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# BACK TO THE FUTURE

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## EMERGING TOPICS FOR LONG-TERM RESILIENCE IN MANUFACTURING

### NATIONAL AND REGIONAL PERSPECTIVES - STIMULUS TO THE PANDEMIC

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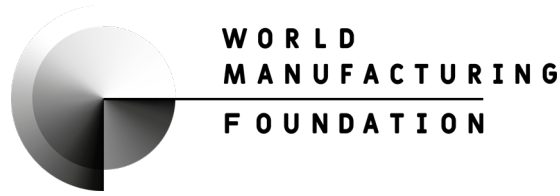
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The views and opinions expressed by whitepaper contributors are given in their personal capacity and do not necessarily reflect the views of the organisations for which they work or committees of which they are members.

For more information on the project and to read other topic-focused whitepapers that are part of the initiative, please visit: <https://worldmanufacturing.org/report/back-to-the-future-emerging-topics-for-long-term-resilience-in-manufacturing/>

# INTRODUCTION

The COVID-19 crisis has had a substantial impact on the economy and triggered unprecedented policy responses across the globe.

All sectors have been heavily impacted and have suffered high economic losses.

This paper aims to provide an overview of the context in which the pandemic has advanced; it lists the main challenges to be addressed in relation to the ongoing pandemic and the overall impact on the manufacturing sector, which has been among the most affected sectors.

It illustrates the measures that governments and institutions have implemented so far. Finally, it provides some key takeaways and describes possible future actions to be considered for long-term resilience in manufacturing.

# CONTEXT

The impacts of COVID-19 have been particularly heavy in every country whose economy relies on the manufacturing sector and the related services.

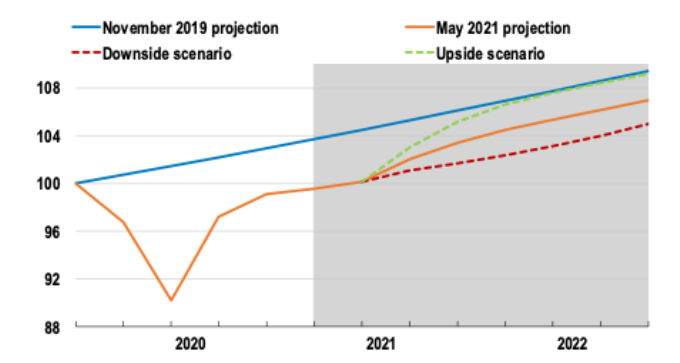


Figure 1: World GDP Projections. Index 2019Q4 = 100. Source: OECD

Economic growth is expected to rebound by 6.0% in 2021 (Figure 1), but the recovery will crucially hinge on the spread of variants of the virus and the distribution of an effective vaccine, which may reduce the need for precautionary saving and the need for governments to

take containment measures.

The main challenges differ among countries, and they depend not only on the effects of the pandemic and lockdowns, but also on the economic, social, and political situation that characterised those countries even beforehand. The pre-existing challenges have increased the short-term costs of the crisis and risk leaving long-term consequences on growth, wellbeing and sustainability.

(real GDP, annual percent change)	PROJECTIONS		
	2020	2021	2022
<b>World Output</b>	-3.2	6.0	4.9
<b>Advanced Economies</b>	-4.6	5.6	4.4
United States	-3.5	7.0	4.9
Euro Area	-6.5	4.6	4.3
Germany	-4.8	3.6	4.1
France	-8.0	5.8	4.2
Italy	-8.9	4.9	4.2
Spain	-10.8	6.2	5.8
Japan	-4.7	2.8	3.0
United Kingdom	-9.8	7.0	4.8
Canada	-5.3	6.3	4.5
Other Advanced Economies	-2.0	4.9	3.6
<b>Emerging Market and Developing Economies</b>	-2.1	6.3	5.2
Emerging and Developing Asia	-0.9	7.5	6.4
China	2.3	8.1	5.7
India	-7.3	9.5	8.5
ASEAN-5	-3.4	4.3	6.3
Emerging and Developing Europe	-2.0	4.9	3.6
Russia	-3.0	4.4	3.1
Latin America and the Caribbean	-7.0	5.8	3.2
Brazil	-4.1	5.3	1.9
Mexico	-8.3	6.3	4.2
Middle East and Central Asia	-2.6	4.0	3.7
Saudi Arabia	-4.1	2.4	4.8
Sub-Saharan Africa	-1.8	3.4	4.1
Nigeria	-1.8	2.5	2.6
South Africa	-7.0	4.0	2.2
<b>Memorandum</b>			
Emerging Market and Middle-Income Economies	-2.3	6.5	5.2
Low-Income Developing Countries	0.2	3.9	5.5

Figure 2: World Economic Outlook Update, July 2021.

