

7 Forces Reshaping the Economy

& Opportunities for North Carolina

Updated Sept. 14, 2020

Seven Forces Reshaping the Economy

Executive Summary

- We describe seven major forces reshaping the U.S. economy in the wake of the global COVID-19 pandemic:
 1. Changes in work, travel and migration patterns
 2. Accelerating shifts toward on-demand and at-home retail
 3. On-shoring and widening of supply chains
 4. Renewed focus on diversity and dismantling systemic racism
 5. Upending of education and childcare
 6. Shocks to health care and pharmaceutical demand
 7. Risk reassessment by capital providers
- Some of these forces are more pronounced in the near term, as the pandemic directly distorts business activity, but many will permanently alter the economy.
- While the seven forces have many unique features, they also share common threads. These commonalities will be important to businesses and investors as they decide how best to realize the emerging opportunities associated with these forces, from assessing their relative values to understanding how to capitalize on these opportunities with scarce resources and significant competition for talent.
- We identify specific opportunities for business and employment growth for the state of North Carolina, the full listing of which is provided in the main text:
 - Support workforce development through up-skilling, re-skilling, and traditional education. North Carolina should build human capital while the labor market is slack.
 - Implement an emergency program to employ recent college graduates as K-12 teaching assistants and tutors for the 2020-21 and 2021-22 academic years.
 - Expand access to broadband. Without better broadband, especially outside major metropolitan statistical areas (MSAs), the gains from new opportunities will be limited to a few regional hubs.
 - Focus on opportunities to expand existing businesses as opposed to attracting new businesses. There is a tremendous set of existing companies operating (and headquartered) in North Carolina and many opportunities can be realized simply by expanding existing operations. Additional near-term emergency support needs to be provided to many small businesses including farmers, minority-owned firms and rural businesses.
 - Renew North Carolina's commitment to diversifying state purchasing from more Historically Underutilized Businesses (HUBs) to promote supplier diversity.
 - Continue to support initiatives that highlight North Carolina's quality of life, including promotion campaigns geared specifically toward relocating knowledge workers from across the U.S.

North Carolina CEO Leadership Forum

Mission Statement

The mission of the North Carolina CEO Leadership Forum is to provide private sector leaders with a voice in navigating the complex issues that North Carolina faces in restarting the state's economy. The work of the forum is nonpartisan and data-driven by nature, leveraging a diverse group of business leaders and University of North Carolina faculty experts to develop actionable recommendations for the state's leadership and the business community at large. The ultimate goal of the forum is to promote the health and economic well-being of North Carolina's citizens and to be a model of public-private cooperation for other states around the country.

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Introduction

The COVID-19 pandemic has had a massive impact on how the global economy operates. Powerful forces are both accelerating long-standing existing trends (e.g., the demise of brick-and-mortar retail) and driving major new trends (e.g., remote work and onshoring). These forces are currently quite pronounced and will persist as long as the pandemic restricts normal activities, and will result in lasting consequences. With these forces come winners and losers. It is increasingly important for business and government leaders to understand how the economy will be transformed over the coming months and years so we can begin to take advantage of new opportunities and assist those individuals and businesses who have been, and will continue to be, economically dislocated through no fault of their own.

This report catalogs work by the Kenan Institute of Private Enterprise, in conjunction with the North Carolina CEO Leadership Forum, to distill insights from top academic researchers, business leaders and policy experts on how the economy is changing and what this means for the future of North Carolina. We describe seven forces currently reshaping the U.S. (and in some cases, global) economy:

- 1. Changes in work, travel and migration patterns
- 2. Accelerating shifts toward on-demand and at-home retail
- 3. Onshoring and widening of supply chains
- 4. Renewed focus on diversity and dismantling systemic racism
- 5. Upending of education and childcare
- 6. Shocks to health care and pharmaceutical demand
- 7. Risk reassessment by capital providers

Why seven forces, and more important, these seven? Our research has identified more than two dozen important economic effects of the pandemic, but additional analysis indicates that many of these are derivative. In fact, many of the seven forces we discuss are related in some important ways (and we highlight these interactions). Yet these seven seem more distinct than the rest and also yield

specific proposals for policy prescriptions. So while it is not a magic number, the seven forces we discuss seem to characterize the majority of important trends in current economic activity.

We provide a high-level analysis and start the process of identifying opportunities for economic growth stemming from changes caused by these forces (additional research will be needed to more fully understand each). We do this from two perspectives:

1. From a private sector business perspective, we consider which industries, and within-industry operations, are most likely to have expansion potential.
2. From an economic policy perspective, we consider what government policies and investment will minimize unemployment and maximize both overall future growth and the sharing of gains across the economy.

We focus on the state of North Carolina as a specific example, but our framework allows for consideration of other geographies as well as for the nation as a whole.

The forces we describe will have both near-term and long-term impact. For our purposes, “near-term” refers to the period during which the pandemic is still a major daily consideration and behaviors are significantly altered because of health risks (e.g., until dissemination of an effective vaccine has conferred immunity among vulnerable populations and people return to work, school and large in-person gatherings). We define “long-term” as the period after the current pandemic risk has passed. While it is unlikely that a bright line will separate the two, we expect the short term to persist well into 2021. Furthermore, there is clearly the potential for a sustained “intermediate term” if an effective vaccine is hard to create or distribute, if the virus mutates significantly or if reinfection risk is high.

Before analyzing the seven forces, we examined the current employment situation.¹ This is useful for providing both a better understanding of where dislocations are greatest now as well as what types of opportunities will most benefit those in need. At a national level, the unemployment rate remains near a 75-year high, but there are significant differences across demographic groups. Table 1 shows that people of color, women, younger workers and those with lower educational attainment have all been harder hit by the economic downturn.

When we focus on North Carolina, we find many of these same effects. In addition, Table 2 shows that those in poor health, those who are divorced or separated, and those in lower-income households are much more likely to have not worked in recent weeks. In addition, a high percentage of people who have not worked recently are relying on selling assets, borrowing from friends and family and using credit cards to meet spending needs. While the data in Table 2 do not have an exact pre-pandemic baseline (because the Census Pulse survey started in April), these numbers are all substantially elevated from similar survey responses in 2019.

¹ We provide condensed versions of data tables here. Complete versions with more detailed statistics are provided in an Appendix at the end of the report.

Table 1. National Employment Statistics (Condensed)
(Current as of August 2020. Source: U.S. Bureau of Labor Statistics)

	Aug. 2020	Change from Aug. 2019
Unemployed		
Total, 16 years and over	13,742	7,539
Unemployment rates		
Total, 16 years and over	8.5%	4.7%
Adult men (20 years and over)	7.7%	4.5%
Adult women (20 years and over)	8.9%	5.1%
Teenagers (16 to 19 years)	15.8%	3.7%
White	7.5%	4.0%
Black or African American	13.1%	7.6%
Asian	10.7%	7.8%
Hispanic or Latino	10.5%	6.3%
Less than a high school diploma	11.8%	7.1%
High school graduate, no college	9.8%	6.2%
Some college or associate degree	8.3%	5.1%
Bachelor's degree and higher	5.6%	3.2%

Table 2. U.S. Census Pulse Survey results for North Carolina (Condensed)
(Week of July 16-21, 2020)

Select Characteristics	% Not Employed in Last 7 Days
All people 18 and older	49%
Marital status	
Married	42%
Widowed	87%
Divorced/separated	68%
Never married	43%
Health status	
Excellent	35%
Fair	56%
Poor	64%
Household income	
Less than \$25,000	65%
\$50,000 - \$74,999	45%
\$200,000 and above	20%
Used in the last 7 days to meet spending needs*	
Credit cards or loans	45%
Money from savings or selling assets	52%
Borrowing from friends or family	62%

When we examine changes in North Carolina unemployment by industry, the greatest impact has been in the service sector. Table 3 shows that just two industries, leisure and hospitality and accommodation and food services, account for the majority of job losses, though almost every industry in the state has lost jobs. In terms of the percentage of jobs lost, the category of arts, entertainment and recreation has been the hardest hit, losing 38.8 percent of employment from a year earlier. In our subsequent analysis, we identify important new opportunities for these industries that should allow for redeploying many of these displaced workers.

Table 3. Employment Changes in North Carolina by Sector and Industry (Condensed)
(Changes from January-July, 2020. Source: NC Department of Commerce)

Sector	July Level	Change from January	%Change from January
Total private	3,547,800	-325,000	-8.4%
Goods-producing	664,300	-51,400	-7.2%
Service-providing	3,622,000	-271,000	-7.0%
10 most-affected industries (ranked by total employment loss/gain):			
Leisure and hospitality	386,300	-148,200	-27.7%
Accommodation and food services	336,100	-116,400	-25.7%
Manufacturing	437,000	-42,100	-8.8%
Education and health services	585,500	-40,000	-6.4%
Trade, transportation and utilities	816,200	-35,300	-4.1%
Arts, entertainment and recreation	50,200	-31,800	-38.8%
Health care and social assistance	498,600	-29,300	-5.6%
Professional and business services	618,600	-27,400	-4.2%
Durable goods	238,700	-25,500	-9.7%
State government	184,000	-23,000	-11.1%

North Carolina has fared slightly better than the U.S. as a whole, with an increase in the unemployment rate of 4.6 percent relative to 2019, compared to an increase of 4.7 percent nationally. However, Table 4 shows that every metropolitan area in the state has seen an increase of more than 3 percent unemployment, with rates having effectively doubled in most areas including Charlotte, Raleigh, Greensboro-High Point, Winston-Salem, Asheville, Hickory and Fayetteville.

Table 4. Unemployment Changes in North Carolina by Geography
(July 2020 and changes since July 2019. Source: U.S. Bureau of Labor Statistics)

Region	Unemployed		Unemployment Rate	
	Jul-20	Change from Jul-19	Jul-20	Change from Jul-19
North Carolina (all regions)	441,279	221,740	8.9%	4.6%
Asheville	21,446	13,220	9.4%	6.0%
Burlington	7,137	3,499	8.8%	4.4%
Charlotte-Concord-Gastonia	126,377	72,352	9.3%	5.4%
Durham-Chapel Hill	23,331	11,514	7.9%	4.1%
Fayetteville	16,666	8,224	11.6%	5.9%
Goldsboro	3,945	1,535	8.2%	3.6%
Greensboro-High Point	37,269	20,061	10.3%	5.7%
Greenville	7,511	2,927	8.8%	3.7%
Hickory-Lenoir-Morganton	15,099	7,884	9.0%	4.9%
Jacksonville	5,298	2,002	8.3%	3.1%
New Bern	3,773	1,436	7.5%	3.1%
Raleigh	56,408	28,327	8.0%	4.2%
Rocky Mount	7,229	3,441	11.3%	5.5%
Wilmington	12,397	6,200	8.3%	4.4%
Winston-Salem	28,313	14,663	8.9%	4.8%

The data suggest that efforts to grow the economy must find a way to get a broad swath of people back to work, but with a special emphasis on people of color, those who have previously worked in the service sector, those with lower educational attainment and those with fewer financial assets at their disposal. Overall, the pandemic has elevated the pressure of systems that were already under significant stress: health care access and payment, public transit and city design, childcare and funding for public schools. Some of these problems can be mended with patches for the short term, but many need to be fundamentally reexamined (and redesigned), which will take long-term planning as well as smart financial investment. In some ways, as we are forced to examine what is most essential to us and the systemic failures that occurred at a most critical time, the pandemic is an opportunity to imagine what the next 20 years of the evolution of the American economic system could look like.

While it may be hard to think in 20-year increments with so many pressing needs, it is still vital to consider long-term trends so we can maximize the value of current investments. For example, we believe that there are currently significant up-skilling opportunities while labor markets are slack and that these will facilitate above-average future income growth for those currently out of work. Investing in human capital now helps solve both short-run and long-run problems.

1. Changes in work, travel and migration patterns

By far, the most significant change driven by the pandemic has been on where people go – to work, to play and even to live. These changes have had an immediate economic impact, but will also have long-term effects such as shifts in business travel activity and on where people prefer to buy homes.

The future of cities

Urbanization has been a powerful force in the modern economy and much has been written on what appears to be growing economies of agglomeration.² However, the pandemic has posed questions as to whether this trend will continue. At a very fundamental level the productive capacity of the economy has experienced two “shocks” from the pandemic related to how and where people work:

- Commercial buildings (especially offices) have become much less productive places for doing work in the short-run. This has reduced the demand for labor from the traditional place of work and increased the demand for work from home. In Q2 of 2020, gross leasing volume for office space in the United States dropped by an astounding 53.4%.³
- The “cost” of commuting and business travel has jumped, primarily because people perceive both as risky and are therefore less willing to use public transit and to travel overnight and away from home.⁴

Some industries, particularly those with workers in higher paying jobs requiring a college education — so-called “thought workers” — have learned that many of their employees can remain productive at home. A Stanford survey has projected that as of June 2020, up to 42 percent of U.S. workers were working from home full time.⁵ Companies such as Facebook, Twitter, and Square have made headlines for announcing that their employees will be permitted to work remotely even after the pandemic ends.⁶ However, working from home is not a viable option for many jobs, especially for those designated as essential. Seventy percent of essential workers working outside the home do not hold a college degree and are more likely have a household income of less than \$40,000 (31 percent versus 19 percent of nonessential workers).⁷

Although COVID-19 has accelerated technology adoption for white-collar work that allows for better monitoring of employees, research suggests that even for many knowledge workers there exists a healthy balance of productivity between remote and on-site work.⁸ This likely reflects benefits from things like the free flow of ideas and other “soft” aspects of relationships with coworkers.⁹ In addition, gains to at-home work are very industry- and job-specific, so while there

² For an overview, see Glaeser (2010).

³ See Homa & Ryan (2020).

⁴ See Verma (2020).

⁵ See Bartik et al (2020), Dingel & Neiman (2020), Bloom (2020).

⁶ See McLean (2020).

⁷ See Kearney & Muñana (2020).

⁸ See Bartik et al (2020) and OCED (2020).

⁹ Employees working from home are also more susceptible to “burnout.” See for example, Fox (2020).

will be a long-run increase in demand for at-home work, the current environment is neither permanent nor optimal. The effects of COVID-19 will be most pronounced in less dynamic and less knowledge-intensive industries and roles.

Table 5: Demographics of Essential Workers

	Currently Employed: Essential Worker	Currently Employed: Nonessential Worker
By race/ethnicity		
White, non-Hispanic	61%	72%
Black, non-Hispanic	15%	5%
Hispanic	16%	11%
By household income		
Less than \$40K	31%	19%
\$40K-<\$90K	35%	27%
\$90K or more	29%	49%
By education		
High school or less	35%	17%
Some college	35%	22%
College +	30%	61%

Source: KFF.org¹⁰

Despite the current increase in remote work, the long-run demand for office space is likely to suffer little. Even now, demand for space is increasing again, as more economic activity returns to normal and workplaces adapt to social distancing requirements.

The pandemic will impact demand for retail space in two ways. First, the trend away from brick-and-mortar retailing has accelerated. However, there will be a short-run bump in renovations that facilitate delivery, curbside pick-up and showroom/customer services. Second, restaurant and entertainment spaces will eventually expand in square footage because of a change in preference toward less crowded spaces.¹¹ For example, the pandemic will accelerate the trend of indoor malls shifting to provide more entertainment and social services and less traditional retail.¹²

Changes in living location and environment

Demand for residential renovation and new home building were strong in July 2020, as more people saw a need for additional space to work and stay at home.¹³ The need for residential structures will

¹⁰ See Kearney & Muñana (2020).

