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The Kauffman Index of Entrepreneurial Activity: 1996-2013

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Executive Summary

The Kauffman Index of Entrepreneurial Activity is a leading indicator of new business creation in the United States. Capturing new business owners in their first month of significant business activity, this measure provides the earliest documentation of new business development across the country. The percentage of the adult, non-business owner population that starts a business each month is measured using data from the Current Population Survey (CPS). The Index captures all types of business activity and is based on nationally-representative sample sizes of more than an half million observations each year. In addition to this overall rate of entrepreneurial activity, separate estimates for specific demographic groups, states, and select metropolitan statistical areas (MSAs) are presented. The Index provides the only national measure of the rate of business creation by specific population groups.

New 2013 data allow for an update to previous reports, with consideration of trends in the rates of entrepreneurial activity over the eighteen-year period between 1996 and 2013. The Kauffman Index reveals important shifts in the national level of entrepreneurial activity and shifts in the demographic and geographic composition of new entrepreneurs across the country. Also, new for 2013 is the reporting of trends in the share of entrepreneurial activity coming from individuals who are not unemployed and looking for a job. The new estimates provide suggestive evidence on trends in "opportunity" business creation relative to unemployment-related ("necessity") business creation over the business cycle. For only the second year, estimates are also reported for

veterans representing some of the first evidence on business creation for this group. Key findings for 2013 include:

- The rate of business creation declined from 300 out of 100,000 adults in 2012 to 280 out of 100,000 adults in 2013. The business creation of 0.28 percent translates into approximately 476,000 new business owners each month during the year.
- The decline in the business creation rate to 0.28 percent in 2013 is important because this rate finally returns levels of business creation to levels found prior to the Great Recession.
- The decline in business creation over the past year is likely due to improved labor market conditions putting less pressure on individuals to start businesses out of necessity. Trends in the share of business starts, which is presented in this report for the first time, indicate that the share coming from individuals who are not unemployed and looking for a job was much higher in 2013 than the share at the end of the Great Recession.
- The rate of employer business creation increased slightly from levels prior to the Great Recession.
- The overall decline in business creation rates was due mainly to a drop in business creation rates among men, but was also due to a slight drop in rates among women.
- The entrepreneurial activity rate decreased for all racial and ethnic groups. The rate decreased from 0.21 percent in 2012 to 0.19 percent in 2013 for African-Americans, from 0.40 percent in 2012 to 0.38 percent in 2013 for Latinos, from 0.31 percent in 2012 to 0.28 percent in 2013 for Asians, and from 0.29 percent in 2012 to 0.27 percent in 2013 for whites.
- Immigrants were nearly twice as likely to start a business each month as were the native-born in 2013. The immigrant rate of entrepreneurial activity decreased from 0.49 percent in 2012 to 0.43 percent in 2013.
- All age groups experienced declines in entrepreneurial activity from 2012 to 2013 except the ages 45-54 group experienced an increase.
- Over the past eighteen years, Latinos, Asians, and immigrants experienced rising shares of all new entrepreneurs mainly because of increasing populations, but also because of rising rates of entrepreneurship. The oldest age group (ages 55-64) also experienced a rising share of all new entrepreneurs primarily because it represents an increasing share of the population.

- Entrepreneurship rates declined for all education groups, except for college graduates who experienced constant rates from 2012 to 2013. The least educated have the highest rate of business creation which might be due to more limited labor market opportunities than for more highly-educated groups.
- Relatively new estimates of entrepreneurial activity for veterans indicate that business creation for veterans declined from 0.28 percent in 2012 to 0.23 percent in 2013. The share of all businesses created by veterans declined sharply over the past eighteen years as the working-age veteran population declined over this period.
- The construction industry had the highest rate of entrepreneurial activity of all major industry groups in 2013 (1.27 percent). The second highest rate of entrepreneurial activity was in the services industry (0.37 percent).
- From 2012 to 2013, entrepreneurial activity rates decreased in all regions in the United States. Entrepreneurship rates are highest in the West and lowest in the Midwest.
- The states with the highest rates of entrepreneurial activity were Montana (610 per 100,000 adults), Alaska (470 per 100,000 adults), South Dakota (410 per 100,000 adults), California (400 per 100,000 adults), and Colorado (380 per 100,000 adults). The states with the lowest rates of entrepreneurial activity were Iowa (110 per 100,000 adults), Rhode Island (140 per 100,000 adults), Indiana (160 per 100,000 adults), Minnesota (160 per 100,000 adults), Washington (170 per 100,000 adults), and Wisconsin (170 per 100,000 adults).
- Among the fifteen largest MSAs in the United States, San Francisco (0.57 percent) had the highest entrepreneurial activity rate in 2013 and Philadelphia (0.18 percent) had the lowest rate.

