



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



## VISUAL EXECUTIVE SUMMARY



# INDUSTRIAL DEVELOPMENT REPORT 2022

THE FUTURE OF INDUSTRIALIZATION  
IN A POST-PANDEMIC WORLD

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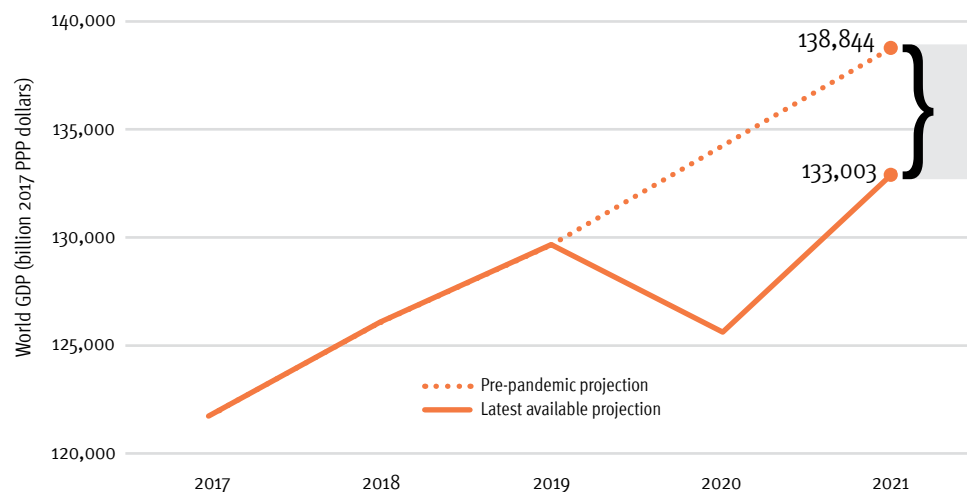
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# The COVID-pandemic had a severe global impact

From work to commerce and social interaction, all human activities and regions worldwide have been affected by the pandemic and the measures taken to contain it.

Estimated world output loss due to COVID-19 by 2021



**USD 5,842**  
billions  
projected  
world output  
loss



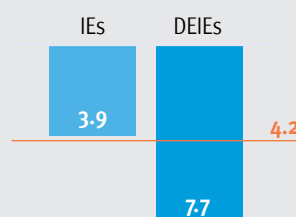
**255**  
million estimated  
job losses



**97**  
million more people  
are projected to be  
living in poverty

=

**4.2%**  
projected  
decline in  
world output



## Industrialized Economies (IEs) vs. Developing and Emerging Industrial Economies (DEIEs):

The average estimated loss of output of these two groups in 2021 relative to pre-pandemic estimates is 3.9 percent (IEs) and 7.7 percent (DEIEs), respectively.



**The COVID-19 pandemic has hit all countries, but some were more affected than others, reflecting deep underlying differences in their resilience against extreme events.**



*Note: Projected world output loss by 2021 is defined as the difference in 2017 PPP dollars between the level of GDP projected before the pandemic (October 2019, dotted line) and the latest available projection (October 2021, solid line). GDP= gross domestic product; PPP = purchasing power parity.*

*Source: The UNIDO Industrial Development Report 2022. <https://www.unido.org/idr2022>*

# A highly uneven impact across industries...

As the COVID-19 pandemic spread, its impact was felt more acutely in some industries, firms and workers than in others.

