

COVID-19 Special Investigation Report: Local Business Recovery and Resilience in New England: Response to COVID-19

Prepared October 2020



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Executive Summary

Developing local businesses recovery and resilience is essential to ensure holistic economic recovery in response to the COVID-19 pandemic. To better understand how to develop this recovery and resilience in the New England region, we carried out this Special Investigation Report on Local Business Resilience. For this report we employ a qualitative method technique by conducting and analyzing interviews. Interviews were conducted in 18 communities across all 6 New England states with stakeholders from the public and private sectors. The data gathered provides robust support for the findings highlighted in this report.

The purpose of this report is two-fold. First, we identify the major challenges facing local businesses across FEMA Region 1 - New England. The major challenges we identify are: 1) Heightened Uncertainty, Risk, and Fear on the Part of Customers and Employees, 2) Considerable Decrease in Consumer Spending, 3) Urgent Need for Skills in Digitization, Digital Literacy, and E-commerce, 4) Need For Flexibility in Government Financing, 5) Difficulties in Navigating and Creating Changes to Existing Business Models, 6) Threats to Supply Chain Resilience, 7) Lack of Access to and Dependence on International Markets, 8) Serious Infrastructure Changes due to COVID-19, 9) Issues in Workforce Retention and Regeneration, and 10) Ongoing Regulatory Uncertainty and Need for Clarity. Second, we offer proposed solutions to each of these challenges that can be taken by both private businesses as well as government agencies, policymakers, and funders. All of these actors plays an essential role in building local business recovery and resilience, and as such we offer dynamic solutions that involve all of these actors. Each of these challenges needs to be addressed in both the short and long term to ensure complete economic recovery. We offer specific and actionable recommendations aimed not only at recovery but also at building business resilience. Although we offer more comprehensive recommendations in the report, several key recommendations include: strengthening of health and safety guidelines, increasing COVID-19 related education for businesses and consumers, employing incentive strategies to increase consumer spending, improving digital literacy and e-commerce sites, providing more flexible and clearer loan and grant opportunities from the federal side, deepening the public-private partnership to respond to collective problems like broadband access, and working with local colleges when possible to fill business needs while also providing real work experience for students.

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COVID-19 Special Investigation Report: Local Business Recovery and Resilience in New England: Response to COVID-19¹

1. Background of the Issue

Businesses are key community actors. If businesses do not survive and rebound economically from COVID-19, communities as a whole will suffer. In this report we focus primarily on local businesses, defined as businesses that provide goods and services to a local population regardless of size. These businesses are often brick and mortar style businesses, but as this report outlines, this business model faces severe threats. To carry out this special issue investigation on local business resilience we used an interview approach across 18 communities throughout FEMA Region 1, New England. The interviews were semi-structured and conducted with stakeholders from both the public and private sectors and were designed to understand the economic impacts of COVID-19. We use these interviews to inform this report and to highlight key problems and challenges that businesses across all industries face. We enumerate the major issues we identified below. In the section following the major issues we offer proposed solutions to each of the major issues. Our solutions are targeted for both private businesses as well as government agencies, policymakers, and funders given the centrality of each of these actors in building local business recovery.

1.1 Key Findings: Biggest Challenges for Local Businesses

In this section we outline the 10 most significant challenges that local firms are facing in the wake of the pandemic. We purposefully identify problems facing all industries to maximize the utility of our report. We will describe each of the challenges using evidence from interviews collected across all 18 communities throughout the 6 New England States. It is important to note that while we have highlighted specific industries that are suffering the most in the background section, the challenges below apply to all local businesses regardless of industry. These businesses are defined as those that provide goods and services to a local population regardless of size. These businesses are often brick and mortar style businesses, but as this report outlines, this business model faces severe threats. To this end, our report encompasses local businesses across all industries and all sizes.

Challenge 1: Heightened Uncertainty, Risk, and Fear on the Part of Customers and Employees

The implementation of social distance measures and business shutdown in March has virtually wiped out profitable revenues for local business that rely on in-person transactions throughout New England. The challenges around fully re-opening and resuming operations in either the summer or fall is quite clouded with uncertainty for business owners to make decisions regarding strategies for recovery, particularly in terms of taking on additional debt to provide operating cash. Many of the businesses, regardless of size, have significant fixed operating expenses – involving payments on rental equipment, boats, tour buses, real estate, audio-visual equipment, and so on, which require substantial on-going payments which must be met if owners hope to bring businesses back to operation.

Nearly 100% of business owners, business associations, and business-supporting non-profits we interviewed identified uncertainty regarding reopening, as well as the accompanying public willingness to participate in reopening scenarios, as a major impediment to business recovery this summer or fall. Given the uncertainty of reopening times, reopening restrictions, and strength of public confidence that would support robust markets with a strong return of customers, many businesses in the industry have signaled to the local chambers of commerce and other supporters of local business that they likely will NOT reopen for the remainder of the year. The exact number of closures is unknown but are expected to be at least 20% and may be much higher.²

While all industries are impacted by this heightened consumer uncertainty, risk, and fear, we have found the tourism industry is particularly threatened. The tourism economy operates primarily through medium, small, and micro sized businesses with extremely tight margins which lack financial bandwidth to tolerate what is tantamount to a year without operation (until the beginning of the 2021 tourism season). In addition, much tourism is “event driven” – visitors come for destination weddings, summer camps, foodie/brewery tours, general tours of the region, re-planned vacations, cruises, etc. which cannot be simply moved forward 6 months, particularly given the uncertainty associated with estimated reopening timelines.

Furthermore, as businesses begin to reopen, the challenges and costs associated with maintaining social distancing and acquiring enough personal protective equipment (PPE) are high. Even if businesses can ensure these policies are adhered to, it is impossible to mitigate all consumer fear of contagion. This leaves firms in a precarious position. As states and cities are developing “reopening plans” many businesses are discouraged by the lack of state assistance in terms of the practicality of reopening. While we found that business owners take some comfort that the government is providing the green-light for them to reopen, reopening alone does not ensure customers or suppliers in sustainable numbers.

Challenge 2: Considerable Decrease in Consumer Spending

The above mentioned increase in consumer fear has led to a sharp decline in consumer spending. This trend has been made evident throughout both our interview process and is supported by the large declines seen in the Geo Insights data. Additionally, as highlighted through our interviews consumer spending has also faced a marked decline as unemployment numbers have increased. Consumers simply do not have the security nor the financial resources available to devote to their businesses. Further, many consumers that may have the means to spend do not do so out as an austerity measure and as a means to pre-plan and save.

