

## CHAPTER IV

# INVESTING IN SUSTAINABLE RECOVERY



# INTRODUCTION

The COVID-19 pandemic has hit the global economy hard. It has been a shock to gross domestic product (GDP) worldwide, with negative growth in most countries and sharp reductions in growth in some. It has hit incomes, especially of lower-income segments of the population, increasing inequality. Its effects are spread unevenly around the world, with many developing countries – unable to provide the level of income support available in developed countries – limping through the crisis and potentially facing long-term social and economic consequences.

International production, an engine of global economic growth and development, has been seriously affected. Global trade received a big initial shock, although the decline in trade by the end of 2020 was less severe than initially feared owing to dynamism in the final quarters of the year. Global investment was hit much harder, with a decline by one third over 2019 levels and major shocks to greenfield investment in industrial and infrastructure projects – the most productive kind.

With vaccine programmes now being rolled out – albeit at very different speeds around the world – attention is shifting towards recovery priorities. The focus of both policymakers and firms is on building back better: reviving and revving up the economy in such a way that it becomes both more sustainable and more resilient to future shocks.

For firms, especially the largest multinational enterprises (MNEs) engaged in complex international production networks, a key priority is making their supply chains more resilient. Many are expanding inventories of key components, diversifying supply sources or increasing flexibility to allow the shifting of production between facilities in different locations. In some industries, especially those more exposed to policy pressures – such as pharmaceuticals or medical equipment, but also strategic growth industries – there is talk of the need to restructure international production networks, with capacity moving closer to home or spread across multiple locations, which would have important implications for cross-border investment flows in the coming years.

Governments are already fully engaged in supporting their populations and business communities through the crisis, with those in rich countries having rolled out huge rescue packages over the past year. They are now gearing up to direct new investment to growth priorities, with developed countries able to direct public funds to sizeable recovery investment packages and poorer ones relying on alternative sources of finance, such as development banks, and on initiatives to attract foreign capital. The focus of spending is on infrastructure, on growth sectors – especially the digital economy – and on the energy transition, in many cases building on or accelerating existing plans. Again, the implications for international investment flows in the coming years are likely to be significant.

This theme chapter of *WIR21* looks at the possible impact of the post-pandemic priorities of both firms and governments on global investment patterns over the coming years. It aims to identify challenges and risks that could damage the prospects for a big push of investment in sustainable development and suggests policy options to counter them. As such, the chapter serves to address General Assembly Resolution 75/207, which requests UNCTAD, through its World Investment Report, to inform the General Assembly on the impact of the COVID-19 pandemic on investment in sustainable development, and to make recommendations for the promotion of SDG investment.

In part, the chapter builds on the theme chapter of *WIR20*, which projected possible trajectories for international production and investment over the decade to 2030 through

an analysis of transformative forces including policy pressures, technology developments and the sustainability imperative. These forces continue to form the backdrop of trends discussed in this chapter which, focuses more specifically on the actions of firms and governments aimed at post-pandemic recovery.

The scope of the chapter cuts across typical international production investment in industry and investment in infrastructure (in particular through international project finance) to reflect the distinct roles played by the public and private sector, by different types of investors (MNEs, investment funds, institutional finance) and by different financing mechanisms (equity investment, debt). The two forms of international investment flows are closely intertwined (box IV.1) and exploiting synergies between them can provide a boost to sustainable recovery efforts.

**Box IV.1. Two types of international investment for development**

Cross-border direct investment for development encompasses two main types of flows: international production investment in resources, manufacturing and services linked to global value chains (GVCs), and international infrastructure investment in physical and social essentials such as transport systems, utilities, industrial zones, and health and education facilities. Despite their equal relevance for development, the two forms of investment are substantially different. Whereas international production investment is carried out mainly by individual MNEs, international investment in infrastructure often involves multiple investors and lenders. The modalities surrounding ownership, control and financial obligations can vary greatly for infrastructure investment depending on individual projects. Although only a part of international infrastructure investment translates into FDI, it acts akin to FDI because of its stability and long-term management interest.

International production investment has been the mainstay of most editions of the *WIR* since the early 1990s. Investment policy has traditionally pivoted around this type of investment because of its relevance for industrialization, export promotion and structural change. In recent years, investment policymakers and promotion agencies are increasingly focusing on infrastructure investment, in part because of the relevance of such investment for the SDGs. This shift in focus could intensify in the aftermath of the pandemic, which has exacerbated challenges for GVCs and deepened the SDG investment gap in developing countries.