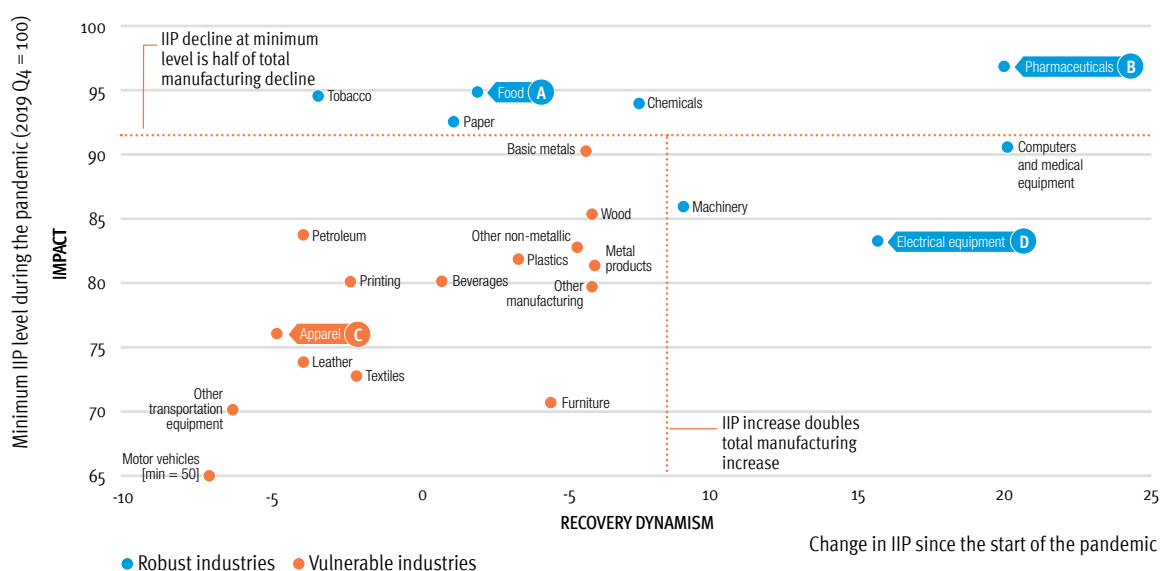


## Industries

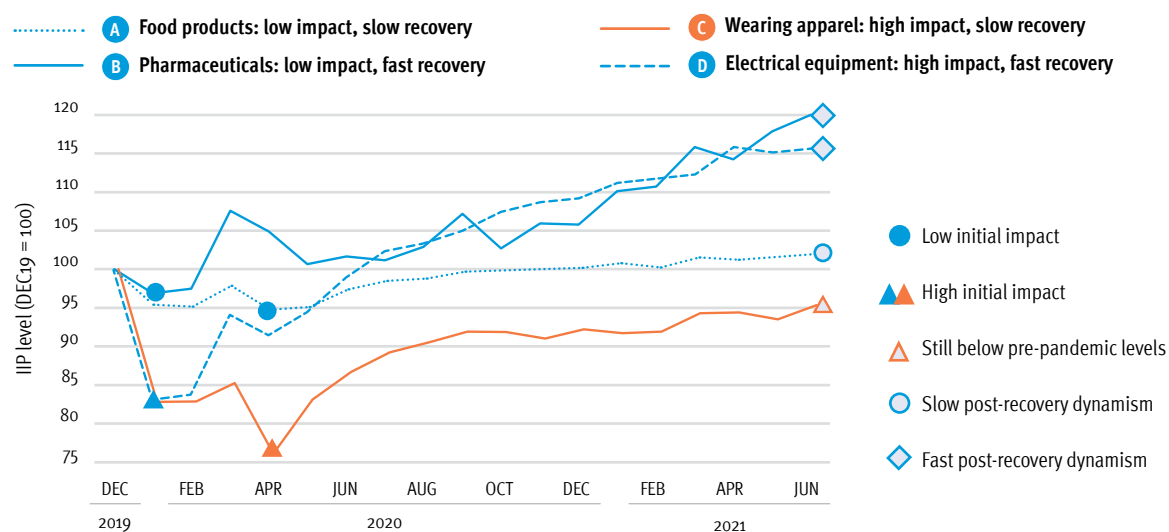


Two types of industries have emerged: Those that suffered a comparatively low impact or a strong negative impact with a swift recovery, and those which were hit hard and have not recovered fast.

### Typology of global industries according to the observed impact of COVID-19 and the speed of recovery, 2019 Q4–2021 Q2



### Heterogeneity of initial impact and speed of recovery in selected industries



Note: The IIP is seasonally adjusted. The figures show weighted averages for all countries with available data. The change in IIP since the start of the pandemic is defined as the difference in the level of the IIP between 2019 Q4 and 2021 Q2 (latest available data). IIP = Index of Industrial Production.