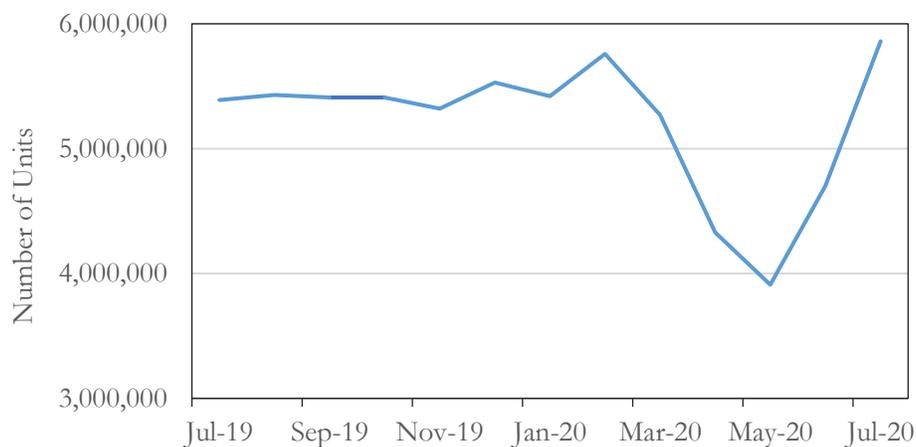
¹¹ Yet even with less retail, there will be an expansion of bars, restaurants, and other establishments that serve people near their neighborhoods as people will want nearby locations for familiarity and speed of service. See for example, Fulton (2020).

¹² See Sisson (2020).

¹³ See Surge in Home Construction, Lumber Prices (2020).

continue to increase, and home builder confidence is at all-time high according to the NAHB/Wells Fargo Housing Market Index (HMI). In July, existing home sales bounced back to pre-pandemic levels (See Figure 1). More time spent at home has already resulted in an increase in residential renovation expenditures. A desire for home offices by some knowledge workers will drive demand for more square footage, especially in more expensive neighborhoods within commuting distance of “high-skill” cities. Knowledge workers also want the amenities that come with living in or near a central business district (CBD), and those amenities will quickly return once the health crisis is over. In places where people mostly take public transit to work, demand for housing close to the CBD will increase until the health crisis is fully resolved.

Figure 1. Monthly Existing Home Sales in U.S.



Source: National Association of Realtors¹⁴

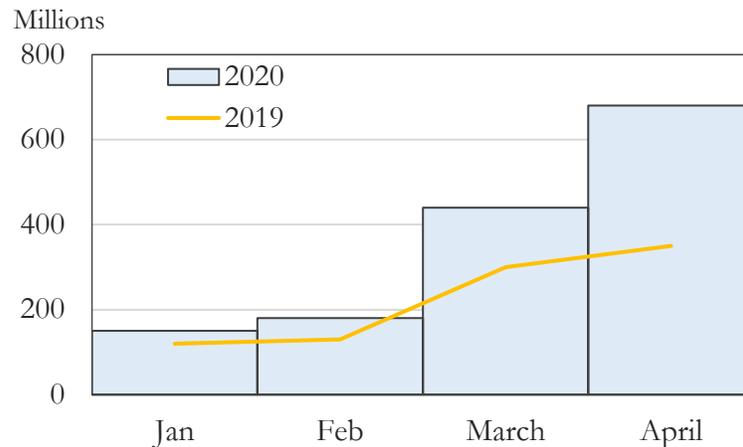
As public transit faces large financial deficits due to decreased ridership (even prior to the pandemic) and lagging tax subsidies from local and state governments, it will be financially challenged to invest the resources to safely bring back riders.¹⁵ The difficulty of making mass transit safe is shifting commuters toward driving to work (and thus increasing commute times). Commuters will tend toward living close to work and opting for walking or other “personal transit” options such as bikes and scooters, especially as many cities have improved and increased pedestrian and biker pathways during the pandemic’s lockdowns.¹⁶

¹⁴ Federal Reserve Bank of St. Louis (2020). Existing Home Sales.

¹⁵ See Verma (2020).

¹⁶ See Bliss et al. (2020).

Figure 2: U.S. Bicycle Sales



Source: The NPD Group

Although the majority of younger urban dwellers will not relocate to the suburbs, the pandemic will reverse the trend of empty nesters moving downtown for access to amenities, as this demographic is more likely to have had a severe scare from COVID-19.¹⁷ In addition, demand will increase for second homes outside of urban areas that can serve as “escape pods” or part-time work-at-home locations.¹⁸ We also expect to see acceleration of the trend for families with school-age children to leave urban areas to be near relatives (often aging parents).

Altogether, there will be fewer overall changes in the workplace and urban environments now that a vaccine is in sight. New opportunities in real estate will be concentrated outside dense urban areas and in new residential construction and renovation.

Travel away from home

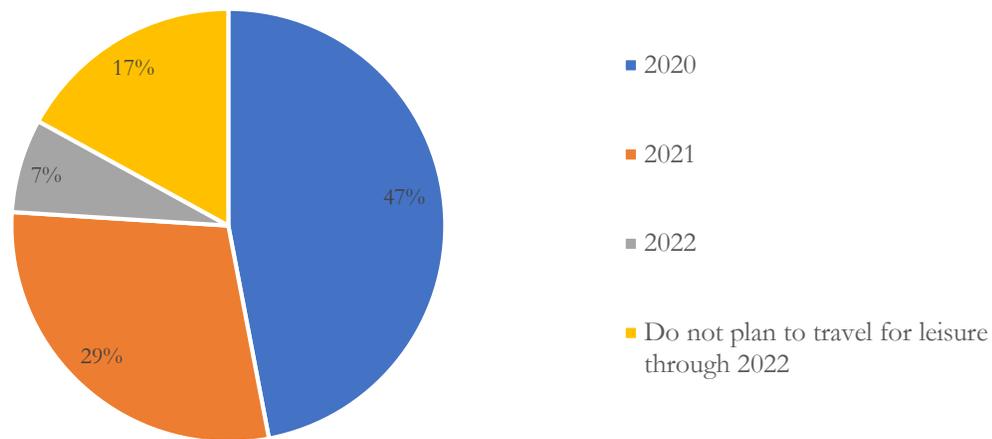
Because of the pandemic, businesses now have a clear picture of what types of business travel are productive. Travel is a major cost for many large companies and can have a significant impact on profitability. The swift and widespread pivot to online meetings has changed how businesses operate, and we expect further innovations in technology that will allow for more personal virtual interactions and collaboration. While the travel industry remains one of the hardest hit sectors in the short run, there will be a permanent and substantial long-run decline in demand for business travel, including air, hotels, rental cars and entertainment.¹⁹ Likewise, due to its reliance on high-density populations, conference hosting and travel will be severely impacted, even in the long run. That said, there is still a vast business need for conferences, so we expect new technological solutions will help satisfy this demand.

¹⁷ Some empty nesters are seeing their children move back in with them. See Hus (2020).

¹⁸ See Olshan (2020).

¹⁹ See Sindreu (2020).

Figure 3. When Do People Expect to Travel for Leisure?



Source: The Harris Poll survey conducted online within the United States from June 25-29, 2020, among 2,000 adults ages 18 and older.²⁰

Vacation travel will rebound much more rapidly, but the demand will shift toward places within easy driving distance.²¹ This has been a major short-run trend driven by health concerns, and because it is cheaper and perceived as safer, it will persist. Many vacationers will find areas they like and develop long-term attachments to them. Families will substitute away from more crowded destinations like amusement parks and urban destinations and toward family resorts, outdoor adventures/tours and “residential” vacations such as rental homes. Demand for the “summer trip abroad” will not return to pre-pandemic levels for the foreseeable future, including tourism to the U.S. by foreign travelers.

Opportunities for North Carolina

- The state should further expand its economic development efforts to include worker-focused efforts. North Carolina has an opportunity to attract people who bring high-paying (remote) jobs with them. Existing businesses can also attract these people with the state’s high quality of life and reasonable commutes. North Carolina will continue to attract people to cities, but there are increasing opportunities to attract people to more rural areas as they seek “escape pods” or relocate from urban areas. The ability to attract certain types of employees will depend on the type of work and individual skillsets of those employees, as well as the amenities and infrastructure of specific locations. Retiree migration to the area will accelerate as well. The state should position itself for an accelerated expansion in residential building by providing streamlined zoning and permit approval, appropriating for

²⁰ See the Harris Poll (2020)

²¹ See Sampson & Compton (2020).

related infrastructure, instituting land/relocation grants for select regions (e.g., Tier I counties) and adopting short-term individual tax incentives and student loan support.

- The state is well positioned in the nearby vacation market for both coastal and mountain regions, though scaling capacity in the near term will be a problem and per-visitor expenditures are likely to be lower than pre-pandemic levels (e.g., fewer meals at restaurants or visits to retail/festival destinations). Opportunities for near-term increased capacity include enhanced offerings at state parks and adjacent areas, given the many desirable destinations in North Carolina.
- Technology for remote working has proven effective but is still unable to replace value-creation from in-person spontaneous encounters. Given the growing strength of the gaming industry and emerging technologies software (e.g., artificial intelligence), North Carolina – and the Triangle region in particular – has an opportunity for technological innovation in the “remote productivity” software segment. This expertise could extend to development of better technologies for virtual and hybrid conferences, given the widespread view that current technology solutions for e-conferences are insufficient.

2. Accelerating shifts toward on-demand and at-home retail

During the past decade, retail has seen a growing movement away from brick-and-mortar to online retailing. Almost 10,000 retail locations closed in the pre-COVID world of 2019.²² Yet recent research has documented that physical stores continue to play a pivotal role for consumers.²³

Even as the move to online retail was shuttering physical retail doors prior to the outbreak, the ensuing pandemic has dealt a death blow to many more retailers than could have been imagined prior to January. Retailers have already been fighting the market-wide (and many times uneven) implications of increased online shopping due to stay-at-home orders and increased public health concerns. Smaller establishments within an affected market tend to face a greater impact by the growth of online retail.²⁴ The potential bankruptcy of so many retailers may benefit others because of lowered competition, but this will not make up for permanent shifts in demand brought on by the pandemic. Pre-COVID-19 retail categories such as music and video, baby supplies and books experienced the highest online market share; however, since COVID-19 there has been an acceleration in other categories that had not historically seen a major shift to online retail.²⁵ A prime example is that of older consumers who have embraced grocery and restaurant delivery in unprecedented numbers, as illustrated by the 65 percent increase in online grocery shopping from March to May 2020.²⁶ However, it is important to note that because grocery retailing needs a

²² See Peterson (2019)

²³ See Dekimpe et al. (2020) and Hortaçsu & Syverson (2015).

²⁴ See Goldmanis et al. (2008).

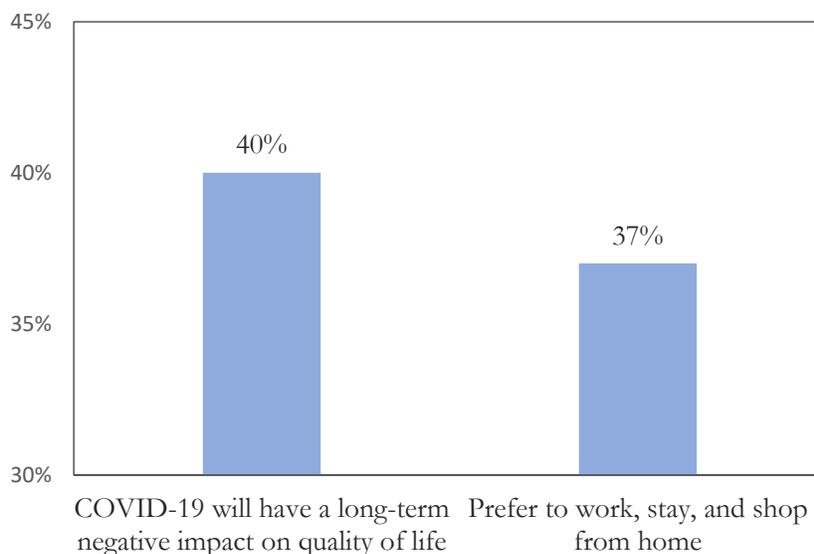
²⁵ See Dekimpe et al. (2020).

²⁶ See Kang (2020).

physical footprint to ensure fresh products reach consumers, many still prefer to shop in person; therefore, we anticipate it will survive several of the recent changes.

In addition to the short-term change in demand for online retail, evidence is emerging that indicates this shift will be permanent.²⁷ A recent Forrester Research survey finds that 37 percent of consumers with a high fear of COVID-19 prefer to make retail purchases from home.²⁸

Figure 4. Changes in Consumer Attitudes Due to COVID-19



Source: Forrester Research²⁹

The rapid adjustment of supply chains in the wake of COVID-19 has expanded capacity and improved the customer experience in many ways. Examples include new remote services in telehealth (more below), on-demand entertainment, exercise and auto maintenance. Evidence also suggests that individual preferences are changing toward expenditures on personal enrichment, family connection and hobbies. These changes have major implications for the workforce since retail is a large employer, especially of lower-income workers.³⁰ Some retail workers have found work in other parts of the retail supply chain (e.g., warehouses and deliveries)³¹ but many more new jobs are “gig-economy” positions employing independent contractors who lack regular hours or benefits.³²

²⁷ See Dean (2020).

²⁸ See Lai (2020).

²⁹ See Lai (2020).

³⁰ See Lai (2020). Roughly 40 percent of consumers are planning to reduce overall spending.

³¹ See Bureau of Labor Statistics (2020).

³² See Hasija et al. (2020).

Figure 5. Monthly Changes in Employment: Warehouse and Storage

As of June 2020	Net Change (in thousands)	Percent Change in Employment
1 month	-5.7	-0.5%
3 month	67.3	6.0%
6 month	-11.7	-1.0%

Source: U.S. Commerce Department, Bureau of Labor Statistics³³

Opportunities for North Carolina

Brick-and-mortar retail is an inherently local endeavor, and it is likely that North Carolina will follow the same trend being seen nationally. Consequently, opportunities for growth will derive from embracing e-commerce logistics and support services.

- Given its location and generally low cost of labor, North Carolina has opportunities to further expand central supply chain and logistics facilities and services (more on this in the next section). The state also has a solid track record in providing retail services support (e.g., the Fidelity customer service center in Cary, N.C.) and is increasingly becoming a competitive provider of other services to e-commerce platforms. Because it matters much less where people are located for e-commerce support, North Carolina can leverage its talent pool and expertise in this area.
- Online shoppers are increasingly seeking high-end, boutique, locally sourced and customized goods and services. This will generate opportunities for specialty goods and services produced in North Carolina, such as food/agricultural products, furniture, personal care products, textiles, health care and financial services. As products from around the world become more readily available online, the unique marketing and sustainability value of local products can become a differentiator. Additionally, as some larger retail chains close stores, opportunities may be created for more local owners and entrepreneurs to establish new retail businesses.

