

Assessment of COVID-19's Impact on Small and Medium-Sized Enterprises

Implications from China

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*Assessment of COVID-19's Impact on Small and Medium-Sized Enterprises: Implications
from China*

Testimony of Jennifer Bouey¹
The RAND Corporation²

Before the Committee on Small Business
United States House of Representatives

March 10, 2020

Chairwoman Velázquez, Ranking Member Chabot, and members of the committee, thank you for inviting me to testify on the impact of the coronavirus outbreak on the economy in China and small and medium-sized enterprises (SMEs) there. As the first country hit by the new coronavirus, China's epidemic patterns and actions and the combined impact on China's SMEs may provide some useful insights for the U.S. government and businesses. I will first briefly introduce the characteristics of the coronavirus disease 2019 (COVID-19) and the epidemic it is causing. Next, I will describe the epidemic patterns in China, China's actions, and the combined impact on China's economy in three stages. Last, I will summarize the epidemic's impact on the global supply chain and a few recommendations on the control of the epidemic and assistance for U.S. SMEs facing the epidemic.

COVID-19 Epidemic: Virus, Host, Environment, and Transmission

SARS-CoV-2 (the virus that causes COVID-19) is the latest member of the coronavirus family affecting humans. This type of virus is commonly found in humans and other mammals. In humans, coronavirus has four strains that cause mild clinical symptoms, usually referred as the common cold. Two other strains are more lethal: SARS-CoV and MERS-CoV. These two strains cause case-fatality rates (CFRs) of 9.6 percent and 34.4 percent, respectively.³ The new zoonotic

¹ The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of the RAND Corporation or any of its research sponsors.

² The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier, and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.

³ World Health Organization, "Middle East Respiratory Syndrome Coronavirus (MERS-CoV): WHO MERS Global Summary and Assessment of Risk," July 2019 (<https://apps.who.int/iris/bitstream/handle/10665/326126/WHO-MERS-RA-19.1-eng.pdf?ua=1>).

virus (i.e., can spread between humans and other animal species) shares a high degree of genomic similarity to coronavirus in bats and to SARS-CoV in humans.⁴ Because this is a new viral challenge to humans, there is no preexisting immunity in humans and everyone is assumed to be a susceptible host to COVID-19.⁵

The most recent data show that COVID-19 is likely to be more contagious but less likely to cause severe clinical symptoms and deaths than SARS and MERS. A Chinese clinical study recorded 72,314 COVID-19 cases diagnosed by February 11, showing an overall CFR of 2.3 percent, with 81 percent of cases being mild. The CFR jumped to 8 percent among patients 70–79 years old and to 14.8 percent among patients 80 years old and older.⁶ Most COVID-19 patients have mild symptoms, similar to a flu. People with mild symptoms might not go to the hospital or even necessarily know that they have the disease but could still carry the infection; accordingly, person-to-person transmission is not limited to hospital settings, which is what happened in the SARS and MERS cases. COVID-19 is transmitted via droplets and fomites (contact with contaminated surfaces). Data synthesis from several preliminary reports on COVID-19 indicates a coronavirus patient, on average, can transmit the disease to three people without intervention (compared with one for the common influenza, two for Ebola, and 18 for the measles).⁷ The World Health Organization (WHO) reported that such transmission in China occurred most often at the household level, as 78 percent to 85 percent of disease clusters were family clusters.⁸ The moderately high infectivity, mild clinical symptoms, uncertain incubation period, no human immunity, and possibility of asymptomatic healthy carriers may mean that the novel virus is likely to cause worldwide transmissions. At the time of this testimony, there have been COVID-19 case reports on every continent except Antarctica, while China still has the majority of the reported cases and deaths. Sustainable community transmissions—multiple chains of person-to-person transmissions in a community without direct link to travel—have emerged in many countries, including the United States.

The timing and the global environment in which this novel coronavirus emerged also helped it spread globally. Just before the outbreak, there were 739 international air travel routes originating from China, and, on average, 51 million people traveled between China and another

⁴ Peng Zhou, Xing-Lou Yang, Xian-Guang Wang, Ben Hu, Lei Zhang, Wei Zhang, Hao-Rui Si, Yan Zhu, Bei Li, Chao-Lin Huang, Hui-Dong Chen, Jing Chen, Yun Luo, Hua Guo, Ren-Di Jiang, Mei-Qin Liu, Ying Chen, Zu-Rui Shen, Xi Wang, Xiao-Shuang Zheng, Kai Zhao, Quan-Jiao Chen, Fei Deng, Lin-Lin Liu, Bing Yan, Fa-Xian Zhan, Yan-Yi Wang, Gengfu Xiao, and Zheng-Li Shi, “Discovery of a Novel Coronavirus Associated with the Recent Pneumonia Outbreak in Humans and Its Potential Bat Origin,” *bioRxiv*, January 23, 2020.

