

# Dynamism in Retreat:

Consequences for Regions,  
Markets, and Workers

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## Purpose and approach

This report draws from a wide range of publicly available data sources and a growing body of academic literature to consolidate in one place the evidence and implications of declining economic dynamism in the United States. Our goal is to provide a comprehensive and relational survey of dynamism punctuated with new insights on the slowdown of new firm starts. No new causal relationships are proven in this report, and we invite the reader to question and refine any and all of the associations advanced herein. Nevertheless, we emphatically believe that declining dynamism is a compelling factor in a wide array of “downstream” symptoms now plaguing the U.S. economy.

Most figures are drawn from the U.S. Census Bureau, Bureau of Economic Analysis, or Bureau of Labor Statistics, with heavy reliance on the

Census’ invaluable Business Dynamics Statistics (BDS) dataset. Historical indicators are presented as data availability allows. A comprehensive bibliography is available at the end of the report.

Finally, an important note on nomenclature. When used, the “startup rate” refers to the share of all companies in the economy launched in the past year. “New firms,” “new companies,” and “new businesses” are all used interchangeably in this report. Each term encompasses everything from high-growth technology-based firms to main street enterprises, contingent upon the company maintaining at least one physical location and having at least one paid employee. This report does not capture sole proprietorships or any other type of self-employment.

## Key findings

This report adds a number of original findings to existing literature on the state of dynamism in the U.S. economy. EIG's findings include:

### National trends

- Startup rates have fallen for decades, but the effects of the Great Recession were so severe that firm births fell below firm deaths more than 20 years ahead of trend.
- In spite of the steadily declining rate of new business formation, 117,300 more firms opened than closed on average each year from 1977 to 2007. Since 2008, however, firm deaths have actually outpaced firm births on average.
- Firm creation significantly diminished with each of the last four recoveries. The U.S. economy added only 104,600 firms between 2010 and 2014, compared to nearly half a million from 1983 to 1987.

### Implications for regions

- Prior to 2008, the vast majority of metro areas—at least 80 percent—saw more firms open than close in any given year, including recessions. The Great Recession completely inverted this trend, with only 11 percent of metro areas adding firms in 2009. Even in 2014, five years into the recovery, three out of five metro areas were still shedding firms.
- As dynamism fades, the U.S. economy becomes more reliant on a rapidly narrowing geographic base to power its growth. From 2010 to 2014, five metro areas alone produced as big an increase in firms as the rest of the nation combined.
- Only one in seven metro areas now keeps pace with the national startup rate. Meanwhile, the dynamism gap between large and small metro areas is growing, with startup rates falling faster in smaller metro areas on average.
- Las Vegas, NV; Provo, UT; and Miami, FL, led the country in new firm formation rates.

In general, high population growth areas led the pack, followed closely by the more familiar innovation-oriented startup hubs, such as San Francisco. Small manufacturing-oriented metro areas in the Midwest registered the lowest firm formation rates.

- High rates of business churn (firm births and deaths) are strongly correlated with expanding local economies. The firm birth rate exceeded the firm death rate in all 20 of the metro areas with the highest rates of churn from 2010 to 2014—but did so in only one of the 20 with the lowest rates of churn.

### Implications for markets

- Companies at least 16 years old are increasingly dominant in U.S. industry with nearly three out of every four American workers on their payrolls in 2014.
- The four largest firms now capture at least 25 percent of the market in nearly half of U.S. industries. Meanwhile, corporate profits have climbed to a record 9.4 percent of GDP.
- The U.S. economy has become less innovative and entrepreneurial. From 1977 to 2014, the number of new firms per \$1 billion in GDP fell from 95 to 25, and the number of patents outside of health and IT per \$1 billion halved relative to the 1980s.

### Implications for workers

- The deficit in new firms significantly harms the labor market, muting both the quality and quantity of job growth since the recession ended. For example, the economy would have produced 924,000 additional jobs in new companies in 2014 alone had the startup rate been as high as in 2006.
- Historically, new companies create an average of 2.9 million jobs per year, while established companies tend to be net job destroyers.

# I. Introduction

**Bob Dylan famously wrote, “he not busy being born is busy dying.”<sup>1</sup>**

**The same holds true for economies.**

Local, regional, and national economies all depend upon constant economic rebirth to produce progress and well-being. Economic rebirth in turn relies on a cycle of creative destruction in which new ideas, technologies, and industries are constantly—often quite subtly—disrupting and replacing those of the past. When working properly, this cycle ensures an economy evolves rather than calcifies. However, today’s economy is one in which arguably the most vital “creative” force—the birth of new businesses—has fundamentally deteriorated, leaving the effects of “destruction” unchecked.

Why do new companies uniquely matter? Their steady infusion throughout the economy is essential for producing healthy markets and abundant job opportunities for workers—and for delivering transformative innovations that boost productivity and raise standards of living. Many forces in market economies tend towards concentration and inequality; new companies push in the opposite

direction and continuously chip away at the status quo. And the birth of new companies sets off chain reactions of people switching jobs and moving regions, with numerous other downstream effects that keep the economy in motion.

Though signs of declining dynamism can be traced back several decades, in previous eras, rain or shine, one could nevertheless take for granted the multiplying of businesses in every sector and region. That changed with the Great Recession, which touched off a true collapse in new firm starts—one so severe it marked the first time on record that companies were actually dying faster than they were being born in the United States. Suddenly, creative destruction was thrown out of balance. Even as other aspects of the economy stabilized, that historic balance has yet to be restored.

These are uncharted waters. What happens to an economy when new firms become an endangered species? What happens to regions, markets, and workers when the codependent forces of creation and destruction are thrown out of sync? What happens when dynamism disappears? This report sets out to answer these questions, as we believe the retreat of dynamism is one of

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1. From 1965’s “It’s Alright, Ma (I’m Only Bleeding).”

the most urgent and fundamental economic challenges of our time.

Indeed, the new Congress and new Administration must grapple with an economy quietly being redefined by a lurch toward concentration and stasis—one in which an increasingly narrow swath of firms, people, and geographies power an unprecedented share of the nation's growth and prosperity. The evidence presented in this report suggests the U.S. economy is far less flexible, less adaptive, and less resilient than it once was. Declining economic dynamism is at the root of the problem.

### **What is economic dynamism?**

If creative destruction is the process of reallocating the economy's resources across firms and industries according to their most productive use, dynamism refers to the rate and scale of such churn. In a dynamic economy, firms are constantly opening and closing with workers churning among them. In a dynamic economy, entrepreneurs and innovators are incessantly commercializing new ideas and business models, keeping established firms on their toes and pushing the economy to evolve and advance. Dynamism brings forward momentum: high rates of dynamism are associated with economic expansion. Without it, an economy trends towards stagnation, not vitality.

Dynamism serves a number of almost biological functions for the economy. Like a living being, the economy needs circulation—churn—in order to remain healthy. It needs its old or damaged cells to be broken down and their raw materials recycled. It needs to develop new resiliencies when exposed to the contagion of a recession or technology-driven disruption. And it must be able to constantly adapt to changes in its environment in order to survive. Dynamism powers all of this.

### **Creative destruction, interrupted.**

American prosperity has always been synonymous with robust business creation. In an economy with fewer new businesses, it becomes less likely that jobs, companies, or industries in the process of dying out will be replaced by something better—or by

anything at all. Thus, the loss of dynamism has reduced the economy's margin for error, with especially profound implications for the country's most disadvantaged people and places.

A less dynamic economy has nevertheless been a resounding success for many older and larger incumbent firms. Unchecked by normal competitive pressures, they are enjoying a sustained period of profitability and market dominance. The average firm is now older than ever. A record portion of the workforce is now employed by an older incumbent company. Industry concentration is at an apex, and profits have reached exceptionally high and sustained levels. The golden age of incumbency and the retreat of dynamism are two sides of the same coin.

Inevitably this report will raise the question of whether declining dynamism is simply a natural development in a maturing economy. We would be wise to remember that natural causes do not always carry benign effects. Preventative and restorative measures can still be taken to mitigate the trend and its worst side-effects on regions, markets, and people—just as individuals strive to remain healthy and active as they age. Indeed, given the pervasiveness of the shift, addressing this challenge will require a radical change in our approach to economic policymaking.

The report is structured as follows: Section II tracks the 30-plus year decline in economic dynamism in the United States, punctuated by a more recent accelerated collapse in new firm formation. Section III maps the same trends across metro areas and discusses what happens to a regional economy when new firms stop appearing and old ones keep dying. Section IV explores how declining dynamism has reshaped industries and markets and been a boon for old incumbent interests. Section V discusses the implications for people when competition for labor is weaker than it should be and the good jobs of the future fail to materialize. Section VI asks how we arrived at this point with a robust discussion of the many forces that seem to be in play. Finally, Section VII concludes with thoughts on the road ahead.



## II. Grinding to a halt

The slowdown in firm creation is the centerpiece of a pervasive decline in economic dynamism

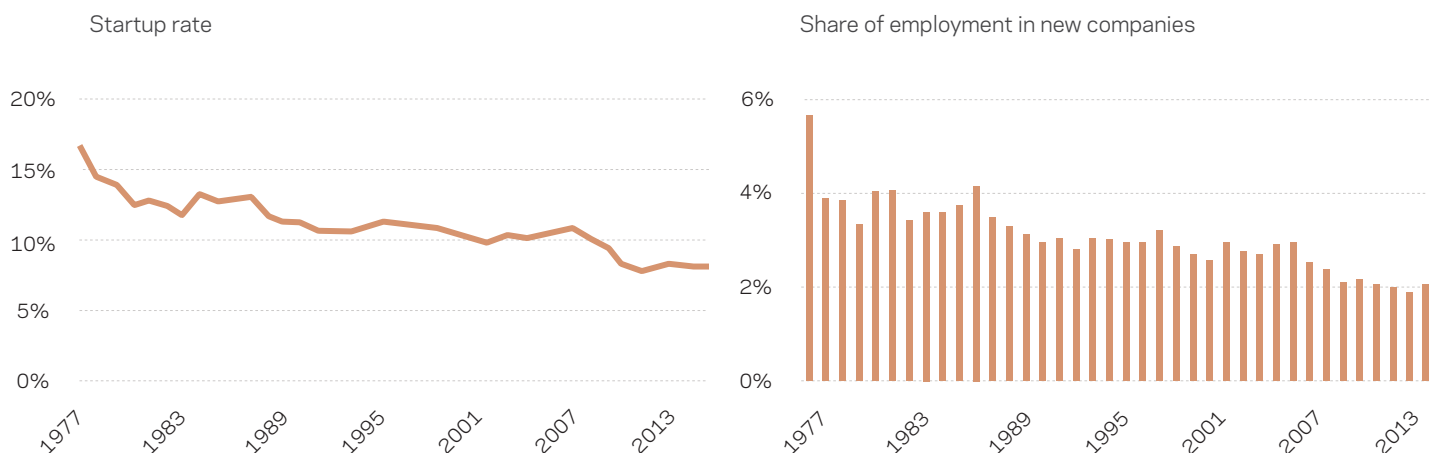
Over the course of the past four decades, changes to the landscape of U.S. dynamism have been nothing short of seismic, driven most notably by steep declines in the rate of new business formation and a dramatic increase in geographic consolidation.

All regions and categories of new companies have been impacted. Other key indicators of dynamism such as labor market fluidity and interstate migration rates are trending decisively in the direction of diminished churn.

### New businesses are vanishing.

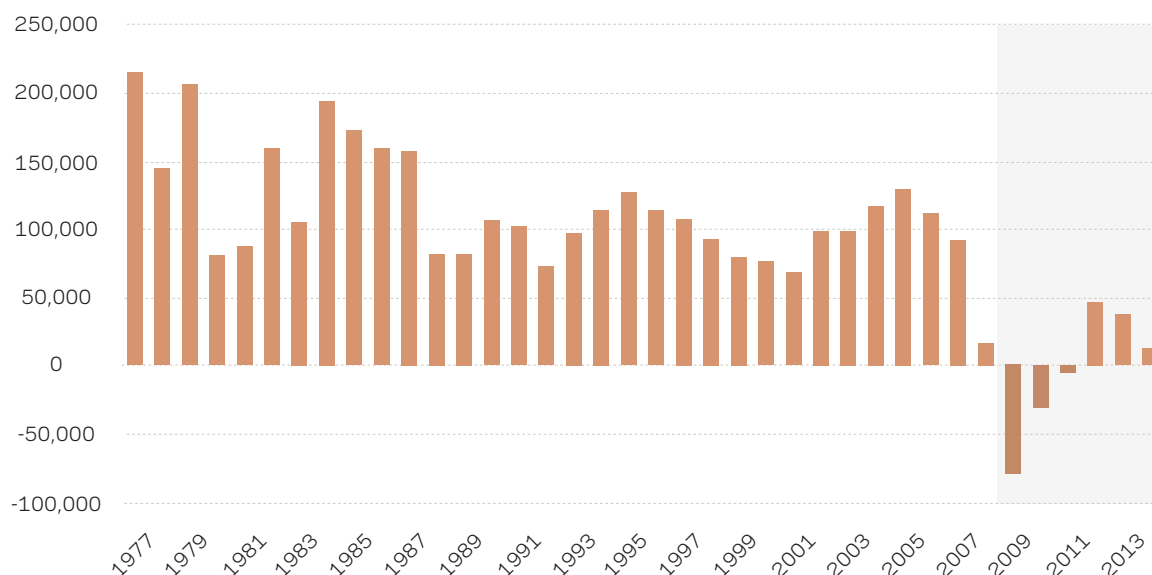
No matter how one measures them, new businesses are a fading feature of the U.S. economy. This is true for all types of companies—from high-tech firms to local family businesses. In 1977, when the federal government first started recording the data, over 16 percent of all firms in the United States were less than one year old. By 2014, that figure had more than halved to 8 percent—still mired near the all-time low of 7.8 percent reached in 2010.

### 1. Startup rate and share of total U.S. employment in new companies





## 2. Annual difference between firm births and deaths in the U.S. economy



Source: Census BDS

The employment impact of new firms has also shrunk: Between the 1980s and 2010s, the share of the workforce employed in a company that had opened in the past year fell by 50 percent.

The country produced its largest annual cohort of new companies on record—565,000 of them—in 1977. Since then, the number of new companies returned close to peak again in 2006 before falling by more than a quarter over the following eight years to 403,900 in 2014. The number of individuals employed in a new company most recently peaked in 1987 at 3.6 million and then proceeded to fall by over 30 percent to only 2.5 million by 2014.

### From steady decline to all-out collapse.

As the rate of new firm formation slowly declined for decades, business openings nonetheless always exceeded business closings to generate steady and sizable annual increases in the economy's total number of firms. All that changed with the Great Recession, when for three straight

years—from 2009 to 2011—more firms closed than opened in the United States.<sup>2</sup>

The magnitude of this reversal is as stunning as it is unprecedented. To put it into context, an average of 117,300 more firms opened than closed each year from 1977 to 2007.<sup>3</sup> Since 2008, however, firm deaths have actually outpaced firm births on average due to the hole dug by the recession. Even in the more recent stretch from 2012 to 2014, the average increase was only 31,900—barely a quarter of the historical norm. In fact, even 2012, the economy's best year for firm formation since the recession fell far short of its worst year prior to 2008.

