

KAUFFMAN INDEX OF
entrepreneurial
activity

1996-2006

Robert W. Fairlie

Ewing Marion
KAUFFMAN
Foundation

Robert W. Fairlie is an
Associate Professor of Economics
and the Director of the Master's
Program in Applied Economics and
Finance at the University of
California, Santa Cruz.

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. Analysis of matched monthly data from the Current Population Survey (CPS) allows for comparisons of the percent of the population of adult non-business owners who start a business over time. In addition to this overall rate of entrepreneurial activity, separate estimates for specific demographic groups, states, and select metropolitan statistical areas (MSAs) are presented.

New CPS data available for 2006 allow for an update to previous reports, with consideration of trends in the rates of entrepreneurial activity over the eleven-year period between 1996 and 2006. While the rate of entrepreneurial activity has remained remarkably consistent over the past decade, the Kauffman Index reveals subtle shifts in the demographic and geographic composition of new entrepreneurs across the country. Key findings for 2006 include:

- An average of 0.29 percent of the adult population (or 290 out of 100,000 adults) created a new business each month, representing approximately 465,000 new businesses per month. There was no change in this rate of entrepreneurial activity between 2005 and 2006.
- The rate of entrepreneurial activity for men (0.35 percent) did not change between 2005 and 2006, ending the downward trend that began in 2003. The Kauffman Index for women declined slightly from 0.24 percent in 2005 to 0.23 percent in 2006.
- The rate of entrepreneurial activity for Asians increased from 0.27 percent in 2005 to 0.32 percent in 2006. The rate for non-Latino whites remained constant at 0.29 percent between 2005 and 2006. For African Americans, the rate of entrepreneurial activity decreased slightly from 0.24 percent in 2005 to 0.22 percent in 2006. The Latino rate increased slightly from 0.32 percent to 0.33 percent during the same time period.
- The immigrant rate of entrepreneurial activity increased from 0.35 percent in 2005 to 0.37 percent in 2006. As in previous years, the rate of entrepreneurial activity for immigrants was substantially higher than the rate for the native-born population (0.27 percent).
- The construction industry had the highest rate of entrepreneurial activity among all major industry groups in 2006 (1.06 percent). The second highest rate of entrepreneurial activity was in the services industry (0.40 percent).
- The rate of entrepreneurial activity decreased in the Midwest from 0.26 percent in 2005 to 0.22 percent in 2006. As a result, the Midwest had the lowest level of entrepreneurial activity of all regions for the first time in the past eleven years.
- The five states with the highest rates of entrepreneurial activity in 2006 were Montana (0.60 percent), Mississippi (0.52 percent), Georgia (0.44 percent), Oklahoma (0.43 percent), and Maine (0.42 percent). The five states with the lowest rates of entrepreneurial activity were Michigan (0.16 percent), Pennsylvania (0.17 percent), South Carolina (0.18 percent), Illinois (0.18 percent), and Delaware (0.19 percent).
- The states experiencing the largest increases in rates of entrepreneurial activity over the past decade were Mississippi (with an increase of 0.16 percentage points), Hawaii (0.12 percentage points), Rhode Island (0.11 percentage points), and Arkansas (0.11 percentage points). The states that experienced the largest decreases in their rates were Alaska (with a decrease of 0.22 percentage points), North Dakota (-0.18 percentage points), New Mexico (-0.14 percentage points), Tennessee (-0.10 percentage points), and Kansas (-0.09 percentage points).
- Among the fifteen largest MSAs in the United States, the highest rates of entrepreneurial activity in 2006 were in Miami (0.50 percent) and Atlanta (0.49 percent). The large MSAs with the lowest rates of entrepreneurial activity were Detroit (0.13 percent) and Chicago (0.18 percent).

Introduction

The Kauffman Index of Entrepreneurial Activity measures the rate of business creation at the individual owner level.

The Kauffman Index of Entrepreneurial Activity measures the rate of business creation at the individual owner level. Presenting the percent of the population of adult non-business owners who start a business each month, the Kauffman Index captures all business owners, including those who own incorporated or unincorporated business, and those who are employers or non-employers. The Kauffman Index analyzes 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 CPS data from 2006 and further refining the definition of the index.

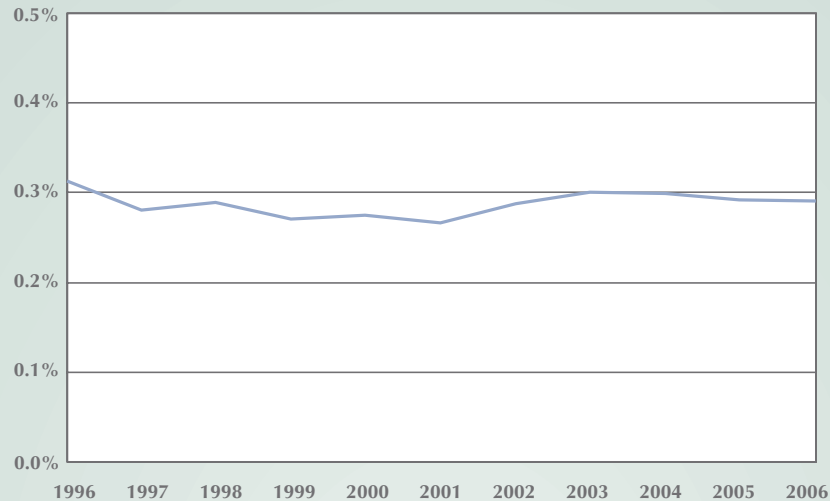
To create the Kauffman Index, all individuals between the ages of 20 and 64 who do not own a business as their main job are identified in the first survey month. By matching CPS files for the following month, it is then determined if these individuals own a business as their main job with fifteen or more usual hours worked per week in the following survey month. These monthly rates of entrepreneurial activity are then averaged to calculate an average monthly estimate for each year. More details about the datasets and measures used are provided in previous reports and in the Appendix.¹

Trends in Entrepreneurial Activity

In 2006, an average of 0.29 percent of the adult population or 290 out of 100,000 adults created a new business each month.

In 2006, an average of 0.29 percent of the adult population or 290 out of 100,000 adults created a new business each month. In other words, approximately 465,000 new businesses were created each month during the year. This rate of business creation did not change between 2005 and 2006. In fact, the rate of business creation has remained fairly steady in the range between 0.27 percent and 0.32 percent over the past eleven years. The average rate of entrepreneurial activity for this entire period is also 0.29 percent. Figure 1 and Table 1 report average monthly estimates of the Kauffman Index by year from 1996 to 2006.²

FIGURE 1
KAUFFMAN INDEX
OF ENTREPRENEURIAL ACTIVITY
(1996–2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

TABLE 1
KAUFFMAN INDEX OF
ENTREPRENEURIAL ACTIVITY
(1996–2006)

Year	MEN		WOMEN		TOTAL	
	Index	Sample Size	Index	Sample Size	Index	Sample Size
1996	0.37%	243,368	0.26%	287,639	0.31%	531,007
1997	0.35%	244,863	0.22%	286,266	0.28%	531,129
1998	0.33%	245,820	0.25%	286,476	0.29%	532,296
1999	0.32%	246,225	0.22%	286,765	0.27%	532,990
2000	0.34%	246,522	0.21%	284,901	0.27%	531,423
2001	0.31%	264,693	0.23%	304,765	0.26%	569,458
2002	0.36%	288,595	0.22%	334,562	0.29%	623,157
2003	0.38%	284,391	0.22%	330,166	0.30%	614,557
2004	0.37%	279,373	0.24%	323,314	0.30%	602,687
2005	0.35%	276,836	0.24%	320,362	0.29%	597,198
2006	0.35%	274,825	0.23%	316,781	0.29%	591,606

