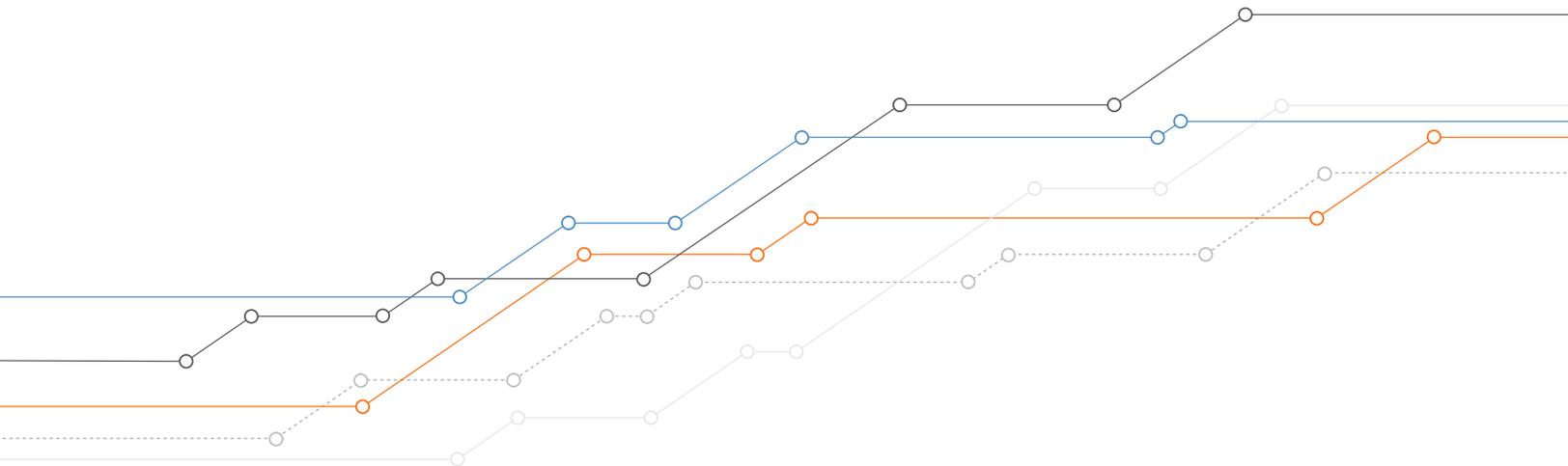




KAUFFMAN  
**INDICATORS** *of*  
**ENTREPRENEURSHIP**

2018 NATIONAL REPORT  
**ON EARLY-STAGE  
ENTREPRENEURSHIP**

SEPTEMBER 2019



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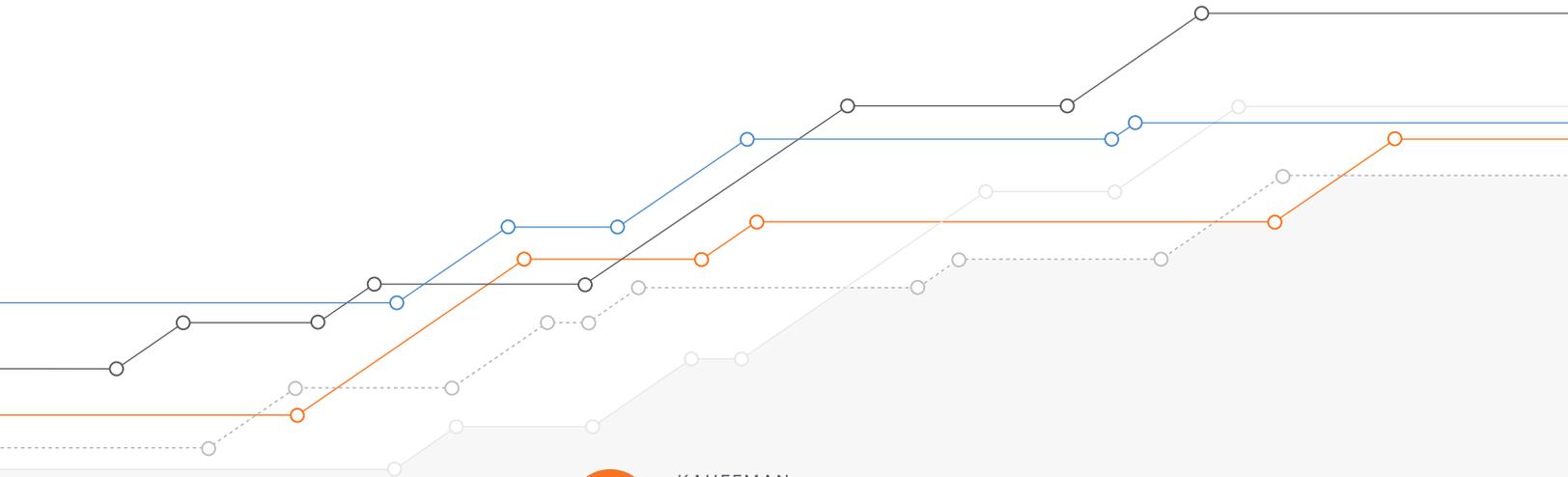
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Explore the Kauffman Indicators further at: [www.kauffman.org/indicators](http://www.kauffman.org/indicators)



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**ENTREPRENEURSHIP**

## **EARLY-STAGE ENTREPRENEURSHIP IN THE UNITED STATES**

This report tracks Early-Stage Entrepreneurship using a set of four indicators capturing early-stage entrepreneurship activity in the United States:

**Rate of new entrepreneurs**

**Opportunity share of new entrepreneurs**

**Startup early job creation**

**Startup early survival rate**

These indicators collectively inform the Kauffman Early-Stage Entrepreneurship (KESE) Index, a summary index of entrepreneurial activity.

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## Executive Summary

The Kauffman Indicators of Early-Stage Entrepreneurship is a set of measures that represents new business creation in the United States, integrating several high-quality, timely sources of information on early-stage entrepreneurship.

This report presents national trends in early-stage entrepreneurship for the years 1996–2018 in the United States, as well as trends for specific demographic groups when possible.

### Early-Stage Entrepreneurship Indicators

- The **rate of new entrepreneurs** in 2018 was 0.32 percent, which reflects that 320 out of every 100,000 adults became new entrepreneurs in an average month.
- The **opportunity share of new entrepreneurs**, representing the percentage of new entrepreneurs who created businesses out of opportunity instead of necessity, was 86.16 percent in 2018. This figure is up slightly from 2017, when it was 84.37 percent. It is more than 10 percentage points higher than it was in 2009 (73.84 percent).
- **Startup early job creation** focuses on early-stage job creation by startups per capita. This indicator was 5.20 jobs per 1,000 people in 2018, reflecting an increase from 4.47 in 2010.
- The **startup early survival rate** captures the one-year survival rate of new employer business establishments. It was 79.43 percent in 2018, essentially remaining constant over the past few years.

### National Trends in Early-Stage Entrepreneurship

- **Sex:** The rate of new entrepreneurs was 0.24 percent among women and 0.41 percent among men in 2018. These figures reflect a slight increase for men from the previous year and a larger decrease for women (0.27 percent in 2017).

- **Race:** The rate of new entrepreneurs in 2018 was the highest among Latinos (0.51 percent) and lowest among African Americans (0.24 percent). The rate of new entrepreneurs increased slightly for Asians in 2018 and decreased for African-Americans in 2018. When compared to 2007, rates of entrepreneurship have increased dramatically among Latinos (up from 0.40 percent to 0.51 percent). The share of new entrepreneurs who are from minority groups is now 45.6 percent, close to twice that in 1996 (22.9 percent).
- **Nativity:** The rate of new entrepreneurs was 0.53 percent for immigrants in 2018, which means they are twice as likely to start businesses as native-born Americans (0.27 percent). Both groups started businesses at slightly lower rates than they did in 2017. Immigrants now comprise nearly 29.8 percent of all new entrepreneurs, a substantial increase from 1996, when 13.3 percent of new entrepreneurs were immigrants.
- **Age:** The rate of new entrepreneurs was highest among Americans aged 45–54 (0.38 percent) and 55–64 (0.37 percent), and lowest among Americans aged 20–34 (0.23 percent). The rate of new entrepreneurs declined slightly in 2018 among all age groups except for the aged 35–44 group. Older adults also represent a growing segment of the entrepreneurial population: adults between the ages of 55 and 64 made up 25.8 percent of new entrepreneurs in 2018, a significant increase over the 14.8 percent they represented in 1996.

#### KAUFFMAN EARLY-STAGE ENTREPRENEURSHIP (KESE) INDEX

The KESE Index, the summary index that combines the four indicators, was 0.56 in 2018. This figure reflects an upward trend over time, moving from -1.00 in 2009, though down slightly from 0.62 in 2017.

**Each of the indicators is based on either a nationally representative sample of more than a half-million observations each year or the universe of employer businesses in the United States (roughly 5 million businesses).**

## Introduction

The Kauffman Indicators of Early-Stage Entrepreneurship captures early-stage entrepreneurial activity broadly defined and includes four key early-stage measures of entrepreneurial activity.