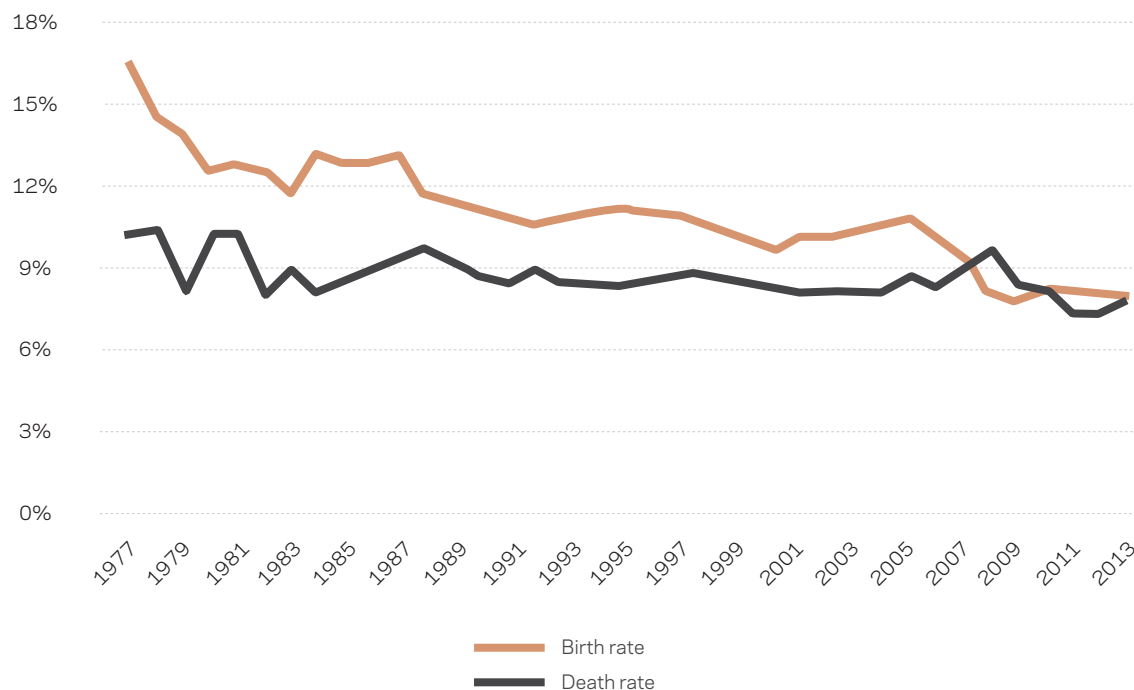
In the end, the U.S. economy had 182,000 fewer firms in 2014 than it had in 2007, even though GDP increased by \$1.1 trillion in real terms over that period. That the number of firms in the economy essentially stopped expanding with the Great Recession provides clear evidence that not all of the forces behind dynamism's decline are gradual or natural to the economy's evolution.

2. The terms “firm births” and “firm openings,” as well as “firm deaths” and “firm closings,” are each used interchangeably.

3. This number, from Figure 2, reflects the difference between the number of firms that started and the number of firms that died in any given year.

It differs from the change in the total number of firms operating in the economy, which is influenced by the entrance of existing companies from abroad, mergers, and other factors as well.

### 3. Firm birth (startup) and death rates



Source: Census BDS

#### The Great Recession flipped the startup and closure rates decades ahead of trend.

Prior to the crisis, the firm birth rate was not on course to fall below the firm death rate until 2031.<sup>4</sup> Instead, it hit that mark more than two decades early in 2009. Longer term, while the startup rate has trended downwards, the closure rate—a proxy for the “destruction” side of creative destruction—has held remarkably steady. On average since 1990, 8.4 percent of firms in the economy closed in any given year; the crisis only came to a head once firm birth rates fell below that mark. Thus the current situation is the product of developments in the firm formation rate rather than any significant increase in the firm closure rate over time.

#### The slowdown in new business creation is pervasive across industries.

Far from an isolated anomaly, new firms are disappearing across all sectors and all geographies.<sup>5</sup> Easy explanations have been

eliminated. For example, productivity-enhancing transformations in the retail sector drove a significant portion of the early decline, but that effect had dissipated by the turn of the century.<sup>6</sup> Other transformations in the economy—notably the evolution from a manufacturing-based to a services-dominated economy—should have actually increased the startup rate given that barriers to entry are lower and firm sizes are on average smaller in the less capital-intensive services sector. The slowdown acquired a new degree of seriousness come 2000, when a rapid fall-off in new, high-growth, technology-based firms set in.<sup>7</sup> Since then, the decline in high-tech entrepreneurship has been even more pronounced than the decline in entrepreneurship economy-wide.<sup>8</sup>

#### Failure to launch; failure to grow.

If new firm starts today were fewer in number but greater in impact, concern about their dwindling would be less warranted.

4. EIG projections using ARIMA model.

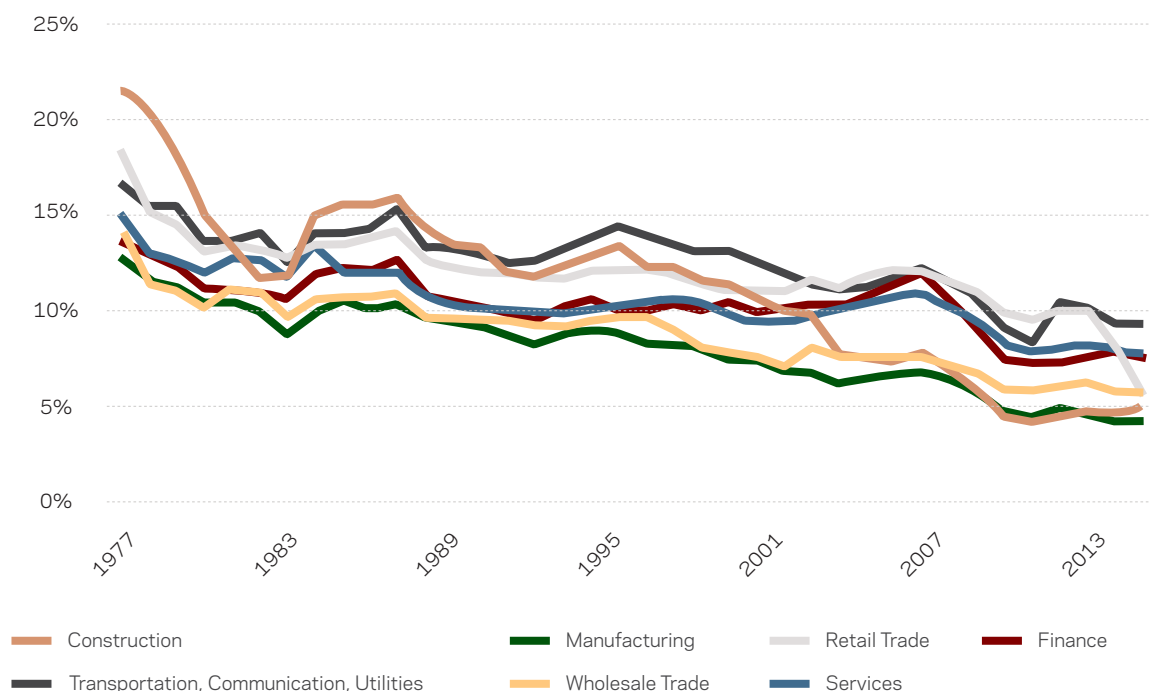
5. Hathaway and Litan, 2014.

6. Foster, et al., 2006.

7. Decker, et al., 2014 and 2015.

8. Haltiwanger, et al., 2014.

#### 4. Startup rate by sector



Source: Census BDS

However, there is evidence that even the most promising and productive new companies are less likely to survive and grow than in the past.<sup>9</sup> There are not only fewer new firms starting up, but also fewer high growth young firms in every sector.<sup>10</sup> The number of initial public offerings (IPOs) fell by almost three-quarters from the 1990s to the 2000s and beyond, evidencing an underlying shift in the economy that has made it harder for companies across the board to not only start but also to grow. Our understanding of what exactly changed is still incomplete, but Section VI outlines some hypotheses. The two critical junctures appear to be around the years 2000 and 2008.

#### Declining startup rates are being matched by declines in other metrics of churn.

The **job turnover rate** plummeted from a

high of 12.4 percent annually in 1999 to a low of 7.2 percent in 2015.<sup>11</sup> Turnover refers to the share of the workforce that begins or ends a job each year, and it is an important signal of labor market flexibility. The United States historically featured robust turnover rates, but this measure of dynamism has ratcheted downwards over time. By 2015, only one in every 14 positions in the economy turned over. Other data sources cover different time periods and provide different estimates of the volume of turnover but confirm the downward direction of its rate.<sup>12</sup>

The fluidity of the U.S. labor market has long been a key economic advantage—one closely linked with economic and social mobility.<sup>13</sup> High rates of job turnover allow workers to move nimbly into increasingly advantageous work arrangements. Each improved match provides wage growth for workers, and job turnover alone accounts

9. Guzman and Stern, 2016; Decker, et al., 2016.

10. Decker, et al., 2016.

11. Turnover here is specifically defined as the number of hires in one quarter plus the number of separations in the next quarter, divided by average employment, annualized. Data are obtained from the U.S. Census Bureau's

Longitudinal Employer-Household Dynamics (LEHD) dataset.

12. Hyatt and Spletzer, 2013. "Other data sources" refers to the Census Bureau's Current Population Survey and the Bureau of Labor Statistics' Job Openings and Labor Turnover Survey.

13. Topel and Ward, 1992.

for an estimated half of within-industry labor productivity growth.<sup>14</sup> And in an era of already anemic GDP growth, economists estimate that slower rates of churn further reduced GDP growth by 0.4 percentage points annually during the early recovery years.<sup>15</sup>

The aging of the workforce (older workers switch jobs less frequently) and the increase in college attainment (jobs requiring more education tend to be more stable) explain part of the decline in turnover, as does the declining prevalence of temporary jobs often held by young workers.<sup>16</sup> But other drivers are inherent to the overall decline in dynamism. Older firms tend to be more stable, for example, and fewer high growth firms translates into fewer companies whose vigorous hiring sprees ripple through the labor market.<sup>17</sup>

Already-disadvantaged workers feel the impact of lower turnover rates most acutely. Fewer job openings mean fewer opportunities for individuals not currently gainfully

employed—young people, under-skilled workers, or someone coming out of unemployment.<sup>18</sup> Churn in the labor market is what enables individuals to find an unoccupied rung on the ladder of career growth.

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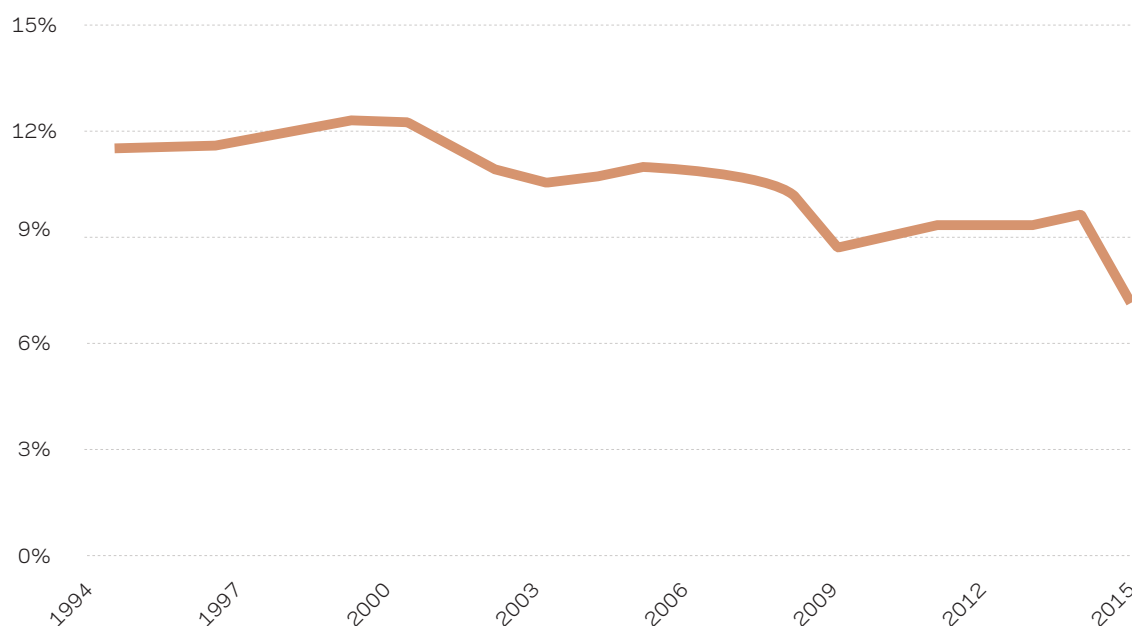
### Already-disadvantaged workers feel the impact of lower job turnover rates most acutely.

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The **domestic migration rate**, meanwhile, has more than halved since the 1980s.

High internal migration rates historically provided the United States with a dynamic leg up over its competitors. For decades, Americans had a unique penchant among their developed country peers to pack up and move to opportunity when the occasion presented itself. This served as an important adjustment mechanism for the economy,

## 5. Job turnover rate



Source: Census LEHD

14. Haltiwanger, et al., 2016.

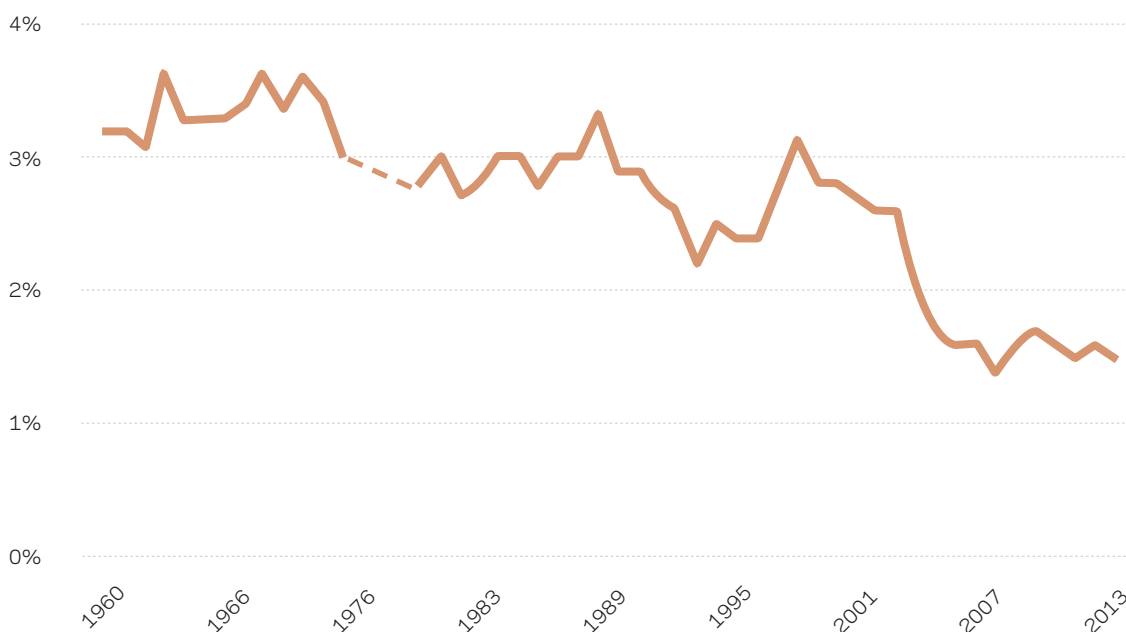
15. Lazear and Spletzer, 2012.

16. Bosler and Petrosky-Nadeau, 2016.

17. Hyatt and Spletzer, 2013; Molloy, et al., 2016; Molloy, et al., 2014; Decker, et al., 2014.

18. Davis and Haltiwanger, 2014. The authors find that a reduction in labor market churn has a three and a half times stronger negative impact on the employment rate of young men with only a high school degree than it does on those with a college degree, for example.

## 6. Percent of the population moving across state lines



Source: Census Bureau

allowing workers to move from depressed areas to booming ones, mitigating downturns and relieving pressure on the social safety net in the process.

Throughout the 1950s, 1960s, and 1970s, between 3.0 percent and 3.5 percent of the country's population moved states each year. Over subsequent decades, the migration rate more than halved to a low of 1.5 percent in 2006, where it remained through 2016.<sup>19</sup> The trend holds for every cross-section of society.<sup>20</sup>

### In essentially every measurable respect, the storied dynamism of the U.S. economy is fading.

As with job turnover, several forces have conspired to lower domestic migration rates. Demographic explanations such as the aging of the population or the rise in dual-earner households only feature marginally.

Instead, scholars attribute most of the fall directly to the broader decline in economic dynamism: As fewer firms open and close and fewer employment opportunities present themselves everywhere, fewer people of all ages and education levels move long distances. The share of people moving between states for job-related reasons has fallen even faster since 2000 than the share of movers in the population overall.<sup>21</sup>

Simply put, reduced churn among companies results in reduced churn among workers, fewer moves, and a less flexible and dynamic labor market.

In essentially every measurable respect, the storied dynamism of the U.S. economy is fading. Diminished dynamism carries with it a number of implications for regions, markets, and workers, and it goes a long way towards explaining the fundamental challenges facing the U.S. economy today.