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

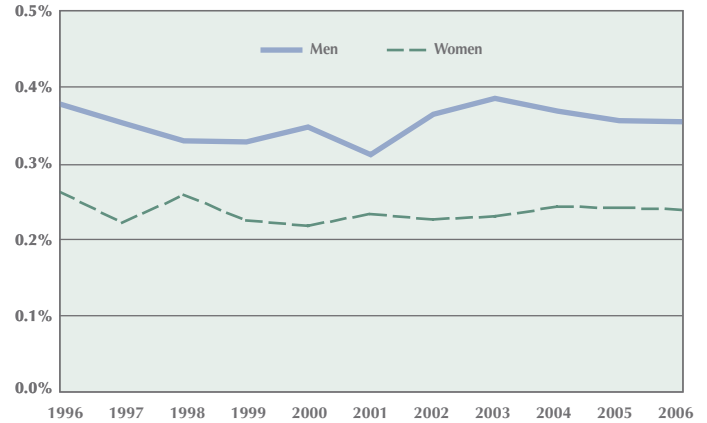
ENTREPRENEURIAL ACTIVITY BY DEMOGRAPHIC GROUPS

The detailed demographic information available in the CPS and large sample sizes allow for the estimation of separate indices by gender, race, education, age, and immigrant status. The 2006 rate of entrepreneurial activity for men (0.35 percent) was substantially higher than the rate for women (0.23 percent). While the rate of entrepreneurial activity for women has remained fairly constant over the past several years, the rate of entrepreneurial activity for men had been declining since 2003. The rate for men did not change between 2005 and 2006, however, ending this downward trend. Figure 2 and Table 1 report estimates of the Kauffman Index by gender between 1996 and 2006.

Asians were the only major racial or ethnic group to experience a significant increase in the rate of entrepreneurial activity between 2005 and 2006. Figure 3 and Table 2 report estimates of the Kauffman Index by race and ethnicity. The Asian rate increased from 0.27 percent in 2005 to 0.32 percent in 2006. The non-Latino white rate of entrepreneurial activity remained constant at 0.29 percent. The African American rate declined slightly to 0.22 percent, and the Latino rate increased slightly to 0.33 percent. Asians and Latinos had the highest rates of entrepreneurial activity in 2006, and African Americans had the lowest rate of entrepreneurial activity.

Immigrants continued to have a substantially higher rate of entrepreneurial activity than native-born individuals in 2006. Figure 4 and Table 3 report estimates of the Kauffman Index by nativity. The rate of entrepreneurial activity for immigrants increased slightly from 0.35 percent in 2005 to 0.37 percent in 2006, while the rate for the native-born declined slightly from 0.28 percent in 2005 to 0.27 percent in 2006.

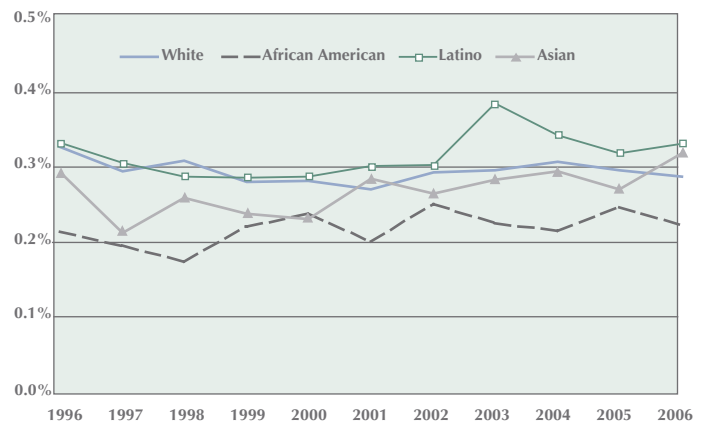
FIGURE 2
KAUFFMAN INDEX OF
ENTREPRENEURIAL ACTIVITY BY GENDER
(1996–2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

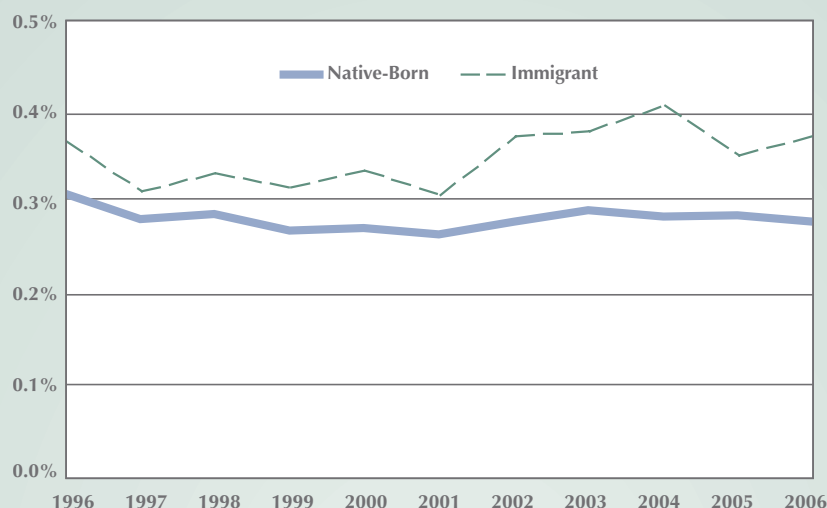
Asians were the only major racial or ethnic group to experience a significant increase in the rate of entrepreneurial activity between 2005 and 2006.

FIGURE 3
KAUFFMAN INDEX OF
ENTREPRENEURIAL ACTIVITY BY RACE
(1996–2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

FIGURE 4
KAUFFMAN INDEX OF
ENTREPRENEURIAL ACTIVITY BY NATIVITY
(1996–2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

TABLE 2
KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY BY RACE
(1996–2006)

Year	WHITE		AFRICAN AMERICAN		LATINO		ASIAN		TOTAL	
	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size
1996	0.33%	405,007	0.21%	54,799	0.33%	44,033	0.29%	20,489	0.31%	531,007
1997	0.29%	402,519	0.19%	55,300	0.30%	45,537	0.21%	20,711	0.28%	531,129
1998	0.31%	402,681	0.17%	54,669	0.29%	46,940	0.26%	21,099	0.29%	532,296
1999	0.28%	401,712	0.22%	54,241	0.29%	49,074	0.24%	21,256	0.27%	532,990
2000	0.28%	394,524	0.24%	55,249	0.29%	52,428	0.23%	21,897	0.27%	531,423
2001	0.27%	425,149	0.20%	58,250	0.30%	54,155	0.28%	23,895	0.26%	569,458
2002	0.29%	469,626	0.25%	61,083	0.30%	57,514	0.26%	26,373	0.29%	623,157
2003	0.29%	455,554	0.22%	58,797	0.38%	59,676	0.28%	24,011	0.30%	614,557
2004	0.31%	444,321	0.21%	56,587	0.34%	59,170	0.29%	24,227	0.30%	602,687
2005	0.29%	437,420	0.24%	55,069	0.32%	60,828	0.27%	25,690	0.29%	597,198
2006	0.29%	428,021	0.22%	55,532	0.33%	64,204	0.32%	26,578	0.29%	591,606

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen 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.

Figure 5 and Table 4 present rates of entrepreneurial activity by age groups. The youngest age group (ages 20-34) continued to have the lowest rate and was the only group to experience a substantial decline, from 0.26 percent in 2005 to 0.23 percent in 2006. The only group to experience an increase in entrepreneurial activity between 2005 and 2006 was the population between the ages of 45 and 54, with a change from 0.29 percent in 2005 to 0.33 percent in 2006.