Source: International Monetary Fund.

While the impact varies between different ecosystems and businesses, the main issues highlighted by the crisis are<sup>1</sup>:

- closed borders that restricted the free movement of people, goods and services;
- disruption of global supply chains affecting the availability of essential products and raw materials;
- lack of demand.

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## Impact on the Manufacturing Sector

Manufacturing industries have been impacted by short-term supply shortages due to closed borders and factories.

A common trend across sectors is that in industries such as the chemicals, food, construction, automotive, digital, and pharmaceutical sectors, the second wave seems to have been less harmful than the first, as factories and borders largely remained open and supply chains intact, workplaces had adapted to new security and distance requirements, and dealerships could continue online.

This confirms that the manufacturing sector is slowly adapting to the current realities of the pandemic.

The effects of the crisis also vary depending on the sub-sector. Construction machinery and intralogistics equipment, for example, are likely to feel much less severe effects than they did during the financial crisis due to expected national infrastructures' stimuli and an increase in e-commerce. On the other hand, companies in the machine tools, plastics machinery, and steel production equipment sectors will feel the effects much more strongly. The reasons for this are overcapacities that already existed before coronavirus (steel) and the acceleration of disruptions (E-Mobility, sustainability), which are leading to restrictive investment behaviour.

Naturally, the impact of the pandemic on different businesses also depends on the size and location within the company life cycle (start-up, scale-up, maturity). Those companies building up production have also been hit hard during the second wave, due to the lower capital stock at hand, while those companies which have been up and running for a certain time have been more affected during the first wave than during the second one. The pandemic has led to critical cashflow issues for small and medium-sized enterprises (SMEs), even in well-performing sectors like digital.

Pharmaceutical production, as well as the production of devices such as computers and tablets, have been affected the least through the first months of the COVID-19 pandemic (Q2 2020), and production was extended during the year.

During the second and third waves of the pandemic (Q4 2020-Q2 2021), significant new shortages in industries that did not secure their supply chain fast enough became prominent. Western countries are heavily dependent on the supply of integrated circuits from Eastern countries and in the event of an exponential increase in demand or in cases of incorrect sales forecasts, the lack of fundamental components leads to a freeze or reduction in production volumes.

On the other hand, sectors that are dependent on human contact and interaction, such as the cultural and creative industries and the aerospace industry (due to the decrease in mobility and tourism activities), have been the hardest hit by the pandemic and the related confinement measures.

Government restrictions to the mobility of people, in addition to strong sanitary and distancing requirements, are the major factors negatively affecting these sectors' performance during the pandemic.

## Overview of Recovery Measures

Beyond the immediate crisis-related interventions – including the need to maintain highly accommodative macroeconomic policy settings for some time – policy focus has been set on medium-term objectives (Figure 3).

Among the medium-term policies, liquidity support measures can generally be classified within the three categories below<sup>2</sup>:

- Job retention schemes
- Deferrals of payments
- Financial support via debt

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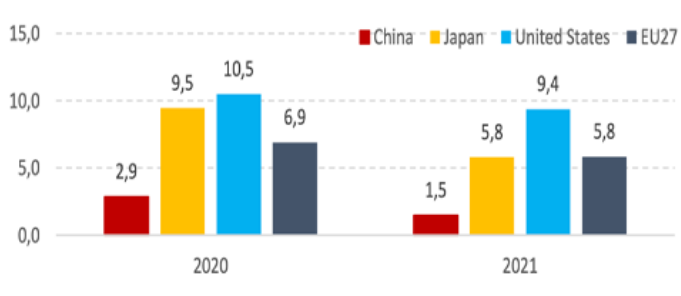


Figure 3: General government expenditure as % of GDP, Percentage points change from the pre-pandemic (i.e 2019) level. Source: International Monetary Fund.

In the aftermath of the pandemic, the scars in labour and product markets and the need to reallocate some workers and capital across sectors emphasise the urgent need for renewed and well-targeted structural policy reforms in all economies. They mainly focus on:

- Support for digitalisation, including for teleworking and e-sales;
- Support for innovation and technology development. In some cases, these policies focus on innovations related to the pandemic, in other cases on supporting wider competitiveness;
- Support for upskilling and reskilling;
- Support for start-ups;
- Support for finding new alternative markets;
- Support for sustainability.