19. U.S. Census Bureau Migration and Geographic Mobility Tables.

20. Molloy, et al., 2014; Molloy, et al., 2016.

21. Molloy, et al., 2016.

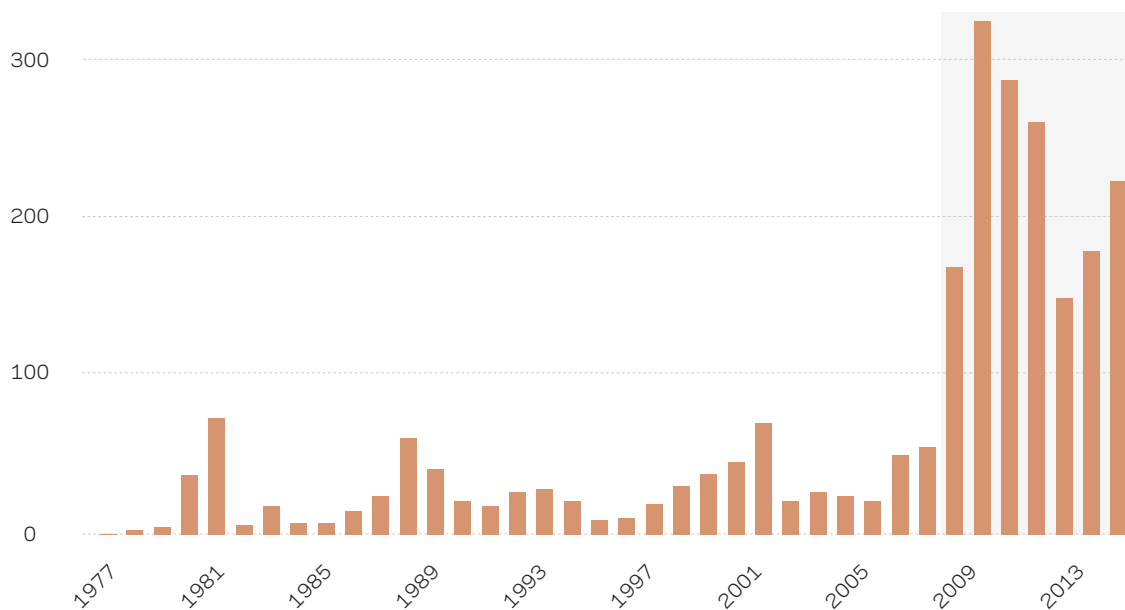
## III. Concentrated growth

### What declining dynamism means for regions

The U.S. has historically enjoyed a balanced geography of economic development, deriving its strength from a vast network of vibrant metropolitan areas and rural regions. However, the long-term decline in the startup rate and punctuated trauma of the Great Recession reshaped the map and left only a dwindling handful of

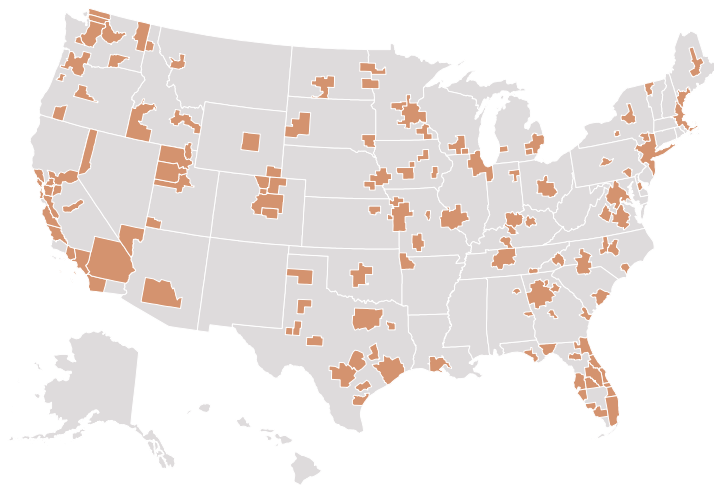
relatively resilient metro areas with an ever-increasing share of the nation's new companies. A clear majority of metro areas are now home to a receding base of firms—a truly striking departure from the nearly universal metropolitan expansion seen in the three decades prior to 2008.

#### 7. Number of metro areas with higher firm death rates than birth rates (Total number of metro areas is 366)

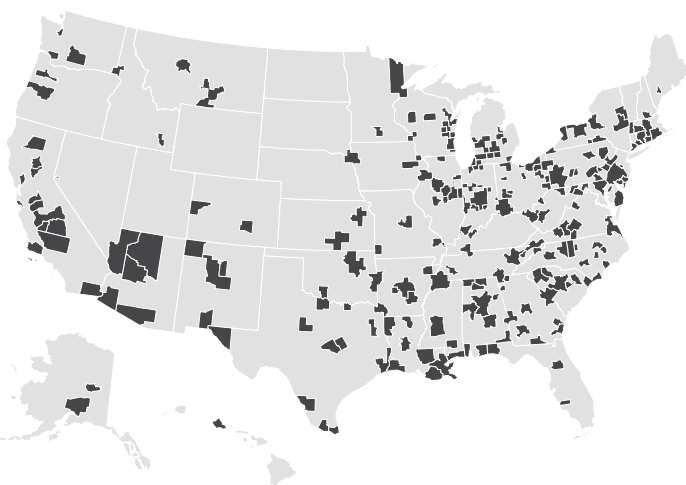


Source: Census BDS

## 8. Metro areas with increasing (left) and decreasing (right) numbers of firms in 2014



**142** metro areas saw a **rise** in firms in 2014



**224** metro areas saw a **decline** in firms in 2014

*Source: Census BDS*

### Nearly two-thirds of U.S. metro areas saw more firms close than open in 2014.

Until recently, the country's 366 metro areas were remarkably consistent in producing more than enough new companies to replace ones that closed each year. In fact, in the 30 years prior to 2008, at least 80 percent of metro areas saw the number of firms in their economies increase annually—even in the depths of recessions.

The Great Recession completely inverted that landscape: Only 11 percent of metro areas saw more firms open than close in 2009—a figure that would have been even smaller had the shale gas revolution not bolstered firm formation rates in the center of the country. Five years into the recovery, U.S. metro areas were nowhere close to returning to their previous norms; fewer than two out of five registered higher rates of firm openings than closures in 2014.

Figure 8 uncovers another important pattern that characterizes the recovery years. In 2014, the map of firm growth showed islands of dynamic local expansion often surrounded by a sea of neighbors in contraction. In the Southeast, metropolitan Atlanta, GA; Charleston, SC; Charlotte, NC; Nashville, TN; and Raleigh, NC, added firms in 2014, while nearly all of their smaller

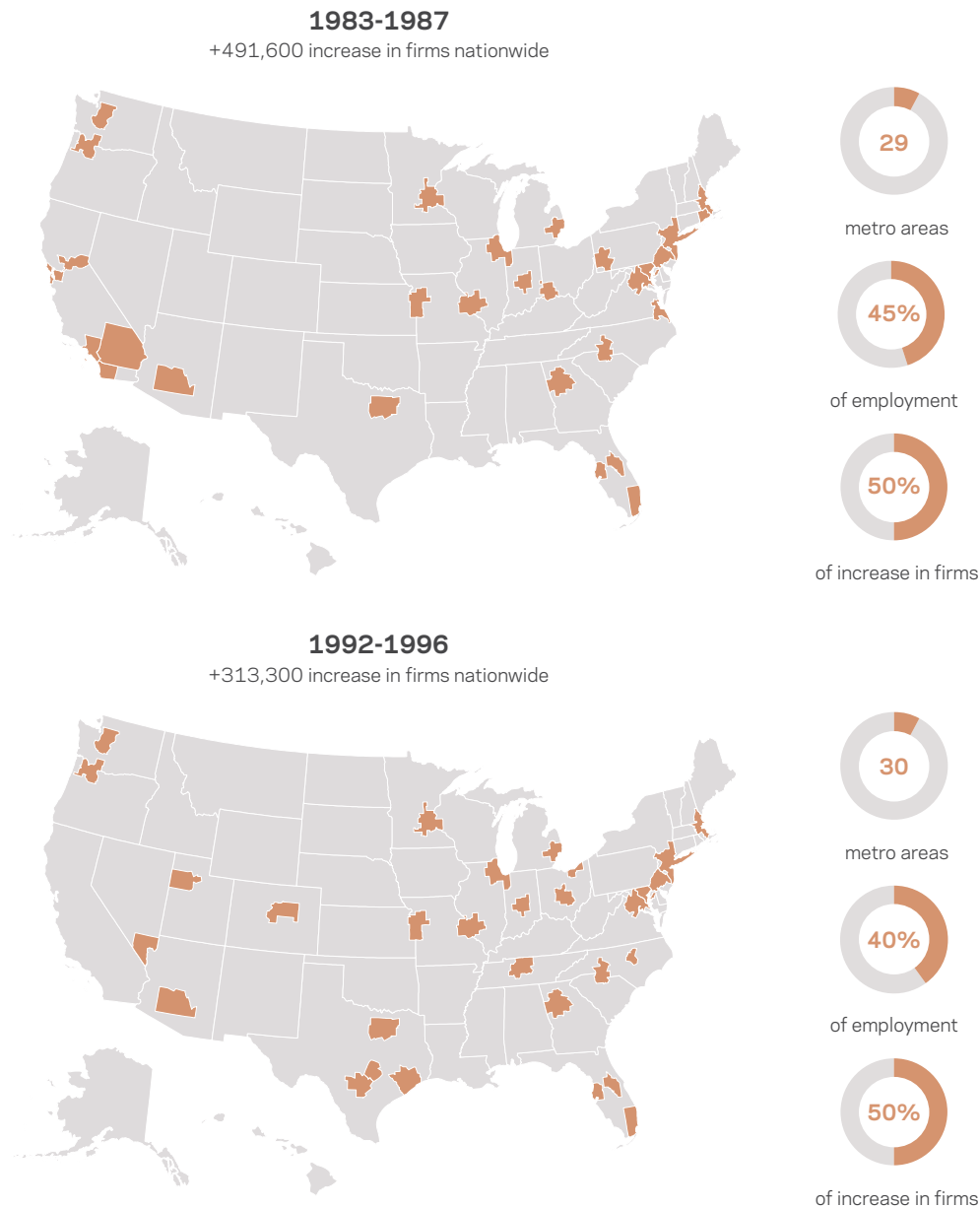
neighbors lost them. The same holds true for New York, NY, and Boston, MA, in the Northeast; for Richmond, VA, and Washington, DC, in the Mid-Atlantic; for Columbus in Ohio; Phoenix in Arizona; and so forth. In California, coastal metro areas nearly universally expanded while interior ones nearly universally contracted. The Deep South, for its part, was left almost entirely behind. Dynamism has fallen away faster in some metro areas than others. As a rule, though, bigger places have increased their relative gravity over the country's landscape of new business creation since the recession—even if their own startup rates have fallen over time, too.

### Five metro areas alone produced half of the national increase in businesses during the recovery.

As the pace of growth grinds down, the U.S. economy is increasingly reliant on a narrowing set of metropolitan economies to expand its base of companies. From 2010 to 2014, five metro areas alone produced the same net increase in firms as the rest of the country combined: New York, NY; Miami, FL; Los Angeles, CA; Houston, TX; and Dallas, TX. They accomplished this while containing only 17 percent of the country's jobs. By contrast, growth was far more balanced during the first five years of the



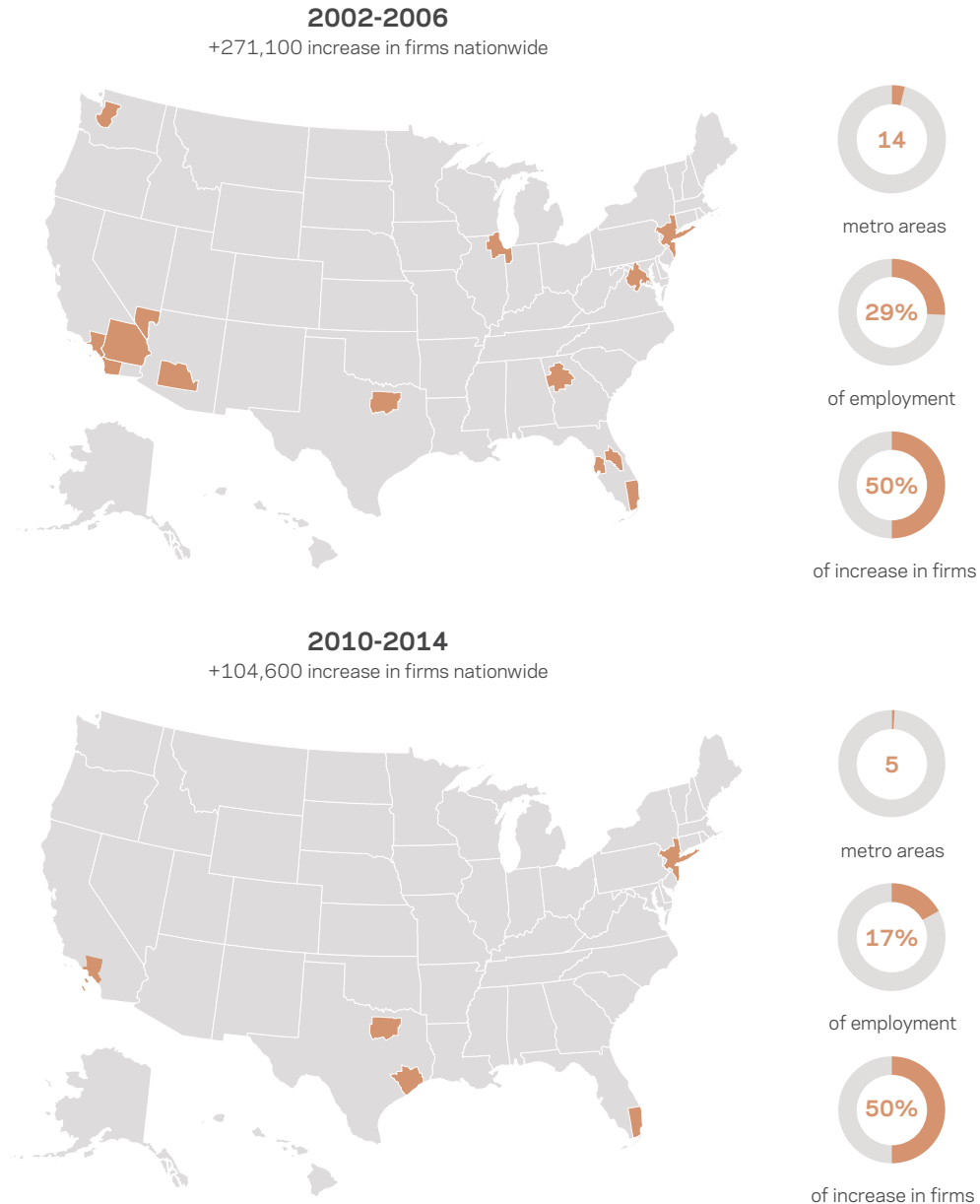
## 9. Metro areas powering the national increase in firms over four recent expansions



1980s recovery: 29 metro areas containing 45 percent of the economy's jobs powered half of the national increase in companies from 1983 to 1987.

Two related forces are at work here. The first is the slowing national startup rate. The other is the narrowing base of metro areas with positive growth in firms: More than half of the country's metro areas saw the number of firms in their economies fall between 2010 to 2014—unprecedented in

modern recoveries. In other words, the five metro areas noted above are remarkable for their resiliency in the midst of declining national dynamism more than for any rapid increase in local dynamism. For example, the number of firms in the New York metro area rose by roughly the same amount—between 16,500 and 17,000—over each of the three most recent national recoveries. Today's map reflects dynamism's retreat into an increasingly narrow base of locales.