⁵ WHO-China Joint Mission on Coronavirus Disease 2019, *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)*, February 16–24, 2020 (<https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>).

⁶ Z. Wu and J. M. McGoogan, “Characteristics of and Important Lessons from the Coronavirus Disease 2019 (COVID-19) Outbreak in China: Summary of a Report of 72 314 Cases from the Chinese Center for Disease Control and Prevention,” *JAMA*, February 24, 2020.

⁷ Ying Liu, Albert A Gayle, Annelies Wilder-Smith, and Joacim Rocklöv, “The Reproductive Number of COVID-19 Is Higher Compared to SARS Coronavirus,” *Journal of Travel Medicine*, February 13, 2020.

⁸ WHO-China Joint Mission on Coronavirus Disease 2019, *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)*, February 16–24, 2020 (<https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>).

country per year. The epicenter of the outbreak, Wuhan, is a major transportation hub in central China, sometimes known as the “Chicago of China.” On an average day, 30,000 people fly out of the city, and many more use the bullet trains from three railway stations in the city. The outbreak intensified right before the peak travel time for the Chinese Lunar New Year (January 25, 2020)—two weeks before to two weeks after the New Year day, a time during which more than 3 billion trips typically occur in a normal year.

Three Stages of the COVID-19 Epidemic in China and the Impact

In this section, I describe China’s COVID-19 epidemic, the Chinese government’s responses, and the combined impact on the economy, in three chronological stages.

Stage One: Awakening to the Epidemic (December 2019 to January 20, 2020)

The Epidemic and Chinese Government’s Actions

A cluster of pneumonia of unknown etiology appeared in Wuhan in December 2019, where several cases were associated with exposure to a seafood market. Wuhan health officials closed the market and announced the 27 cases on December 30, 2019, after a few doctors in Wuhan sent social media messages warning their acquaintances about a “SARS-like” pneumonia. Three Chinese Center for Disease Control and Prevention (Chinese CDC) expert teams were dispatched to Wuhan for investigation. The first two went to Wuhan on January 1 and January 8, respectively. They concluded that there was no person-to-person transmission, the epidemic was under control, and no new cases were reported. Meanwhile, the virus’s genomic data were shared with GenBank of the U.S. National Institutes of Health (NIH) and Global Initiative on Sharing All Influenza Data (GISAID) by the Chinese CDC and Fudan University on January 11. Soon after, these original genetic data helped Japan and Thailand link their new COVID cases to Wuhan. A third expert team from the central government went to Wuhan on January 19 and confirmed the person-to-person transmission. On January 20, the Chinese government hosted a high-level political meeting on COVID-19 management, triggered the national public health emergency, and added COVID-19 to the national Infectious Disease Information System (IDIS) that would guarantee mandatory case reporting according to the China’s Health Emergency Regulations.⁹ For more discussion about the epidemic and Chinese government’s actions at this stage, see my previous testimony.¹⁰

Impact on the Economy

Even before the lockdown, NASA satellite images showed Wuhan to have lower levels of pollutants in January 2020 than the same time a year ago, indicating a slowdown in industrial

⁹ Library of Congress, “China: Legal Responses to Health Emergencies,” webpage, last updated June 9, 2015 (<https://www.loc.gov/law/help/health-emergencies/china.php>).

¹⁰ Jennifer Bouey, “From SARS to 2019-Coronavirus (nCoV): U.S.-China Collaborations on Pandemic Response,” testimony presented before the House Foreign Affairs Subcommittee on Asia, the Pacific, and Nonproliferation on February 5, 2020, Santa Monica, Calif.: RAND Corporation, CT-523, 2020 (<https://www.rand.org/pubs/testimonies/CT523.html>).

production, either because of the new, as yet unknown disease or because of undetermined causes that linked to the overall economic environment.¹¹ The domestic consumer market and service sector now contribute more than half of China's GDP. However, multiple sectors were suffering significant demand weakness in the past year, most notably the automotive sector and smartphones.¹² The Chinese government has also been trying to reduce the high level of domestic indebtedness that has led to less borrowing power for business. In other words, China's economy was facing many challenges and was slowing before COVID-19.

