

## ANALYSIS

9 NOVEMBER, 2020

### Prepared by

John Leer  
[jleer@morningconsult.com](mailto:jleer@morningconsult.com)  
Economist for Morning Consult

Dante DeAntonio  
[Dante.DeAntonio@moodys.com](mailto:Dante.DeAntonio@moodys.com)  
Senior Economist

Ryan Sweet  
[Ryan.Sweet@moodys.com](mailto:Ryan.Sweet@moodys.com)  
Senior Director

Cristian deRitis  
[Cristian.deRitis@moodys.com](mailto:Cristian.deRitis@moodys.com)  
Senior Director and Deputy Chief Economist

Mark Zandi  
[Mark.Zandi@moodys.com](mailto:Mark.Zandi@moodys.com)  
Chief Economist

### Contact Us

Email  
[help@economy.com](mailto:help@economy.com)

U.S./Canada  
+1.866.275.3266

EMEA  
+44.20.7772.5454 (London)  
+420.224.222.929 (Prague)

Asia/Pacific  
+852.3551.3077

All Others  
+1.610.235.5299

Web  
[www.economy.com](http://www.economy.com)  
[www.moodysanalytics.com](http://www.moodysanalytics.com)

# Business Closures and Entrepreneurship During COVID-19

## INTRODUCTION

The COVID-19 pandemic has precipitated an unprecedented health and economic crisis, creating unique challenges for households and businesses. A critical question is how this may change the way Americans make important economic decisions. Morning Consult and Moody's Analytics have teamed up, conducting an in-depth survey of 5,000 adults in mid-September, to examine how the pandemic is impacting decisions over household finances, parenting, entrepreneurship, employment and moving.

# Business Closures and Entrepreneurship During COVID-19

BY JOHN LEER, CRISTIAN DERITIS, RYAN SWEET, DANTE DEANTONIO AND MARK ZANDI

The COVID-19 pandemic has precipitated an unprecedented health and economic crisis, creating unique challenges for households and businesses. A critical question is how this may change the way Americans make important economic decisions. Morning Consult and Moody's Analytics have teamed up, conducting an in-depth survey<sup>1</sup> of 5,000 adults in mid-September, to examine how the pandemic is impacting decisions over household finances, parenting, entrepreneurship, employment and moving.

This paper explores the economic fallout from the COVID-19-fueled recession and its impact on small-business closures as well as plans to start new businesses.

## Summary

- » The pandemic is forcing the closure of thousands of small businesses.
- » Black and Hispanic small-business owners have been disproportionately affected by COVID-19 even after controlling for education and income.
- » Young and middle-age men and women entrepreneurs have been more likely to go out of business due to the pandemic.
- » The pandemic has not materially stifled Americans' entrepreneurial spirit. This bodes well for the long-run recovery.
- » Younger individuals reported a greater desire to open a business than older individuals, as expected. But a solid

quarter of 45- to 64-year-olds viewed entrepreneurship favorably.

- » Black and Hispanic individuals indicated a greater desire to open a business in the wake of the pandemic than white individuals with similar age or education.
- » Men are more likely than women to indicate they want to start a business.
- » Individuals with high risk tolerance are more likely to have friends and family members who started a business., highlighting the importance of environmental and social factors on risk-taking and entrepreneurship.

## Survey methodology

The survey interviews were conducted online September 10-14 among a representative sample of 5,000 adults in the U.S., weighted to match the characteristics of the U.S. population according to age, gender, educational attainment and region.

Morning Consult partners with more than 20 survey panel providers to conduct interviews in the U.S. This panel network provides access to tens of millions of Americans via recruitment from an extended network that includes thousands of web-

sites, mobile apps, social networks, email lists and publishers. The network ensures Morning Consult can reach a large, diverse, representative audience of Americans in a timely fashion.

Morning Consult used a stratified sampling process based on age and gender to reach a broad, nationally representative audience in the U.S. As part of its post-stratification phase, the data were weighted to reflect the demographic composition of the U.S. based on age, education, race/ethnicity, gender and geographic region according to the 2017 five-year estimates of the American Community Survey. The margin of error for the survey is +/-1 percentage point.

## Small-business vitality

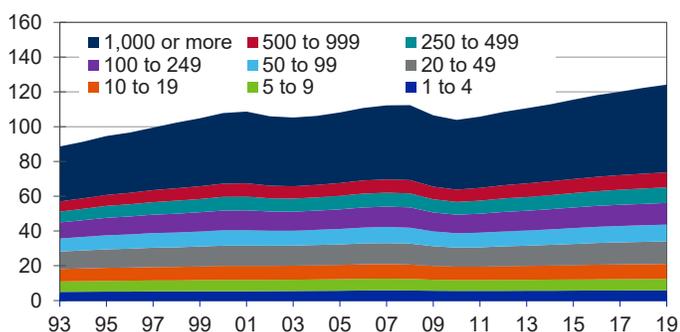
The COVID-19 pandemic has created significant economic distress across households and businesses throughout the country and across multiple industries. Of particular concern is the impact on small businesses.

Not only do small businesses represent a significant share of overall employment (see Chart 1), they are also responsible for the creation of nearly half of all new jobs (see Chart 2). In addition, small businesses are incubators of new products, techniques and technologies, making them critical to the economic ecosystem.