The coronavirus pandemic has also made the need for new job-related skills<sup>3</sup> more urgent. Workers across industries must figure out how they can adapt to rapidly changing conditions, and companies have to learn how to match those workers to new roles and activities (Figure 4).

Once the recovery is firmly in place, the post-crisis environment will provide an opportunity for countries to undertake a more fundamental reassessment of their tax and spending policies<sup>4</sup>, along with their overall fiscal framework. Such a reassessment will need to take into account both the challenges brought to the fore by the crisis as well as those related to ongoing structural trends, including climate change, rising inequalities, digitalisation and population ageing.

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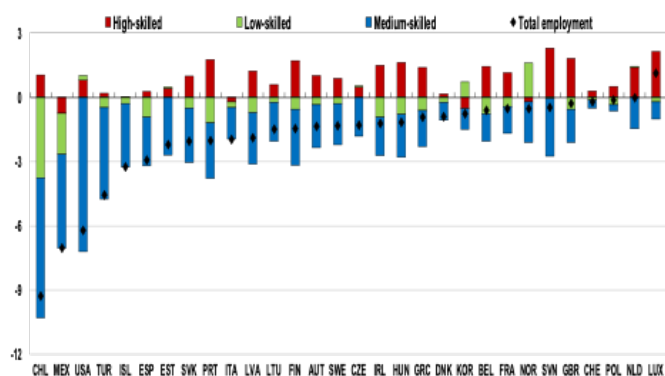


Figure 4: Decomposition of the percentage change in employment between 2019 and 2020 across occupation groups. Source: OECD

## Examples across the world

In the **EU**, the European Commission designed a substantial pandemic recovery instrument with the twin objectives of supporting the economic recovery as well as targeting the EU's climate and digital objectives. This led to the largest-ever EC stimulus package, called Next Generation EU (NGEU), with an amount of €750 billion borrowed from the financial markets.

This package consists of grants financed by the EU Own Resources budget and loans are repaid directly by the Member States. Of the total sum borrowed, €672.5 billion will be allocated through the Recovery and Resilience Facility (RRF) subject to the approval of national recovery programmes produced by the Member States. The remaining NGEU budget will be allocated to the Recovery Assistance for Cohesion and the Territories of Europe (REACT-EU) initiative and five other EU programmes: InvestEU, Horizon Europe, the EU civil protection mechanism (RescEU), the Rural Development and the Just Transition Fund (JTF).

Through the RRF, the key instrument at the heart of Next Generation EU that entered into force on 19 February 2021, the European Commission aims to help the EU to emerge more resilient from the current crisis. To benefit from the support of the Facility, Member States have to submit their recovery and resilience plans to the European Commission. The reforms and investments included in the plans should be implemented by 2026.

European Central Bank President, Christine Lagarde, estimates that “if Member States use EU funding correctly, we could be looking at a 1.5% real output growth in the Euro area in the medium term”.

Currently, the European Commission has approved eighteen national recovery and resilience plans and funding will soon start to be released into the economy.

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Each plan should effectively address challenges identified in the European Semester, particularly the country-specific recommendations adopted by the Council of 2019 and 2020.

In addition, each plan is expected to contribute to the four dimensions outlined in the 2021 Annual Sustainable Growth Strategy, which launched this year’s European Semester cycle.

- Environmental sustainability
- Productivity
- Fairness
- Macroeconomic stability

Many Member States<sup>5</sup> had broad sectoral packages that aided the manufacturing sector but below we point out some examples specifically geared to manufacturing:

- **Ireland: 1.** Sustaining Enterprise Fund. For manufacturers with 10 or more employees that are vulnerable but viable; it permits €100,000- €800,000 packages of stimulus that are 50% non-repayable (e.g. a grant) of up to €200,000. **2.** COVID-19 Business Financial Planning Grant. A grant of up to €5,000 to aid businesses to understand how to access private (e.g. bank) financing to support their manufacturing businesses throughout the crisis.
- **Italy** set-aside: €280 million of grants to support the food & drink manufacturing sector that was affected by local restrictions; €5 million to support

the fashion manufacturing sector in investment projects in design, innovation, and the enhancement of Made in Italy; €245 million in favour of the textile and fashion, footwear, and leather goods sectors entitled to a 30% tax credit, to contain the disadvantageous effects of inventories of products in the warehouse, caused by the Covid emergency; a €500 million Technology Transfer Fund to support the development of strategic technologies for the country through investments in venture capital in start-ups and innovative SMEs; €800 million to help companies affected by the coronavirus outbreak and support the development of coronavirus-relevant products.