Introduction

The Kauffman Index of Entrepreneurial Activity measures the rate of business creation at the individual owner level. Presenting the percentage of the adult, non-business owner population that starts a business each *month*, the Kauffman Index captures *all* new business owners, including those who own incorporated or unincorporated business, and those who are employers or non-employers.¹ The Kauffman Index is calculated from matched data from the Current Population Survey (CPS), a monthly survey conducted by the U.S. Bureau of the Census and the Bureau of Labor Statistics. This report updates previous accounts of the Kauffman Index, incorporating new data from 2013.

To create the Kauffman Index, all individuals between ages twenty and sixty-four who do not own a business as their main job are identified in the initial survey month. By matching CPS files for the subsequent month to create a two-month survey pair, it is then determined if these individuals own a business as their main job with fifteen or more usual hours worked per week in the following survey month. These monthly entrepreneurial activity rates then are averaged to calculate an average monthly estimate for each year. More details about the datasets and measures used, and where to access the microdata for research are provided in previous reports and in the Appendix.² The Kauffman Index of Entrepreneurial Activity improves over other possible measures of entrepreneurship because of its timeliness, dynamic nature, inclusion of all types of

1 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>.

2 See "Kauffman Index of Entrepreneurial Activity, 1996 - 2012" (Fairlie 2013) and <http://www.kauffman.org/research-and-policy/kauffman-index-of-entrepreneurial-activity.aspx> for previous reports.

business activity, exclusion of "casual" businesses, information on owner demographics, and measurement at the time of business creation instead of retrospectively.

Trends in Entrepreneurial Activity

In 2013, an average of 0.28 percent of the adult population, or 280 out of 100,000 adults created a new business each month.³ This business-creation rate translates into 476,000 new businesses being created each month during the year. The entrepreneurial activity rate steadily declined over the past two years. In 2011, an average of 0.32 percent of the adult population, or 320 out of 100,000 adults created a new business each month. In 2012, the entrepreneurship rate dropped to 0.30 percent and in 2013 the entrepreneurship rate dropped again to 0.28. The drop of 20 new businesses per month out of 100,000 adults in 2012 and 2013 represents a decrease of 6-7 percent in each of these two years.

In 2013, entrepreneurship rates returned to the pre-recessionary level of 2006, which is likely due to improving economic conditions. The national unemployment rate hit a peak of roughly 10 percent from the Great Recession, but has declined since then ending the year at below 7 percent for the first time in five years (Bureau of Labor Statistics 2014a). Figure 1 and Table 1 report average monthly estimates of the Kauffman Index by year from 1996 to 2013.⁴ From 1996 to 2007 the business creation rate

³ Estimates of annual business creation rates would be approximately 6 to 8 times higher. Annual rates are not 12 times higher than monthly rates because individuals can potentially start and exit from business ownership multiple times within the same year. Additionally, because of the broader definition of new business owners used in the Kauffman Index, it is not possible to directly compare the monthly statistics in the Kauffman Index with the quarterly and annual statistics of new employer businesses produced by the U.S. Census Bureau and U.S. Bureau of Labor Statistics.

⁴ Starting in 2009, the annual entrepreneurship rate is calculated using data from December to December. In previous years, annual entrepreneurship rates are calculated using data from January to January. See Fairlie (2010) for more details.

fluctuated within a range of 0.27 percent to 0.31 percent, but then rose above this level in 2008 (the official start date of the Great Recession is December 2007). Over the next four years when the labor market was weak the total rate of business creation rose to an elevated level of between 0.32 percent and 0.34 percent. The decline in the business creation rate to 0.30 percent in 2012 and further decrease to 0.28 percent in 2013, represents a return to pre-recessionary longer-term levels, and is likely due to improving opportunities in the labor market. On the one hand, economic growth increases potential business income and access to credit, but it also improves opportunities in the wage/salary sector exerting a strong negative effect on business creation.

