The novel coronavirus outbreak (COVID-19) is slowing economic activity in China and raising concerns about potential U.S. supply chain vulnerabilities in a range of sectors that rely directly and indirectly on China-based suppliers. These sectors include medical supplies, pharmaceuticals, auto parts, microelectronics, and strategic raw materials. Similar to the outbreak of severe acute respiratory syndrome (SARS) in China in 2002-2003, most cases so far are concentrated in China, but the current number of infections is already an order greater and every Chinese province is affected. U.S. senior officials have expressed concerns about the completeness and timeliness of the information China is reporting, complicating assessments of the scope, trajectory, and economic impact of the outbreak. The Chinese government has also imposed tight content controls on media reporting and placed Sina Weibo, Tencent, ByteDance, and other Internet firms under “special supervision” of the Cyberspace Administration of China, further limiting coverage of the outbreak.

Figure 1. COVID-19 Regional Case Map


Economic Outlook

The coronavirus is hitting China during an economic downturn as the government grapples with U.S. tariffs and China’s counter tariffs, rising consumer inflation due in part to domestic pork shortages resulting from African swine fever, and efforts to rein in local government spending and shadow lending. China’s economic growth could go negative in the first quarter of 2020 and fall below 5% for the year, with more serious effects if the outbreak continues beyond March. In a sign the slowdown could last past March, the Chinese government cancelled several spring meetings: the State Council’s China Development Forum, the National People’s Congress annual legislative session, and the Canton Trade Fair.

A key factor affecting the economic outlook in China is the ability of businesses to resume operations after the Lunar New Year was extended from late January until February 10, 2020. Business reopening has been uneven across sectors and locations in China. Many firms are awaiting government approvals to reopen and are facing difficulties in meeting new operating requirements, such as providing masks for employees. Foxconn, a Taiwan electronics firm that produces for Apple, has applied to reopen in early March. Resumption of transportation and travel appears to be a major obstacle. Chinese media has reported on employees struggling to return to work amid transportation shutdowns and contagion concerns. The American Chamber of Commerce in Shanghai reported on February 17, 2020, that most companies surveyed do not yet have sufficient staff to run a production line and face numerous logistics constraints. Almost half of the companies surveyed report that their global operations are already affected by the outbreak. These companies expect demand to be lower over the next several months.

The Chinese government has locked down cities in China’s provinces of Hubei (e.g., Wuhan, Ezhou) and Zhejiang (e.g., Wenzhou, Hangzhou, Ningbo, and Taizhou). In total, an estimated 90 cities across China face some form of restrictions. The Chinese government has leaned on online delivery services and the military for logistics support, and is restricting consumer activity across multiple cities. Domestic and global transportation links have been significantly curtailed with ramifications for trade. Air services face reduced capacity with the canceling of passenger travel and restrictions on pilots and flight staff on cargo flights to third countries. Cargo operations in China depend on port staffing and are reportedly operating at significantly reduced capacity. While most businesses typically plan for a shut down during the Lunar New Year, including some stockpiling, companies are now likely to experience more serious shortages. Cargo shipments from China to the United States typically take approximately three weeks; slowdowns in maritime shipping could affect a wide range of industrial and consumer goods.

The Chinese government is trying to encourage economic activity, but restrictions on business reopening, travel, and transportation are hampering its support efforts. Unlike other types of economic slowdowns, government stimulus cannot generate real economic activity on its own if business operations remain partially or completely shut down. The Chinese government is issuing economic support measures such as tax exemptions and special-purpose bonds. City governments in Beijing, Qingdao, Shanghai, and Suzhou are offering small- and medium-sized businesses in hard-hit industries support to reduce loans and delay payments for rent and social security. With a priority on social stability, localities are also offering preferences to companies that retain workers. In early February, China’s central bank pumped $57 billion into the
banking system, capped banks’ interest rates on loans for major firms, and extended deadlines for banks to curb shadow lending. The central bank has been setting the reference rate for China’s currency stronger than its official close rate to keep it stable.

There have been press reports of shortages of medical supplies—N95 respirator masks, medical protective equipment, antiviral drugs—and food. In response, the government has repurposed some production facilities to meet health and medical needs, including the facilities of U.S. firms such as General Motors (GM) and 3M. In early February, the Commerce Ministry directed local governments to increase imports of medical supplies, production materials, and agricultural products, potentially providing U.S. export opportunities in these sectors.