Stage Two: Quarantine and Shutdown (January 21, 2020, to February 21, 2020)

Epidemic: Wuhan Is the Epicenter of the Epidemic

On January 30, 2020, the WHO declared the situation a public health emergency of international concern. Between January and February, there was spread of COVID-19 cases in all 31 provinces of mainland China. Wuhan was the epicenter of the epidemic, with 83 percent of all the cases and 95 percent of the deaths in China on February 21.¹³ Wuhan's COVID-19 cases also showed a 100-fold infection rate (per million population) and a four-times-higher CFR (4.2 percent), compared with those in other areas in China. Total Chinese reported case numbers increased from 309 on January 21, 2020, to 76,392 on February 21, 2020.¹⁴

By February 13, 2020, the WHO had recorded 170 cases of COVID-19 that had been reported outside China and had a connection to China. The majority of these cases (89 percent) did not lead to further transmission of the virus, and 19 cases were associated with at least four new infection clusters. The largest cluster involved 20 individuals in six countries.¹⁵

China's Actions

The decision to lock down Wuhan on January 23, 2020, was made three days after the government accepted the fact that the outbreak was fueled by person-to-person transmission. All public transportation, including airports and railways from the city, were shut down two days before the Chinese New Year. On January 28, 16 more cities in the same province (Hubei) were under a similar lockdown policy. By January 29, all 31 provinces in China declared emergency level 1 (the highest out of four levels), which enabled local governments to employ social policing mechanisms to enforce self-quarantine, cancel public events, and prohibit crowd

¹¹ Earth Observatory, NASA, "Airborne Nitrogen Dioxide Plummets Over China," webpage, February 2020 (<https://www.earthobservatory.nasa.gov/images/146362/airborne-nitrogen-dioxide-plummets-over-china>).

¹² McKinsey, "What Can We Expect in China in 2020?" December 2019 (<https://www.mckinsey.com/featured-insights/china/what-can-we-expect-in-china-in-2020>).

¹³ World Health Organization, *Coronavirus Disease 2019 (COVID-19): Situation Report—33*, February 22, 2020 (https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200222-sitrep-33-covid-19.pdf?sfvrsn=c9585c8f_4).

¹⁴ World Health Organization, *Coronavirus Disease 2019 (COVID-19): Situation Report—33*, February 22, 2020; World Health Organization, *Novel Coronavirus (2019-nCoV): Situation Report—2*, January 22, 2020 (https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200122-sitrep-2-2019-ncov.pdf?sfvrsn=4d5bcba_2).

¹⁵ World Health Organization, *Novel Coronavirus (2019-nCoV): Situation Report—24*, February 13, 2020 (https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200213-sitrep-24-covid-19.pdf?sfvrsn=9a7406a4_4).

gatherings across the country. Most of the highways, railroads, and flights in China were shut down, and people were asked to stay home as much as possible. All tour groups were canceled. In rural areas, most villages in China closed traffic and set entrance checks. In the cities, residential areas were divided into small districts where residents had to show ID, and a daily quota was set to go in and out of the area. All business and recreational facilities, except grocery stores, were closed during the extended Chinese New Year period. All residents were required to wear face masks outdoors. Meanwhile, given the concentration and the severity of the COVID-19 cases in Wuhan, the Chinese government mobilized resources, medical personnel, public health teams, and testing kit productions to support Wuhan.

Internationally, countries have placed various levels of restrictions on travel to and from China. As of February 19, international restrictions to China involved 99 countries in four forms: (1) border closures for partial or total closure of a land border with China, (2) entry or exit bans that generally restrict the ability of nationals to depart from their country for travel to China or the ability of foreign travelers and nationals to enter a country after traveling from or transiting through China, (3) visa restrictions that include total or partial visa suspensions or restrictions for travelers originating from or traveling through China, and (4) flight suspensions that include government bans on flights to or from China.¹⁶

Impact on the Economy

Although official data are not yet available, most analysts believe that the outbreak, mass quarantine, and international travel ban began to severely affect China's economy at the end of January. Travel/tourism, hospitality, entertainment, and the financial industry suffered the most during this period.¹⁷ Revenue lost in both retail and food services during the Chinese New Year week is reported to be RMB 1 trillion (\$142 billion), as major chains shuttered stores across the country.¹⁸ Real estate sales and car sales also slumped.¹⁹ The service sector losses during the Chinese New Year in 2020 are expected to cost China 1 percent of lost GDP growth in the first quarter.²⁰

Not all retail sectors experienced losses. A Kantar (an international consulting company) report showed that businesses relying on physical space and shops, such as supermarkets, traditional food markets, restaurants, car dealers, movie theaters, gyms, and bars, suffered losses, whereas local neighborhood markets (convenience stores) and online markets did particularly

¹⁶ Samantha Kiernan and Madeleine DeVita, *Travel Restrictions on China Due to COVID-19*, Think Global Health, March 5, 2020 (<https://www.thinkglobalhealth.org/article/travel-restrictions-china-due-covid-19>).