The interview process highlighted a sharp decline in consumer spending for businesses that remain open across nearly all industries with the exception of: (1) restaurants that primarily offered ‘take out’ options prior to COVID-19 (or ones that were able to pivot to e-commerce options shortly after the outbreak); (2) large big-box retailers that have global supply chains (e.g., Amazon and Lowe’s); (3) grocery and liquor stores; and (4) stores that sell DIY or home improvement type products. Anecdotally evidenced from the interviews, 1/3 of businesses throughout New England have reported at least 30% decreases in revenue from a lack of consumer spending. Although there are no official data on the number of businesses that will close for this reason, many local businesses expressed closure as a potential or even likely scenario.

Challenge 3: Urgent Need for Skills in Digitization, Digital Literacy, and E-commerce

COVID-19 has forced a massive digital migration. While all segments of the community have experienced this migration, it has been particularly challenging for businesses that are trying to transform their businesses, where possible, into the digital world. There are many associated challenges. First, some existing

industries and businesses do not have digital options. For example, the tourism industry. Hotels cannot transform their rooms into digital stays and once a day is lost, that calendar day cannot be recovered. The same is true for the events industry. All summer festivals, weddings, concerts, etc. have been cancelled, with many companies now cancelling through the fall season. These services cannot be transferred to a digital platform, no matter how savvy a business owner is.

Second, for those industries that can digitize, digital literacy is a threat. Many local brick and mortar businesses do not have digital records nor do they have an understanding of online marketing. Understanding and operating these processes can be extremely costly. One local business owner indicated that for a developer to create an online platform for her business it cost roughly \$100,000. While some companies can afford to outsource this digitization, our interviews revealed that many companies do not have the financial capacity to do so. As a result, many local businesses are reliant on social capital, informal networking through community connections, and social media (e.g., Facebook). While this may be an adequate survival strategy in the short-term, most local businesses say that the reduction in capacity and revenue is their number one fear. Relatedly, many local businesses do not have functional e-commerce sites even if their production capacity remains intact. For example, several farmers throughout New England noted that while they are still actively growing and producing crops, they have no way to sell them. In one community, a local chamber of commerce was able to set up an “e-farmers market” for the local farm, but poorer and marginalized communities do not have this internal capability.

Finally, broadband and hardware remains a serious challenge to firms attempting to digitize. While access to broadband is available in most major cities, more rural and poorer communities do not have adequate broadband to sustain the digitization of businesses. Several key stakeholders in the agricultural industry indicated that they did not have broadband access at their farms and several cited the cost of computers as a barrier to digitization. Other industries have also expressed this as a concern. One local inn owner noted that while his rooms are available and may offer attractive get-a-way work locations for people coming from the city who can work remotely, the lack of serviceable broadband threatens occupancy. In an effort to get broadband he sought quotes from several broadband companies and the cheapest quote was \$30,000 which included only the connection and not the service. If businesses are expected to transition to or enhance their digital presence, broadband will need to be more widespread and readily accessible.

Challenge 4: Need For Flexibility in Government Financing

In all New England states, local businesses constitute a significant part of the economic landscape. Many are struggling to reopen, and many may be unable to reopen at all. Due to the small size of a good portion of these local businesses, many of them do not have the revenue structure to remain viable for the duration of COVID-19 shutdowns and operating restrictions, so their major concern is income protection of owners and employees. The CARES Act Paycheck Protection Program (PPP), Small Business Administration (SBA) loans, and Economic Injury Disaster Loans (EIDL) have had uneven success. Initially, many micro businesses were not able to access the support available through PPP and EIDL structures due to a congestion in processing, confusion about options and requirements, and fear regarding the uncertainty of reopening scenarios. For instance, small businesses in the tourism and hospitality sector, such as local restaurants, hotels, and lodging, could not benefit from PPP loans due to the nature of their businesses (e.g. they could not be open and thus had no employees paychecks to protect). Further, for those that were able to avail themselves of the CARES Act programs, the cessation of PPP on June 30 eliminates this needed support months before the businesses can actually begin to profitably reopen – leaving them to assume further debt from private banks if possible (which many are unable or unwilling to do) or to simply close permanently.

Because federal legislation and regulations are by necessity written to cover the entire country, there is a common perception among businesses that needed recovery funding is often inflexible and fails to reach those most in need. There is a general consensus throughout the communities that certain businesses are not well positioned to receive support under general federal programs because they may not have the time or the financial, administrative, or technological literacy required to successfully apply for funding. In this disaster, the most commonly cited programs in our interviews were the Paycheck Protection Program and the Economic Injury Disaster Loan. While both were acknowledged as important and much needed programs, respondents also thought that both would have been more effective if state and local authorities were able to tailor programs like these to specific sectors and adjust them according to need. While some businesses have been successful in the short-term, it is not clear that these protections will be sufficient to bridge the gap between closing and reopening to profitability, particularly as the crisis extends into the summer and beyond. Without additional intervention, Chamber representatives, Council of Government members, and business owners forecast a devastating drop in the small/micro/local business economy and perhaps a shifting of its entire nature.

Challenge 5: Difficulties in Navigating and Creating Changes to Existing Business Models

Despite the challenging scenario, New England’s businesses show encouraging signs in their ability to “pivot” operations, marketing, and distribution and delivery channels to adjust to post-COVID conditions. Pivoting in this case refers to businesses adapting their operations in response to current external factors and conditions. For those who could access financial aid, the access to CARES Act grants and loans helped make this transition possible, allowing for alterations in their business models. For example, a small whiskey distillery in Portland, Maine has pivoted away from distilling alcohol and instead has begun to produce hand sanitizer based on current community needs. The same was reported in Middlebury, Vermont, where a Kombucha factory joined forces with distilleries in the state to convert its naturally-occurring organic alcohol into hand sanitizer. Also, a glove company and a toy manufacturer in Middlebury, Vermont are producing protective masks for healthcare workers and a makerspace in a nearby community is creating face shields in partnership with a local medical school.

Agricultural producers have hastily formed new online-mediated sales and distribution, converting the traditional farmer’s market into an online marketplace – with some coastal fishers adopting similar practices in an attempt to move fresh product from dock to home consumer markets. Artisans and crafters have similarly innovated online means of advertising, marketing, and selling wares online – increasing their revenue and discovering new and broader markets. While some micro businesses are able to carry out such pivots, not all businesses have the tacit knowledge and capacity to do so. For that reason, Chambers of Commerce and Small Business Initiatives in all States have worked together to implement online marketplaces to support local businesses and offered trainings on e-commerce and social media. Their rapid response has helped small/micro local businesses to reopen more quickly and have provided some revenue in a particularly challenging economic landscape.

While some micro businesses are able to carry out such pivots, not all businesses have the tacit knowledge and capacity to do so.