Patterns in rates of entrepreneurial activity among different education levels were relatively unchanged in 2006. As Figure 6 and Table 5 illustrate, there continued to be little difference in rates of entrepreneurial activity between these groups, with the exception of slightly higher rates for less-educated individuals throughout the period. Previous research that controls for other correlated factors such as race, ethnicity, and unemployment status, however, indicates higher rates of entrepreneurship among the more educated.³

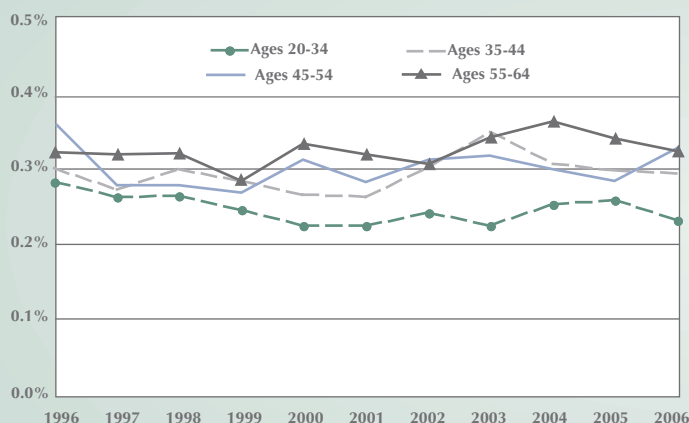
TABLE 3
KAUFFMAN INDEX OF
ENTREPRENEURIAL ACTIVITY BY NATIVITY
(1996-2006)

Year	NATIVE-BORN		IMMIGRANT		TOTAL	
	Index	Sample Size	Index	Sample Size	Index	Sample Size
1996	0.30%	474,984	0.36%	56,023	0.31%	531,007
1997	0.27%	473,208	0.31%	57,921	0.28%	531,129
1998	0.28%	472,458	0.33%	59,838	0.29%	532,296
1999	0.26%	472,107	0.31%	60,883	0.27%	532,990
2000	0.27%	466,150	0.33%	65,273	0.27%	531,423
2001	0.26%	500,292	0.30%	69,166	0.26%	569,458
2002	0.27%	549,356	0.37%	73,801	0.29%	623,157
2003	0.29%	539,914	0.38%	74,643	0.30%	614,557
2004	0.28%	528,881	0.41%	73,806	0.30%	602,687
2005	0.28%	521,967	0.35%	75,231	0.29%	597,198
2006	0.27%	513,386	0.37%	78,220	0.29%	591,606

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

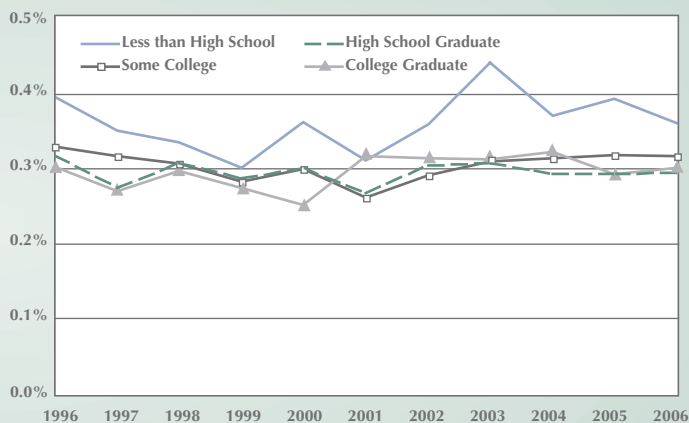
Patterns in rates of entrepreneurial activity among different education levels were relatively unchanged in 2006.

FIGURE 5
KAUFFMAN INDEX OF
ENTREPRENEURIAL ACTIVITY BY AGE
(1996-2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

FIGURE 6
KAUFFMAN INDEX OF ENTREPRENEURIAL
ACTIVITY BY EDUCATION
(1996-2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

TABLE 4
KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY BY AGE
(1996–2006)

Year	AGES 20–34		AGES 35–44		AGES 45–54		AGES 55–64		TOTAL	
	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size
1996	0.28%	193,242	0.30%	148,251	0.36%	113,187	0.32%	76,327	0.31%	531,007
1997	0.26%	189,631	0.28%	149,034	0.28%	115,371	0.32%	77,093	0.28%	531,129
1998	0.27%	185,691	0.30%	147,668	0.28%	119,502	0.32%	79,435	0.29%	532,296
1999	0.25%	180,102	0.29%	146,808	0.27%	123,993	0.29%	82,087	0.27%	532,990
2000	0.23%	178,854	0.27%	144,969	0.31%	125,619	0.34%	81,981	0.27%	531,423
2001	0.23%	187,883	0.27%	153,012	0.28%	139,228	0.32%	89,335	0.26%	569,458
2002	0.24%	203,569	0.30%	164,997	0.31%	152,841	0.31%	101,750	0.29%	623,157
2003	0.23%	198,248	0.35%	158,205	0.32%	152,447	0.34%	105,657	0.30%	614,557
2004	0.26%	193,373	0.31%	150,221	0.30%	150,743	0.37%	108,350	0.30%	602,687
2005	0.26%	190,271	0.30%	147,905	0.29%	149,119	0.34%	109,903	0.29%	597,198
2006	0.23%	186,939	0.30%	142,910	0.33%	149,117	0.33%	112,640	0.29%	591,606

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

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TABLE 5
KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY BY EDUCATION
(1996–2006)

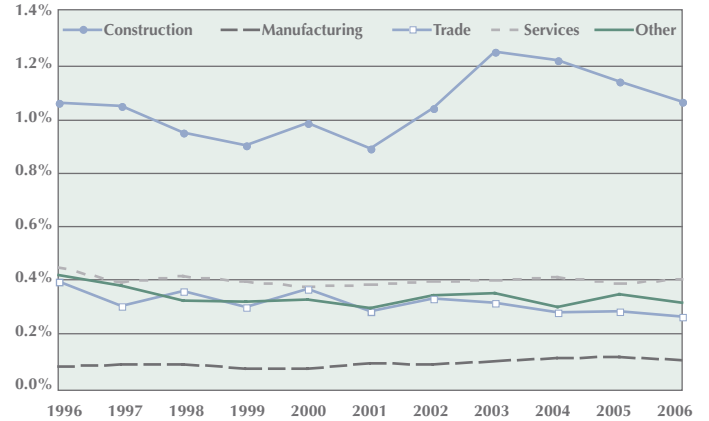
Year	LESS THAN HIGH SCHOOL		HIGH SCHOOL GRADUATE		SOME COLLEGE		COLLEGE GRADUATE		TOTAL AGES 25-64	
	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size
1996	0.39%	64,210	0.31%	162,390	0.32%	126,376	0.30%	121,451	0.32%	474,427
1997	0.35%	62,653	0.27%	162,088	0.31%	126,570	0.26%	123,904	0.29%	475,215
1998	0.33%	60,824	0.30%	160,574	0.30%	126,861	0.29%	128,391	0.30%	476,650
1999	0.30%	58,617	0.28%	158,787	0.28%	128,497	0.27%	131,801	0.28%	477,702
2000	0.36%	57,710	0.29%	155,477	0.29%	129,658	0.25%	131,932	0.29%	474,777
2001	0.31%	60,007	0.26%	164,765	0.26%	140,562	0.31%	144,419	0.28%	509,753
2002	0.35%	63,257	0.30%	179,230	0.29%	153,908	0.31%	161,682	0.30%	558,077
2003	0.44%	61,472	0.30%	175,389	0.30%	151,086	0.31%	161,841	0.32%	549,788
2004	0.37%	59,907	0.29%	170,234	0.31%	148,945	0.32%	160,064	0.31%	539,150
2005	0.39%	59,405	0.29%	166,435	0.31%	147,920	0.29%	159,962	0.31%	533,722
2006	0.36%	58,330	0.29%	162,751	0.31%	146,951	0.30%	161,102	0.30%	529,134

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 25-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

ENTREPRENEURIAL ACTIVITY BY INDUSTRY

Rates of entrepreneurial activity differed substantially by the industry of the worker. Figure 7 and Table 6 report estimates of entrepreneurial activity by major industry. In 2006, rates of entrepreneurial activity were highest in construction at 1.06 percent. Rates of entrepreneurial activity in services were also high (0.40 percent), followed by the other category (0.31 percent) and trade (0.26 percent). Manufacturing had substantially lower rates of entrepreneurial activity than all other industries, with only 0.09 percent of non-business owners starting businesses in this industry per month in 2006. Between 2005 and 2006, the rate of entrepreneurial activity in construction declined from 1.14 percent to 1.06 percent, and the rate of entrepreneurial activity in services increased from 0.38 percent to 0.40 percent.