**Global Economic Impact**

China’s economy is globally connected through trade, investment, and tourism, and any slowdown and persistent travel and transportation restrictions beyond March are likely to pressure global supply chains and potentially create worldwide economic fallout. Measures to contain the outbreak have significantly curtailed domestic and global transportation links, preventing the transport of many products and manufacturing inputs. Passenger air traffic has slowed significantly, taking offline significant air cargo capacity for microelectronics and other products that ship by air. Production has slowed across China, with sharp slowdowns in sectors concentrated in Hubei, such as auto parts, LCD panels, and pharmaceuticals. Manufacturing that recently shifted offshore to other parts of Asia still often depends on intermediate inputs from China and thus is not insulated from China’s production slowdown.

Disruptions in Chinese supply chains are expected to have a limited macroeconomic effect on developed markets in the short term but developing markets and Asia’s developed economies, are more vulnerable. Vietnam, Taiwan, Malaysia, South Korea, Japan, Thailand, and Singapore all have strong supply chain links with China and are reporting supply shortages. South Korea’s Hyundai and Kia, for example, announced production slowdowns in response to problems in securing auto parts from China. While developed economies might be insulated in the short term, the economic risks grow the longer the outbreak continues.

At the firm level, companies in sectors such as technology and autos or that are exposed to China’s tourism, retail, or other services businesses could take a significant hit. According to the United Nations World Tourism Organization, China’s outbound tourism spending in 2018 was $277 billion, of which an estimated $36 billion was in the United States. U.S. business will likely be affected by China’s slowdown, including through shortages of inputs, the cancelation of some commercial activity, and potential increased costs related to a strengthening U.S. dollar. China’s Commerce Ministry is helping firms obtain free force majeure certifications—which allow firms to opt out of contractual obligations without legal recourse because of developments beyond their control—and China National Offshore Oil Company declared force majeure in cancelling some LNG imports.

**Broader Considerations for Congress**

**Phase One Trade Deal:** The crisis is calling into question China’s ability to implement the U.S.-China phase one trade deal signed in January 2020. Transportation constraints and a slowdown in demand could affect China’s import levels. The agreement has a force majeure provision that could give China flexibility in implementing its commitments. The deal was finalized in December 2019, when Chinese officials reportedly knew about the outbreak, which raises questions about the rationale and timing of the decision to include the force majeure provision. As part of the phase one trade deal, China and the United States on February 14, 2020, cut by 50% the tariffs they imposed in September 2019. China also announced a tariff exemption process for 700 tariff lines that include some agriculture, medical supplies, raw materials, and industrial inputs.

**Pharmaceutical Market Access and IP:** Pharmaceuticals are a component of Made in China 2025 industrial plans that aim to create competitive advantages for China in certain strategic industries. The Chinese government restricts market access for foreign pharmaceutical firms, including the disclosure of proprietary information for drug trials and sales. The Wuhan Institute of Virology and China’s military recently applied to patent an adaption of an antiviral drug developed by California-based Gilead Sciences, Remdesivir. Also, Chinese firm BrightGene Bio-Medical Technology Co. announced it can produce a generic alternative to Remdesivir, potentially complicating Gilead’s way forward in China. Gilead’s patent application in China for Remdesivir use in coronaviruses has been pending since 2016. The Chinese government is also conducting an antitrust review of AbbVie’s acquisition of Allergan, Inc. and could set terms for the use or transfer of AbbVie’s antiviral intellectual property to benefit Chinese industry. China has required technology transfer in other antitrust reviews of foreign firms in China 2025 sectors.

**Table 1. Select U.S. Imports of Healthcare Products from China**

<table>
<thead>
<tr>
<th>Product</th>
<th>2019 value U.S.$</th>
<th>2019 % of U.S. imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antibiotics</td>
<td>$302,866,251</td>
<td>35%</td>
</tr>
<tr>
<td>PPE</td>
<td>$1,852,214,083</td>
<td>30%</td>
</tr>
<tr>
<td>Medical Devices</td>
<td>$3,911,308,981</td>
<td>8.6%</td>
</tr>
</tbody>
</table>

**Source:** U.S. International Trade Commission, Assessed Customs Value.

**Supply Chain Vulnerabilities:** China’s role as a global supplier of medical personal protective equipment (PPE), medical devices, antibiotics, and active pharmaceutical ingredients means reduced production or exports from China could lead to shortages and increased costs of critical medical supplies in the United States. The outbreak is also likely to create shortages in China-sourced raw materials, manufacturing inputs, microelectronics, and finished goods.

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