Each of the indicators is based on either a nationally representative sample of more than a half-million observations each year or the universe of employer businesses in the United States (roughly 5 million businesses). These datasets allow for an examination of entrepreneurs and the early-stage startups that they create.

The four indicators are as follows:<sup>1</sup>

- 1) Rate of new entrepreneurs:** the broadest measure possible for business creation by population.
- 2) Opportunity share of new entrepreneurs:** the percentage of new entrepreneurs who created a business out of choice instead of necessity.
- 3) Startup early job creation:** the number of jobs created in the first year of business per capita.
- 4) Startup early survival rate:** the rate of survival in the first year of business.<sup>2</sup>

A summary index of entrepreneurship activity, the KESE Index, is also created from these four indicators. The KESE Index presents a snapshot of early-stage entrepreneurial activity. It evenly weights contributions from the rate of new

entrepreneurs, the share of entrepreneurs that represents opportunity, early-stage job creation by startups, and startup survival rates after one year. These four measures represent a set of indicators capturing the first year of these new businesses in the United States.

The purpose of these indicators is to provide a picture of early-stage entrepreneurial activity. The indicators track changes in entrepreneurial activity over time, across geographies, and among various demographic groups.

We provide these indicators with the hope that interested individuals and organizations will be able to better understand trends in different dimensions of entrepreneurial activity. For example, if the rate of new entrepreneurs were to increase rapidly while the startup early survival rate stayed fairly constant, it suggests a need for further exploration of the causes of this difference. Along the same lines, if an indicator were to differ significantly across demographic groups, this points to the need to investigate the reasons for such differences.

The Kauffman Indicators of Early-Stage Entrepreneurship offers a guidepost for a broad picture of early-stage entrepreneurship. No single indicator can provide a complete picture of all types of entrepreneurial activity at any given time. Like many measures derived from large longitudinal datasets, the indicators are limited by sampling, interpretation, and reporting constraints. The KESE Index can be used to track changes in entrepreneurial activity over time at the national level.

**We provide these indicators with the hope that interested individuals and organizations will be able to better understand trends in different dimensions of early-stage entrepreneurial activity.**

1. The first two indicators were calculated using special panel and cross-sectional databases created from the U.S. Bureau of Labor Statistics microdata. The latter two indicators were calculated using data that is extracted and compiled from the U.S. Bureau of Labor Statistics, Business Employment Dynamics (BED) series on business establishments with employees.

2. More specifically, this is the percentage of new employer establishments that are still active after one year of operation.



## KAUFFMAN INDICATORS *of* ENTREPRENEURSHIP

### RATE OF NEW ENTREPRENEURS DEFINED

The rate of new entrepreneurs captures the percentage of the adult, non-business owner population that starts a business each month. This indicator 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 a special panel dataset created from the Current Population Survey (CPS), a monthly survey conducted by the U.S. Bureau of the Census and the Bureau of Labor Statistics.

The large sample sizes and detailed demographic information available in the CPS allow for the estimation of separate business creation rates by sex, race, immigrant status, age, level of education, and veteran status. These attributes of the dataset represent an advantage of using the individual-level CPS data because large, nationally representative business-level datasets typically provide either no or very limited demographic information on the owner. New business owners are defined here as those individuals who work an average of 15 or more hours per week in their businesses in the preceding month.

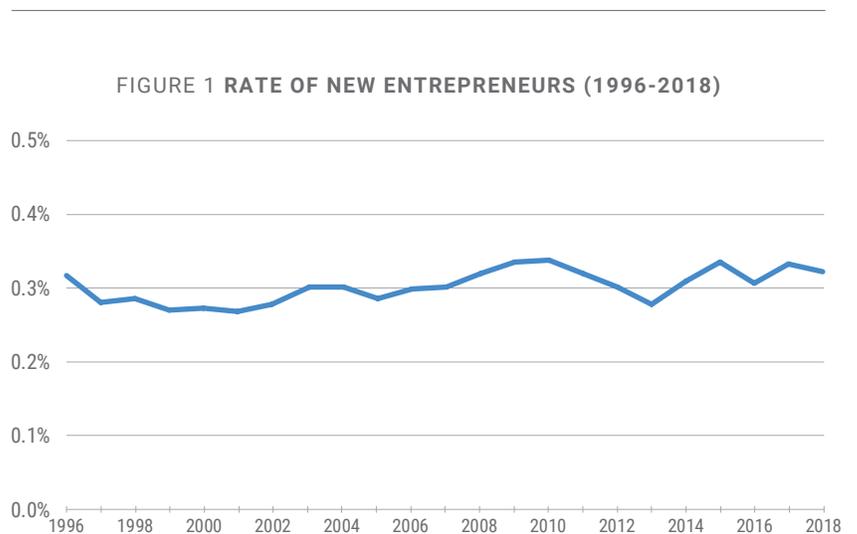
# Kauffman Indicators of Entrepreneurship

## RATE OF NEW ENTREPRENEURS

The rate of new entrepreneurs provides a broad measure of entrepreneurship, capturing all new business owners, regardless of business size or origin. As such, it includes businesses of all types, regardless of their growth potential or the intentions of their owners.

Figure 1 presents the rate of new entrepreneurs from 1996 to 2018. In 2018, an average of 0.32 percent of the adult population, or 320 out of 100,000 adults, created a new business each month.<sup>4</sup> Over the past several years, the rate of new entrepreneurs experienced an upward trend, with recent figures representing one of the highest levels for this indicator in the past two decades.

The rate of new entrepreneurs increased from 0.28 percent of the adult population (280 out of 100,000) in 2013 to 0.32 percent (320 out of 100,000) in 2018.



Source: Estimates calculated from the Current Population Survey.

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.  
<https://www.census.gov/epcd/nonemployer/view/define.html>

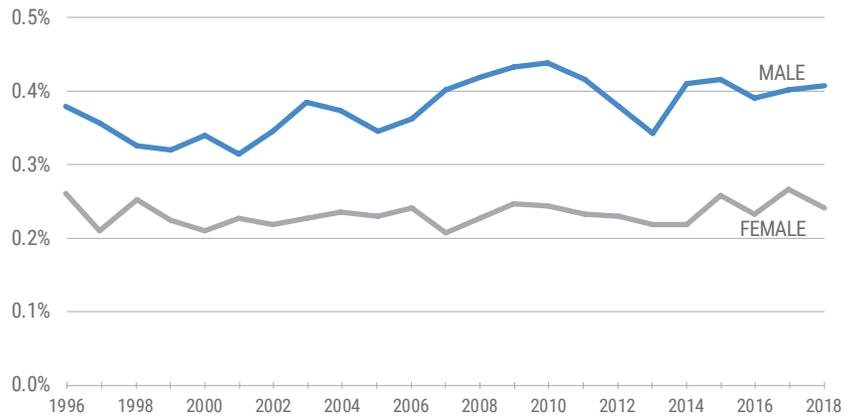
4. Estimates of annual business creation rates would be approximately six to eight times higher. Annual rates are not twelve times higher than monthly rates because individuals potentially can start and exit from business ownership multiple times within the same year. For example, an individual with a sole proprietorship might work more than 15 hours a week during one month, showing up in our data as a new entrepreneur, then be unable to find a new project for that business for several months, taking a seasonal position as an employee at another business during that time. Later in the year, they may find a new project which enables them to activate the business and work more than 15 hours in a subsequent month. This person will show up twice in our data even though the business is the same from an ownership point of view. The yearly figures presented in the graphs in this report are averages of the monthly rate.

### TRENDS IN THE RATE OF NEW ENTREPRENEURS

The rate of new entrepreneurs decreased for women from 0.27 percent in 2017 to 0.24 percent in 2018 (Figure 1.1 and Table 1.1 report results). For men, the rate of new entrepreneurs increased slightly from 0.40 percent in 2017 to 0.41 percent in 2018.

**Overall, men are substantially more likely to start businesses each month than women, which holds in all reported years. In 2018, 410 out of every 100,000 men became new entrepreneurs in a given month, compared to 240 out of 100,000 women.**

FIGURE 1.1 RATE OF NEW ENTREPRENEURS BY SEX (1996–2018)



Source: Estimates calculated from the Current Population Survey.