3. Onshoring and widening of supply chains

From its first materialization in China, the COVID-19 pandemic has upended and highlighted serious vulnerabilities in the global supply chain.³⁴ The initial supply chain shock derived from the closure of manufacturing facilities in Asia,³⁵ but quickly migrated to interruptions in transportation and closure of domestic facilities with the proliferation of stay-at-home orders and outbreaks in

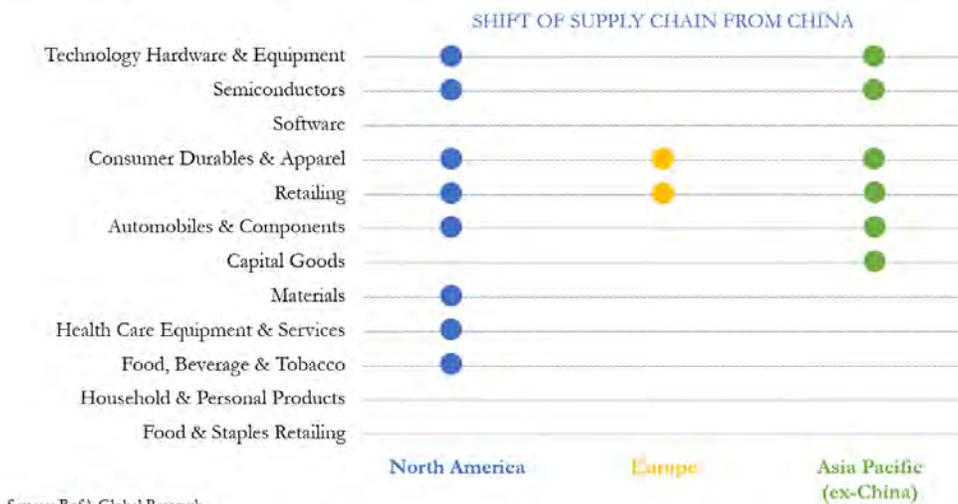
³³ Bureau of Labor Statistics (2020).

³⁴ See Bank of America (2020).

³⁵ See Mickle (2020). For example, Apple closes facilities in China.

facilities such as meat processing plants.³⁶ In addition, significant increases in demand for some items such as PPE, cleaning supplies, food to be consumed at home and delivery/transportation services resulted in widespread shortages (such as the infamous toilet paper scare). In March 2020, the World Health Organization estimated that global PPE manufacturing would need to increase by 40 percent in order to meet global demand.³⁷ Within the United States, many doctors were working (and some are still are) without the necessary levels of PPE such as masks and hand sanitizer.³⁸ In response, companies have undertaken full-spectrum analyses of their supply chains with an eye to two primary considerations: agility and resiliency.³⁹

Figure 6: North American companies are ahead of their Asia Pacific (ex-China) and European counterparts in moving their supply chains out of China



To increase agility, companies are seeking to source critical components (including labor) from more flexible suppliers and bring more operations in house.⁴⁰ As the COVID-19 pandemic has demonstrated, unforeseen events can trigger major disruptions to entire supply chain networks. Many global companies failed to implement effective business continuity plans, operating instead under the assumption that their supply chain designs would somehow allow materials and services to flow freely globally and would enable them to continue operations while leveraging the lowest-cost locations around the world.

Companies also want to simplify logistics to make change easier to manage.

³⁶ See Areddy (2020).

³⁷ World Health Organization (2020).

³⁸ See McCauley & Hayes (2020).

³⁹ See Sheffi (2020).

⁴⁰ See Maidenberg (2020).

To increase resiliency, companies are making operations more robust to external shocks by moving production closer to markets and increasing buffers (e.g., inventories). Additionally, companies will become increasingly reliant on systems based on newer and disruptive technologies that help build smarter supply chains and reduce vulnerabilities in global pandemics or other unforeseen circumstances. Smarter supply chains that leverage the power of artificial intelligence (AI), the internet of things (IoT) and blockchain capabilities, among others, will help companies maintain business continuity amid disruption and uncertainty. This not only allows these companies to closely monitor their supply chains in real time; it also helps them predict possible vulnerabilities and disruptions and understand their up- and downstream impacts, enabling more rapid responses.

Leveraging technology, combined with near-shoring or onshoring (and supply chain fluidity), will help with rapid responses and issue resolution, limiting disruptions due to unforeseen circumstances. In addition, companies have become more aware of secondary and tertiary supply chain dependencies, especially their reliance on China.⁴¹ While the trend in recent years had been toward more efficient supply chains, the focus has now shifted to making those supply chains more robust. In summary, the results of these changes will include onshoring more production (and expanding existing domestic facilities); diversifying supplier relationships; increased investing in inventories and materials; greater reliance on sophisticated technological solutions; and bringing certain operations in house (through *de novo* operations or vertical mergers and acquisitions).

The United States faces another set of challenges due to disruptions at all levels in the agricultural supply chain. By June 2020, there had already been an 8 percent increase in farm bankruptcies compared to 2019.⁴² Due to social distancing requirements and immigration restrictions, farmers may struggle to find sufficient workers.⁴³ In addition, with a potential labor shortage and existing farm workers' increased potential for contracting COVID-19, farmers may be unable to pay higher wages to attract workers. Disruptions to food processing further compound the challenges. The closure of meat processing facilities due to COVID-19 outbreaks has led to meat distribution shortages, adding additional strain on the food supply chain. From April 2019 to April 2020, livestock processing decreased 40 percent, a slowdown that has led some farmers to euthanize their stock to prevent massive overcrowding.⁴⁴ A diminished food supply has the potential to inequitably affect underprivileged communities, possibly exacerbating already raw social tensions (see next section). Finally, the stability of the nation's agricultural infrastructure could face further disruption if relations between the U.S. and certain trading partners continue to deteriorate.

Opportunities for North Carolina

- North Carolina can benefit from the onshoring of manufacturing; however, such operations are likely to depend on substantially more automation than facilities of 10 or 20 years ago. Consequently, businesses will need to hire and/or train more specialized workers. The state

⁴¹ See Shih (2020).

⁴² See Newman (2020).

⁴³ See Felix et al. (2020).

⁴⁴ See OECD (2020).

needs to be careful not to forgo opportunities because of workforce deficiencies and should work with specific industries to expand specialized training through community colleges for certain types of opportunities (the BioWork program is a prime example; more on this below). Otherwise, the rapid technological adoption that COVID-19 has stimulated could put even more downward pressure on wages for routine occupations.

- Just as it can for retail, North Carolina can benefit from its geography in the logistics and wholesale supplier market. North Carolina-based facilities are able to service a large geography efficiently. The Triad region in particular has substantial unused or underused former manufacturing space, and though much of that space will need to be significantly upgraded, it benefits from good access to a utility, rail, highway and air transportation infrastructure.
- North Carolina has substantial expertise in business data analytics (e.g., SAS, IBM, etc.) that can be tapped into to provide supply chain optimization and risk identification/mitigation services. With global companies leading the build-out and delivery of such software solutions, North Carolina can create a hub of such supply-chain management solutions. Similarly, North Carolina's financial services industry has deep expertise in financial operations and risk management, with many large financial institutions operating middle- and back-office operations in the state.

4. Renewed focus on diversity and dismantling systemic racism

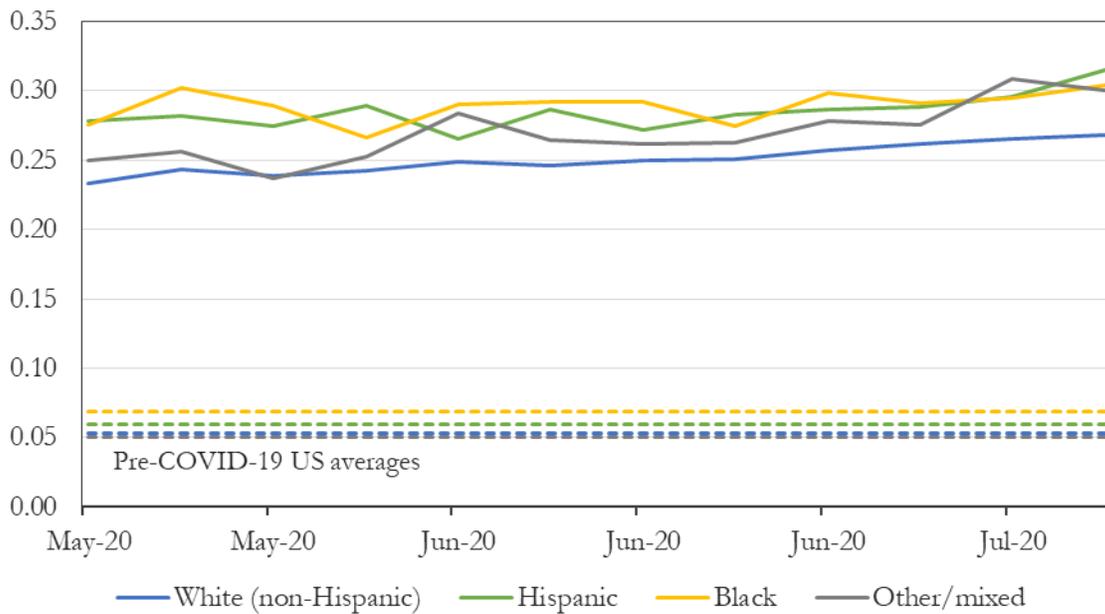
The pandemic has exacerbated long-standing inequities in American society. As noted in the introduction, socioeconomic groups that already experienced more challenges in the workforce have experienced larger increases in unemployment as well as higher rates of COVID-19 infection and death. With the murder of George Floyd coming on the heels of other recent deaths of Black people at the hands of police, racial tensions reached a boiling point in late May. Massive demonstrations and social unrest pointed a new spotlight on systemic racism and the Black Lives Matter (BLM) movement. Most important, this forced a national dialog at a new level, with substantially more popular support than the movement had previously experienced. According to a Pew Research Center survey conducted in early June, 67 percent of all adults either strongly or somewhat support the BLM movement — a substantial increase from 43 percent in 2016.⁴⁵ Many business leaders, as well as rank-and-file employees, joined the discussion and, more than ever before, proposed meaningful changes in policies addressing systemic racism in the U.S. Below we examine some of these initiatives in more detail, but first we examine the backdrop for this force as it relates to the pandemic and associated economic conditions during spring 2020.

The onset of the pandemic and rising racial tensions reinforced each other as certain socioeconomic groups, such as people of color, found themselves more susceptible to both contracting COVID-19 and becoming victims of the economic fallout. The disproportionate impacts of the pandemic on people of color have been manifested in a variety of ways. We have constructed a measure of

⁴⁵ See Parker et al. (2020) and Menasce & Livingston (2016).

socioeconomic adversity that is a composite of mental adversity (anxiety, worry and depression), health care adversity (delayed or unavailable health care) and food insecurity (sometimes or often not having enough to eat). While the index jumped to high levels for all people when the pandemic began, Black (as well as Hispanic and mixed-race) individuals experienced a significantly larger increase than non-Hispanic whites (see Figure 7). In addition, the index did not decrease even as the economy started to improve in May (and, in fact, continued to trend up slightly). Likewise, other measures such as employment ratios and education outcomes have been more depressed for people of color.⁴⁶

Figure 7. Socioeconomic Adversity Index for US by Race & Ethnicity



Source: Kenan Institute of Private Enterprise⁴⁷

Traditionally, most businesses have attempted to stay on the sidelines of controversial issues to avoid alienating customers and limit internal discord. But with the growing awareness of systemic racism in the U.S. and the gut-wrenching scenes of violence against Black people mounting, business leaders have increasingly realized the need to take a public stance. In many cases, this appears to be led by businesses' own concerns, but the shift in public opinion (and increased pressure from customers and employees) solidified the trend toward making public statements. In some cases, companies also committed to new initiatives related to more fair and equitable treatment of diverse populations, especially people of color. Corporate positioning benefited from the growing evidence supporting the business case for corporate diversity and inclusion policies. Specifically, businesses with more diverse workforces, leadership and boards tend to out-perform less diverse businesses.⁴⁸

⁴⁶ See Kenan Institute of Private Enterprise (2020).

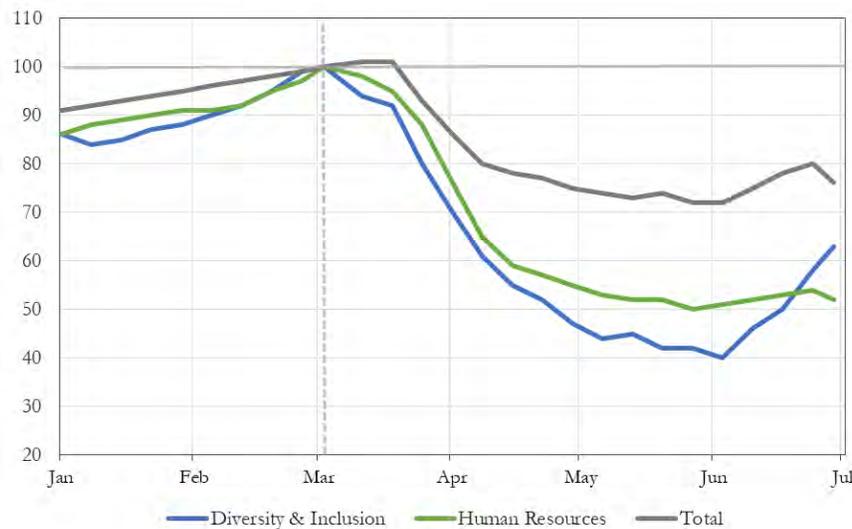
⁴⁷ See Kenan Institute of Private Enterprise (2020).

⁴⁸ See for example, Gompers and Kovvali (2018), and citations therein.

Likewise, a movement toward “stakeholder capitalism,” as described by the Business Roundtable, has set the stage for a broader range of policies than would have been considered by many companies even just a few years ago.⁴⁹

Reactions by corporations have resulted in two general types of initiatives: those looking internally at how the business treats its own diverse employees and those looking at the environment outside the company, including relationships with other businesses and the broader community. We consider these in turn. New internal policies have focused on such topics as diversity training and reexamining compensation practices. Increasingly, companies are setting internal benchmarks for diversity at all levels of the organization and more carefully benchmarking promotion and pay. Because companies better understand the business case for diversity, they are now willing to implement programs that mentor diverse junior employees, drive a sense of belonging by employees and allow for more credible recruitment of diverse talent. Businesses also understand that industry leaders are increasingly valuing diversity, and this can lead to competitive (and branding) advantages.⁵⁰ Ironically, these shifts come after an apparent pull-back in diversity initiatives at the onset of the pandemic (see Figure 8).⁵¹

Figure 8. D&I Job Openings



Source: Source: Glassdoor, U.S. job openings. Data through June 29, 2020, Each series is indexed to March 11 = 100

New externally focused policies have been announced by some large companies in the last two months. These policies actively seek to address inequities experienced by stakeholders outside the company and could have more immediate and noticeable economic impacts. There are again two general types of actions. The first is to stop policies that perpetuate systemic racism. Examples

⁴⁹ See Business Roundtable (2019).

⁵⁰ See Dolan et al. (2020).