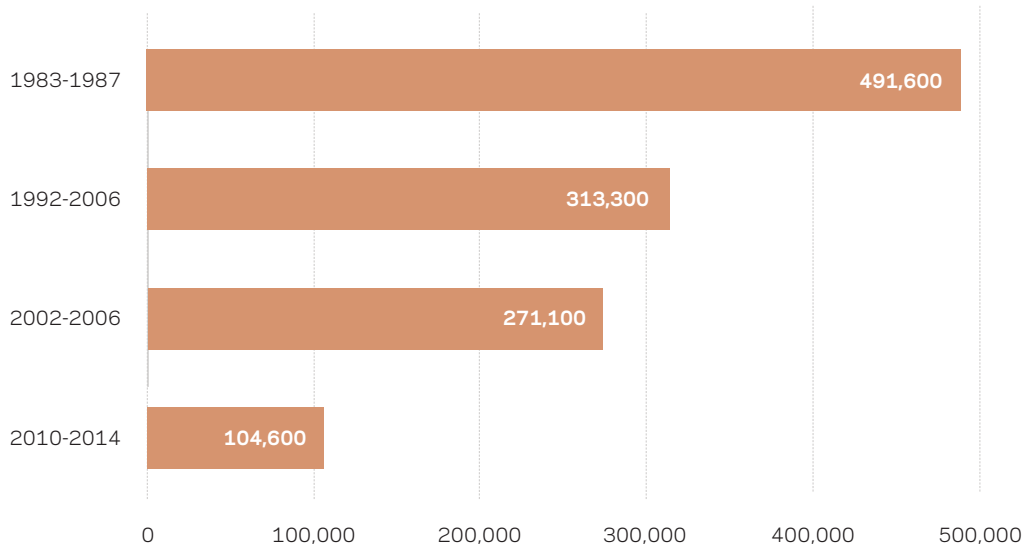
Source: Census BDS

Meanwhile, the rise in the number of firms in the economy grew increasingly anemic over each recovery period. The total number of firms in the United States increased by only 104,600 from 2010 to 2014. Less than a decade earlier, the United States added more than 270,000 firms during the 2002-2006 expansion. But neither period comes close to the nearly half million new firms produced in the five years following the 1980s recession (see Figure 10 on next page).

**Only one in seven metro areas matches or exceeds the national startup rate.**

The falling national startup rate has been accompanied by a contracting geography of metro dynamism. In the 1970s, more than one-third of metro areas met or exceeded the national startup rate. By the late 1990s, only one in five did. Come the 2010s, the number was only one in seven—even though the bar set by a diminished national rate was much lower.

## 10. Total increase in the number of firms nationwide



Source: Census BDS

The 56 metro areas that matched or exceeded the national startup rate in 2014 were concentrated almost entirely in the West and the South. Several Missouri metro areas also passed the bar but otherwise only one, New York, was located elsewhere.

### **New and fast-growing metro areas tend to register the highest rates of new firm formation.**

Innovation hubs such as Boston and the Bay Area may get the most attention as the country's leading startup hubs, but several other places actually surpass their rates of new firm formation thanks in large part to higher population growth rates. Population growth bolsters startup rates as market activity follows new residents. Accordingly, many fast-expanding metro areas in the Sun Belt posted the country's highest post-recession startup rates. Nevertheless, population growth explains only about half of the variation in startup rates across metro areas—by no means an exhaustive explanation for differences across the map.<sup>22</sup> Even high population growth metro areas now register lower rates of firm formation than they once did. Worker reallocation rates have fallen pervasively across all metro areas as well.

Several of the country's top producers of new firms combine high rates of population growth with thriving innovation ecosystems: Austin, TX; Denver, CO; and Provo, UT, fall into this category. In comparison, innovation powerhouses with slower population growth rates such as New York and San Francisco post slightly lower startup rates, but still fall within the top tier of metro areas nationwide. And while as a group small metro areas now struggle to keep pace with the national startup rate, several in Florida and other fast-growing regions performed quite strongly as outliers amongst their smaller peers.

### **Small metro areas in the Midwest register the lowest rates of new firm formation.**

The 20 metro areas with the lowest average rates of firm formation from 2010 to 2014 were relatively small former manufacturing economies concentrated around the Great Lakes. The startup rate languished below the firm death rate in every one of them over the recovery. Elevated deaths were not the problem, though: All 20 registered firm closure rates significantly lower than the national average. Instead, their post-industrial malaise lied squarely with low firm birth rates. Of course, these figures do not take into account the size or industries of the firms opening or closing each year.

22. Hathaway and Litan, 2014.

## 11. The 20 metro areas with the highest and lowest average startup rates over the recovery (2010-2014 averages)

The 20 metro areas with the highest average startup rate

Metro name	Average startup rate	Average firm death rate	Average annual startups	Average annual firm deaths
Las Vegas - Paradise, NV	11.8%	10.4%	3,200	2,810
Provo - Orem, UT	11.7%	9.1%	960	750
Miami - Fort Lauderdale - West Palm Beach, FL	11.4%	9.1%	13,900	11,110
Orlando - Kissimmee - Sanford, FL	10.7%	9.3%	4,190	3,630
Cape Coral - Fort Myers, FL	10.5%	9.0%	1,230	1,050
Austin - Round Rock - San Marcos, TX	10.4%	7.6%	3,220	2,340
McAllen - Edinburg- Mission, TX	9.8%	8.1%	820	680
St. George, UT	9.8%	8.2%	310	260
Naples - Marco Island, FL	9.7%	7.8%	770	620
Tampa - St. Petersburg - Clearwater, FL	9.6%	8.7%	4,810	4,340
Phoenix - Mesa - Scottsdale, AZ	9.5%	9.1%	5,530	5,290
Dallas - Fort Worth - Arlington, TX	9.4%	8.1%	9,240	7,880
North Port - Bradenton - Sarasota, FL	9.4%	8.3%	1,420	1,250
Houston - The Woodlands - Sugar Land, TX	9.4%	7.6%	8,300	6,760
Atlanta - Sandy Springs - Roswell, GA	9.3%	8.6%	8,220	7,640
Riverside - San Bernardino - Ontario, CA	9.4%	8.8%	4,300	4,080
Jacksonville, FL	9.2%	8.8%	2,180	2,080
Denver - Aurora - Lakewood, CO	9.1%	7.8%	4,770	4,080
San Diego - Carlsbad, CA	9.1%	8.2%	5,040	4,540
Los Angeles - Long Beach - Anaheim, CA	9.0%	8.0%	21,870	19,430
<b>United States</b>	<b>8.0%</b>	<b>7.8%</b>	<b>400,140</b>	<b>388,370</b>

The 20 metro areas with the lowest average startup rate

Metro name	Average startup rate	Average firm death rate	Average annual startups	Average annual firm deaths
Lima, OH	3.7%	5.0%	80	100
Johnstown, PA	3.7%	4.7%	100	120
Wheeling, WV-OH	3.8%	5.0%	100	130
Springfield, OH	4.0%	5.5%	80	100
Font du Lac, WI	4.1%	5.0%	80	100
Michigan City - La Porte, IN	4.1%	5.6%	80	110
Mansfield, OH	4.2%	5.6%	90	120
Danville, IL	4.2%	5.9%	50	70
Steubenville - Weirton, OH-WV	4.2%	6.1%	80	110
Bay City, MI	4.3%	5.2%	80	90
Cumberland, MD-WV	4.3%	5.4%	70	90
Erie, PA	4.3%	5.5%	200	260
Duluth, MN-WI	4.4%	5.4%	230	290
Decatur, IL	4.4%	5.3%	90	100
Elmira, NY	4.4%	5.1%	60	70
Altoona, PA	4.4%	4.6%	110	120
Sandusky, OH	4.4%	4.9%	70	70
Parkersburg - Marietta - Vienna, WV-OH	4.4%	5.6%	130	160
Muncie, IN	4.4%	5.3%	80	100
Kokomo, IN	4.4%	5.6%	70	90
<b>United States</b>	<b>8.0%</b>	<b>7.8%</b>	<b>400,140</b>	<b>388,370</b>

However, they do offer compelling evidence that the path to renewed economic growth starts with rekindling dynamism.

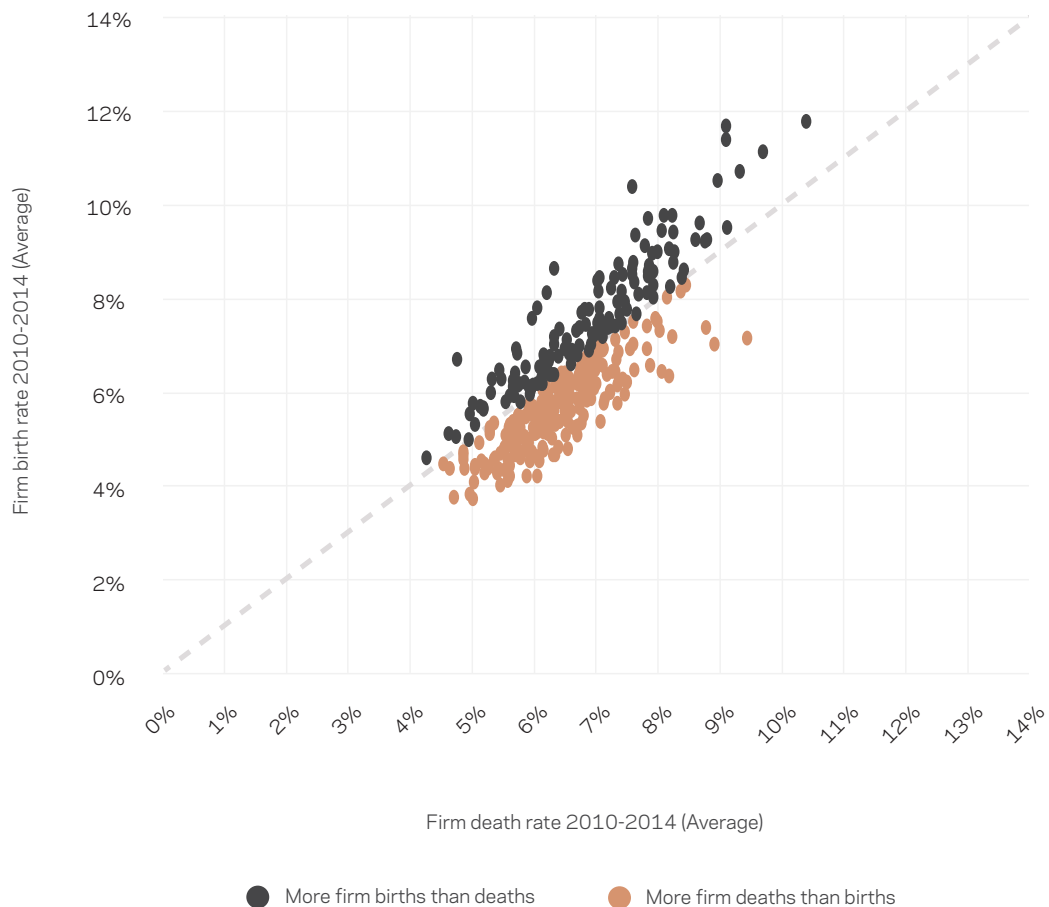
**The benefits of a “high churn” local economy are clear.**

In dynamic local economies, both sides of creative destruction are robustly present. Areas with high startup rates also tend to register high firm closure rates. For example, Las Vegas, NV, registered both the country’s highest startup rate and the highest death rate, leaving it the top churn metro area in the United States, followed by Provo, UT, and Miami, FL.<sup>23</sup> Relatedly, as the startup rate rises in a metro area, the gap between it and the closure rate tends to widen as well. Austin, TX, and Provo, UT, posted the

biggest gap between average firm birth and death rates of any metro area during the recovery. This differential leaves high churn places with rising numbers of firms on net, underscoring that the dual forces of creative destruction work symbiotically in healthy ecosystems.<sup>24</sup> At the other end of the spectrum, a slowdown in firm formation does not correspond to an equivalent slowdown in the firm closure rate.

In the end, the firm birth rate outpaced the firm death rate in all 20 of the metro areas with the highest rates of churn from 2010 to 2014 but in only one of the 20 with the lowest rates of churn. High dynamism metro areas tend to have expanding bases of companies; low dynamism metro areas suffer erosion.

## 12. Average metro area firm birth versus death rates (2010-2014)



Source: Census BDS

23. Churn is defined here as the firm birth rate plus the firm death rate.

24. The correlation between firm birth and death rates is 0.82 and the r-squared is 0.67.

### 13. The 20 metro areas with the largest declines in firms 2010-2014

Metro Area	Change in firms 2010-2014	Change in employment 2010-2014	Change in employment 2006-2014
Cleveland - Elyria- Mentor, OH	-712	65,600	-28,400
Milwaukee - Waukesha - West Allis, WI	-627	33,000	-16,400
Virginia Beach - Norfolk - Newport News, VA-NC	-455	12,600	-38,300
Youngstown - Warren - Boardman, OH-PA	-420	14,100	-1,200
Hartford - West Hartford - East Hartford, CT	-406	16,300	-12,300
Tucson, AZ	-405	-2,400	-34,300
Providence - New Bedford - Fall River, RI-MA	-383	25,100	-30,000
Cincinnati - Middletown, OH-KY-IN	-371	57,900	2,100
Memphis, TN-MS-AR	-369	16,900	-26,200
Charleston, WV	-369	-1,100	-6,300
Honolulu, HI	-361	25,200	6,300
Toledo, OH	-354	11,700	-22,600
Cape Girardeau - Jackson, MO-IL	-349	-300	-2,100
Knoxville, TN	-333	24,000	5,200
Duluth, MN-WI	-305	2,200	2,700
Mobile, AL	-302	-400	-9,100
Wichita, KS	-276	9,600	4,700
Dayton, OH	-270	13,400	-46,800
Louisville/Jefferson County, KY-IN	-266	45,900	16,800
Topeka, KS	-250	400	-1,500

Source: Census BDS

#### The steepest company losses were registered in eastern metro areas.

In absolute terms, the 20 metro areas that saw the largest declines in firm counts from 2010 to 2014 were spread throughout the eastern United States. Cleveland, OH; Milwaukee, WI; and Virginia Beach, VA posted the three largest drops. Change in firms is only one measure of economic health, of course. Only four of the 20 saw employment decline alongside firm counts. Cleveland, for example, enjoyed a 65,500-strong rise in jobs over the same period. Nevertheless, 2014 employment was still below 2006 levels in 14 out of the 20 metro areas on the list. Slow rates of company formation seem to correspond with a slower climb out of the hole left by the recession.



Learn more at [EIG.org/DCI](http://EIG.org/DCI)

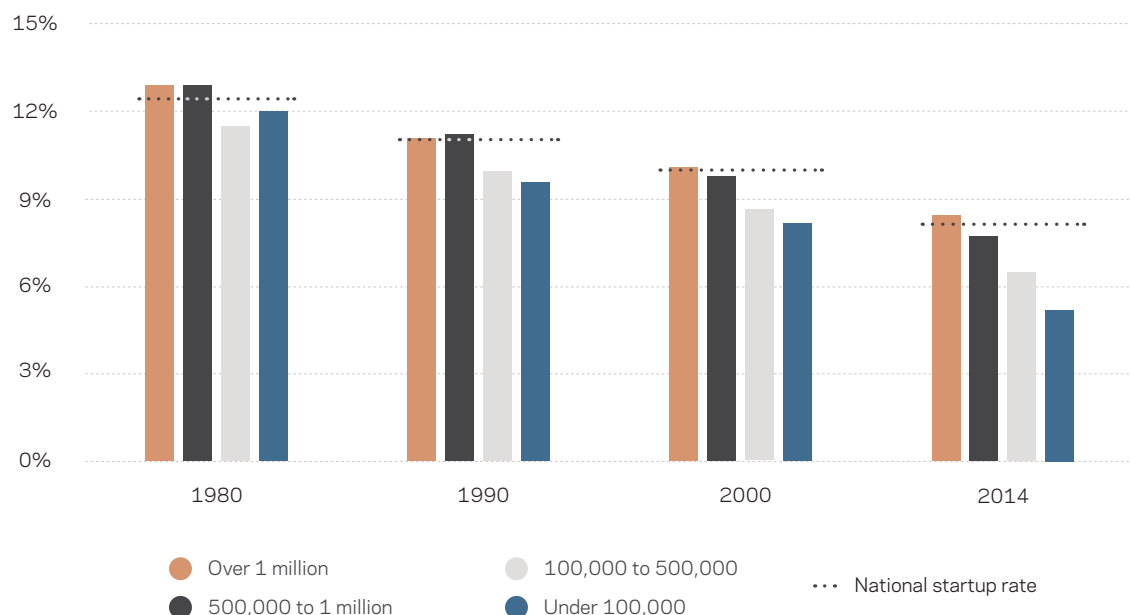
#### Declining dynamism is fueling regional inequality.