With this measure of business creation that includes businesses of *all* types it is impossible to cleanly disaggregate between the creation of high-growth potential businesses and individuals starting businesses because of limited job opportunities. Thus, an increase in entrepreneurship rates could be driven by improving conditions for high-growth potential businesses (sometimes referred to as "opportunity" entrepreneurship) or worsening labor market conditions resulting in "necessity" entrepreneurship.⁵ Similarly, it is impossible to know whether necessity or opportunity entrepreneurship is driving the year-to-year changes in business creation rates reported here for the nation, demographic groups, or geographical areas without taking into consideration underlying economic conditions.

One approximate method for disentangling these two opposing trends 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

⁵ See Fairlie (2011) "Entrepreneurship, Economic Conditions, and the Great Recession" *Journal of Economics and Management Strategy* for more evidence and discussion.

labor market states. Individuals starting businesses out of unemployment might be more inclined to start those businesses out of necessity than opportunity. The distinction is not perfect because many successful businesses are created by people who have lost their jobs and are unemployed, but the distinction offers at least some suggestive evidence on the influence of economic conditions on overall business creation.

The share of new entrepreneurs coming from individuals who are not unemployed and looking for a job was substantially higher than at the end of the Great Recession. In 2013, 78.2 percent of new entrepreneurs were from those who were not unemployed and looking for a job. This share is more than four percentage points higher than it was in 2009 at the end of the recession. Figure 1.B displays trends in the share from 1996 to 2013. Over the past eighteen years, the share of new business creation from "opportunity" entrepreneurship increased when economic conditions were improving and decreased when economic conditions were worsening. The largest share of "opportunity" entrepreneurship occurred at the height of the "Roaring 90s," and the smallest share was in 2009 at the end of the Great Recession. The share of opportunity business creation also decreased in the recession of the early 2000s and increased in the following growth period in the mid-2000s.

In addition to an examination of these trends, other factors such as the unemployment rate, changes in Gross Domestic Product, population growth, and general labor market conditions can be coupled with the KIEA to help interpret whether changes in the entrepreneurship rate are likely being driven by changes in opportunity entrepreneurship, necessity entrepreneurship, or both. Even with all of this evidence, however, the complete answer is difficult to ascertain and care should be taken when

interpreting what trends in rates of total business creation mean. For example, the motivation for starting businesses when economic conditions are weak and unemployment rates are high may differ from those created in stronger economic conditions, but many of these businesses may eventually be very successful.⁶

Comparison to Employer Business Creation Rates

The Kauffman Index of Entrepreneurial Activity indicates that 476,000 new businesses were created each month during 2013. This *per month* figure differs drastically from employer establishment creation such as the Business Employer Dynamics, which indicate roughly the same number of new businesses *per year* (Bureau of Labor Statistics 2014b). The primary difference is that the Kauffman Index counts both employer and non-employer firms, whereas other measures consider only the former. New businesses with employees represent only a small share of all new businesses.

The drop in entrepreneurship rates over the past two years differs from a slight upward trend in employer business creation from 2011 to 2013. Figure 1.C reports average quarterly estimates of employer establishment birth rates in addition to the average monthly estimates of the Kauffman Index by year from 1996 to 2013. The employer establishment birth rate is the ratio of the average quarterly number of establishment births divided by the average number of non-business owners. The number of establishment births is from the Business Employer Dynamics (BED) compiled by the U.S. Bureau of Labor Statistics (BLS), and the number of non-business owners is estimated using cross-sectional CPS data. The employer establishment birth rate was 0.12

⁶ For example, the majority of Fortune 500 companies were started during recessions or bear markets. See Stangler, Dane. 2009. *The Economic Future just Happened*, Kansas City: Ewing Marion Kauffman Foundation, <http://www.kauffman.org/uploadedFiles/the-economic-future-just-happened.pdf>

percent or 12 out of 100,000 people per quarter in 2012 and 0.13 percent or 13 out of 100,000 people per quarter in 2013 (only the second quarter of data was available for 2013 at the time of this report).⁷ This rate translates into an average of 226,000 employer establishment births per quarter in 2013.

Looking back over the past several years, the quarterly employer establishment birth rate dropped from 0.13 percent in 2007 to 0.10 percent in 2009.⁸ Over this same period of time, the monthly entrepreneurship activity rate increased from 0.30 percent to 0.34 percent. These opposing trends may be due to the Great Recession pushing many individuals into business ownership because of high rates of unemployment. These individuals were probably more likely to start sole proprietorships and other non-employer firms instead of more costly employer firms. From 2009 to 2013 the employer establishment birth rate rose slightly while the entrepreneurship rate declined over the same time period.