⁵¹ See Stansell & Zhao (2020).

include stores such as Walmart, CVS, and Walgreens discontinuing the practice of locking up haircare products typically used by “multicultural” customers, and tech companies such as Amazon and Microsoft banning the use of their facial recognition software by police (with IBM exiting the business entirely).⁵² Another interesting example has been the commitments by a wide range of technology companies to eliminate insensitive terminology like master/slave for storage devices from their products and product documentation.⁵³

The second type of external policy concerns active engagement in programs designed to stimulate diverse economic activity. This includes investing in minority-owned businesses as well as allocating procurement dollars to diverse businesses and certain communities. Examples include major new commitments by IBM to its supplier diversity program and Bank of America’s pledge of \$1 billion to address racial inequality in small business, housing, health and employment.⁵⁴

Opportunities for North Carolina

- North Carolina can generate a large pool of talented minority employees for professional careers from its relatively large minority population. The state ranks eighth among U.S. states in the percentage of the population identifying as Black or African American (and eleventh in terms of the total population of Blacks/African Americans).⁵⁵ North Carolina ranks first in the number of four-year Historically Black Colleges and Universities (HBCUs) and third in the change in degree attainment by Black and African American students since 2000.⁵⁶ The statistics suggest that employers seeking to locate in areas where they can tap into diverse talent will find North Carolina increasingly attractive.
- North Carolina is well poised to facilitate the formation and growth of minority-owned businesses. Minorities seeking to start their own businesses benefit from an existing network of diverse business owners and a supportive ecosystem. North Carolina ranks as the ninth most supportive state for Black-owned businesses.⁵⁷ In recent years, the state economy has grown more rapidly than the national economy, and is currently faring better in the economic recovery than the U.S. as a whole.⁵⁸ High-growth sectors in North Carolina include information technology, health care and transportation, which all rank among the top five industries for Black-owned businesses.⁵⁹
- The state could benefit quickly by more effectively executing on existing programs to increase contracting with minority-owned (especially Black-owned) businesses. Another logical focus is on procurement by “anchor institutions.” Anchor institutions are geographically immobile employers who have significant procurement needs (e.g., universities, hospitals and military bases), and that often rely on large suppliers outside their region. While anchor institutions already have a significant impact on their respective local

⁵² See Associated Press (2020) and Crumpler (2020).

⁵³ See Cimpanu (2020).

⁵⁴ See Nyugen (2020).

⁵⁵ See U.S. Census Bureau (2020).

⁵⁶ See *Historically Black Colleges and Universities* (n.d.) and Nichols & Schak (2018).

⁵⁷ See Postma (2020).

⁵⁸ See Kenan Institute of Private Enterprise (2020).

⁵⁹ See Black Owned Businesses Statistics (2020).

economies by virtue of scale, they also have the opportunity to play a pivotal role in ensuring the long-term prosperity of the regions in which they are located. Anchor institutions can lead economic recovery efforts by redirecting procurement spending to areas disproportionately impacted by COVID-19 (e.g., African American, Hispanic and Native American communities). Furthermore, intentional procurement strategies committed to both supplier diversity and local economic impact will build a more resilient, equitable economy.

5. Upending of education and childcare

As a new school year starts, the experience for almost all students is quite different than in previous years. Students are trading in composition notebooks for iPads and bus rides for dinner tables that double as school desks. For parents, the next academic year is raising anxiety-inducing questions about the health and well-being of their children, the quality of remote learning and how to handle the loss of reliable childcare.

Students spend, on average, more than 30 hours per week in school, not including all of the extracurricular activities and after-school care in which many participate.⁶⁰ As the pandemic upends the traditional school format, school districts have had to make tough decisions about the best way to provide a quality education while keeping students, teachers and their families healthy. For many, there has been a move to virtual learning or a hybrid model of virtual and in-person instruction. In North Carolina alone, nearly two-thirds of students are expected to start the school year remotely.⁶¹ This decision has left parents scrambling, and though it can add stress for all parents and students, it undoubtedly has a larger impact on some than on others.

The Pandemic Could Widen the Achievement Gap

The “achievement gap” refers to the longstanding disparities in academic performance or education attainment between subgroups of students, in particular groups defined by race/ethnicity and/or socioeconomic status.⁶² These disparities are often measured through standardized test scores (an imperfect measure, to be sure) but can also be seen through dropout rates, college enrollment and other academic factors. In recent decades, there has been a slight but uneven decline in the achievement gap between white students and their Black and Hispanic peers. However, the unequal access to quality education along racial lines (and often segregated in high-poverty schools) has remained, making the gains nearly negligible.⁶³ According to a McKinsey report, the average Black or Hispanic student is roughly two years academically behind the average white student.⁶⁴ Additionally, there remain significant gaps based on students’ socioeconomic status, with students from low-income families falling behind their peers.⁶⁵

⁶⁰ See National Center for Education Statistics. (n.d.).

⁶¹ See North Carolina School Board Association. (2020).

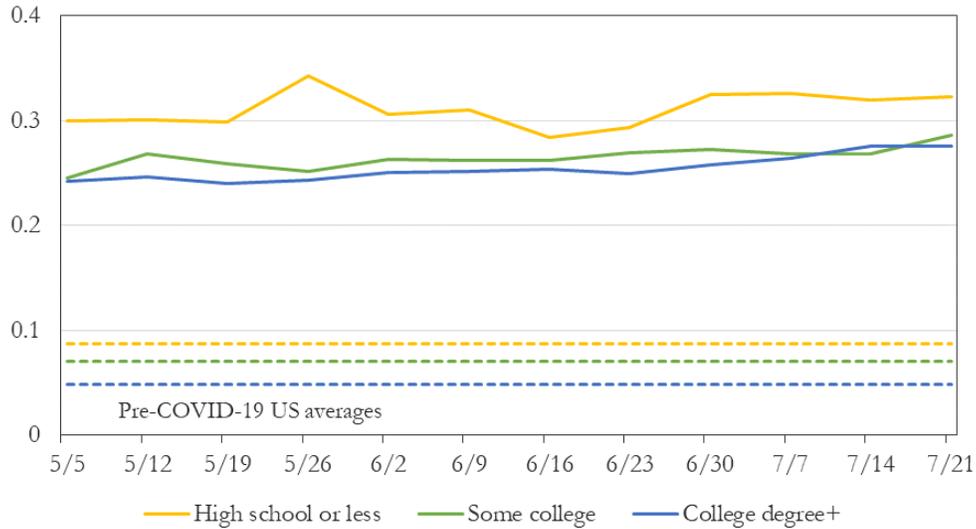
⁶² See National Assessment of Education Progress. (2020).

⁶³ See Reardon et al. (2019) and Hansen et al. (2018).

⁶⁴ See Dorn et al. (2020).

⁶⁵ Ibid.

Figure 9. Socioeconomic Adversity Index for the U.S. by Educational Attainment



Source: Kenan Institute of Private Enterprise (Index is an average of response rates for the index) ⁶⁶

North Carolina schools follow these national trends. A 2017 report from the National Center for Education Evaluation and Regional Assistance (Department of Education) found that the white–Black proficiency gap in 2011–12 exceeded 15 percentage points (22–25 percentage points in reading and 16–21 percentage points in math), and the white–Hispanic proficiency gap was 17–24 percentage points in reading and 9–13 percentage points in math.⁶⁷ Although these numbers were slightly better than those of the previous three years, the report estimated that it would take from 15–40 years to eliminate these achievement gaps.⁶⁸

Some fear the pandemic will only exacerbate these inequities and widen the achievement gap due to learning loss caused by the ineffectiveness of current online tools compared to in-person instruction, and a potential decline in the number of students reached.⁶⁹ In particular, access to computers and broadband connectivity may be a barrier for some, especially low-income and rural students (a phenomenon known as the “homework gap”).⁷⁰ Nearly 12 million school-age children in the U.S. live in homes without broadband access.⁷¹

It is also notable that in a virtual school environment, many food-insecure families with school-age children are unable to easily obtain the free or reduced meals normally provided during in-person instruction at school. Congressional approval of Pandemic Electronic Benefit Transfer (P-EBT) under the Families First Coronavirus Response Act was an important step to help bridge this gap and support SNAP and non-SNAP families by providing EBT funds equivalent to the value of the

⁶⁶ See Kenan Institute of Private Enterprise (2020).

⁶⁷ See Herrera (2017).

⁶⁸ Ibid.

⁶⁹ See Dorn et al. (2020).

⁷⁰ See Bacher-Hicks, Goodman, & Mulhern (2020) and Vogels, Perrin, Rainie, & Anderson (2020).

⁷¹ See U.S. Congress Joint Economic Committee (2017).

meals that the child would have received he or she were attending school. In North Carolina alone, more than 800,000 families are eligible for P-EBT. The issuance of P-EBT funds has helped to support the health of children in the state while easing the financial burden on parents, and likely also created a notable trickle-down economic impact for directly and indirectly affected businesses.⁷²

The achievement gap has not only has a significant impact on the trajectory of student outcomes, but also has affected the economy at large. McKinsey estimates that “if the Black and Hispanic student achievement gap had been closed in 2009, today’s U.S. GDP would have been \$426 billion to \$705 billion higher. If the income-achievement gap had been closed, we estimate that U.S. GDP would have been \$332 billion to \$550 billion higher.”⁷³

Women Shoulder Much of the Burden of a Childcare Crisis

With many students now schooling from home, working parents will have to balance their own work responsibilities with supervising and instructing their children. Additionally, many families are experiencing financial challenges created by the economic downturn and mass unemployment. This nearly impossible balancing act will have some short- and medium-term impacts on the labor market at large – and the shock could cause long-standing implications for the career trajectories of women, who shoulder much of the childcare responsibilities.

Most parents with school-age children work. In 2019, about 80 percent of mothers with a child between the ages of 6 and 17 were employed, and 76 percent of them were employed full time. For fathers with children in the same age range, 92 percent were employed and almost all were employed full time.⁷⁴ Additionally, there are roughly 15 million households headed by single mothers, accounting for 70 percent of single-parent households.⁷⁵

Beyond relying on schools for childcare, many working parents depend on some sort of after-school care. According to the 2012 National Survey of Early Care and Education (NSECE), 10.2 million children ages 6–12 were regularly cared for by someone other than a parent, including relatives, friends, babysitters, organized childcare providers and after-school programs in schools and community centers.⁷⁶ Data from the 2019 update to the survey should be released later this year. A working paper from the Urban Institute highlights some of the compounding factors that have led to a childcare crisis during the pandemic, including a significant decrease in the number of childcare workers, childcare centers unsure of if and when they will reopen and the increasing cost of childcare overall.⁷⁷

⁷² See North Carolina Department of Health and Human Services. (n.d.)

⁷³ See Dorn et al. (2020).

⁷⁴ See Bureau of Labor Statistics, U.S. Department of Labor (2020).

⁷⁵ See Alon, Doepke, Olmstead-Rumsey, & Tertilt (2020a).

⁷⁶ See Adams & Todd (2020).

⁷⁷ See Adams & Todd (2020).

Figure 10. Percentage of Employed Mothers and Fathers in 2019



Source: U.S. Commerce Department, Bureau of Labor Statistics

Even prior to the pandemic, women shouldered more childcare responsibilities, having a greater negative impact on mothers' income-earning potential compared to fathers'.⁷⁸ This "child penalty" means that women earn 20 percent less than their male peers over the course of their careers.⁷⁹ Note that this statistic was from a study that used data from Denmark, which has more liberal maternity and parental benefits than the United States. Similar studies using data from the U.S. have shown comparable results, indicating that added childcare responsibilities have a lasting impact on women's earning potential.⁸⁰

Early evidence points to continued uneven distribution of childcare responsibilities for women during the pandemic, when schools and childcare outlets have closed their doors.⁸¹ Additionally, it is important to note that women have experienced higher rates of unemployment during the pandemic, largely because of the prevalence of jobs held by women in industries more significantly affected by lockdowns.⁸²

However, there may be a silver lining. Existing studies have shown that women need more flexible work schedules, and that they often prefer jobs that offer greater flexibility even if that means a pay decrease. Several recent studies suggest that the increased acceptability of remote work and flexible hours formed during the pandemic will continue, which could benefit women over time.⁸³ In addition, more and more companies are offering benefits for emergency childcare and online tutoring of children.

⁷⁸ See Alon, Doepke, Olmstead-Rumsey, & Tertilt (2020a) and Kliff (2018).

⁷⁹ See Kleven, Landais, & Sogaard (2018).

⁸⁰ See Bertrand, Goldin, & Katz (2010) and Goldin (2014).

⁸¹ See Alon, Doepke, Olmstead-Rumsey, & Tertilt (2020a).

⁸² See Kochhar (2020).

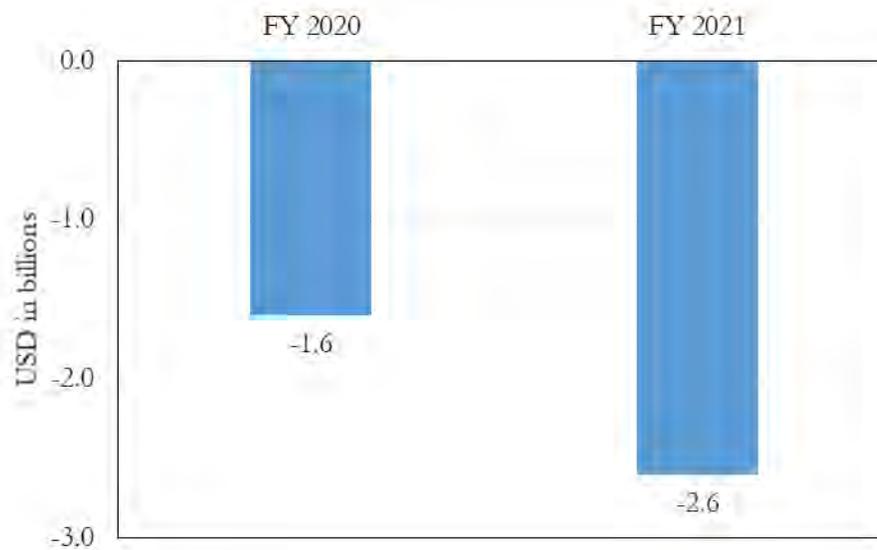
⁸³ See Alon, Doepke, Olmstead-Rumsey, & Tertilt (2020a) and Alon, Doepke, Olmstead-Rumsey, & Tertilt (2020b).

School Districts in Distress

COVID-19 not only unleashed a public health crisis, but also created devastating economic impacts which have led to job losses and budget cuts across industries. Education has not been immune to this fallout. Schools receive most of their funding from state and local sources, with some additional federal dollars.⁸⁴ Due to state budget shortfalls, cuts to public education are expected in many states, which could lead to mass layoffs of teachers, support staff and administrators.⁸⁵ Some school districts are even requesting waivers for class size requirements, since online learning can allow for larger class sizes, potentially leading districts to lay off teachers.⁸⁶

North Carolina faces these same issues. The Fiscal Research Division of the North Carolina General Assembly has forecasted a budget shortfall of \$1.6 billion in the 2020 fiscal year and \$2.6 billion in the 2021 fiscal year, representing declines of 7 percent and 10 percent, respectively.⁸⁷ These budget shortfalls will have serious consequences for public services, including possibly to public education spending.

