

Financing Resilience in Post-COVID-19 Manufacturing and Supply Systems

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Executive summary

The report aims to inform decision-making on financing resilience in manufacturing and supply systems.

The COVID-19 pandemic resulted in unprecedented supply-and-demand shocks, not only increasing the uncertainty of the economic outlook, but also affecting the financial and operational capacity of manufacturing and supply systems. From lower cash reserves and higher administrative costs to capital disruption and lack of traditional sources of financing, in addition to a confluence of economic, social, technological and environmental megatrends, organizations have been forced to reassess their long-term strategies to better prepare for and respond to similar shocks in the future. Leaders are now building on what they have learned from recent experience to make investments that enable them to anticipate and navigate future disruption that may affect global value chains.

Realizing this, the World Economic Forum and International Finance Corporation (IFC) have carried out a series of consultations with senior executives in operations and supply chains to explore and better understand financial needs in order to build resilience during and post-COVID-19. The consultations, conducted during Spring 2021, addressed three critical dimensions:

- Identifying the most common financial constraints in the manufacturing sector emerging from the pandemic together with effective methodologies in terms of responses
- Understanding how manufacturing and supply-chain actors are envisioning the future of operations and the financial requirements and capacity
- Exploring the opportunity for a global coordinated response to increase financing and operational resilience in manufacturing and supply systems

The findings of this paper – based on the conducted consultations – reveal that the pandemic almost instantaneously affected firms' liquidity and access to financing, particularly for small and medium-sized enterprises (SMEs). Business

continuity costs also increased as companies took action to protect their employees and reorganize their operations while functioning through continuous economic and health uncertainty. Manufacturing players also adjusted quickly to the new circumstances by providing financial support to their suppliers and broader partners in the manufacturing ecosystem.

At the same time, companies started rethinking their approach to building resiliency as well as accelerating the implementation of investment plans in digital technology, the logistical landscape and advanced analytics. Many firms were able to use the COVID-19 pandemic to draw lessons and respond accordingly by investing in a new set of priority capabilities in order to future-proof manufacturing and supply systems and ensure they are better prepared for future disruptions. A change in mindset also took place, with a greater sense of shared responsibility emerging and the realization that higher degrees of coordination are required for the global manufacturing community to successfully navigate the future.

The consultations carried out revealed three main coordination imperatives for stakeholders looking to be better equipped in the event of future disruption:

1. A global mindset shift to first ensure sufficient financial liquidity for long-term resiliency investments
2. A shared vision, supporting the more fragile stakeholders in the path towards resiliency, starting with their suppliers and other important players along their value chains
3. New multistakeholder partnerships such as with academia and the public sector to finance increased resilience

The objective of this report is to share findings and knowledge to inform discussions and support businesses and governments as they upgrade their investment strategies and update industrial policies to future-proof value chains.

Introduction

Supply chains have been disrupted and altered over the past years in an unprecedented way as a result of megatrends such as emerging technologies, trade tensions, sustainability imperatives and the reconfiguration of globalization. The COVID-19 pandemic has further exposed the fragility of global value chains. According to a recent World Economic Forum report in collaboration with Kearney, 76% of senior executives across different industries indicated that COVID-19 was a significant disruptor of their operations, affecting activity from both the supply and demand side.¹ The future economic outlook is still uncertain, and disruptions from these megatrends will likely accelerate, continuing to threaten manufacturing and supply systems.

Companies are now shifting towards increased collaboration and finding new solutions for more resilient and sustainable value chains, building the capabilities required to future-proof them. They are, for instance, prioritizing multi-tier visibility in their supply chains, looking to reconfigure them and reimagining supplier relationships. However, the associated costs and potential investments needed are slowing down the pace of the required changes. Furthermore, the pandemic has altered the financing landscape due to changes in lending priorities among financial institutions,² with the overall impact on financing posing yet another challenge to resilient recovery. Moving forward, manufacturing and supply-chain actors are looking to lay the foundations of a new multistakeholder financing ecosystem for the future of value chains.

