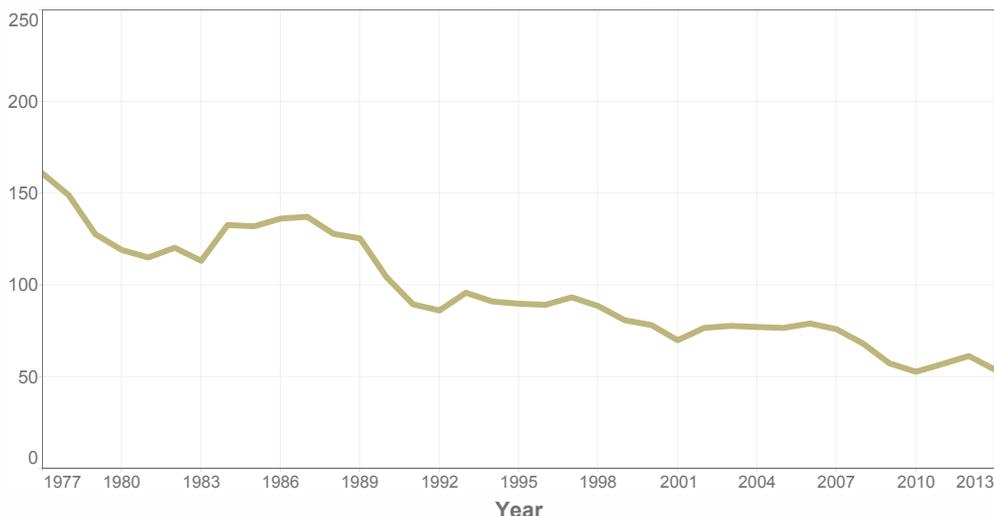
### Startup Density

2016 Component	2015 Component
<b>53.8</b>	<b>61.4</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Smaller States

2016	2015
<b>15</b>	<b>22</b>

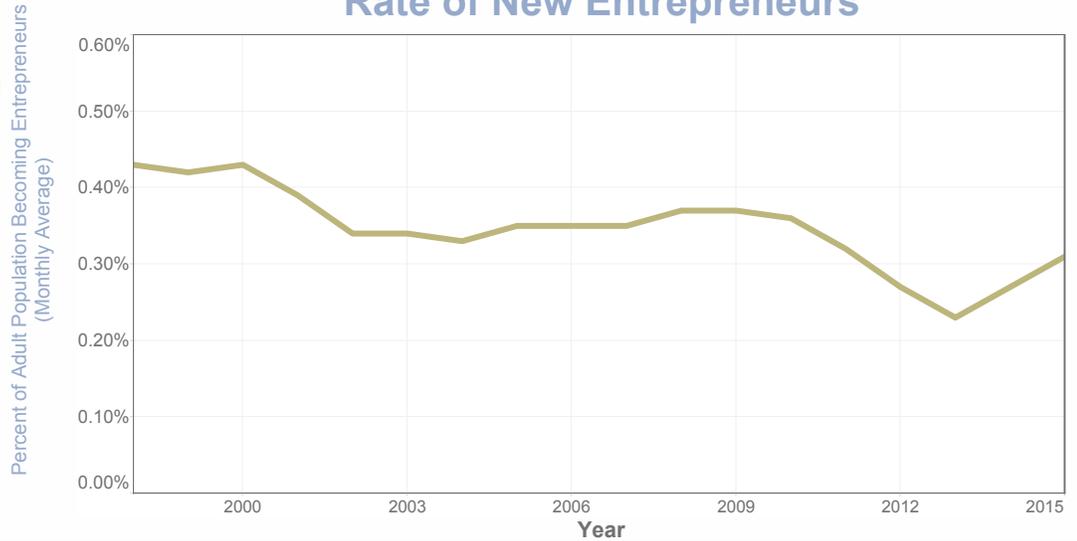
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.31%</b>	<b>0.27%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



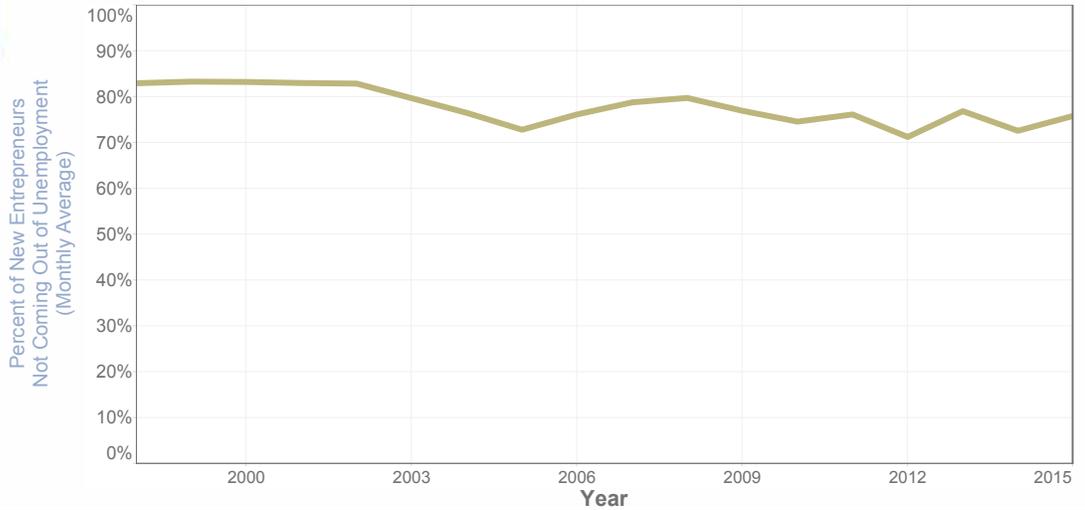
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>75.83%</b>	<b>72.60%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



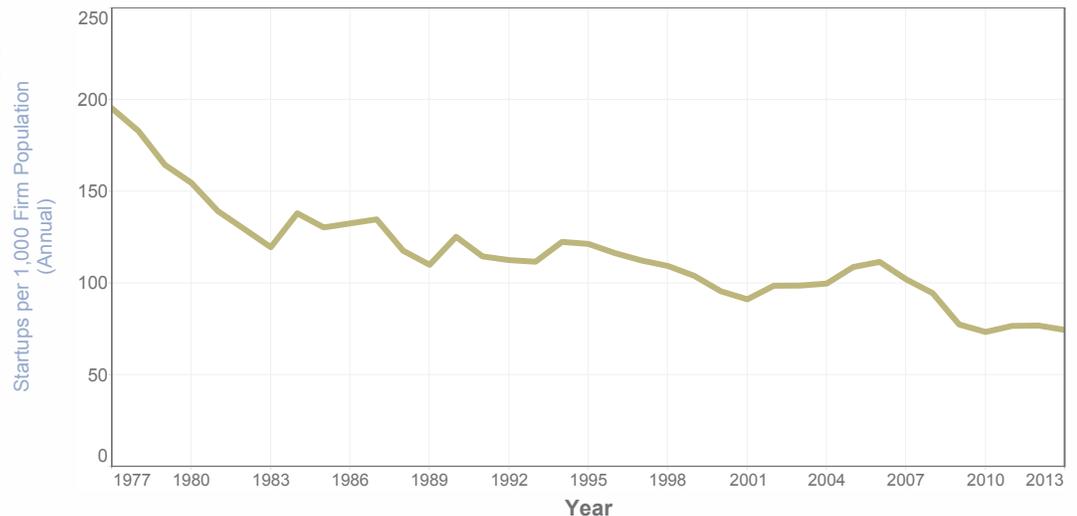
### Startup Density

2016 Component	2015 Component
<b>74.5</b>	<b>76.9</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>16</b>	<b>14</b>

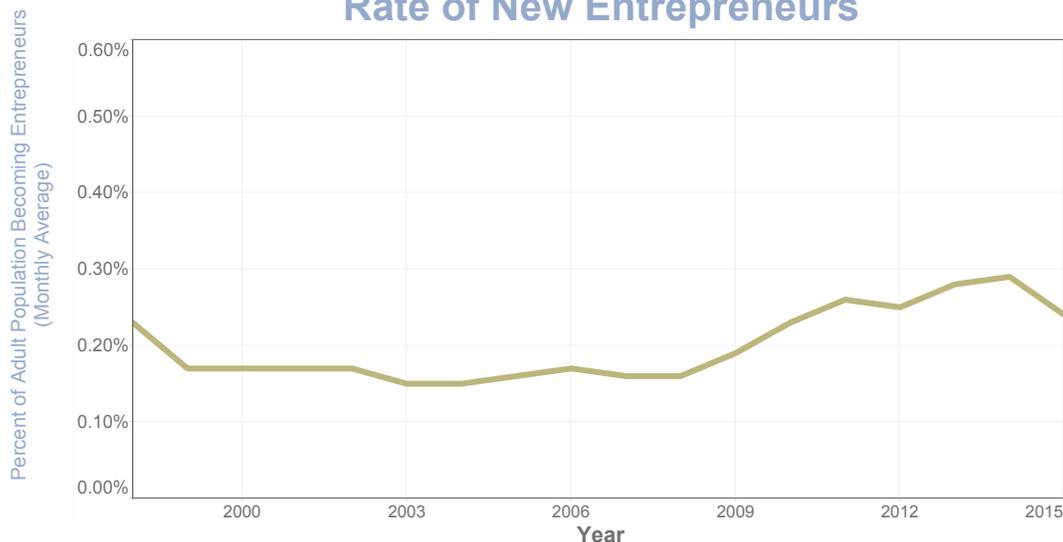
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.24%</b>	<b>0.29%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



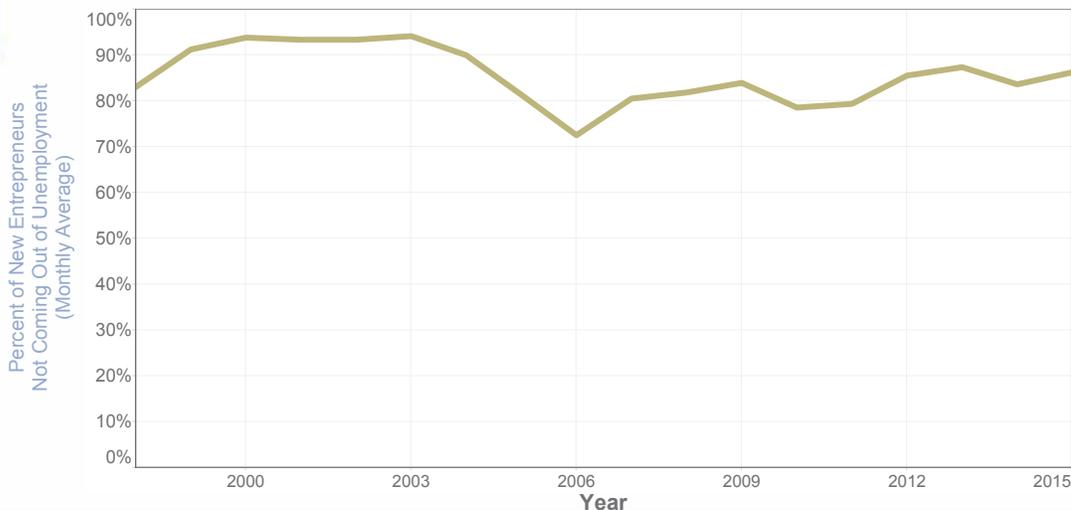
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>86.22%</b>	<b>83.60%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