Figure 11. North Carolina Forecasted Budget Shortfall



Source: North Carolina General Assembly

State governors can direct funding to education via the Governor’s Emergency Education Relief (GEER) Fund stipulated in the federal CARES Act.⁸⁸ North Carolina Governor Roy Cooper allocated \$95.6 million from the state’s GEER funds to help support K-12 and postsecondary

⁸⁴ See National Center for Education Statistics (2020).

⁸⁵ See Turner (2020).

⁸⁶ See Burnette (2020).

⁸⁷ See Fiscal Research Division, North Carolina General Assembly (2020).

⁸⁸ See Office of Elementary & Secondary Education, U.S. Department of Education (2020).

students most affected by the COVID-19 pandemic.⁸⁹ However, this only addresses a fraction of the state budget woes. Congress has considered additional stimulus funding for states through bills such as the Heroes Act, but it has yet to be seen if this will come to fruition.

Strategies to Best Meet Student and Parent Needs

More effort needs to be put on solutions that get children back to school quickly, and there is clearly a need for more robust delivery of K-12 education. Higher education has experienced similar issues. Nonetheless, schools are already integrating the lessons they have learned from operating virtually in the spring into the traditional education model.

To meet student needs in a blended academic experience at a level of quality that students should expect, schools must focus their attention and resources on three key areas: technology infrastructure, strategies for effective online instruction and increased student services accessibility.

- Technology infrastructure: The shift to online education this spring highlighted equity gaps in access to technology and internet connectivity, among others, which will remain a challenge for both K-12 and higher education. Addressing these could have broad and long-lasting positive economic and social effects.
- Strategies for effective online instruction: As many students and teachers learned this spring, simply moving a class to Zoom is not an effective replacement for the traditional classroom experience. Also, in North Carolina, the first day of remote classes for the fall semester left many parents frustrated as the statewide online education system crashed.⁹⁰ That said, deliberate full-scale adoption of technology solutions can provide a high-value learning experience, if teachers are supported and prepared with effective techniques to successfully engage students on virtual platforms. Without pedagogical support, equity gaps in student outcomes are likely to widen.
- Student services accessibility: In addition to core education, schools and colleges now have to consider carefully how students interact with broader services, including health services, career counseling, social/athletic activities and financial aid (for higher education). The solutions to these problems are wide-ranging and require thoughtful planning to reimagine services and ensure access, but in many cases existing technologies can be leveraged.

Opportunities for North Carolina:

- There is an immediate need to address K-12 educational challenges in the 2020-21 school year. A high-quality short-run solution is to utilize recent college graduates as teaching assistants in K-12 education. According to the Federal Reserve, as of June 2020, 13.3 percent of recent graduates are unemployed and 39 percent are underemployed.⁹¹ These recent grads can be used to help instruct students remotely, as well facilitate in-person classroom

⁸⁹ See EdNC (2020).

⁹⁰ See Browder, Moreno, Brown (2020).

⁹¹ See Federal Reserve Bank of New York, (2020).

learning when physical interaction by older, at-risk faculty is inadvisable. This is the best short-run option for providing high-quality K-12 education in the state this year.

- North Carolina has developed a variety of innovative and high-value online educational programs, and the state can leverage this expertise to become a leader in online higher education. As the model rapidly changes to embrace online learning, education technology will be a differentiator. Investment in newer platforms based on gaming and social media technologies will provide better student experiences and command a premium. North Carolina can leverage its expertise in gaming to develop innovative products in the ed tech space. There will also be movement toward greater demand for year-round school options, and new technologies can facilitate remote education with less parental supervision. For example, North Carolina could develop expertise in “tutor pods,” in which small groups of students work remotely with a tutor.

6. Shocks to health care and pharmaceutical demand

The health care services industry has been severely affected by the pandemic.

COVID Impacts on Hospitals and Health Care Providers

The COVID-19 pandemic is putting a serious strain on America’s hospitals and health care systems. According to the American Hospital Association, from March-June 2020, hospitals and health care systems faced an estimated financial impact of \$202.6 billion in losses, averaging roughly \$50.7 billion per month.⁹² Although Congress was quick to respond with emergency relief funding, it may not be enough to support a system that was already financially stressed prior to the outbreak.⁹³ Revenue for the hospital industry as a whole has seen a decline for the past five years. According to IBISWorld, industry revenue has decreased at an annualized rate of 1.5 percent to \$945.5 billion over the five years leading up to 2020, including a decline of 18.2 percent in 2020 alone.⁹⁴ Similarly, pre-pandemic, the Congressional Budget Office projected that 40-50 percent of hospitals could have negative margins by 2025.⁹⁵

The pandemic has exacerbated these financial constraints. Treating the coronavirus has been costly for many hospitals, as additional labor needs and the rising cost of medical equipment like PPE and ventilators add to operating costs.⁹⁶ In addition, early in the COVID-19 response, the Centers for Medicare and Medicaid Services recommended that “all elective surgeries and nonessential medical, surgical and dental procedures be delayed during the 2019 Novel Coronavirus (COVID-19) outbreak.”⁹⁷ These elective procedures are important revenue-generating activities for hospitals and other health care providers.

⁹² See American Hospital Association, (2020)

⁹³ See Hayford, Nelson, & Diorio (2016)

⁹⁴ See Curran, J. (2020a).

⁹⁵ See Hayford, Nelson, & Diorio (2016)

⁹⁶ See Curran, J. (2020a).

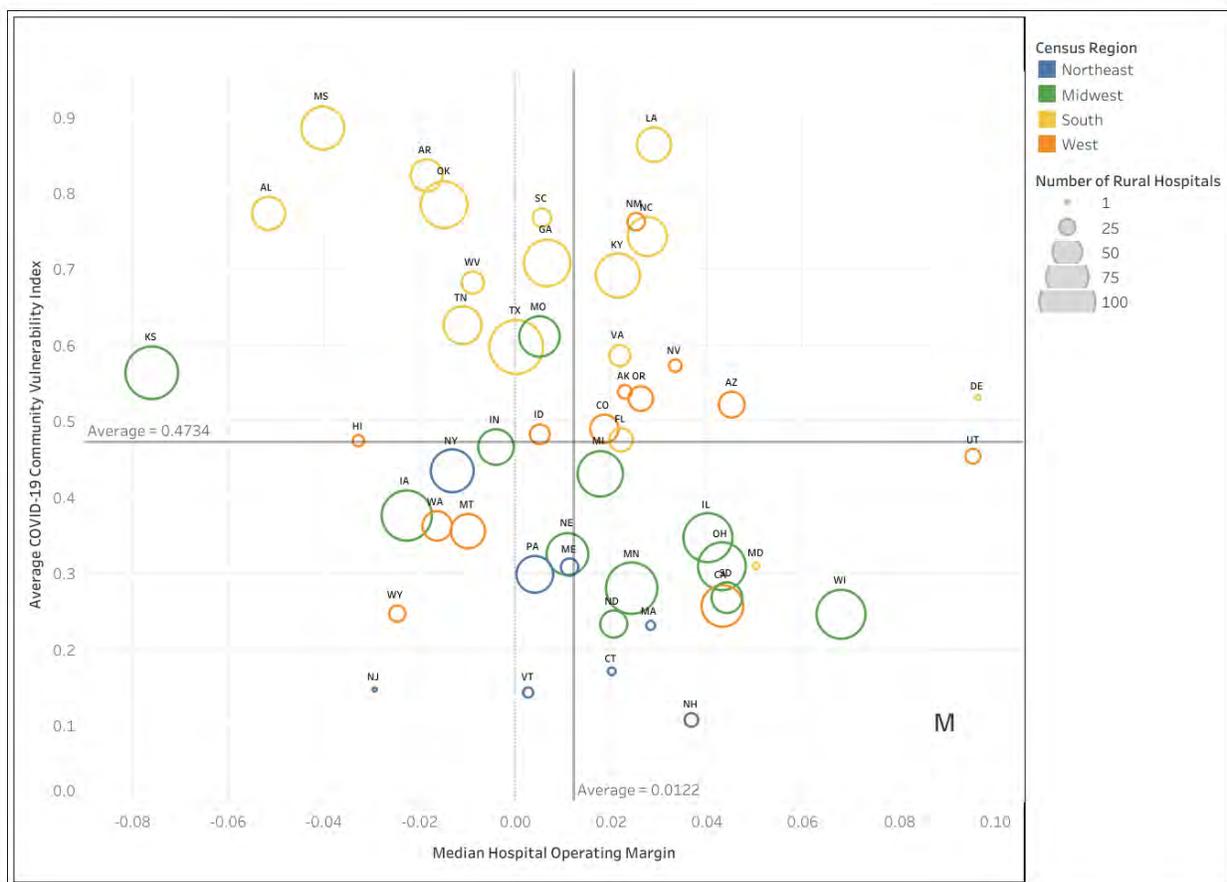
⁹⁷ See Centers for Medicare & Medicaid Services (2020)

Unequal Burden of the Pandemic in our Health Care Systems

Rural Hospitals Hit Hard

As the pandemic spreads outside of urban centers and into more rural parts of the U.S., rural hospitals may fall victim to the added burden of dealing with the virus. Rural hospitals have lower per capita capacity, especially with respect to ICU beds, compared to their urban counterparts. Additionally, residents in rural areas are, on average, older and less healthy, increasing the likelihood of the need for intensive care for COVID-19 complications.⁹⁸ Rural hospitals are also at higher risk of closure. Going into the pandemic, many were extremely financially constrained, with most, on average, having less than a month's worth of cash on hand.⁹⁹

Figure 12. COVID-19 Vulnerability for Rural Hospitals by State



Source: The Cecil G. Sheps Center for Health Services Research¹⁰⁰

Addressing Long-Standing Health Disparities for People of Color

Another important need and opportunity is addressing health disparities among people of color. Due to inequities in the U.S. health care system, people of color have been disproportionately

⁹⁸ See Orgera et al. (2020)

⁹⁹ See The Cecil G. Sheps Center for Health Services Research, (2020)

¹⁰⁰ See The Cecil G. Sheps Center for Health Services Research (n.d.)

affected by COVID-19. Infection rates and deaths among people of color are 2.5 times and 1.7 times higher than white people, respectively.¹⁰¹ In particular, Black and Native American communities have been particularly hard hit. People of color are facing poorer outcomes due to long-standing discriminatory practices within health care systems, limited health care access and other societal and economic factors.¹⁰² Even prior to the pandemic, research showed systemic racial differences in the quality of care provided to people of color compared to whites, leading to poorer health outcomes.¹⁰³ The pandemic has amplified these differences.

Especially as related to COVID-19, many new grants have been announced from major foundations seeking partners who are focused on these issues.

Figure 13. Race Impacts on Cases and Deaths in North Carolina

	Percentage of Population	Percentage of Cases	Percentage of Deaths
Black or African American alone	21%	24%	31%
White alone	69%	57%	59%

Source: COVID Tracking Project¹⁰⁴

Growth of Innovation and Opportunities in the Health Care and Life Sciences Sectors

Although the pandemic has had, and will continue to have, many serious consequences for the U.S. health care system, it also has presented some unique opportunities to innovate within the health care space. The COVID-19 vaccine will likely be developed in record time, putting on display the capabilities of well-funded scientific endeavors and highlighting the importance of public-private partnerships. In the U.S., the federal government is assuming most of the financial risk, and lowering the barriers to market entry for vaccine developers. In what is pointedly named “Operation Warp Speed,” the Department of Health and Human Services (DHHS) and Department of Defense (DoD) are overseeing vaccine development and distribution with private sector drug companies.¹⁰⁵ As the race for the vaccine continues worldwide, its development and distribution will undoubtedly test global ingenuity. In the meantime, health care systems have had to adapt to more creative, often digital, solutions to deliver their services. These developments present new opportunities for growth and job creation.

Biopharmaceutical Research and Production

One of the bright spots in the health care industry, and an area for long-term growth and job creation, is biopharmaceutical research and production. Domestic biopharmaceutical research and production will expand with the willingness to address other risks and the desire to onshore

¹⁰¹ See Goldfarb & Rivera (2020)

¹⁰² See Centers for Disease Control and Prevention (2020)

¹⁰³ See Artiga, Orgera, & Pham (2020)

¹⁰⁴ See The COVID Tracking Project (2020)

¹⁰⁵ See Lopez, C.T. (2020)

pharmaceutical production capacity and the related supply chain.¹⁰⁶ North Carolina’s current biotechnology ecosystem makes it a natural place for increased pharma production, with Research Triangle Park serving as an epicenter for activity.¹⁰⁷

In addition, COVID-19 is highlighting the importance of vaccines – an area that has seen modest growth in recent years. According to BCC Research, in the next five years the global vaccine market is expected to grow at a moderate compound annual growth rate (CAGR) of 6.3 percent. The primary driver of recent growth is increasing interest by governments, which assume some of the financial risks, in various parts of the world due to outbreaks of major diseases such as Ebola, the Zika virus, chikungunya, avian influenza, the H1N1 virus and COVID-19.¹⁰⁸ Conversely, a reversal or refinement of interest in these diseases by governments could change the prospects for economic growth.

Figure 14. Global Market for Human Vaccines, by Type, through 2025

Type	2020	2025	CAGR% 2020-2025
Conjugate vaccines	9,908	14,654	8.1
Inactivated (killed) vaccines	5,518	7,395	6.0
Attenuated (live) vaccines	6,065	7,276	3.7
Recombinant/recombinant DNA (rDNA)	4,288	6,797	9.7
Subunit vaccines	2,899	4,601	9.7
Toxoid vaccines	1,380	1,638	3.5
Other/combination vaccines	4,725	5,435	2.8
Total	34,785	47,797	6.6

Source: BCC Research, CAGR% is compound annual growth rate in percent

North Carolina is already in a strong position to capitalize on renewed interest in vaccine development and production. According to a North Carolina Biotechnology Center report outlining the economic impact of the life sciences in the state, North Carolina has developed a particularly strong concentration in vaccine development and manufacturing.¹⁰⁹ Yet there are also concerns over COVID-19 serving as a distraction to the development of vaccines for other diseases. Thus, there may be a short-term lull in the development of vaccines for diseases other than COVID-19, with a subsequent surge after a coronavirus vaccine is developed. Therefore, North Carolina should aggressively continue traditional vaccine production, but also invest in innovative approaches to rapid development and small/local manufacturing capabilities, which is the largest and most concerning gap in pandemic and bioterror defense preparedness. To attract government funding

¹⁰⁶ For example, Kodak recently [announced](#) the formation of a new division focused on producing active pharmaceutical ingredients.