On the back of existing studies, the World Economic Forum and the International Finance Corporation (IFC) consulted with more than 20 senior executives in manufacturing and supply chains to understand the financial constraints that emerged from COVID-19, the best practices in overcoming the financial challenges to a post-pandemic world, and the key capabilities required to finance the resilience of global value chains.

This report aims to help inform decision-making on financing resilience across manufacturing and supply systems in the post-COVID world and to highlight new opportunities for collaboration. The following sections describe the findings of our consultations with senior executives in operations with respect to:

- The emerging financial constraints raised by the COVID-19 pandemic as well as the response mechanism and financial support that were activated within manufacturing
- The investments needed for a reorganization strategy towards a more resilient global manufacturing ecosystem
- The opportunity for a global response and coordination mechanism to be established, for the manufacturing community to help finance resilience in value chains

Emerging financial constraints from the pandemic and the response mechanism

The most common financial constraints in manufacturing and supply systems emerging from the pandemic – and effective responses.

1.1 Major disruptions and financial difficulties

Modern characteristics of manufacturing – such as fragmentation of production processes in global value chains supported by complex logistics – as well as information and communication technologies make manufacturing more sensitive to trade and supply disruptions such as those caused by COVID-19. Companies were affected both operationally and financially, which resulted in an unprecedented shock that affected value chains. Consultations carried out with senior executives in operations and supply chains within the scope of this work focused on the major disruptions and financial difficulties that firms suddenly started to encounter. The most common financial constraints highlighted are captured below:

- **Liquidity restrictions and drop in profitability:** Liquidity and cash reserves were significantly affected soon after the pandemic hit. The sudden decrease in sales also affected revenues and margins. This has been confirmed by a World Bank survey on COVID-19's impact on businesses showing that, globally, more than four out of five firms reported a reduction in sales in the summer of 2020.³ SMEs and previously financially stressed companies with low or unstable cash reserves were particularly affected.
- **Scarce sources of traditional financing:** Lending and borrowing were both affected as traditional sources of financing became more restricted and less accessible. During the interviews, executives revealed that securing financing during the pandemic became more difficult. An IFC survey of financial institutions' clients also revealed similar results, with companies reporting that seven months after the outbreak, loan disbursement volume had decelerated and was still below pre-crisis levels.⁴ The same survey also reported that 16% of financial institutions declared that supply-

chain financing had gained priority as a result of the crisis, while 8% of clients deprioritized lending operations for supply-chain finance.

- **Increased fixed, transportation and inventory costs:** Higher fixed, transportation, raw materials and inventory working-capital costs were some of the other major constraints highlighted by the manufacturing companies consulted. This trend of increasing costs was also confirmed by a McKinsey survey-based study, which shows that manufacturing costs increased the most out of all cost categories. In this study, 63% of respondents reported a manufacturing cost increase of 5% and up to 20% since the pandemic began, while also expecting costs to stay high in 2021.⁵
- **Trade barriers and time delays:** Another spillover effect of the crisis was the trade barriers that countries introduced by imposing or adjusting import or export taxes with the objective of maximizing the availability of critical supplies in domestic markets.⁶ These barriers affected normal operations in some manufacturing value chains by further raising the costs of some critical inputs and delaying planned investments to de-bottleneck operations. Lockdowns and related travel restrictions further hindered delivery times of key products, especially for “just-in-time” (JIT) production processes.
- **Higher COVID-19-related sanitary and precautionary costs:** Maintaining clean premises and protecting employees became the most important priorities to secure the supply chain and keep the operations running. This also resulted in sudden operational cost increases for precautionary and sanitary materials.⁷

“ From lower cash reserves and higher administrative costs to capital disruption, the pandemic has affected manufacturers and triggered a support mechanism.

- **Higher labour costs and fall in productivity:** The pandemic also highlighted a sudden ramp-up in demand, especially for some products or services (e.g. medical and pharmaceutical). Hence, firms responded by repurposing existing operations, capital investments and sourcing of temporary labour to support demand resurgence. Naturally, this also led to higher workforce costs as well as lower initial

productivity due to necessary adjustments to respond to customer demand.

The impact of the financial constraints discussed so far brought up the need to activate action and support within the private sector. The next section describes the financial support given within the manufacturing ecosystem as highlighted by senior executives during the consultations.