TABLE 1.1

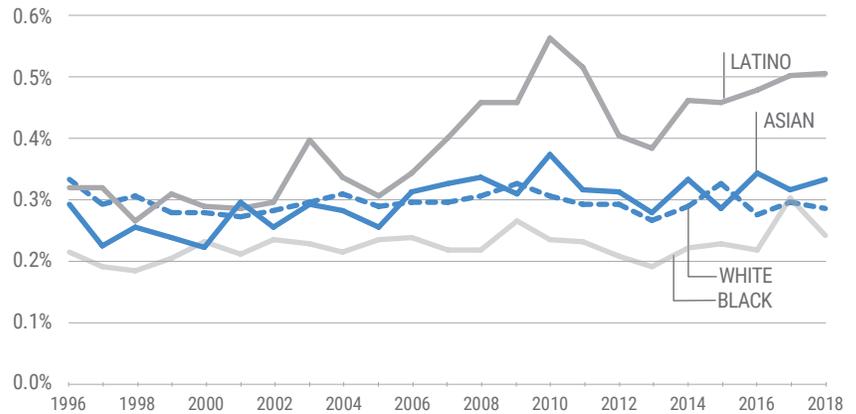
RATE OF NEW ENTREPRENEURS BY SEX (1996–2018)

YEAR	MALE	FEMALE	TOTAL
1996	0.38%	0.26%	0.32%
1997	0.36%	0.21%	0.28%
1998	0.32%	0.25%	0.29%
1999	0.32%	0.22%	0.27%
2000	0.34%	0.21%	0.27%
2001	0.31%	0.23%	0.27%
2002	0.35%	0.22%	0.28%
2003	0.38%	0.23%	0.30%
2004	0.37%	0.24%	0.30%
2005	0.35%	0.23%	0.28%
2006	0.36%	0.24%	0.30%
2007	0.40%	0.21%	0.30%
2008	0.42%	0.23%	0.32%
2009	0.43%	0.25%	0.34%
2010	0.44%	0.24%	0.34%
2011	0.42%	0.23%	0.32%
2012	0.38%	0.23%	0.30%
2013	0.34%	0.22%	0.28%
2014	0.41%	0.22%	0.31%
2015	0.42%	0.26%	0.33%
2016	0.39%	0.23%	0.31%
2017	0.40%	0.27%	0.33%
2018	0.41%	0.24%	0.32%

Notes: (1) Estimates calculated from the Current Population Survey. (2) The rate of new entrepreneurs is the percent of individuals (ages 20–64) who do not own a business in the first survey month and start a business in the following month with 15 or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

Among ethnic and racial groups,<sup>5</sup> African Americans and whites experienced decreases in the rate of new entrepreneurs in 2018. Asians and Latinos experienced increases in 2018. Figure 1.2 and Table 1.2 report estimates of the rate of new entrepreneurs by race and ethnicity. Over most of the time period covered, the rate of new entrepreneurs is highest among Latinos and lowest among African Americans.

FIGURE 1.2 RATE OF NEW ENTREPRENEURS BY RACE AND ETHNICITY (1996–2018)



Source: Estimates calculated from the Current Population Survey.

TABLE 1.2 RATE OF NEW ENTREPRENEURS BY RACE AND ETHNICITY (1996–2018)

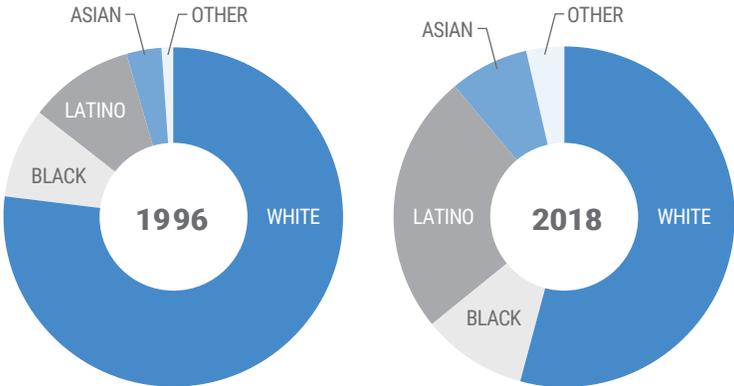
YEAR	WHITE	BLACK	LATINO	ASIAN	TOTAL
1996	0.33%	0.21%	0.32%	0.29%	0.32%
1997	0.29%	0.19%	0.32%	0.23%	0.28%
1998	0.31%	0.18%	0.27%	0.25%	0.29%
1999	0.28%	0.21%	0.31%	0.24%	0.27%
2000	0.28%	0.23%	0.29%	0.22%	0.27%
2001	0.27%	0.21%	0.29%	0.30%	0.27%
2002	0.28%	0.24%	0.30%	0.26%	0.28%
2003	0.30%	0.23%	0.40%	0.29%	0.30%
2004	0.31%	0.22%	0.34%	0.28%	0.30%
2005	0.29%	0.23%	0.31%	0.26%	0.28%
2006	0.30%	0.24%	0.34%	0.31%	0.30%
2007	0.30%	0.22%	0.40%	0.33%	0.30%
2008	0.31%	0.22%	0.46%	0.34%	0.32%
2009	0.33%	0.27%	0.46%	0.31%	0.34%
2010	0.31%	0.24%	0.56%	0.37%	0.34%
2011	0.29%	0.23%	0.52%	0.32%	0.32%
2012	0.29%	0.21%	0.40%	0.31%	0.30%
2013	0.27%	0.19%	0.38%	0.28%	0.28%
2014	0.29%	0.22%	0.46%	0.33%	0.31%
2015	0.32%	0.23%	0.46%	0.29%	0.33%
2016	0.28%	0.22%	0.48%	0.34%	0.31%
2017	0.30%	0.30%	0.50%	0.31%	0.33%
2018	0.29%	0.24%	0.51%	0.33%	0.32%

Notes: (1) Estimates calculated from the Current Population Survey. (2) The rate of new entrepreneurs is the percent of individuals (ages 20–64) who do not own a business in the first survey month and start a business in the following month with 15 or more hours worked per week. (3) Race and Latino codes changed in 2003. Estimates for 2003 only include individuals reporting one race. (4) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

5. For Census classifications, refer to: <https://www.census.gov/topics/population/race/about.html>. We present data for all racial/ethnic categories for which there were sufficient sample sizes to present accurate estimates. Due to this constraint, we are unable to include data for Native-American, Native Hawaiian or Pacific-Islander, or individuals of two or more races.

The share of all new entrepreneurs who are Latino rose from 10.0 percent in 1996 to 24.9 percent in 2018, reflecting the longer-term trends of rising Latino rates of entrepreneurship and the growing Latino share of the total U.S. population. While both the Latino and Asian share of new entrepreneurs rose substantially between 1996 and 2018, the white share of new entrepreneurs declined over the past two decades, and the African American share increased slightly.

FIGURE 1.2A CHANGES IN SHARE OF NEW ENTREPRENEURS BY RACE AND ETHNICITY (1996, 2018)



RACE	1996	2018
White	77.1%	54.4%
Black	8.4%	9.8%
Latino	10.0%	24.9%
Asian	3.4%	7.3%
Other	1.0%	3.6%

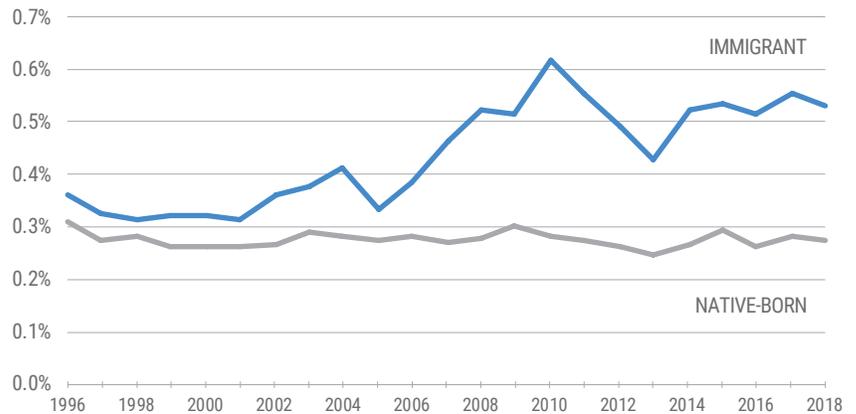
Source: Estimates calculated from the Current Population Survey.

**Both the Latino and Asian share of new entrepreneurs rose substantially between 1996 and 2018, the white share of new entrepreneurs declined over the past 18 years, and the African American share increased slightly.**

The rate of new entrepreneurs decreased for immigrants in 2018 but continues to remain much higher than for the native-born. Figure 1.3 and Table 1.3 report estimates of the rate of new entrepreneurs by nativity.

**The 2018 rate of new entrepreneurs among immigrants of 0.53 percent is close to double than that for the native-born of 0.27 percent.**

FIGURE 1.3 RATE OF NEW ENTREPRENEURS BY NATIVITY (1996–2018)



Source: Estimates calculated from the Current Population Survey.