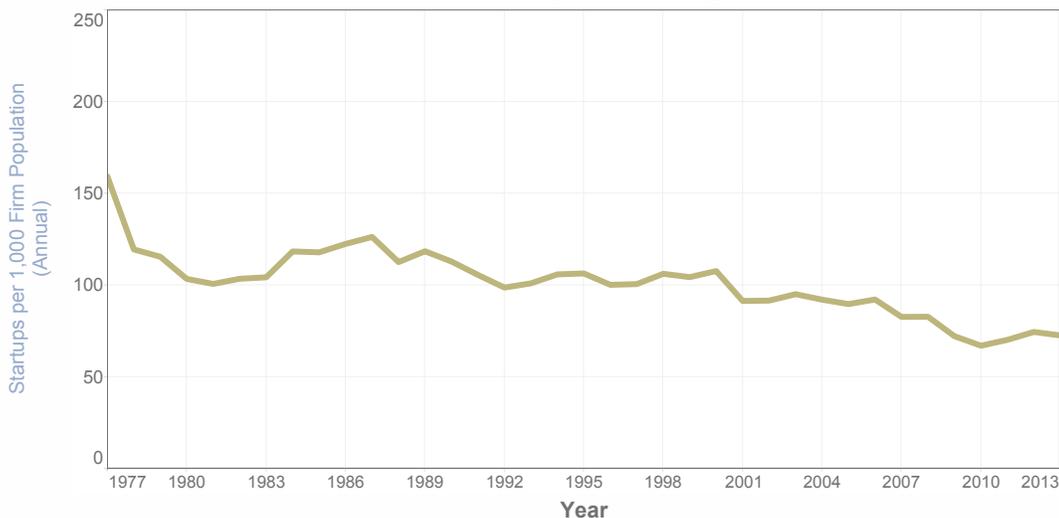
### Startup Density

2016 Component	2015 Component
<b>72.6</b>	<b>74.5</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>17</b>	<b>19</b>

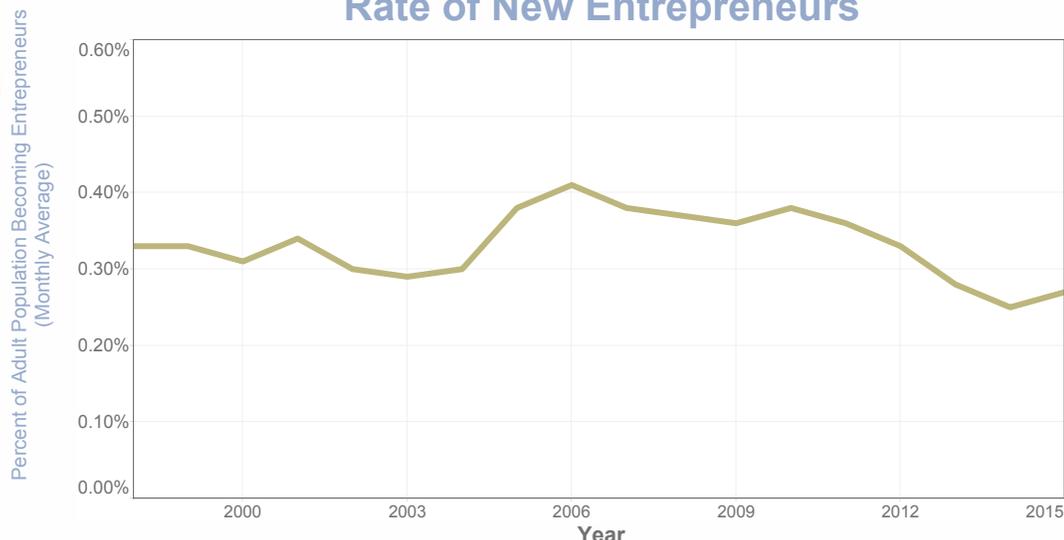
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.27%</b>	<b>0.25%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



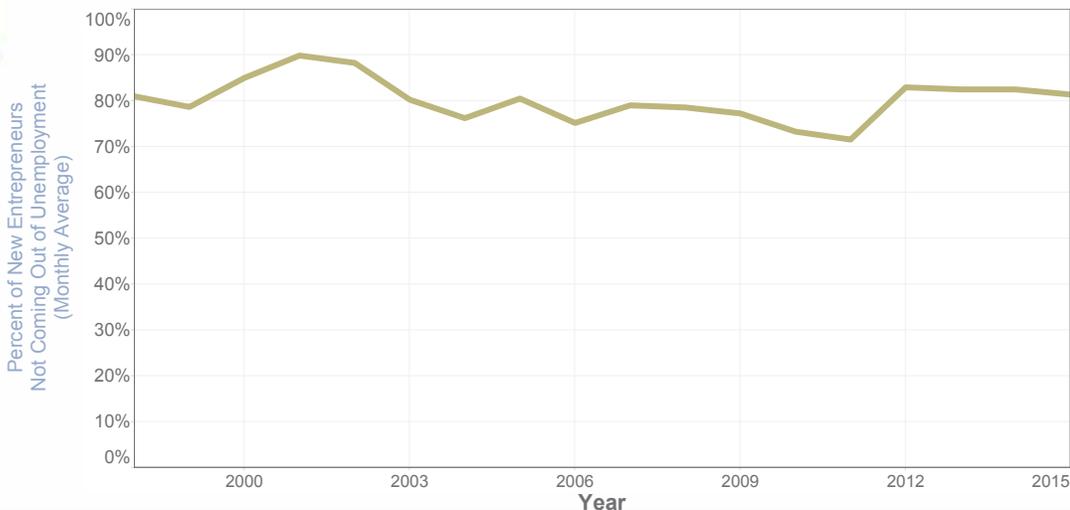
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>81.37%</b>	<b>82.49%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



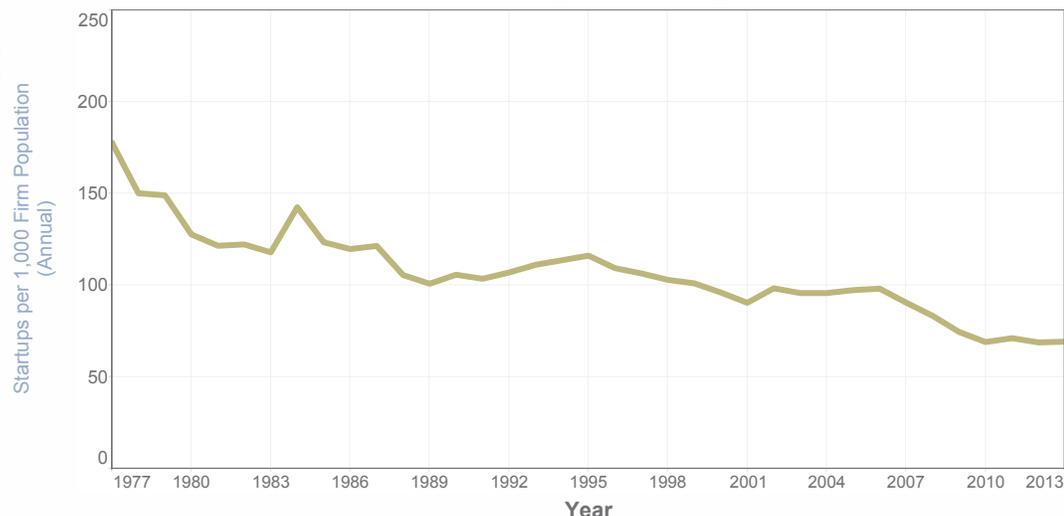
### Startup Density

2016 Component	2015 Component
<b>69.2</b>	<b>68.8</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>18</b>	<b>17</b>

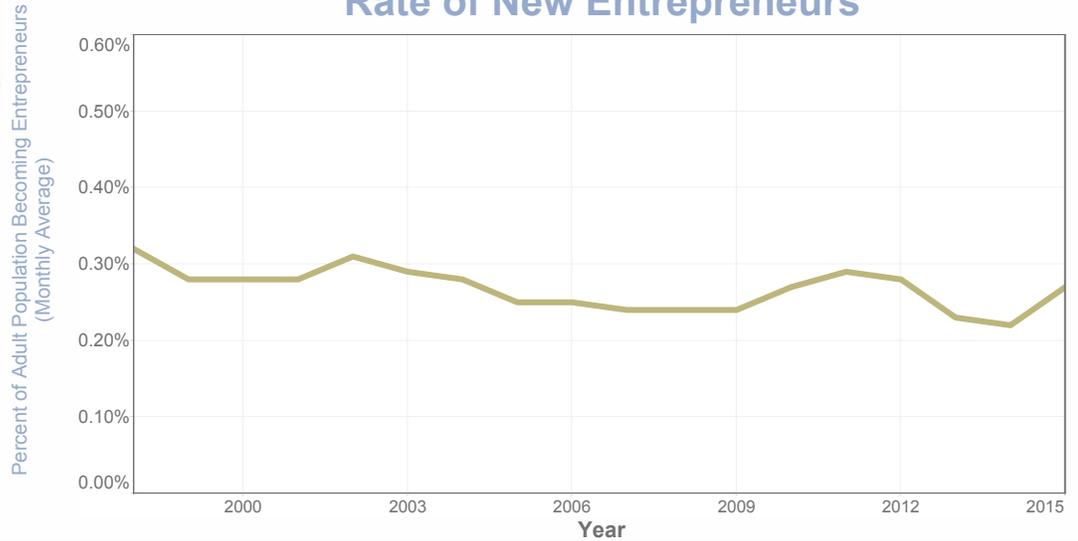
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.27%</b>	<b>0.22%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



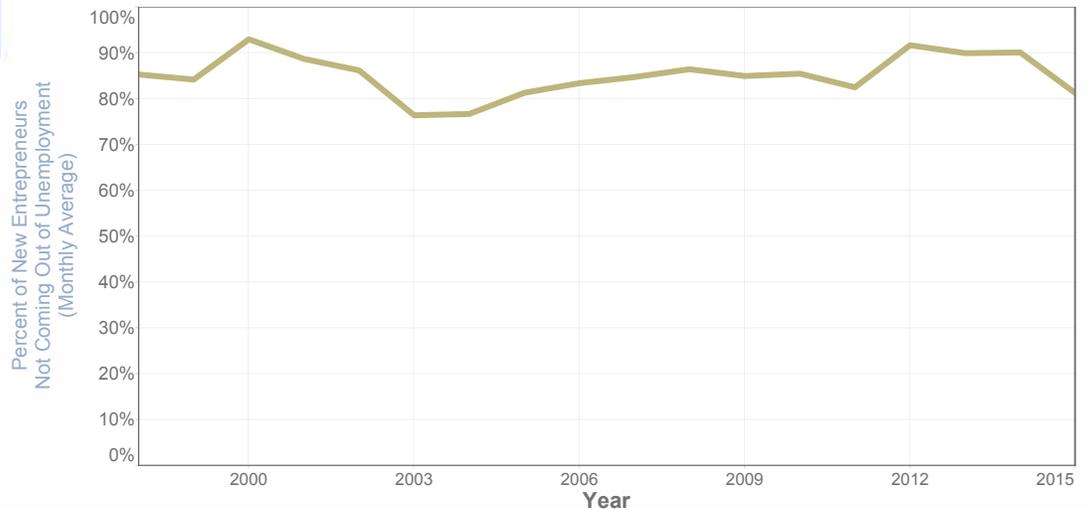
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>81.25%</b>	<b>90.12%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