FIGURE 7
KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY BY INDUSTRY (1996–2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

Manufacturing had substantially lower rates of entrepreneurial activity than all other industries, with only 0.09 percent of non-business owners starting businesses in this industry per month in 2006.

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TABLE 6
KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY BY INDUSTRY (1996–2006)

Year	CONSTRUCTION		MANUFACTURING		TRADE		SERVICES		OTHER	
	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size
1996	1.06%	23,693	0.07%	71,120	0.39%	60,144	0.44%	205,664	0.41%	55,604
1997	1.05%	23,694	0.08%	71,152	0.30%	59,480	0.38%	208,199	0.37%	55,302
1998	0.95%	23,961	0.07%	69,792	0.35%	59,763	0.41%	211,337	0.32%	55,124
1999	0.90%	24,754	0.06%	66,980	0.29%	59,935	0.39%	213,046	0.31%	54,331
2000	0.98%	25,771	0.06%	65,676	0.36%	59,445	0.37%	212,927	0.32%	53,941
2001	0.89%	28,472	0.08%	67,844	0.27%	63,069	0.38%	231,578	0.29%	56,704
2002	1.04%	31,212	0.08%	70,348	0.32%	69,660	0.39%	257,048	0.34%	61,376
2003	1.25%	31,542	0.09%	65,494	0.31%	69,037	0.39%	254,486	0.34%	58,302
2004	1.22%	31,726	0.10%	62,079	0.27%	67,839	0.41%	248,391	0.29%	56,946
2005	1.14%	32,179	0.10%	59,476	0.28%	67,491	0.38%	246,875	0.34%	57,671
2006	1.06%	32,760	0.09%	57,677	0.26%	65,244	0.40%	247,242	0.31%	57,386

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

TABLE 7
KAUFFMAN INDEX OF ENTREPRENEURIAL
ACTIVITY BY STATE (2006)

State	Index	Confidence Interval		Entrepreneurs per 100,000 People	Sample Size
		Lower	Upper		
U.S. Total	0.29%	0.27%	0.30%	290	591,606
Alabama	0.25%	0.13%	0.37%	250	7,017
Alaska	0.25%	0.14%	0.36%	250	7,877
Arizona	0.30%	0.18%	0.42%	300	7,898
Arkansas	0.37%	0.22%	0.52%	370	6,386
California	0.35%	0.29%	0.40%	350	47,404
Colorado	0.28%	0.19%	0.37%	280	12,687
Connecticut	0.29%	0.19%	0.40%	290	12,783
Delaware	0.19%	0.09%	0.28%	190	9,253
District of Columbia	0.29%	0.16%	0.42%	290	7,151
Florida	0.34%	0.27%	0.42%	340	24,408
Georgia	0.44%	0.32%	0.56%	440	12,841
Hawaii	0.40%	0.24%	0.55%	400	8,519
Idaho	0.37%	0.22%	0.52%	370	6,837
Illinois	0.18%	0.12%	0.25%	180	18,200
Indiana	0.21%	0.11%	0.30%	210	9,481
Iowa	0.31%	0.21%	0.42%	310	11,150
Kansas	0.22%	0.12%	0.32%	220	8,578
Kentucky	0.24%	0.14%	0.34%	240	8,939
Louisiana	0.30%	0.15%	0.45%	300	5,203
Maine	0.42%	0.30%	0.54%	420	11,381
Maryland	0.27%	0.17%	0.36%	270	13,158
Massachusetts	0.35%	0.22%	0.47%	350	9,103
Michigan	0.16%	0.10%	0.23%	160	14,675
Minnesota	0.29%	0.20%	0.38%	290	14,347
Mississippi	0.52%	0.31%	0.72%	520	5,402
Missouri	0.25%	0.14%	0.35%	250	10,140
Montana	0.60%	0.39%	0.81%	600	5,792
Nebraska	0.28%	0.17%	0.38%	280	8,913
Nevada	0.33%	0.22%	0.45%	330	9,466
New Hampshire	0.21%	0.13%	0.28%	210	12,768
New Jersey	0.24%	0.16%	0.33%	240	12,021
New Mexico	0.35%	0.20%	0.49%	350	5,900
New York	0.33%	0.26%	0.41%	330	24,708
North Carolina	0.20%	0.12%	0.29%	200	11,909
North Dakota	0.29%	0.17%	0.41%	290	7,540
Ohio	0.22%	0.14%	0.30%	220	17,318
Oklahoma	0.43%	0.27%	0.58%	430	7,282
Oregon	0.38%	0.24%	0.52%	380	7,857
Pennsylvania	0.17%	0.11%	0.24%	170	18,367
Rhode Island	0.28%	0.17%	0.39%	280	10,418
South Carolina	0.18%	0.09%	0.27%	180	8,265
South Dakota	0.41%	0.27%	0.55%	410	8,568
Tennessee	0.25%	0.15%	0.36%	250	8,212
Texas	0.30%	0.24%	0.37%	300	29,239
Utah	0.29%	0.17%	0.41%	290	7,799
Vermont	0.38%	0.24%	0.52%	380	8,734
Virginia	0.28%	0.19%	0.38%	280	12,794
Washington	0.27%	0.17%	0.37%	270	10,583
West Virginia	0.19%	0.09%	0.29%	190	7,677
Wisconsin	0.27%	0.18%	0.37%	270	11,285
Wyoming	0.32%	0.19%	0.44%	320	7,373