TABLE 1.3

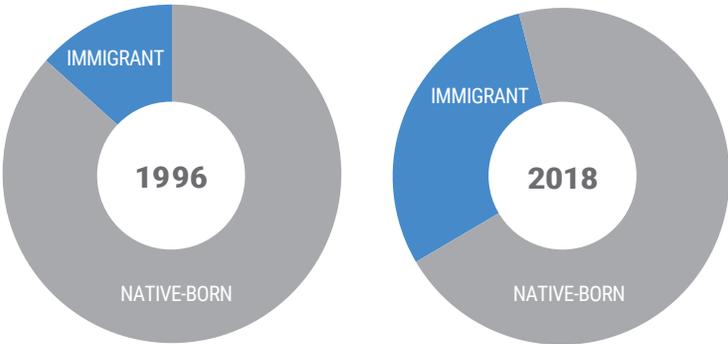
RATE OF NEW ENTREPRENEURS BY NATIVITY (1996–2018)

YEAR	NATIVE-BORN	IMMIGRANT	TOTAL
1996	0.31%	0.36%	0.32%
1997	0.27%	0.33%	0.28%
1998	0.28%	0.31%	0.29%
1999	0.26%	0.32%	0.27%
2000	0.26%	0.32%	0.27%
2001	0.26%	0.31%	0.27%
2002	0.26%	0.36%	0.28%
2003	0.29%	0.38%	0.30%
2004	0.28%	0.41%	0.30%
2005	0.28%	0.33%	0.28%
2006	0.28%	0.38%	0.30%
2007	0.27%	0.46%	0.30%
2008	0.28%	0.52%	0.32%
2009	0.30%	0.51%	0.34%
2010	0.28%	0.62%	0.34%
2011	0.27%	0.55%	0.32%
2012	0.26%	0.49%	0.30%
2013	0.25%	0.43%	0.28%
2014	0.27%	0.52%	0.31%
2015	0.29%	0.53%	0.33%
2016	0.26%	0.52%	0.31%
2017	0.28%	0.56%	0.33%
2018	0.27%	0.53%	0.32%

Notes: (1) Estimates calculated from the Current Population Survey. (2) The rate of new entrepreneurs is the percent of individuals (ages 20–64) who do not own a business in the first survey month and start a business in the following month with 15 or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

This rising rate of new entrepreneurs and the growing immigrant population have contributed to an increasing immigrant share of new entrepreneurs. Figure 1.3A reports estimates of the share of new entrepreneurs by nativity. Immigrant entrepreneurs account for 29.8 percent of all new entrepreneurs in 2018, which represents a substantial increase from 13.3 percent in 1996.

FIGURE 1.3A CHANGES IN SHARE OF NEW ENTREPRENEURS BY NATIVITY (1996, 2018)



NATIVITY	1996	2018
Native-Born	86.7%	70.2%
Immigrant	13.3%	29.8%

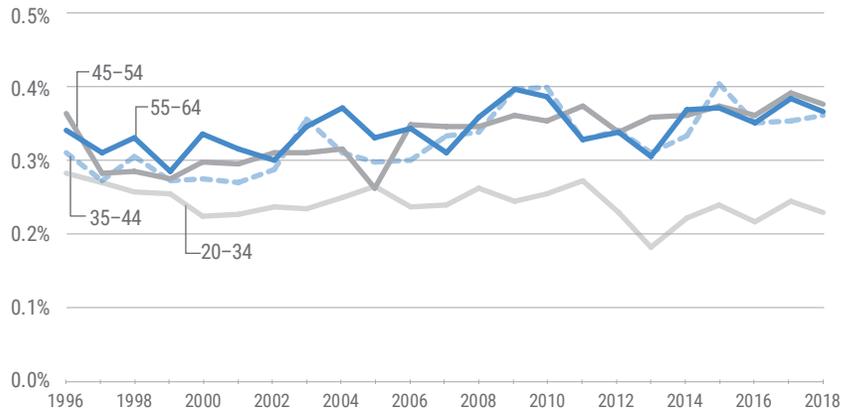
Source: Estimates calculated from the Current Population Survey.

**This rising rate of new entrepreneurs and the growing immigrant population have contributed to an increasing immigrant share of new entrepreneurs.**

Figure 1.4 and Table 1.4 report estimates of the rate of new entrepreneurs by age group.

**All of the age groups, except the aged 35–44 group experienced slight drops in the rate of new entrepreneurs in 2018. The rate of new entrepreneurs is lowest among the youngest group.**

FIGURE 1.4 RATE OF NEW ENTREPRENEURS BY AGE (1996–2018)



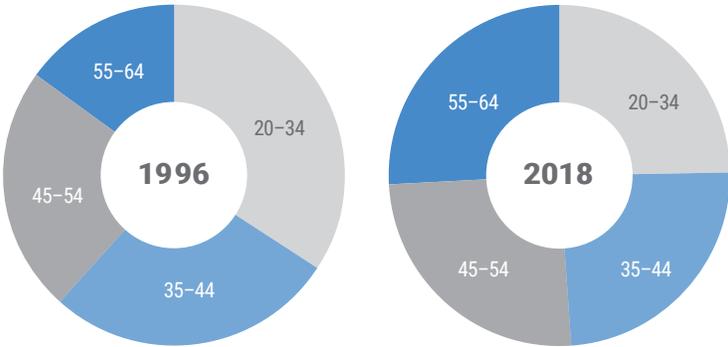
Source: Estimates calculated from the Current Population Survey.

YEAR	AGES 20–34	AGES 35–44	AGES 45–54	AGES 55–64	TOTAL
1996	0.28%	0.31%	0.36%	0.34%	0.32%
1997	0.27%	0.27%	0.28%	0.31%	0.28%
1998	0.26%	0.31%	0.28%	0.33%	0.29%
1999	0.26%	0.27%	0.28%	0.28%	0.27%
2000	0.22%	0.27%	0.30%	0.34%	0.27%
2001	0.23%	0.27%	0.30%	0.32%	0.27%
2002	0.24%	0.29%	0.31%	0.30%	0.28%
2003	0.23%	0.36%	0.31%	0.35%	0.30%
2004	0.25%	0.31%	0.31%	0.37%	0.30%
2005	0.27%	0.30%	0.26%	0.33%	0.28%
2006	0.24%	0.30%	0.35%	0.34%	0.30%
2007	0.24%	0.33%	0.35%	0.31%	0.30%
2008	0.26%	0.34%	0.35%	0.36%	0.32%
2009	0.24%	0.40%	0.36%	0.40%	0.34%
2010	0.26%	0.40%	0.35%	0.39%	0.34%
2011	0.27%	0.33%	0.37%	0.33%	0.32%
2012	0.23%	0.34%	0.34%	0.34%	0.30%
2013	0.18%	0.31%	0.36%	0.31%	0.28%
2014	0.22%	0.33%	0.36%	0.37%	0.31%
2015	0.24%	0.40%	0.37%	0.37%	0.33%
2016	0.22%	0.35%	0.36%	0.35%	0.31%
2017	0.24%	0.35%	0.39%	0.38%	0.33%
2018	0.23%	0.36%	0.38%	0.37%	0.32%

Notes: (1) Estimates calculated from the Current Population Survey. (2) The rate of new entrepreneurs is the percent of individuals (ages 20–64) who do not own a business in the first survey month and start a business in the following month with 15 or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

Figure 1.4A reports estimates of the share of new entrepreneurs for each age group. An aging population has led to a rising share of new entrepreneurs in the group aged 55–64. This group represented 14.8 percent of new entrepreneurs in 1996, and it represented 25.8 percent of new entrepreneurs in 2018.

FIGURE 1.4A CHANGES IN SHARE OF NEW ENTREPRENEURS BY AGE (1996, 2018)



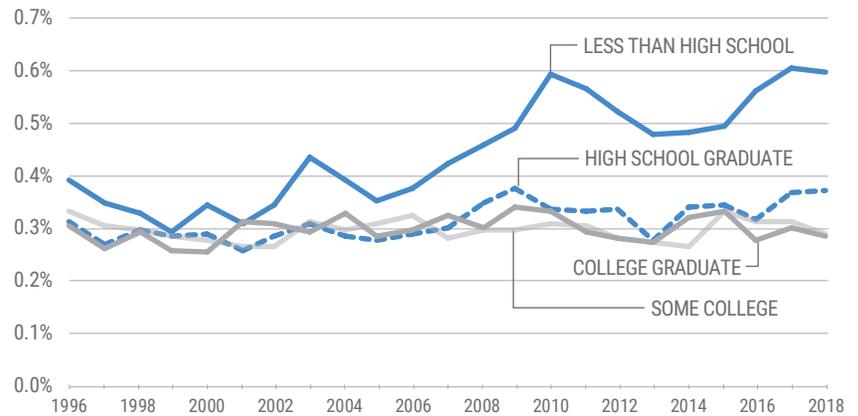
AGE	1996	2018
20-34	34.3%	25.0%
35-44	27.4%	24.0%
45-54	23.5%	25.3%
55-64	14.8%	25.8%

Source: Estimates calculated from the Current Population Survey.

**An aging population has led to a rising share of new entrepreneurs in the group aged 55–64. This group represented 14.8 percent of new entrepreneurs in 1996, and it represented 25.8 percent of new entrepreneurs in 2018.**

The rate of new entrepreneurs declined slightly or remained constant in 2018 for all education groups. Figure 1.5 and Table 1.5 report estimates by education level. The rate of new entrepreneurs is highest among the least- educated group.<sup>6</sup>

FIGURE 1.5 RATE OF NEW ENTREPRENEURS BY EDUCATION (1996–2018)



Source: Estimates calculated from the Current Population Survey.