ENTREPRENEURIAL ACTIVITY BY DEMOGRAPHIC GROUPS

The detailed demographic information available in the CPS and large sample sizes allow for the estimation of separate indices by gender, race, immigrant status, age, and education. This represents an advantage of the individual-level CPS data because large, nationally-representative business-level datasets typically provide either no or very limited demographic information on the owner.⁹ Entrepreneurial activity decreased for

⁷ Due to a reclassification of codes, the first quarter of data for 2013 is not comparable to other quarters and is not included.

⁸ Employer firms were also starting with fewer employees. See Reedy and Litan (2011) "Starting Smaller; Staying Smaller: America's Slow Leak in Job Creation" Kauffman Foundation Report for more information on job creation among new employer firms.

⁹ See Kauffman Foundation and LegalZoom (2014) *Who Started New Businesses in 2013?* for evidence on the demographic and other characteristics of a sample of 720 responses to a survey of newly incorporated business owners using LegalZoom.

men from 2012 to 2013 continuing a downward trend that started in 2011. The male entrepreneurial activity rate decreased substantially from 0.38 percent in 2012 to 0.34 percent in 2013, reaching pre-recessionary levels. For women, the entrepreneurship rate dropped slightly from 0.23 percent in 2012 to 0.22 percent in 2013. The female entrepreneurship rate in 2013 was lower than the recessionary peak of 0.25 percent in 2009. Figure 2 and Table 1 report estimates of the Kauffman Index by gender from 1996 to 2013. Overall, men are substantially more likely to start a business each month than are women. The average rate of entrepreneurial activity for men over the eighteen -year period was 0.37 percent. The average rate for women was substantially lower at 0.23 percent.

All racial and ethnic groups experienced declines in entrepreneurial activity rates between 2012 and 2013. Figure 3 and Table 2 report estimates of the Kauffman Index by race and ethnicity. The Latino rate of business creation decreased from 0.40 percent in 2012 to 0.38 percent in 2013, and the African-American rate of business creation decreased from 0.21 percent in 2012 to 0.19 percent in 2013. The Asian rate of business creation rate declined from 0.31 percent to 0.28 percent, and the white rate of business creation decline from 0.29 percent 2012 to 0.27 percent in 2013.

Reflecting the longer-term trends showing rising Latino rates of entrepreneurship and a growing share of the total U.S. population, the Latino share of all new entrepreneurs rose from 10.5 percent in 1996 to 20.4 percent in 2013. Figure 3.B report estimates of the share of new entrepreneurs by race from 1996 to 2013. The Asian share of new entrepreneurs also rose substantially from 1996 to 2013, but remains relatively

small at 6.1 percent. The white share of new entrepreneurs declined over the past eighteen years, whereas the black share increased slightly.

The entrepreneurial activity rate decreased for immigrants in 2013 and declined slightly for the native-born. These trends slightly reduced the large positive gap between immigrant and native-born rates. Figure 4 and Table 3 report estimates of the Kauffman Index by nativity. The entrepreneurial activity rate for immigrants dropped from 0.49 percent in 2012 to 0.43 percent in 2013. The longer-run pattern in entrepreneurship rates for immigrants, however, is a return to levels that are closer to pre-recessionary levels. The immigrant rate of entrepreneurship increased from 0.37 percent in 2006 to levels above 0.50 percent in the Great Recession and dropped to 0.43 percent by 2013. The native-born rate has remained relatively flat over the last eighteen years. The result of these contrasting trends is that immigrants were substantially more likely to start a business each month as were the native-born in 2013. For immigrants, 430 out of 100,000 people start a business each month compared with 250 out of 100,000 people for the native-born.

A growing immigrant population and rising entrepreneurship rate contributed to a rising share of new entrepreneurs that are immigrant. Figure 4.B reports estimates of the share of new entrepreneurs by nativity. The immigrant share of new entrepreneurs is 25.9 percent which is up from 13.7 percent in 1996.

Figure 5 and Table 4 reports estimates of entrepreneurial activity rates by age group. All of the age groups experienced declines in business creation rates except the 45-54 age group which experienced an increase from 0.34 percent to 0.36 percent. The youngest age group (ages 20-34) experienced a drop from 0.23 percent in 2012 to 0.18

percent in 2013, the next age group (ages 35-44) experienced a drop from 0.34 percent in 2012 to 0.31 percent in 2013, and the oldest age group (ages 54-64) experienced a drop from 0.34 percent in 2012 to 0.31 percent in 2013. Over the entire period, business creation was the lowest among the youngest group.