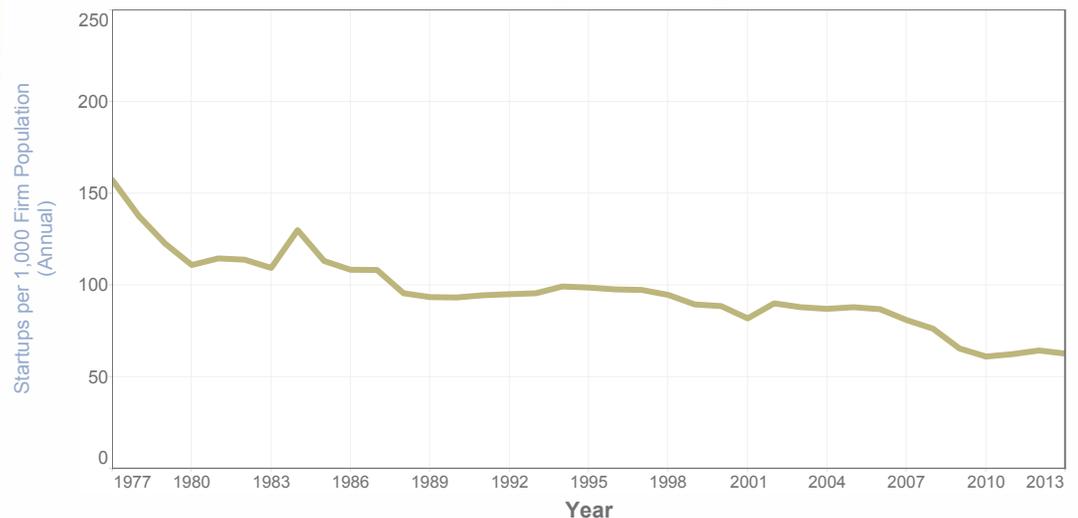
### Startup Density

2016 Component	2015 Component
<b>62.7</b>	<b>64.4</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>19</b>	<b>21</b>

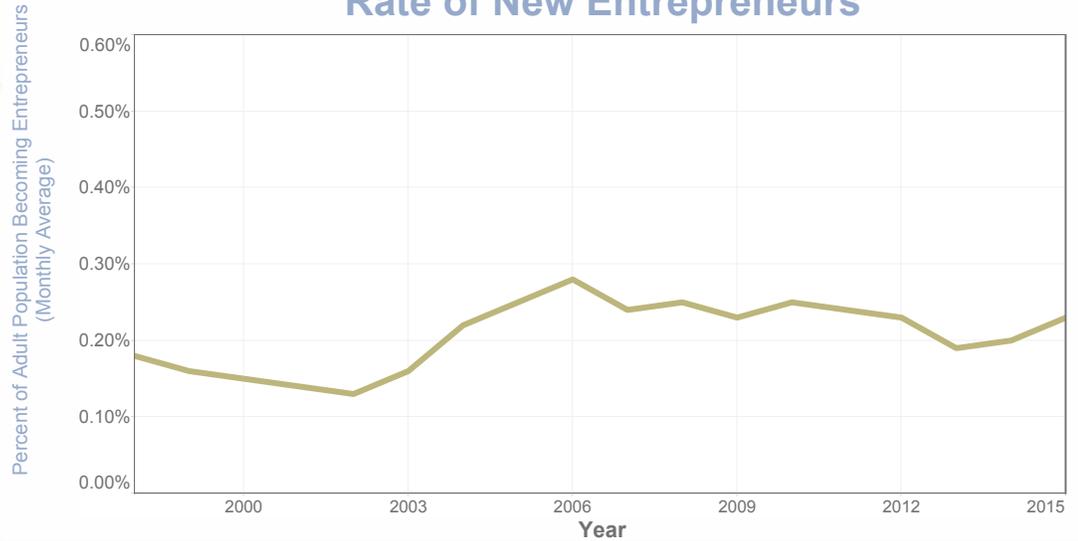
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.23%</b>	<b>0.20%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



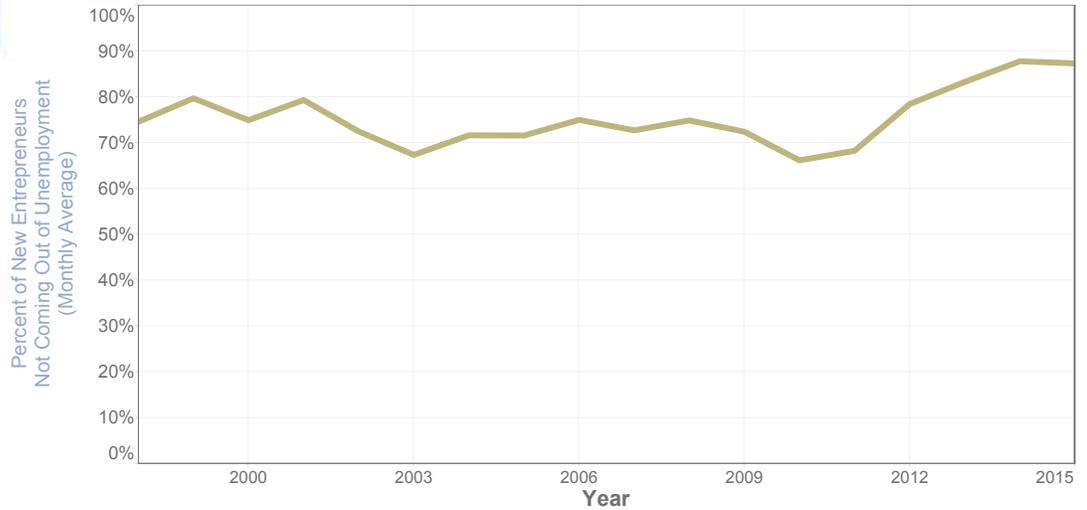
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>87.30%</b>	<b>87.76%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



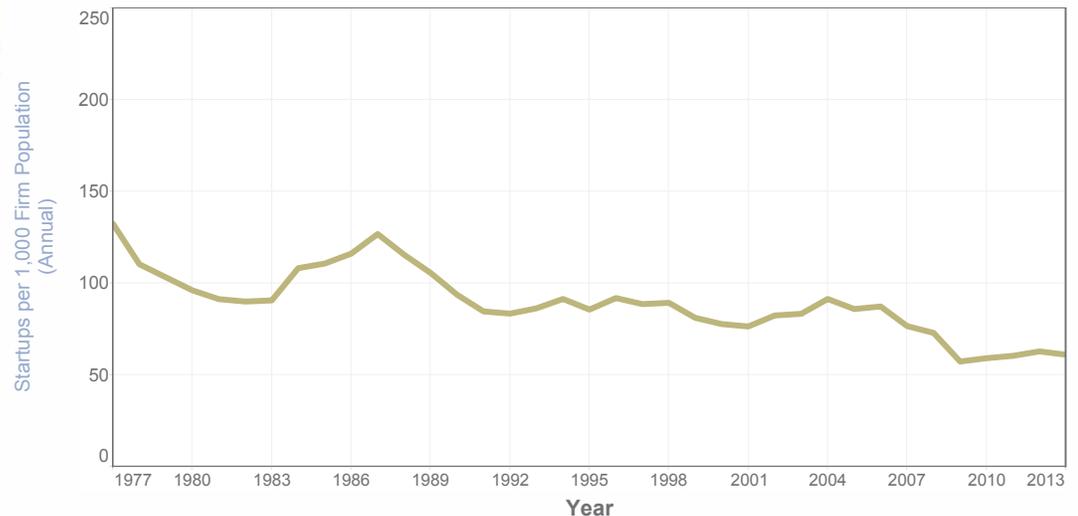
### Startup Density

2016 Component	2015 Component
<b>61.0</b>	<b>62.8</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>20</b>	<b>16</b>

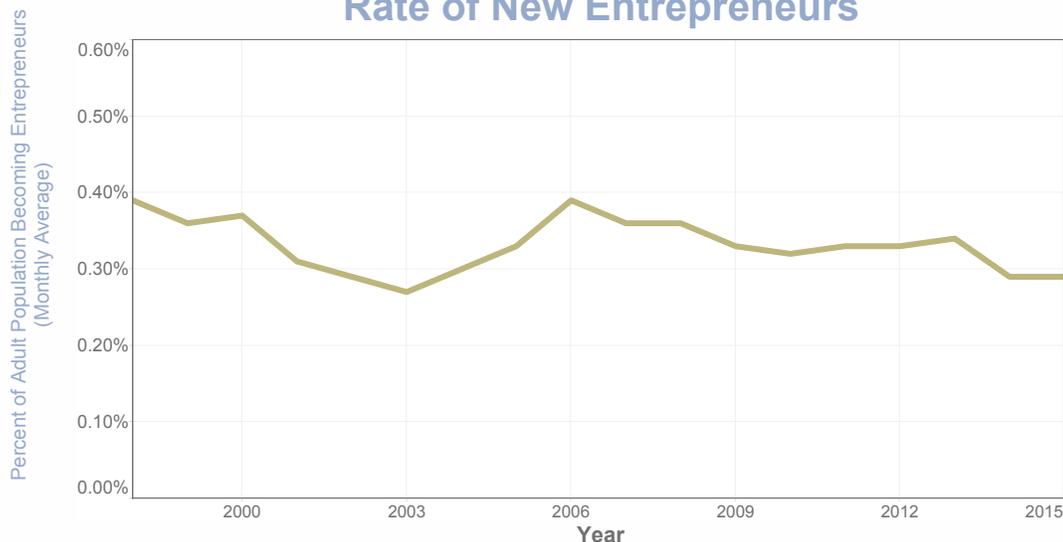
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.29%</b>	<b>0.29%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



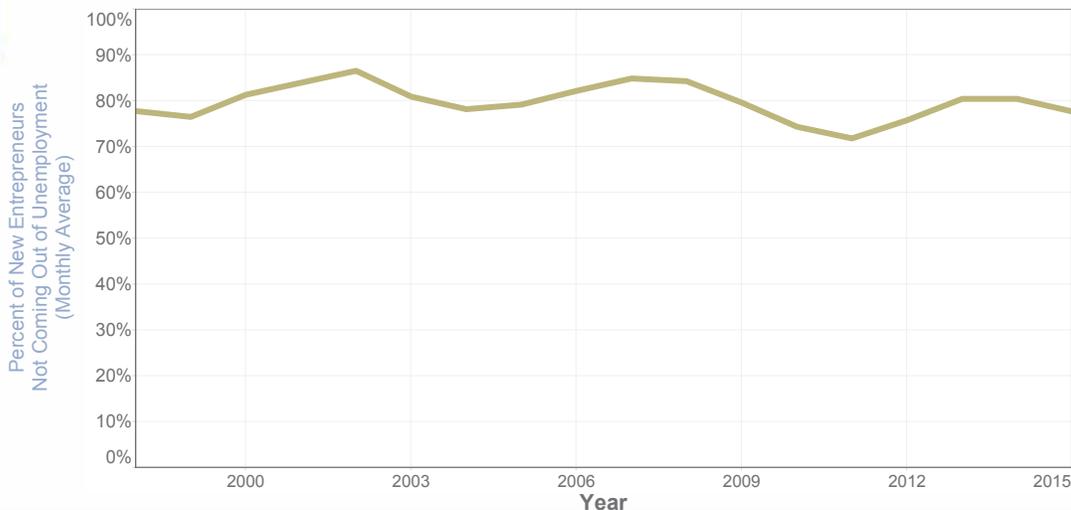
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>77.68%</b>	<b>80.43%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