- **Portugal** set-aside: a €30 million fund to strengthen local manufacturing that is innovative (e.g. contains a service element) to build back a more sophisticated industrial base.
- **France:** Greening of the Economy<sup>6</sup> – €30 billion will be earmarked to speed up the greening of the economy, for investments in energy performance renovations for buildings, in “green” infrastructure and mobility, to reduce the carbon-intensity of manufacturing processes, and in the development of new green technologies (hydrogen, bio-fuels, recycling).

The pandemic has also shown the fragility of our value chains. The European Commission and EU countries are also taking actions to mitigate the impact of the coronavirus pandemic on the transportation sector.

To keep freight moving freely and efficiently across the EU, on 23 March 2020 the European Commission issued the ‘Green Lanes’<sup>7</sup> – border crossings open to all freight vehicles carrying goods where any checks or health screenings should take no more than 15 minutes.

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On 25 January 2021, amid new national measures that also threatened the integrity of the internal market for freight, the Commission proposed to update the coordinated approach on free movement restrictions. Member States should also seek to avoid disruptions to essential travel, notably to keep transport flows moving in line with the 'Green Lanes' system and to avoid supply chain disruptions (Figure 5). Overall, the 15-minute target for any controls or health checks is respected most of the time.



Figure 5: European Green Lanes. Source: European Commission

The **UK** faced a decrease of more than 10% in GDP, registering the worst performance in the European continent just after Spain. In the United Kingdom, some important challenges are related to the logistics sector. The pandemic had a huge impact on transportation and challenged logistics, which is actually one of the main service sectors connected to manufacturing. Shipping costs and the costs of transport are accelerating at quite a fast rate at the moment, and this is a huge concern for manufacturers.

Other challenges are related to the shortage of shipping containers, the increase in the cost of raw materials, and labour availability. It is important to highlight, though, that these issues were not only due to

the pandemic, but they were already there due to the Brexit disruption, which the pandemic worsened. In order to tackle these problems and have a recovery in the manufacturing sector the main challenges should be related to technological innovation, digitalisation and the improvement of productivity, which in the UK is quite low at the moment.

Now the UK seems to be on track with the vaccination campaign, which is progressing reasonably well. Aside from just economic figures, the manufacturing sector really highlighted its value to the UK economy, especially concerning the ventilator challenge, when manufacturing stepped in, producing a record number of ventilators in a very short time.

On the other side of the Atlantic<sup>8</sup>, with a decrease of about 3.5% of the GDP, the **United States** has suffered less than the EU or the UK. Nonetheless, the manufacturing sector has also taken a huge hit there. The manufacturing sector in the USA has always suffered from a sort of neglect: this is quite clear, especially comparing American investments in manufacturing with the relative German or even British investment. For instance, the German Fraunhofer programme has an annual investment that exceeds an 8-year investment in manufacturing in the USA programme, and also the British Catapult programme exceeds the American investments in the Manufacturing USA programme. Although the UK has a much smaller economy than the USA, in a dollar to dollar, or pound to pound, comparison, British investment in the manufacturing sector is higher than that of the Americans. With the pandemic, a greater attention to manufacturing has been shown and now there is some stimulus that is directed towards it, which may partially bridge the gap with competitors. However, current indications are that the drivers to investment are mainly national security concerns and, to a lesser extent, environmental. American national security concerns are tied to COVID, in that there is a fear that defence supply chains could be vulnerable if there were a conflict. This recognition was heightened by the effects of COVID, so they are related. However, very little of the new

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investment is related to COVID. It is directed towards integrated circuit manufacture, and decarbonisation of the manufacturing sector.

The main challenges here are related to offshoring. As a matter of fact, the USA has offshored much of its manufacturing capability and many of the plants that were offshored were closed or temporarily nationalised. The supply chain faced a sort of disruption that defeated its purpose, questioned its security and whether or not at a time of crisis the supply chain can even function. Clearly, what we saw more than anything in the early months of 2020 was that the supply chain didn't function. Now, there is a recognition that there must be some level of domestic manufacturing for economic welfare and national security reasons, the latter being especially important to the USA because of its worldwide treaty obligations.

**India**<sup>9</sup> did not excel in terms of a stimulus package. The Government offered the equivalent of 15% of the GDP in stimulus but only approximately 10% of this has been new expenditure. 90% has been in the form of credit and loan guarantees without involving an actual expenditure of money.