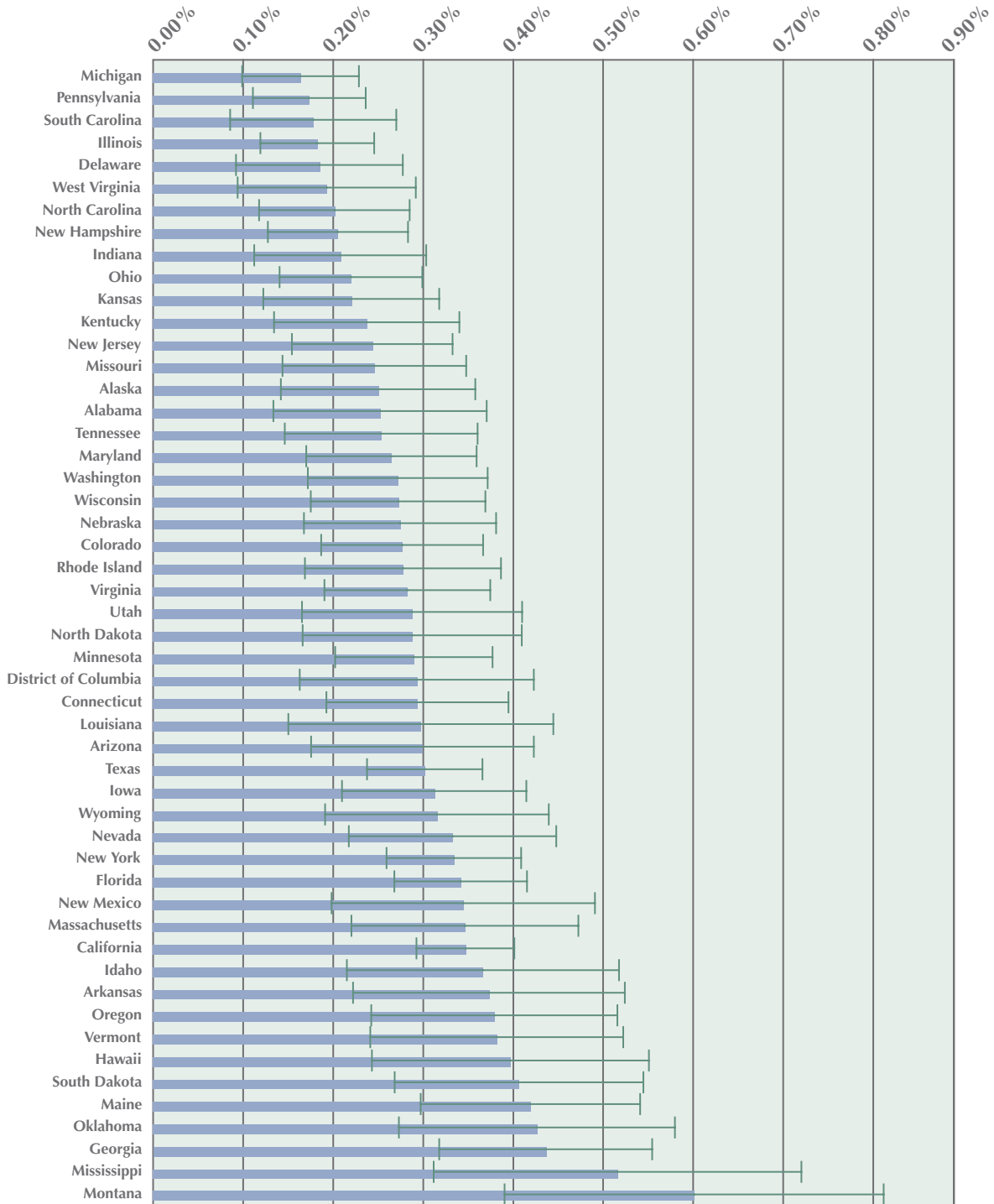
Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded. (4) Approximate 95 percent confidence intervals for the index for each state are reported.

There are strong geographical patterns in these rates of entrepreneurial activity. Entrepreneurial activity appears to have been highest in the Western, Mountain, Southern, and New England states and lowest in the Midwestern states.

ENTREPRENEURIAL ACTIVITY BY STATE

There continued to be significant variation in rates of entrepreneurial activity by state in 2006. Michigan exhibited the lowest rate of entrepreneurial activity with 0.16 percent of adults starting new businesses each month. Montana appears to have had the highest rate of entrepreneurial activity, with 0.60 percent of adults creating businesses each month. Table 7 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.

FIGURE 9
 KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY BY STATE
 WITH 95 PERCENT CONFIDENCE INTERVALS, 2006

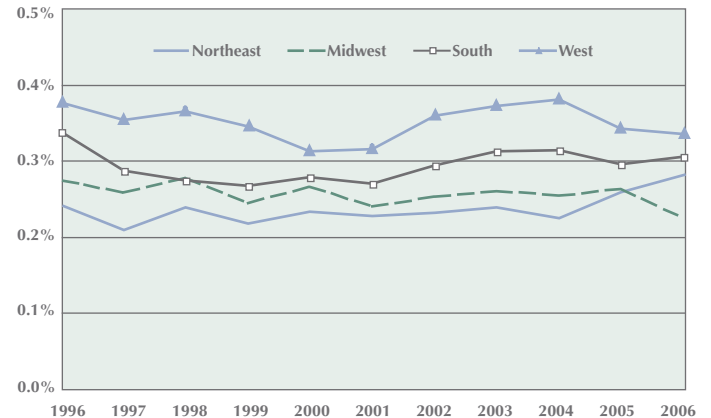


SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

made this difference even more significant. The decline in rates of business creation also placed the Midwest below the Northeast in entrepreneurial activity, which had the lowest rates of entrepreneurial activity in every year from 1996 to 2005. Table 9 reports estimates of the Kauffman Index by state for 2005 and 2006.

Trends in state rates of entrepreneurial activity over the past decade are reported in Table 10. In order to maximize sample sizes, the three-year period between 2004 and 2006 is compared to the three-year period between 1996 (the earliest year included in this dataset) and 1998.⁴ Mississippi experienced the largest positive change in its rate of entrepreneurial activity over this time period, increasing 0.16 percentage points from 0.27 percent to 0.43 percent. Other states experiencing large increases in rates of entrepreneurial activity were Hawaii (0.12 percentage points), Rhode Island (0.11 percentage points), and Arkansas (0.11 percentage points). The states that experienced large decreases in rates of entrepreneurial activity were Alaska (-0.22 percentage points), North Dakota (-0.18 percentage points), New Mexico (-0.14 percentage points), Tennessee (-0.10 percentage points), and Kansas (-0.09 percentage points). All of these changes over time were statistically significant at the 0.05 or 0.10 level of confidence.

FIGURE 10
KAUFFMAN INDEX OF
ENTREPRENEURIAL ACTIVITY BY REGION
(1996–2006)



SOURCE: Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey.

TABLE 8
KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY BY REGION
(1996–2005)

Year	NORTHEAST		MIDWEST		SOUTH		WEST		TOTAL	
	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size	Index	Sample Size
1996	0.25%	114,903	0.27%	126,744	0.34%	164,976	0.39%	126,072	0.32%	532,695
1997	0.21%	114,290	0.26%	125,935	0.29%	164,865	0.36%	127,751	0.28%	532,841
1998	0.24%	114,739	0.28%	125,789	0.28%	164,770	0.37%	128,871	0.29%	534,169
1999	0.23%	113,301	0.26%	125,765	0.28%	165,095	0.36%	130,846	0.28%	535,007
2000	0.24%	111,809	0.27%	127,390	0.28%	164,427	0.32%	129,934	0.28%	533,560
2001	0.24%	123,006	0.25%	140,086	0.28%	170,190	0.32%	138,566	0.27%	571,848
2002	0.24%	135,651	0.26%	156,763	0.30%	179,950	0.36%	153,238	0.29%	625,602
2003	0.25%	133,507	0.27%	154,611	0.32%	178,064	0.39%	151,072	0.31%	617,254
2004	0.22%	128,536	0.25%	149,380	0.31%	178,789	0.38%	145,982	0.30%	602,687
2005	0.26%	123,177	0.26%	144,081	0.29%	183,966	0.34%	145,974	0.29%	597,198
2006	0.28%	120,283	0.22%	140,195	0.30%	185,136	0.33%	145,992	0.29%	591,606

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded.