Challenge 6: Threats to Supply Chain Resilience

New England’s agricultural and fishery sectors are essential for the functioning of the states.³ The fishery sector, which is highly dependent on the demand side market of both ground fish and other main catch such as lobster, is suffering a direct hit as an outcome of COVID-19 closures. Market demand from restaurants and hospitality-related outlets creates the highest market price and is supported through a supply

chain of processors, storage, and distribution targeted specifically to this market. With the closure, fisheries from Portland and up and down the coastline saw an immediate drop in overall demand and a corresponding drop in market prices that have decimated revenues and limited the ability of the state's 10,000+ commercial fishers to turn a profit.⁴ Supply chains for this industry require a number of specialized components (such as flash freezing, cold storage, and rapid delivery mechanisms) that could not easily pivot when the restaurant market largely closed.

Many fishers have found limited opportunities to sell their fish directly to consumers through informal channels. For more detail, see GRI special report on fisheries by Scyphers and Grabowski. However, many local fishers do not have the infrastructure to freeze the fish, allowing them to either sell frozen or distribute down the eastern seaboard. The result has been that a vast majority of the frozen fish sales to home consumers through groceries have gone to large overseas fisheries from Iceland and other Nordic countries. While these pivots to divert distribution to local consumers or to wider distribution outside the New England markets via frozen processing might help alleviate some of their immediate and short-term income needs, such changes could lead to long-term and permanent economic disturbances to the fishing economy.

On the other side of the spectrum, the dairy sector was also severely affected when restaurants, colleges, and hospitality-related outlets closed for quarantine. Anecdotal data shows that small farmers cannot process the milk produced locally, limiting the possibilities to add value to the commodity. In Vermont, the milk locally produced is exported to other states in New England for processing and packaging, and then imported for mass consumption. This adds costs for consumers and enlarges the value chain, limiting the possibilities to increase revenues for local, family-owned farms.

While the above anecdotes highlight specific industries that are suffering from supply chain issues, one trend that was made clear throughout the interviews is that a more resilient supply chain is needed.

Challenge 7: Lack of Access to and Dependence on International Markets

Key international borders remain closed which is a threat for local businesses that rely on international spending. For example, Newport, VT shares a 30 mile long lake that extends into Canada. Local restaurants, hotels, retail shops, weddings, and recreation companies all rely on Canadian travelers as key sources of revenue. However, since COVID-19, there has been an a significant decrease in international consumer spending as indicated heavily in the restaurant and tourist industries. With borders closed, local businesses cannot take advantage of the international spending opportunities. While this is not representative of the entirety of international spending in the community, it corroborates the narrative heard throughout the interview process. This trend extends beyond Newport, VT. Each state in New England has suffered from a lack of access to international spending in the retail industry. The interview findings indicated that this is particularly damaging in the summer, when many seasonal businesses make the majority of their revenue for the entire year. Once more, although the graph indicates slight upticks, the full rebound time is not yet known.

Aside from international spending, many local firms expressed concerns regarding major foreign competitors that already have the capacity to export globally and have well-established global value chains. While some businesses have been successful at exporting and internationalizing in general, many local businesses, particularly smaller and "mom and pop style," do not have the capacity to scale their businesses to tap into international markets, leaving them at a disadvantage. Communities that are close to an international border or seacoast experience this problem to a higher degree than others. Anecdotally, several key actors in the fishing industry in Maine expressed concerns that larger global fisheries from countries like Iceland and Norway, already have the ability to ship their products globally in a cheaper and more efficient manner. This problem is exacerbated by the reality that many local fishers typically only sell their product throughout

Maine and rarely ever outside of New England. Given the current economic climate from a consumer standpoint, these local businesses are in serious danger.

Challenge 8: Serious Infrastructural Changes due to COVID-19

The major concern shared by the micro-business community in New England is the need to invest in the necessary infrastructure changes needed due to COVID-19's public health restrictions. Despite some businesses having access to grants and loans, many of them are not in a position to take on more debt given the uncertainty around opening regulations. Business owners are unwilling to invest in drastic reshaping of facilities, dining concepts, operations, and so on, without clear public plans that can allay consumer fears and build consumer confidence regarding the public health and safety of the dining out experience. Small businesses, such as restaurants and other hospitality-related outlets, work on small margins, so without the promise of customers willing to return to a changed and uncertain dining out experience, they cannot hope to survive.

For example, in the State of Vermont many cities rely on small restaurants, B&Bs, hotels and other services related to the tourism and hospitality sector. These businesses were particularly affected and will need financial help to support their cashflows, as well as the transformation for a post-COVID-19 world. Unable to open their doors to clients, those that can move to a digital format, will demand significant resources (e.g. financial assistance and a trained workforce) to change their business models but will also need support for the necessary for PPE and other infrastructural changes, such as face shields in places where employees interact with costumers. In Maine, while several restaurants have been able to transition to curbside/delivery only options, many restaurants are too small and do not have enough money to operate at sub-30% capacity. While there have been efforts at the city and state level to relax regulations and ordinances in order to support open-air dining and drinking, there is simply not enough physical space to make this a feasible or profitable option. This problem is exacerbated by the costly infrastructural changes necessary (e.g. face shields, plexiglass dividers, etc.) even when physical space is not an issue.

Challenge 9: Issues in Workforce Retention and Regeneration

The New England States' economy that will emerge from the COVID-19 emergency is expected to be significantly altered. Hiring for many jobs will slowly recover, for many reasons. First, the potential widespread failure of small businesses may lead to many jobs disappearing altogether and requiring workforce training, redevelopment, and skill certifications for the new positions that will emerge. Additionally, adult education and technical training programs that could facilitate these certifications were also affected, since many specific programs had to be shut down. Second, with the CARES Act programs supporting unemployment, some businesses are facing difficulties in attracting and re-hiring employees since under current conditions these individual's incomes are higher than before the COVID-19 pandemic affected businesses in the whole country. Third, the lack of childcare positions and the closure of schools has aggravated the situation for the local workforce while transitioning to working from home or continuing working in essential businesses. See GRI report on childcare by Modestino for more details. For instance, Vermonters acknowledged a pressing need for childcare and share stories about professionals wanting to relocate to Vermont who could not because no room could be found in the existing programs, particularly for infants. Fourth, access to broadband and related hardware as well as digital literacy also have created a disruption in the attempts to retain labor. As many jobs have transitioned to work from home style, individuals who do not have access to broadband and hardware suffer. Fifth, there are housing shortages throughout the states that have exacerbated the workforce retention issue. Retaining and cultivating a robust local workforce is even more challenging when the housing stock is limited – and even more limited for affordable housing, which is a concern facing many low-income and immigrant families. Sixth, some states are facing the challenge of stagnation and an aging population, with a growing shortage in the local workforce. This fact is exacerbated

in businesses that depend on manual and immigrant labor, such as dairy farms in Vermont. Additionally, for communities that are reliant on migrant labor, current cessations of visa programs pose a serious threat.