<sup>1</sup> A detailed description of the survey methodology and composition can be found in the appendix of the first paper in this series, "Struggling Through: Household Finances in the Pandemic": <https://www.moodyanalytics.com/microsites/pandemic-economics>

## Chart 1: Small Biz Employs 50% of Workers

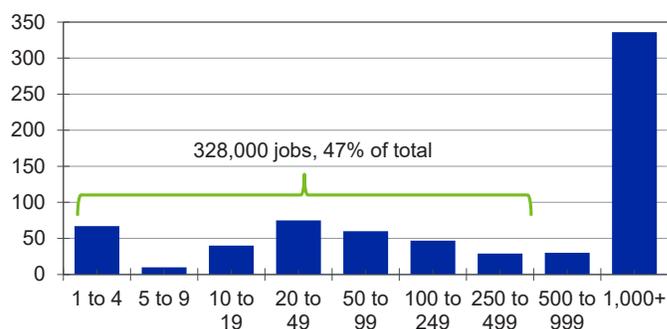
Private-sector employment by firm size, mil



Sources: BLS, Moody's Analytics

## Chart 2: Small Biz Generates Jobs

Net growth in employment by firm size 2019Q4, ths



Sources: BLS, Moody's Analytics

### The small-business landscape

According to the Census Bureau, there were approximately 6 million businesses in the U.S. in 2017 (see Chart 3). Though small businesses play an important role, it is noteworthy that most individuals work for larger businesses and corporations (see Chart 4). While employment in firms with fewer than 500 employees has fallen over time, small businesses remain vital for both job growth and the development of new products and services (see Chart 5).

For many entrepreneurs, owning their own business is as much a lifestyle choice as a profit-maximizing decision. Relatively few successful small businesses end up filing for an initial public offering, with an acquisition by a larger competitor being the more likely outcome.

Without a healthy pipeline of smaller businesses to draw from, it is unlikely that large companies would be willing or able to conduct the level of innovation that

small-business owners provide. The passion, drive and dedication that entrepreneurs bring to their businesses may be difficult—if not impossible—to replicate at a more established firm with a lower risk tolerance.

Given the critical role of small businesses in the broader economic ecosystem, it is essential to examine the health of small businesses as well as the future of entrepreneurship in the wake of the COVID-19 pandemic.

In designing our survey, Morning Consult and Moody's Analytics looked to better understand the demographic composition of small-business owners today and how their decisions to close or remain open during the pandemic may have varied by the owner's education, age, income, ethnicity or location (see Chart 6).

In addition, we wanted to better understand how future entrepreneurship may be affected. Are Americans giving up on their dreams of self-employment? Or, has the coronavirus given them even more incentive

to become their own bosses and address the needs of the new post-pandemic economy?

Finally, we sought to better understand who these new entrepreneurs are. What does their demographic composition look like and who does the data suggest we should expect to see starting businesses in coming quarters and years?

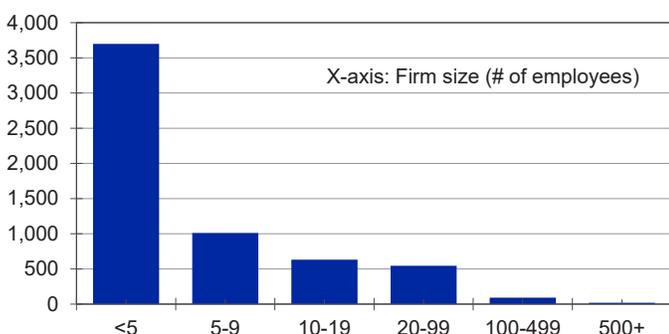
### Small-business closures rise

Both official and unofficial data on business bankruptcies and closures in 2020 highlight the incredibly tough economic environment facing businesses today.

The collapse in demand as consumers withdrew their spending in March was felt across all industries, though some industries were more affected than others. Bankruptcy filings jumped in the second and third quarters with a number of marquee brands and major brick-and-mortar retailers looking to restructure or close, including Hertz, J.C. Penney and Neiman Marcus.

## Chart 3: Businesses by Size Category

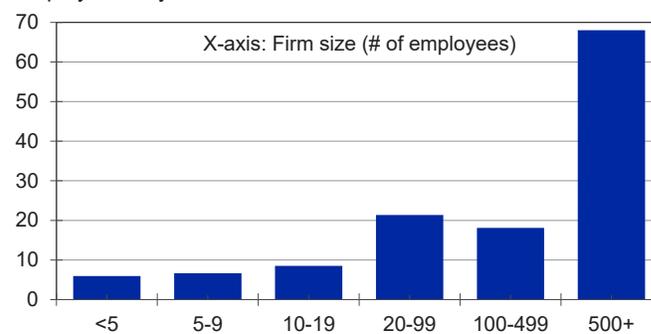
# of firms by firm size in 2017, ths



Sources: Census, Moody's Analytics

## Chart 4: Employment by Employer Size

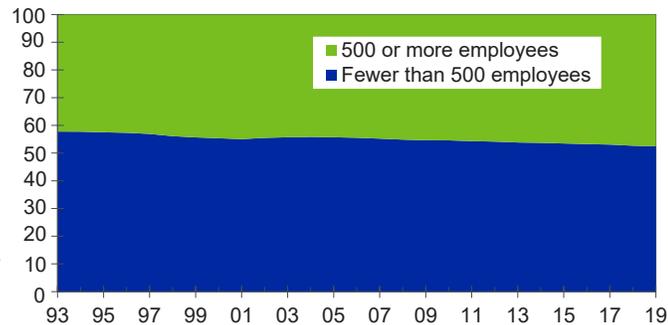
Employment by firm size in 2017, mil



Sources: Census, Moody's Analytics

## Chart 5: Small-Biz Job Share Declining

Private-sector employment by firm size, %



Sources: BLS, Moody's Analytics

But official bankruptcy statistics can miss the extent of the stress as many smaller or micro businesses simply close their doors without incurring the expense of a bankruptcy filing. As a case in point, under the government's Paycheck Protection Program, businesses are forbidden from using the proceeds of their PPP loans or grants to file for bankruptcy.