¹⁷ Weiwen Han, Karen Harris, and Thomas Luedi, *How much Will Coronavirus Hurt China's Economy?* Bain & Company, February 8, 2020 (<https://www.bain.com/insights/coronavirus-impact-china-gdp-snap-chart/>).

¹⁸ "Virus Outbreak Cost China 1 Trillion Yuan Loss in Chinese New Year Week," *The Star*, February 3, 2020 (<https://www.thestar.com.my/news/regional/2020/02/03/virus-outbreak-cost-china-1-trillion-yuan-loss-in-chinese-new-year-week>).

¹⁹ "China Car Sales Slump 92% in First Half of February on Virus," Bloomberg News, February 20, 2020 (<https://www.bloomberg.com/news/articles/2020-02-21/china-car-sales-tumble-92-in-first-half-of-february-on-virus>).

²⁰ Luohan Academy, "Seven Trends in China's Macro-Economy," February 13, 2020 (https://mp.weixin.qq.com/s/f_dwO4BMeyEZsv-xm8hXPg).

well. Online retail shops with apps built into social media were popular, as were such recent innovations as human-free markets and vending machines (still relatively new to China).²¹

Data on online sales from the Data Insider Consulting report (based on Alipay Business counsel) for February showed increases in personal health-related product sales (e.g., sanitizer, personal protection gear, and vitamins and supplements), while sales of meat/fruit/deli, snacks, luxury goods, and apparel suffered more than a 40 percent drop.²²

The widespread outbreak, mass quarantine, and travel ban also had an impact on the confidence of both domestic businesses and international companies, according to a survey of 761 business owners by the University of International Business and Economics in mid-February.²³ Among the 761 businesses, half were private Chinese companies, 20 percent were international joint ventures, and 27 percent were State Owned Enterprises (SOEs); 18 percent had online business. Thirty-five percent of companies had more than 1,000 employees, 29 percent had 1,000 employees, 14 percent had 50–100 employees, and 21 percent had fewer than 50 employees. Most of the business in the study fit the SME definition in China.²⁴ Thirty percent reported that company cash on hand could sustain their businesses for no more than three months, and 30 percent reported cash coverage of six to 12 months. Half of the businesses expected 10–30 percent loss of revenue this year. The most challenging issue reported was the company's cash flow.

The American Chamber of Commerce in Shanghai conducted a survey of 127 American companies operating in China between February 4 and 6.²⁵ Among the 127 companies, 20 companies had China-sourced revenues of over \$500 million, and 27 had Chinese revenues of \$100 million to \$500 million. Eighty-seven percent of the companies responding believed that coronavirus would have a direct impact on 2020 revenues, and 24 percent expected revenue to fall by 16 percent or more. Twenty-nine percent of respondents believed that their corporate headquarters did not sufficiently understand the potential economic impact of coronavirus. Sixty percent of companies preferred staff to work remotely, 84.5 percent canceled meetings of over 20 people, 14 percent planned to repatriate foreign staff and their families, and 33 percent were not sure of their plans. Eleven percent of the companies reported that they were reevaluating their China strategies, while 40 percent felt that it was too early to tell. Notably, 3.1 percent decided to move back to the United States and 5.5 percent to another country, and 56.7 percent responded that they would not move out of China.

²¹ Kantar, 疫情之下，各行各业的危与机。 , February 2020.

²² Data Insider, 疫情影响下 1000 个电商品类众生相, February 2020.

²³ He Wen Long and Wu Jian Feng, *Research Report on Companies' Survival and Development Strategy During a Novel Coronavirus Epidemic*, Beijing: UIBE Press, February 2020.

²⁴ In China, an industrial SME is defined as having up to 2,000 employees. A small business had fewer than 300 employees. Liu Xiang Feng, "SME Development in China: A Policy Perspective on SME Industrial Clustering," in H. Lim, ed., *SME in Asia and Globalization*, ERIA Research Project Report 2007-5, 2008, pp. 37–68 (https://www.eria.org/SME%20Development%20in%20China_A%20Policy%20Perspective%20on%20SME%20Industrial%20Clustering.pdf).

²⁵ American Chamber of Commerce in Shanghai, "AmCham Shanghai Coronavirus Impact Member Survey," February 7, 2020 (<https://www.amcham-shanghai.org/en/article/amcham-shanghai-coronavirus-impact-member-survey>).