Challenge 10: Ongoing Regulatory Uncertainty and Need for Clarity

Voluminous amounts of scholarly research on the topic of regulations (which are a form of ‘formal institutions’ in academic terminology⁵) in both domestic and international business demonstrates that businesses have the best chance at success and profitability when regulatory frameworks are clear.⁶ Further, this research demonstrates that competing sets of regulations do not create positive business environments.⁷ COVID-19 represents an ongoing disruption to existing regulations, creating an unfavorable environment for businesses. First, there are too many different sources of information that may at times present competing information. Information is critical for firms, but when local businesses receive different and often conflicting information surrounding regulations, rules, and policy updates from local newspapers, chambers of commerce, state level documents, and federal level documents, it becomes very challenging to follow. This problem is exacerbated in rural and poor communities. Second, the rules and regulations pose a serious challenge for many businesses that cannot afford and do not have a legal team. The regulations and policies are lengthy and often mandate interpretation which exceeds the capacity of many local businesses. This problem was most severe in the agricultural and dairy industry where local farmers felt unprepared to interpret and follow state and federal policies. Third, there remains a lack of clarity around federal loans.

It is also important to note that the business impact of the pandemic has been disproportionately greater for minorities and for women.

Across every industry interviewed, local businesses owners seemed very uneasy about the current round of federal loans. While they were grateful that loans were provided, many urged for further information on the payback policy and timeframe. Additionally, there were overwhelming requests for greater flexibility in terms of when the loans could be used, as sectors such as hospitality and tourism (which are bedrock industries for many states) felt that the loans were

not serviceable for their business needs. In sum, COVID-19 has left a majority of local businesses looking for clarity and strong policies.

It is also important to note that the business impact of the pandemic has been disproportionately greater for minorities⁸ and for women.⁹ This includes business owners, employees, and consumers. For business owners, the effects on their companies has been much greater among minorities.¹⁰ For employees, the unemployment rate has been much greater among minorities. For consumers, due to the loss of employment and income, there has been a higher number of minorities who have had to resort to social programs such as food stamps. In addition, women have had to take a disproportionate role in taking care of their kids, even when both parents are employed. This is largely due to existing systemic issues of inequality and the distribution of opportunities becoming exacerbated when there is a disruption of any kind, such as a natural or a man-made disaster. It therefore requires attention not only for this particular pandemic, but more holistically and preemptively before the next disruption occurs.

2. Important Factors for Local Business Recovery

In this section we offer proposed solutions to each of the core challenges for business recovery described in the previous section. The goal was to develop creative and actionable solutions for each of the issues. We begin with background information that applies to addressing the challenges in general, and then we provide specific suggestions and guidelines in response to each of them. It is important to note that these suggestions and guidelines are targeted towards both private sector actors as well as government officials, policymakers, and funding organizations given the centrality of each of these different actors to business recovery and resilience.

There are some challenges that we identified through our interviews but do not have full answers to. For instance, government funds often fail to reach the businesses that need them most, with large companies having the know-how to obtain grants and loans that smaller businesses do not possess. This gap can be closed to some extent with stronger and more precise regulations, but there is also a need for educating owners of small and micro businesses and providing them with technical skills to take advantage of the opportunities afforded, which may not happen or may take too long if such business owners struggle with embracing these changes. As another example, dependence on international markets and global supply chains can be somewhat addressed by developing domestic markets and supply chains. However, this will most likely only provide a temporary solution for businesses to remain afloat during the pandemic, requiring a return to international markets and supply chains as soon as possible.

2.1 Reopening Businesses Safely: The Importance of Balancing Health and Economic Concerns

“...if you don't solve the biology, the economy won't recover”
- Erin Bromage¹¹

After two long months of in person businesses having to close in most of the country from about mid-March to mid-May, it began reopening progressively in late-May and June.¹² The shutdown was required to slow the spread of the infection and to avoid overwhelming our hospitals, as we were dealing with a novel virus for which the medical establishment was unprepared.¹³ However, this shutdown resulted in rampant unemployment, people being isolated at home, and a number of other health, social, and psychological issues.¹⁴ Among other byproducts, this has led to a myriad of health problems, including increased anxiety and depression, and potentially even suicide.¹⁵ Therefore, it is important to keep in mind that although the economic shutdown was necessary at the time and was successful in slowing the spread of the infection and saving lives, it came with other serious consequences that will likely be felt for years to come.

On the other hand, once businesses began to reopen, several states decided to limit compliance with Center for Disease Control (CDC) recommendations that were designed to reduce the spread of the virus, such as wearing face coverings, social distancing, and avoiding large gatherings.¹⁶ Also, across states there have been a growing number of individuals who have chosen to flaunt the guidelines.¹⁷ This has led to a rapid increase in the transmission of the virus across much of the US at levels that are significantly higher than in any other developed nation.^{18,19} As such, going to the other extreme after the shutdown of simply reopening the economy and ignoring the guidelines of the medical establishment, has led to a rapid spread of the contagion and a much higher number of deaths as a result.

These two extreme cases demonstrate the importance of balancing health and economic concerns in a systemic fashion and not as conflicting interests going forward. It shows that the health crisis and economic crisis are intricately entwined and need to be addressed simultaneously.

For business to recover more quickly and fully from the pandemic, it is thus imperative that the health and economic crisis be addressed jointly and not as two separate problems. Until then, business will remain hampered, with rampant instability in stock markets, employment, and other economic indicators. This is important as a number of the recommendations we provide below refer to health issues precisely because it is essential to address them in order to allow for business recovery to occur.

2.2 Importance of Reducing Uncertainty and Instability in the Market to Aid Business Recovery

In order to facilitate local business recovery, it is critical to address not only the *actual* economic problems that have resulted from the health pandemic and from the economic shutdown, but also the *perceived* uncertainty, instability, fear, and risk on the part of economic actors. These include business leaders, such as entrepreneurs, business owners, and managers, but it also includes all other employees as well as consumers and investors. So long as uncertainty and instability reign in the market due to the pandemic leaving people feeling unsafe, critical drivers of the economy such as consumption, investment, entrepreneurship, and innovation will be stymied.²⁰

For instance, as long as consumers limit the extent to which they physically enter businesses to purchase goods and services because of fear of contracting the virus, the level of consumption will be significantly reduced. Of course, online shopping has increased as a result²¹, but not to the extent that it makes up for the deficit of in person consumption. This is largely due to uncertainty and fear on the part of consumers, as well as the increase in unemployment. Researchers have found a clear association between uncertainty and economic slowdown²², as consumers and investors are less likely to take risks with their capital, choosing instead to increase their savings and be prepared for any eventuality.²³

As another example, many potential entrepreneurs wishing to start a new business will wait until the economy stabilizes to reduce risk. At the same time, business leaders such as owners and managers will be less likely to take unnecessary risks during the pandemic, choosing instead to do the bare minimum for their businesses to remain viable. Similarly, employees who are unable to work remotely during the pandemic and have to return to work in person, will often seek to minimize their time at work and their interaction with clients. Of course, these generalization do not apply in all cases, but display a tendency of economic actors on average to reduce their risk-taking behavior when they perceive uncertainty and instability to be too great.²⁴

Given these points, we therefore provide recommendations to address not only the *actual* issues that have resulted from the health pandemic and from the economic shutdown, but also the *perceived* uncertainty and fear on the part of economic actors. This is essential as they both require attention to facilitate business recovery.