Data from the business listing and review service Yelp can help shed some insight on small-business closures. Through September an estimated 100,000 businesses were listed as closed on the Yelp portal. The vast majority of these were restaurants and retailers, with 60% of restaurants indicating that their closure was permanent (see Chart 7).

Based on the Morning Consult survey data, nearly one-third of the small-business owners who discontinued their operations in the past six months cited COVID-19 as either a major or minor reason (see Chart 8). This was not the case for owners over the age of

65 who may have already planned to end their operations.

Slightly more men (36%) than women (30%) indicated that COVID-19 was a major or minor reason for a business closure.

Somewhat surprising, the coronavirus was a significant reason for business closures for nearly 45% of higher-income entrepreneurs who typically earn at least \$100,00 per year. COVID-19 was the major or minor reason for business closures for almost 35% of lower-income business owners but was less important for individuals earning from \$50,000 to \$100,000 with only 25% of this group reporting COVID-19 as a significant cause.

Controlling for both age and gender, we find that men between the ages of 35 and 44 were the most impacted by COVID-19, with over 75% of those going out of business citing the pandemic as either a major or minor reason (see Chart 9).

Women in the 45- to 64-year-old category were more likely to cite COVID-19 as a

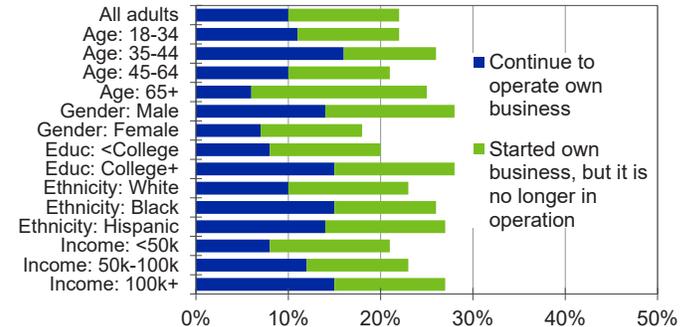
significant reason for closing a business than men of a similar age, but the rate was lower than average at 22%. This finding adds nuance to our prior study of household finances, which indicated that COVID-19 had a greater impact on women. Specifically, female parents were more than twice as likely as men to reduce their work hours among couples living together.

Turning to the breakdown of business closures by race and ethnicity, the survey reported a disparate impact on black and Hispanic business owners, with nearly 60% of entrepreneurs of color reporting COVID-19 as a major or minor reason for closing their businesses relative to 30% for whites.

This finding is consistent with the disparate impact of the coronavirus itself on minorities. A disproportionate share of COVID-19 infections have been confirmed in blacks and Hispanics relative to whites. COVID-19 fatality rates have been higher in minorities as well with a rate of 100 per

## Chart 6: Small-Business Demographics

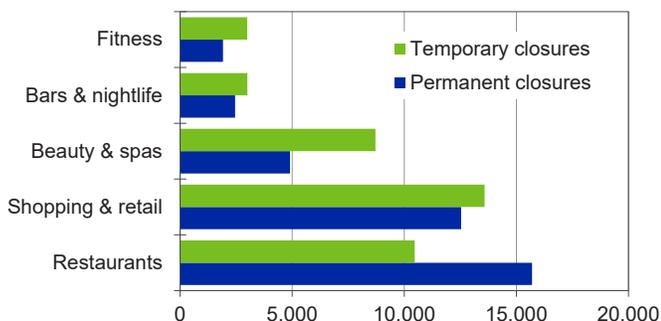
Share of total respondents who started own business



Sources: Morning Consult, Moody's Analytics

## Chart 7: Small Businesses Struggle

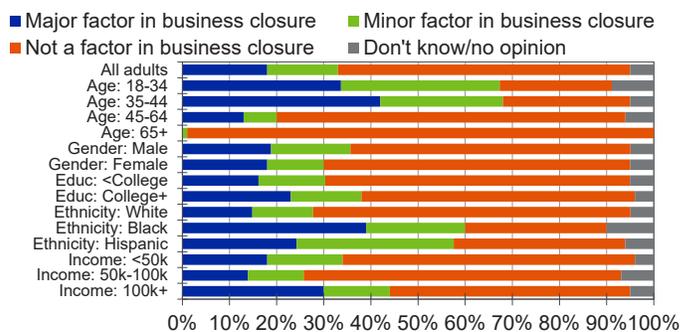
# of businesses reported as closed since Mar 1



Sources: Yelp, Moody's Analytics

## Chart 8: COVID-19 Drove 1/3 of Closures

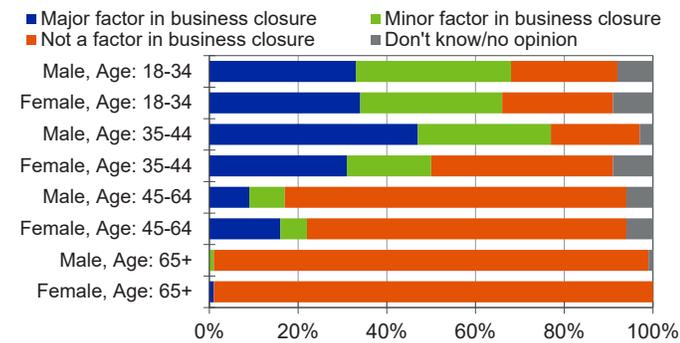
The coronavirus pandemic was a...