Dynamism's retreat into a dwindling number of hubs means that its local benefits now accrue to smaller and smaller slices of the population.<sup>25</sup> Indeed, already-disadvantaged places seem to be suffering most from the national slowdown. EIG's Distressed Communities Index found that the country's most economically distressed zip codes continued to experience a deep and enduring recession while the nation as a whole enjoyed years of recovery: From 2010 to 2013, the number of business establishments fell by 8.3 percent in the average distressed zip code and employment declined by 6.7 percent. In contrast, the average prosperous zip code experienced an 8.8 percent rise in the number of business establishments and a massive 17.4 percent expansion in employment.<sup>26</sup>

25. See Longman, 2015 and Feldman, 2016 for two good discussions.

26. EIG, 2016.

#### 14. Average metro area startup rates by size of employment base



Source: Census BDS

Perhaps even more shocking, the nine counties of California's Bay Area garnered nearly 10 percent of all payroll growth nationwide during the first five years of the recovery—with only 2.6 percent of the workforce.<sup>27</sup> Such disparities may become more typical in an era of diverging dynamism.

#### The dynamism gap between large and small metro areas is growing.

As groups, large metro areas consistently register higher startup rates than smaller ones, but the gap between size classes used to be minimal. In 1980, the difference in average startup rates between metro areas with more than one million workers and those with fewer than 100,000 workers was less than one percentage point. By 2014, the gap had widened to 2.6 percentage points. That year, only the largest metro areas posted higher average startup rates than the country as a whole. The least populated metro areas, on the other hand, had fallen the furthest behind. In fact, by 2014, the average rate of firm closure had overtaken the birth rate in small metro areas.

Of course, many over- and underperforming metro areas exist within each category. Among small metro areas, Bend, OR, posted a 9.6 percent startup rate in 2014, far outpacing the small metro average of 5.8 percent. Conversely, among large metro areas, Chicago, IL, trailed nearly a full percentage point behind the large metro average of 8.4 percent, and Philadelphia, PA, even further at 7.0 percent. These ranges notwithstanding, the average startup rates reveal important trends in the diverging fates of large and small metro areas in an era of retreating dynamism.

Outside of metro areas, the state of firm creation is especially bleak. In the late 1970s, just over 20 percent of the country's new businesses were launched outside of metropolitan areas, with over 100,000 new companies sprouting up across the rural landscape each year. By the 2010s, only 12 percent of the country's new companies were created in rural areas. Numbering 49,000 in 2014, new firms in rural areas were too few in number to offset the 57,000 rural enterprises that closed that year. The non-metropolitan startup rate of 6.1 percent remains far below the national rate of 8.0 percent.

27. EIG analysis of U.S. Census Bureau County Business Patterns data. Payroll includes all forms of compensation including wages, bonuses, sick leave, and

pension contributions. The nine counties are: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma.



## IV. The golden age of incumbents

### What declining dynamism means for markets

The collapse and new firm formation has coincided with a transformation of the country's corporate and industrial landscape.

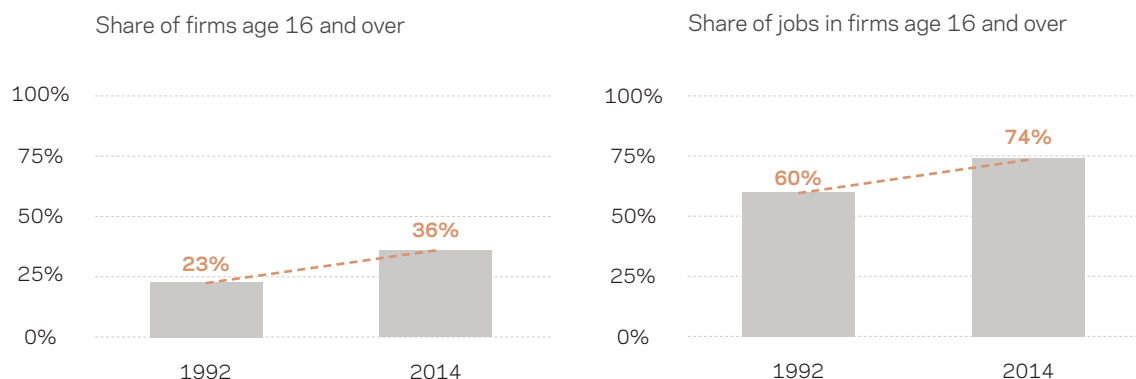
**Nearly three-quarters of all workers are now employed by a company at least 16 years old.**

American business is graying rapidly.<sup>28</sup> The share of all firms in the economy that are at least 16 years old rose by half between 1992 and 2014 so that today more than one-third of all firms in the economy are over that age.

The share of the workforce employed in these firms increased from 60 percent to nearly three-quarters over the same period.

The trend towards greater incumbency is nearly entirely explained by the steady drying up of the country's pipeline of new businesses.<sup>29</sup> Incumbent companies enjoy many advantages—established brands, proven management practices, and honed competitive advantages—but they have not seen a demonstrable increase in longevity or survival rates.<sup>30</sup>

#### 15. Share of firms 16 years and older and share of employment in such firms



Source: Census BDS

28. Hathaway and Litan, 2014.

29. Pugsley and Sahin, 2014.

30. EIG analysis of BDS data. Employment in older companies has become less volatile, however.

Rather, years of depressed firm birth rates have altered and aged the demographic profile of U.S. enterprise, just as falling birth rates among people leads to an aging of the population pyramid over time. This matters because older firms are less likely than their younger counterparts to be radically innovative or fast-growing, implying that an older economy will likely exhibit slower productivity and job growth.<sup>31</sup>

Large firms are on the march as well. Firms with 1,000 or more employees represent a mere 0.2 percent of all companies in the economy but now employ 46 percent of all workers, up 6 percentage points since 1987.

The growing dominance of large firms may be a natural consequence of rising returns to scale across the economy thanks to technology and globalization—forces that increase the benefits of being big. Economies of scale can pose significant barriers to entry for new firms, however, which may have difficulty matching the cost-minimizing advantages of scale even with the most liquid financial markets backing them.

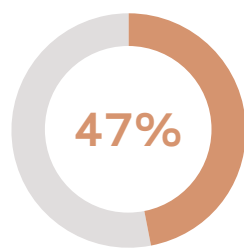
Size and scale may boost efficiency, but they can also create an uneven playing field that suppresses dynamism.

### **Most industries have become more concentrated since 1997.**

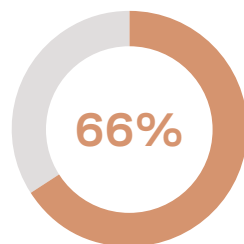
Given the crucial function that entrepreneurship plays in disrupting markets and established ways of doing business, a less dynamic economy with fewer companies being created will ultimately be one with weaker competitive pressures. Data on market concentration, which serves as a proxy for the degree of competition within an industry, shows that reduced dynamism and steady increases in concentration have indeed gone hand in hand.<sup>32</sup>

Between 1997 and 2012, two-thirds of the country's industries saw an increase in market concentration.<sup>33</sup> This widespread consolidation meant that, by 2012, the four largest firms captured at least 25 percent of the market in nearly half of all industries in the United States.

## **16. Extent of concentration across industries**



47% of all industries were concentrated in 2012, with the four largest firms claiming at least 25% of the market.



66% of all industries saw an increase in concentration between 1997 and 2012.

*Source: Economic Census*

31. For more on the relationship between new firm starts and productivity growth see Syverson, 2011; Foster, et al., 2001; Haltiwanger, 2012.

32. CEA, 2016.

33. EIG analysis of Economic Census data, modeled after The Economist but analyzing industries at the four-digit

NAICS code level, e.g. NAICS 3361 "Motor Vehicle Manufacturing," of which there are 255. For six predominately IT industries, the analysis is conducted for 2002 to 2012 due to data availability. Concentration is a function of the share of an industry's revenues garnered by the largest firms within it.

Even more striking, in 14 percent of all industries, the four largest firms claimed more than 50 percent of the market. That figure represents a near-doubling since 1997, when only 7 percent of industries registered such high levels of concentration. Concentrated industries also register a higher than average ratio of revenue to workforce: In 2012, they employed only 30 percent of the U.S. workforce but generated 40 percent of the economy's revenues—a share that cannot only be explained by their capital intensity.

Is rising concentration inherently bad for markets? Not necessarily.

Markets could be settling into new equilibriums in a technology-powered era of global commerce, for example. Some industries are naturally concentrated, and others—especially manufacturing industries threatened by imports—may be concentrating in order to remain competitive. Outside of the education and healthcare sectors, price increases—tell-tale signs of abuses of market power—have yet to register in the public debate.<sup>34</sup> However, there is ample reason for concern. Unusually high and persistent profits signal the existence of economic rents, which are unhealthy and unfair extractions from consumers.

## 17. Most concentrated and fastest concentrating industries in the United States

The 20 most concentrated industries in the U.S. economy (2012)				The 20 industries with the most rapid rise in concentration (1997-2012)			
Industry	Top four firm share of revenue	Employees	Revenue (bil)	Industry	Increase in top four firm share of revenue	Employees	Revenue (bil)
Couriers & express delivery services	92.5%	497,700	\$65.8	Scheduled air transportation	37.2%	408,200	\$163.9
Tobacco manufacturing	90.2%	14,000	\$31.8	Agencies, brokerages, & insurance	33.9%	856,300	\$263.8
Wireless telecommunications carriers	89.1%	293,100	\$225.4	Building material & supplies dealers	33.4%	997,600	\$240.4
Securities & commodity exchanges	84.8%	6,400	\$9.7	Wireless telecommunications carriers	27.4%	293,100	\$225.4
Other general merchandise stores	82.7%	1,725,000	\$463.3	Book stores & news dealers	26.6%	97,900	\$12.8
Department stores	73.2%	1,047,600	\$177.3	Home furnishings stores	25.0%	233,500	\$40.3
Motor vehicle manufacturing	72.5%	173,200	\$59.9	Nonscheduled air transportation	24.3%	36,400	\$17.4
Book stores & news dealers	66.1%	97,900	\$12.8	Fabric mills	22.1%	55,300	\$6.9
General medical & surgical hospitals	64.0%	505,500	\$88.6	Nondepository credit intermediation	21.1%	526,700	\$536.0
Amusement parks & arcades	63.7%	155,000	\$14.3	Health & personal care stores	20.9%	1,002,200	\$270.5
Scheduled air transportation	62.7%	408,200	\$163.9	Scenic & sightseeing transportation	20.4%	2,600	\$0.5
Household appliance manufacturing	62.4%	56,700	\$9.3	Automotive equipment rental & leasing	19.9%	153,900	\$48.4
Psychiatric & substance abuse hsptls.	62.0%	62,000	\$5.0	Performing arts & events promoters	19.6%	98,300	\$14.0
Health & personal care stores	60.0%	1,002,200	\$270.5	Footwear manufacturing	19.1%	13,600	\$1.0
Ship & boat building	59.2%	128,400	\$20.0	Psychiatric & substance abuse hsptls.	18.5%	62,000	\$5.0
Automotive equipment rental & leasing	58.9%	153,900	\$48.4	Apparel knitting mills	18.3%	14,100	\$0.9
Cable & other subsc. programming	58.9%	55,600	\$63.6	Apparel accessories & other mfg.	18.2%	12,400	\$0.6
Railroad rolling stock manufacturing	58.2%	24,100	\$5.7	Urban transit systems	17.9%	47,800	\$3.7
Aerospace product & parts mfg	57.7%	495,000	\$111.3	Automotive parts & tire stores	17.6%	485,900	\$81.7
Other pipeline transportation	56.7%	6,500	\$6.7	Cutlery & handtool manufacturing	17.3%	39,300	\$6.3

Source: BEA

34. Recent research from Blonigen and Pierce, 2016, suggests that markups are actually quite high, however.

For more on dynamics within the education and healthcare sectors, see Rothwell, 2016.

Accumulating evidence suggests that rising concentration is changing the balance of power in favor of employers in the labor market too.<sup>35</sup> And, perhaps most importantly, concentrated markets in which incumbents exercise undue power are harder for new companies to disrupt, reinforcing the downward trend in dynamism.<sup>36</sup>

### Corporate profits have risen to unprecedented heights.

Corporate profits as a share of GDP have risen from an average of 5.5 percent in the early 1990s to 9.4 percent since 2010. Prior to that, profits remained relatively stable fluctuating around 6 percent of GDP going all the way back to the late 1940s.

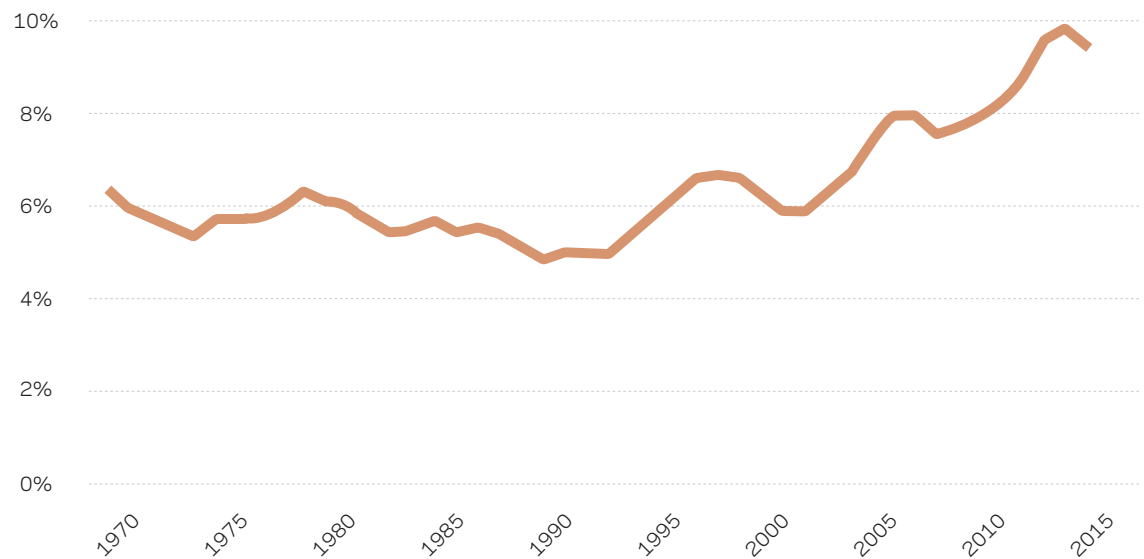
Profits under normal circumstances are not only good for the economy but essential. Still, the persistence of excess profits within a relatively small number of firms signals a potential danger.

### A less dynamic economy with fewer new companies will ultimately be one with weaker competitive pressures.

There is extremely low turnover among the ranks of highly profitable companies.<sup>37</sup> What should be temporary rewards in a competitive economy now resemble perpetual rewards to incumbency.<sup>38</sup> High and persistent profits also give their owners sizable war chests for fighting off, undercutting, or purchasing rivals—including the most promising new ones—outright.

In general, as dynamism dissipates the U.S. economy appears to be bifurcating into two separate tiers divided by performance, productivity, and pay.<sup>39</sup> Each remains stable without the disruptive force of entrepreneurial dynamism intensifying the competitive pressures facing either.

## 18. Corporate profits as a share of GDP (5-year moving average)



Source: BEA

35. CEA, 2016. See section V for deeper discussion.

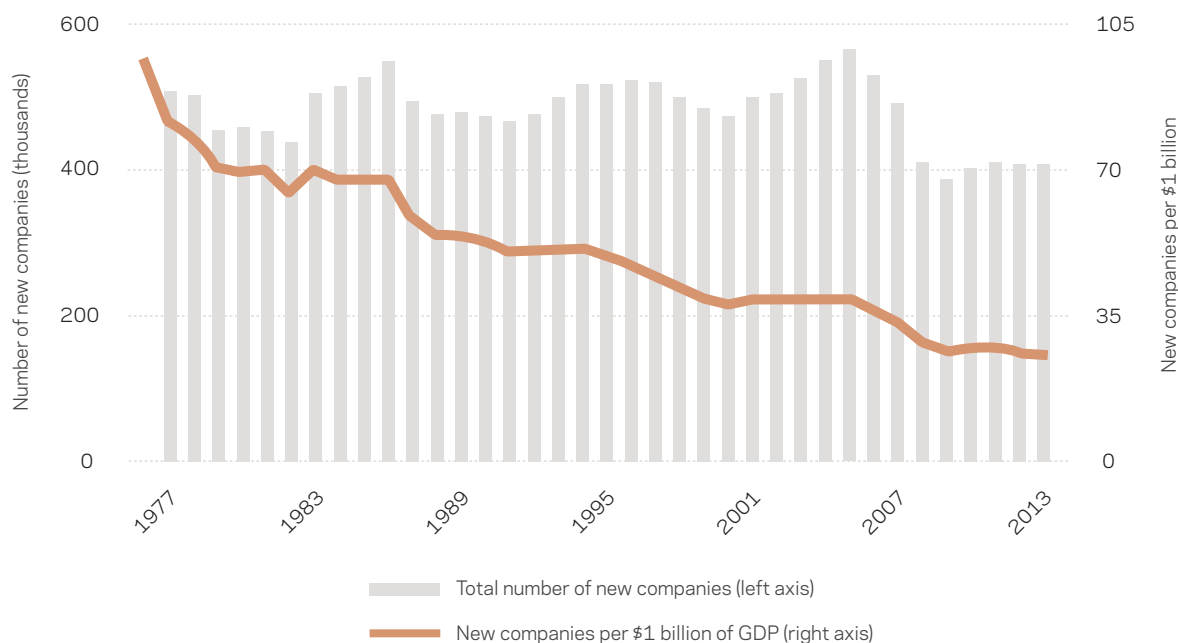
36. Hathaway and Litan, 2014 and 2016, find that the degree of business consolidation and the startup rate at the metro area level are significantly negatively related.