Actual and Perceived Business Safety Measures

Based on the above, it is important not only for businesses to ensure that their customers and employees *are* safe, but also that they *feel* safe. Taking the necessary measures to ensure a safe environment for customers is important but if they are unaware of those measures and do not perceive a business as a safe environment, many will remain hesitant to visit those businesses unless they absolutely need to, which will in turn depress sales and slow down business recovery. Thus, it is critical to clearly inform customers of safety measures being taken to reduce uncertainty and fear.

Applicability Across Business Activities

Many of the suggested guidelines below apply to all genres of business and related activities where individuals in different capacities congregate. For instance, they apply to customers entering business establishments like shops and restaurants, employees entering their offices, students and teachers entering classrooms in schools and universities, and so on.

Current Guidelines are Insufficient for Business Indoors

Transmission of the virus can occur through respiratory exposure to someone who is infected with the virus or through touching a contaminated surface and then touching one's nose or mouth. Both of these are critical to address for businesses, so we provide specific recommendations below.

However, health experts have also indicated that in order for respiratory transmission to occur, it requires exposure to a sufficient viral load over a prolonged period of time (usually a few minutes).²⁵ As such, it is less likely for transmission to occur outdoors, due to exposure to the elements. As explained by an epidemiologist: "Social distancing rules are really to protect you with brief exposures or outdoor exposures. In these situations there is not enough time to achieve the infectious viral load when you are standing 6 feet apart or where wind and the infinite outdoor space for viral dilution reduces viral load. The effects of sunlight, heat, and humidity on viral survival, all serve to minimize the risk to everyone when outside."²⁶ Of course, there are cases of people who have contracted the virus outdoors, such as during the Black Lives Matters protests, but they were likely due to close proximity between people and often not wearing masks for a prolonged period of time.²⁷ This suggests that the current guidelines of social distancing and face coverings are sufficient in most cases for outdoor business activities.

On the other hand, indoor activities such as stores and offices carry a much greater risk of respiratory transmission. This occurs because as air is recirculated inside with limited ventilation to the outside, the viral load can build up to the necessary levels for more brief exposure to lead to an infection.²⁸ As stated by an epidemiologist: "When assessing the risk of infection (via respiration) at the grocery store or mall, you need to consider the volume of the air space (very large), the number of people (restricted), how long people are spending in the store (workers - all day; customers - an hour). Taken together, for a person shopping: the low density, high air volume of the store, along with the restricted time you spend in the store, means that the opportunity to receive an infectious dose is low. But, for the store worker, the extended time they spend in the store provides a greater opportunity to receive the infectious dose and therefore the job becomes more risky."²⁹ Thus, the risk likely lower for consumers entering a business and exiting promptly than it is for store or office workers that spend many hours breathing the same air, but in both cases the risk of transmission is greater indoors than it is outdoors. Of course, wearing an N95 mask (and applying it properly over one's nose and mouth) can significantly reduce this risk while indoors.³⁰ However, given the limited availability of N95 masks, most people who use face coverings use medical masks, cloth coverings, and so on, which provide some degree of protection, but do allow passage of the virus into the respiratory system.^{31,32}

This suggests that the current guidelines of social distancing and face coverings are insufficient for indoor business activities. We propose stronger indoor guidelines below. Our recommendations focus on proposed guidelines for businesses that apply to protection from respiratory transmission indoors and outdoors, while at the same time focusing on the risk of transmission through physical contact with contaminated surfaces whether indoors or outdoors.

3. Recommendations for Local Business Recovery: Proposed Guidelines for Firms to Address Each Challenge Identified in Section 2

3.1 Solution 1: Heightened Uncertainty, Risk, and Fear on the Part of Customers and Employees

As per the discussion above, the current guidelines of social distancing and masks are necessary but not sufficient for indoor spaces, where air can recirculate and the viral load can build up to contagious levels more readily.³³ Ultimately, social distancing and masks remain the first line of defense both for indoor and outdoor activities, but more is required for indoor spaces. Therefore, it is important to reduce the viral load inside through air cleaning procedures and improving fresh air circulation. This includes making use of air purifiers and UV lights, keeping windows and doors open, and moving business outdoors where possible. Most of these proposed solutions are relatively inexpensive for a business, especially when considering the potential benefits.

- **Air purifiers.** Our first recommendation is that businesses set up High Efficiency Particulate Air (HEPA) air purifiers in all enclosed spaces where workers and customers congregate indoors. These air purifiers are designed to clean the air, including capturing viruses, thus diminishing contaminated air from recirculating indoors.³⁴ They reduce the viral load in an enclosed space and thus lessen the likelihood of contagion significantly. These purifiers would serve as a critical line of defense to reduce contagion significantly and for individuals to feel safe. Air purification and filtration systems would not ensure there is no viral transmission indoors, but they would help reduce the viral load. It is surprising how little attention air purifiers have received as a means of reducing contagion during the pandemic. They are a relatively low cost solution to the need for improving air quality in indoor spaces, providing a vastly untapped opportunity to enhance safety in businesses of all types (offices, stores, gyms, schools, and anywhere else individuals congregate). This is especially surprising considering the cost-to-benefit ratio they can provide in terms of not only keeping employees and customers safe, but also for individuals to feel safe in that environment and thus be more willing to go there. Some of the top rated portable air purifiers are priced in the 100-200 dollar range and cover small spaces around 300-400 square feet, with prices going up for larger areas.³⁵
- **Air Filters.** Relatedly, enclosed spaces with central HVAC systems can often switch out the basic furnace filter with more expensive ones that capture viruses and other airborne pathogens.³⁶ HVAC systems can recirculate contaminated air, unless a proper filter designed to capture viruses is used.³⁷ There were indications of this being the case early on in the pandemic as far back as January and February, when cases were reported on cruise ships where guests were quarantined to their respective rooms yet still contracted the virus, suggesting the virus was being transmitted across rooms and even across floors through the ventilation systems.³⁸ However, the fact the virus can linger indoors in an airborne state was not confirmed by the World Health Organization (WHO) until quite recently.³⁹ Hospitals and airplanes are among the enclosed spaces that already use high quality ventilation systems that capture airborne

pathogens.⁴⁰ During the pandemic, it would be wise for the use of these types of filters to be much more widespread across businesses (e.g., offices, stores, gyms, daycares, classrooms, and so on). This may or may not be in place of adding standalone air purifiers, as having both could help clean the air more quickly and thoroughly. Also, the presence of an air purifier can be something that customers and employees see as they enter a business, providing a sense of safety that air filters hidden behind a panel would not provide.