TABLE 9
KAUFFMAN INDEX OF ENTREPRENEURIAL
ACTIVITY BY STATE (2005, 2006)

State	2005				2006			
	Index	Confidence Lower	Interval Upper	Sample Size	Index	Confidence Lower	Interval Upper	Sample Size
U.S. Total	0.29%	0.28%	0.31%	597,198	0.29%	0.27%	0.30%	591,606
Alabama	0.17%	0.08%	0.26%	7,431	0.25%	0.13%	0.37%	7,017
Alaska	0.40%	0.26%	0.55%	7,914	0.25%	0.14%	0.36%	7,877
Arizona	0.32%	0.19%	0.44%	7,849	0.30%	0.18%	0.42%	7,898
Arkansas	0.47%	0.29%	0.66%	6,819	0.37%	0.22%	0.52%	6,386
California	0.32%	0.27%	0.37%	46,674	0.35%	0.29%	0.40%	47,404
Colorado	0.53%	0.40%	0.67%	12,560	0.28%	0.19%	0.37%	12,687
Connecticut	0.27%	0.18%	0.36%	12,957	0.29%	0.19%	0.40%	12,783
Delaware	0.16%	0.07%	0.24%	9,041	0.19%	0.09%	0.28%	9,253
District of Columbia	0.24%	0.12%	0.36%	6,886	0.29%	0.16%	0.42%	7,151
Florida	0.28%	0.21%	0.35%	24,062	0.34%	0.27%	0.42%	24,408
Georgia	0.33%	0.22%	0.44%	12,025	0.44%	0.32%	0.56%	12,841
Hawaii	0.34%	0.21%	0.46%	8,702	0.40%	0.24%	0.55%	8,519
Idaho	0.47%	0.31%	0.64%	6,941	0.37%	0.22%	0.52%	6,837
Illinois	0.26%	0.18%	0.33%	18,917	0.18%	0.12%	0.25%	18,200
Indiana	0.29%	0.19%	0.40%	10,137	0.21%	0.11%	0.30%	9,481
Iowa	0.34%	0.22%	0.45%	10,997	0.31%	0.21%	0.42%	11,150
Kansas	0.25%	0.14%	0.35%	8,806	0.22%	0.12%	0.32%	8,578
Kentucky	0.18%	0.09%	0.27%	8,975	0.24%	0.14%	0.34%	8,939
Louisiana	0.32%	0.15%	0.48%	5,523	0.30%	0.15%	0.45%	5,203
Maine	0.36%	0.25%	0.47%	11,661	0.42%	0.30%	0.54%	11,381
Maryland	0.42%	0.26%	0.58%	12,251	0.27%	0.17%	0.36%	13,158
Massachusetts	0.23%	0.14%	0.33%	9,920	0.35%	0.22%	0.47%	9,103
Michigan	0.23%	0.15%	0.31%	15,680	0.16%	0.10%	0.23%	14,675
Minnesota	0.31%	0.22%	0.40%	14,202	0.29%	0.20%	0.38%	14,347
Mississippi	0.39%	0.21%	0.57%	5,704	0.52%	0.31%	0.72%	5,402
Missouri	0.19%	0.11%	0.28%	10,432	0.25%	0.14%	0.35%	10,140
Montana	0.49%	0.30%	0.68%	5,859	0.60%	0.39%	0.81%	5,792
Nebraska	0.23%	0.13%	0.33%	9,104	0.28%	0.17%	0.38%	8,913
Nevada	0.35%	0.22%	0.47%	9,089	0.33%	0.22%	0.45%	9,466
New Hampshire	0.28%	0.19%	0.38%	12,500	0.21%	0.13%	0.28%	12,768
New Jersey	0.30%	0.20%	0.40%	12,293	0.24%	0.16%	0.33%	12,021
New Mexico	0.45%	0.27%	0.63%	5,874	0.35%	0.20%	0.49%	5,900
New York	0.28%	0.21%	0.35%	25,482	0.33%	0.26%	0.41%	24,708
North Carolina	0.23%	0.14%	0.32%	12,377	0.20%	0.12%	0.29%	11,909
North Dakota	0.32%	0.19%	0.44%	7,270	0.29%	0.17%	0.41%	7,540
Ohio	0.27%	0.19%	0.35%	17,895	0.22%	0.14%	0.30%	17,318
Oklahoma	0.41%	0.26%	0.56%	6,994	0.43%	0.27%	0.58%	7,282
Oregon	0.33%	0.20%	0.46%	8,047	0.38%	0.24%	0.52%	7,857
Pennsylvania	0.18%	0.12%	0.24%	19,104	0.17%	0.11%	0.24%	18,367
Rhode Island	0.24%	0.14%	0.33%	10,658	0.28%	0.17%	0.39%	10,418
South Carolina	0.25%	0.13%	0.36%	8,097	0.18%	0.09%	0.27%	8,265
South Dakota	0.31%	0.20%	0.43%	9,083	0.41%	0.27%	0.55%	8,568
Tennessee	0.23%	0.13%	0.33%	8,567	0.25%	0.15%	0.36%	8,212
Texas	0.35%	0.28%	0.42%	28,656	0.30%	0.24%	0.37%	29,239
Utah	0.38%	0.24%	0.51%	8,181	0.29%	0.17%	0.41%	7,799
Vermont	0.55%	0.39%	0.72%	8,602	0.38%	0.24%	0.52%	8,734
Virginia	0.22%	0.13%	0.30%	12,619	0.28%	0.19%	0.38%	12,794
Washington	0.23%	0.14%	0.32%	10,984	0.27%	0.17%	0.37%	10,583
West Virginia	0.17%	0.08%	0.26%	7,939	0.19%	0.09%	0.29%	7,677
Wisconsin	0.27%	0.17%	0.37%	11,558	0.27%	0.18%	0.37%	11,285
Wyoming	0.48%	0.31%	0.65%	7,300	0.32%	0.19%	0.44%	7,373

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded. (4) Approximate 95 percent confidence intervals for the index for each state are reported

TABLE 10
KAUFFMAN INDEX OF ENTREPRENEURIAL
ACTIVITY BY STATE (1996-98 to 2004-2006)