## ...firms and workers

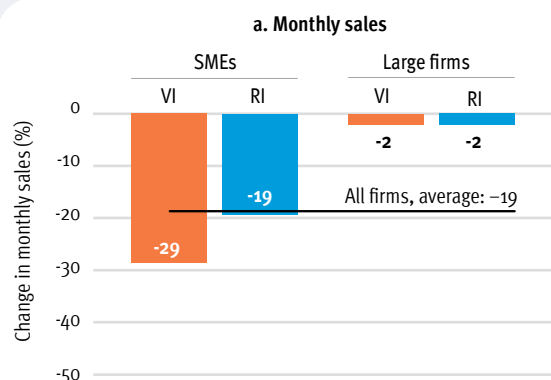


### Firms

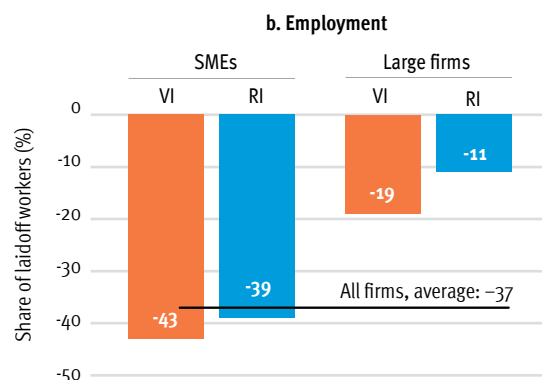


**SMEs have been disproportionately affected by the pandemic relative to large firms.**

#### Impact of COVID-19 on firms, 2019-2020



**SMEs in vulnerable industries reported a decline in sales after the pandemic which, on average, was 14 times higher than that reported by large firms in robust industries.**



VI = Vulnerable industries  
RI = Robust industries

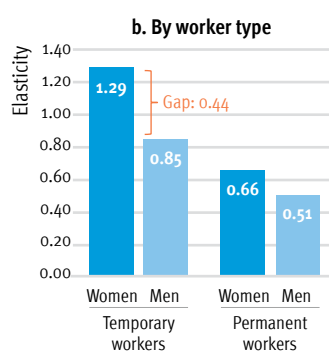
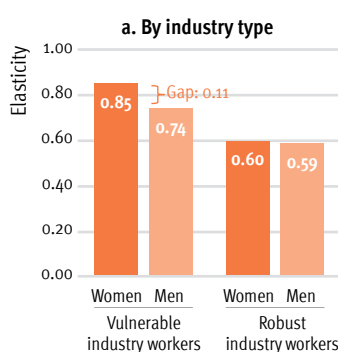
*Note:* SMEs have up to 99 employees. Large firms have 100 or more employees. Robust and vulnerable industries classified based on previous page. Sample includes about 2,900 manufacturing firms in 26 developing and emerging industrial economies.



### Workers



#### Elasticity of employment to sales: percentage of lost jobs for every 1 percent decrease in the value of money sales



**The pandemic has affected female and temporary workers more negatively than others. A given decrease in sales is associated with a larger decrease in the number of female workers than of male workers.**

*Note:* Robust and vulnerable industries classified based on previous page. Permanent workers work for a term of one or more fiscal years. Temporary workers work for a term of less than one fiscal year. Sample includes about 1,000 manufacturing firms in 26 developing and emerging industrial economies.

*Source:* The UNIDO Industrial Development Report 2022. <https://www.unido.org/idr2022>