YEAR	LESS THAN HIGH SCHOOL	HIGH SCHOOL GRADUATE	SOME COLLEGE	COLLEGE GRADUATE	TOTAL <sup>7</sup>
1996	0.39%	0.31%	0.33%	0.31%	0.33%
1997	0.35%	0.27%	0.31%	0.26%	0.29%
1998	0.33%	0.30%	0.30%	0.29%	0.30%
1999	0.29%	0.29%	0.29%	0.26%	0.28%
2000	0.35%	0.29%	0.28%	0.26%	0.29%
2001	0.31%	0.26%	0.27%	0.31%	0.28%
2002	0.35%	0.29%	0.27%	0.31%	0.29%
2003	0.44%	0.31%	0.32%	0.29%	0.32%
2004	0.39%	0.29%	0.30%	0.33%	0.32%
2005	0.35%	0.28%	0.31%	0.29%	0.30%
2006	0.38%	0.29%	0.33%	0.30%	0.31%
2007	0.42%	0.30%	0.28%	0.33%	0.32%
2008	0.46%	0.35%	0.30%	0.30%	0.33%
2009	0.49%	0.38%	0.30%	0.34%	0.36%
2010	0.59%	0.34%	0.31%	0.33%	0.36%
2011	0.57%	0.33%	0.31%	0.29%	0.34%
2012	0.52%	0.34%	0.28%	0.28%	0.32%
2013	0.48%	0.28%	0.27%	0.28%	0.30%
2014	0.48%	0.34%	0.27%	0.32%	0.33%
2015	0.50%	0.35%	0.33%	0.33%	0.35%
2016	0.56%	0.32%	0.31%	0.28%	0.33%
2017	0.61%	0.37%	0.31%	0.30%	0.35%
2018	0.60%	0.37%	0.29%	0.29%	0.34%

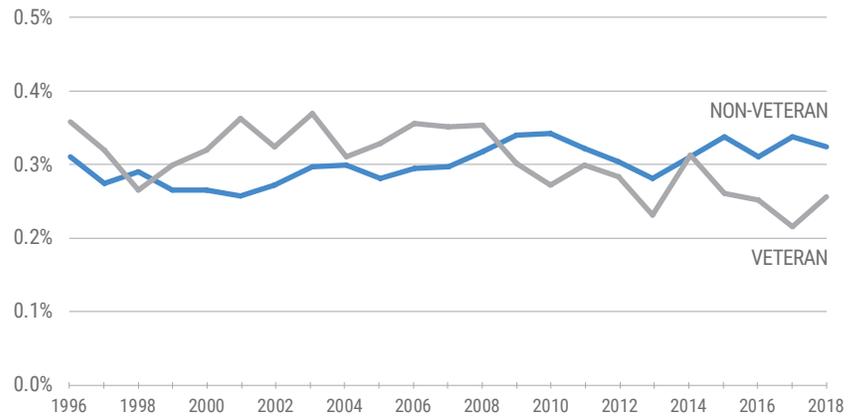
Notes: (1) Estimates calculated from the Current Population Survey. (2) The rate of new entrepreneurs is the percent of individuals (ages 20–64) who do not own a business in the first survey month and start a business in the following month with 15 or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

6. This finding could partially reflect a high level of necessity entrepreneurship for this group. See Fairlie and Fossen (2017).

7. The total reported here includes the overall rate of entrepreneurs for individuals aged 25 to 64 to standardize the age comparison across educational groups. Inclusion in the college educated group, for example, is extremely unlikely for someone aged 18.

Figure 1.6 and Table 1.6 report estimates of the rate of new entrepreneurs by veteran status. In 2018, the rate of new entrepreneurs was 0.26 percent for veterans. The non-veteran rate was 0.32 percent in 2018.

FIGURE 1.6 RATE OF NEW ENTREPRENEURS BY VETERAN STATUS (1996–2018)



Source: Estimates calculated from the Current Population Survey.

YEAR	VETERAN	NON-VETERAN	TOTAL
1996	0.36%	0.31%	0.32%
1997	0.32%	0.27%	0.28%
1998	0.27%	0.29%	0.29%
1999	0.30%	0.26%	0.27%
2000	0.32%	0.26%	0.27%
2001	0.36%	0.26%	0.27%
2002	0.32%	0.27%	0.28%
2003	0.37%	0.30%	0.30%
2004	0.31%	0.30%	0.30%
2005	0.33%	0.28%	0.28%
2006	0.35%	0.29%	0.30%
2007	0.35%	0.30%	0.30%
2008	0.35%	0.32%	0.32%
2009	0.30%	0.34%	0.34%
2010	0.27%	0.34%	0.34%
2011	0.30%	0.32%	0.32%
2012	0.28%	0.30%	0.30%
2013	0.23%	0.28%	0.28%
2014	0.31%	0.31%	0.31%
2015	0.26%	0.34%	0.33%
2016	0.25%	0.31%	0.31%
2017	0.21%	0.34%	0.33%
2018	0.26%	0.32%	0.32%

Notes: (1) Estimates calculated from the Current Population Survey. (2) The rate of new entrepreneurs is the percent of individuals (ages 20–64) who do not own a business in the first survey month and start a business in the following month with 15 or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded. (4) The total sample size is slightly larger than the sum of the veteran and non-veteran sample sizes from 1996 to 2005 because of missing values for veteran status in those years.



## OPPORTUNITY SHARE OF NEW ENTREPRENEURS DEFINED

The rate of new entrepreneurs includes entrepreneurs and businesses of all types. As such, additional analysis is necessary to distinguish between individuals who are “opportunity entrepreneurs,” including those coming out of wage and salary work, school, or other labor market status, and individuals who are “necessity entrepreneurs,” due to unemployment.<sup>8</sup> This distinction is useful because it offers some insight into the influence of economic conditions on overall business creation. The opportunity share of new entrepreneurs reflects the percent of the total number of new entrepreneurs who were not unemployed and not looking for a job as they started the new business.

## OPPORTUNITY SHARE OF NEW ENTREPRENEURS

Not surprisingly, over the past two decades, the opportunity share of new entrepreneurs increased when economic conditions were improving and decreased when economic conditions were worsening. The opportunity share of new entrepreneurs was largest in the 1990s, and the smallest share was observed in 2009, at the end of the Great Recession. The opportunity share of new entrepreneurs also decreased in the recession of the early 2000s and increased in the growth period that followed in the mid-2000s.

It is important to note that although the motivations for starting businesses can differ (and can be in the context of weak economic conditions and high unemployment rates), necessity businesses could eventually become very successful.<sup>9</sup>

In 2018, the opportunity share of new entrepreneurs was 86.16 percent. This represents a substantial increase from 2014 and is now more than 10 percentage points higher than it was in 2009 at the end of the Great Recession. Figure 2 displays trends in the opportunity share of new entrepreneurs from 1996 to 2018.

FIGURE 2 OPPORTUNITY SHARE OF NEW ENTREPRENEURS (1996–2018)



Source: Estimates calculated from the Current Population Survey.

**The opportunity share of new entrepreneurs has been highest in the 1990s and late 2010s, while the smallest share was observed in 2009, at the end of the Great Recession.**

8. See Fairlie and Fossen (2017).

9. Block and Sandner (2009); Hinz and Junbauer-Gans (2010); Caliendo and Kritikos (2010); Stangler (2009).

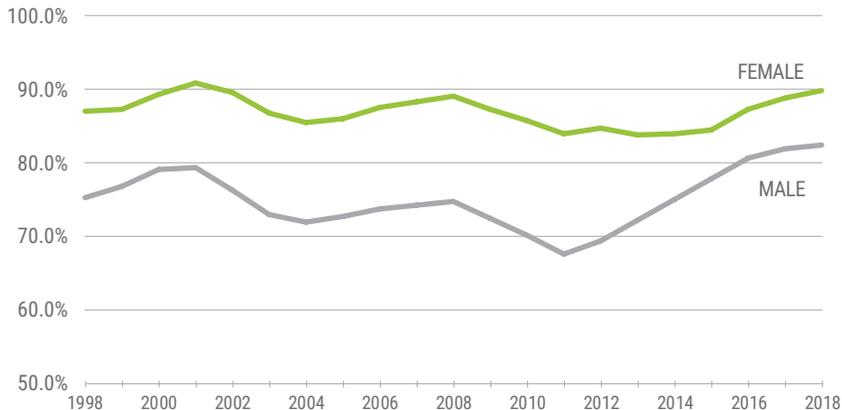
**TRENDS IN THE OPPORTUNITY SHARE OF NEW ENTREPRENEURS**

We also examined trends in the opportunity share of new entrepreneurs by demographic groups. Three-year moving averages are reported to increase the precision of estimates.<sup>10</sup>

The opportunity share of new entrepreneurs increased for both men and women from 2017 to 2018, continuing an upward trend over the past few years as the economy has improved (Figure 2.1 reports estimates).