Sources: Morning Consult, Moody's Analytics

## Chart 9: Younger Entrepreneurs Exposed

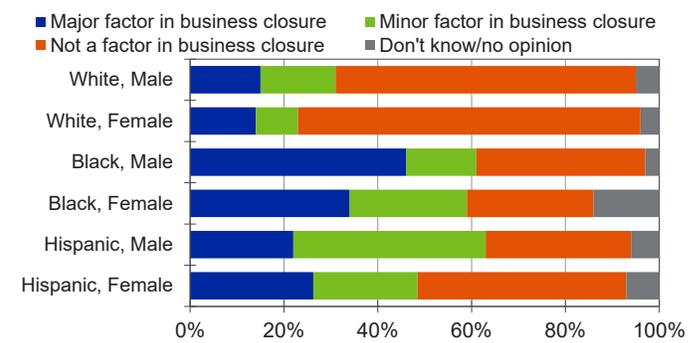
The coronavirus pandemic was a...



Sources: Morning Consult, Moody's Analytics

## Chart 10: COVID Affects Black & Hispanic

The coronavirus pandemic was a...



Sources: Morning Consult, Moody's Analytics

100,000 for blacks versus 65 for Hispanics, 41 for Asians and 44 for whites, according to the COVID Tracking Project.

Not only are minorities paying a higher cost in terms of health outcomes, but the economic costs in terms of lost jobs and businesses have been greater as well.

There are three likely reasons why minority entrepreneurs attribute a greater share of their closures to COVID-19. First, these businesses likely face greater exposure to impacted industries such as leisure and hospitality. Second, minority entrepreneurs may be more likely to operate businesses in urban areas, which have experienced a more dramatic decrease in business activity than suburban or rural communities. Third, black and Hispanic Americans have a higher likelihood of either contracting the virus personally or having to care for an affected family member.

The direct impact of the virus on minority communities also harms minority entrepreneurs and businesses that serve minority customers. Many minority-owned businesses that closed likely experienced some combination of these factors.

Black women reported a greater impact from COVID-19 than women of other groups, with close to 60% reporting that COVID-19 was either a major or minor reason for closing their businesses compared with 50% of Hispanic women and 25% of white women (see Chart 10).

Controlling for income in addition to other demographic characteristics revealed interesting and counterintuitive patterns.

COVID-19 was reported as a major or minor reason for business closure for higher-

income individuals across all ethnic categories. Particularly striking was that 87% of high-income blacks reported COVID-19 as the major reason for terminating their businesses (see Chart 11).

In contrast, 65% of high-income Hispanics and 40% of high-income whites cited COVID-19 as a reason for a business closure. A similar pattern was observed for lower-income entrepreneurs, with 61% of blacks, 58% of Hispanics, and 26% of whites citing COVID-19 as a significant reason for a business closure.

Middle-income Hispanics were somewhat harder hit, with just over half citing COVID-19 as a major/minor issue versus 47% for blacks and 21% for whites.

Education level was a differentiator with more highly educated small-business owners reporting that they closed their businesses due to COVID-19. But less highly educated business owners were not immune, with nearly 30% of non-college graduates reporting COVID as a significant reason for shutting down their businesses. These differences are likely driven by differences in the industrial composition and geographic location of these businesses.

This pattern differed for black and Hispanic entrepreneurs. Just over 60% of non-college-educated, black entre-

preneurs who closed their businesses were impacted by COVID-19 versus 50% of the college-educated.

The reverse was true for Hispanics where more college-educated entrepreneurs (65%) reported COVID-19 as a reason for business failure relative to non-college-graduates (53%).

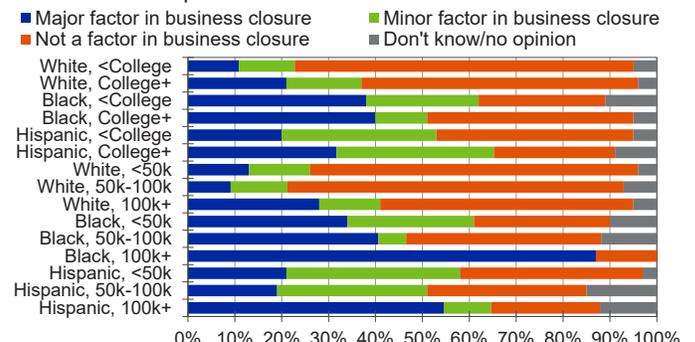
### The state of entrepreneurship

While most economic indicators continue to point to a weak recovery, one potential sign of future growth is the sharp increase in the number of new-business applications, which hit a multiyear high over the summer after a lockdown-induced decline earlier this spring (see Chart 12).

Though encouraging, the optimism is tempered by the number of new businesses indicating an intent to hire. While this also rose during the summer, the growth rate was modest. A sudden increase in the number of new businesses will support the economic recovery but will likely take

## Chart 11: Education and Income Matter

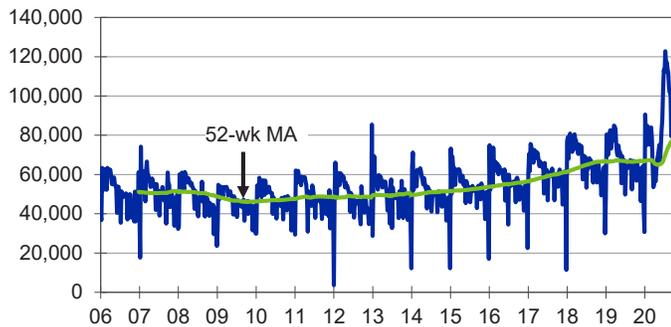
The coronavirus pandemic was a...



