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COVID-19 Impacts on Defense Supply Chains and the Defense Industrial Base: Understanding the Real Impacts

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Bill Edgar is Director, Industry Solutions at Janes. His comments expand upon remarks he gave at a National Institute symposium in October 2020 on the impact of the COVID-19 pandemic on national security.

The COVID-19 pandemic has proven to be a serious health issue that has unquestionably affected millions of lives around the world. Governments, businesses, communities, and individuals continue to struggle with the impacts of this global crisis.

As the pandemic emerged and progressed, there was a clear focus on mitigation, response, and recovery. This has been the case across multiple sectors and industries, including aerospace and defense.

For the defense industrial sector in the United States, and largely across the globe, the COVID-19 pandemic has proven to be a period of challenge, resilience, and reflection.

The pandemic has shown both the strengths of the defense industrial base – its ability to assess risks to business and respond with mitigation plans – and the weaknesses – illuminating those vulnerabilities that have not been at the forefront of supply chain risk discussions, or were



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relegated to a lower position on the topic list. Supply chain risk for the defense industrial base covers a broad swath of existing and potential vulnerabilities that include manufacturing and production challenges, counterfeit parts and components (not up to the demanding standards of military specifications), limited or restricted access to key input materials (such as rare earth metals), and potential influences by foreign governments (covering material inputs as well as financial support).

While the pandemic has been a struggle and period of reflection, the questions still stand as to what the full impact is, or will be, and what kind of inflection point this will be for the U.S. Defense Industrial Base?

Bottom-line: The most significant impacts to the industrial base from the COVID-19 pandemic are yet to be realized because thus far the impact at the business level has been relatively limited across the entire industrial base. This is even more the case when compared to other sectors of the economy. The insulated nature of the defense industry, as a result of the large proportion of government funding combined with the industry's direct support to national security priorities, justifies its spending that funding—even in the face of a pandemic. This helped mitigate the impact of the COVID-19 outbreak and spurred a quicker and more effective recovery. The overall insulation of the defense sector does not downplay the individual impacts across the industrial base, which were significant in many instances, and continue to exist, but rather helps to align perspective when comparing to other sectors in the aggregate.

It is also to up-play the point that some of those same mitigating factors that insulated the industry in this crisis will be factors that potentially fuel, if not create, future challenges and headwinds for the industry.

In short, the pandemic has proven to be mostly a supply-side issue for the industrial base—for now. Its impact has been mostly felt on the supplier side across the original equipment manufacturers (OEMs), who build the military planes, tanks and ships, and their suppliers, who have felt the impact more acutely. The unique attributes of this industry have ensured that the demand side of the equation, where the funding comes from, and consisting mostly of Government customers, mostly did not falter, and in some instances improved. The defense industrial base, unlike many commercial retail-dependent sectors, only needed to focus on the operational delivery; the exception of course being those defense industrial base companies with business in both defense and commercial aerospace.

From the demand side, the Department of Defense (DoD), the single largest funder of the industrial base, focused on stabilizing that base by ensuring payments continued throughout the crisis. Many of the OEMs did the same with their supply chains. This had the effect of mitigating both business operating and financial impacts as well as program impacts within the Department. It meant that there were few disruptions in manufacturing and therefore



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shorter stop-work periods and lay-offs (relative to the broader economy). It meant businesses within the defense industrial base continued to get paid, as did their employees. This was largely possible because of the existing budget commitments (prior to the pandemic) and financial aid packages pushed forward by the Pentagon, Trump Administration and Congress as a result of the pandemic.

The Department of Defense even accelerated payments to OEMs, which helped to ensure that these businesses would continue to operate with a minimum amount of disruption. The \$2 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act also provided more than \$17 billion in cash for the defense sector, further mitigating impacts of COVID-19 by helping companies quickly invest in the necessary processes and infrastructure needed to continue operating safely during the pandemic. In addition, there was another \$80 billion in loans for the broader aerospace industry.¹

During the first six months of the pandemic, progress payments (which are provided to companies as they meet specific production milestones) rose from 80 to 90 percent for larger contractors and from 90 to 95 percent for small businesses, ensuring healthy cash flow for the industry.² DoD also accelerated payments for small businesses, bringing advanced progress payments to companies above \$2 billion.

Additionally, the CARES Act provided funding to offset cash flow challenges across the defense industrial base, amounting to more than \$650 million. These were small loans and other payments intended to bolster these businesses by redirecting many companies to support the national pandemic response and recovery efforts. Most of this funding was provided via Defense Production Act (DPA) Title III and largely targeted the supply chains in aircraft, shipbuilding, soldier systems, microelectronics, space, and rare earth elements. Specific funding levels reflected this focus, as well as an emphasis on ensuring areas of emerging military capabilities, such as hypersonics, were also insulated from the impacts of COVID-19³:

- \$252.1 million to sustain and preserve the aircraft and propulsion industrial base;
- \$236.0 million for the shipbuilding industrial base;
- \$35.5 million to support and maintain the space industrial base;
- \$20.9 million to support body armor, force protection, survivability equipment; uniforms, and sustaining the soldier survivability industrial base;
- \$79.1 million to support the electronics industrial base; and
- \$39.8 million to preserve at-risk essential materials suppliers and support and maintain the hypersonics industrial base.

Over this period, and despite the significant economic impacts of global lockdowns, foreign military sales continued – a combination of existing transactions moving through the process, as well as new ones. During the height of the pandemic the U.S. Government announced new



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military arms sales amounting to more than a billion dollars with India, Morocco, the Netherlands, South Korea, and others.