1.2 Financial support given within the manufacturing ecosystem

To mitigate the impact of the crisis, manufacturers supported partners within their ecosystem by providing technical, advisory and financial support, according to consultations with industry leaders. Across companies, the following main strategies emerged: providing direct and indirect financial support to suppliers; offering advisory services and technical assistance as well as establishing strategic partnerships with key providers, especially SMEs; and diversifying sources of input provision.

Manufacturers first ensured on-time payments to suppliers as per their originally agreed payment terms despite the disruptions caused by the pandemic to avoid further impact on liquidity and cash reserves. Larger manufacturing and supply-chain actors also worked closely with both suppliers and financial institutions to bridge financing options. They used their relationships with banks to help suppliers, especially SMEs, access financing by providing recommendations to financial institutions or serving as guarantors.



Vale, a global mining company with headquarters in Brazil, advanced payments from March to May 2020 to around 3,000 small and medium-sized suppliers from all over the country to support them address the effects of the pandemic. More than \$300 million in working capital was granted by means of a reduction of up to 85% of the usual

payment terms for services performed or materials delivered. This initiative was announced on 24 March 2020 and included contracts for services performed or materials delivered up to 31 May 2020. Vale also granted more than \$100 million in working-capital support for clients that were affected by the pandemic.

Additionally, consultations showed an enhanced emphasis by firms on more frequent communication within the supply networks, with a novel focus on creating long-term partnerships with suppliers and working closely with the network to land resources

when needed. Manufacturers also helped suppliers source raw material in case of shortages, as well as assuming all excess inventory with suppliers.



Recognizing the role of ecosystem partnering in ensuring business continuity, a leading global textile conglomerate worked with a network of 15,000 farmers to help them identify financing options for

their farms and obtain fair prices in the market, and also provided budget support. Beyond financial support, it also provided guidance on fertilizers to be used to drive overall operational efficiency.

Consultations also revealed the importance of strengthening cooperation with the financial sector in order to respond to COVID-19 and other similar exogenous shocks. Companies are adopting a more strategic approach to diversify sources of production input and spread the risks of disruption. They are re-evaluating offshore manufacturing operations by conducting a “right” or “best shoring” analysis driven by commercial,

operational, financial, tax, legal, infrastructure, regulatory and logistics conditions in the company’s sector and products.⁸

The redesign of supply chains also includes the diversification of funding sources and adoption of digital technologies that will allow a swifter response to changes in demand, and will be discussed further in the next section.

Investments for a future reorganization strategy towards greater resilience

Manufacturing and supply-system actors are investing in a set of priority capabilities to future-proof value chains.

“ Learnings from the pandemic and the acceleration of megatrends are triggering and expediting new reorganization strategies with emerging investment priorities.

To mitigate the negative impact of the COVID-19 pandemic, manufacturing and supply-chain players had to take immediate action to ensure supply security and navigate continued market uncertainty. The consultations carried out also showed that previous investments made by leading institutions to increase the resiliency of their supply chains against disruptions from climate change, geopolitical tensions or emerging technologies paid off. To mitigate the impact of shocks from such megatrends, and building on learnings from this pandemic and its impact on global businesses, manufacturers are now shifting from reacting to disruptions to finding new solutions to future-proof their supply chains and enable more resilient and sustainable production ecosystems with strengthened global coordination.

Learnings from previous disruptions that affected value chains reveal that resilient leaders are characterized by: simplified product portfolio design; a smart geographic footprint to ensure proximity to customers together with diverse go-to-market channels; financial viability and agility; a balance between a diverse supplier base and strategic partnerships; end-to-end visibility in logistics; a responsive manufacturing set-up as well as advanced planning capabilities to rapidly sense shifts in demand and thus pivot accordingly – as

depicted in a recent World Economic Forum white paper.⁹ Senior executives across all industries who were interviewed observed the capabilities and requirements in the supply chain that were crucial during the crisis and could have mitigated its negative impact. This, together with the increasing importance of certain megatrends, is triggering and expediting new reorganization strategies with emerging investment priorities. From the consultations conducted, it has emerged that, in the future, manufacturers and supply-chain actors will primarily accelerate their investments in the following capabilities to build more resilient global value chains:

Investments in redesigning supply chains – for an optimal geographic footprint and a responsive manufacturing set-up that allows quick adaptability. Currently, according to a World Economic Forum report with Kearney, 35% of surveyed firms are still highly dependent on region-specific manufacturing set-ups.¹⁰ Leading companies are now looking to shorten value chains to be closer to the end customer, to duplicate value chains to allow for back-up in case of disruptions and to adapt to newer demand sectors such as e-commerce. Some 11% of manufacturers have already invested heavily in this area¹¹ to ensure customer demand can be met, while remaining agile and flexible.



To streamline, prioritize and meet the sourcing requirements of various manufacturing plants in a more agile and efficient way, Mahindra Group – headquartered in India – has put in place supply-chain hubs to manage supplier clusters across India. All schedules across business units for various assembly plants as well as supplier data such as capacity usage, inventory information and

multi-tier locations are digitized and routed to each hub. The supply-chain hub manager then routes a consolidated version of the planning schedule to suppliers, ensuring effective capacity usage, addressing any emerging vulnerabilities through mitigation measures such as temporary share of business change or buffer inventory build-up.



Sanofi, a global healthcare company headquartered in France, has launched a new company, EUROAPI, to produce active pharmaceutical ingredients

(API) in six factories in Europe, supplying a range of pharmaceutical companies and reducing dependency on API supply from Asia.¹²

Investments in risk-management strategies and tools – following a mindset shift from cost reduction only to an increased risk-mitigation focus instead. Manufacturing and supply-chain players are preparing for future disruptions by building predictive capabilities that anticipate changes, thus planning for contingencies as well as having

a procurement strategy that is focused on revenue assurance as opposed to cost saving. To ensure continuity in operations, the supply chain of the next decade will be defined by a shift from a “just-in-time”, cost-optimization paradigm to a “just-in-case”, risk-mitigation focus, at the best – not necessarily lowest – cost.¹³



To help establish resilient and responsive supply chains and ensure business continuity in the event of a crisis, Mahindra Group is actively investing in supply-chain mapping coupled with artificial intelligence (AI) and machine learning-based pre-emptive triggers on supply risks. The mapping accounts for supply risks, demand risks and operational risks across environmental, geopolitical, economic and technological factors.

Risk indices are monitored digitally, triggering alerts whenever the defined threshold is reached. Probabilities are then generated based on the early signals’ strength. Next, a mitigation matrix is derived depending on whether the event outcome is controllable, influenceable or uncontrollable. An internal business continuity APEX council then decides on the planning and execution of the mitigation strategy.

Investments in advanced supplier relationships – as manufacturers now realize the importance of analysing their supplier base and striking a balance between diversifying sources of supply and building long-term strategic partnerships with key suppliers to ensure the availability of essential

input materials. They are prioritizing working with suppliers who have digital capabilities, and who can adapt to changes, deliver and evolve with them. For that, they are also willing to provide them with the support needed – from landing resources to training and joint investments.



To achieve the right balance between dual sourcing and strategic single sourcing and guide the supplier selection process, companies are also using decision frameworks. In August 2020, Vale launched a programme named Programa Partilhar, seeking to encourage the social development of communities in partnership with their supply-chain actors. Using an innovative methodology in its hiring processes, Vale is prioritizing the suppliers with the greatest socioeconomic contribution to each

region and offering incentives aimed at training and increasing the competitiveness of these companies. The analysis is based on an index that assesses five factors related to the contribution of each supplier in each region: employment; income and salary; local purchases; taxes; voluntary social investment. The Programa Partilhar started with 11 categories of purchases including infrastructure, construction and engineering services among others and will be gradually expanded to other categories.