SMEs in China, as in most countries around the world, are the engines of the economy. In China, they compose more than 30 million entities, constituting 99.6 percent of China's companies and 80 percent of national employment. SMEs hold more than 70 percent of the country's patents. They account for more than 60 percent of China's GDP and contribute more than 50 percent of tax collections.²⁶ They may also suffer the most during the coronavirus epidemic. A survey conducted by researchers from Tsinghua University of 995 SMEs in February showed that 30 percent of the companies have seen their income drop by more than 50 percent; another 28 percent reported a 20 percent to 50 percent drop. More than one-third of the companies in the study reported that they could stay open for only one month with their current cash flow, 33 percent could sustain two months, and less than 10 percent could stay open for more than six months. Most of the financial pressure (62.8 percent) is from paying salaries and employee insurance and social security; rent and loan payments were the second and third causes for stress.²⁷

Stage Three: "Back to Work" in China (February 21, 2020–Present)

Epidemic: COVID-19 Is Spreading Globally

On February 24, 2020, the WHO and China Joint Program concluded their COVID-19 investigation in China.²⁸ On the same day, a joint WHO and European Centre for Disease Prevention and Control mission arrived in Italy to support Italian authorities on the COVID-19 situation, indicating that the COVID-19 epidemic intervention focus has been switching from China to other countries where community transmitted cases started to emerge: South Korea, Japan, Singapore, Italy, and Iran. By the end of February, new reported cases outside China increased faster than in China (based on the data available). However, this does not mean that the epidemic in the country is over yet. The global surge of COVID-19 currently has four major global concentrations: China, other countries in East Asia (South Korea and Japan), the Middle East (Iran), and Europe (Italy, Germany, and France). Governments in all continents are bracing for possible COVID-19 epidemics in their countries. Given the virus's high infectivity and mild symptoms demonstrated in the majority of cases, the continued spread of the virus around the world seems to be inevitable.

China's Actions

Since the COVID-19 epidemic in China reached its peak in mid-February, the Chinese government has switched its policy to restart the economy, prompted by the deepening worries about the near-term outlook for the national economy and employment. At the central-

²⁶ EU SME Centre, *SMEs in China: Policy Environment Report*, July 2019 (https://www.eusmecentre.org.cn/sites/default/files/2019%20SME%20Policy%20Environment%20Report_0.pdf).

²⁷ MBACHina, 清华、北大联合调研 995 家中小企业，如何穿越 3 个月的生死火线, February 25, 2020 (<https://www.mbachina.com/html/tsinghua/202002/214377.html>).

²⁸ WHO-China Joint Mission on Coronavirus Disease 2019, *Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19)*, February 16–24, 2020 (<https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>).

government level, China's central bank has given the economy a monetary stimulus of RMB 1.2 trillion (\$174 billion) in February to ease borrowing costs and funds availability. China Development Bank, China's principal industrial lender, has issued about \$2 billion of bonds in global bond markets, and several Chinese SOEs raised over \$4 billion of "COVID bonds" to shore up their finances in February.²⁹ To help borrowing, the official interest rate set by the central bank for commercial lenders was cut by a quarter percentage point, to 2.5 percent. The State Council encouraged private commercial banks to postpone interest payments on loans to small businesses experiencing cash flow difficulties until the end of June and defer the repayments of principal for the time being. The State Council also ordered large state-owned banks to increase lending to small businesses by at least 30 percent in the first half of 2020. China's three government-run policy banks were also told to lend RMB 350 billion (\$49.7 billion) to small businesses at preferential rates. The central government encouraged local policy makers to provide fiscal support to keep SMEs afloat. For example, Beijing announced a series of measures to help struggling small businesses, including exemptions on some rent payments for two months and reducing tax and contributions to the national social security fund.

To the local governments, China's central government set a few principles on balancing the reopening of businesses and supporting SMEs with epidemic control: First, COVID-19 prevention readiness is a criterion in reopening: Local governments will review business reopening applications, with a focus on assessing whether the business has met the COVID-19 prevention requirements, monitoring the business on its implementation of the disease prevention methods, and helping the business make a plan for emergencies. Second, business reopening is happening in waves. Instead of letting all businesses open at one time, priority is given to the businesses high on the local government's list—for example, Shanghai prioritized businesses that have an impact on city development and daily needs and businesses with large contributions to the area economy. Zhejiang Province gave first priority to its major export industries. Third, prioritize personal protective equipment (PPE) and medical production.³⁰

The responsibility for implementation of these principles falls on local governments. Some governments have focused more on outbreak control, such as where there is a need for more-stringent rules on social distancing, travel case tracing, and quarantine (e.g., Beijing), while others have focused more on jump-starting the economy, such as by supporting factories with chartered buses, trains, and planes to transport some of the 290 million migrant workers (e.g., Shanghai).

Despite these efforts, SMEs still face the following challenges in reopening: First, **local quarantine policy**: Until recently, most cities and their subdivisions (neighborhoods) still required migrants or travelers from elsewhere to self-quarantine for 14 days. During these 14 days, either the factories or the workers themselves would have to cover rent and living costs.