- **UV Lights.** There is also some evidence that UV lights, especially when paired with an appropriate air purifier or air filter, can help reduce viral load in the air.⁴¹ Businesses could thus consider adding this as an additional measure to improve air quality in enclosed spaces.

- **Keep Windows and Doors Open.** Weather permitting and where it is safe to do so, it would also be useful to keep windows and doors to the outside open. This accomplishes two goals. It provides fresh air circulation and it eliminates people touching door handles to open doors (e.g., customers entering/exiting a store, employees entering/exiting an office building or factory, students entering/exiting a school building or classroom).

- **Make Masks Mandatory.** It is important for businesses to implement “No Mask, No Service” policy and to post a sign stating as much at the entrance (e.g., see Figure 5). Also, masks must be worn properly, over one’s mouth and nose. Unfortunately many people just wear them over their mouth, which significantly reduces their utility.⁴²

- **Provide Outdoor Service Wherever Possible.** Where space allows, certain businesses may be able to conduct their operations outdoors. Ultimately, the less time individuals congregate with others indoors (outside of people in their household), the less likely transmission will occur.⁴³ For instance, restaurants with outdoor space may place seating outside, remembering to space out tables properly as per social distancing guidelines. As another example, some factories and offices where working virtually may not be ideal and thus require employees to return to the office, may have an outdoor courtyard or other open area where individuals may work portions of the day outdoors. This may require adding WiFi extenders and some flexibility on the part of the workforce, but it would likely reduce the infection rate significantly. Additionally, and when possible, companies may also consider rotating workforce scheduling to reduce the amount of people in a building at a given time.

- **Provide Curbside Service Wherever Possible.** For some commerce, such as restaurants, dry cleaners, and veterinarians, it may be possible to provide curbside service. For instance, picking up takeout from restaurants or dropping off and picking up a pet with a veterinarian, but doing so outside instead of having to enter the establishment to do so.

Figure 1. Example of a posted sign in Boston requiring wearing a mask for entry



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- **Test People’s Temperature at the Door.** Testing people’s temperature would require having a dedicated employee, which is not always an option. But in businesses where this is possible, it would help at least to catch symptomatic cases and thus help reduce transmission in indoor spaces, while making individuals feel safer when entering that location.
- **Contactless Payment Readers.** For commerce, installing contactless payment readers for credit cards and smart phones can reduce having employees and customers touch the same surface, thus reducing cross-contamination.
- **Online and/or Phone Ordering and Payment Systems.** In addition, companies can provide online and/or phone ordering and payment systems, to further reduce unnecessary physical contact between employees and customers. As a side note, this may also provide an indirect environmental benefit by reducing having to print receipts and thus paper consumption, through providing them via email instead.
- **Post Rules by Entrance.** Provide signs by the entrance to the business establishment (e.g., office, factory, restaurant, storefront, and so on) clearly stating the rules such as the need to wear a mask to enter.
- **Educate Customers and Employees.** Although educating the population in terms of a health pandemic is largely something for which the government takes responsibility, companies can also provide information on the dangers of contracting the virus and how to reduce the likelihood of transmission. For instance, they can have a poster available to employees and/or customers, explaining the importance of social distancing and wearing masks properly over their mouth and nose. Unfortunately, much of the population only understands the basics of how transmission occurs, so this type of generalized education requires a public-private partnership where government, businesses, and other organizations work together.
- **Advertise Safety Measures.** Just as important, companies can advertise the safety measures they are following to keep their employees and customers safe. Ultimately, if individuals are unaware of the steps a company is taking to reduce the risk of transmission, then the measures will increase safety but not the perception of safety. It is important to make these apparent, so workers and customers feel safe in that establishment. Advertising can start by posting a large and inviting sign by the entrance listing all of the practices the business is pursuing for their benefit. For some companies, it may also be viable to place ads in different venues, such as newspapers, radio, television, or social media. As a business develops a reputation for being health conscious during the pandemic, word of mouth can be a powerful force for advertising, leading to an increased number of individuals feeling safe when visiting that establishment.
- **No Gloves.** We propose that companies and the government refrain from encouraging the use of gloves. This is for two reasons. First, gloves provide a false sense of security. COVID-19 is a respiratory illness, so it is not contracted through the hands or skin. Whether someone’s hands or gloves get contaminated, the problem occurs if they then touch their face or touch something or someone else and spread the contamination that way. By wearing gloves, workers and customers often feel protected, so they handle products, credit cards, touch their face, and so on, thinking they are protected, when they actually may be spreading the virus. Second, the use of gloves is detrimental to the environment, as it leads to unnecessary pollution. The majority of the gloves ultimately end up in landfills or the ocean, leading to long-term environmental issues. Of course, the increase in mask production, use of electricity with air purification systems, and so on are also not good for the environment, but they are necessary to combat the pandemic, whereas gloves are not.

3.2 Solution 2: Considerable Decrease in Consumer Spending

The proposed guidelines above address much of this challenge as well. Here we provide additional suggestions that companies can implement to enhance consumer spending.

- **Provide Incentives to Customers.** Companies can provide different types of creative incentives for customers, including sales and deals, raffles and prizes, gifts and rewards. For instance, companies can create a loyalty program that rewards purchases. Also, companies can use gamification as a means of attracting customers. For example, a store could host an award for the customer who sends in the best picture of themselves wearing a mask while visiting that store. A key adage in economics is that economic actors respond to incentives, so it is in the best interest of companies to develop creative incentives to attract customers.
- **Stimulus Funding from Government.** There are a number of actions that businesses can pursue to increase consumption, such as the ones outlined above. However, most of these require time to take effect. Meanwhile, companies can make use of stimulus funding provided by the government, in order to maintain their payroll and keep them afloat.

3.3 Solution 3: Urgent Need for Skills in Digitization, Digital Literacy, and E-commerce

- **Universal? Broadband Access.** Given the move toward increased digitization across many industries, it is important for businesses to invest in developing adequate broadband access for their operations, with support from government funding. However, given the importance of universal broadband for education, we also recommend that the government also provide broadband access, particularly in rural communities.
- **Provide Digital Literacy Training.** Businesses also need to engage in digital literacy training for their workforce, to ensure they possess the necessary know-how to develop and improve their digital systems and presence. We recommend that businesses be proactive and seek the training, but also encourage the federal and state level governments to provide training opportunities or assistance.
- **Develop E-Commerce Sites.** Businesses may also consider partnering with local college students with the necessary educational background and hiring them as interns to help set up e-commerce sites. This can be a win-win proposition: a relatively low cost solution for businesses that provides an opportunity for real world experience for students.
- **Hire Media Consultancy.** This can be a costly option for many smaller companies, but if financing is available, they may also consider paying for media consultancy.
- **Government Grants.** Each of the suggestions under Solution 3 require significant resources. Given the importance of digitization for business recovery and resilience, the government could thus offer grants to small local businesses to develop these programs.