¹⁰⁷ See North Carolina Biotechnology Center (2018)

¹⁰⁸ See BCC Research (2020)

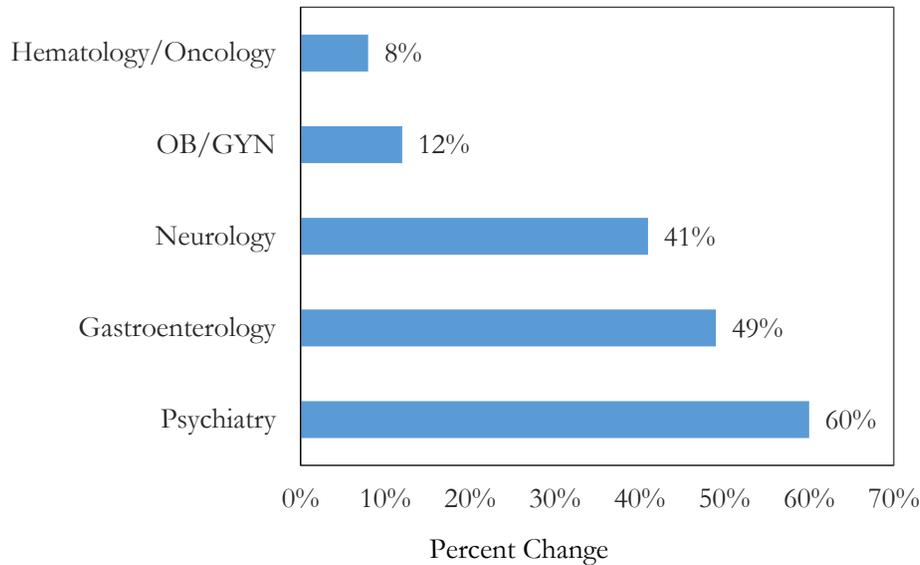
¹⁰⁹ See North Carolina Biotechnology Center (2018)

and redefine the industry, North Carolina will need to combine its infectious disease effort with bioterror defense.

Health Care Teleservices

Another significant near-term shift has been the increase in health care teleservices, an industry that has seen rapid expansion in the last five years.¹¹⁰ Due to a number of factors exacerbated by the pandemic, telehealth industry revenue is expected to grow at an annualized rate of 8.3 percent – to roughly \$4.8 billion over the next five years. Its growth can be attributed to rising health care costs, medical professional shortages and an increased demand for medical care for an aging population. Since March 2020, many health care providers have replaced traditional appointments with telehealth visits because of stay-at-home orders and infection risks to health care facilities. Growing acceptance of such technologies will lead to long-term opportunities, which will result in new products for health care status and compliance monitoring, as well as for mental health services. There has been an immediate and substantial shift toward greater acceptance of remote expertise, but the likelihood of a more permanent move to telehealth/virtual visits is uncertain. While payers have shifted in the current environment to meet the need, hospitals have started marketing and pushing patients to come back to traditional care settings. Hospitals and doctors do not make as much money using telehealth, and with their current financial circumstances, they will likely resist permanent changes.¹¹¹

Figure 15. Increase in Telehealth Use by Medicare Patients since COVID-19



Source: US Department of Health and Human Services¹¹²

¹¹⁰ See Curran (2020b)

¹¹¹ See Tozzi (2020)

¹¹² Assistant Secretary for Planning and Evaluation, Health and Human Services (2020)

Opportunities for North Carolina:

- North Carolina has tremendous expertise in pharmaceutical research, drug trials and other services provided by contract research organizations (CROs). Although CROs have seen disruptions to their typical operating model due to COVID-19, they are expected to rebound quickly, driven largely by the trends of hybrid clinical trials and remote patient monitoring.¹¹³ Expanding existing operations is an exceptional opportunity for economic growth, given the trends previously noted. However, opportunities are highly dependent on government funding.
- Biopharma production also poses an exceptionally advantageous opportunity for investment and growth of high-wage jobs, with the average salary of a North Carolina life sciences job at more than \$91,000 (as of 2016), twice the average of other private sector jobs.¹¹⁴ Take, for example, the AveXis gene therapy production site opening soon in Durham. The cost of building the facility was about \$190 million, including the building, equipment and consulting costs for equipment validation, environmental testing, HVAC and other items. It will employ about 500 people, with average annual salaries of more than \$70,000 in a range of roles including manufacturing, warehouse/distribution logistics, analytical support, maintenance, quality control, process development science and general management. The educational requirements of positions range from high school only through advanced degrees, with as many as half the jobs not requiring a college degree. The facility will employ workers from the North Carolina Community College BioWork certificate program, which provides 136 hours of training for entry-level process technicians. The typical worker will receive hundreds of hours of additional on-the-job training. Almost all positions are full-time salaried employment with bonus, stock options and a full benefits package, including continuing education support. Overall, the North Carolina Biotechnology Center estimates that North Carolina will create more than 10,000 new jobs in the biotech industry over the next decade. The industry is experiencing rapid growth that could extend to broader pharmaceutical production, and represents an excellent example of collaboration between private sector business, higher education and state and local government. In general, the state should invest in innovative approaches to rapid development and small/local manufacturing capabilities.
- North Carolina expertise in retail health care delivery provides an opportunity for informing important supply chain logistics and policy through public-private partnerships. In addition, teleservices are a related and significant opportunity for North Carolina, given the state's existing expertise and the evolving health care ecosystem. These services are a growth market that can extend well beyond the borders of the state.

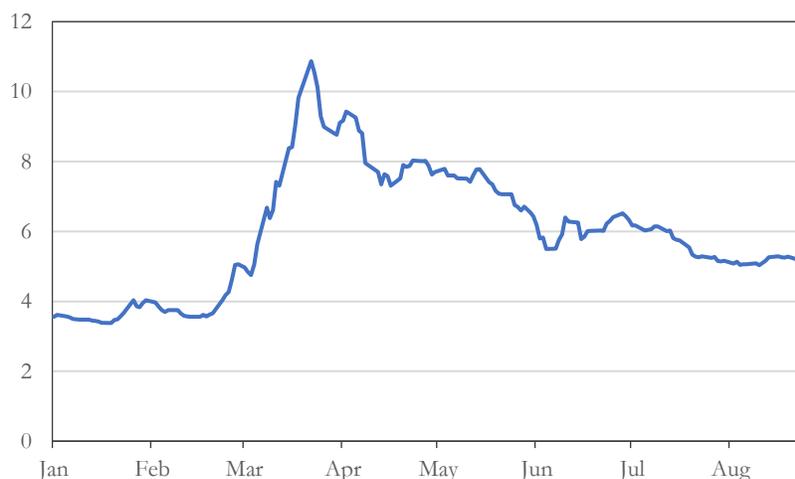
¹¹³ See Jain (2020)

¹¹⁴ See North Carolina Biotechnology Center (2018)

7. Risk reassessment by capital providers

Achieving pre-pandemic output levels will require substantial financial investment. Since March, a large fraction of new capital entering the economy has come from government sources. More than \$3 trillion in federal fiscal stimulus has already been provided directly to households and businesses and more is likely on the way. In addition, the Federal Reserve has instituted unprecedented support programs for credit markets (and indirectly, public equity markets).¹¹⁵ However, private sector providers of capital will necessarily be part of long-run business investment, and the pandemic has caused a massive change in the risk profile of many businesses. A risk reassessment by capital providers will fundamentally change the amount, type and mix of capital allocated to private sector businesses.

Figure 16: 2020 U.S. High-Yield Index Spread over U.S. Treasuries
(Percent, Option-Adjusted)



*Source: Bank of America Merrill Lynch*¹¹⁶

To date, public companies have benefited from the Fed's massive liquidity injection, and fortunately public equity and debt markets are now functioning normally. Capital access for private companies is more of a mixed bag. There is substantial liquidity at the large end of the institutional private equity market, supported by record levels of committed but un-deployed capital at the start of 2020. Deals volume in the first half of the year was slow but will accelerate in the second half and likely reach record levels in 2021. Increasingly, this capital will also be available to middle-market companies as conditions further stabilize. However, the lower-middle market and many small companies are in very bad financial shape (further exacerbated by the supply issues discussed previously).¹¹⁷ Many

¹¹⁵ See Martin (2020).

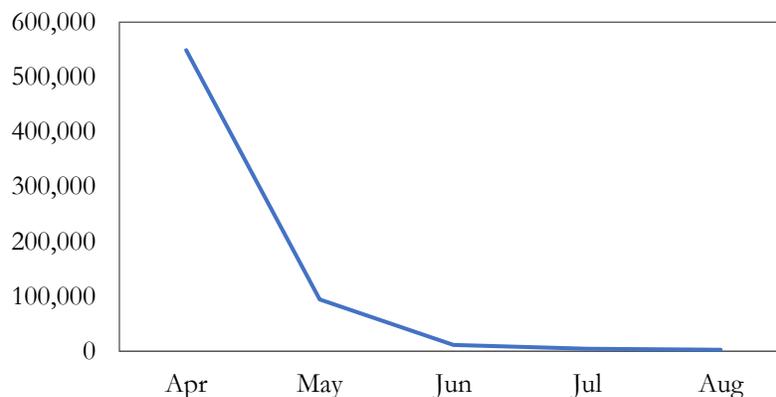
¹¹⁶ Retrieved from Federal Reserve Bank of St. Louis (2020).

¹¹⁷ Caniato et al (2020).

businesses will not be viable until the recovery fully takes hold, and the increasingly uncertain timeline is holding back capital.

This fundamentally is an issue of shifting risks in the economy brought about by the pandemic. Companies that were once assumed to have very predictable cash flows even through a recession have instead experienced previously unimaginable shocks to revenues.¹¹⁸ Furthermore, the radical uncertainty around the pandemic's future course generates more financial risk than many investors can tolerate. For example, banks' commercial and industrial (C&I) loan books have been battered, and the six largest U.S. banks have set aside \$36 billion in reserves to date for future loan losses.¹¹⁹ Banks were very efficient in doling out PPP loans to small businesses, but with these funds drying up, there will be a very careful assessment and scaling back of C&I lending activity. The banking sector overall is unlikely to be a source of new capital for most small businesses desperately in need of it. This decline in capital supply is exacerbated by low levels of private fund institutional capital (both debt and equity) in the lower-middle market.

Figure 17. Total Count of PPP Loans of \$150,000 to \$10 Million
(April-August 2020)



Source: U.S. Small Business Administration¹²⁰

Given this severe dislocation, the lack of current funding sources is a great opportunity for new capital providers who can solve two problems. First, investors must be able to ascertain forward-looking business risks and, in many cases, provide operational expertise in navigating these risks. There is no existing playbook for the type of evaluation needed in many industries, but savvy investors will be able to devise new methods and management practices. Second, investors will need to identify what structures and platforms can quickly obtain capital from investors not currently active in the lower-middle market and small business segments. These may take the form of new traditional private credit and private equity funds, new small business investment companies (SBICs)

¹¹⁸ See Akers & Nicum (2020).

¹¹⁹ See Forsyth (2020).

¹²⁰ See Small Business Administration (2020).

and even entirely new structures currently under consideration in federal legislation to support small businesses.¹²¹

Opportunities for North Carolina:

- The large financial services industry in North Carolina provides an opportunity for growth in asset management, credit and equity intermediation, and other financial services in the lower-middle market – not just in the state, but nationally. The success of firms such as Live Oak Bank and AvidXchange, as well as the growing fintech ecosystem in Charlotte, demonstrate North Carolina’s potential to be a national leader in financial innovation. Advances in data analytics (which is also an area of expertise in the state) can facilitate rapid development of new processes for how investment decisions and other types of financial intermediation will occur.
- Related to these opportunities are potential new investment vehicles that could be created by pending federal legislation in which North Carolina has particular expertise (such as SBICs).

8. Combined opportunities

While the seven forces outlined in this report have many unique features, they also share common threads that will be important to businesses and investors as they decide how best to leverage the associated opportunities. Fully realizing the potential of these opportunities will require coordinated governmental policies informed by private sector business. Here we discuss what we perceive as the most important commonalities:

- The need for workforce development through upskilling, reskilling, and traditional education. This should be North Carolina’s top priority because slack in the labor market lowers the opportunity cost for training and education. The long-run goal for the state should be to increase wages for a large segment of the workforce. This requires an increase in worker productivity, driven by an increasingly skilled workforce. Improvements require traditional education investments in high schools, community colleges, four-year colleges and advanced university degree programs. These advances do not always require additional resources, and can instead be derived from focusing on existing capabilities — again, we cite the example of the BioWorks program. The private sector can also provide significant upskilling through worker training. Likewise, the trends above often provide clear paths toward attracting high-skill workers, who can generate positive economic spillovers.
- Expanding the quality and access to broadband is a requirement for realizing many of the opportunities discussed above. Without better broadband, especially outside major metropolitan statistical areas (MSAs), the gains from new opportunities will be limited to a few regional hubs. We strongly support the efforts of the North Carolina Broadband Infrastructure Office to expand availability.

¹²¹ See for example, section 321 of the HEALS Act: Coronavirus Response Additional Supplemental Appropriations Act. S. 4320 116th Cong. (2020).

- Growth opportunities will be greatest for the expansion of existing businesses, as opposed to attracting new businesses. As previously discussed, there is a tremendous set of existing companies operating (and headquartered) in North Carolina, and many opportunities can be realized simply by expanding existing operations in a manner that makes use of innovations driven by the forces described in this report. The greatest opportunities will come from goods and services with unique characteristics and in industries in which North Carolina companies have an existing comparative advantage.
- Residential and infrastructure construction is needed in many areas. The increase in physical capital will facilitate growth in the intellectual capital that supports many opportunities. For example, beach and mountain communities are very attractive to a subset of workers more likely to work remotely on a permanent basis, but these workers will demand high-quality housing and superior public infrastructure and services (e.g., broadband and K-12 education). In addition, onshoring of various supply chain components and biopharmaceutical production will require substantial commercial construction.
- Intellectual capital is a necessary ingredient for everything from health care research to high-tech manufacturing. Private and public sector investment in research and development (and associated human capital) are required for almost all growth opportunities.
- Government processes should be streamlined and made proactive instead of reactive. The economic fallout from the COVID-19 pandemic has highlighted stark differences between the “haves” and “have nots,” and in many cases, the government response to the pandemic has inadvertently exacerbated the disparities between large and small businesses. In particular, government needs to specifically consider what can be done to support the many small businesses and entrepreneurial firms in the state. Businesses also need confidence that the regulatory environment and other economic policies will support investment. A prime example is onshoring activity. Investors accustomed to relatively looser offshore regulations will need assurance from domestic policymakers that they will not impose onerous onshoring restrictions and regulations.
- Finally, some additional factors need to be considered as we contemplate how the economy will perform over the coming months and years. Change is indeed happening, though the full transition will take years in many cases. For example, manufacturing projects requiring substantial capital investment and construction (especially greenfield operations) may take several years to become fully operational. In some cases, thought, timelines may be accelerated by repurposing existing assets (e.g., utilizing abandoned factories) and this should be a consideration for additional stimulus policy.