State	Index	1996-98 Period		Sample Size	Index	2004-06 Period		Sample Size
		Confidence Interval Lower	Confidence Interval Upper			Confidence Interval Lower	Confidence Interval Upper	
U.S. Total	0.29%	0.28%	0.30%	1,594,432	0.29%	0.28%	0.30%	1,791,491
Alabama	0.23%	0.17%	0.30%	22,508	0.24%	0.18%	0.31%	23,022
Alaska	0.59%	0.47%	0.71%	18,315	0.37%	0.29%	0.45%	24,137
Arizona	0.40%	0.32%	0.49%	23,278	0.32%	0.24%	0.39%	23,955
Arkansas	0.31%	0.24%	0.39%	21,495	0.42%	0.32%	0.51%	20,039
California	0.34%	0.31%	0.38%	131,823	0.35%	0.32%	0.39%	136,243
Colorado	0.44%	0.35%	0.53%	23,331	0.39%	0.32%	0.45%	37,946
Connecticut	0.21%	0.14%	0.28%	16,576	0.26%	0.21%	0.32%	37,560
Delaware	0.23%	0.15%	0.31%	16,571	0.16%	0.11%	0.22%	26,657
District of Columbia	0.28%	0.19%	0.36%	15,322	0.24%	0.17%	0.31%	20,226
Florida	0.34%	0.29%	0.38%	70,549	0.31%	0.27%	0.35%	72,036
Georgia	0.31%	0.25%	0.38%	28,903	0.38%	0.31%	0.45%	34,814
Hawaii	0.21%	0.14%	0.28%	16,292	0.32%	0.25%	0.40%	25,142
Idaho	0.39%	0.30%	0.48%	22,702	0.43%	0.34%	0.52%	20,645
Illinois	0.25%	0.21%	0.29%	68,087	0.23%	0.19%	0.28%	57,669
Indiana	0.24%	0.18%	0.31%	22,680	0.25%	0.19%	0.30%	30,860
Iowa	0.38%	0.29%	0.47%	20,436	0.30%	0.24%	0.36%	32,839
Kansas	0.33%	0.25%	0.41%	20,354	0.24%	0.18%	0.29%	27,328
Kentucky	0.28%	0.21%	0.36%	21,966	0.22%	0.17%	0.28%	26,771
Louisiana	0.32%	0.24%	0.39%	21,989	0.29%	0.21%	0.38%	17,278
Maine	0.38%	0.28%	0.48%	17,566	0.39%	0.32%	0.46%	34,162
Maryland	0.25%	0.18%	0.33%	18,675	0.33%	0.25%	0.40%	36,031
Massachusetts	0.20%	0.15%	0.25%	39,033	0.26%	0.20%	0.32%	30,135
Michigan	0.25%	0.20%	0.29%	58,156	0.19%	0.15%	0.24%	47,390
Minnesota	0.31%	0.23%	0.38%	23,027	0.30%	0.24%	0.35%	41,002
Mississippi	0.27%	0.19%	0.34%	20,519	0.43%	0.32%	0.54%	17,473
Missouri	0.29%	0.21%	0.37%	19,321	0.22%	0.17%	0.28%	30,225
Montana	0.52%	0.42%	0.62%	20,860	0.55%	0.44%	0.67%	17,724
Nebraska	0.36%	0.27%	0.45%	20,216	0.28%	0.22%	0.35%	27,826
Nevada	0.36%	0.26%	0.45%	20,160	0.31%	0.25%	0.38%	29,179
New Hampshire	0.25%	0.18%	0.33%	16,436	0.23%	0.18%	0.28%	37,122
New Jersey	0.21%	0.17%	0.26%	48,937	0.26%	0.21%	0.31%	38,610
New Mexico	0.57%	0.47%	0.68%	22,522	0.43%	0.33%	0.53%	18,347
New York	0.28%	0.24%	0.31%	102,328	0.29%	0.25%	0.33%	77,340
North Carolina	0.28%	0.23%	0.33%	43,195	0.23%	0.18%	0.28%	37,463
North Dakota	0.46%	0.36%	0.56%	19,200	0.27%	0.21%	0.34%	22,938
Ohio	0.25%	0.21%	0.30%	62,180	0.25%	0.20%	0.29%	53,806
Oklahoma	0.38%	0.30%	0.46%	23,839	0.44%	0.34%	0.53%	21,319
Oregon	0.43%	0.33%	0.52%	19,111	0.34%	0.27%	0.42%	25,011
Pennsylvania	0.17%	0.14%	0.20%	69,109	0.17%	0.14%	0.21%	58,610
Rhode Island	0.17%	0.10%	0.23%	16,782	0.28%	0.22%	0.34%	32,164
South Carolina	0.30%	0.22%	0.38%	18,661	0.22%	0.16%	0.28%	24,324
South Dakota	0.42%	0.33%	0.52%	19,954	0.34%	0.27%	0.41%	26,702
Tennessee	0.35%	0.26%	0.43%	21,189	0.25%	0.18%	0.31%	24,956
Texas	0.30%	0.26%	0.34%	78,273	0.34%	0.30%	0.38%	84,914
Utah	0.32%	0.24%	0.40%	22,181	0.33%	0.26%	0.41%	24,256
Vermont	0.40%	0.29%	0.50%	15,784	0.45%	0.37%	0.54%	26,293
Virginia	0.26%	0.20%	0.33%	25,731	0.26%	0.20%	0.32%	36,187
Washington	0.29%	0.21%	0.37%	21,359	0.31%	0.24%	0.37%	32,684
West Virginia	0.19%	0.12%	0.25%	23,497	0.19%	0.13%	0.24%	24,381
Wisconsin	0.23%	0.17%	0.29%	23,805	0.30%	0.23%	0.36%	35,071
Wyoming	0.37%	0.28%	0.46%	19,649	0.40%	0.32%	0.49%	22,679

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded. (4) Approximate 95 percent confidence intervals for the index for each state are reported.

TABLE 11
**KAUFFMAN INDEX OF ENTREPRENEURIAL ACTIVITY
 FOR THE FIFTEEN LARGEST MSAs (2006)**

Metropolitan Statistical Area	Index	Confidence Interval Lower	Confidence Interval Upper	Entrepreneurs per 100,000 People	Sample Size
New York-Northern New Jersey-Long Island, NY-NJ-PA	0.39%	0.31%	0.47%	390	23,523
Los Angeles-Long Beach-Santa Ana, CA	0.34%	0.25%	0.44%	340	17,467
Chicago-Naperville-Joliet, IN-IN-WI	0.18%	0.11%	0.26%	180	12,778
Dallas-Fort Worth-Arlington, TX	0.24%	0.13%	0.35%	240	7,665
Philadelphia-Camden-Wilmington, PA-NJ-DE	0.23%	0.12%	0.34%	230	12,834
Washington-Arlington-Alexandria, DC-VA-MD-WV	0.28%	0.18%	0.37%	280	17,068
Miami-Fort Lauderdale-Miami Beach, FL	0.50%	0.33%	0.66%	500	7,038
Houston-Baytown-Sugar Land, TX	0.33%	0.19%	0.47%	330	6,505
Atlanta-Sandy Springs-Marietta, GA	0.49%	0.32%	0.66%	490	7,268
Detroit-Warren-Livonia, MI	0.13%	0.04%	0.21%	130	6,430
Boston-Cambridge-Quincy, MA-NH	0.38%	0.23%	0.54%	380	10,081
San Francisco-Oakland-Fremont, CA	0.44%	0.26%	0.61%	440	5,527
Phoenix-Mesa-Scottsdale, AZ	0.23%	0.11%	0.36%	230	5,550
Riverside-San Bernardino, CA	0.38%	0.21%	0.55%	380	5,069
Seattle-Tacoma-Bellevue, WA	0.22%	0.09%	0.34%	220	5,673

Notes: (1) Estimates calculated by Robert W. Fairlie, University of California, Santa Cruz, using the Current Population Survey. (2) The index of entrepreneurial activity is the percent of individuals (ages 20-64) who do not own a business in the first survey month that start a business in the following month with fifteen or more hours worked per week. (3) All observations with allocated labor force status, class of worker, and hours worked variables are excluded. (4) Approximate 95 percent confidence intervals for the index for each MSA are reported.

ENTREPRENEURIAL ACTIVITY BY METROPOLITAN AREA

An index of entrepreneurial activity is also created for the fifteen largest metropolitan areas in the United States (Table 11).⁵ Among these cities, Miami and Atlanta had the highest rates of entrepreneurial activity, with 0.50 percent and 0.49 percent, respectively. San Francisco (0.44 percent) also had a high rate of entrepreneurial activity. The cities with the lowest rates of entrepreneurial activity in this group were Detroit (0.13 percent) and Chicago (0.18 percent).

Summary

The Kauffman Index measures the monthly rate of business creation at the individual owner level, reporting the percent 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. The total sample size for the period from 1996 to 2006 for the adult population is over eight million. Detailed demographic information available in the CPS and large sample sizes also allow for estimates of separate indices by gender, race, education, age, and immigrant status. Indices for all states and for the largest MSAs are also calculated.

In 2006, 0.29 percent of the adult population or 290 out of 100,000 adults created a new business each month, representing approximately 465,000 new businesses per month. This total rate of business creation did not change between 2005 and 2006. There are some interesting differences in changes in rates of entrepreneurial activity in 2006 for subgroups of the population. First, the rate of entrepreneurial activity for men remained constant between 2005 and 2006, apparently ending the downward trend over the previous several years. Second, Asians experienced the only notable increase in rates of entrepreneurial activity in 2006 among major ethnic and racial groups. The non-Latino white rate of entrepreneurial activity remained constant, the African American rate declined slightly, and the Latino rate increased slightly during this time period. A related finding is that the rate of entrepreneurial activity among immigrants, already high relative to the native-born, increased between 2005 and 2006. In 2006, the rate of entrepreneurial activity among immigrants was 0.37 percent, compared to 0.27 percent among

the native-born. Finally, the Midwest experienced a sizeable drop in entrepreneurial activity between 2005 and 2006, making it the lowest ranked region in the United States for the first time in the past eleven years.