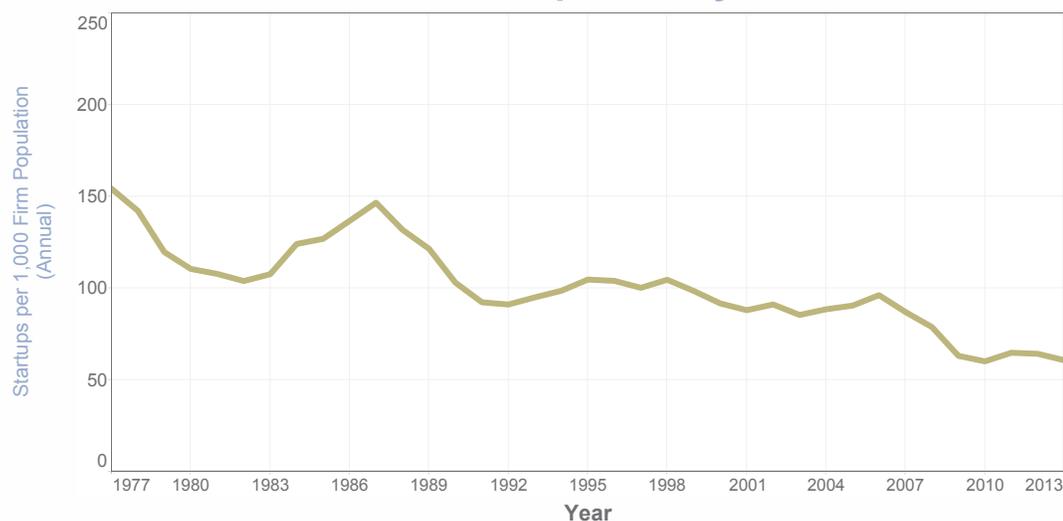
### Startup Density

2016 Component	2015 Component
<b>60.7</b>	<b>64.2</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>21</b>	<b>18</b>

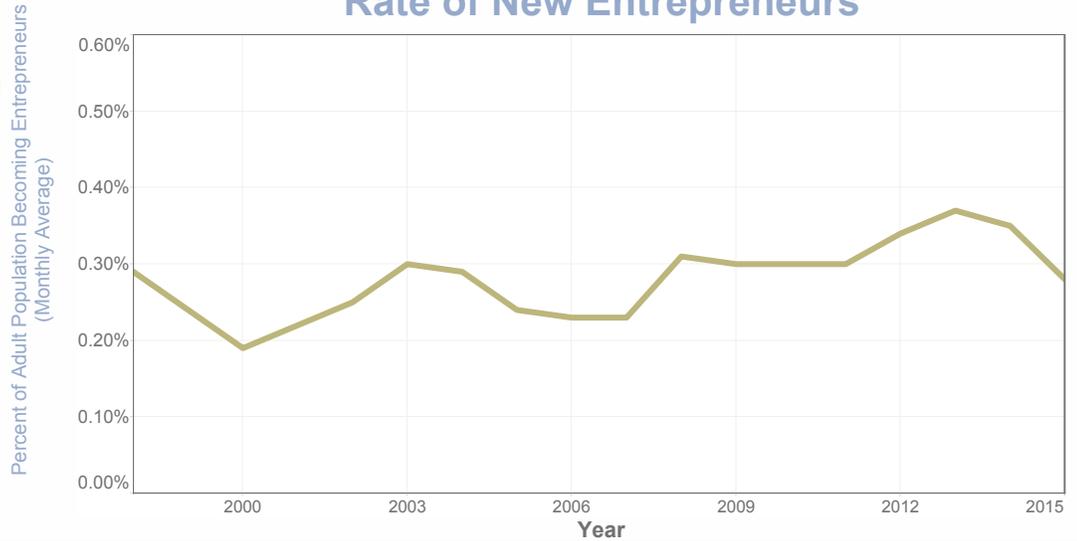
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.28%</b>	<b>0.35%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



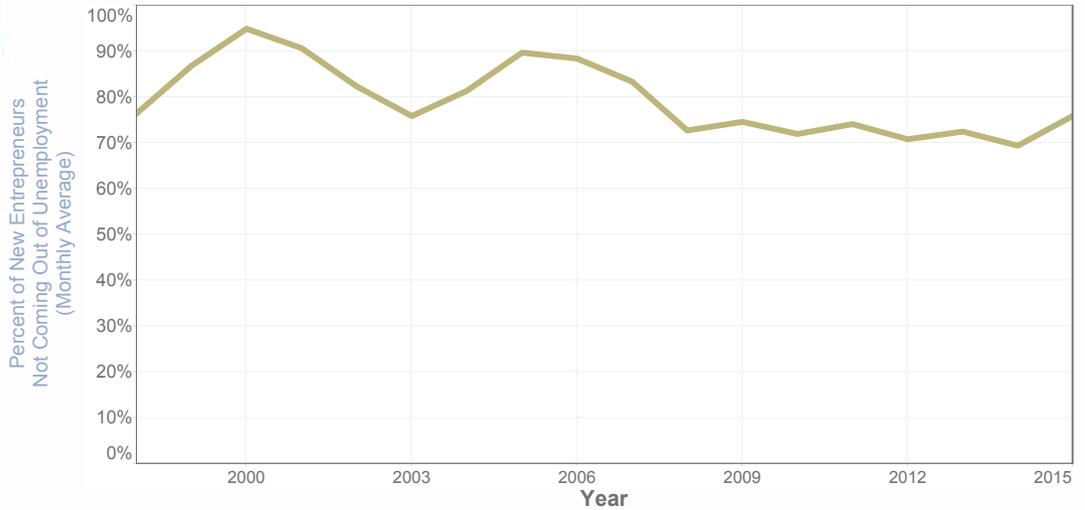
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>75.86%</b>	<b>69.35%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



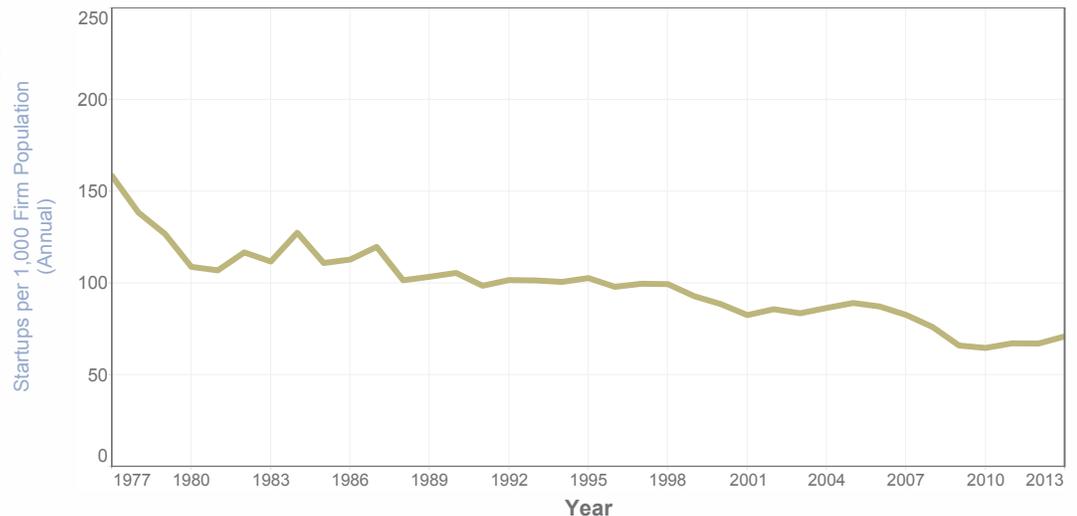
### Startup Density

2016 Component	2015 Component
<b>71.0</b>	<b>67.1</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>22</b>	<b>20</b>

2016 KAUFFMAN INDEX

## Connecticut State Profile

startup activity

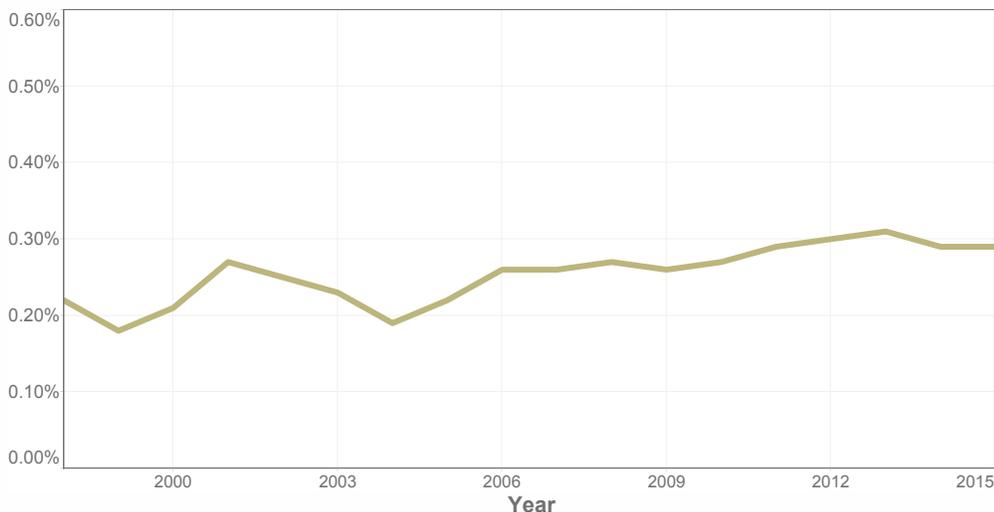
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.29%</b>	<b>0.29%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

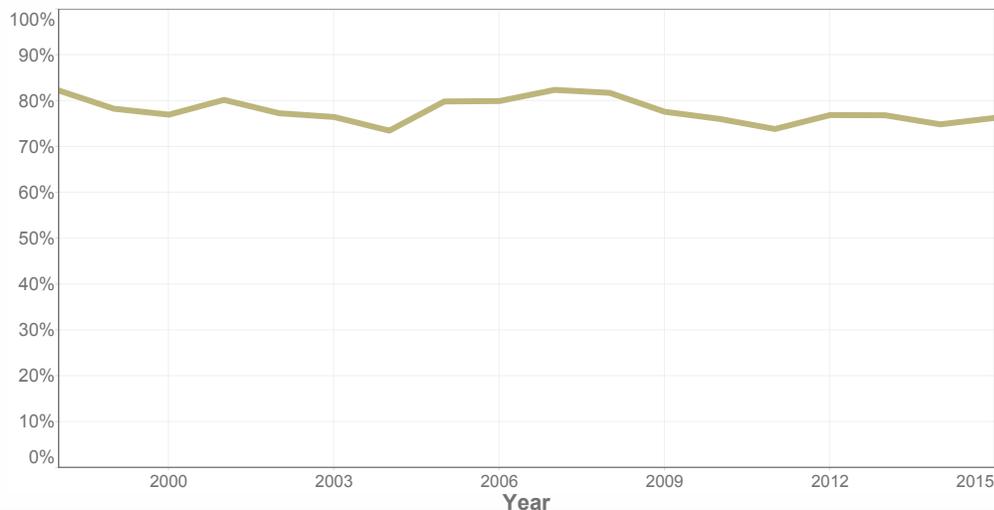
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>76.30%</b>	<b>74.88%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