Figure 5.B reports estimates of the share of new entrepreneurs by age group. An aging population has led to a rising share of new entrepreneurs in the ages 55-64 group. The ages 55-64 group represented 14.3 percent of new entrepreneurs in 1996 whereas it represented 23.4 percent of new entrepreneurs in 2013. The next oldest age group (ages 45-54) also experienced a rising share of new entrepreneurs (23.9 percent in 1996 to 30.0 percent in 2013).

Entrepreneurial activity rates continued a sharp downward trend for the least educated group, possibly reflecting an improving labor market. Although rates dropped in the past two years, entrepreneurship rates are the highest for this educational group compared to all other education groups as indicated in Figure 6 and Table 5. These high rates for the least educated group suggest an increased number of people entering entrepreneurship more out of necessity. Entrepreneurship rates declined for high school graduates, slightly declined for those with some college, and remained constant for college graduates. Although rates are the highest for the least educated group, previous research that controls for other correlated factors such as race, ethnicity and unemployment status indicates increasing rates of entrepreneurship with higher levels of education.¹⁰

10 For evidence of the relationship between education and entrepreneurship from a multivariate analysis that controls for other factors, see Fairlie (2007) "Entrepreneurship in Silicon Valley during the Boom and Bust," University of California, Santa Cruz Working Paper at <http://people.ucsc.edu/~rfairlie/papers/siliconvalley.pdf>.

ENTREPRENERIAL ACTIVITY BY VETERAN STATUS

For the only the second time in this series of annual reports on entrepreneurial activity, entrepreneurship rates are reported by veteran status. The new data on entrepreneurship rates by veteran status over the past eighteen years and are reported in Table 6 and Figure 7. In 2013, the business creation rate was 0.23 percent for veterans. The non-veteran entrepreneurship rate was 0.28 percent. Entrepreneurship rates declined from 0.28 percent in 2012 to 0.23 percent in 2013 for veterans. Over the earlier reported period, veteran entrepreneurship rates have generally been higher than non-veteran entrepreneurship rates. Over the past five years, however, veteran rates have been lower than non-veteran rates.

The share of all new entrepreneurs represented by veterans was 12.3 percent in 1996. This share steadily declined to 4.8 percent by 2013 (see Figure 7.B). Part of the decline in the veteran share of new entrepreneurs over the past eighteen years was due to declining rates among veteran entrepreneurs compared to only a slight decline in rates among non-veterans, but the bulk of the drop in the veteran share appears to be due to the declining share of veterans in the U.S. working-age population. The decline in the veteran population ages 20-64 from 1996 to 2013 is due to declines in the Korean and Vietnam War veteran share of the working-age population over the past eighteen years.¹¹

ENTREPRENERIAL ACTIVITY BY INDUSTRY

Entrepreneurial activity rates differed substantially by major industry groups. Figure 8 and Table 7 report estimates of entrepreneurial activity by major industry. In

¹¹ See Fairlie (2012) "Kauffman Index of Entrepreneurial Activity by Veteran Status, 1996-2011," http://www.kauffman.org/uploadedFiles/DownloadableResources/2012%20KIEA_VET_FINAL.pdf for more details.

2013, entrepreneurial activity rates were highest in construction at 1.27 percent, but continued a downward trend from 2011 levels. Entrepreneurial activity rates in services were also relatively high (0.37 percent). Manufacturing had substantially lower rates of entrepreneurial activity than all other industries, with only 0.10 percent of non-business owners starting businesses per month in this industry in 2013.

ENTREPRENEURIAL ACTIVITY BY STATE

There was substantial variation in entrepreneurial activity rates across states in 2013. Montana had the highest entrepreneurial activity rate, with 610 per 100,000 adults creating businesses each month. Iowa exhibited the lowest entrepreneurial activity rate with 110 per 100,000 adults starting new businesses each month. Table 8 reports estimates of the Kauffman Index for all fifty states and the District of Columbia, as well as sample sizes and approximate 95 percent confidence intervals for each state.