**Box table IV.1.1. Features of the two main types of international investment for development**

	<b>Production investment</b>	<b>Infrastructure investment</b>
<b>Types</b>	<ul style="list-style-type: none"> <li>Resource-, efficiency- and market-seeking investment in the context of GVCs</li> </ul>	<ul style="list-style-type: none"> <li>Strategic-asset- and market-seeking investment less dependent on international trade</li> </ul>
<b>Main actors</b>	<ul style="list-style-type: none"> <li>MNEs</li> </ul>	<ul style="list-style-type: none"> <li>Investment funds, financial institutions, development banks and MNEs</li> </ul>
<b>Ownership advantages</b>	<ul style="list-style-type: none"> <li>Technology, intellectual property, network access and managerial advantages</li> </ul>	<ul style="list-style-type: none"> <li>Financial strength, risk management skills and project management reputation</li> </ul>
<b>Nature of intrafirm transactions</b>	<ul style="list-style-type: none"> <li>Trade transactions and financial flows</li> </ul>	<ul style="list-style-type: none"> <li>Financial flows</li> </ul>
<b>Policy relevance</b>	<ul style="list-style-type: none"> <li>Long-standing focus of development strategy, industrial policy, investment policy and IPAs</li> </ul>	<ul style="list-style-type: none"> <li>Cross-border investment a relatively recent focus in the context of the SDGs</li> </ul>
<b>Selected data sources</b>	<ul style="list-style-type: none"> <li>Balance of payments (FDI)</li> <li>Greenfield project announcements</li> <li>Foreign affiliate statistics</li> </ul>	<ul style="list-style-type: none"> <li>Balance of payments (FDI, debt, portfolio)</li> <li>International project finance announcements</li> <li>Bilateral/multilateral financing commitments and disbursements</li> </ul>

Source: UNCTAD.

The discussion in the chapter is structured as follows:

- Section A briefly looks at the behaviour of international investors during and after past crises, to inform and set expectations for likely developments as the current investment downturn subsides.
- Section B starts off the analysis of investment priorities for the recovery phase from the perspective of firms engaged in international production, exploring the possible investment implications of the drive towards more resilient global supply chains.
- Section C takes a country perspective on investment in sustainable recovery, arguing that the development of productive capacity is a helpful guide in setting investment priorities, and showing where international investment both contributes more and took the hardest hit during the pandemic.
- Section D discusses the implications of recovery investment packages that have been adopted or are being developed around the world for international project finance, especially in infrastructure sectors.
- The final section E presents policy conclusions, drawing parallels with the Big Push for investment in the SDGs long advocated by UNCTAD.

# A. FDI AFTER THE PANDEMIC: PARALLELS WITH PAST CRISES

*The experience of past FDI downturns shows that, whereas financial flows and transactions may rebound relatively quickly, a real investment recovery could take some time to gather speed. Policy responses are important factors shaping the post-crisis investment landscape.*

The last major global crisis that offers parallels to the COVID-19 pandemic in terms of its impact on global FDI flows was the global financial crisis (GFC). That crisis, in addition to causing a short-term shock for FDI, also coincided with a shift in its long-term trajectory. In the decade since then, FDI growth was significantly lower than before the crisis. Numerous other crises – regional and global, financial, debt or currency related, and with varying economic repercussions – have affected FDI and the operations of MNEs over the last few decades. The experience from these crises, with respect to their impact on investment on the one hand, and the role of investment during recovery phases on the other, can offer some lessons for harnessing its potential for sustainable recovery (table IV.1).

Table IV.1.	FDI and global crises: 10 facts
1	FDI flows react more strongly to crises than trade and GDP and take both more time and more (policy) effort to recover.
2	FDI flows are, nevertheless, more stable and resilient than other international financial flows and external sources of finance for developing countries (such as portfolio flows or bank loans).
3	International deal activity (including both project finance and M&As) falls further and takes longer to recover than domestic deal activity.
4	Greenfield investment and international project finance, important for developing productive capacity, take relatively longer to recover than the financial and transactions components of FDI.
5	Recovery of investment in lower-income developing countries can take relatively long due to both their greater reliance on greenfield projects and investors' more risk-averse behaviour after crises.
6	M&As during crises include opportunistic purchases but also transactions necessary for corporate restructuring.
7	MNEs and their foreign affiliates adjust to crises and recover relatively quickly compared with smaller domestic firms.
8	The presence of resilient MNEs in host countries can support faster recovery from crises, depending on linkages with domestic suppliers.
9	Most post-crisis policy interventions have aimed at facilitating or stimulating FDI (rather than restricting it), to support recovery.
10	FDI downturns can presage a shift in sectoral patterns and types of investment.