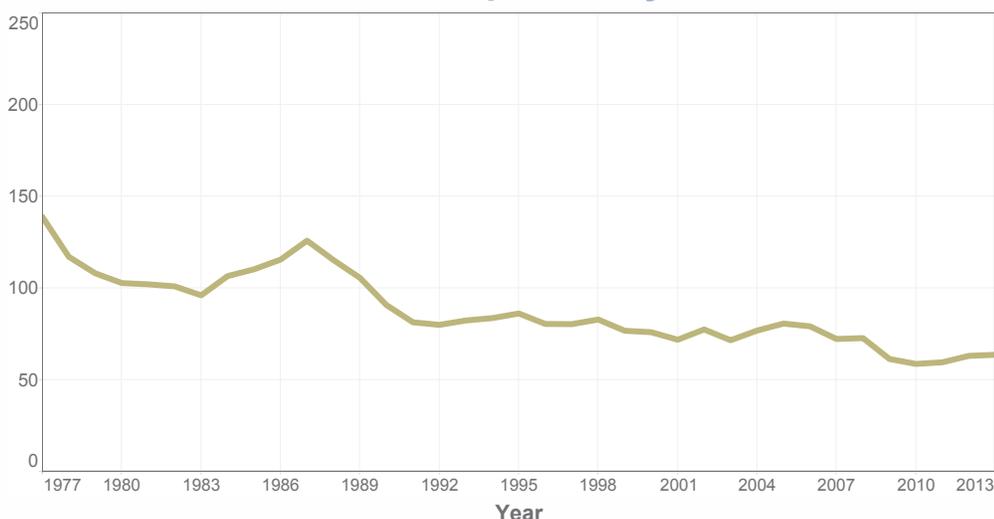
### Startup Density

2016 Component	2015 Component
<b>63.7</b>	<b>63.1</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Smaller States

2016	2015
<b>23</b>	<b>23</b>

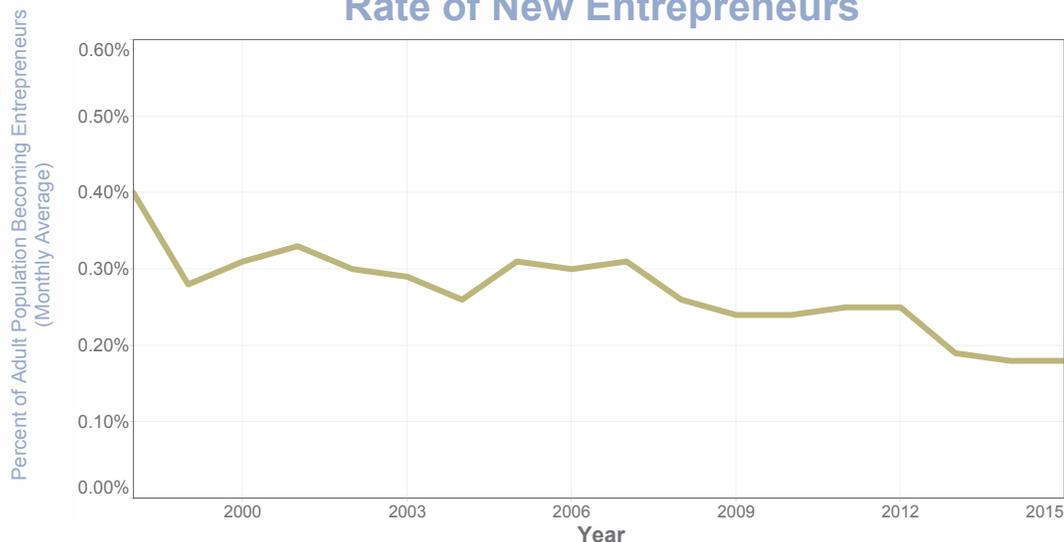
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.18%</b>	<b>0.18%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



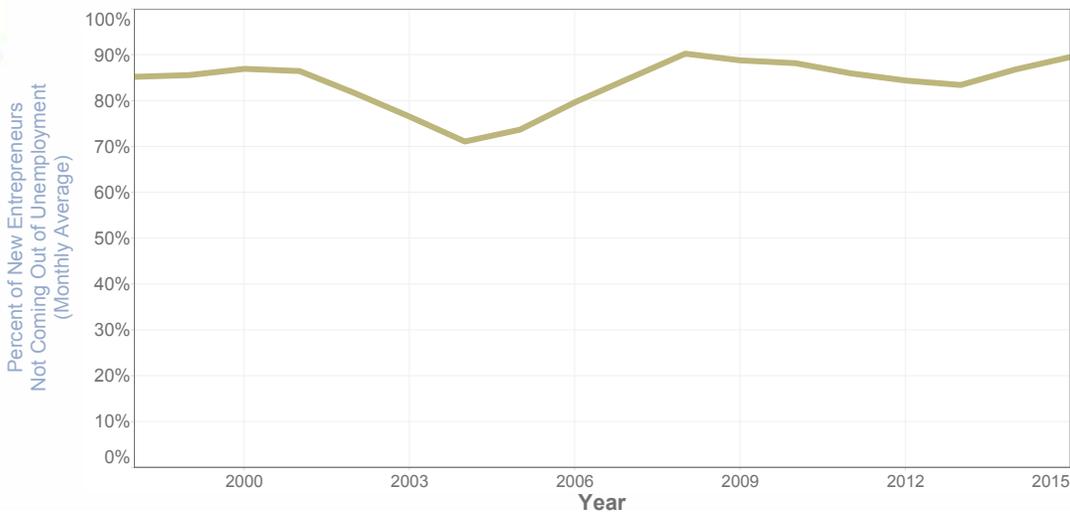
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>89.59%</b>	<b>86.87%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



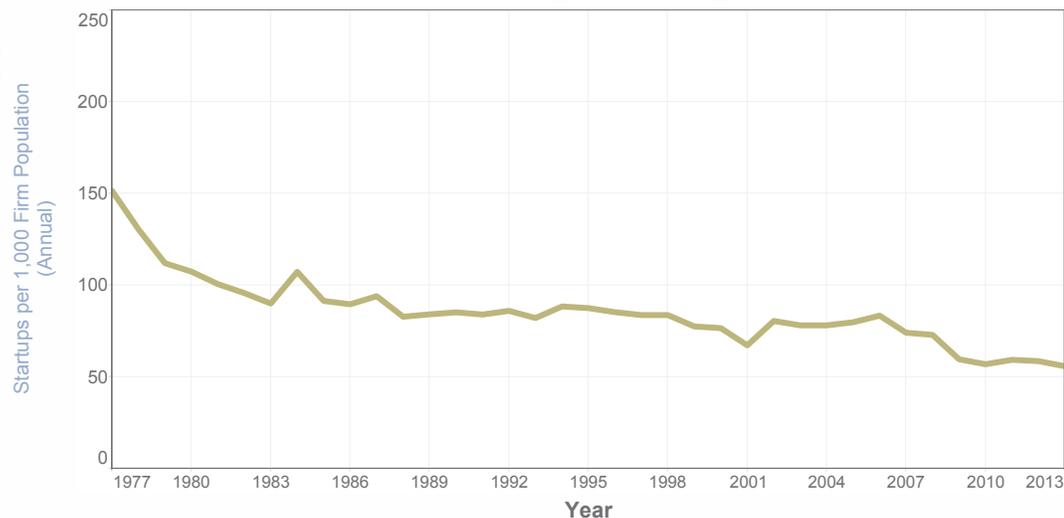
### Startup Density

2016 Component	2015 Component
<b>55.8</b>	<b>58.6</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Startup Activity Rank Smaller States

2016	2015
<b>24</b>	<b>24</b>



## New Hampshire State Profile



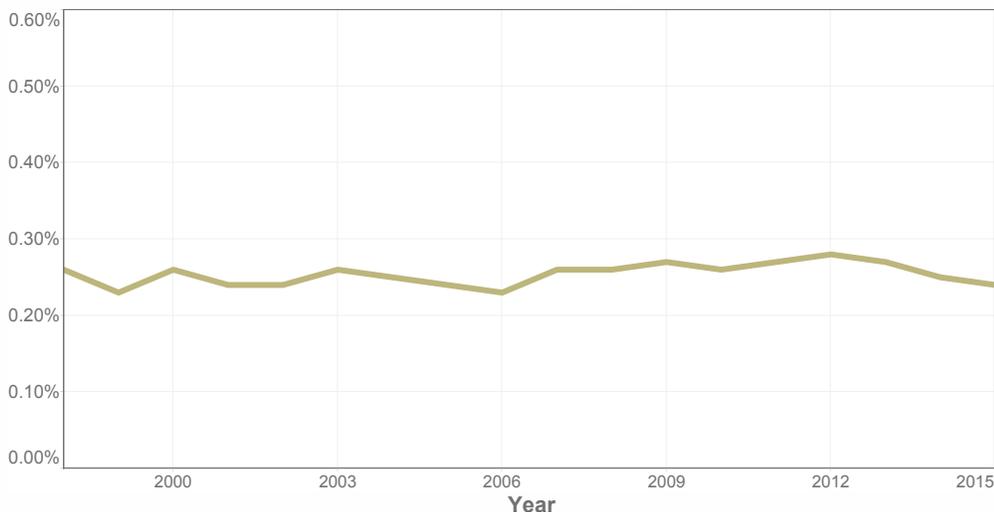
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.24%</b>	<b>0.25%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

Percent of Adult Population Becoming Entrepreneurs (Monthly Average)



### Rate of New Entrepreneurs

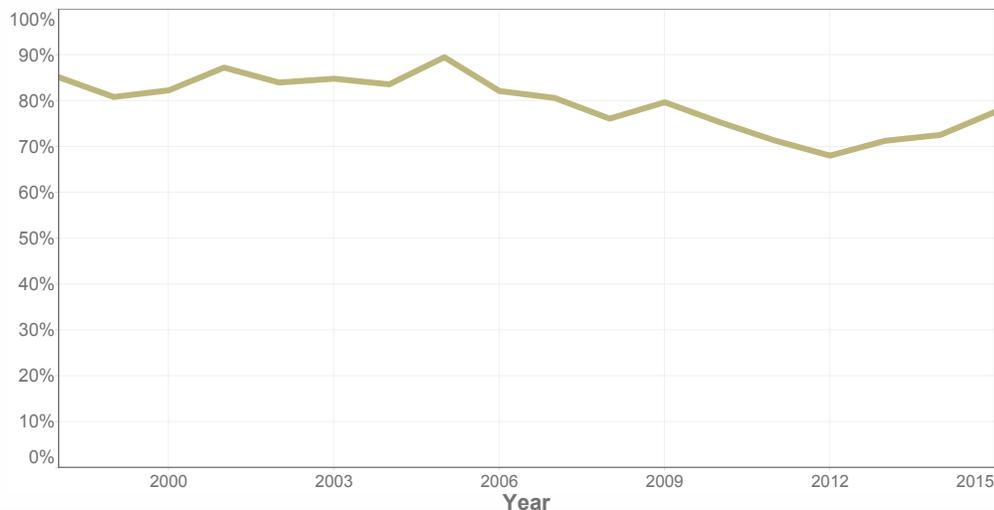
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>77.61%</b>	<b>72.57%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

Percent of New Entrepreneurs Not Coming Out of Unemployment (Monthly Average)