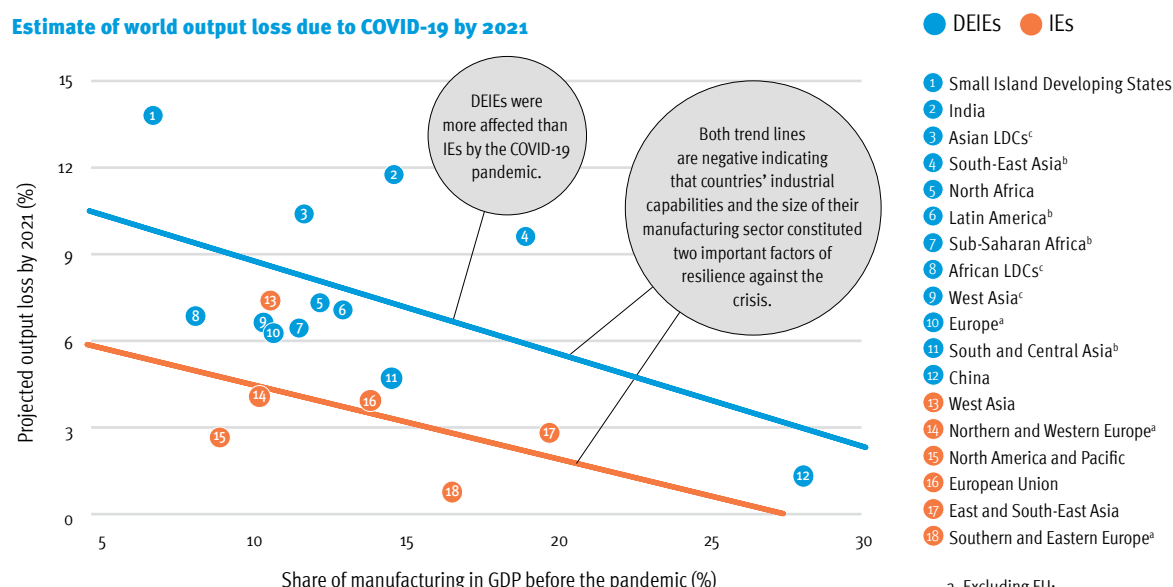


# Why did some countries fare better than others?

## The role of industrial capabilities

**Countries with a larger share of manufacturing in GDP weathered the pandemic crisis better.**

Estimate of world output loss due to COVID-19 by 2021

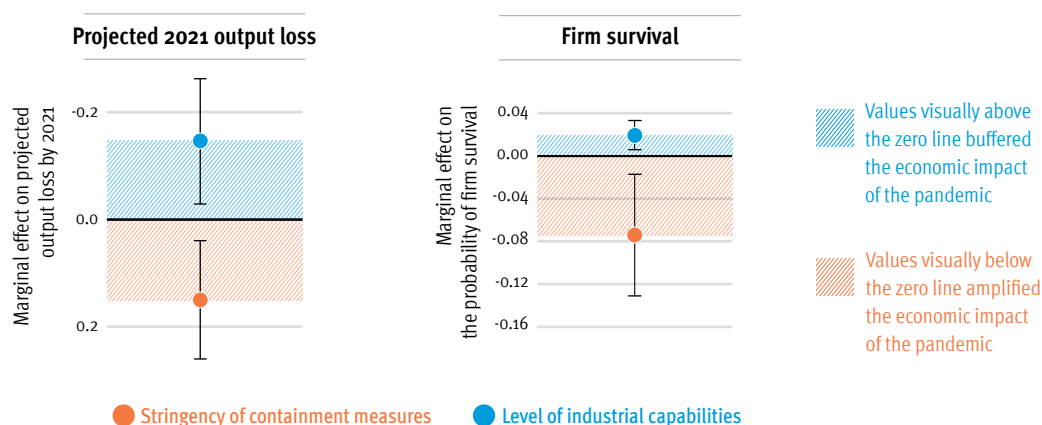


**The correlation between the manufacturing sector's size and the impact suffered may be influenced by a number of factors. Let us take a closer look at them.**

*Note:* The graphs show simple averages. *Projected output loss by 2021* is defined as the difference between the pre-pandemic projection of the level of GDP (October 2019) and the latest available projection (October 2021) and presented as share of the pre-pandemic projection. The solid line indicates the linear regression estimate. DEIEs = developing and emerging industrial economies; IEs = industrialized economies; LDCs = least developed countries.

### Determinants of the impact of COVID-19 on economic activity and manufacturing firms

**A country's preexisting industrial capabilities has had a mitigating effect on the pandemic's impact, while the stringency of containment measures has had the opposite effect.**