Sources: UNCTAD, based on various sources (see also box IV.2).

There is a significant body of research on the impact of the GFC as well as other global and regional crises on FDI and on the role played by FDI during and after crises. It shows that (i) investment responds to crises and economic distress in a way that is different from other capital flows; (ii) its response varies depending on the development status of economies, and it varies by industry and type of investment; and (iii) policies on investment during and after crises can be crucial in determining the scale and scope of the contribution of FDI to the recovery. This section offers a brief complementary analysis on the differential effects of crises on greenfield investment and project finance, the two types of investment that will be most important for sustainable recovery, and a perspective that is largely missing from existing research (box IV.2).

#### Box IV.2 FDI during and after global crises: existing research

A significant body of research looks at the response of MNEs to global crises and the resulting patterns of FDI. The literature can be divided into three strands: (i) FDI patterns and responses from a macroeconomic perspective, (ii) FDI and MNE behaviour and (iii) FDI and policy responses.

*The first strand of literature analyses FDI as a financial flow affected by macroeconomic crises.* FDI is the largest source of external finance for many developing countries, and in recent years, especially during financial crises, has been more stable than portfolio investment and bank lending. Most studies find that FDI is steadier and more resilient than other financial flows because of its link with productive capacities, and the inherent sunk costs (for the Asian financial crisis, see Thompson and Poon, 2000; Athukorala, 2003; Aguiar and Gopinath, 2005; Doraisami, 2007; for the GFC, see Vintila, 2011; Rugman, 2013; Lund et al., 2018). However, there is evidence showing that FDI was affected more than macroeconomic variables such as GDP or trade (for the Asian crisis, see Doraisami, 2007; Thangavelu, Yong and Chongvilavivan, 2009; for the GFC, see Lund et al., 2018).

*The second strand of literature looks at investor and MNE behaviour.* It studies FDI from the business perspective, especially in relation to the role of MNEs during economic crises and in the recovery phase. For example, there is some evidence of MNEs from developed regions engaging in opportunistic acquisitions in emerging markets during financial or currency crises that do not affect their home markets (Krugman, 2000). Cross-border mergers and acquisitions (M&As) may play a role in restructuring economic activities for the post-crisis period, when M&As save the acquired firms and protect their activities in the aftermath of financial crises (Zhan and Ozawa, 2001). But other studies find both stabilizing and de-stabilizing effects. Moon et al. (2011) show a stabilizing role of FDI during the GFC, as MNEs bring both tangible and intangible benefits to host countries. Yet, Doraisami (2007) observes that FDI contributed to vulnerability rather than stabilizing the economy in Malaysia. Alfaro and Chen (2012) conclude that, although the footloose operation of MNEs may contribute to the volatility, vertical production and financial linkages may reduce the negative impact of the crisis in host countries. Enderwick and Buckley (2020) focus on the decision of relocation and regionalization as a result of crises, suggesting that a more regionally based world economy offers a better balance between efficiency and resilience FDI in supply chains. In this case, the costs of location shifting might be mitigated through emerging technologies.

*The third strand of literature investigates policy responses during economic crises.* Studies look at the need for reforming investment policies and promoting investment (Thomson and Poon, 2000), the role of investment liberalization and facilitation in the aftermath of the Asian crisis (Plummer and Cheung, 2009), the importance of the regulatory environment (Dornean, Isan and Oanea, 2012), and the need for industrial policy for upgrading productive activities (Szent-Iványi, 2016). Edgington and Hayter (2001) underscore the role of post-crisis FDI policies that actively sought foreign capital for recovery after the Asian financial crisis. Several studies look at changes in the sectoral composition of FDI post-crisis, including those driven by policy, and conclude that crises can be a turning point (for Asia, Edgington and Hayter, 2001, and Thangavelu, Yong and Chongvilavivan, 2009; for Eastern Europe, Szent-Iványi, 2016; for the Russian Federation, Khutko, 2020). Teigland, Lhermitte and Bax (2020) investigate the mitigating effects of stimulus and recovery programmes on FDI during the COVID-19 crisis. Kowalski (2020) analyses the policy measures adopted in response to health crises and concludes that they may accelerate the move towards less openness to FDI.

Two areas remain relatively unexplored in the literature. First, despite the different roles played by cross-border M&As and greenfield investments in restructuring economic activities (Nocke and Yeaple, 2008), most studies use FDI data and relatively few are based on greenfield and international project finance data, which can be more relevant for the analysis of the impact of crises on investment in productive capacity. Second, analyses of how FDI shapes the economy after economic crises in developing and least developed countries are limited. Brambilla-Macias and Massa (2010) argue that some of the detrimental economic effects of the GFC filtered through to Sub-Saharan Africa through FDI. Future studies will likely focus on how FDI evolves in the face of financial crises and its potential contribution to a sustained and inclusive recovery.