37. Furman and Orszag, 2015; Bennett and Gartenberg, 2016; Andrews, et al., 2015.

38. Bessen, 2016 finds that the rapid post-2000 rise in profits stems more from political and regulatory factors (signaling rent-seeking) than returns to intangibles (such as intellectual property).

39. Decker, et al., 2016; Baily and Montalbano, 2016; Autor, et al., 2017.

## 19. Number of new companies per \$1 billion of real GDP



Source: Census BDS

The firms minting record profits, for example, have not yet channeled them into any commensurate investments in the future.<sup>40</sup> On the one hand, this may reflect the expectation of slow growth in the years ahead.<sup>41</sup> On the other hand, it may be a sign that firms expect the competitive environment to remain mild and therefore see little need to upgrade their equipment and facilities in order to become more productive.

At any rate, persistently high profits combined with depressed investment levels are features consistent with declining dynamism and a malfunction of the competitive mechanism essential to a healthy market economy. The fruits of economic growth that should be returned to workers and consumers have instead become rents enjoyed by incumbents.<sup>42</sup>

### The U.S. economy grows less innovation-intensive each year.

New firms are a key delivery method for bringing innovations to market, and they innovate in a qualitatively different manner

from incumbents.<sup>43</sup> Their fading signals a fading of the economy's innovation intensity.

One measure: The increase in patenting in the information technology (IT) and health sectors masks a steep decline in the innovation intensity of the rest of the economy. The United States today only generates two non-health and non-IT patents for every \$1 billion in GDP; in the 1980s the figure was over four.<sup>44</sup>

**The fruits of economic growth that should be returned to workers and consumers have instead become rents enjoyed by the incumbents.**

Another measure of the waning innovation intensity of the economy—and one that captures new process and business model innovations across all sectors—is the waning

40. CEA, 2017 and EIG analysis of BEA and Annual Capital Expenditure Survey data.

41. Policy and regulatory uncertainty may play a role too. See Baker, et al., forthcoming.

42. Lettieri Senate Testimony, 2016.

43. Acemoglu, et al., 2013.

44. EIG analysis of USPTO data.

entrepreneurial intensity of the economy itself. In the 1970s, the United States generated over 95 new firms per billion dollars of GDP. Since the Great Recession the figure has hovered around 25. This matters because new companies are disproportionately likely to bring radical new product and process innovations to market that disrupt the status quo.<sup>45</sup> As new entrants, they have the ability to pursue new ideas and seize upon new knowledge in ways that older, more risk-averse firms avoid.<sup>46</sup>

What is more, the ratio of new firms to GDP should actually have increased with the transition into services.<sup>47</sup> Instead, the U.S. economy is moving in the opposite direction—just when it needs dynamism and innovation to fuel growth the most.

In sum, markets appear less dynamic and innovations scarcer in an economy generating fewer new companies every year. Individual Americans are just beginning to feel the consequences of this transformation via its concrete impacts on the labor market.

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**New companies are disproportionately likely to bring radical new product and process innovations to market that disrupt the status quo.**

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45. Huergo and Jaumandreu, 2004; Litan and Schramm, 2012; Acemoglu and Cao, 2015. See also Acemoglu, et al., 2013, for an analysis of the differences in the innovation

and R&D activities of new firms versus incumbents.

46. Audretsch, et al., 2006.

47. Decker, et al., 2014.

## V. Missing jobs

### What declining dynamism means for workers

Reduced dynamism impacts individuals most tangibly through the labor market. A less dynamic economy is one likely to feature fewer jobs, lower labor force participation, slack wage growth, and rising inequality—exactly what we see today.

**The deficit in new companies was responsible for nearly one million missing jobs in 2014 alone.**

On its face, job growth stands out as a relative bright spot in the wake of the Great Recession. Seventy-five straight months of hiring produced approximately 15.6 million new jobs over the recovery. But by historical standards the pace of job growth has disappointed.

The jobs recovery would have been significantly stronger over the past several years had the country's startup rate been higher. On average, each new business creates six new jobs in its first year.<sup>48</sup> The U.S. economy launched 154,000 fewer companies in 2014 than it did in 2006—despite being 9.4 percent larger in terms of real GDP.

That translates into 924,000 missing jobs in new companies in 2014 alone—setting aside the question whether established companies stepped in to fill any of the void. The cumulative jobs deficit from firms that were never born over the past eight years is even larger: 3.4 million jobs in 2014 by our conservative estimate.<sup>49</sup>

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**The jobs recovery would have been significantly stronger over the past several years had the country's startup rate been higher.**

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**New firms drive net job creation.**

The labor market impact of new companies becomes especially clear when one looks at net job creation. By definition, every job generated by a new company contributes to net job creation. By contrast, established companies shed more workers than they hire in most years (14 of the past 23 for which data is available, as shown in Figure 22).

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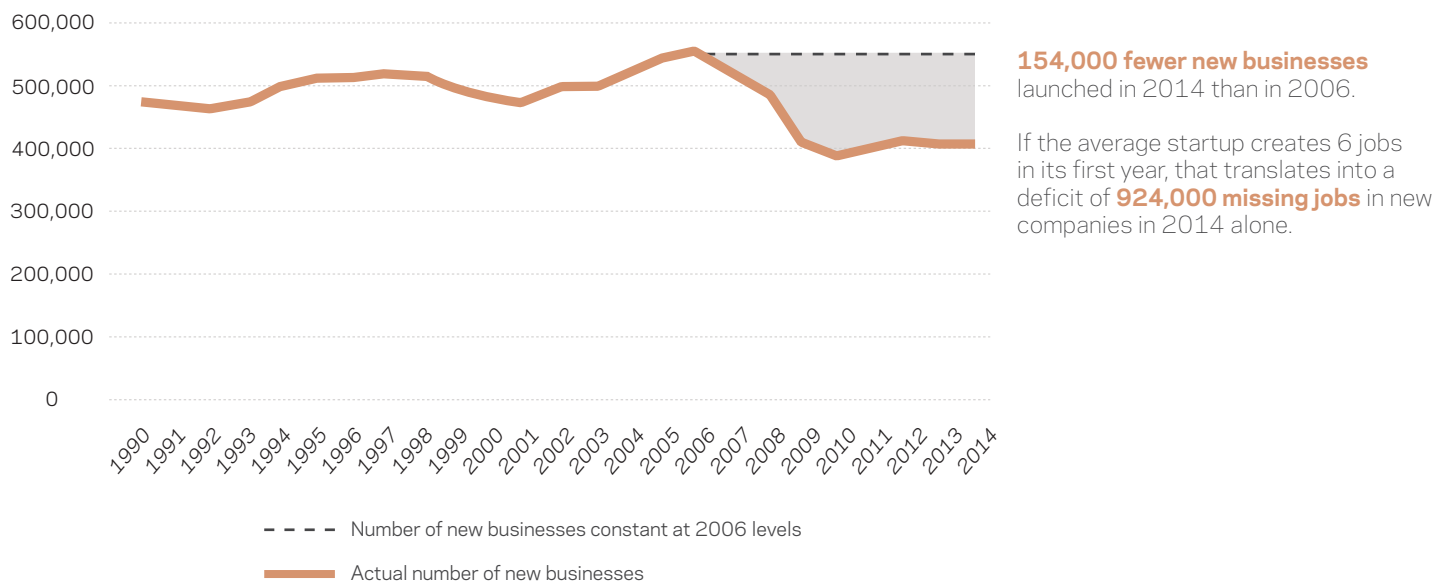
48. EIG analysis of BDS data.

49. By EIG's broad calculation for 2014 holding the number of new and young firms and employee per firm ratios constant at 2006 levels. Pugsley and Sahin, 2014,

use a more sophisticated methodology to estimate that 14 million jobs were missing in 2012 due to the cumulative impact of depressed rates of new firm formation going back to 1997.



## 20. Total number of new businesses in the United States



Source: Census BDS; EIG calculations

Even in years when old firms do expand their payrolls, such as the past four years on record, their contribution to net job growth is minimal compared to new firms.

Thus, the quantity of new businesses in any given year often determines just how many jobs the economy adds—or doesn't. Meanwhile, new firms' share of gross job creation (before any jobs losses are netted out) fell along with the nation's startup rate, dropping from 20 percent in the 1980s to between 14 percent and 15 percent in the 2010s.<sup>50</sup>

Attempting to boost the survival rates of existing firms can help bolster employment levels at the margins, as can attempts to induce further hiring among older firms, but existing firms simply cannot match the scale of impact on net job growth produced by new firms.

However, in a new development, the economy has become more reliant on old firms to generate job growth since the recession.

Their increased contributions are not due to expanded hiring, however, but rather to fewer layoffs than usual.<sup>51</sup> Their new-found stability combined with young firms' rising volatility raises the question whether older incumbents may be crowding out new upstarts.

### Declining dynamism has likely exacerbated the fall in labor force participation.

The labor force participation rate has declined steadily since 2000, long before the onset of the Great Recession. By the end of 2016, the labor force was 11.8 million workers smaller than it would have been had participation rates held steady at 2000 levels.

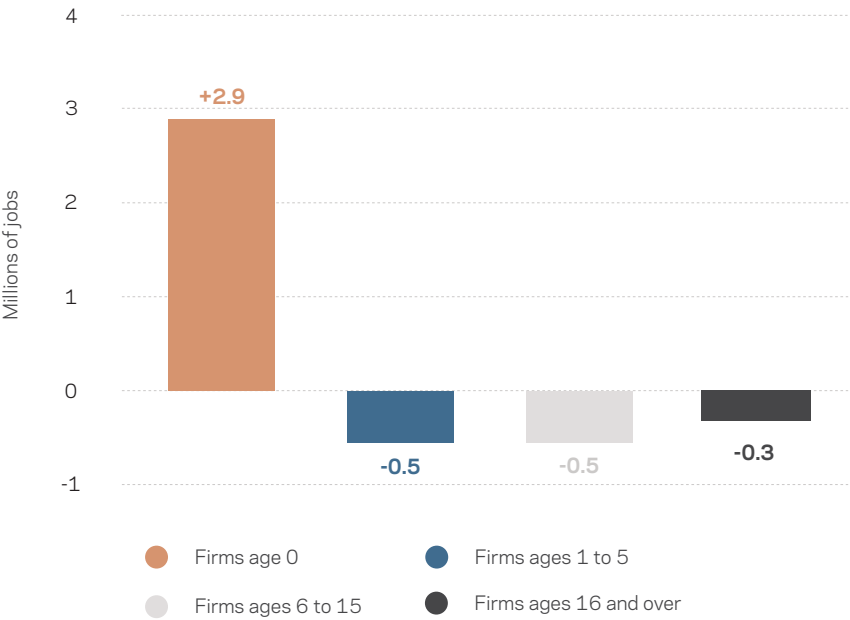
A significant portion of the decline—economists estimate roughly half—can be attributed to demographic changes: Baby Boomers reaching retirement and young people staying in school longer.<sup>52</sup> But economic considerations—whether individuals can find a suitable position at a salary they are willing to take, for example—must explain the rest of the decline.

50. Decker, et al., 2014. The total change in employment in any given year (net job creation) is the sum of all jobs created in the economy (gross job creation) minus all jobs destroyed in the economy (gross job losses). Here we analyze the positive contributions (gross job creation) of firms irrespective of the jobs they shed, too.

51. EIG's analysis of BDS data on reallocation rates across firms by age group finds that, over the past decade, older firms have seen a large fall in volatility and younger firms a large rise.

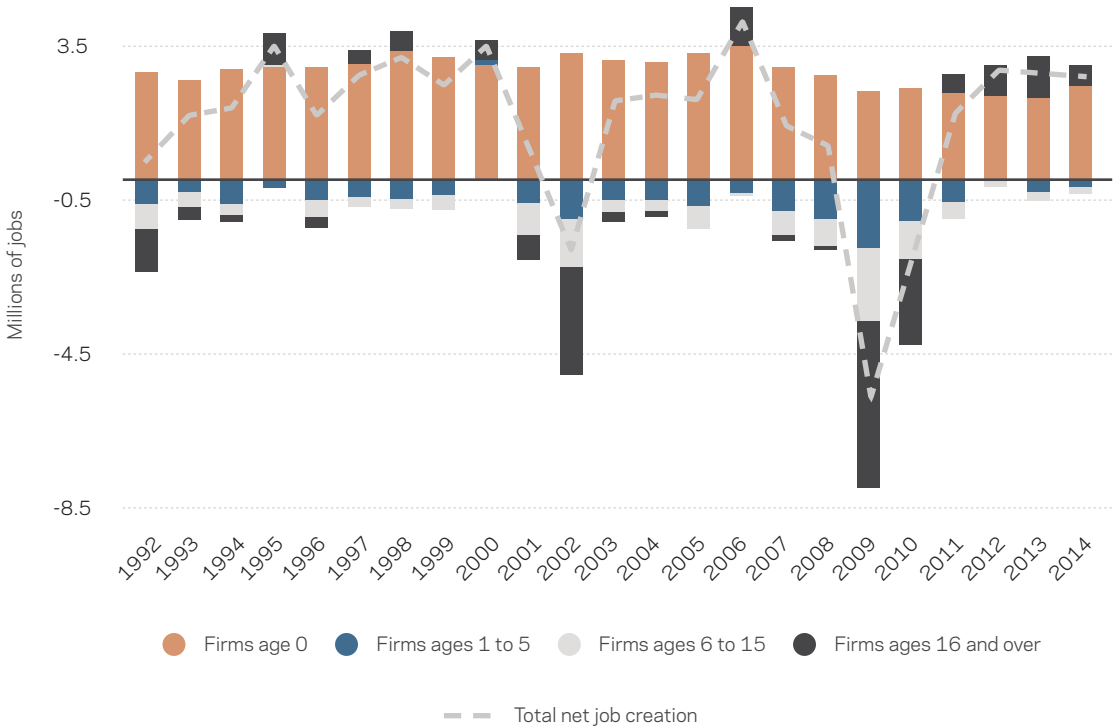
52. CEA, 2014; Krueger, 2016; Van Zandweghe, 2012.

21. Average net annual job creation by firm size (1992-2014)



Source: Census BDS

22. Net annual job creation by firm age



Source: Census BDS

In fact, the participation rate for prime age workers (25 to 54 years old) fell by 3.3 percentage points between 1998, its peak, and 2015, its trough. A labor market with weak demand for workers and few good new job opportunities is unlikely to keep marginal individuals attached to it, let alone draw in those outside.

New firms play an underappreciated role in keeping the labor market healthy by finding new and productive ways to employ workers displaced by globalization, automation, or the natural course of competition. Indeed, a critical function of entrepreneurs in the economy is to find novel ways to put underutilized resources—including people—back to work.