On 28 June, Finance Minister Nirmala Sitharaman announced some fresh relief measures for the economy, the first such package after the second COVID-19 wave, focusing largely on extending loan guarantees and concessional credit for pandemic-hit sectors and investments to ramp up healthcare capacities.

The government pegged the total financial implications of the package, which included the reiteration of some steps that were already announced such as the provision of food grains to the poor until November and higher fertiliser subsidies, at 628,993 crore.

Economists, however, noted that the elements of direct stimulus in the package and its upfront fiscal costs in 2021-22 are likely to be limited. More stimulus steps may be needed to shore up the economy through the rest of the year, they said.

Moreover, India tried to support one of its most important manufacturing sectors, the domestic electronics hardware manufacturing sector through the Production Linked Incentive Scheme<sup>10</sup> issued on 1 April 2020. It offers a production-linked incentive to boost domestic manufacturing and attract large investments in mobile phone manufacturing and specified electronic components, including Assembly, Testing, Marking and Packaging (ATMP) units.

The scheme will extend an incentive of 4% to 6% on incremental sales (over base year) of goods manufactured in India and covered under target segments, to eligible companies, for a period of five (5) years subsequent to the base year as defined.

However, PLI is not working, mainly due to the fact that: 1. manufacturing is not incentivised to increase production as demand is critically low. Moreover, India is expecting a third wave (only 6% of the population is vaccinated) and this creates a lot of uncertainty and does not encourage investment. 2. In India, the majority of companies are MSMEs, that represent 29% of Indian GDP. Most of their workforce has no formal contract (90% of the Indian workforce is employed in the "informal" sector).

In **China**, the Chinese Government has adopted several measures, including:

- CIT and VAT incentives for companies producing medical supplies, used in relation to COVID-19;
- A longer tax loss carry-forward period (from five to eight years) for severely affected companies.

## KEY TAKEAWAYS AND RECOMMENDATIONS

The COVID-19 crisis has had an abrupt impact on the global economy. The economic shocks related to the second and subsequent waves have been more cushioned compared to the first wave. Most manu-

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facturing-based industries started recovering relatively quickly in Q3 2020, as confinement measures were increasingly lifted and as a result of various measures (e.g. the recognition of 'essential' sectors and their workers and green lanes to ensure transborder transport and supply chain functioning).

However, there are remarkable differences in performance amongst but also within sectors. The different trends in the COVID-19 effects are partially explained by the ability of businesses to go digital.

Overall, the pandemic has increased the awareness of the benefits of the digital and green transition, which needs to be coupled with investments and political drives. Since the outbreak of the pandemic, spending has been mostly focusing on healthcare and short-term measures, while the need to support industrial sectors through long-term investments to innovate (e.g. in new digital infrastructure like 5G, research in 6G, data centres, etc.) is crucial as well.

Ensuring sufficient investment in digital and technical re-/upskilling is also imperative as a way of increasing the resilience and competitiveness of businesses.

The economy will need to continue to rely on global value chains. However, the resilience of the value chains has been tested: the COVID-19 pandemic unveiled weaknesses, as many businesses were initially unable to cope with shortages in supplies caused by closed borders and closed manufacturing sites. Nevertheless, most supply chains quickly recovered and have been affected less severely during subsequent waves of infections. The overall view from industry and experts alike is that value chains can be strengthened through increased diversification rather than reshoring/onshoring. However, dependencies and risks can be reduced by strengthening international partnerships, diversification of suppliers, innovation reducing the need for certain resources, and circular economy approaches encouraging the reuse of materials. Cooperation in lowering trade tensions and removing tariffs and additional costs for firms and

consumers is also essential to mitigate the damage to activity and avoid further income losses for companies already struck by the crisis.

The speed of adoption of national plans and recovery measures is a crucial element of their success. However, speed should not be at the expense of insufficient analysis and superficial prioritisation. It is crucial to ensure that the plans are considering the specificities of the industrial tissue.

Going forward, the lessons learned from this experience, especially the cost of uncoordinated action and the value of well-functioning supply chains, need to guide the reactions to the next crisis.

As the roll-out of vaccination gradually installs hope, policy focus is turning to recovery packages that provide the foundations for stronger, more equitable and sustainable medium-term growth.

Structural policies might be able to support economies' ability to bounce back strongly and rapidly, especially if they focus on the demand and consumers' side. The objective is to achieve a recovery that also delivers more sustainable, resilient and equitable growth. Without structural reforms that boost growth, the ability of governments to deliver resilience and buffer future shocks may be limited.