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Appendix Table 1. National Employment Statistics (Complete)

(As of August 2020)

Source: U.S. Labor Department, Bureau of Labor Statistics

	Aug-20	Change from Aug-19
Unemployed		
Total, 16 years and over	13,742	7,539
Unemployment Rates		
Total, 16 years and over	8.5%	4.7%
Adult men (20 years and over)	7.7%	4.5%
Adult women (20 years and over)	8.9%	5.1%
Teenagers (16 to 19 years)	15.8%	3.7%
White	7.5%	4.0%
Black or African American	13.1%	7.6%
Asian	10.7%	7.8%
Hispanic or Latino ethnicity	10.5%	6.3%
Less than a high school diploma	11.8%	7.1%
High school graduates, no college	9.8%	6.2%
Some college or associate degree	8.3%	5.1%
Bachelor's degree and higher	5.6%	3.2%
Reason for Unemployment (1,000s)		
Job losers and persons who completed temporary jobs	10,347	7,441
Job leavers	672	-193
Duration of Unemployment (1,000s)		
Less than 5 weeks	2,283	67
5 to 14 weeks	3,442	1,433
15 to 26 weeks	6,381	5,673
27 weeks and over	1,637	367

Appendix Table 2. U.S. Census Pulse Survey results for State of North Carolina (Complete)
(Week of July 16-21, 2020)

Select Characteristics	% Not Employed in Last 7 Days
All People 18 and Older	49%
Age	
18 - 24	31%
25 - 39	40%
40 - 54	36%
55 - 64	44%
65 and above	87%
Sex	
Male	47%
Female	52%
Hispanic Origin and Race	
Hispanic or Latino (may be of any race)	34%
White alone, not Hispanic	51%
Black alone, not Hispanic	51%
Asian alone, not Hispanic	36%
Two or more races + Other races, not Hispanic	56%
Education	
Less than high school	63%
High school or GED	52%
Some college/associate's degree	49%
Bachelor's degree or higher	42%
Marital Status	
Married	42%
Widowed	87%
Divorced/separated	68%
Never married	43%
Presence of Children Under 18 Years Old	
Children in household	41%
No children	54%
Health Status	
Excellent	35%
Very good	42%
Good	55%
Fair	56%
Poor	64%
Household Income	
Less than \$25,000	65%
\$25,000 - \$34,999	54%
\$35,000 - \$49,999	47%
\$50,000 - \$74,999	45%
\$75,000 - \$99,999	48%
\$100,000 - \$149,999	34%
\$150,000 - \$199,999	27%
\$200,000 and above	20%
Used in the Last 7 Days to Meet Spending Needs*	
Regular income sources like those used before the pandemic	38%
Credit cards or loans	45%
Money from savings or selling assets	52%
Borrowing from friends or family	62%
Unemployment insurance (UI) benefit payments	82%
Stimulus (economic impact) payment	56%
Money saved from deferred or forgiven payments (to meet spending needs)	55%

Appendix Table 3. Employment in North Carolina by Sector and Industry (Complete)

(Changes from January to July 2020)

Source: North Carolina Department of Commerce

Sector	July Level	Change from Jan.	%Change from Jan.
Total nonfarm	4,286,300	-322,400	-7.0%
Total private	3,547,800	-325,000	-8.4%
Goods-producing	664,300	-51,400	-7.2%
Service-providing	3,622,000	-271,000	-7.0%
Private service-providing	2,883,500	-273,600	-8.7%
Ranked by Total Job Loss/Gain:			
Leisure and hospitality	386,300	-148,200	-27.7%
Accommodation and food services	336,100	-116,400	-25.7%
Manufacturing	437,000	-42,100	-8.8%
Education and health services	585,500	-40,000	-6.4%
Trade, transportation and utilities	816,200	-35,300	-4.1%
Arts, entertainment and recreation	50,200	-31,800	-38.8%
Health care and social assistance	498,600	-29,300	-5.6%
Professional and business services	618,600	-27,400	-4.2%
Durable goods	238,700	-25,500	-9.7%
State government	184,000	-23,000	-11.1%
Retail trade	479,600	-19,200	-3.8%
Administrative and waste services	278,000	-16,800	-5.7%
Nondurable goods	198,300	-16,600	-7.7%
Educational services	86,900	-10,700	-11.0%
Transportation and warehousing	153,500	-9,600	-5.9%
Other services	153,900	-9,300	-5.7%
Mining, logging and construction	227,300	-9,300	-3.9%
Construction	221,900	-9,000	-3.9%
Information	70,800	-7,700	-9.8%
Professional and technical services	258,500	-7,500	-2.8%
Wholesale trade	183,100	-6,500	-3.4%
Real estate and rental and leasing	57,500	-5,900	-9.3%
Financial activities	252,200	-5,700	-2.2%
Management of companies and enterprises	82,100	-3,100	-3.6%
Finance and insurance	194,700	200	0.1%
Federal	75,800	800	1.1%
Government	738,500	2,600	0.4%
Local government	478,700	24,800	5.5%

References

- Adams, G. & Todd, M. (2020). Meeting the School-Age Child Care Needs of Working Parents Facing COVID-19 Distance Learning: Policy Options to Consider. Urban Institute. Retrieved from <https://www.urban.org/sites/default/files/publication/102621/meeting-the-school-age-child-care-needs-of-working-parents-facing-covid-19-distance-learning.pdf>
- Akers, J., & Nicum, P. (2020, May 13). The Secondary Market under COVID-19. Adams Street Partners. <https://www.adamsstreetpartners.com/news/the-secondary-market-under-covid-19-learning-from-the-great-financial-crisis/>
- Alon, T., Doepke, M., Olmstead-Rumsey, J., & Tertilt, M. (2020a). The Impact of COVID-19 on Gender Equality (NBER Working Paper No. 26947). Retrieved from National Bureau of Economic Research website: <https://www.nber.org/papers/w26947.pdf>
- Alon, T., Doepke, M., Olmstead-Rumsey, J., & Tertilt, M. (2020b). This Time It's Different: The Role of Women's Employment in a Pandemic Recession (NBER Working Paper No. 27660). Retrieved from National Bureau of Economic Research website: <https://www.nber.org/papers/w27660.pdf>
- American Hospital Association. (2020, May). Hospitals and Health Systems Face Unprecedented Financial Pressures Due to COVID-19. Retrieved from <https://www.aha.org/guidesreports/2020-05-05-hospitals-and-health-systems-face-unprecedented-financial-pressures-due#:~:text=COVID%2D19%20increased%20the%20demand,the%20beginning%20of%20the%20pandemic>
- Arredy, J. T. (2020, February 3). Coronavirus Closes China to the World, Straining Global Economy. The Wall Street Journal. <https://www.wsj.com/articles/coronavirus-closes-china-to-the-world-straining-global-economy-11580689793>
- Artiga, S., Orgera, K., & Pham, O. (2020, March 4). Disparities in Health and Health Care: Five Key Questions and Answers. KFF. Retrieved from <https://www.kff.org/disparities-policy/issue-brief/disparities-in-health-and-health-care-five-key-questions-and-answers/>
- Assistant Secretary for Planning and Evaluation, Health and Human Services (2020). Medicare Beneficiary Use of Telehealth Visits: Early Data from the Start of the COVID-19 Pandemic. Retrieved from: https://aspe.hhs.gov/system/files/pdf/263866/HP_IssueBrief_MedicareTelehealth_final7.29.20.pdf
- Associated Press (2020, June 13). Walmart, CVS, Walgreens to stop locking up black beauty products. MarketWatch. <https://www.marketwatch.com/story/walmart-cvs-walgreens-to-stop-locking-up-black-beauty-products-2020-06-11>
- Bacher-Hicks, A., Goodman, J., & Mulhern, C. (2020). Inequality in Household Adaption to Schooling Shocks: COVID-Induced Online Learning Engagement in Real Time (NBER Working Paper No.27555). Retrieved from National Bureau of Economic Research website: <https://www.nber.org/papers/w27555.pdf>
- Bank of America (2020). Tectonic shifts in global supply chains. Bank of America Global Research. https://www.bofam.com/content/dam/boamlimages/documents/articles/ID20_0147/Tectonic_Shifts_in_Global_Supply_Chains.pdf
- Bartik, A. W., Cullen, Z. B., Glaeser, E. L., Luca, M., & Stanton, C. T. (2020). What Jobs are Being Done at Home During the Covid-19 Crisis? Evidence from Firm-Level Surveys (Working Paper No. 27422; Working Paper Series). National Bureau of Economic Research. <https://doi.org/10.3386/w27422>

- BCC Research. (2020, September). Global Markets for Vaccine Technologies (BCC Research Report PHM014H). Retrieved from BCC Research Database.
- Bertrand, M., Goldin, C., & Katz, L. F. (2010). Dynamics of the gender gap for young professionals in the financial and corporate sectors. *American Economic Journal. Applied Economics*, 2(3), 228-255. doi:10.1257/app.2.3.228
- Black Owned Businesses Statistics (n.d.). BlackDemographics.com. Retrieved September 2, 2020, from <https://blackdemographics.com/economics/black-owned-businesses/>
- Bliss, L., Lin, J., & Patino, M. (2020, June 18). Global Data Reveals Inequality of Pandemic Travel. Bloomberg. <https://www.bloomberg.com/graphics/2020-coronavirus-transportation-data-cities-traffic-mobility/?srnd=citylab-transportation>
- Bloom, N. (2020, June). How working from home works out. Stanford Institute for Economic Policy Research. <https://siepr.stanford.edu/research/publications/how-working-home-works-out>
- Browder, C., Moreno, L., & Brown, M. (2020, August 17). Remote learning even more remote as online education system crashes on NC's first day of school. WRAL. Retrieved from <https://www.wral.com/coronavirus/remote-learning-even-more-remote-as-online-education-system-crashes-on-nc-s-first-day-of-school/19239370/>
- Bureau of Labor Statistics, U.S. Department of Labor. (2020). Employment by Industry. Retrieved August, 2020. <https://www.bls.gov/charts/employment-situation/employment-levels-by-industry.htm>
- Bureau of Labor Statistics, U.S. Department of Labor (2020, April 21). Employment Characteristics of Families - 2019. Retrieved from <https://www.bls.gov/news.release/pdf/famee.pdf>
- Burnette II, D. (2020, May 28). 7 Issues Facing K-12 Budgets as COVID-Shocked Legislatures Reconvene. Education Week. Retrieved from <https://www.edweek.org/ew/articles/2020/05/28/whats-in-store-for-school-budgets-when.html>
- Business Roundtable Redefines the Purpose of a Corporation to Promote “An Economy That Serves All Americans.” (2019, August 19). <https://www.businessroundtable.org/business-roundtable-redefines-the-purpose-of-a-corporation-to-promote-an-economy-that-serves-all-americans>
- Caniato, F., Moretto, A., & James B. Rice, J. (2020, August 6). A Financial Crisis Is Looming for Smaller Suppliers. Harvard Business Review. <https://hbr.org/2020/08/a-financial-crisis-is-looming-for-smaller-suppliers>
- Centers for Disease Control and Prevention. (2020, July 24) Health Equity Considerations and Racial and Ethnic Minority Groups. Retrieved from <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html>
- Centers for Medicare & Medicaid Services (2020, March 18). CMS Release Recommendations on Adult Elective Surgeries, Non-Essential Medical, Surgical, and Dental Procedures During COVID-19 Response. Retrieved from <https://www.cms.gov/files/document/covid-elective-surgery-recommendations.pdf>
- Crumpler, W. (2020, May 1). The Problem of Bias in Facial Recognition. Center for Strategic & International Studies. <https://www.csis.org/blogs/technology-policy-blog/problem-bias-facial-recognition>
- Curran, J. (2020a, July). Hospitals in the US (IBISWORLD Industry Report 62211). Retrieved from IBISWorld database.
- Curran, J. (2020b, August). Telehealth Services in the U.S. (IBIS World Industry Report OD5775) Retrieved from IBISWorld database.

- Dean, Korie (2020, July 9). Changing how we get our groceries. The Well. https://thewell.unc.edu/2020/07/09/changing-how-we-get-our-groceries/?utm_campaign=071020+Changing+how+we+get+our+groceries&utm_medium=bitly&utm_source=Twitter
- Dekimpe, M. G., Geyskens, I., & Gielens, K. (2020). Using technology to bring online convenience to offline shopping. *Marketing Letters*, 31(1), 25–29. <https://doi.org/10.1007/s11002-019-09508-5>
- Dingel, J. I., & Neiman, B. (2020). How Many Jobs Can be Done at Home? (Working Paper No. 26948; Working Paper Series). National Bureau of Economic Research. <https://doi.org/10.3386/w26948>
- Dolan, K., Hunt, V., Prince, S., & Sancier-Sultan, S. (2020, May 19). Diversity during COVID-19 still matters. *McKinsey Quarterly*. <https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-still-matters>
- Dorn, E., Hancock, B., Sarakatsannis, J., & Viruleg, E. (2020, June 1). COVID-19 and student learning in the United States: The hurt could last a lifetime. McKinsey & Company. Retrieved from <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19-and-student-learning-in-the-united-states-the-hurt-could-last-a-lifetime>
- EdNC. (2020, August 12). Gov. Cooper directs \$95.6 million to support students impacted by the COVID-19 pandemic. Retrieved from <https://www.ednc.org/governor-cooper-directs-95-6-million-to-support-students-impacted-by-the-covid-19-pandemic/>
- Federal Reserve Bank of New York. (2020). The Labor Market for Recent College Graduates. Retrieved from: https://www.newyorkfed.org/research/college-labor-market/college-labor-market_unemployment.html
- Federal Reserve Bank of St. Louis (2020). Existing Home Sales. Retrieved August 28, 2020. <https://fred.stlouisfed.org/series/EXHOSLUSM495S>
- Federal Reserve Bank of St. Louis (2020). ICE BofA High Yield Index Option-Adjusted Spread. <https://fred.stlouisfed.org/series/BAMLH0A0HYM2>
- Felix, I., Martin A., Mehta, V., and Mueller, C. (2020). US Food Supply Chain: Disruptions and Implications from COVID-19. McKinsey. <https://www.mckinsey.com/industries/consumer-packaged-goods/our-insights/us-food-supply-chain-disruptions-and-implications-from-covid-19>
- Fiscal Research Division, North Carolina General Assembly. (2020, May 22). North Carolina General Fund. Retrieved from https://www.ncleg.net/FiscalResearch/generalfund_outlook/19-20/May%202020%20Revised%20Consensus%20Forecast%20Report.pdf
- Forsyth, Randall (2020). Banks' Loan-Loss Reserves Send Sharp Warning on Economy. *Barrons*. <https://www.barrons.com/articles/banks-loan-loss-reserves-send-sharp-warning-on-economy-51595032237>
- Fox, M. (2020, July 28). Remote work burnout is growing as pandemic stretches on. Here's how to manage it. *CNBC*. <https://www.cNBC.com/2020/07/28/remote-work-burnout-is-growing-as-coronavirus-pandemic-stretches-on.html>
- Fulton, W. (2020, March 29). How the COVID-19 pandemic will change our cities. The Kinder Institute for Urban Research. <https://kinder.rice.edu/urbanedge/2020/03/30/how-covid-19-pandemic-will-change-our-cities>