Investments in data and technology – not only to operate factories digitally and remotely but also to encourage innovation and trigger new operating and business models. For instance, leaders are incorporating advanced analytical tools to enhance planning and optimize inventory management

but are also rolling out technological solutions to digitally integrate their supply chains end-to-end and provide visibility where needed. Only 15% of manufacturers have mastered this art to date, while 51% are currently taking steps to transform their logistics set-up towards greater transparency.¹⁴



Schneider Electric – a multinational company providing energy and automation digital solutions for efficiency and sustainability, headquartered in France – currently has seven end-to-end control

towers in place that are connected 24/7. With these, it aims to integrate planning, orchestrate inventories, monitor flows and achieve end-to-end visibility on its supply chain.

Investments in talent development, training and empowerment – realizing that the future of manufacturing is about how technology enables people. Manufacturers are focusing on upskilling

their talent and investing in technologies that enable the workforce to be more effective and efficient as well as supported.



Companies such as Schneider Electric are reinforcing their local teams and investing in resources locally by reinjecting capability and

capacity, enabling decision-making at a regional level as well as incentivizing their talent through recognition and remuneration.

A change in paradigm: the coordination imperative

Three emerging coordination imperatives to finance increased resilience in manufacturing and value chains.

“ The emerging investments needed to future-proof value chains require a shift in mindset, with increased global coordination and a global response to ongoing challenges.

Manufacturers and their ecosystems can be an engine for recovery and are often a vital driver in any global economic and social prosperity wave. As such, investments in scalable, inclusive and sustainable modern manufacturing solutions are required to increase resilience and agility. However, as depicted in section 1, the COVID-19 pandemic has placed a financial burden on manufacturing and supply chains, posing challenges to a resilient recovery. Additionally, the emerging investments needed to future-proof value chains and avoid negative impacts in the event of future disruptions from megatrends require a shift in mindset, with increased global coordination and a global response to ongoing challenges.

The interviews with manufacturing players suggest that companies looking to better equip themselves in the event of future crises and target the reorganization of their supply systems will need:

1. **A global mindset shift to ensure sufficient financial liquidity for long-term resilience investments.** Ensuring financial liquidity and lines of credit are available will help companies effectively respond to future disruptions by making necessary and timely adjustments – such as paying premiums to secure supply or building inventory in anticipation of market scarcity. Additionally, this will allow them to finance the investments required to meet disruptions in the future. So far, such investments tend to be driven by companies’ desired returns on investment based on proof of concepts, which do not reflect the full benefits of a broader roll-out and often fail to account for social, environmental and resilience gains as well as the learnings and capabilities acquired. In the future, decision-makers in manufacturing may no longer look for immediate returns on investment and accept the long-term benefits of investments in technology or risk management, acknowledging that resilience has now become an “insurance premium” and should be paid for and embedded by design in an organization’s processes. In fact, more than 85% of executives surveyed in a World Economic Forum report in collaboration with Kearney indicated that, in addition to the classical factors of cost, value and flexibility, risk-resiliency and sustainability now play an equally important role in making value-chain configuration and network optimization decisions.¹⁵

2. **A shared vision and support for the more fragile stakeholders across supply chains in the path towards resiliency.** Realizing that supply chains can be – beyond cost centres – an engine for recovery and growth, manufacturing and supply-chain actors are shifting towards working closely with financially and non-financially fragile partners in the path towards resiliency. Examples of such support require not only the investment of resources or provision of training to key suppliers and vendors but also making joint investments on innovation and digitalization to accelerate inclusive technology adoption. Manufacturers are already exploring opportunities to join forces and create fund-like instruments to finance their value chains. In addition to this, they are using existing relationships with banks to help ecosystem partners explore financing options and thus fund projects to collectively establish a reorganization strategy for greater resilience.
3. **New multistakeholder partnerships for increased resilience.** To navigate uncertainty and build lasting resilience, manufacturing and supply-chain actors need to align on common priorities for action and investment to collectively shape a long-term strategy. Beyond that, investing in partnerships with additional stakeholders such as academia and research institutes will be instrumental in gaining insights into the latest innovations in managing supply-chain disruption. This can also help adequately prepare talent for the future of manufacturing and supply systems by investing in training programmes that can upskill and reskill the workforce to meet emerging needs (e.g. technology adoption and supply-chain management). In the future, there will also be a stronger call for continuous dialogue and collaboration with the public sector. Such cooperation could influence the reshaping of investment strategies and industrial policies in the most efficient and impactful way to both drive coordination among stakeholders and address supply-chain resilience gaps for the common good.