### Opportunity Share of New Entrepreneurs

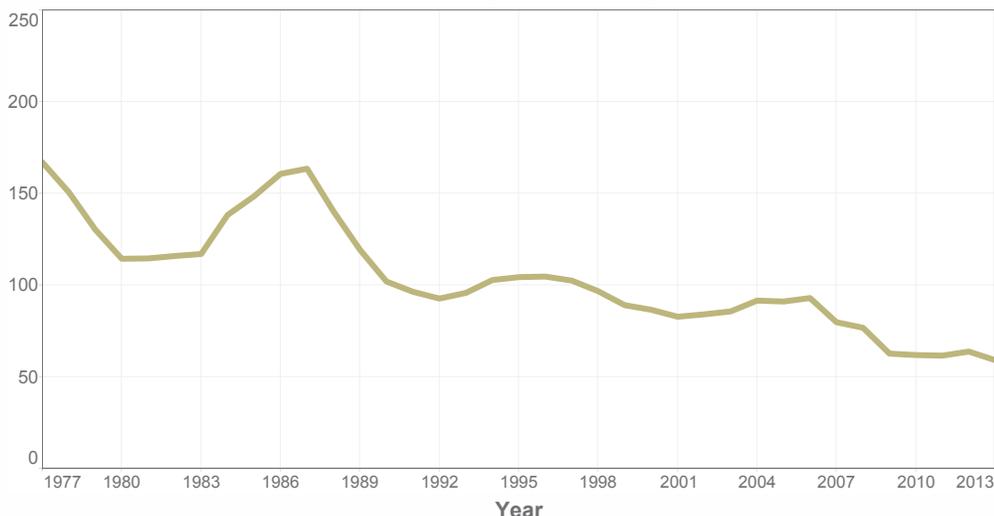
### Startup Density

2016 Component	2015 Component
<b>59.1</b>	<b>63.8</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

Startups per 1,000 Firm Population (Annual)



### Startup Density

## Startup Activity Rank Smaller States

2016	2015
<b>25</b>	<b>25</b>

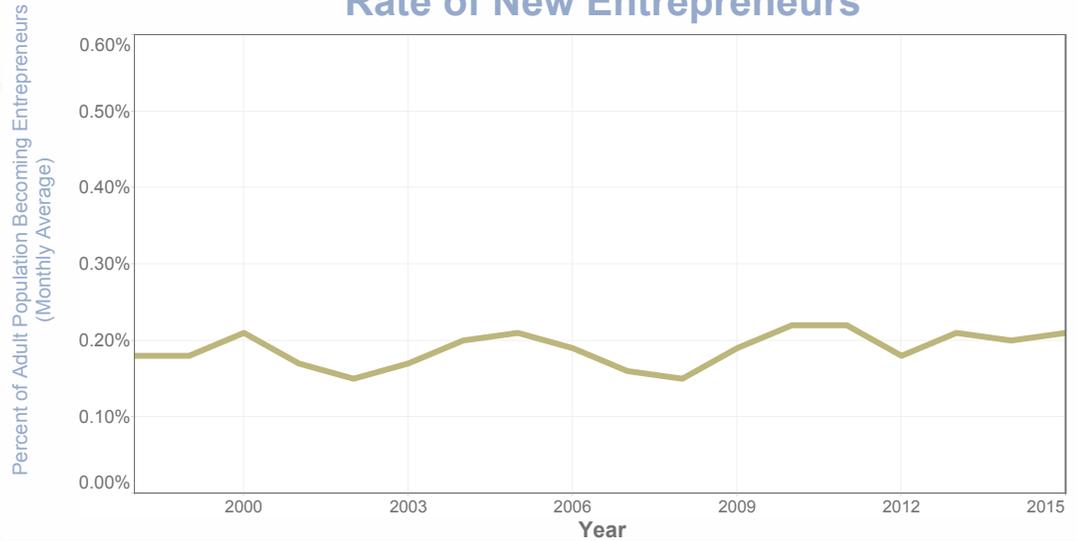
### Rate of New Entrepreneurs

2016 Component	2015 Component
<b>0.21%</b>	<b>0.20%</b>

Early and broad measure of business ownership. Measures the percent of the adult population of an area that became entrepreneurs in a given month.

Source: Author calculations from CPS. 3-year moving average.

### Rate of New Entrepreneurs



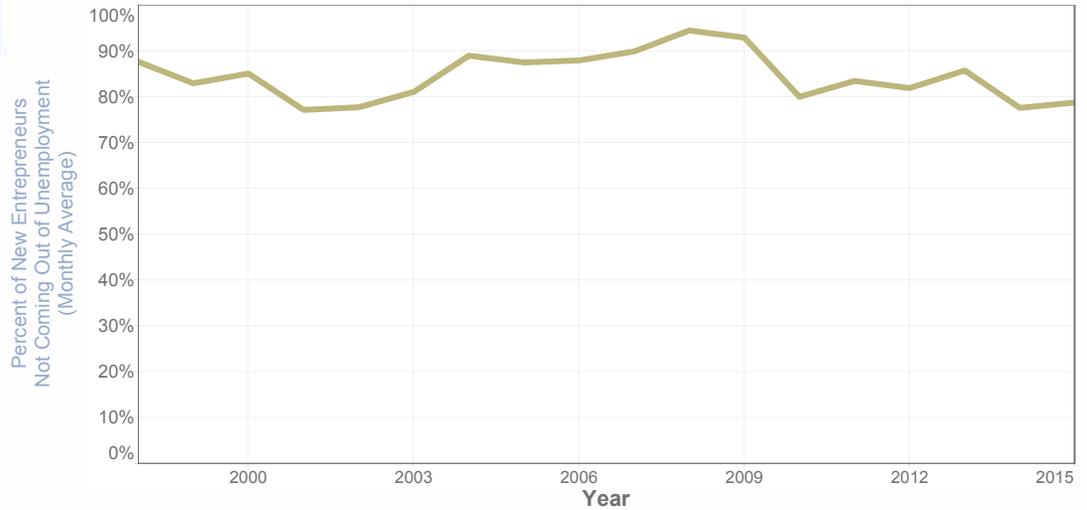
### Opportunity Share of New Entrepreneurs

2016 Component	2015 Component
<b>78.77%</b>	<b>77.59%</b>

Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities. Measures the percent of new entrepreneurs who were not unemployed before starting their businesses.

Source: Author calculations from CPS. 3-year moving average.

### Opportunity Share of New Entrepreneurs



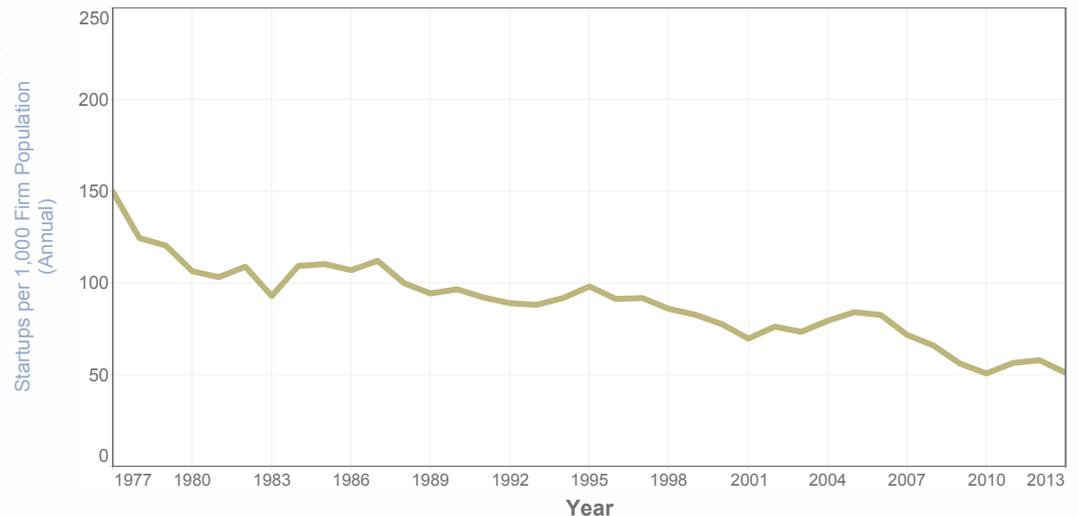
### Startup Density

2016 Component	2015 Component
<b>51.1</b>	<b>58.0</b>

Number of startup firms per 1,000 firm population. Startup businesses here are defined as firms less than one-year-old employing at least one person besides the owner.

Source: Author calculations from BDS and BEA. Yearly measure.

### Startup Density



## Methodology and Framework

In this part of the report, we discuss the methodology and framework for the Kauffman Index of Startup Activity reports across all geographic levels: national, state, and metropolitan area.

### Definitions of Startup Activity Index Components

The Kauffman Index of Startup Activity is calculated based on three components: Rate of New Entrepreneurs, Opportunity Share of New Entrepreneurs, and Startup Density. In this section, we will share detailed definitions of each one of these components.



#### Component A: Rate of Entrepreneurs

Component A of the Kauffman Index of Startup Activity comes from the Current Population Survey (CPS) and is calculated by author Rob

Fairlie. The CPS microdata capture all business owners, including those who own incorporated or unincorporated businesses, and those who are employers or non-employers. To create the Rate of New Entrepreneurs, all individuals who do not own a business as their main job are identified in the first survey month. By matching CPS files, it is then determined whether these individuals own a business as their main job with fifteen or more usual hours worked in the following survey month. Reducing the likelihood of reporting spurious changes in business ownership status from month to month, survey-takers ask individuals whether they currently have the same main job as reported in the previous month. If the answer is yes, the interviewer carries forward job information, including business ownership, from the previous month's survey. If the answer is no, the respondent is asked the full series of job-related questions. Survey-takers ask this question at the beginning of the job section to save time during the interview process and improve consistency in reporting.

The main job is defined as the one with the most hours worked. Individuals who start side businesses will, therefore, not be counted if they are working more hours on a wage/salary job. The requirement that business



Rate of New Entrepreneurs



Opportunity Share of New Entrepreneurs



Startup Density



### Rate of New Entrepreneurs

- Early and broad measure of business ownership.
- Measures the percent of the U.S. adult population that became entrepreneurs, on average, in a given month.
- Includes entrepreneurs with incorporated or unincorporated businesses, with or without employees.
- Data based on the Current Population Survey, jointly produced by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics.
- What the number means:
  - For example, the Rate of New Entrepreneurs was 0.33 percent for Colorado in the 2016 Index. That means that, on average, 330 people out of 100,000 adults became entrepreneurs in Colorado in each month.

owners work fifteen or more hours per week in the second month is imposed to rule out part-time business owners and very small business activities. It may, therefore, result in an understatement of the percent of individuals creating any type of business.

The Rate of New Entrepreneurs also excludes individuals who owned a business and worked fewer than fifteen hours in the first survey month. Thus, the Rate of New Entrepreneurs does not capture business owners who increased their hours from less than fifteen per week in one month to fifteen or more hours per week in the second month. In addition, the Rate of New Entrepreneurs does not capture when these business owners changed from non-business owners to business owners with less than fifteen hours worked. These individuals are excluded from the sample, but may have been at the earliest stages of starting a business. More information concerning the definition is provided in Fairlie (2006).

The Rate of New Entrepreneurs component of the Startup Activity Index also may overstate entrepreneurship rates in certain respects because of small changes in how individuals report their work status. Longstanding business owners who also have salaried positions may, for example, report that they are not business owners as their main jobs in a particular month because their wage/salary jobs had more hours in that month. If the individuals then switched to having more hours in business ownership the following month, it would appear that a new business had been created.