With entrepreneurs and new firms fading and the economy's other adjustment mechanisms such as migration failing, idled workers are piling up. Recent research from the IMF confirms that labor force participation has become an increasingly prominent shock absorber for places negatively impacted by economic change—meaning that more people now simply leave the labor force altogether in

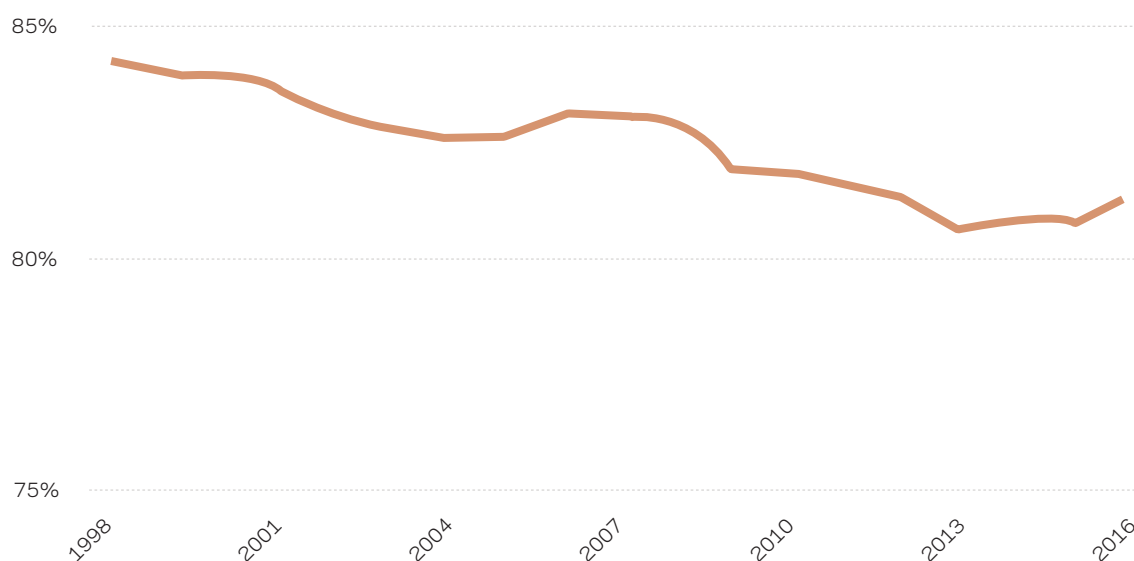
response to hard times.<sup>53</sup> EIG's own research finds that low levels of labor force participation and community economic distress often go hand in hand.<sup>54</sup> Both the quantity and the quality of jobs produced over the most recent recovery have disappointed; missing entrepreneurs go a long way towards explaining why.

### **Declining dynamism has coincided with depressed wages.**

Wage growth rates have declined over the last two decades alongside the broader decline in dynamism, falling rapidly during recessions and then failing to fully recover.

One way to isolate the demand effect on wages is to examine the gap in median wage growth between job switchers and job stayers. In a market with many employers competing intensely for workers, job switchers should enjoy a wage premium—one employer must entice the switcher from another. From 1997 to 2000, a period of robust economic growth, job switchers enjoyed 1.2 percentage point higher wage growth than peers who remained with the same employer.<sup>55</sup>

## **23. Labor force participation rate for prime age adults (25-54 years old)**



Source: BLS

53. Dao, et al., 2014.

54. EIG's Distressed Communities Index, 2016; Berube, 2016.

55. Average based on the monthly numbers reported

in the Federal Reserve Bank of Atlanta's Median Wage Tracker, which is derived from Current Population Survey responses.

By the 2014 to 2016 period, that gap had narrowed to 0.6 percentage points, and wage growth for both switchers and stayers had slowed. This suggests that job switchers no longer enjoy the upper hand they once did. Other evidence supports the same conclusion: Workers today receive fewer outside offers for their labor than in the past.<sup>56</sup>

The shrinking number of firms and growing weight of incumbents in the economy have an increasing number of economists concerned about labor market monopsony: A condition where sellers of labor (workers) confront too few buyers (employers) who, with their outsized market power, are able to set the price of labor (wages) to their own liking.<sup>57</sup> By competing for workers and breaking up any collusion among established employers, new companies help ensure that the labor market remains a seller's market.

### **Rising income inequality may be partially related to dynamism's retreat.**

Numerous factors contribute to widening income inequality, and reduced dynamism appears to be one of them.

The trends in income inequality in the United States are well-known—though their implications are still the subject of significant debate. Regardless of how one measures it—the GINI coefficient, the share of income garnered by the top “x” percent of households— income inequality has risen since the 1970s.

A handful of recent studies establish that rising inequality is being fueled in significant part by income differences across firms within the same industry rather than within firms (e.g. the gap between the CEO and his or her secretary) or across industries (e.g. between finance and manufacturing).<sup>58</sup>

Workers employed in elite incumbent firms that have pulled away from their peers in terms of productivity and profitability, such as those discussed in Section IV, now enjoy

outsized rewards relative to their peers at other firms.<sup>59</sup> Reduced dynamism may be creating an insider-outsider economy in which individuals employed in the core functions of dominant firms (often located in prime geographic enclaves) prosper while individuals employed elsewhere struggle. Without disruptive churn, greater competition, and a pervasive influx of new enterprise, it will be difficult to break this new status quo.

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### **Entrepreneurship is contagious.**

**As fewer people are exposed to it, fewer will consider it a career option.**

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### **Declining dynamism is self-reinforcing.**

As dynamism falls, a negative feedback loop sets in. A vibrant labor market acts as a safety net for would-be entrepreneurs, too. By ensuring that good jobs will still be available if the venture fails, it lowers the risk of starting out on one's own.<sup>60</sup> Similarly, the compensation arms race among elite firms may raise the opportunity cost of entrepreneurship for people who would otherwise be predisposed to start their own company. Furthermore, entrepreneurship is contagious. As fewer people are exposed to it—the number of new firms per 1,000 individuals in the labor force fell from 5.6 to 2.6 over the past three and a half decades— fewer will consider it a career option. Already the Millennial generation is shaping up to be the least entrepreneurial on record.<sup>61</sup>



Learn more at [EIG.org/Millennial](http://EIG.org/Millennial)

56. Molloy, et al., 2014.

57. Abraham, 2015; Rothstein, 2015; CEA, 2016.

58. Furman and Orszag, 2015; Barth, et al., 2014; Song, et al., 2015.

59. Furman and Orszag, 2015. Along the same lines, Barkai, 2016, finds that the shrinking share of national income going to workers is being offset not by a rising

share going to capital owners in general, but rather by markups and exceptionally high profits specifically. Inequality is being fueled by the gap between people with a stake in those profits and people without.

60. Konczal, 2016.

61. Wilmoth, 2016 and Reedy and Morelix, 2017.

## VI. How did we get here?

What forces are sapping the economy of its dynamism? We truly do not yet understand the causes behind either the long-term structural or the short-term cyclical trends. The only real certainty is that we do not have enough resources dedicated to furthering our understanding of these fundamental questions about how the economy is changing.

We are confident that a multitude of interrelated forces have combined to erode the economy's dynamism. This report makes no pretensions about providing an exhaustive inventory but rather aims to offer a preliminary list that will generate further consideration and debate.

Some factors reflect megatrends that remain largely outside of the immediate control either policymakers or the private sector. Some are not problems per se, but rather new realities that must be understood and adapted to. But others are the product of policy choices that can be reversed or modified. While diminishing dynamism itself was certainly not the aim of any previous policy agenda, understanding how past choices compounded

to bring us to this point will help bring some deliberateness to the task of restoring it.

- **Demographics** clearly impact dynamism. Population growth is a major driver of new firm formation both nationally and regionally, and population growth rates have been falling since the early 1990s.<sup>62</sup>

Absent corrective action, the United States appears to be following other advanced countries down a path of demographic stagnation. In 2016, the country's population grew by 0.7 percent—the slowest annual rate since at least the Great Depression.<sup>63</sup> Fertility rates have been falling for at least a decade.<sup>64</sup> The median age in the United States climbed to 37.9 in 2016; up nearly 10 years since 1970.<sup>65</sup> Rising dependency ratios will place a further drag on growth and require that productivity increase even faster in order to maintain living standards. All the while immigration into the United States has slowed—and immigrants are twice as likely to start a company as U.S.-born individuals.<sup>66</sup>

62. Hathaway and Litan, 2014. The authors estimate that variations in certain demographic factors explain approximately half of the variation in startup rates across metro areas. Karahan, et al., provide additional estimates in a forthcoming paper.

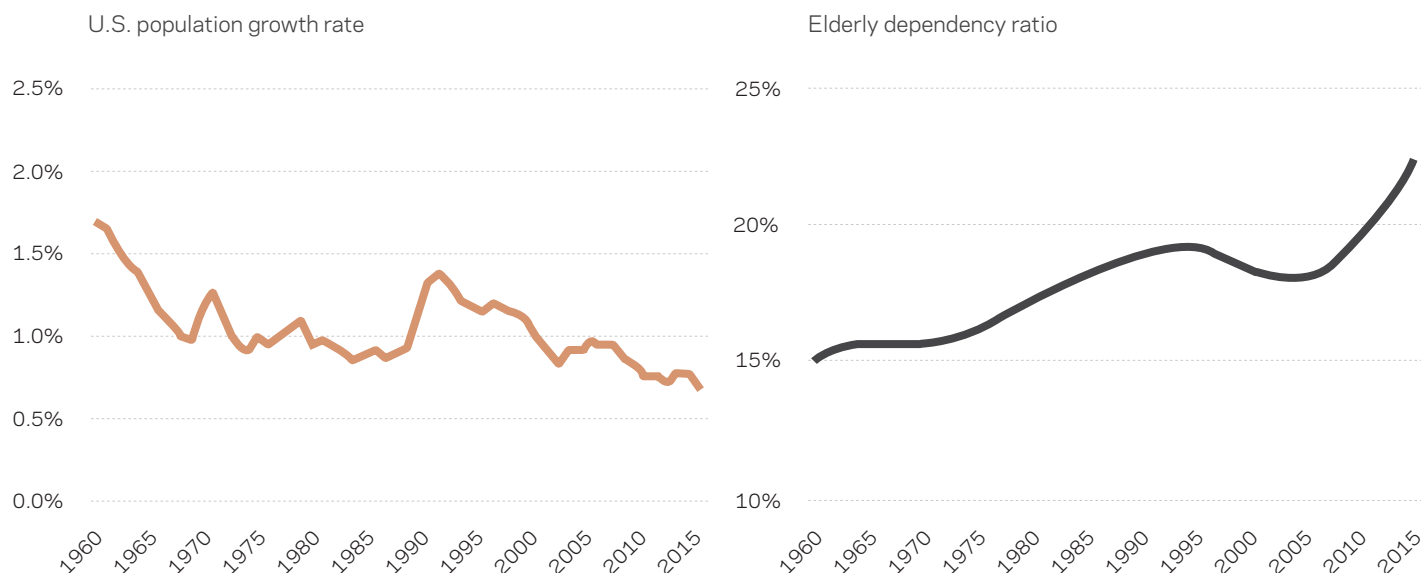
63. Frey, 2016.

64. EIG analysis of various CDC, World Bank, and OECD-Stat data.

65. EIG analysis of Decennial Census and CIA World Factbook data.

66. Kauffman Foundation, 2015.

## 24. U.S. population growth rate (left) and elderly dependency ratio<sup>67</sup> (right)



Source: Census Bureau Population Estimates (left) and World Bank (right)

Demographics can be influenced from a number of different points. Immigration policy may be the most obvious, but policies that make it easier to support a family could also help ensure the United States faces the future with a dynamic populace on which to fall back.

- More immediately, the Great Recession wiped out key sources of **startup capital**, most notably home equity. The net worth of the median U.S. household decreased by 44 percent from 2007 to 2010.<sup>68</sup> Half of the country's housing equity—an important source of wealth for most people and startup capital for would-be entrepreneurs—evaporated, and deteriorating local mortgage markets translated into constrained local credit markets.<sup>69</sup> Small young firms are particularly sensitive to changes in local housing markets, suggesting that a financial crisis originating in the housing sector may very well impact them disproportionately.<sup>70</sup>

These supply-side constraints may have

contributed to the collapse in new firm formation in the years around the recession, but a bigger mystery today is why startup rates have not recovered as housing, credit, and financial markets have.

- Meanwhile, rising **consolidation within the banking sector** has coincided with a dramatic decline in lending to small and young businesses—predictably, given that bigger banks have less of an incentive to engage in small-scale lending. Even as total corporate lending scales new heights, small-scale business lending languishes more than a quarter below its pre-recession peak in real terms. A partial explanation may be that community banks, which are more likely to service small borrowers (including early-stage companies), have seen their numbers dwindle by a quarter through acquisition and attrition post-recession.<sup>71</sup> Demand-side factors are reinforcing these supply-side developments: Lending is down in part because there are fewer small creditworthy borrowers seeking finance today as well.<sup>72</sup>

67. Measured as the number individuals 65 and over per 100 working age (15-64) adults.

68. Wolff, 2014 analysis of Survey of Consumer Finances data.

69. EIG analysis of Federal Reserve Bank data; Harding and Rosenthal, 2015; Davis and Haltiwanger,

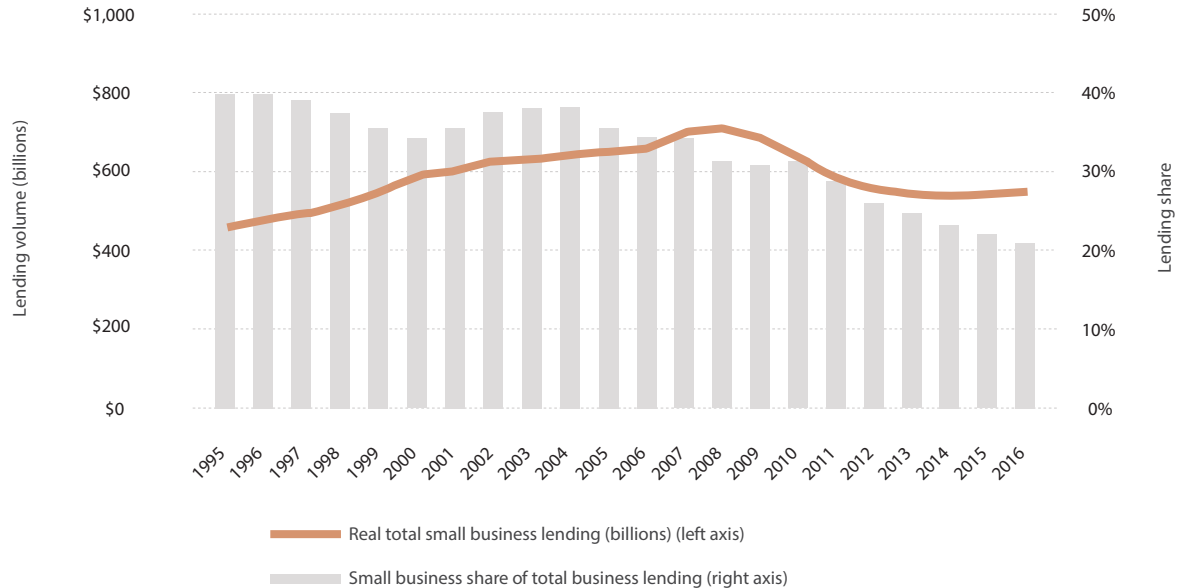
forthcoming.

70. Fort, et al., 2013; Adelino, et al., 2015.

71. Wiersch and Shane, 2013, among others. The banking sector itself is suffering from a near-total collapse in startups (McCord, et al., 2015).

72. Brown and Liner, 2016.

## 25. Trends in small-scale business lending



Source: FDIC

- The volume of **regulations** —which seems to increase in response to each passing crisis— **and the complexity of the tax regime** both place a disproportionate burden on small and young companies, which cannot spread the fixed costs of compliance across a vast organization. The long-term rise in incumbency and decline in the startup rate clearly coincide with this growing compliance burden, although scholars have yet to find any clearly quantifiable link between rising regulatory complexity and falling entrepreneurship.<sup>73</sup>

The policy environment may undermine dynamism more directly in other respects, though: Strikingly, the United States ranks 51st out of 190 countries for the ease of starting a business according to the World Bank—an abysmally low performance for a country with such historic affinity for entrepreneurship.<sup>74</sup> The policy and regulatory environments have both become more uncertain and less predictable over time, too.<sup>75</sup>

- Changes in the regulatory landscape may contribute to the fact that **the behavior**

**of the most promising new businesses themselves is changing** —and changing in ways that may reduce competition and dynamism further. The annual number of **initial public offerings** fell by three-quarters from the late 1990s to 2015. Instead of going public, promising young companies are more likely than ever to opt for **acquisition** instead.

Acquisitions may be rational from the perspective of both the entrepreneur and the acquirer, but they have the broader impact of eliminating a rising competitor from the market. The innovation embodied in a new company goes on to strengthen an incumbent instead.