- Glaeser, E. L. (Ed.). (2010). *Agglomeration economics*. The University of Chicago Press. <https://www-nber-org.libproxy.lib.unc.edu/chapters/c7977.pdf>
- Goldfarb, A. & Rivera, J.M. (2020, August 21). COVID-19 Race and Ethnicity Data: What's Changed, and What Still Needs Improvement [Blog Post]. The COVID Tracking Project. Retrieved from <https://covidtracking.com/blog/covid-19-race-and-ethnicity-data-whats-changed-and-what-still-needs>
- Goldin, C. (2014). A grand gender convergence: Its last chapter. *The American Economic Review*, 104(4), 1091-1119. doi:10.1257/aer.104.4.1091
- Goldmanis et al. M. Hortacsu, A., Syverson, C., & Emre, O. (2008). *E-commerce and the Market Structure of Retail Industries* (Working Paper No. 14166; Working Paper Series). National Bureau of Economic Research. <https://doi.org/10.3386/w14166>
- Gompers, P., & Kovvali, S. (2018, July 1). The Other Diversity Dividend. *Harvard Business Review*, July–August 2018. <https://hbr.org/2018/07/the-other-diversity-dividend>
- Gulledge, S. T. (2020, July 17). Rising Inequality: Why Black businesses miss out on billions in North Carolina contracts. *Triangle Business Journal*. <https://www.bizjournals.com/triangle/news/2020/07/17/black-businesses-overlooked-by-nc-hub-contracts.html>
- Hansen, M., Levesque, E.M., Quintero, D., & Valant, J. (2018, April 17). Have we made progress on achievement gaps? Looking at evidence from the new NAEP results. Brookings Institution. Retrieved from <https://www.brookings.edu/blog/brown-center-chalkboard/2018/04/17/have-we-made-progress-on-achievement-gaps-looking-at-evidence-from-the-new-naep-results/>
- Hasija, S., Padmanabhan, V. “Paddy,” & Rampal, P. (2020, June 1). Will the Pandemic Push Knowledge Work into the Gig Economy? *Harvard Business Review*. <https://hbr.org/2020/06/will-the-pandemic-push-knowledge-work-into-the-gig-economy>
- Hayford, T., Nelson, L., & Diorio, A. (2016). *Projecting Hospitals' Profit Margins Under Several Illustrative Scenarios* (Congressional Budget Office Working Paper 2016-04). Retrieved from the Congressional Budget Office website: https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/workingpaper/51919-Hospital-Margins_WP.pdf
- Herrera, S., Zhou, C., & Petscher, Y. (2017). Examining school-level reading and math proficiency trends and changes in achievement gaps for grades 3–8 in Florida, Mississippi, and North Carolina. National Center for Education Evaluation and Regional Assistance. Retrieved from https://ies.ed.gov/ncee/edlabs/regions/southeast/pdf/REL_2017235.pdf
- Historically Black Colleges and Universities. (n.d.). Retrieved September 2, 2020, from <https://www.google.com/maps/d/viewer?mid=1W7OCg1enqVaomN8HUMJJFLmffz0&hl=en>
- Homa, S., & Ryan, P. (2020, July 16). United States Office Outlook Q2 2020 [JLL]. <https://www.us.jll.com/en/trends-and-insights/research/office-market-statistics-trends>
- Hortacsu, A., & Syverson, C. (2015). The Ongoing Evolution of US Retail: A Format Tug-of-War. *Journal of Economic Perspectives*, 29(4), 89–112. <https://doi.org/10.1257/jep.29.4.89>
- Hsu, T. (2020, May 15). Young Adults Take Refuge in Parents' Empty Nests. *The New York Times*. <https://www.nytimes.com/2020/05/15/business/economy/coronavirus-parents-home.html>
- Jain, K. (2020, August 21). Hybridization of clinical trial designs reviving global CRO market post-pandemic; 2019- 2024(Frost & Sullivan Report PB21). Retrieved from Frost & Sullivan database.

- Kang, J. (2020, June 13). Grocers Embrace Food Delivery, But They Still Don't Love It. The Wall Street Journal. <https://www.wsj.com/articles/grocers-embrace-food-delivery-but-they-still-dont-love-it-11592056800>
- Kearney, A., & Muñana, C. (2020, May 1). Taking Stock of Essential Workers. KFF. <https://www.kff.org/policy-watch/taking-stock-of-essential-workers/>
- Kenan Institute of Private Enterprise (2020). Kenan Dashboard: Reopening Amid COVID-19. <https://kenaninstitute.unc.edu/dashboard/reopening-amid-covid-19/>
- Kleven, H., Landais, C., & Sogaard, J.E. (2018). Children and Gender Inequality: Evidence from Denmark (NBER Working Paper No. 24219). Retrieved from National Bureau of Economic Research website: <https://www.nber.org/papers/w24219>
- Kliff, S. (2018, February 19). A stunning chart shows the true cause of the gender wage gap. Vox. Retrieved from <https://www.vox.com/2018/2/19/17018380/gender-wage-gap-childcare-penalty>
- Kochhar, R. (2020, June 11). Unemployment rose higher in three months of COVID-19 than it did in two year of the Great Recession. Pew Research Center. Retrieved from <https://www.pewresearch.org/fact-tank/2020/06/11/unemployment-rose-higher-in-three-months-of-covid-19-than-it-did-in-two-years-of-the-great-recession/>
- Lai, Anjali (2020). A Snapshot of US Consumers' Attitudes and Behavior During COVID-19. Forrester Research, Inc. <https://go.forrester.com/blogs/a-snapshot-of-us-consumers-attitudes-and-behavior-during-covid-19/>
- Lopez, C.T. (2020, June 16). Operation Warp Speed Accelerates COVID-19 Vaccine Development. U.S. Department of Defense. Retrieved from <https://www.defense.gov/Explore/News/Article/Article/2222284/operation-warp-speed-accelerates-covid-19-vaccine-development/>
- Maidenberg, M. (2020, April 26). Fewer Products, Localized Production—Companies Seek Supply-Chain Solutions. The Wall Street Journal. <https://www.wsj.com/articles/coronavirus-disrupted-supply-chains-that-companies-are-still-fixing-11587893401>
- Martin, F. (2020, July 16). The Impact of the Fed's Response to COVID-19. St. Louis Fed. <https://www.stlouisfed.org/on-the-economy/2020/june/impact-feds-response-covid19>
- McCauley, L., & Hayes, R. (2020). Taking responsibility for front-line health-care workers. The Lancet Public Health, 0(0). [https://doi.org/10.1016/S2468-2667\(20\)30179-1](https://doi.org/10.1016/S2468-2667(20)30179-1)
- McLean, R. (2020, June 25). These companies plan to make working from home the new normal. As in forever. CNN. <https://www.cnn.com/2020/05/22/tech/work-from-home-companies/index.html>
- Menascé Horowitz, J., & Livingston, G. (2016, July 8). How Americans view the Black Lives Matter movement. Pew Research Center. <https://www.pewresearch.org/fact-tank/2016/07/08/how-americans-view-the-black-lives-matter-movement/>
- Mickle, T. (2020, February 1). Apple Closes Chinese Stores, Corporate Offices Due to Coronavirus. The Wall Street Journal. <https://www.wsj.com/articles/apple-closes-chinese-stores-corporate-offices-due-to-coronavirus-11580580600>
- National Assessment of Education Progress. (2020). Achievement Gaps. U.S. Department of Education. Retrieved from <https://nces.ed.gov/nationsreportcard/studies/gaps/>

- National Center for Education Statistics. (n.d.). Schools and Staffing Survey (SASS). U.S. Department of Education. Retrieved from <https://nces.ed.gov/fastfacts/display.asp?id=76>
- National Center for Education Statistics. (2020, April). Public School Revenue Sources. U.S. Department of Education. Retrieved from https://nces.ed.gov/programs/coe/indicator_cma.asp
- Newman, Jesse. (2020). More Farmers Declare Bankruptcy Despite Record Levels of Federal Aid. The Wall Street Journal. https://www.wsj.com/articles/more-farmers-declare-bankruptcy-despite-record-levels-of-federal-aid-11596706201?mod=hp_lista_pos1
- Nichols, A. H., & Schak, J. O. (2018). Degree Attainment for Black Adults: National and State Trends. The Education Trust, 9.
- Nguyen, L. (2020, June 2). BofA Pledges \$1 Billion Over 4 Years to Fight Racial Inequality. Bloomberg. <https://www.bloomberg.com/news/articles/2020-06-02/bofa-pledges-1-billion-over-4-years-to-fight-racial-inequality>
- North Carolina Biotechnology Center. (2018). 2018 Evidence and Opportunity: Impact of Life Sciences in North Carolina. Retrieved from https://www.ncbiotech.org/sites/default/files/inline-files/TEconomy-NCBiotech%20Report%202018_no%20crop%20mark.pdf
- North Carolina Department of Health and Human Services. (n.d.). Pandemic Electronic Benefit Transfer (PEBT) Program. Retrieved from <https://covid19.ncdhhs.gov/information/human-services/pandemic-electronic-benefit-transfer-pebt-program>
- North Carolina School Board Association. (2020, August 7). Tracking NC school district reopening plans. EdNC. Retrieved from <https://www.ednc.org/resource-tracking-nc-school-district-reopening-plans/>
- OECD (2020, July 15). Productivity gains from teleworking in the post COVID-19 era: How can public policies make it happen? <http://www.oecd.org/coronavirus/policy-responses/productivity-gains-from-teleworking-in-the-post-covid-19-era-a5d52e99/>
- OECD (2020). Food Supply Chains and COVID-19: Impacts and Policy Lessons. https://read.oecd-ilibrary.org/view/?ref=134_134305-ybqvdf0kg9&title=Food-Supply-Chains-and-COVID-19-Impacts-and-policy-lessons
- Office of Elementary & Secondary Education, U.S. Department of Education. (2020). Governor's Emergency Education Relief Fund. Retrieved from <https://oese.ed.gov/governors-emergency-education-relief-fund/>
- Olshan, D. (2020). Coronavirus Has New Yorkers Fleeing The City And Hunting For Second Homes. Forbes. <https://www.forbes.com/sites/donnaolshan/2020/05/10/coronavirus-has-new-yorkers-fleeing-the-city-and-hunting-for-second-homes/>
- Orgera, K., McDermott, D., Rae, M., Claxton, G., Koma, W., & Cox, C. (2020, April 22). Urban and rural differences in coronavirus pandemic preparedness. Peterson-FF. Retrieved from <https://www.healthsystemtracker.org/brief/urban-and-rural-differences-in-coronavirus-pandemic-preparedness/>
- Parker, K., Menasce Horowitz, J., & Anderso, M. (2020, June 12). Majorities Across Racial, Ethnic Groups Express Support for the Black Lives Matter Movement. Pew Research Center's Social & Demographic Trends Project. <https://www.pewsocialtrends.org/2020/06/12/amid-protests-majorities-across-racial-and-ethnic-groups-express-support-for-the-black-lives-matter-movement/>
- Percent Black/African American Ranking, 2000. (n.d.). CensusScope. Retrieved September 2, 2020, from http://www.censusscope.org/us/rank_race_blackafricanamerican.html

- Peterson, H. (2019, December 23). More than 9,300 stores are closing in 2019 as the retail apocalypse drags on -- here's the full list. Business Insider. Retrieved from <https://www.businessinsider.com/stores-closing-in-2019-list-2019-3>
- Postma, A. (2020, June 11). Most Supportive States for Black-Owned Businesses. Zippia. Retrieved from <https://www.zippia.com/advice/supportive-states-black-owned-businesses/>
- Reardon, S., Weathers, E.S., Fahle, E.M., Jang, H., & Kalogrides, D. (2019). Is Separate Still Unequal? New Evidence on School Segregation and Racial Academic Achievement Gaps (CEPA Working Paper No. 19-06). Retrieved from Stanford Center for Education Policy Analysis website: <https://cepa.stanford.edu/sites/default/files/wp19-06-v092019.pdf>
- Sampson, H., and Compton, N. (2020, June 15). 11 Ways the Pandemic Will Change Travel. The Washington Post. <https://www.washingtonpost.com/travel/2020/06/15/11-ways-pandemic-will-change-travel/>
- Sheffi, Y. (2020). Who Gets What When Supply Chains Are Disrupted? MIT Sloan Management Review. Retrieved August 21, 2020, from <https://sloanreview.mit.edu/article/who-gets-what-when-supply-chains-are-disrupted/>
- Shih, W. (2020, March 19). Is It Time to Rethink Globalized Supply Chains? MIT Sloan Management Review. <https://sloanreview.mit.edu/article/is-it-time-to-rethink-globalized-supply-chains/>
- Sindreu, J. (2020, August 11). A Chunk of Corporate Travel May Be Gone Forever. But How Much? The Wall Street Journal. <https://www.wsj.com/articles/a-chunk-of-corporate-travel-may-be-gone-forever-but-how-much-11597155657>
- Sisson, P. (2020, February 18). Dying malls want a second chance at life. Curbed. <https://www.curbed.com/2020/2/18/21137819/malls-real-estate-entertainment>
- Small Business Administration (2020). Paycheck Protection Program. Data retrieved August 26, 2020. <https://sba.app.box.com/s/ox4mwmvli4ndbp14401xr411m8sefx3i>
- Stansell, A., & Zhao, D. (2020, July 15). Diversity Now: How Companies and Workers Are Bringing Nationwide Social Justice Protests to the Workplace. Glassdoor Economic Research. <https://www.glassdoor.com/research/diversity-jobs-reviews/>
- Surge in Home Construction, Lumber Prices. (2020, August 20). NAHB Now - The News Blog of the National Association of Home Builders [blog post]. <http://nahbnow.com/2020/08/surge-in-home-construction-lumber-prices/>
- The Cecil G. Sheps Center for Health Services Research. (2020). Rural COVID Research and Figures. Retrieved from <https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-covid-research-and-figures/>
- The Cecil G. Sheps Center for Health Services Research. (n.d.) .State Rural Hospital and Community COVID-19 Vulnerability. Retrieved from <https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-covid-research-and-figures/rural-hospital-and-community-covid-19-vulnerability/>
- The Harris Poll. (2020). *The Summer Travel Season*. Retrieved from <https://theharrispoll.com/the-summer-travel-season/>
- The COVID Tracking Project. (2020). Racial Data Dashboard. Retrieved from <https://covidtracking.com/race/dashboard>

- Tozzi, J. (2020, June 4). Hospitals Emptied Out by Pandemic Push for Patients to Return. Bloomberg Law. Retrieved from <https://news.bloomberglaw.com/coronavirus/hospitals-emptied-out-by-pandemic-push-for-patients-to-return>
- Turner, C. (2020, May 26). A Looming Financial Meltdown for America's Schools. NPR. Retrieved from <https://www.npr.org/2020/05/26/858257200/the-pandemic-is-driving-americas-schools-toward-a-financial-meltdown>
- U.S. Congress Joint Economic Committee. (2017). America's Digital Divide. Retrieved from https://www.jec.senate.gov/public/_cache/files/ff7b3d0b-bc00-4498-9f9d-3e56ef95088f/the-digital-divide-.pdf
- United States Postal Service, Inc (2016). 2016 UPS Pulse of the Online Shoppe. https://pressroom.ups.com/assets/pdf/2016_UPS_Pulse%20of%20the%20Online%20Shopper_executive%20summary_final.pdf
- Verma, P. (2020, July 19). Public Transit Officials Fear Virus Could Send Systems Into “Death Spiral.” The New York Times. <https://www.nytimes.com/2020/07/19/us/coronavirus-public-transit.html>
- Vogels, E.A., Perrin, A., Rainie, L., & Anderson, M. (2020, April 3). 53% of American Say the Internet has Been Essential during the COVID-19 Outbreak. Pew Research Center. Retrieved from <https://www.pewresearch.org/internet/2020/04/30/53-of-americans-say-the-internet-has-been-essential-during-the-covid-19-outbreak/>
- World Health Organization (2020, March 3). Shortage of personal protective equipment endangering health workers worldwide. <https://www.who.int/news-room/detail/03-03-2020-shortage-of-personal-protective-equipment-endangering-health-workers-worldwide>