Entrepreneurial activity rates follow strong geographical patterns. Entrepreneurial activity generally is highest in Western and Southern states, and lowest in Midwestern and Northeastern states. Figure 9 illustrates variation in entrepreneurial activity levels across the United States, and Figure 10 ranks states by levels of entrepreneurial activity, with 95 percent confidence intervals for each state. The five states with the highest entrepreneurial activity rates were Montana (610 per 100,000 adults), Alaska (470 per 100,000 adults), South Dakota (410 per 100,000 adults), California (400 per 100,000 adults), and Colorado (380 per 100,000 adults). The six states with the lowest rates of entrepreneurial activity were Iowa (110 per 100,000 adults), Rhode Island (140 per 100,000 adults), Indiana (160 per 100,000 adults),

Minnesota (160 per 100,000 adults), Washington (170 per 100,000 adults), and Wisconsin (170 per 100,000 adults).

The decline in business creation rates from 2012 to 2013 was experienced in all regions of the United States. The downward trends in business creation rates in all regions generally started at the end of the Great Recession and continued from 2012 to 2013. Estimates of the Kauffman Index by region are reported in Figure 11 and Table 9. Entrepreneurship rates are highest in the West, followed by the South. Rates are the lowest in the Midwest.

Trends in entrepreneurship rates by state over the past decade are reported in Table 10. To increase sample sizes and precision, the three-year period 2011-13 is compared to the three-year period 2001-03 providing a decadal estimate of trends. Year-to-year estimates are not presented here because of the lack of precision in entrepreneurship rates especially for smaller states.¹² Estimates for 2006-08 are also reported to demonstrate shorter-run trends in entrepreneurial activity across states. Delaware experienced the largest positive change in its entrepreneurial activity rate over the past decade, nearly doubling its incidence from 0.15 percent to 0.28 percent. Other states experiencing large increases in rates of entrepreneurial activity were Massachusetts (0.08 percentage points), Nevada (0.08 percentage points), Alabama (0.08 percentage points), Florida (0.07 percentage points), California (0.07 percentage points), and New York (0.07 percentage points). States that experienced large decreases in entrepreneurial activity rates were Oregon (-0.11 percentage points), Iowa (-0.10 percentage points), Minnesota (-0.08 percentage points), and Wisconsin (-0.08 percentage points). All of the

¹² Annual estimates of state-level entrepreneurship rates are available for downloading at www.kauffman.org/kauffmanindex, but care should be taken in analyzing changes over time in these rates

changes over time are statistically significant at the 0.05 level of confidence except for two changes which are statistically significant at the 0.10 level.

ENTREPRENEURIAL ACTIVITY BY METROPOLITAN AREA

An index of entrepreneurial activity also was created for the fifteen largest metropolitan areas in the United States (Table 11).¹³ Among these metropolitan areas, San Francisco had the highest entrepreneurial activity rate at 570 per 100,000 adults. Los Angeles (490 per 100,000 adults) and Miami (430 per 100,000 adults) also had high rates of entrepreneurial activity. The metropolitan area with the lowest entrepreneurial activity rate in this group of large MSAs was Philadelphia (180 per 100,000 adults).

Summary

The Kauffman Index measures the monthly business-creation rate at the individual owner level, reporting the percentage of non-business owning adults who start businesses with more than fifteen hours worked per week. The matched basic monthly files from the Current Population Survey (CPS) provide a uniquely large, nationally representative panel dataset for measuring this entrepreneurial activity. Detailed demographic information available in the CPS and large sample sizes also allow for estimates of separate indices by gender, race, immigrant status, age, education, and veteran status. Indices for all states and the largest MSAs are also calculated.

In 2013, 0.28 percent of the adult population or 280 out of 100,000 adults created a new business each month, representing approximately 476,000 new businesses per

¹³ As there is no oversampling of metropolitan areas in the CPS, only the largest metropolitan areas have sufficient observations to calculate reasonably accurate rates of entrepreneurial activity. All MSAs reported in Table 11 have at least 4,500 observations.

month. The drop in the total rate of business creation from 2012 to 2013 continued the downward trend that started in 2011, which is likely due to improving labor market conditions. The national unemployment rate was 8.5 percent at the end of 2011 and dropped to 6.7 percent at the end of 2013. The share of business creation from "opportunity" entrepreneurship versus unemployment ("necessity") entrepreneurship was substantially higher in 2013 than shares found in the Great Recession. The share of total business creation by individuals who are not unemployed and looking for a job closely tracks fluctuations in the business cycle over the past eighteen years, which is presented here for the first time.