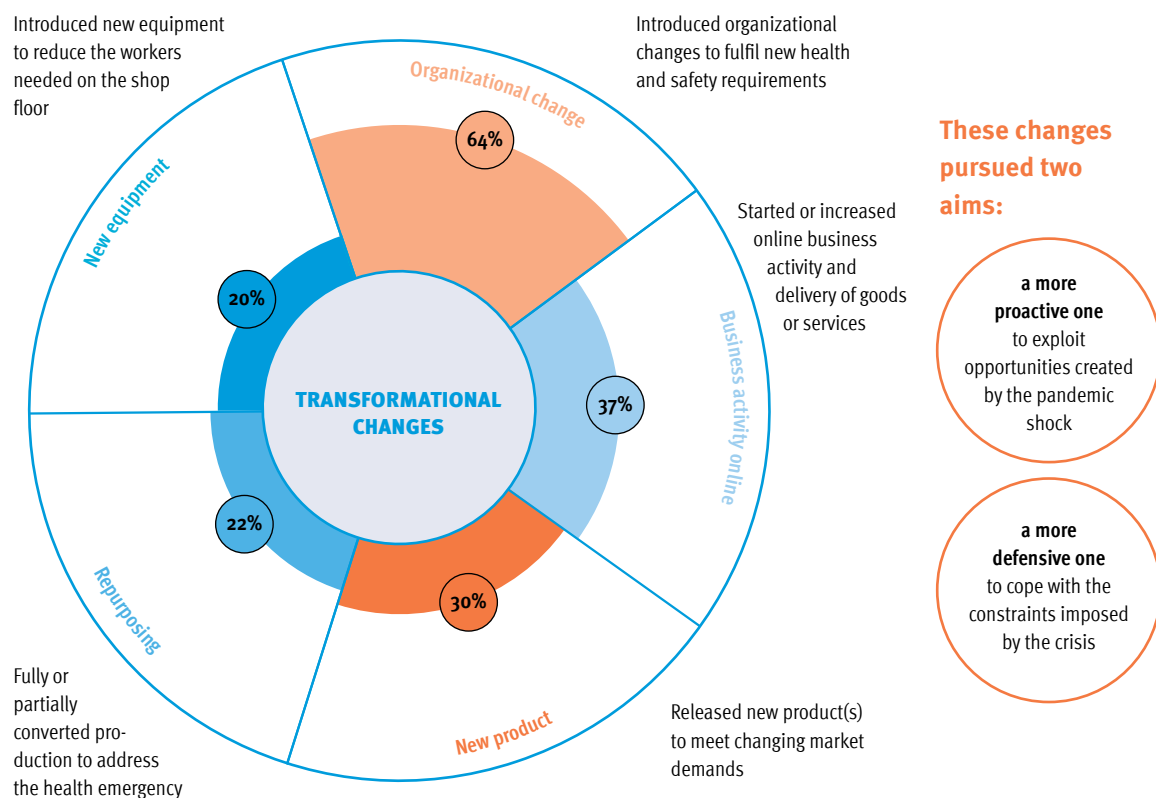
*Note:* The figure depicts coefficients (dots) and confidence intervals (at 95 percent) (lines) for the average marginal effects of the variables of interest on the projected output loss of each country for the year 2021 (first panel), and the probability of firm survival (second panel). *Stringency of containment measures* is defined as the cumulative average level of Oxford's Stringency Index by October 2021; *level of industrial capabilities* is defined as the level of UNIDO CIP Index in 2019. *Firm survival* is proxied with a binary variable that takes the value of 1 if the firm is fully operational at the time of the World Bank Enterprise follow-up survey, and 0 if it closed operations (temporarily or permanently).

Source: UNIDO Industrial Development Report 2022. <https://www.unido.org/idr2022>

# Why did some firms fare better than others?

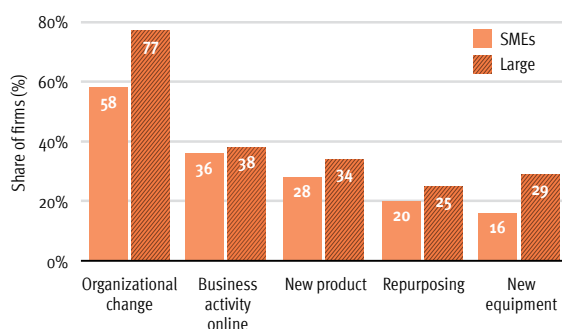
## Readiness to respond

Five changes were introduced by manufacturing firms.



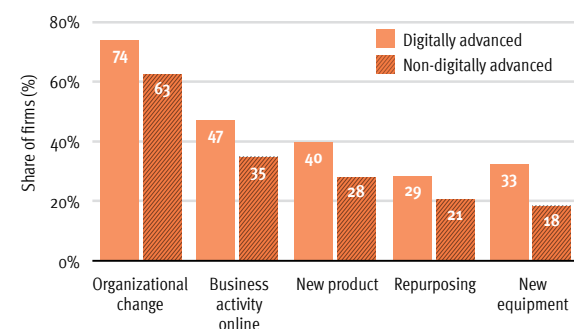
The readiness to introduce transformational change across the board was continuously lower than average among SMEs.