Sources: Morning Consult, Moody's Analytics

## Chart 12: An Entrepreneurship Revival?

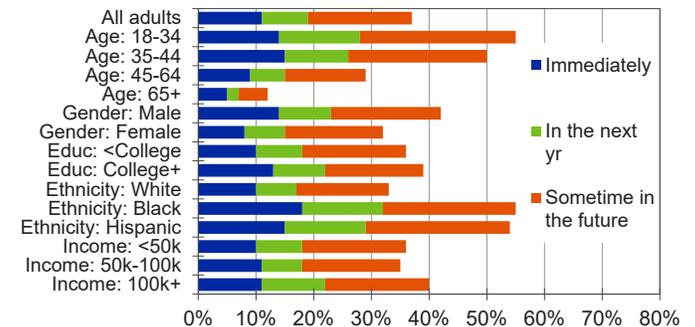
# of weekly business applications



Sources: Census Bureau, Moody's Analytics

## Chart 13: Entrepreneurship Pre-COVID-19

Share who prior to COVID-19 wanted to start a business...



Sources: Morning Consult, Moody's Analytics

multiple quarters to translate into robust job growth.

Renewed interest in entrepreneurship in the face of record-high unemployment bodes well for both the resiliency of consumer optimism and future growth. Although large corporations have increased their market share through the course of the pandemic given their access to capital and ability to deploy resources quickly, small-business formation remains vital for the creation of new products, services and job opportunities.

The current low interest rate environment and the prospect of rates remaining low for an extended time are likely contributing to strong business formation. The COVID-19 crisis has also created demand for new products and services. Though counterintuitive, some of the largest and most successful businesses were started during recessions.

The Morning Consult survey provides unique insight into the profile of these new entrepreneurs.

As might be expected, the share of survey respondents indicating that they had planned to start a business skewed younger, with 55% of individuals under the age of 34 and 50% of respondents between the ages of 35 and 44 indicating they had intended to start a business prior to the COVID-19 pandemic while just over 25% of those between the ages of 45 and 64 years old indicated the same (see Chart 13). Twelve percent of individuals age 65 or older indicated an intent to start a business sometime in the future.

While lower, this is still a healthy share given that 10% of the population overall was self-employed as of 2015, according to the Bureau of Labor Statistics. It is also worth noting that desire and execution are two different things. The majority of new business formations are actually started by those over the age of 35.

In terms of other demographic cuts, men (42%) are more likely than women (32%) to want to start their own businesses as are higher-income individuals (40%).

the breakdown by race and ethnicity, with nearly 55% of blacks and Hispanics expressing a desire to open a business versus 32% of whites.

Interactions between gender, age, education and ethnicity revealed similar or consistent patterns. For example, young college graduates were more likely than other combinations of age and education to want to start their own businesses.

Black and Hispanic middle-income individuals were more likely to want to start a business than whites with similar incomes.

Women expressed a lower desire for entrepreneurship across education and income categories. Policymakers will want to take a closer look to better understand the factors that may be driving this observation.

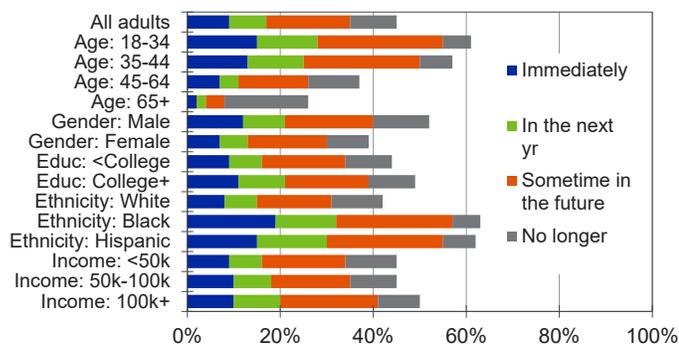
In the post-pandemic environment, many individuals over the age of 65 indicated that they had given up on their dreams of starting a business while younger cohorts indicated that they have simply delayed their plans (see Chart 14).

More than 15% of blacks and Hispanics reported that they want to start businesses in the immediate term compared with 8% of whites. The differences were further accentuated after controlling for education with 65% of Hispanic college graduates wanting to start a business in the future versus 28% of non-graduate whites (see Chart 15).

The survey confirms that the desire for entrepreneurship is not dead, just delayed. For some, the COVID-19 pandemic presents an opportunity to pursue dreams of self-employment. However, capital and access to resources remain critical factors to their future success.

## Chart 14: Dreams Delayed Post-COVID-19

Share who now want to start a business...



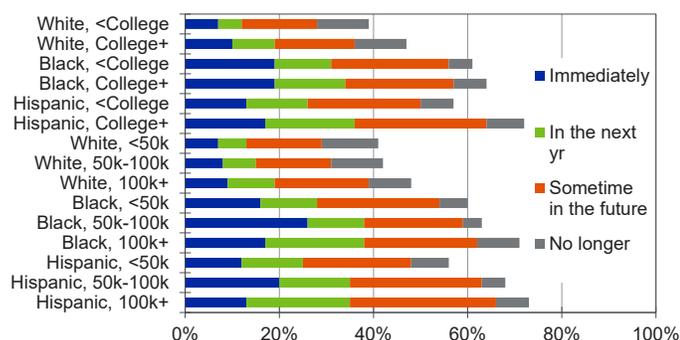
Sources: Morning Consult, Moody's Analytics

Of note, level of education appears to have little to do with the desire to start one's own business, with nearly an equal share of college graduates and non-graduates stating that they planned to start a business.