There are some interesting patterns in changes in entrepreneurial activity rates for population subgroups. First, the overall decline in entrepreneurship rates in 2013 was primarily due to a large drop in rates among men, but was also due to a slight drop in rates among women. All racial and ethnic groups – African-Americans, Latinos, Asians and whites – experienced declines in rates of business creation in 2013. Related to the findings for race and ethnicity, entrepreneurial activity among immigrants also decreased sharply in 2013, although the rate of business creation remains nearly twice as high as the native-born rate. All age groups experienced declines in entrepreneurial activity from 2012 to 2013 except the ages 45-54 group experienced an increase. Finally, all educational groups experienced a decline in rates except college graduates who rates remained constant from 2012 to 2103.

Over the past eighteen years, Latinos, Asians, and immigrants experienced rising shares of all new entrepreneurs mainly because of increasing populations, but also because of rising rates of entrepreneurship. The oldest age group (ages 55-64) also

experienced a rising share of all new entrepreneurs primarily because it represents an increasing share of the population.

For only the second time in this series of annual reports, entrepreneurial activity by veteran status is reported. The entrepreneurship rate for veterans was 0.23 percent in 2013. The rate of business creation among veterans declined from a higher level in 2012 (0.28 percent). The share of all new entrepreneurs represented by veterans declined from 12.3 percent in 1996 to 4.8 percent by 2013, which was primarily due to the declining share of veterans in the U.S. working-age population.

Entrepreneurial activity rates reflect strong geographical patterns in the United States. By broad region, rates of new business creation are the highest in the West and lowest in the Midwest. All regions experienced declining rates in 2013 continuing the downward trend since the end of the Great Recession. Entrepreneurial activity rates varied substantially across states, from a high of 0.61 percent in Montana to a low of 0.11 percent in Iowa. Among the fifteen largest metropolitan areas in the United States, San Francisco (0.57 percent) had the highest entrepreneurial activity rate in 2013 and Philadelphia (0.18 percent) had the lowest rate.

References

- Bureau of Labor Statistics. 2014. *Labor Force Statistics from the Current Population Survey*, <http://www.bls.gov/cps/>
- Bureau of Labor Statistics. 2014. "Table 8. Private sector establishment births and deaths, seasonally adjusted," *Business Employment Dynamics*, <http://www.bls.gov/news.release/cewbd.t08.htm>
- 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. 2007. "Entrepreneurship in Silicon Valley during the Boom and Bust," University of California, Santa Cruz, Department of Economics Working Paper.
- Kauffman Foundation and LegalZoom. 2014. *Who Started New Businesses in 2013?* Kansas City: Ewing Marion Kauffman Foundation. <http://www.kauffman.org/what-we-do/research/2014/01/who-started-new-business-in-2013>
- Stangler, Dane. 2009. *The Economic Future just Happened*, Kansas City: Ewing Marion Kauffman Foundation.
- Reedy, E.J., and Litan, Robert E. 2011. "Starting Smaller; Staying Smaller: America's Slow Leak in Job Creation," *Kauffman Foundation Research Series: Firm Formation and Economic Growth*, Kansas City: Ewing Marion Kauffman Foundation.

Appendix

DATA

The underlying datasets that are used in this analysis are the basic monthly files to the Current Population Survey (CPS). These surveys, conducted monthly by the U.S. Bureau of the Census 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 business creations. Combining the monthly files creates a sample size of roughly 700,000 adults ages 20-64 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 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).

The microdata used in this report and a codebook are available for downloading at <http://www.kauffman.org/research-and-policy/kiea-data-files.aspx>. The dataset includes the entrepreneurial index as well as many additional variables for analysis.

DETAILED DEFINITIONS

The CPS microdata capture all business owners, including those who own incorporated or unincorporated business, and those who are employers or non-employers. To create the Kauffman Index, 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, individuals are asked by survey-takers whether they currently have the same main job as reported in the previous month. If the answer is yes, then the interviewer carries forward job information including business ownership from the previous month's survey. If the answer is no, then 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 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 Kauffman Index also excludes individuals who owned a business and worked fewer than fifteen hours in the first survey month. Thus, the Kauffman Index 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 Kauffman Index 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 Kauffman Index also may overstate business creation 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.

The main sample used to calculate the Kauffman Index includes only adults between the ages of 20 and 64. For estimates of entrepreneurial activity rates by education level, the population between the ages of 25 and 64 is used instead to capture completed formal education. Older individuals (ages 65 and over) are removed from the sample because retirement in this age group leads to lower rates of entrepreneurial

activity. There were major changes in race and industry coding over the included period. Although every effort was devoted to creating consistent coding, definitions are not perfectly consistent over time.