Collaborations that increase the financing of resilience can enable manufacturers to invest in improved efficiency and productivity in their operations, boosting growth. Additionally, they allow them to successfully establish a reorganization strategy to enhance the resilience and sustainability of their value chains in case of disruptions. They also enable them to become more agile and proactively navigate dynamic environments to rebound stronger.

The way forward

The World Economic Forum and the World Bank Group will continue to support stakeholders at the country, regional and global level by providing a unique space to help them navigate financial disruptions in manufacturing while ensuring sustainable and inclusive long-term growth.

The World Economic Forum offers access to bleeding-edge innovations and connects the most senior levels in business, government, academia and civil society. Using its 19 existing platforms for shaping the future – such as the Future of Advanced Manufacturing and Value Chains – the Forum helps organizations monitor and understand ongoing and upcoming shifts in value chains in order to help strengthen public-private and international cooperation. To support manufacturing and supply systems navigate disruptions and uncertainties, the Forum in collaboration with Kearney has recently launched a Resiliency Compass, for both public and private organizations to accelerate the resilience-building process and define the new priorities and actions needed to prepare for, and respond to, future disruption. The compass consists of eight dimensions of resilience on both the demand and supply side. Demand-side dimensions are advanced planning, product portfolio, geographic footprint and distribution channels, while supply-side dimensions are the supplier landscape, financial health, logistics system and manufacturing set-up.

Since the pandemic, the World Bank Group has committed to fighting the impacts of COVID-19 in a way that is tailored to the health, economic and social shocks that countries are facing. It is helping developing countries finance the purchase and distribution of COVID-19 vaccines and has partnered with COVAX to help speed up the vaccine supply. The World Bank Group provided \$6 billion in funds from the International Bank of Reconstruction and Development (IBRD) and

the International Development Association (IDA) to assist companies cope with the impact of the global outbreak. In addition, the International Finance Corporation (IFC) provided \$6 billion to its real sector and financial institution clients to help relieve liquidity pressures on companies, refinance and reschedule debt to help cover costs of delays in project implementations and help address supply-chain disruptions.

IFC is also helping sustain jobs and economic activity to expedite pandemic recovery, and working with stakeholders to support the transition to the future of global value chains, enabled by improved financing resilience in manufacturing and supply systems. The response from IFC is designed to help companies with the operational and financial impacts of COVID-19 through: (1) the Real Sector Crisis Response Envelope (RSE); and (2) the Financial Institutions Response Envelope (FIRE). The RSE was created for existing IFC infrastructure and manufacturing, agribusiness and services clients experiencing, or vulnerable to, the economic impacts of COVID-19. The surge in global demand for healthcare products and services caused by COVID-19 far exceeds the supply in both developed and developing countries. Aiming to mobilize private investment in order to close the massive healthcare supply gaps faced by developing countries, IFC's Global Health Platform (GHP) is providing financing solutions to manufacturers, suppliers and service providers for their capacity expansion and working-capital requirements.

The findings presented in this report provide the means for leaders to inform discussions and continue sharing learnings aimed at improving investment strategies and industrial policies to future-proof global value chains. We look forward to continuing our work with stakeholders in their journey towards financing resilience in manufacturing and supply systems.

Methodology

The World Economic Forum and International Finance Corporation conducted interviews with executives from more than 20 companies engaged in the Advanced Manufacturing and Value Chains Platform of the World Economic Forum between March and June 2021. The consultation process involved companies based on their availability. The sample included companies located across South Asia, Asia-Pacific, Europe, the Middle East, and North and South America, and from industry

sectors including pharmaceuticals, consumer and retail, automotive and parts, technology and industrial. Company size ranged from local small and medium-sized enterprise to multinationals with \$100 billion in annual sales. These valuable inputs, in combination with previous studies by the World Economic Forum and International Finance Corporation on manufacturing and supply systems and additional sources cited here, were used to inform the content presented in this white paper.

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