Some of the largest differences were observed in

## Chart 15: Minority Entrepreneurs Ready

Share who now want to start a business...



Sources: Morning Consult, Moody's Analytics

### Risk-taking and business creation

Starting a business requires individuals to take risks. There is no guarantee that entrepreneurs will recoup the time and capital they invest in their businesses.

Given the vital role that small businesses play in the U.S. economy, policymakers will want to understand the relationship between individuals' risk preferences and their willingness to start businesses. To address this issue, we asked survey respondents to self-assess their own risk tolerance.

While the risks of any one entrepreneur may prove to be financial folly, diversified risk-taking and business formation across the country tend to be good for the economy as a whole.

Not surprisingly, individuals with a higher risk tolerance are more likely to have started a business than those with a lower risk tolerance. We find that 30% of adults with a high-risk tolerance have started a business, compared with 20% and 18% of risk-neutral and low-risk adults, respectively.

What is more surprising is the extent to which risk-tolerant adults are surrounded by friends and family members who started a business. Thirty percent of risk-tolerant adults have parents who started a business, and 39% have friends who started a business, compared with only 17% and 21%, respectively, of risk-averse adults.

This finding speaks to the relationship between social and environmental factors and risk-taking. Children who see their parents start a business are themselves more likely to have a higher risk tolerance. The inverse is also true. Children who do not see or personally know entrepreneurs are less likely to be willing to take risks as adults.

Americans' willingness to take risks also sheds light on why certain entrepreneurs are more likely to have changed their plans of creating a business due to the pandemic.

The more risk-tolerant adults are, the less likely it is that the pandemic caused them to no longer want to start a business. More technically,

the ratio of respondents who no longer want to start a business relative to those who wanted to start a business prior to the coronavirus increases as risk aversion increases.

Among risk-tolerant adults, only 17% of those who wanted to start a business prior to the coronavirus no longer want to do so due to the pandemic. That ratio jumps to 36% among risk-neutral adults and 48% among risk-averse adults.

As described in the appendix, older Americans tend to be more risk averse, which helps explain the disproportionate impact of the pandemic on low-risk would-be entrepreneurs. At this point in their lives, the risks likely outweigh possible future rewards.

### Policy implications

The survey results highlight the struggle of many small businesses throughout the country in the wake of the COVID-19 pandemic. Black and Hispanic business owners have been particularly hard hit, with a large fraction of respondents citing COVID-19 as either a major or minor reason for closing their businesses.

Additional financial support to struggling small businesses will be necessary to help many of them survive until the pandemic is resolved through vaccines, therapies, or other means of controlling the spread such as masks and social distancing. The resulting improvement in consumer confidence and associated spending would restore the demand needed for businesses to thrive.

Support is particularly crucial for small-business owners of color who may be more exposed to the economic fallout of COVID-19 due to the specific industries

or geographies in which they operate. Businesses in industries such as restaurants or retail may be disproportionately exposed to the economic effects given their reliance on foot traffic.

When the CARES Act was passed in March, it was assumed that the spread of the coronavirus would be contained in short order. Loans and grants to small businesses under the Paycheck Protection Program were viewed as stopgap measures as large portions of the economy were shut down to contain the spread of the virus.

The approach was initially effective, as the confirmed number of COVID-19 cases fell steadily through April and early May. However, the lifting of lockdown measures starting in late May without the adoption of preventive measures such as mask-wearing and social distancing led to an even larger outbreak by late July.

The limited economic gains that resulted from the reopening were insufficient to overcome the anxieties of businesses and consumers. Without a substantial increase in confidence resulting from control of the coronavirus, the economy will struggle to build the momentum necessary for a self-sustaining recovery.<sup>2</sup>

Failing to deal with the spread of COVID-19 has significant economic consequences that must now be addressed with additional emergency support.

Given the current state of households' and businesses' finances and the still-weak labor market, an estimated \$1.5 trillion to \$2 trillion of additional support will be needed to buy additional time to contain the virus and support the fragile economic recovery.<sup>3</sup>

While this cost is far from inconsequential, the potential cost of inaction is far greater. As evidenced by the survey, numerous businesses are financially vulnerable. Not only would their closure contribute to additional job losses, but a rise in defaults on their payment obligations would also have negative consequences for banks and other lenders. The knock-on effects of missed rental payments would reverberate on commercial

<sup>2</sup> The correlation between Morning Consult's daily Index of Consumer Sentiment and the seven-day moving average of new coronavirus cases in the U.S. from January 29 to October 28 is -0.63, indicating a strong negative correlation between consumer confidence and the spread of the virus.

<sup>3</sup> See [Moody's Analytics scenario narratives](#) for additional information.

real estate owners and investors, including fixed-income retirees.

The survey results also provide some reasons for optimism. Despite the hardships facing households and businesses in the face of record-high unemployment, the entrepreneurial spirit lives on.

Rather than giving up after the record-high number of layoffs earlier this year, individuals have rolled up their sleeves and looked to start their own businesses. An impressively large share of survey respondents

indicated that they are ready to start their businesses immediately. Although this may not lead to job growth in the near term, it is likely to be supportive of job growth in late 2021 and following years.

While desire and will are arguably the most important factors for starting a new business, access to capital is critical as well.

Policymakers will need to ensure that the new crop of entrepreneurs has adequate access to loans from both the private and public sectors. Expanded lending from the Small

Business Administration may be necessary in the short term should banks and other private sector lenders shy away from new loan originations until the economic recovery is in full swing.