Transformational changes, by size



There is a positive correlation between the adoption of advanced digital production technologies and firms' response strategy.

Transformational changes, by firm type



Note: Sample includes about 2,800 manufacturing firms in 26 developing and industrial emerging economies. SMEs have up to 99 employees. Large firms have 100 or more employees. Digitally advanced firms are those adopting advanced digital production (ADP) technologies.  
Source: UNIDO Industrial Development Report 2022. <https://www.unido.org/idr2022>

# Three megatrends are reshaping industrial development

Megatrends share three characteristics:



They last several decades



They affect the social, economic and political spheres of industrial development



They have a global impact

## TECHNOLOGICAL CHANGE:

Rapid digitalization of production and other breakthroughs related to the fourth industrial revolution

## GLOBAL SHIFTS IN MANUFACTURING:

Rebalancing of world production from the North-Atlantic “traditional” industrial core towards East Asia

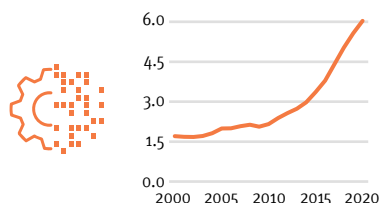
## INDUSTRIAL GREENING:

Transformation of industrial production to address growing concerns related to global warming and environmental degradation

Three indicators illustrate the speed and magnitude of these developments

### A. TECHNOLOGICAL CHANGE

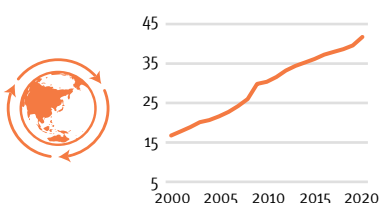
World industrial robot density (robots per thousand workers)



Robots are one out of several technological solutions that are revolutionizing industrial production. Robot density in manufacturing industries has increased fourfold globally in the last 20 years.

### B. GLOBAL SHIFTS IN MANUFACTURING

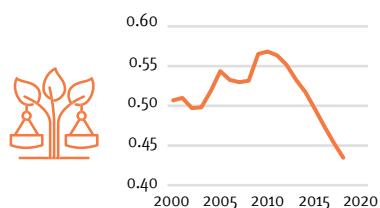
Asia-Pacific DEIEs share in world MVA (%)



Industrial production is rapidly shifting towards Asia, not only in terms of quantity but also in terms of quality. Asia's share in world manufacturing value added has increased almost threefold in the last 20 years.

### C. INDUSTRIAL GREENING

World industrial CO<sub>2</sub> emissions per unit of MVA (kilograms per 2015 \$)



Until 2010, the share of CO<sub>2</sub> emissions per unit of manufacturing value added continued to increase. A sustained decline after 2010 puts the level of 2018 at 15% below that of 2000.

Note: Industrial robot density is defined as the total stock of industrial robots divided by the total number of manufacturing economies; MVA = manufacturing value added.

Source: The UNIDO Industrial Development Report 2022. <https://www.unido.org/idr2022>

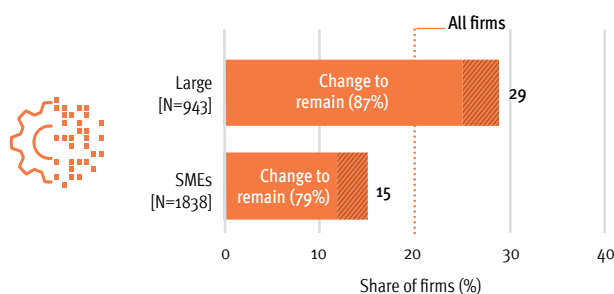


# Preliminary evidence shows that COVID-19 is reinforcing these megatrends

The pandemic has accelerated technological change, global shifts in manufacturing and industrial greening in developing countries. These changes are here to stay.