For the definition of the Rate of New Entrepreneurs discussed in this report, all observations from the CPS with allocated labor force status, class of worker, and hours worked variables are excluded. The Rate of New Entrepreneurs is substantially higher for allocated or imputed observations. These observations were included in the first Kauffman Index report (Fairlie 2005). See Fairlie (2006) for a complete discussion of the issues and comparisons between unadjusted and adjusted Rate of New Entrepreneurs.

The CPS sample was designed to produce national and state estimates of the unemployment rate and additional labor force characteristics of the civilian, non-institutional population ages sixteen and older. The total national sample size is drawn to ensure a high level of precision for the monthly national unemployment rate. For each of the fifty states and the District of Columbia, the sample also is designed to guarantee precise estimates of average annual unemployment rates, resulting in varying sample rates by state (Polivka 2000). Sampling weights provided by the CPS, which also adjust for non-response and post-stratification raking, are used for all national and state-level estimates. The CPS also can be used to calculate metropolitan-area estimates, but only for the largest U.S. metropolitan areas. For example, the Bureau of Labor Statistics reports annual labor-force participation and unemployment rates for the largest fifty-four MSAs. We focus on the forty largest MSAs in our analysis and calculate moving averages when needed to ensure adequate precision in all reported estimates.



### *Component B: Opportunity Share of New Entrepreneurs*

Building from the same data used for component A, the Opportunity Share of New Entrepreneurs is defined as the share of the new business owners that are coming out of wage and salary work, school, or other labor market statuses. Alternatively, individuals



## Opportunity Share of New Entrepreneurs

- Proxy indicator of the percent of new entrepreneurs starting businesses because they saw market opportunities.
- Measures the percentage of new entrepreneurs who were not unemployed before starting their businesses (e.g., have been previously working for another organization or studying in school).
- This indicator is important for two reasons: 1) Entrepreneurs who were previously unemployed seem to be more likely to start businesses with lower growth potential, out of necessity. Thus, the Opportunity Share of New Entrepreneurs serves as a broad proxy for growth prospects. 2) This measure helps us understand changes in the Rate of New Entrepreneurs motivated by weak job markets, such as the one we had after the recent Great Recession. If the Rate of New Entrepreneurs goes up but the Opportunity Share of New Entrepreneurs is low, we can see that many new entrepreneurs are starting businesses coming out of unemployment, and arguably started their companies largely out of necessity.
- Data based on the Current Population Survey jointly produced by the U.S. Census Bureau and the U.S. Bureau of Labor Statistics.
- What the number means:
  - For example, the United States Opportunity Share of New Entrepreneurs was 84 percent in the 2016 Index. That means that approximately eight out of every ten new entrepreneurs in this year started their businesses coming out of another job, school, or other labor market states. Meanwhile, two out of ten started their businesses directly coming out of unemployment.

can start businesses coming out of unemployment. The initial labor market status is defined in the first survey month. Rate of New Entrepreneurs is measured in the second (or following) survey month.



### *Component C: Startup Density*

The Startup Density component of the Kauffman Index of Startup Activity uses U.S. Census Bureau data from the Business Dynamics Statistics, and it measures the number of new employer firms normalized by the employer business population of a given area. We define startups here as employer firms that are younger than one year old, and we divide the number of startups in a region by the number of active employer businesses. The Startup Density rate is per 1,000 employer businesses in the area. Our definition here largely is based on the entrepreneurship density measure suggested by our Kauffman Foundation colleagues Stangler and Bell-Masterson (2015) in their Measuring an Entrepreneurial Ecosystem paper.

### *Calculating the Startup Activity Index*

The Kauffman Index of Startup Activity provides a broad index measure of business startup activity in the United States. It is an equally weighted index of three normalized measures of startup activity. The three component measures of the Startup Activity Index are: i) the Rate of New Entrepreneurs among the U.S. adult population, ii) the Opportunity Share of New Entrepreneurs, which captures the percentage of new entrepreneurs primarily driven by “opportunity” vs. by “necessity,” and iii) the Startup Density (new employer

businesses less than one year old, normalized by population).

Each of these three measures is normalized by subtracting the mean and dividing by the standard deviation for that measure (i.e., creating a z-score for each variable). This creates a comparable scale for including the three measures in the Startup Activity Index. We use national annual estimates from 1996 to the latest year available (2015) to calculate the mean and standard deviation for each of the CPS-based components. Similarly, we use national annual numbers from 1994 to the latest year available (2013) to calculate the mean and standard deviation for the BDS-based component of the Index. The same normalization method is used for all three geographic levels—national, state, and metropolitan area—for comparability and consistency over time.

The components we use for the national-level Startup Activity Index are all annual numbers. The Rate of New Entrepreneurs covers years from 1996 to the latest year available (2015). The Opportunity Share of New Entrepreneurs covers years from 1996 to the latest year available (2015). The Startup Density covers years from 1994 to the latest year available (2013).

The Rate of New Entrepreneurs and the Opportunity Share of New Entrepreneurs components of the state-level Startup Activity Index are calculated on three-year moving averages with the same yearly coverage as the national-level numbers. The reason we do three-year moving averages on the sample-based CPS measures is to reduce sampling issues. Because these are three-year moving averages with annual estimates starting in 1996, the first year for which three-year moving averages are available is 1998. The Startup Density component of the Index is



## Startup Density

- Number of startup firms by total employer firm population.
- Startup businesses here are defined as employer firms less than one year old employing at least one person besides the owner. All industries are included on this measure.
- Measures the number of new employer startup businesses normalized by the employer firm population of an area. Because companies captured by this indicator have employees, they tend to be at a more advanced stage than are the companies in the Rate of New Entrepreneurs measure.
- Data based on the U.S. Census Bureau’s Business Dynamics Statistics.
- What the number means:
  - For example, the 2016 Index Startup Density for the New York metropolitan area was 89.1 per 1,000 businesses. That means that, for every 1,000 employer businesses in the New York metro area, there were 89.1 employer startup firms that were less than one year old in this year.

presented yearly, from 1994 to the latest year available (2013).

For the metropolitan-area level Startup Activity Index, we present the Rate of New Entrepreneurs component on a three-year moving average from 2008 to the latest year available (2015). Because these are three-year moving averages, annual estimates are first calculated in 2006. The Opportunity Share of New Entrepreneurs component of the Startup Activity Index is presented on five-year moving averages, starting in 2010 and going up to the latest year available (2015). Annual estimates used to calculate the moving average start in 2006. Again, the reason behind presenting moving averages is to reduce sampling issues. The Startup Density component of the Index is presented yearly, from 1994 to the latest year available (2013).

## Data Sources and Component Measures

### Data Sources

In this section, we discuss the underlying data sources used to calculate each of the components of the Startup Activity Index.

#### *Rate of New Entrepreneurs and Opportunity Share of New Entrepreneurs*

To calculate the Rate of New Entrepreneurs and the Opportunity Share of New Entrepreneurs, the underlying dataset used is the basic monthly files of the Current Population Survey. These surveys, conducted monthly by the U.S. Census Bureau and the Bureau of Labor Statistics, represent the entire U.S. population and contain observations for more than 130,000 people each month. By linking the CPS files over time, longitudinal data are created, allowing for the examination of the Rate of New Entrepreneurs. Combining the monthly files creates a sample size of roughly 700,000 adults ages twenty to sixty-four each year.

Households in the CPS are interviewed each month over a four-month period. Eight months later, they are re-interviewed in each month of a second four-month period. Thus, individuals who are interviewed in January, February, March, and April of one year are interviewed again in January, February, March, and April of the following year. The CPS rotation pattern makes it possible to match information on individuals monthly and, therefore, to create two-month panel data for up to 75 percent of all CPS respondents. To match these data, the household and individual identifiers provided by the CPS are used. False matches are removed by comparing

race, sex, and age codes from the two months. After removing all non-unique matches, the underlying CPS data are checked extensively for coding errors and other problems.

Monthly match rates generally are between 94 percent and 96 percent (see Fairlie 2005). Household moves are the primary reason for non-matching. A somewhat non-random sample (mainly geographic movers) will, therefore, be lost due to the matching routine. Moves do not appear to create a serious problem for month-to-month matches, however, because the observable characteristics of the original sample and the matched sample are very similar (see Fairlie 2005).

#### *Startup Density*

We use one firm-level dataset to calculate Startup Density, the U.S. Census Bureau's Business Dynamics Statistics (BDS).

The BDS is constructed using administrative payroll tax records from the Internal Revenue Service (IRS). The BDS data present, among other things, numbers of firms tabulated by age and by geography (national, state, and metropolitan area). We make use of that data to calculate the raw number of employer firms younger than one year old by geographic levels. We then normalize this number by employer business population to arrive at the Startup Density of an area. In the 2015 Index, an alternative measurement for Startup Density had normalized by population from the Bureau of Economic Analysis. The updated normalization method allows for more straight forward matching location definitions without meaningful change in the spirit of the measurement.

Matching BDS state and national numbers to CPS figures population data is a non-issue because the definitions of the geographical areas are the same. However, this is slightly different for metropolitan areas. Because metropolitan area definitions may vary across datasets, we used the Office of Management and Budget (OMB) definitions for metropolitan areas from December 2009 to calculate Startup Density. This is the definition of metros used on the BDS dataset, and it is used to calculate both the number of employer startups and the overall employer firm population.

We match the forty largest metropolitan areas in the United States by population using the OMB 2009 definition of metros and the 2012 BEA population data to their counterparts in the CPS dataset. This was the most appropriate aggregation method because neither the CPS nor the BDS dataset provides county-level data. To diminish issues of changing metro definitions, we only present the top forty metropolitan areas in the United States—in which shifts in county composition are less

likely to cause big shifts in total population or business activity—and only use CPS data for metros in the most recent years, from 2006 to the most recent year available (2014).<sup>8</sup>

## Standard Errors and Confidence Intervals

### *Rate of New Entrepreneurs and Opportunity Share of New Entrepreneurs*

The analysis of Rate of New Entrepreneurs by state includes confidence intervals that indicate confidence bands of approximately 0.15 percent around the Rate of New Entrepreneurs. While larger states have smaller confidence bands, the smallest states have larger confidence bands of approximately 0.20 percent. Oversampling in the CPS ensures that these small states have sample sizes of at least 5,000 observations and, therefore, provides a minimum level of precision.

The standard errors used to create the confidence intervals reported here may understate the true variability in the state estimates. Both stratification of the sample and the raking procedure (post-stratification) will reduce the variance of CPS estimates (Polivka 2000 and Train, Cahoon, and Maken 1978). On the other hand, the CPS clustering (i.e., nearby houses on the same block and multiple household members) leads to a larger sampling variance than would have been obtained from simple random sampling. It appears as though the latter effect dominates in the CPS, and treating the CPS as random generally understates standard errors (Polivka 2000). National unemployment rate estimates indicate that treating the CPS as a random sample leads to an understatement of the variance of the unemployment rate by 23 percent. Another problem associated with the estimates reported here is that multiple observations (up to three) may occur for the same individual.

All of the reported confidence intervals should be considered approximate, as the actual confidence intervals may be slightly larger. The complete correction for the standard errors and confidence intervals involves obtaining confidential replicate weights from the BLS and employing sophisticated statistical procedures. Corrections for the possibility of multiple observations per person, which may create the largest bias in standard errors, are made using statistical survey procedures for all reported

confidence intervals. It is important to note, however, that the estimates of the Rate of New Entrepreneurs are not subject to any of these problems. By using the sample weights provided by the CPS, all estimates of the Rate of New Entrepreneurs are correct.