The opportunity share of new entrepreneurs is lower for men than for women, although some of this gap closed during the recent economic recovery. The opportunity share of new entrepreneurs for women has been generally more stable than that for men.

**FIGURE 2.1 OPPORTUNITY SHARE OF NEW ENTREPRENEURS (3-YEAR MOVING AVERAGE) BY SEX (1998–2018)**

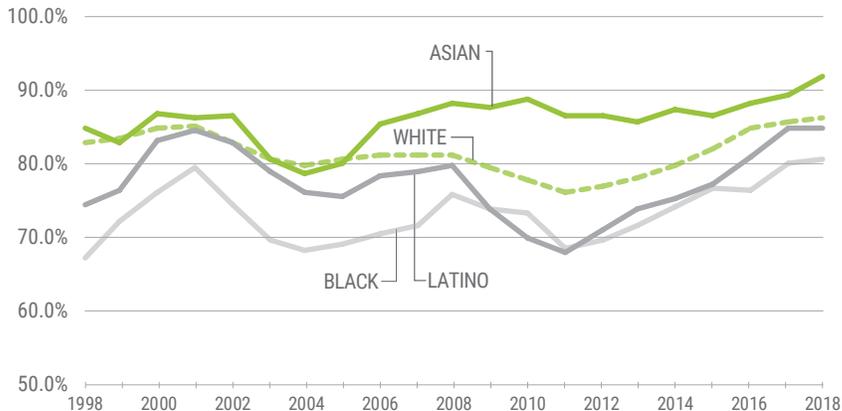


Source: Estimates calculated from the Current Population Survey.

**The opportunity share of new entrepreneurs for women has been generally more stable than that for men.**

All racial and ethnic groups experienced increases in the opportunity share of new entrepreneurs in 2018, continuing upward trends over the past few years. Figure 2.2 reports estimates of the opportunity share of new entrepreneurs by race and ethnicity. This indicator is highest among Asians and lowest among African Americans.

**FIGURE 2.2 OPPORTUNITY SHARE OF NEW ENTREPRENEURS (3-YEAR MOVING AVERAGE) BY RACE AND ETHNICITY (1998–2018)**

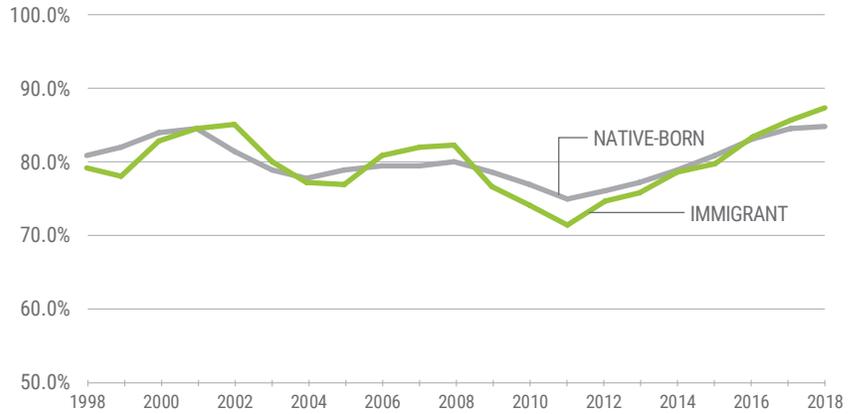


Source: Estimates calculated from the Current Population Survey.

10. It is important to note that a three-year moving average can increase (or decrease) even when the measure for the latest year decreases (or increases) from the previous year. This occurs when the measure for the new year replaces a lower value for the first year in the three-year moving average (e.g., the moving average for the series 1,5,3 is 3, but when it updates to 5,3,2 the moving average increases to 3.3.)

The opportunity share of new entrepreneurs increased for immigrants in 2018. The opportunity share is higher for immigrants than for native-born Americans. Figure 2.3 reports estimates of the opportunity share of new entrepreneurs by nativity.

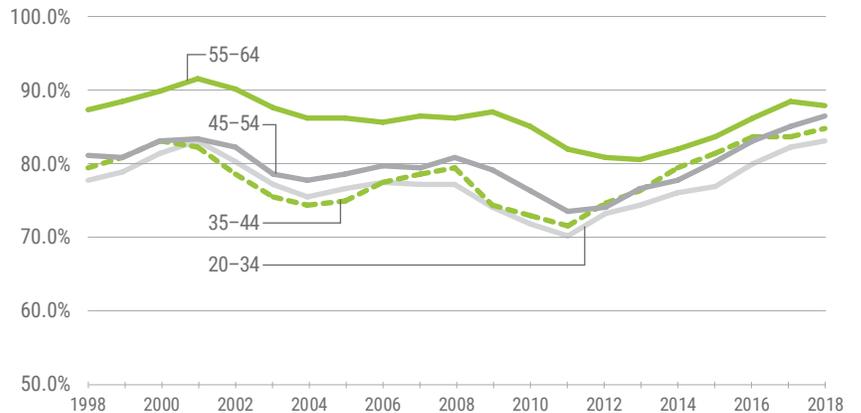
FIGURE 2.3 OPPORTUNITY SHARE OF NEW ENTREPRENEURS (3-YEAR MOVING AVERAGE) BY NATIVITY (1998–2018)



Source: Estimates calculated from the Current Population Survey.

Figure 2.4 reports opportunity share of new entrepreneurs by age group. All age groups except the oldest experienced increases in the opportunity share in 2018, continuing upward trends since the Great Recession. The indicator is highest among the oldest age group and lowest among the youngest age group in 2018.

FIGURE 2.4 OPPORTUNITY SHARE OF NEW ENTREPRENEURS (3-YEAR MOVING AVERAGE) BY AGE (1998–2018)



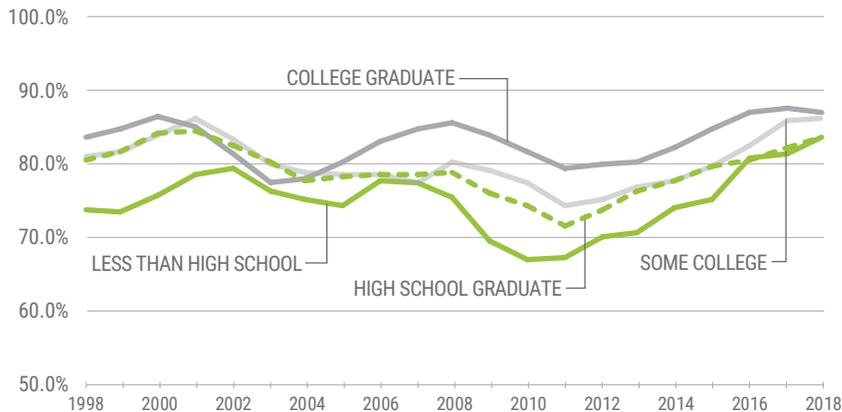
Source: Estimates calculated from the Current Population Survey.

**Most of the age groups experienced increases in this indicator in 2018, continuing the upward trend since the Great Recession.**

The opportunity share of new entrepreneurs increased for all education groups except college graduates. The opportunity share generally increases with education level. Figure 2.5 reports estimates of this indicator by education level.

**High school dropouts have the lowest opportunity share of new entrepreneurs, and college graduates are tied for the highest opportunity share of new entrepreneurs in 2018.**

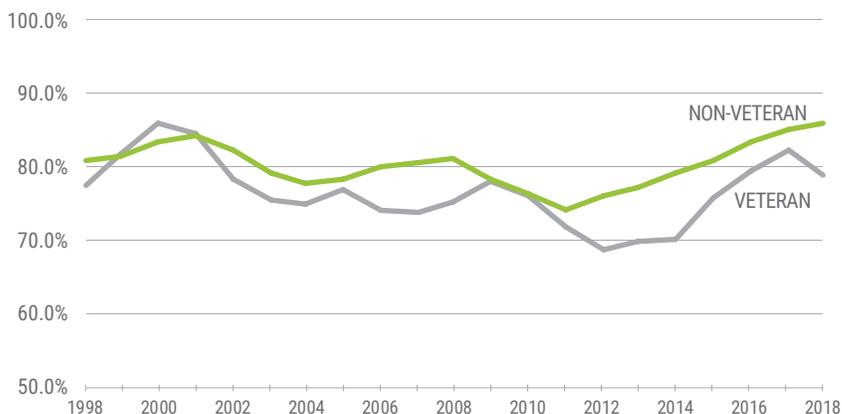
**FIGURE 2.5 OPPORTUNITY SHARE OF NEW ENTREPRENEURS (3-YEAR MOVING AVERAGE) BY EDUCATION (1998–2018)**



Source: Estimates calculated from the Current Population Survey.

Figure 2.6 reports estimates of the opportunity share of new entrepreneurs by veteran status. The opportunity share of new entrepreneurs decreased in 2018 among veterans, but longer-term trends show an increase since the Great Recession. The opportunity share is lower among veterans than non-veterans.