As with support for households, time is of the essence. Delays in aiding either existing small businesses or up-and-coming entrepreneurs could delay the recovery and, at worst, trigger a W-shape recession as a tidal wave of business bankruptcies and layoffs takes out other viable businesses.

# Appendix: Description of risk tolerance measurement and results

Respondents were asked to rate themselves in terms of their willingness to take risks on a scale from 0 to 10. Throughout this paper, respondents are grouped into one of three risk-tolerance buckets: scores from 0 to 3 are categorized as having a low-risk tolerance; scores from 4 to 6 as having a medium-risk tolerance; and scores from 7 to 10 as having a high-risk tolerance.

As shown in Chart 16, men tend to be more risk tolerant than women, although both genders exhibit broadly similar risk tolerance distributions characterized by concentrations at the extremes and in the middle.

As one might expect, younger adults also tend to be more risk tolerant than older adults, likely reflecting longer time horizons to benefit from the payoffs from successful risks and to recoup any losses from unsuccessful risks (see Chart 17). In other words,

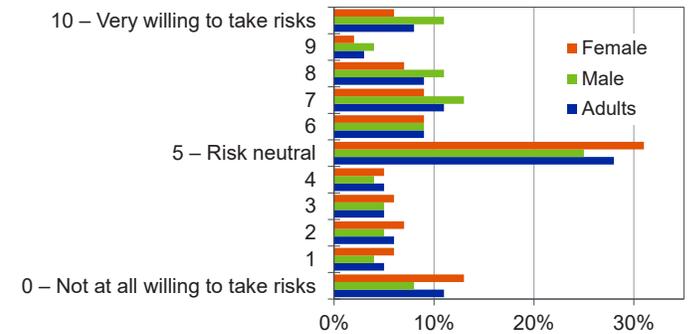
quite apart from a generational divide, differences across age most likely reflect some version of a life-cycle theory of utility maximization.

Risk tolerance tends to increase as income increases (see Chart 18). This finding runs counter to the view that poorer Americans have less to lose and are more willing to risk it all.

To the contrary, income appears to provide adults with a financial security net that allows them to feel comfortable taking risks. Income is also likely to

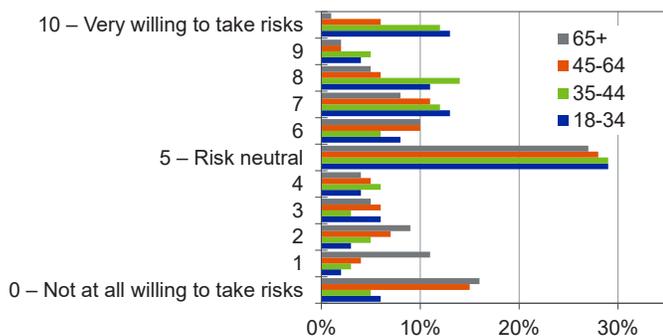
increase adults' access to capital and to other entrepreneurs and risk-takers who provide a blueprint for effective, strategic risk-taking.

### Chart 16: Risk Tolerance by Gender



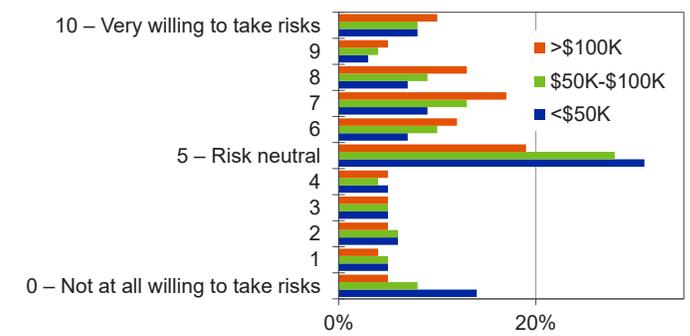
Sources: Morning Consult, Moody's Analytics

### Chart 17: Risk Tolerance by Age



Sources: Morning Consult, Moody's Analytics

### Chart 18: Risk Tolerance by Income



Sources: Morning Consult, Moody's Analytics

## About the Authors

**John Leer** is an economist for Morning Consult, leading the global data intelligence company's economic research efforts. He is an authority on the effects of consumer preferences and purchasing patterns on economic and business trends as well as labor market dynamics.

Prior to Morning Consult, Leer worked for Promontory Financial Group, offering strategic solutions to financial services firms on a range of matters including credit risk modeling and management, corporate governance, and compliance risk management.

He earned his bachelor's degree in economics and philosophy with honors from Georgetown University and his master's degree in economics and management studies (MEMS) from Humboldt University in Berlin. Leer's graduate research assessed the effects of fluctuations in housing prices and credit flows on the European Commission's measure of the non-accelerating wage rate of unemployment (NAWRU). His analysis has been cited in The New York Times, The Wall Street Journal, Reuters, The Washington Post and more.

**Dante DeAntonio** is a senior economist with Moody's Analytics. Dante specializes in the U.S. labor market and regional economics. He conducts labor market research on various topics in partnership with ADP Research Institute. Before joining Moody's Analytics, he worked as an economist in the Current Employment Statistics program at the Bureau of Labor Statistics. Dante is also an adjunct professor in the Economics and Finance Department at West Chester University of Pennsylvania. Previously, he was an adjunct in the Economics Department at Lehigh University. He holds a master's degree and PhD in economics from Lehigh University and a bachelor's degree in economics from Pennsylvania State University.