## Startup Density

Because the BDS is based on administrative data covering the overall employer business population, sampling concerns like standard errors and confidence intervals are irrelevant. Nonetheless, nonsampling errors could still occur. These could be caused, for example, by data entry issues with the IRS payroll tax records or by businesses submitting incorrect employment data to the IRS. However, these are probably randomly distributed and are unlikely to cause significant biases in the data. Please see Jarmin and Miranda (2002) for a complete discussion of potential complications on the dataset caused by changes in the administrative data on which the BDS is based.

## Advantages over Other Possible Measures of Entrepreneurship

The Kauffman Index of Startup Activity has several advantages over other possible measures of entrepreneurship based on household or business-level data. We chose to use two distinct datasets: one based on individuals (CPS) and another one based on businesses (BDS). This allows us to study both entrepreneurs and the startups they create. These datasets have complementary strengths that make this Index a robust measure of startup activity.

### *Rate of New Entrepreneurs and Opportunity Share of New Entrepreneurs*

The Rate of New Entrepreneurs and Opportunity Share of New Entrepreneurs components of the Startup Activity Index are based on the CPS, and this dataset provides four prominent advantages as an early and broad measure of startup activity. First, the CPS data are available only a couple of months after the end of the year, whereas even relatively timely data such as the American Community Survey (ACS) take more than

8. For more details on the CPS metropolitan area definitions, please see [https://cps.ipums.org/cps/codes/metfips\\_2014onward\\_codes.shtml](https://cps.ipums.org/cps/codes/metfips_2014onward_codes.shtml).

a year to be released. Second, these components of the Startup Activity Index include all types of business activities (employers, non-employers, unincorporated, and incorporated businesses), but do not include small-scale side business activities such as consulting and casual businesses (because only the main job activity is recorded, and the individual must devote fifteen or more hours a week to working in the business). Third, the panel data created from matching consecutive months of the CPS allow for a dynamic measure of entrepreneurship, whereas most datasets only allow for a static measure of business ownership (e.g., ACS). Fourth, the CPS data include detailed information on demographic characteristics of the owner, whereas most business-level datasets contain no information on the owner (e.g., employer and non-employer data).

It is worth mentioning that the CPS components of the Kauffman Index of Startup Activity also differ from another entrepreneurship measure that may, on a first glance, look similar: the Global Entrepreneurship Monitor's Total early-stage Entrepreneurial Activity (TEA). The TEA captures the percentage of the age eighteen-to-sixty-four population who currently are nascent entrepreneurs (i.e., individuals who are actively involved in setting up businesses) or who are currently owner-managers of new businesses (i.e., businesses with no payments to owners or employees for more than forty-two months). The nascent entrepreneurs captured in the TEA who are still in the startup phase of business creation are not necessarily captured in the Rate of New Entrepreneurs because they may not be working on the new business for fifteen hours or more per week. The CPS components of the Kauffman Index of Startup Activity also differ from the TEA in that, because they are based on panel data, they capture entrepreneurship at the point in time when the business is created. In addition, the Global Entrepreneurship Monitor (GEM) measures in the United States use a much smaller sample, allowing for significant estimation challenges.

### *Startup Density*

The Startup Density component of the Startup Activity Index, based on the BDS, presents four main advantages compared to other business-level datasets. First, it is based on administrative data covering the overall employer business population. As such, it has no potential sampling issues. Second, it has detailed coverage across all levels of geography, including metropolitan areas. Third, it provides firm-level data, rather than just establishment-level data. This is an important feature because new establishments may show another location of an existing firm, rather than an actual new business. Fourth, it provides detailed age breakdown of firms, allowing us to clearly identify new and young firms.

A dataset we use that is similar to the BDS data is the Business Employment Dynamics product from the Bureau of Labor Statistics. We chose not to use it for this report because of two distinct advantages we see the BDS having over the BED. First, the BDS tracks firm-level data, as opposed to the establishment-level data tracked by the BED. Second, the BDS has data available at the metropolitan level, while the BED does not.

Because the BED tracks establishments rather than firms, the numbers from the BDS are different than the ones on the BED. Nonetheless, the trends on the two datasets move largely in tandem, and usually point in the same direction.

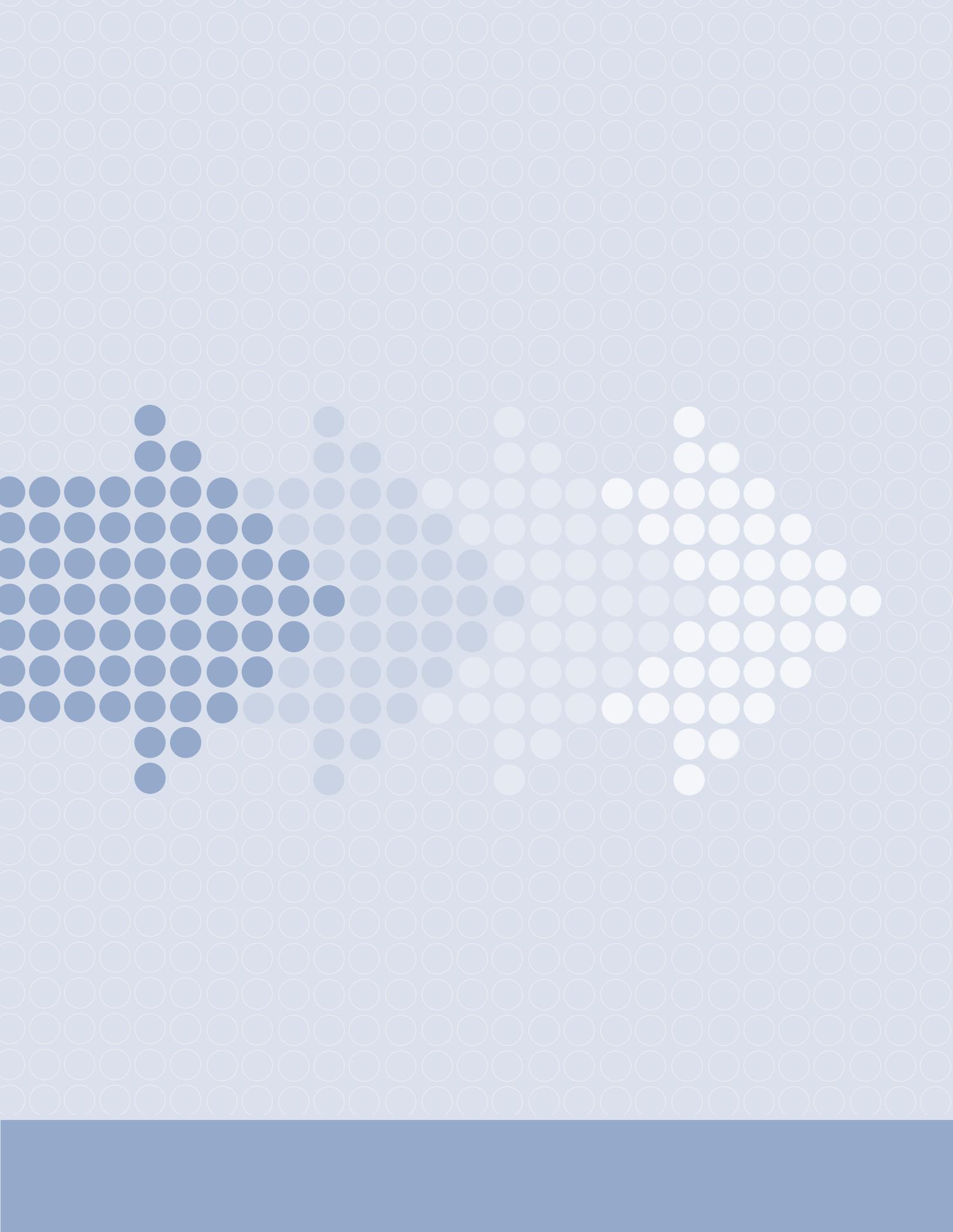
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## REFERENCES

- Bureau of Labor Statistics. 2015. "Table: Private sector establishment births and deaths, seasonally adjusted," *Business Employment Dynamics (BED)*, <http://www.bls.gov/news.release/cewbd.t08.htm>.
- Bureau of Labor Statistics. 2015. *Labor Force Statistics from the Current Population Survey (CPS)*, <http://www.bls.gov/cps/>.
- Fairlie, Robert W. 2014. *Kauffman Index of Entrepreneurial Activity, 1996–2013*, Kansas City: Ewing Marion Kauffman Foundation.
- Fairlie, Robert W. 2013. *Kauffman Index of Entrepreneurial Activity, 1996–2012*, Kansas City: Ewing Marion Kauffman Foundation.
- Fairlie, Robert W. 2012. *Kauffman Index of Entrepreneurial Activity by Veteran Status, 1996–2011*, Kansas City: Ewing Marion Kauffman Foundation.
- Fairlie, Robert W. 2011. "Entrepreneurship, Economic Conditions, and the Great Recession," *Journal of Economics and Management Strategy*, 22(2): 207–231.
- Fairlie, Robert W. 2006. *Kauffman Index of Entrepreneurial Activity, 1996–2005*, Kansas City: Ewing Marion Kauffman Foundation.
- Fairlie, Robert W. 2005. *Kauffman Index of Entrepreneurial Activity, 1996–2004*, Kansas City: Ewing Marion Kauffman Foundation.
- Feld, Brad. 2012. *Startup communities: Building an entrepreneurial ecosystem in your city*. Hoboken, NJ: John Wiley & Sons.
- Global Entrepreneurship Monitor Consortium. 2015. *Global Entrepreneurship Monitor (GEM)*, <http://www.gemconsortium.org/What-is-GEM>.
- Jarmin, Ron S., and Miranda, Javier. 2002. *The Longitudinal Business Database*, Washington, D.C.: U.S. Census Bureau.
- Karabell, Zachary. 2014. *The Leading Indicators: A Short History of the Numbers That Rule Our World*. New York, NY: Simon & Schuster.
- Polivka, Anne E. 2000. *Using Earnings Data From the Monthly Current Population Survey*, Washington, D.C.: Bureau of Labor Statistics.
- Stangler, Dane, and Bell-Masterson, Jordan. 2015. *Measuring an Entrepreneurial Ecosystem*, Kansas City: Ewing Marion Kauffman Foundation.
- Stangler, Dane. 2009. *The Economic Future just Happened*, Kansas City: Ewing Marion Kauffman Foundation.
- Train, George, Cahoon, Lawrence, and Makens, Paul. 1978. "The Current Population Survey Variances, Inter-Relationships, and Design Effects," *Proceedings of the Section on Survey Research Methods*, American Statistical Association, Washington, D.C., 443–448.
- U.S. Census Bureau. 2014. *American Community Survey (ACS)*, <http://www.census.gov/acs/www/>.
- U.S. Census Bureau. 2014. *Business Dynamics Statistics (BDS)*, <http://www.census.gov/ces/dataproducts/bds/overview.html>.
- U.S. Census Bureau. 2014. *Survey of Business Owners (SBO)*, <http://www.census.gov/ces/dataproducts/bds/overview.html>.







This is the 2016 Startup Activity release version of the Kauffman Index.  
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