## CONCLUSION

The COVID-19 crisis has strongly threatened the robustness of the industrial system. Manufacturing industries have been impacted by short-term supply shortages due to closed borders and factories. The response of the different countries varied in intensity and in terms of the policies implemented. Most manufacturing-based industries started recovering relatively quickly in Q3 2020, as confinement measures were increasingly lifted. The best practices that have proved to be most effective and the first studies of

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the impact of the pandemic on industrial ecosystems allow us today to outline a framework for action for an effective resilience of the productive world.

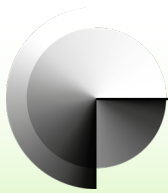
This has led to the following conclusions:

- People's safety at work and the avoidance of new closures are key factors for the recovery of the industrial and economic system. Therefore, among the medium and long-term objectives, it is essential to carry out the vaccination campaign rapidly.
- Among the long-term objectives, it will be necessary to respond to the need for new professional figures and continue to support the dual green and digital transition of industries.
- The scars in labour and product markets and the need to reallocate some workers and capital across sectors emphasise the urgent need for renewed and well-targeted structural policy reforms in all economies.
- The speed of adoption of the tailored national plans and recovery measures is a crucial element of their success.
- The cost of uncoordinated action and the value of well-functioning supply chains need to guide the reactions to the next crisis.
- Value chains should be made more efficient and sustainable in relation to any future impacts.

# REFERENCES

---

- <sup>1</sup> OECD. (2021, April). One year of SME and entrepreneurship policy responses to COVID-19: Lessons learned to “build back better”. Retrieved from: [https://read.oecd-ilibrary.org/view/?ref=1091\\_1091410-rxwx81cfwj&title=One-year-of-SME-and-entrepreneurship-policy-responses-to-COVID](https://read.oecd-ilibrary.org/view/?ref=1091_1091410-rxwx81cfwj&title=One-year-of-SME-and-entrepreneurship-policy-responses-to-COVID)
- <sup>2</sup> European Commission. (2021, March). THE SECTORAL IMPACT OF THE COVID-19 CRISIS. [https://www.consilium.europa.eu/media/48767/eg-note-sectoral-impact\\_fin.pdf](https://www.consilium.europa.eu/media/48767/eg-note-sectoral-impact_fin.pdf)
- <sup>3</sup> Mckinsey. (2020, May). To emerge stronger from the COVID-19 crisis, companies should start reskilling their workforces now. Retrieved from: <https://www.mckinsey.com/business-functions/organization/our-insights/to-emerge-stronger-from-the-covid-19-crisis-companies-should-start-reskilling-their-workforces-now>
- <sup>4</sup> OECD. (2021, April) Tax Policy Reforms 2021. Special Edition on Tax Policy during the COVID-19 Pandemic. Retrieved from: [https://www.oecd-ilibrary.org/taxation/tax-policy-reforms-2021\\_427d2616-en](https://www.oecd-ilibrary.org/taxation/tax-policy-reforms-2021_427d2616-en)
- <sup>5</sup> BusinessEurope. Overcoming the Covid19 crisis. Retrieved from: <https://www.busesseurope.eu/campaign/overcoming-covid-19-crisis>
- <sup>6</sup> KPMG. (2020, December). Government and institution measures in response to COVID-19. Retrieved from: <https://home.kpmg/xx/en/home/insights/2020/04/government-response-global-landscape.html>
- <sup>7</sup> European Commission. (2020, March). Communication from the Commission on the implementation of the Green Lanes under the Guidelines for border management measures to protect health and ensure the availability of goods and essential services. Retrieved from: [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0324\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020XC0324(01)&from=EN)
- <sup>8</sup> International Monetary Fund. (2020, August). COVID-19 Funds in Response to the Pandemic. Retrieved from: <https://www.imf.org/en/Publications/SPROLLS/covid19-special-notes>
- <sup>9</sup> The Hindu. (2021, June). Govt. unveils ₹6.28 lakh cr stimulus post second COVID wave. Retrieved from: <https://www.thehindu.com/business/Economy/nirmala-sitharaman-unveils-new-covid-recovery-package-expands-credit-relief/article35020572.ece>
- <sup>10</sup> Ministry of Electronics & Information Technology, Government of India. Production Linked Incentive Scheme (PLI) for Large Scale Electronics Manufacturing: Retrieved from: <https://www.meity.gov.in/esdm/pli>



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