At the same time, the State Department's Directorate of Defense Trade Controls (DDTC), which ensures commercial exports of defense equipment and services comply with U.S. foreign policy objectives, also implemented measures designed to lessen the impact of COVID-19 on U.S. companies and the defense industry supply chain selling to foreign governments. The DDTC temporarily suspended registration renewal requirements for manufacturers and exporters in an effort to streamline business activity, which was important because it effectively made it easier to complete business transactions and collect payments during the peak of the COVID-19 outbreak.

In fact, net sales for Lockheed Martin Corporation rose 9 percent to \$16.5 billion in the third quarter of 2020, as all four of its business segments posted gains despite challenges posed by the coronavirus pandemic.⁴ This was not the case, however, for more diversified equipment manufacturers, such as Boeing, and small businesses tied to specific programs facing delays and production interruptions.

On the government program side, impacts have been mostly limited to slowdowns and sporadic delays – most of which were addressed once manufacturing facilities re-oriented their operations for COVID-19 protocols.

The most impacted segments of the defense industrial base have been shipbuilding, military aviation, and small space launch, though most were back up to speed by mid-October.

That said, over this period analysis shows that more than seventy large programs from across the globe were significantly impacted due to COVID-19 delivery delays. Delays resulted from a combination of manufacturing and budgetary issues. Globally, Canada, India, Turkey and the United Arab Emirates were impacted the most, with delays, and some postponements resulting from COVID-19 impacting construction across multiple large defense equipment programs – many of which have been naval. In the United States, program confidence levels for on-time deliveries for several U.S. Navy and U.S. Coast Guard sealift and auxiliary programs, and for selected frigates, have gone down.

Current impacts aside, the most significant strategic implications are yet to come. And, arguably, headwinds may increase further as geopolitical tensions rise in the wake of the pandemic, and as the re-emerging great power competition escalates.

The \$2 trillion CARES Act—and the additional recovery spending packages increase the financial pressure facing defense spending in the out years, for the United States and many others. While requests have been made to increase defense spending in the coming fiscal year,



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it is not clear yet whether the current Administration is willing to do this in light of other spending priorities. What is clear, is that there is growing pressure on the top line budget and the potential for flat, if not declining, spending is higher than it has been in years. Whether that comes to fruition will be known soon, and even if increases are maintained for this next fiscal year, they are no guarantee for the future.

Prior to the COVID-19 pandemic, analysis showed an average real rise of 3 percent per year from 2021 to 2025, which has now been reassessed at just 0.09 percent due to anticipated financial impacts. A return to the previously envisaged growth trend is not expected until 2026, at the earliest. Defense spending by 2023 will in real terms be 8 percent below the previously forecasted level, and spending is expected to be flat, or in a slight decline, in real terms between 2020 and 2025 – amounting to five years of lost growth. Globally, there will be regional variance, with the Asia-Pacific region being the only region expected to see any growth in defense spending over the next four years, and the United States and Europe being at the top of the list of those being most negatively impacted at the budgetary level.

Compounding the significance of, and potential risk associated with, forthcoming budget cuts, are the risks highlighted by the additional supply chain vulnerability awareness surfacing because of the pandemic.

Sourcing risks from foreign suppliers like China, who provide microelectronics and other sub-components, dual-use products such as unmanned aerial systems (UASs), and control access to critical materials such as rare earth are creating potentially exploitable vulnerabilities across the defense industrial base.

Additionally, the pandemic has highlighted the fragility across many large international defense programs such as the multi-national Joint Strike Fighter (JSF), a state-of-the-art 5th generation fighter aircraft program and the largest single defense production program in the world with multiple countries participating in manufacturing. Notwithstanding the removal of Turkey from the JSF program as a result of its purchase of the Russian S-400 air defense system, COVID-19 impacts to JSF manufacturing operations in Turkey illustrate how tenuous supply chains can be when a key component supply is impacted and affects an entire, global, program that is dependent on that supplier. This single point of failure had repercussions across the entire program, and Lockheed Martin who is the prime contractor for JSF delivered fewer JSF aircraft to domestic and international customers than planned in 2020, with the ongoing COVID-19 pandemic affecting supplies to its production plants.⁵

Additionally, as supply chains grow increasingly complex, defense prime contractors are balancing the benefits of outside innovation and expertise with the need to maintain robust security standards and protect their intellectual property. Sourcing for these products has



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evolved significantly over the past decade, largely driven by the priorities of the U.S. Department of Defense.

COVID-19 has provided a closer look at how defense supply chain vulnerabilities have evolved as well, and what that means for the future. Arguably, a potentially near perfect supply chain storm is in the making.

COVID-19 has also helped to shine a light on many of the risks and vulnerabilities across the industrial base—risks and vulnerabilities that are also exploitable by means other than pandemics. The challenges associated with a lack of supply chain visibility combined with increasing dependencies on foreign-source components and critical materials, and the reemergence of great power competition exacerbate existing risks while potentially creating new ones.

The challenge will increase too, as we face the financial fallout and head winds associated with the long-term recovery from this pandemic. Budgetary pressure will increase and the insulation the industrial base benefited from during the initial days and months after the outbreak will become thinner and thinner. As other sectors recover and build back with the spread of the vaccine, the defense industrial base will potentially just be beginning to feel the full symptoms of COVID-19.

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