3.4 Solution 4: Need For Flexibility in Government Financing

- **Reduce Loan Regulations and Requirements.** Based on our interviews, it is clear that small and medium businesses find that the current regulations and requirements on government loans in response to Covid-19 have been too onerous and difficult to navigate. This has reduced the level to which the necessary funds have actually reached the companies most in need. It is critical to: simplify the loan system, reduce reporting requirements, extend the time period that firms can use the funds, and clarify the repayment process.

- **Provide Grants not Loans.** Also based on the interviews, it is evident that businesses believe they would be much better served with grants than with loans that may require repayment. For businesses, surviving this pandemic will be difficult enough, and to then be expected to repay the influx of capital they received to keep their operations going may prove fatal for many small and medium businesses. Reducing the burden on companies via grants, can reduce the number of businesses that will be unable to reopen, thus helping to maintain employment at higher levels.
- **Funding Flexibility.** Whether loans or grants are provided, it is important that they be more flexible (e.g., in terms of how they can be used), so that more industries can tap into them.

3.5 Solution 5: Difficulties in Navigating and Creating Changes to Existing Business Models

Changes to Existing Business Models

- **Crisis as a Time of Opportunity.** The word 'crisis' in Japanese is famously known to mean danger and opportunity.⁴⁴ In place of firms seeing their goal as being simply to survive, they can think of the current disruption as a challenging opportunity to think outside the box and develop innovative strategies that align with current market conditions and demand. This paradigm shift can be the difference between trying to hold on to a business model that may be in the process of becoming obsolete and evolving into a new model that can help them adapt and thrive under the changing conditions. This suggestion is purposefully broad, as it needs to be carefully and creatively tailored not only to each industry, but also to each particular company. Relatedly, academic research has shown that firms can also positively engage and fill voids in serving community needs when governments are strained.^{45,46} This is beneficial for communities in need, but it can also generate good will for the companies.
- **Pivoting Strategies.** Relatedly, firms need to develop pivoting strategies. That is, they need to start considering if and how they could adapt their business models or what other types of activities they could engage in with their existing personnel and infrastructure in response to current conditions. As identified above under challenge 5, several firms are already engaging in these types of practices, which can serve as an example for others to follow. Further, if financially feasible, firms might also consider working with a consultant to discuss pivoting potential. To reduce costs of consulting, firms may also partner with local college students (where available) by hiring them as interns to work on creative solutions.
- **Transitioning Towards Cooperative Business Models Where Applicable.** In many communities, particularly rural ones, cooperative business models may provide increased resilience and help mitigate risks associated with disruptions and crises. These models can help reduce costs across different actors. Although this model may not work for all industries, for some (e.g. agriculture and dairy) it may be a helpful consideration.
- **B2B Networking Programs.** The chamber of commerce in each community could also encourage more business-to-business (B2B) networking programs for best practices.

3.6 Solution 6: Threats to Supply Chain Resilience

- **Develop Alternate Supply Chain Options.** Supply chain disruptions have been a serious issue with which businesses are having to contend. An important way to address this is to develop alternative supply chain options, to reduce reliance on any particular suppliers or buyers. This can make them more nimble, adaptable, and resilient to future disruptions.

3.7 Solution 7: Lack of Access to and Dependence on International Markets

- **Develop Domestic Markets for their Goods and Services.** Related to the above point, it is important for businesses to develop an alternate network of domestic suppliers and buyers, to ensure they can continue operating while access to international markets is curbed. This may increase cost and be less profitable for those businesses initially, but over time, it may lead to new opportunities for cost reduction and sources of revenue that may be extended once foreign market access becomes more readily available.

3.8 Solution 8: Serious Infrastructural Changes due to COVID-19

- **Government Infrastructure Funding.** Given the uncertainty in the current business climate, companies are often unwilling or unable to make the necessary investments in infrastructure in response to the pandemic. It is thus critical for government funding to be made available for firms to meet infrastructure guidelines. This will facilitate business recovery, while helping to curb the spread of the virus.
- **Business Partnerships.** Firms can also band together and form informal strategic alliances as a means of providing additional outdoor space. As an actual example, two restaurants that operate side by side have drastically different hours of operation, with one serving breakfast and lunch, and the other dinner. Both added outdoor seating that can be used by whichever of the two restaurants is open at a given time, thus doubling the outdoor seating space available for both during their hours of operation.

3.9 Solution 9: Issues in Workforce Retention and Regeneration

- **Incentivize Maintaining Full Workforce.** The government has provided some loans to companies to maintain their workforce through the CARES Act, which they may not need to repay. However, more could be done in this respect by providing greater incentives for companies to maintain full employment, as the current approach has led to rampant unemployment. It will thus require more time to rebuild the economy when individuals have to find employment oftentimes elsewhere, instead of maintaining most companies with their current workforce.
- **Adequate Broadband and Hardware Availability for Employees to Work from Home.** As stay-at-home advisories and orders were extended throughout the country to curb the expansion of the pandemic, many office workers transitioned to working virtually from home. This has overwhelmed many broadband systems, causing delays and interruptions in service, which have in turn impacted productivity. It is thus critical for the government to work with telecommunications companies to ramp up the broadband system wherever necessary, which is something that can continue to bear fruit well past the end of the current crisis. At the same time, people working from home may not have the appropriate hardware (e.g., computers, printers, scanners, and so on) that they require to fully perform their jobs. Companies, with the help of government subsidies, need to keep this in mind and ensure they provide the necessary hardware to their employees to avoid an unnecessary loss in productivity.
- **Safe and Affordable Child Care.** One of the main challenges for employees to return to work and maintain their level of productivity when working from home is for the government to ensure the availability of safe and affordable child care.⁴⁷ In the meantime, parents working from home have had to play the dual role of working and taking care of their children during work hours, which has impacted both their work productivity and the necessary attention their children need. This requires funding from the government so day care centers can reopen while following CDC guidelines to keep children and day care center employees safe. As per the guidelines mentioned earlier, we also strongly recommend installing air purification systems in day care centers.

- **Safely Reopening Schools.** It is also critical to reopen schools safely, so parents of school age children can return to work and/or focus their attention on their work, instead of having to homeschool their children or help them with their online learning. See GRI report by Mann and Gardinier on K-12 education for more details. This also requires considerable funding from the government to ensure schools can follow CDC guidelines to keep children, teachers, and staff safe. As per the guidelines mentioned earlier, we also strongly recommend installing air purification systems in school and university classrooms, offices, libraries and other enclosed spaces where individuals congregate.