Established firms sometimes even use acquisitions to neutralize threatening innovations altogether in order to prevent an upstart from disrupting a profitable market. And so acquisitions can have significant negative externalities by muting the potential impact of entrepreneurship on competition and dynamism. The increasing compliance burden placed on public companies may

73. Goldschlag and Tabarrok, 2014. Bessen, 2016 does, however, find a connection between rising complexity and rising market power and profitability for established

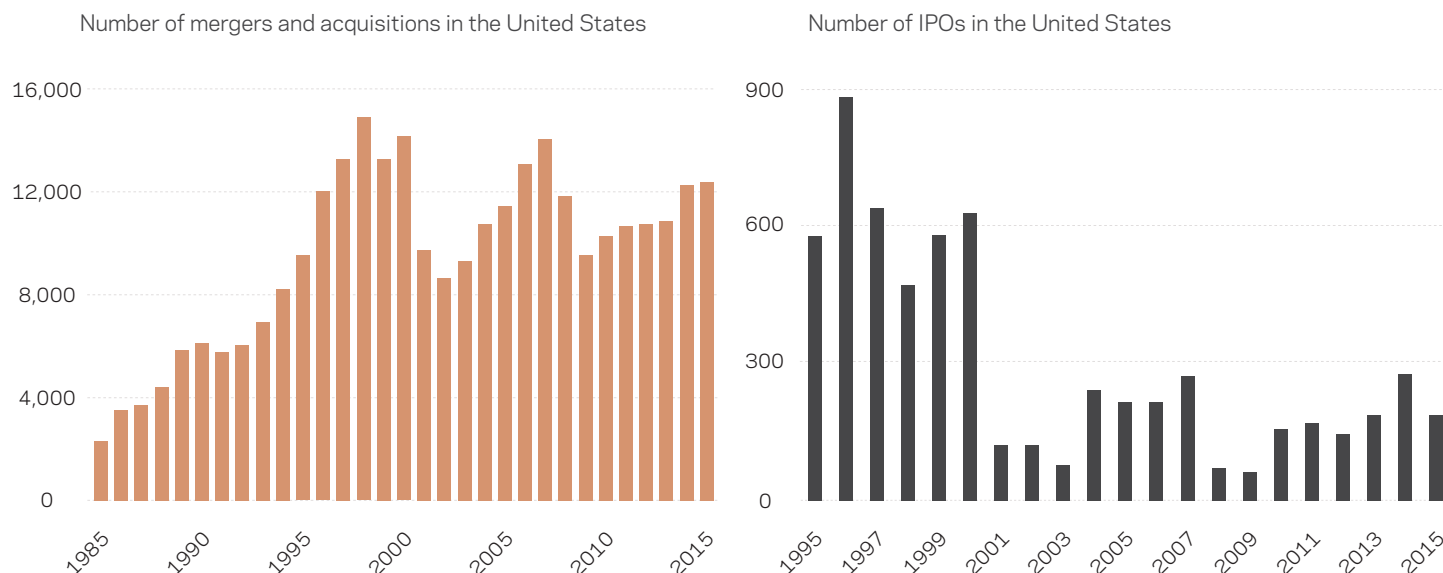
interests.

74. World Bank Doing Business Index.

75. Baker, et al., forthcoming.



## 26. Number of mergers and acquisitions (left) and IPOs (right) in the United States



Source: Institute for Mergers, Acquisitions and Alliances and National Venture Capital Association

contribute to the shift in preferences from IPOs to acquisitions, but a deeper change in incentives seems to be at work too—in large part thanks to the massive war chests incumbents now have for poaching from the ecosystem. At any rate, the changing motivations of the economy’s dwindling number of entrepreneurs only reinforces the slowdown in the cycle of creative destruction.

An intensifying debate now asks whether 21st century **antitrust enforcement** needs a new set of tools and definitions.<sup>76</sup> In 2010, the Department of Justice raised the threshold at which it considers an industry to be too concentrated, ratcheting its benchmarks for scrutiny upwards to match competition’s economy-wide decline.<sup>77</sup> In addition, antitrust regulators around the world have yet to figure out how to deal with the rapid pace of change in many titan-dominated but technology-based (mainly Internet) markets and the knotty demand-side issues of platforms and network effects that can lock in a single company’s de facto monopoly.

- Antitrust enforcement traditionally focuses on the potential impacts of a merger on consumer prices; perhaps antitrust policy has a more robust role to play in preserving innovation, entry, and productivity advancement (all of which concentration undermines) in markets, too.<sup>78</sup> A recent study of the effects of M&As from 1997 to 2012 in the manufacturing sector elevates the issue: Economists find that the purported efficiency and productivity gains failed to materialize and that the mergers only resulted in fewer competitors enjoying higher markups.<sup>79</sup>
- Changes in the **innovation landscape** favor incumbents over radical upstarts, too. The U.S. R&D landscape has shifted away from basic and towards and applied pursuits.

**Public investment in basic R&D**—the well-spring of totally new knowledge that generates breakthrough technologies and entirely new industries—stood at 1963 levels as a share of GDP in 2015, even though the economy is now fundamentally more advanced and more dependent on innovations for growth.<sup>80</sup>

76. CEA, 2016; Jarsulic, et al., 2016; Lynn and Khan, 2012.

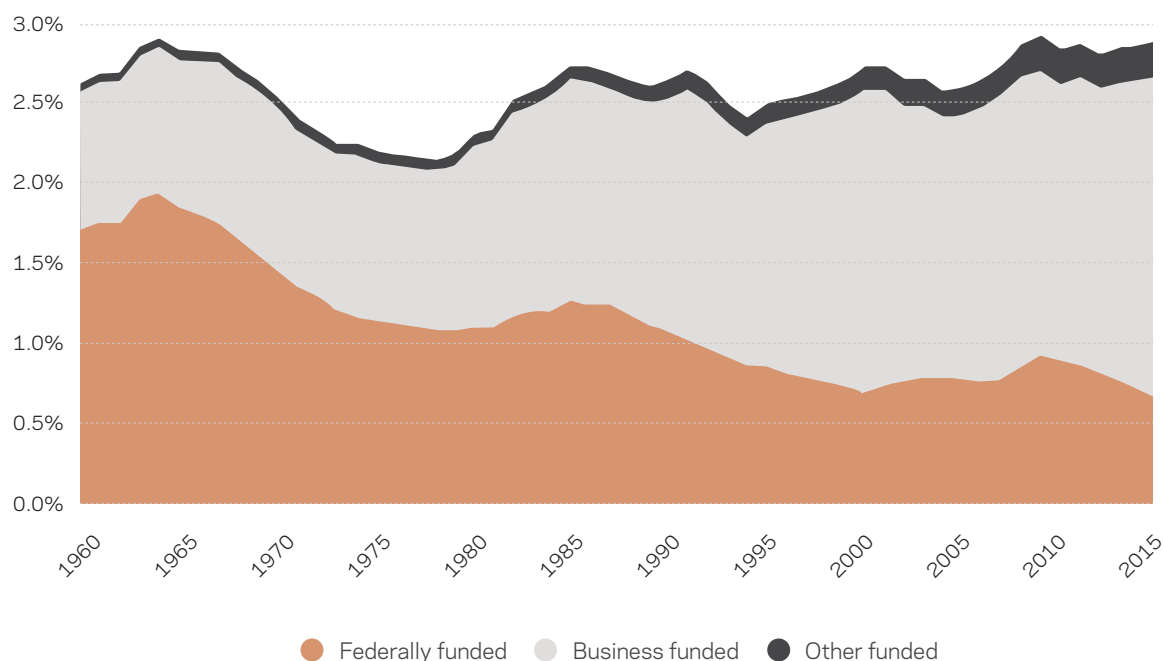
77. Department of Justice, 2010.

78. Furman, 2016; Jarsulic, et al., 2016.

79. Blonigen and Pierce, 2016.

80. EIG analysis of NSF data.

## 27. R&D as a share of GDP by source of funding



Source: National Science Foundation

Federal funding for all types of R&D declined more or less steadily from a high of 1.9 percent of GDP in 1964 to 0.6 percent in 2015.

Business-funded R&D offset much of the decline in volume, if not character (business R&D is motivated by the company's own bottom-line, which limits its scope, and it is less likely to spill over into the broader innovation ecosystem or be spun out into a brand new company).

What is more, business expenditures on R&D in the United States are dominated by large firms. Small and medium enterprises only account for one-fifth of such expenditures, the fifth-lowest proportion out of 31 OECD countries.<sup>81</sup> Large firms account for the remaining four-fifths. The rise in power of large firms over the innovation landscape parallels the rise of large firms over the economy.

- Despite their rising control over the innovation landscape, incumbent interests have attempted to stem knowledge spillovers further through **noncompete agreements**.

Such agreements reduce dynamism in two ways: By limiting job turnover and by obstructing the path to entrepreneurship for covered workers. Fully 18 percent of the workforce—30 million people—is covered by a noncompete agreement.<sup>82</sup> These agreements, demanded by employers as a condition for work, typically prohibit an employee from working for a competitor or in a similar market for a set period of time.

Workers covered by such agreements cannot switch employers in the same field, limiting their own earnings potential, reducing productivity-enhancing worker turnover, and limiting knowledge spillovers.<sup>83</sup> Such agreements also raise the barriers for workers to spin out and start their own companies if they see a better way to provide a service or wish to seize a perceived market opportunity.<sup>84</sup>

Nor are noncompete agreements found only in knowledge-intensive sectors: Fully 14 percent of workers earning less than \$40,000 a year are now subject to such agreements, indicating that employers increasingly see them as an attractive tool for increasing their own power.<sup>85</sup>

81. OECD Science and Technology Industry Outlook, 2014.

82. U.S. Department of the Treasury, 2016.

83. Tambe and Hitt, 2013.

84. Starr, et al., 2014.

85. CEA, 2016.

- Overly onerous **occupational licensing** regimes likely compound the decline in dynamism. Occupational licensing can serve an important role protecting consumers and enabling skilled practitioners to differentiate themselves in the marketplace, but the five-fold increase in the percentage of the U.S. workforce in an occupation that requires a state-issued license raises a red flag that the policy tool is being abused to restrict entry into certain professions. The latest estimate holds that 29 percent of the labor force is required to pay for and hold a license in order to work.<sup>86</sup>

By raising the barriers to entrepreneurship, occupational licenses reduce dynamism—and in a manner that directly constrains the career options of many middle- and low-skilled workers.

- Other state and local regulations erode the economy's dynamism by slowing people's ability to respond to market signals—including the rules and regulations that keep the **costs of housing** extremely high in many of today's most productive and opportunity-rich metro areas.<sup>87</sup> Individuals without high-paying knowledge jobs—or even just starting off in less expensive housing markets—may struggle to afford their expected standard of living in the hubs of the new economy. By limiting the degree to which workers can move to high productivity locales, high housing costs also act as a brake on economy-wide productivity growth and cement income inequality in place. Nevertheless, the empirical evidence remains somewhat inconclusive: Migration has declined into places with low house prices and lax land use regulations, and across all geographic scales, too.<sup>88</sup>
- **Entrepreneurial risk capital remains** far more concentrated geographically than entrepreneurial potential—a market failure. Explaining some of dynamism's divergence: In 2015, 78 percent of the country's venture capital investment was sequestered in only three states—

California, Massachusetts, and New York.<sup>89</sup> Fully half of the country's 366 metro areas obtained no venture capital investment that year.

Angel capital resources are more evenly distributed geographically, but both the number of active angel investors and the number of companies receiving angel investment are falling.<sup>90</sup> The extreme concentration of these vital sources of capital into a few hubs means much of the country's entrepreneurial potential remains latent in underserved and overlooked regional ecosystems.

- Megatrends are operating in the background. **Globalization and technological change**, for example, both reward size and scale: Globalization by advantaging companies with the broadest reach and technology by advantaging those who master its complexity.<sup>91</sup> Both advantages are difficult for new companies to replicate or compete against, serving as de facto barriers to entry benefiting incumbents.

New evidence suggests that the diffusion of technological advances is actually slowing across firms, too.<sup>92</sup> This implies that technology could now confer compounding advantages to firms at the frontiers of adoption and deployment, which may explain the gap opening up between the best and the rest in addition to the increasing difficulty even the most promising new firms are encountering to survive.

At any rate, evidence suggests that both technology and globalization have thus far been forces for consolidation rather than fragmentation across industries.

- Finally, declining dynamism may also be **the price of stability**. Political and economic stability allows vested interests to accumulate over time and influence the policymaking process in directions that reduce competition and raise barriers to entry for new businesses.<sup>93</sup>

86. Kleiner and Krueger, 2011.

87. Furman, 2015.

88. Molloy, et al., 2015.

89. NVCA, 2015.

90. Sohl, 2015.

91. Andrews, et al., 2015; Autor, et al., 2017.

92. Andrews, et al., 2015; Decker, et al., 2016.

93. Olson, 1982; Bessen, 2016.

Stability also slows the process of creative destruction, which is powered in part by the natural booms and busts of the economy.<sup>94</sup> It's a provocative question whether technocratic governments' increasing prowess at moderating the business cycle could actually constrain long-term growth by weakening the forces that firms must weather in order to survive.<sup>95</sup> What if the forces of creative destruction have been tamed below their optimal level?

The Great Recession provides a recent case study. The crisis financially ruined millions of Americans and led to widespread job losses that impacted vulnerable middle-skilled workers and young people most dramatically. Yet the Great Recession was actually marked by incredible stability of the corporate landscape. Incumbents emerged from the most traumatic period in American economic history since the Great Depression more powerful and profitable than ever.

The interplay of these issues demands a holistic approach to restoring the economy's dynamism to a more natural, forward-leaning balance—one that enables more people and places to partake in the economy's expansion.

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**Evidence suggests that both technology and globalization have thus far been forces for consolidation rather than fragmentation across industries.**

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94. Schumpeter, 1934 and 1942.

95. Adalet, et al., 2017.

## VII. The road ahead

Conventional wisdom seems to accept the idea that too much churn and too much destruction now plague the American economy, to the detriment of many American workers and communities. The evidence presented here strongly indicates this is wrong. The United States in fact suffers from a creation problem—perhaps for the first time in its history. Understanding this distinction is critical as it will point to a very different set of remedies.

Is dynamism's retreat inevitable in a mature economy? Certainly not to the extent observed over the past few decades. Furthermore, being explicable does not necessarily make the phenomenon acceptable or dismissible. Dynamism is worth restoring to the extent that other economic forces cannot replace its benefits to the well-being of regions, workers, and markets. The geographic implications alone should render the status quo unsustainable. Even a single percentage point increase in the startup rate would tip many metropolitan economies back into

expansion. Even a percentage point increase in the job turnover rate would unlock millions of opportunities for American workers. Why does dynamism matter? Simply put, a less dynamic and entrepreneurial economy is one less likely to offer access to the American Dream.

So how do we turn the tide? In spite of everything we know about the features and consequences of this trend, we still know very little about its underlying causes. Most fundamentally, we don't know what caused the long-term, steady decline in firm formation, nor have we come close to a satisfactory explanation for the nearer-term collapse. We don't know why people stopped moving and became more settled in their work arrangements. We don't know why the returns to incumbency have increased. In order to find out we need a better understanding of how the economy is evolving, how technology and markets intersect, and how the forces of economic change play out geographically.

The lack of perfect answers shouldn't be an excuse for inaction. One thing we can do immediately is invest in new data and new diagnostic tools to address these critical blind spots. And there are plenty of partial solutions such as removing overly burdensome occupational licensing

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**Simply put, a less dynamic and entrepreneurial economy is one less likely to offer access to the American Dream.**

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restrictions and improving access to capital that enjoy strong bipartisan support and can be addressed today.

Indeed the stakes are too high for further delay. In the past eras of high growth and churn, the economy's inherent dynamism was a shock absorber that softened the blow of getting policies wrong. Without it, the consequences of mistaken policies will be felt more severely. Thus, policymaking in an era of retreating dynamism should be focused on rebuilding the economy's margin for error. Paradoxically this should be done not by seeking to mitigate all risk, but by empowering individuals and firms to take the kinds of risks that are so crucial to a healthy and competition-rich economy.

In spite of its challenges, the United States retains significant advantages, ranging from the world's leading research system and top clusters of innovation, to its majority share of global angel and venture capital, to its cultural affinity for entrepreneurial risk taking and ability to attract the world's best human capital. The contours of a less dynamic future are already taking shape. The decisions we make next will decide if the future belongs to the incumbents, or if we will instead maximize our historical advantages and renew the broader vitality that helped to make the U.S. economy the envy of the world.

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