²⁹ Alison Tudor-Ackroyd, "Funding the Coronavirus Fight: Chinese Companies Sell US\$4.1 Billion in Bonds to Shore Up Finances as Economy Falts," *South China Morning Post*, February 13, 2020 (<https://www.scmp.com/business/banking-finance/article/3050411/funding-coronavirus-fight-chinese-companies-sell-us41>).

³⁰ Xinhau News Agency, *Analysis of Regional Policies on Businesses Reopening Support*, China Economic Information Service, Economic Analysis Report No. 1048, Epidemic Series No. 2, February 17, 2020.

Second, **business-reopening permits and health regulations**: Many SMEs struggle to meet the COVID-19 prevention requirements from the local government agencies. Some local governments also push the burden of COVID-19 prevention entirely on businesses. If one COVID-19 case cluster shows up in a business, the business will be closed for a longer period. Third, **broken supply chain and logistics**: Upstream SME closures are felt by downstream factories that are relying on the parts they produce for SMEs. Without the parts and necessary logistics to bring in materials and ship out products, many factories can barely produce or have no place to store the products. Most of the international shipping companies are slow in getting back to work because of the ongoing epidemic and various travel bans. Fourth, **worries about revenue and cash flow**: Because of the widespread low market demand, many small businesses have found that reopening only means they continue to pay rent and salaries without revenue. Many will pay staff minimal wages or lay off staff, which can further reduce demand.

Around the time of this testimony, several small-business owners in China told me that they were working but not at full capacity. Many employees work from home, with several business owners using the downtime to figure out the fragmented supply chain, look for new overseas contracts, design training sessions for staff or redesign websites, or use online platforms and social media to keep in touch with regular customers. Most considered their loss in the first quarter a natural disaster that will have to be absorbed by their business; some were concerned about borrowing more when the future revenue was uncertain. Many hope that their businesses will gradually get back on track by the end of the second quarter.

Impact on the Economy

Luohan Academy estimated that, for every ten days of delay in return to work, the cost will be 0.39 to 0.46 percent of quarterly GDP growth.³¹ The longer the delay in returning to work, the bigger the impact on investor confidence and consumer confidence. This could lead to large-scale closures of SMEs. The increased unemployment rate will in turn further suppress demand and investment. The delay of factory recovery to full-capacity production will certainly affect exports and further fracture the global supply chain. The hope is an economic recovery similar to the fast rebound after SARS.³²

SARS cost China RMB 1 billion and \$40 billion worldwide.³³ Although the overall impact of COVID-19 on China's and the world's economy is still hard to predict, many economists think that the impact of the COVID-19 outbreak is likely to exceed that of SARS. There are six main differences. (1) **Scale**: The COVID-19 epidemic has a much larger scale and affects more countries and more people in the world than SARS. (2) **Intervention**: The COVID-19 intervention in China is unprecedented and the return to work will be gradual, albeit more

³¹ Luohan Academy, "Seven Trends in China's Macro-Economy," webpage, February 13, 2020 (https://mp.weixin.qq.com/s/f_dwO4BMeyEZsv-xm8hXPg).

³² John Wong, Sarah Chan, and Liang Ruobing, "The Impact of SARS on Greater China Economics," in John Wong and Zheng Yonngian, eds., *The SARS Epidemic: Challenges to China's Crisis Management*, Singapore: World Scientific Publishing, 2004, p. 11.

³³ J. W. Lee and W. McKibbin, "Estimating the Global Economic Cost of SARS," in Stacey Knobler, Adel Mahmoud, Stanley Lemon, Alison Mack, Laura Sivitz, and Katherine Oberholtzer, eds., *Learning from SARS: Preparing for the Next Disease Outbreak: Workshop Summary*, Washington, D.C.: National Academies Press, 2004.

sustainable. A slower recovery is expected than we saw after SARS. Of course, the saving of lives because of the massive intervention will pay off in higher long-term economic growth. (3) **Timing:** COVID-19 halted China's economy right before the Chinese New Year. The most affected sectors were tourism (11 percent of GDP) and retail (36 percent of GDP). Other high-value sectors affected include personal services and entertainment.³⁴ The economy is, therefore, more sensitive to the domestic demand drop. (4) **China's role:** China now also accounts for 17 percent of world's economy, compared with 4.3 percent in 2003, when the SARS epidemic was unfolding. China drives 30 percent of the world's GDP growth and is a trade partner to more than 100 countries. Wuhan and Hubei Province, the epicenter of COVID-19, are central to multiple industries. The world economy is more likely to experience a chain reaction after a downturn in China. (5) **China's economic growth:** China's growth has slowed down in the past ten years, compared with 2003, when China's economy growth was accelerating. (6) **Internet and electronics:** On the positive side, the development of the internet and electronics in China made e-commerce, online education, and remote working easier when adapting to the requirements of the quarantine. This may relieve some of the losses in demand (e.g., many restaurant or supermarket sales converted to online orders).