3.10 Solution 10: Ongoing Regulatory Uncertainty and Need for Clarity

The following are proposed government regulatory guidelines to facilitate business recovery and promote business resilience.

- **Extend Guidelines for Indoor Business Activities.** Given that the current CDC guidelines are insufficient for indoor spaces, it is critical to extend them to reduce the spread of infection and encourage business activity, based on the suggestions we provided above. This is important so employees and customers feel safe when entering a business, which is critical for consumption to increase and the economy to rebound. First, the government could require wearing masks and social distancing for employees and customers when indoors in any business establishment. This is already in place in some locations but not others. Second, they could require businesses to have an appropriate air purification system, as discussed above. They can also provide suggestions such as keeping windows and doors open where possible, but there would be too many exceptions for this to be a rule. Third, they could require that businesses post guidelines and educational information for individuals by the entrance.
- **Allow Companies to Reopen as Long as they Follow the Guidelines.** Once appropriate guidelines for indoor activities are in place, businesses can be allowed to reopen as long as they follow those guidelines. This would allow them to provide a relatively safe environment for individuals to congregate, while enabling their businesses and the economy to begin recovering.
- **Provide Funding for Companies (e.g., Subsidies, Grants, and Loans).** Several of the suggested guidelines for companies require a steep capital investment, such as purchasing air purification systems or UV lights, providing contactless payment methods, testing individuals' temperature at the entrance, and providing information to educate individuals. To facilitate this process and increase compliance, the government can provide subsidies or other forms of funding, for companies to carry out these recommendations. This would require a significant investment on the part of the government, but it would help reduce the spread of infection while increasing employee and consumer confidence, thus leading to a faster economic recovery.
- **Protection For Firms From Lawsuits.** It is also important for companies to be protected from litigation from people who become infected, *as long as they follow the guidelines*. This would require the government to pass a law to protect these companies. The reason for this is that even with the best of intentions and following the strictest of guidelines, there can still be infections that occur in a business. There can also be individuals who become infected elsewhere but believe it occurred in that business, potentially leading to costly and time consuming litigation for businesses at a time their attention needs to be on their recovery. The risk of litigation and the associated costs can be too much for many businesses to justify reopening, so this can slow down business and economic recovery considerably.

- **Address systemic issues of inequality.** As pointed out earlier, the pandemic has disproportionately affected minorities and women. The government should therefore consider providing greater financial assistance for the business recovery of historically underprivileged groups, including owners, employees, and consumers. More importantly, it is critical to develop and implement a broad set of social programs and policies to reduce inequality before the next disruption befalls, to ensure historically marginalized groups do not continue to be affected disproportionately.
- **Provide Education and Consistent Messaging – Beyond Altruism.** It is also critical for business recovery that the government educate the population in terms of the risks of the infection, how they can contract it, how they can avoid it, the extended guidelines being put in place to keep them safe indoors, and to provide consistent messaging throughout the country. For instance, the government and media have expressed the importance of wearing face coverings as a means of protecting others. This is based on the understanding that asymptomatic transmission in younger and healthier individuals can lead to older individuals and those with pre-existing conditions to become infected and seriously ill. This has encouraged a significant portion of the population to wear masks as an altruistic measure to protect their fellow citizens. However, it has also evidenced the fact that a large percentage of the population either does not understand or care enough about the wellbeing of others to inconvenience themselves to wear a mask, social distance, or follow the other guidelines. Many young and healthy individuals in particular are flaunting the guidelines of social distancing and face coverings, going to beaches, parties, and other social gatherings, displaying an unfortunate level of self-centeredness and lack of social disregard and civism. As such, it is critical to educate the population by explaining to them *that these guidelines are important not just for others but also for them*. Although it is true that wearing a face covering does not provide full protection for oneself unless it is an N95 mask, it does provide some protection from infection.⁴⁸ This point needs to be made clear to the population so they understand wearing masks is not just for the good of others, but also for their own. More importantly, many young and healthy individuals seem to believe that they are safe even if they get infected, because they will most likely not die. It is critical to explain to them that this virus can have serious long-term consequences for individuals, even if they do not die. For instance, it can significantly reduce lung capacity and thus the ability to engage in activities such as sports⁴⁹, it can lead to a loss of sense of smell and/or taste⁵⁰, and there are even some indications that it could cause brain trauma or damage.⁵¹ Recent studies suggest that this virus can affect all major systems of the human body and not just the respiratory system.⁵² This needs to be explained to the population so people understand the *potential risks not only to others but also to themselves if they fail to follow the guidelines*. It is a means of motivating individuals to follow the guidelines for their own good as well as that of others. This type of education campaign can help increase compliance and in turn help business and economic recovery.
- **The Need for a National Strategy for Business Recovery.** The pandemic requires a unified national response, or at a minimum a regional one for New England and other northeast states. Since people cross borders freely within the country, the spread of the virus does not stop at state lines. Advisories asking visitors from other states to self-quarantine are helpful, but not enforceable. This means that efforts to address business recovery in one state, no matter how heroic, will be far less effective if neighboring states have a laxer attitude toward following CDC guidelines.

4. Conclusions

In short, for local businesses to recover from the pandemic, it is critical to address the health crisis and economic crisis simultaneously in a systemic fashion, and not as conflicting interests. In large part, New England's economy is driven by local businesses across a variety of industries. It is also essential to develop a national, or at a minimum a regional, strategic response and set of guidelines for businesses to follow. Until then, business will remain somewhat hampered with considerable instability in stock markets, employment, and other economic indicators.

Furthermore, current guidelines are necessary but not sufficient for indoor spaces, requiring them to be revamped for indoor business activities. This includes installing air purification and filtration systems in indoor spaces to reduce accumulation of the viral load required for transmission. This is important not only for employees and customers to be safe, but also so they will feel safe, thus facilitating returning to in person operations and encouraging consumption.

In sum, we have provided important guidelines and recommendations for both private sector actors as well as for government actors. These guidelines and recommendations are essential in order for local businesses to recover and build resilience.

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About the Global Resilience Institute

Based at Northeastern University in Boston, MA, the Global Resilience Institute's (GRI) research and educational mission is to develop and deploy practical and innovative tools, applications, and skills that drive social and technical changes, which strengthen the capacity of individuals, communities, systems, and networks to adapt to an increasingly turbulent world. Launched in 2017, GRI is the world's first university-wide institute to respond to the resilience imperative. Today, GRI undertakes multi-disciplinary resilience research and education efforts that draw on the latest findings from network science, health sciences, coastal and urban sustainability, engineering, cybersecurity and privacy, social and behavioral sciences, public policy, urban affairs, business, law, game design, architecture, and geospatial analysis. GRI works in close partnership with industry, government, communities, and non-governmental organizations, as well as engages in external outreach to inform, empower, and scale bottom-up efforts that contribute to individual and collective resilience.

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