## A. TECHNOLOGICAL CHANGE

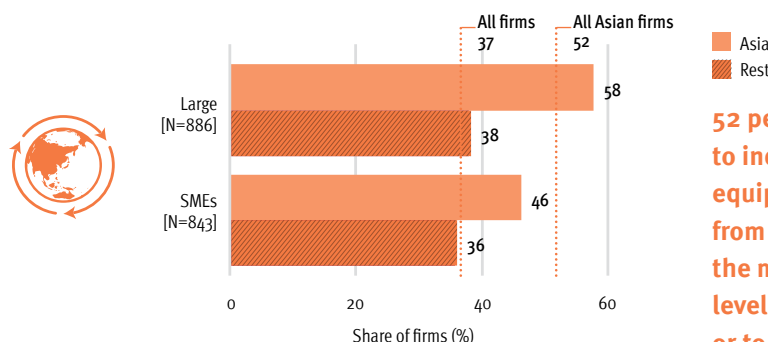
Firms introducing new equipment to reduce workers on the shop floor (i.e. automation) in response to the pandemic



The pandemic has forced many manufacturing firms to make decisions on automation. This was particularly important in large firms, where about 30 percent indicated that they introduced these changes in response to the pandemic. The majority expect these changes to be permanent.

## B. GLOBAL SHIFTS IN MANUFACTURING

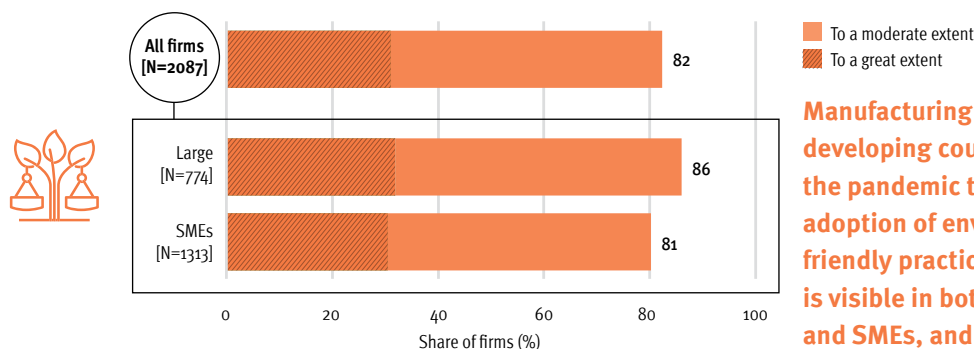
Firms planning to increase post-pandemic investments in new equipment



52 percent of Asian firms planned to increase investments in new equipment. Their responses differ from those of other regions, where the majority of firms expected their level of investment to decrease or to remain the same.