**FIGURE 2.6 OPPORTUNITY SHARE OF NEW ENTREPRENEURS (3-YEAR MOVING AVERAGE) BY VETERAN STATUS (1998–2018)**



Source: Estimates calculated from the Current Population Survey.



## STARTUP EARLY JOB CREATION DEFINED

Startup early job creation, the third indicator, measures how many total jobs are created by startups in their first year and is normalized by the population. This indicator is an annual measure calculated from the Business Employment Dynamics (BED). We use this measure because it allows us to track the total number of jobs created by startups while accounting for differences in population over time or by geography. To create this indicator, we calculate the total employment created by new employer firms in their first year and divide it by the total population. This measure of job creation is normalized by dividing by the total population to make it a per capita metric. Focusing on only the quantity of employer startups or the average number of jobs created per startup alone would not capture the potential of startups for early job creation. Total employment created by new employer firms captures the average number of jobs created by each startup. Although the measure focuses on job creation, it can also be viewed as an early-stage indicator of business growth.

## STARTUP EARLY JOB CREATION

Startup early job creation captures the employment of a cohort of startup businesses in their first year of operation. This measure represents job creation in the first year of operation and does not directly reflect long-term job creation. As reported here, it does not provide detail on trends in job creation by industry, which may be an important consideration for policy interpretation of the measure.

### TRENDS IN STARTUP EARLY JOB CREATION

The number of jobs created by startups in their first year was 5.20 per 1,000 people in 2018, essentially unchanged from the previous year. Figure 3 presents the indicator from 1996 to 2018. The level of job creation is promising, as the 2016, 2017, and 2018 rates represent the highest levels since 2008 and continues the general upward trend since 2012. However, levels remain substantially lower in recent years than they were prior to the Great Recession and especially during the 1990s. For comparison, this indicator peaked at 7.87 in 1997, and has since declined by almost a third.

FIGURE 3 STARTUP EARLY JOB CREATION (1996–2018)



Source: Calculated from the Business Employment Dynamics.

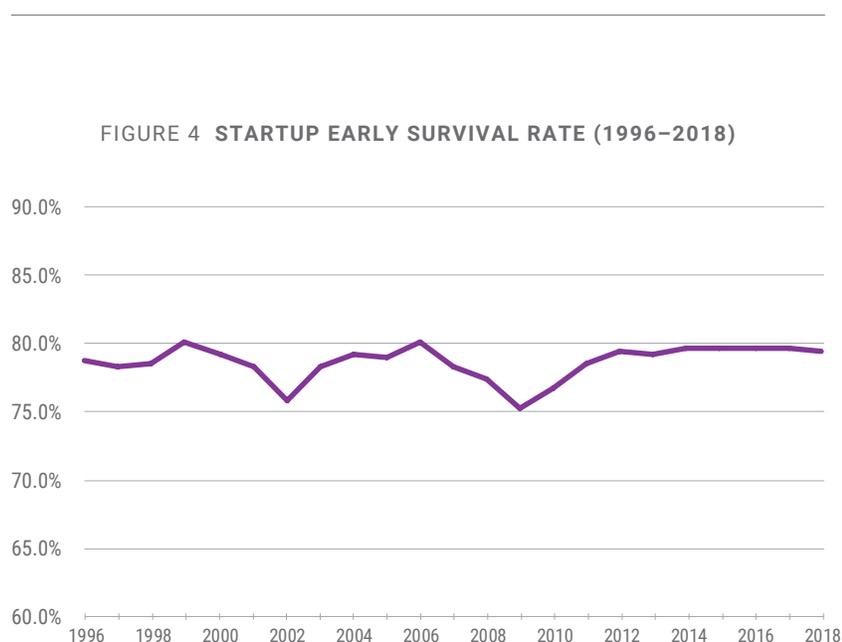
**The number of jobs created by startups in their first year was 5.20 per 1,000 people in 2018, which was essentially unchanged from 2017.**

## STARTUP EARLY SURVIVAL RATE

### TRENDS IN STARTUP EARLY SURVIVAL RATE

The startup early survival rate remained essentially unchanged from 2017 to 2018. Figure 4 presents the startup early survival rate from 1996 to 2018.

The startup early survival rate has increased from 75.25 percent in 2009 when it hit a low point due to the Great Recession to 79.43 percent in 2018. Since 2012, the startup early survival rate has remained relatively constant at between 79.24 percent to 79.70 percent.



Source: Calculated from the Business Employment Dynamics.

**The startup early survival rate has increased from 75.25 percent in 2009 when it hit a low point due to the Great Recession to 79.43 percent in 2018.**

11. Historical data on firm survival rate is available from the U.S. Census Business Dynamics Statistics at [https://www.census.gov/ces/dataproducts/bds/data\\_firm2016.html](https://www.census.gov/ces/dataproducts/bds/data_firm2016.html)



KAUFFMAN  
INDICATORS *of*  
ENTREPRENEURSHIP

### STARTUP EARLY SURVIVAL RATE DEFINED

The startup early survival rate, an early-stage indicator of business performance, measures the percentage of new employer establishments that are still active after one year of operation. This indicator is an annual measure calculated from the Business Employment Dynamics (BED).

As with startup early job creation, the startup early survival rate measure reflects a trend among startups within their first year. This indicator is a measure of immediate survival; it does not reflect the long-term survival of startups. And for businesses that do not survive, it does not assume the reason for exit. It is also important to note that this indicator measures the early survival rates of new establishments rather than new firms. Unlike new firms, new establishments can be generated from existing businesses. For example, a new location of a service-oriented business (such as a restaurant or gas station) would count as a new establishment but not as a new firm. Historically, however, the establishment survival rate has been very similar to the firm survival rate.<sup>11</sup>

# Kauffman Early-Stage Entrepreneurship (KESE) Index

Using the four key indicators, we create the KESE Index, a summary index that reflects entrepreneurial activity, broadly defined. It is an equally weighted index of the four normalized indicators of entrepreneurship activity:<sup>12</sup>

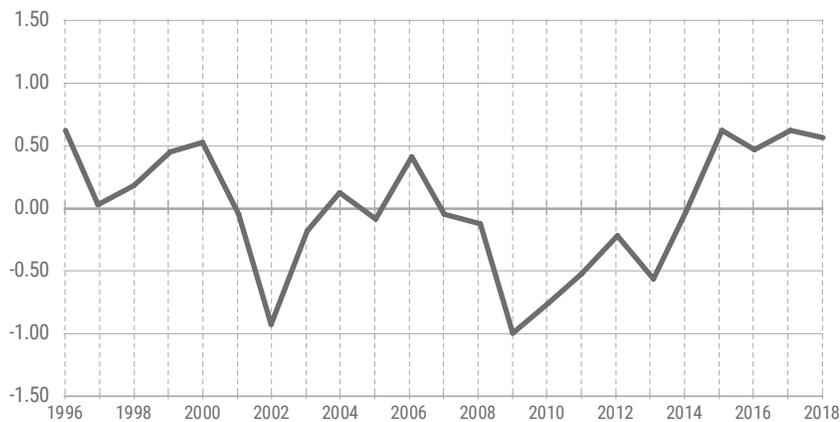
- 1) **Rate of new entrepreneurs:** the percentage of adults becoming entrepreneurs in a given month.
- 2) **Opportunity share of new entrepreneurs:** the percentage of new entrepreneurs driven primarily by opportunity rather than necessity.
- 3) **Startup early job creation:** the total number of jobs created by startups in their first year normalized by the population (i.e., per capita).
- 4) **Startup early survival rate:** the percentage of startups that remain in operation through their first year.

## National Trends in the KESE Index

Figure 5 and Table 5 present the KESE from 1996-2018.<sup>13</sup>

The KESE Index is centered at 0 which is the average over the full time period (1996-2018). Thus, a positive index value indicates that the index is above its two-decade average, and a negative value indicates that it is below its two-decade average. The KESE Index decreased slightly from 0.62 in 2017 to 0.56 in 2018. The past couple of years have some of the highest levels recorded over the past two decades.

FIGURE 5 KAUFFMAN EARLY-STAGE ENTREPRENEURSHIP (KESE) INDEX (1996–2018)



Source: Calculated from CPS and BED data.

YEAR	INDEX SCORE
1996	0.6197
1997	0.0281
1998	0.1785
1999	0.4438
2000	0.5182
2001	-0.0563
2002	-0.9367
2003	-0.1783
2004	0.1128
2005	-0.0926
2006	0.4058
2007	-0.0588
2008	-0.1213
2009	-0.9981
2010	-0.7593
2011	-0.5265
2012	-0.2234
2013	-0.5630
2014	-0.0367
2015	0.6079
2016	0.4586
2017	0.6156
2018	0.5622

**The KESE is an equally weighted index of the four normalized indicators of entrepreneurship activity.**

12. We normalize each of the four measures by subtracting the mean and dividing by the standard deviation for that measure (i.e., creating a z-score for each variable). This calculation creates a comparable scale for including the four measures in the summary index. We use annual estimates from more than two decades to calculate the mean and standard deviations for each component measure (see Methodology and Underlying Data Sources for more details).