Impact on the Global Supply Chain

Finally, a few words on the global supply chain. Overall, the Chinese share of global output includes 33 percent to 53 percent of global electrical equipment and motor vehicles parts; 52 percent of basic metals; 58 percent of mineral products; 58 percent of the commodity group textiles, apparel, and leather; 40 percent of wood and wood products; and 35 percent of pharmaceuticals. China also consumes (imports) about the same percentages of global products in those categories. Several of these sectors are part of intricate, cross-provincial domestic supply chains that sometimes even reach outside China—notably, the electrical equipment, electronics, automotive, and textile sectors.³⁵

Although it is too early to know the full effects of disruptions in supply chains, particularly those with key segments in the most affected areas (Hubei Province, for instance, is a hub for the automotive, electrical equipment, and ship-building sectors), some disruptions are inevitable. At the end of February, only 30 percent of small business were back at work and many had only a few months of cash to keep themselves afloat.³⁶ The good news is that Chinese State Council approved RMB 800 billion (\$114.2 billion) for small-business lending in February, and SMEs tend to be more nimble than large firms, adapting to adverse conditions and surviving against the

³⁴ Bloomberg News, "Coronavirus Is More Dangerous for the Global Economy Than SARS," January 31, 2020 (<https://www.bloomberg.com/news/articles/2020-01-31/the-coronavirus-is-more-dangerous-for-the-economy-than-sars>).

³⁵ Jonathan Woetzel et al., *China and the World: Inside the Dynamics of a Changing Relationship*, McKinsey Global Institute, July 2019 (<https://www.mckinsey.com/~/media/mckinsey/featured%20insights/china/china%20and%20the%20world%20inside%20the%20dynamics%20of%20a%20changing%20relationship/mgi-china-and-the-world-full-report-june-2019-vf.ashx>).

³⁶ Frank Tang, "Coronavirus: China Grants Banks Extra Funding to Spur Loans to Hard Hit Small Businesses," *South China Morning Post*, February 26, 2020 (<https://www.scmp.com/economy/china-economy/article/3052474/coronavirus-china-grants-banks-extra-funding-spur-loans-hard>).

odds. China is still, as noted, largely dependent on SMEs to drive the economy's growth, and will likely benefit from this industrial structure. The Chinese government at the provincial level has historically been supportive of SMEs. If it continues this support, there are reasons to be optimistic about SMEs surviving the epidemic and regaining their role in the economy.

Even before the epidemic outbreak, the U.S.-China trade war caused many American companies to move their supply chains out of China, which can be more costly for American SMEs. Those that remain may suffer from the delayed production and shipment until the second quarter of the year. The emerging epidemic in the United States, East Asia, and Europe may exacerbate the trade war-induced interruption of the global supply chain that SMEs rely on.

Equally worrisome is COVID-19's potential impact on the logistics sectors.³⁷ China has seven out of the nine busiest ports in the world, where 80 percent of trade of world goods by volume is carried by sea. Global maritime shipping volumes have decreased heavily because of COVID-19—already the equivalent of 1 percent of total global volume has been lost, amounting to \$350 million loss in revenue per week. Global air freight has also experienced decreased capacity because of the travel ban and reduced air travel worldwide. Land transport velocity has also slowed down and led to overstocking in a number of ports. The COVID-19 impact on global logistics will take an extended period to correct. Inbound container volumes at U.S. seaports are projected to be down 12.9 percent in February and 9.5 percent in March, compared with the same time a year ago.³⁸

Impact on the SMEs in the United States

If similar a epidemic is seen in the United States, will U.S. SMEs face a similar fate as their counterparts in China? SMEs are as important to the economy in the United States as in China and most other countries. In addition to the supply chain problems, U.S. SMEs will, as in China, likely see an immediate “demand shock” when people decide to stay home when a broad outbreak starts. Even without mandated mass quarantines, a highly contagious disease outbreak will naturally reduce travel, crowd gathering, and certain services and consumptions before a vaccine or a treatment is widely available. People may want to avoid crowded office buildings, shopping malls, gyms, bars, and movie theaters and turn to remote working, home entertainment, and online stores. Businesses may want to protect their employees and cancel conferences and meetings and encourage remote working. Tourism, hospitalities, transportations, restaurants, rentals, optional personal services, and daycare facilities are likely to suffer. Health care settings may be overwhelmed by people with flu symptoms, but optional procedures and routine checks or other health spending may even see a downturn during the outbreak.