## C. INDUSTRIAL GREENING

The pandemic has triggered the adoption of new environmental-friendly practices

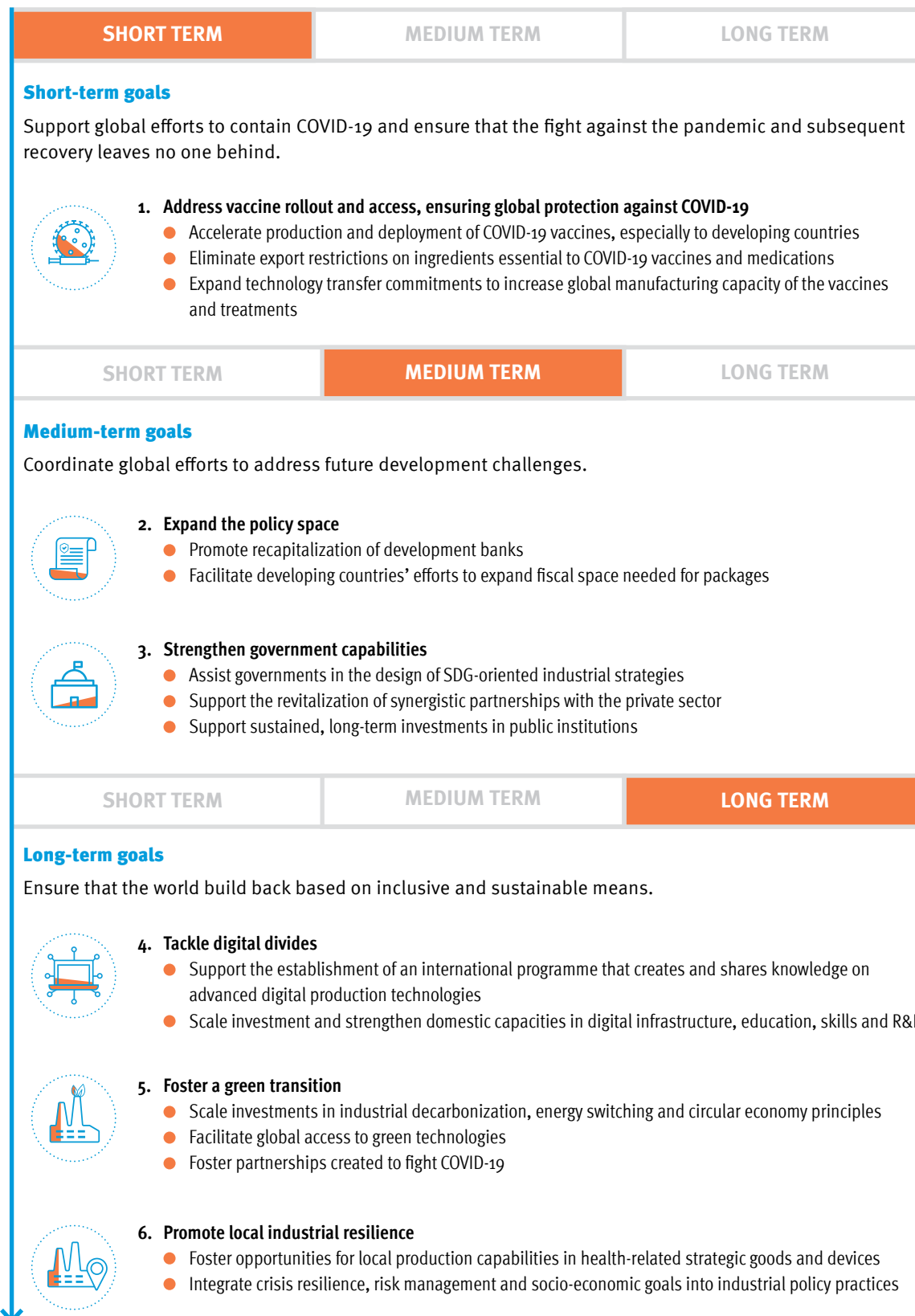


Manufacturing firms in developing countries expect the pandemic to induce the adoption of environmentally friendly practices. This trend is visible in both large firms and SMEs, and across the three regions where data has been collected.

Note: Sample includes manufacturing firms from 26 developing and emerging industrial economies. SMEs have up to 99 employees. Large firms have 100 or more employees.  
Source: UNIDO Industrial Development Report 2022 <https://www.unido.org/idr2022>

# Building Back Better

## A Call For Action to the International Community — to Support an Inclusive, Sustainable and Resilient Industrial Recovery



Note: R&D = research and development; SDG = Sustainable Development Goal.  
 Source: UNIDO Industrial Development Report 2022. <https://www.unido.org/idr2022>



“This report provides a comprehensive analysis and valuable new evidence on the impact of the COVID-19 pandemic and the importance of industrial capabilities and digitalization in mitigating the negative impact of the pandemic and in strengthening resilience for post-pandemic recovery. It highlights the role of digital transformation, international coordination and global cooperation of industrial policy for building back better for all. The report is an important, timely and visionary guide for governments and policymakers at various levels to develop an effective solution for a more inclusive, resilient and sustainable development in the post-pandemic world.”

Xiaolan Fu, University of Oxford

“UNIDO brilliantly underpins policy responses and the contributions of the industrial sector in overcoming the challenges of the COVID-19 crisis. An endemic SARS CoV-2 can lead to recurrent aggressive variants, particularly if less developed countries do not receive massive immunization assistance. Long-term economic growth is also threatened by the jump in poverty and underemployment, foreshadowing a deepening of the social, industrial and digital divide between developed and developing societies. More than ever, international cooperation for both a broad, post-pandemic recovery of investments in sustainable energy and infrastructure as well as increased digitalized industrial development is essential to socially equitable and sustainable global growth.”

Luciano Coutinho, University of Campinas



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