13. Complete information about the methodology behind the calculations of the KESE Index is available in the methodology section of this report.

## Methodology

This section of the report discusses the methodology and underlying data sources for each of the Kauffman Indicators of Early-Stage Entrepreneurship and the methodology for calculating the summary KESE Index.

The underlying definitions and methodology are the same for the national and state estimates, with appropriate adjustments for geography and population size by state.

### Indicator 1: Rate of New Entrepreneurs

The rate of new entrepreneurs is calculated using a special panel dataset created from the Current Population Survey (CPS). The CPS is a monthly survey of approximately 60,000 households conducted by the Bureau of Labor Statistics on behalf of the U.S. Census Bureau. The survey primarily asks questions focused on the employment status of household members, including their employment and business ownership status.<sup>14</sup> 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,<sup>15</sup> all individuals who do not own a business as their main job are identified in the first survey month. By matching monthly CPS files, it is then determined if these individuals own a business as their main job with 15 or more hours worked per usual week in the following survey month.

Changes to respondents' main jobs from month to month are measured accurately because CPS survey takers ask whether the individual has the same main job that they 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 job 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 owners work 15 or more hours per week in the second month is imposed to rule out part-time business owners and very small business activities.

The rate of new entrepreneurs may, therefore, underestimate or overestimate the percent of individuals creating any type of business.

The rate of new entrepreneurs excludes individuals who owned a business and worked fewer than 15 hours in the first survey month. Thus, it does not capture business owners who increased their hours from less than 15 per week in one month to 15 or more hours per week in the second month. It also does not capture when these business owners changed from being non-business owners to business owners with less than 15 hours worked. These individuals are excluded from the sample but may actually have been at the earliest stages of starting a business.

At the same time, the rate of new entrepreneurs may overstate entrepreneurship because of how individuals report their work status. Longstanding business owners who are also salaried in the business may, for example, not report that business ownership is their main job if their wage/salary jobs had more hours in that particular month. If these individuals later report having worked more hours in business ownership in a subsequent month, it would appear that a new business had been created.

For the rate of new entrepreneurs calculations presented 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.

### Indicator 2: Opportunity Share of New Entrepreneurs

Building from the same data used for the rate of new entrepreneurs, 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. This "opportunity entrepreneurship" can be

14. <https://www.census.gov/programs-surveys/cps.html>

15. This measure was created by Rob Fairlie, formerly known as the Kauffman Index of Entrepreneurial Activity. For more information see Fairlie (2014).

contrasted to the “necessity entrepreneurship” that occurs when individuals start businesses coming out of unemployment. The opportunity share of new entrepreneurs considers individuals’ initial labor market status in the first survey month.

The distinction between opportunity versus necessity has been discussed extensively in the entrepreneurship literature.<sup>16</sup> It is conceptually useful because the motivations for starting a business could influence the type, nature, and future direction of the business; it is also meaningful because it reflects to some extent the landscape of economic opportunity for entrepreneurs. Although there is some convergence about the theoretical distinction between the two motivations for business creation, a clean distinction is difficult to make with empirical data. Distinguishing between opportunity and necessity entrepreneurship using prior labor market status presents a useful approach.

**UNDERLYING CURRENT POPULATION SURVEY (CPS) PANEL DATA**

To calculate the rate of new entrepreneurs and the opportunity share of new entrepreneurs, a special panel dataset is created by matching the basic monthly files of the Current Population Survey (CPS) over time. 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 month-to-month changes in business creation. Combining the monthly files creates a sample size of roughly 700,000 adults ages 20 to 64 each year.

This method of creating panel data takes advantage of the household surveying strategies used for the CPS. 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 of data. After removing all non-unique matches, the underlying CPS data are checked extensively for coding errors and other problems.

Monthly match rates are generally between 94 percent and 96 percent. 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.

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 16 and older.<sup>17</sup> The total national sample size is drawn to ensure a high level of precision for the monthly national unemployment rate. For each of the 50 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.<sup>18</sup> 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.

**Indicator 3: Startup Early Job Creation**

Startup early job creation uses BED data to capture early-stage job creation among startup cohorts each year. To focus on early-stage business success, a one-year window is used to measure job creation. For this measure, startups are defined as new employer establishments that are younger than one year

16. See Fairlie and Fossen (2017) and Desai (2017), among others.

17. The civilian non-institutional population is defined as persons 16 years of age and older residing in the 50 states and the District of Columbia, who are not inmates of institutions (e.g., penal and mental facilities, homes for the aged), and who are not on active duty in the Armed Forces. This number is reported regularly by the Federal Reserve and is available here: <https://fred.stlouisfed.org/series/CNP160V>

18. See Polivka (2000).

old in a given year. The total employment generated by these startups in their first year is divided by the population to create the per capita startup early job creation measure.

#### **Indicator 4: Startup Early Survival Rate**

The startup early survival rate uses BED data to measure the percentage of new employer establishments that survive their first year of operation.

##### ***UNDERLYING BUSINESS EMPLOYMENT DYNAMICS (BED) DATA***

Startup early job creation and startup early survival rate both use the U.S. Bureau of Labor Statistics, Business Employment Dynamics (BED) series. The BED is derived from the Quarterly Census of Employment and Wages (QCEW), or ES-202, program. The data include all establishments subject to state unemployment insurance (UI) laws and federal agencies subject to the Unemployment Compensation for Federal Employees program. It covers all employer establishments in the United States (approximately 7 million establishments).

The BED data include numbers of businesses tabulated by firm age, establishment age, employment size, and geography (national and state). Firm age information is used to identify and measure the number of startups, defined as employer businesses younger than one year old.

Because the BED is based on underlying administrative data that covers the universe of employer establishments in the United States, sampling concerns such as standard errors and confidence intervals are irrelevant. Nonetheless, non-sampling errors still could occur. These could be caused, for example, by data entry issues or by businesses submitting incorrect employment data.

#### **Kauffman Early-Stage Entrepreneurship Index**

The KESE is calculated from the four indicators of entrepreneurship activity. It is an equally weighted index of the four normalized indicators. Each of the measures is normalized by subtracting its mean and dividing by its standard deviation (i.e., creating a z-score for each variable). This calculation creates a comparable scale for including the four measures in the KESE. We use national annual estimates from 1996 to 2018 to calculate the mean and standard deviation for each component. The same normalization method, which is based on national data, is used for both geographical levels—national and state—for comparability and consistency over time.

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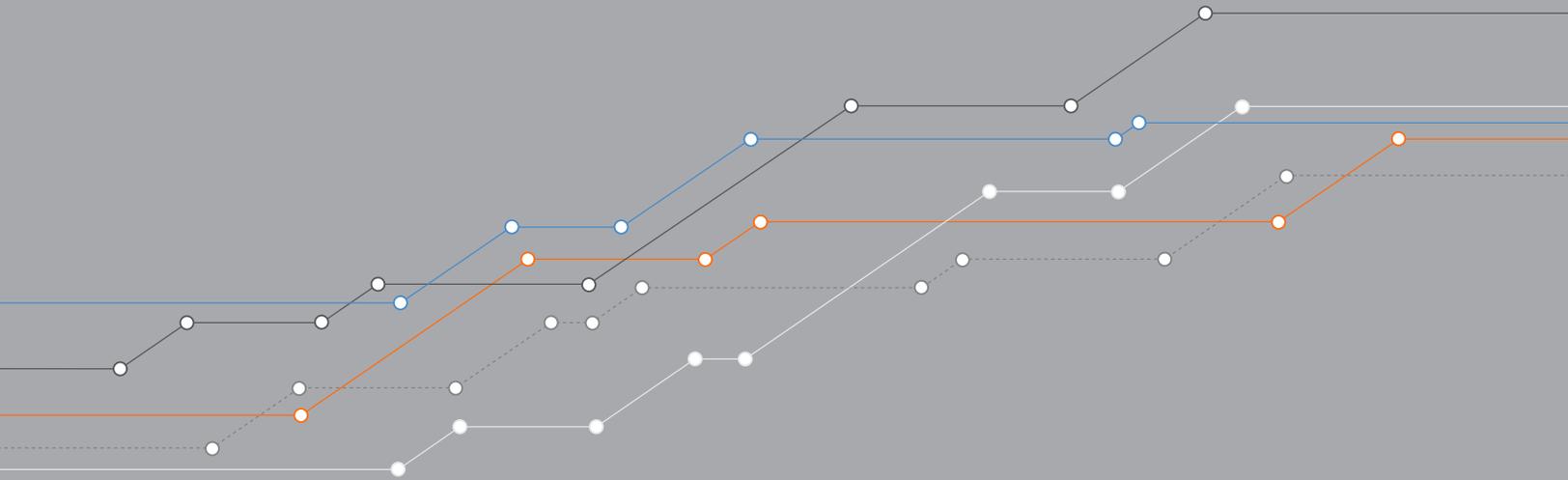
# NOTES



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Explore the Kauffman Indicators further at: [www.kauffman.org/indicators](http://www.kauffman.org/indicators)

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