Inequality issues have already been mentioned in recent reports, but it is worth noting that people who cannot afford sick days or lack of health care coverage may be less likely to self-quarantine or seek proper medical care, which could exacerbate transmissions. If the epidemic is

³⁷ Matt Craven, Linda Liu, Mihir Mysore, and Matt Wilson, “COVID-19: Implications for Business,” McKinsey & Company, March 2020 (<https://www.mckinsey.com/business-functions/risk/our-insights/covid-19-implications-for-business>).

³⁸ National Retail Federation, “February Retail Imports to See Larger Drop Amid Coronavirus,” February 10, 2020 (<https://nrf.com/media-center/press-releases/february-retail-imports-see-larger-drop-amid-coronavirus>).

prolonged and market demands plunge, we may see SMEs lay off workers to balance the lack of revenues. This will further reduce demand.

Recommendations:

COVID-19 is, first and foremost, a humanitarian crisis. Many people and families have suffered and will suffer from the unexpected losses around the world. It will have a profound impact on the world's social and political environments and on its economy. China has the second largest economy in the world and has accounted for one-third of world economic growth in recent years. Its export of minerals, textile, chemical/pharmaceutical ingredients, and electronic/automobile parts supports 30 to 50 percent of the global supply chain. China also imports about the same percentage of goods from the global market. The coronavirus epidemic in China can therefore affect both the demand and the supply sides of the world economy. I will provide a few recommendations for the U.S. government and SMEs based on my review of China's experience.

Considerations for Policymakers and SMEs

1. Social distancing-based public health interventions, such as mass quarantines, extensive travel bans, and transportation system disruption, can shock the economy and shrink the market demand in the service sectors that are critical for many SMEs that rely on visits by regular customers. When considering using these interventions, the cost on SMEs should be considered.
2. SMEs are financially more fragile and cash-strapped when market demand is down. Emergency funding programs that target SMEs could be one important component of a response. Lower interest rates, deferred or waived taxes and fees, or easier lending policies could also help SMEs stay afloat during the period of low market demand. Congress has begun to take actions through supplemental appropriations to address some of the financial challenges of SMEs. The Federal Reserve Bank's recent lending rate cut will also support SMEs.
3. SMEs could benefit from diversifying business platforms. Online-based platforms and virtual service provisions can help SMEs sustain business during quarantines or travel bans. It would be helpful if policymakers could bring tax breaks and technical guidance to help SMEs restructure their business operations.
4. China is currently putting the disease prevention burden on SMEs. This may further stress SMEs. The U.S. public health system could have a hotline or website to provide SMEs with information on the epidemic, disease prevention methods, PPE resources, and testing sites (or provide mobile testing).
5. The U.S. government could consider setting aside additional funding for unemployment insurance payments in the event that SMEs affected by the COVID-19 are forced to lay off employees.
6. Additional emergency funding could be considered to help SMEs avoid bankruptcy or help the creditors of bankrupt SMEs.

Considerations for Epidemic Containment

1. **Learn the lesson of a wrong epidemiology case definition:** The delay in identifying the nature of the epidemic in Wuhan was partly due to an overly narrow epidemiologic case definition—a case definition that posited a direct connection to the seafood market (that was associated with the first few cases). An epidemiology case definition that does not reflect the actual transmission routes will provide a false sense of security that obscures the real epidemic. The United States’ testing policy in January and February that narrowly focused on a travel history to China when other countries already had cases fell into the same category of mistake.
2. **A concerted public health effort is needed:** Social distancing policies—mass quarantines, travel bans, or case tracing policies—should be combined with large health investments, technology- and data-supported surveillance, and high-level government commitment early on to effectively stop the transmissions. Taiwan’s 100 percent travel registration at the border and tracing, Taiwan’s and Singapore’s mandatory self-quarantine with rigorous reinforcement, and large-scale population-level testing with ample medical resources (e.g., Singapore opened 800 public health clinics for a population of 5 million) are good examples of effective policies.
3. **Risk communication and coordination are important:** Both the public and the health care sector will need well-planned, persistent, and targeted risk communication to help prevent the hysteria associated with an acute outbreak. The U.S. government should have a hotline or a centralized broadcast source for the public to ask questions and clarify disinformation. Mobile clinics, testing, and identifying resources to help patient care and isolation are necessary. PPEs and essential health care equipment should be well inventoried, and the distribution should be coordinated.
4. **Health care surge capacity needs to be estimated:** Gaps can be met using temporary space (conference centers, hotels, large gyms, military bases, etc.) that can be converted to temporary quarantine locations for cases with mild symptoms. Hospitals and clinics should consider how to separate the potential infection zones from the regular patient areas.