**Ryan Sweet** is a senior director at Moody's Analytics. Ryan contributes regularly to Economic View and is a member of the U.S. macroeconomics team in West Chester PA. His areas of specialization include U.S. monetary policy and forecasting high-frequency economic indicators. He is among the most accurate high-frequency forecasters of the U.S. economy, according to MarketWatch and Bloomberg LP. He is also an adjunct professor in the Economics and Finance Department at West Chester University of Pennsylvania. He received his master's degree in economics from the University of Delaware and his bachelor's degree in economics from Washington College.

**Cristian deRitis** is a senior director and deputy chief economist at Moody's Analytics, where he leads a team of economic analysts and develops econometric models for a wide variety of clients. His regular analysis and commentary on consumer credit, policy and the broader economy appear on the firm's Economic View web site and in other publications. He is regularly quoted in publications such as The Wall Street Journal for his views on the economy and consumer credit markets. Currently he is spearheading efforts to develop alternative sources of data to measure economic activity more accurately than traditional sources of data.

Before joining Moody's Analytics, Cristian worked for Fannie Mae and taught at Johns Hopkins University. He received his PhD in economics from Johns Hopkins University and is named on two U.S. patents for credit modeling techniques.

**Mark Zandi** is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

Dr. Zandi is on the board of directors of MGIC, the nation's largest private mortgage insurance company, and is the lead director of Reinvestment Fund, one of the nation's largest community development financial institutions, which makes investments in underserved communities.

He is a trusted adviser to policymakers and an influential source of economic analysis for businesses, journalists and the public. Dr. Zandi frequently testifies before Congress and conducts regular briefings on the economy for corporate boards, trade associations, and policymakers at all levels. He is often quoted in national and global publications and interviewed by major news media outlets, and is a frequent guest on CNBC, NPR, Meet the Press, CNN, and various other national networks and news programs.

Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360° Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by the New York Times as the "clearest guide" to the financial crisis.

Dr. Zandi earned his BS from the Wharton School at the University of Pennsylvania and his PhD at the University of Pennsylvania.

## About Moody's Analytics

Moody's Analytics provides financial intelligence and analytical tools supporting our clients' growth, efficiency and risk management objectives. The combination of our unparalleled expertise in risk, expansive information resources, and innovative application of technology helps today's business leaders confidently navigate an evolving marketplace. We are recognized for our industry-leading solutions, comprising research, data, software and professional services, assembled to deliver a seamless customer experience. Thousands of organizations worldwide have made us their trusted partner because of our uncompromising commitment to quality, client service, and integrity.

Concise and timely economic research by Moody's Analytics supports firms and policymakers in strategic planning, product and sales forecasting, credit risk and sensitivity management, and investment research. Our economic research publications provide in-depth analysis of the global economy, including the U.S. and all of its state and metropolitan areas, all European countries and their subnational areas, Asia, and the Americas. We track and forecast economic growth and cover specialized topics such as labor markets, housing, consumer spending and credit, output and income, mortgage activity, demographics, central bank behavior, and prices. We also provide real-time monitoring of macroeconomic indicators and analysis on timely topics such as monetary policy and sovereign risk. Our clients include multinational corporations, governments at all levels, central banks, financial regulators, retailers, mutual funds, financial institutions, utilities, residential and commercial real estate firms, insurance companies, and professional investors.

Moody's Analytics added the economic forecasting firm Economy.com to its portfolio in 2005. This unit is based in West Chester PA, a suburb of Philadelphia, with offices in London, Prague and Sydney. More information is available at [www.economy.com](http://www.economy.com).

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). Further information is available at [www.moodyanalytics.com](http://www.moodyanalytics.com).

DISCLAIMER: Moody's Analytics, a unit of Moody's Corporation, provides economic analysis, credit risk data and insight, as well as risk management solutions. Research authored by Moody's Analytics does not reflect the opinions of Moody's Investors Service, the credit rating agency. To avoid confusion, please use the full company name "Moody's Analytics", when citing views from Moody's Analytics.

## About Moody's Corporation

Moody's Analytics is a subsidiary of Moody's Corporation (NYSE: MCO). MCO reported revenue of \$4.8 billion in 2019, employs more than 11,000 people worldwide and maintains a presence in more than 40 countries. Further information about Moody's Analytics is available at [www.moodyanalytics.com](http://www.moodyanalytics.com).

© 2020 Moody's Analytics, Inc. and The Morning Consult LLC and/or their respective licensors and affiliates (collectively, the "Providers"). All rights reserved. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT THE PROVIDERS' PRIOR WRITTEN CONSENT. All information contained herein is obtained by the Providers from sources believed to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. Under no circumstances shall the Providers, or their sources, have any liability to any person or entity for (a) any loss or damage in whole or in part caused by, resulting from, or relating to, any error (negligent or otherwise) or other circumstance or contingency within or outside the control of Providers or any of their directors, officers, employees or agents in connection with the procurement, collection, compilation, analysis, interpretation, communication, publication or delivery of any such information, or (b) any direct, indirect, special, consequential, compensatory or incidental damages whatsoever (including without limitation, lost profits), even if the Providers are advised in advance of the possibility of such damages, resulting from the use of or inability to use, any such information. The ratings, financial reporting analysis, projections, and other observations, if any, constituting part of the information contained herein are, and must be construed solely as, statements of opinion and not statements of fact or recommendations to purchase, sell or hold any securities. NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY SUCH RATING OR OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY THE PROVIDERS IN ANY FORM OR MANNER WHATSOEVER. Each rating or other opinion must be weighed solely as one factor in any investment decision made by or on behalf of any user of the information contained herein, and each such user must accordingly make its own study and evaluation of each security and of each issuer and guarantor of, and each provider of credit support for, each security that it may consider purchasing, holding, or selling.