Rates of entrepreneurial activity varied substantially across states, from a low of 0.16 percent in Michigan to a high of 0.60 percent in Montana. Rates of entrepreneurial activity were also high in Mississippi (0.52 percent), Georgia (0.44 percent), Oklahoma (0.43 percent), and Maine (0.42 percent). In addition to Michigan, the lowest rates of entrepreneurial activity were found in Pennsylvania (0.17 percent), South Carolina (0.18 percent), Illinois (0.18 percent), and Delaware (0.19 percent).

The states experiencing the largest increases in rates of entrepreneurial activity over the past decade were Mississippi (with an increase of 0.16 percentage points), Hawaii (0.12 percentage points), Rhode Island (0.11 percentage points), and Arkansas (0.11 percentage points). The states that experienced the largest decreases in their rates were Alaska (with a decrease of 0.22 percent percentage points), North Dakota (-0.18 percentage points), New Mexico (-0.14 percentage points), Tennessee (-0.10 percentage points), and Kansas (-0.09 percentage points).

Analysis of the fifteen largest metropolitan areas in the United States reveals that Miami (0.50 percent) and Atlanta (0.49 percent) had the highest rates of entrepreneurial activity in 2006. Detroit (0.13 percent) and Chicago (0.18 percent) had the lowest rates of entrepreneurial activity.

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 each month by the U.S. Bureau of the Census and the Bureau of Labor Statistics, are representative of 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 2006 monthly data creates a 2006 dataset with a sample size of roughly 600,000 adults. The dataset built for the analysis of the eleven-year period between 1996 and 2006 has a sample size of more than 8 million adults.

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 rotation pattern of the CPS makes it possible to match information on individuals monthly, and, therefore, to create monthly panel data for 75 percent of all respondents in the CPS. 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 all non-unique matches are removed, the underlying CPS data are checked extensively for coding errors and other problems.

Monthly match rates are generally between 94 and 96 percent (see Fairlie 2005), and the primary reason for non-matching is household moves. 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).

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.

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 may also 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 rates of entrepreneurial activity by education level, the population between the ages of 25 and 64 is used instead. These age categories follow the Bureau of Labor Statistics practice of publishing unemployment rates for ages 20+ for total rates and ages 25+ for rates by education. Older individuals 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 1996 to 2006 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. Rates of entrepreneurial activity are substantially higher for allocated or imputed observations. These observations were included in the first Kauffman Index report (Fairlie 2005). While the previous report (Fairlie 2006) excluded these observations, new information on allocated observations has resulted in further changes to a small percent of cases from 1996 to 2003. Estimates in this report may, therefore, differ slightly from the previous report (Fairlie 2006). The estimates reported here for 1996 to 2006 update those from all previous reports. See Fairlie (2006) for a complete discussion of the exclusion of allocated observations and for comparisons of unadjusted and adjusted rates of entrepreneurial activity.

The CPS sample was designed to produce national and state estimates of the unemployment rate and other labor force characteristics of the civilian, non-institutional population ages sixteen and over. The total national sample size is, therefore, drawn to ensure a high level of precision for the *monthly* national unemployment rate. In addition, the sample is designed to guarantee precise estimates of average *annual* unemployment rates for each of the fifty states and the District of Columbia (Polivka 2000). Sample sizes for states are drawn to ensure that the coefficient of variation, which is the standard error of the estimate divided by the estimate, is no larger than

8 percent for an annual average unemployment rate of 6 percent.⁶ For many states, the sample sizes contained in the CPS are much larger than this threshold. While state-level estimates are not affected by non-random sampling by state in the same way that national estimates are, they are still non-representative because of non-response and post-stratification raking (Polivka 2000). Sampling weights provided by the CPS are used for all 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 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 clustering of the CPS (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). Estimates of the national unemployment rate indicate that treating the CPS as a random sample leads to an understatement of the variance of the unemployment rate of 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 complicated statistical procedures. Corrections for the possibility of multiple observations per person, which may create the largest bias in standard errors, are corrected for in all reported confidence intervals. It is important to note, however, that the estimates of rates of entrepreneurial activity 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.

COMPARISON TO OTHER MEASURES

The Kauffman Index differs from many other measures of entrepreneurial activity in that it measures flows into business ownership rather than the number of existing businesses at a specific point in time. Other measures of the number of entrepreneurs, self-employed business owners, or businesses in the United States are readily available from several nationally-representative government datasets. For example, the Economic Census Surveys of Minority- and Women-Owned Business Enterprises provide estimates of the number of businesses every five years, and the CPS and Census of Population provide estimates of the number of self-employed business owners annually and every decade, respectively. Typical measures of business ownership based on these data, however, do not capture the dynamic nature of entrepreneurial activity that the Kauffman Index illustrates.

The Kauffman Index differs from the 2002 Survey of Business Owners (SBO) conducted 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 2002 that filed tax forms as individual proprietorships, partnerships, or any type of corporation. Second, the Kauffman Index captures business entry, whereas the SBO captures numbers of existing businesses. Increases in the number of existing businesses over time may be a result of more business creation, less business closure or a combination of the two. 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 birth data from the Statistics of U.S. Businesses (SUSB). These data, collected by the U.S. Census Bureau and summarized by the U.S. Small Business Administration (SBA), Office of Advocacy, include only employer firms. Employer firms represent only approximately one-fourth of all firms,⁷ 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, such as the high-technology industry. Finally, the SUSB is a business-level measure, while the CPS is a person-level measure.

The Kauffman Index also differs from the Total Entrepreneurial Activity (TEA) index used in the Global Entrepreneurship Monitor. The TEA captures individuals ages 18–64 who are involved in either the start-up phase or managing a business that is less than forty-two months old (Reynolds, Bygrave, and Autio 2003). This measure of nascent entrepreneurship, therefore, includes individuals who are still in the start-up phase of business creation and are not necessarily captured in the Kauffman Index because they may not be working on the new business for fifteen hours each week. In addition, the Kauffman Index captures entrepreneurs only once when they first create their business.

In addition to the SUSB data, there have recently been several state-level reports of entrepreneurial activity, including the Advanced Research Technologies, LLC (2005) report to the SBA and Burton: Center for American Progress (2005). The Kauffman Index offers more recent data than these other sources, and, unlike the others, it provides a dynamic picture of flows into business ownership over time.

Visit www.kauffman.org/kauffmanindex/ to download tables and graphs.

1 See "Kauffman Index of Entrepreneurial Activity, 1996 - 2004" (Fairlie 2005), "Kauffman Index of Entrepreneurial Activity, National Report 1996 - 2005" (Fairlie 2006), and "Kauffman Index of Entrepreneurial Activity, State Report 1996-2005 (Fairlie 2006).

2 Estimates of entrepreneurial activity for 1996 to 2003 have been slightly revised from earlier estimates because of the removal of extra allocated variables that affected a small percent of cases. See Appendix for further explanation.

3 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://econ.ucsc.edu/~fairlie/papers/siliconvalley.pdf>.

4 Annual estimates of state rates of entrepreneurial activity are available for downloading at www.kauffman.org/kauffmanindex.

5 As there is no oversampling of metropolitan areas in the CPS, only the largest cities have sufficient observations to calculate reasonably accurate rates of entrepreneurial activity. All MSAs reported in Table 4 have at least 5,000 observations.

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

7 According to the 2003 Statistics of U.S. Businesses, U.S. Census Bureau, 23.6 percent of firms have employees.

Ewing Marion
KAUFFMAN
Foundation

4801 ROCKHILL ROAD
KANSAS CITY, MISSOURI 64110
816-932-1000
www.kauffman.org