For the definition of entrepreneurial activity discussed in this report, all observations with allocated labor force status, class of worker, and hours worked variables are excluded. Entrepreneurial activity 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 rates of entrepreneurial activity.

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 over. 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 is also designed to guarantee precise estimates of average *annual* unemployment rates resulting in varying sample rates by state (Polivka 2000).¹⁴ 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.

STANDARD ERRORS AND CONFIDENCE INTERVALS

The analysis of entrepreneurial activity by state includes confidence intervals that indicate confidence bands of approximately 0.15 percent around the rates of

¹⁴ The ratio of households sampled for each state range from 1 in 100 households to 1 in 3,000 households (Polivka 2000).

entrepreneurial activity. 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 entrepreneurial activity

rates are not subject to any of these problems. By using the sample weights provided by the CPS, all estimates of rates of entrepreneurial activity are correct.

ADVANTAGES OVER OTHER POSSIBLE MEASURES OF ENTREPRENEURSHIP

The Kauffman Index of Entrepreneurial Activity has several advantages over other possible measures of entrepreneurship based on household or business-level data. 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 over a year to be released. Second, the index includes all types of business activities (employers, non-employers, unincorporated and incorporated businesses), but does not include small-scale business activities such as consulting and casual businesses. For example, the County Business Patterns data include only employer firms and the Survey of Business Owners and underlying non-employer data include any business activity with at least \$1,000 in annual sales. Third, the panel data created from matching consecutive months of the CPS allow for a dynamic measure of business creation, whereas most datasets only allow for a static measure of business ownership (e.g. ACS). Finally, the CPS data included 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).

COMPARISON TO SELECTED DATASETS

The main difference between the Kauffman Index and possible measures of entrepreneurial activity from the ACS (and related decennial Census of the Population) is

that the index measures flows into business ownership rather than the number of existing business owners at a specific point in time. Cross-sectional datasets, such as the ACS, do not provide information on business creation. Static measures of business ownership based on cross-sectional data do not capture the dynamic nature of entrepreneurial activity that the Kauffman Index illustrates.

The Kauffman Index differs from the Survey of Business Owners (SBO) conducted every 5 years by the U.S. Census Bureau in several major ways. First, the Kauffman Index is based on household survey data and measures individual business owners. The SBO includes all firms operating during the year that filed tax forms as individual proprietorships, partnerships, or any type of corporation. Second, the Kauffman Index captures business creation, whereas the SBO captures the number of existing businesses at a point in time. Third, the Kauffman Index only includes individuals starting businesses as their main work activity with a substantial hours commitment. The SBO includes all firms with receipts of \$1,000 or more, which may include side or "casual" businesses owned by wage/salary workers, the unemployed, or retired workers. Finally, the Kauffman Index includes all new business owners, whereas the SBO excludes agricultural and a few other types of businesses.

The Kauffman Index captures a broader range of entrepreneurial activity than the national and state level firm or establishment birth data from the Business Employer Dynamics (BED) or the Statistics of U.S. Businesses (SUSB). The BED data are compiled by the U.S. Bureau of Labor Statistics (BLS) from existing quarterly state unemployment insurance (UI) records through the Quarterly Census of Employment and Wages (QCEW) or ES-202 program. The SUSB data are collected by the U.S. Census

Bureau and summarized by the U.S. Small Business Administration (SBA), Office of Advocacy. Both of these datasets include only employer firms. Employer firms represent only approximately roughly one-fourth of all firms, and many firms start with no employees. These data, therefore, are likely to lead to a substantial undercount in the rate of entrepreneurial activity, particularly for certain industries and regions. Finally, the BED and SUSB data are business-level data containing essentially no information on the owner's characteristics, while the CPS is person-level data containing very detailed information on the owner.

The Kauffman Index also differs from the Total early-stage Entrepreneurial Activity (TEA) index used in the Global Entrepreneurship Monitor. The TEA captures the percentage of the age 18–64 population who are currently nascent entrepreneurs (i.e. individuals who are actively involved in setting up a business) or who are currently an owner-manager of a new business (i.e. businesses with no payments to owners or employees for more than 42 months). The nascent entrepreneurs captured in the TEA who are still in the start-up phase of business creation are not necessarily captured in the Kauffman Index because they may not be working on the new business for fifteen hours or more per week. The Kauffman Index also differs from the TEA in that it captures entrepreneurship at the point in time when the business is created because it is based on panel data.

Figure 9: Kauffman Index of Entrepreneurial Activity by State (2013)