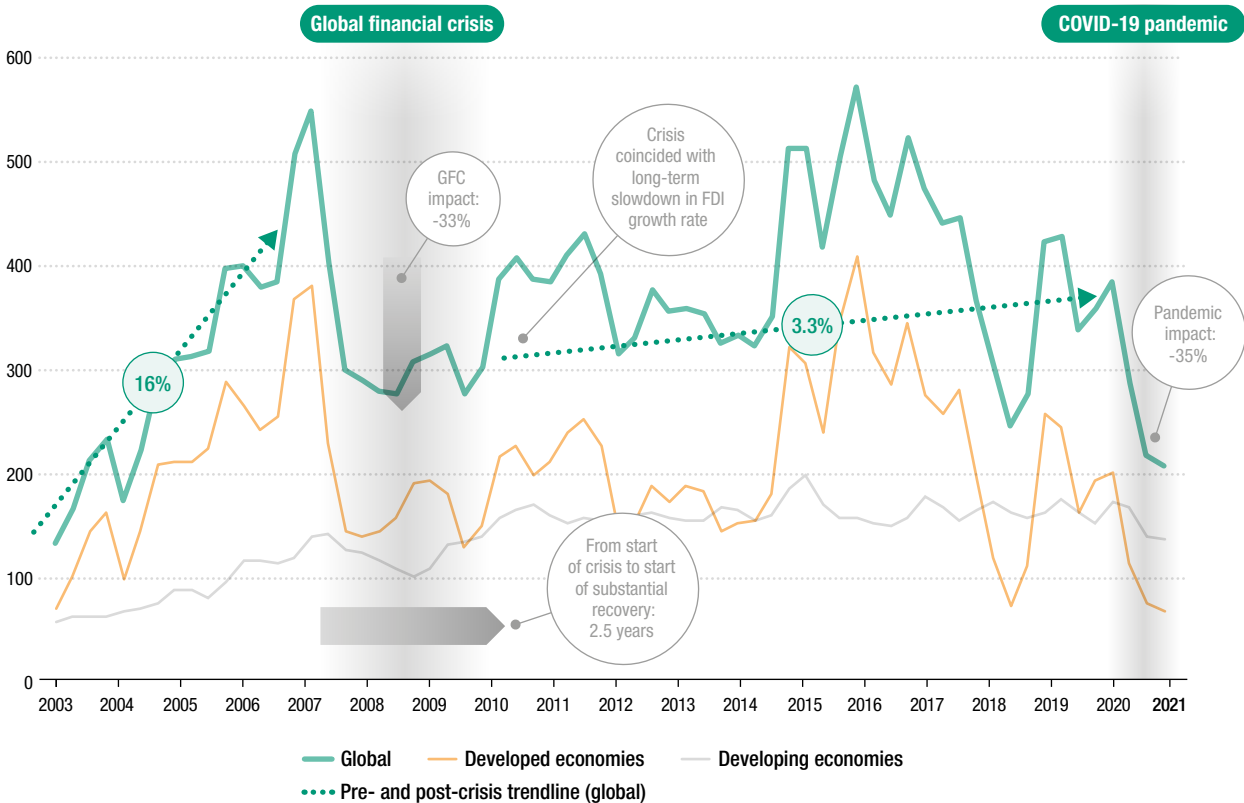
Source: UNCTAD.

Investment responses to the global financial crisis and the COVID-19 crisis show both similarities and differences that vary by the type of investment.<sup>1</sup> FDI, in addition to investment in new productive capacity, also contains intrafirm financial flows and merger and acquisition (M&A) transactions, especially in developed countries. However, the distinction between FDI and portfolio investment had eluded many commentators and research on the GFC (Rugman, 2013). These correlate closely with financial markets and often are more reactive to short-term economic conditions. Greenfield investment is more attuned to real economic trends and directly affects tangible activities. It is thus particularly important for developing countries. International project finance, often used for large infrastructure projects that require multiple investors, tends to include a sizeable debt component that is affected by interest rates and financial market trends. Yet, like greenfield investment, it is more closely linked to the real economy. Also, because it is often directed towards long-term projects, it has long gestation periods that cause delayed responses to crises.

### 1. Foreign direct investment

Although the GFC started as a financial market crisis, it had significant repercussions for FDI globally and offers some parallels to the COVID-19 pandemic (figure IV.1). The current crisis, like the GFC, has resulted in a steep decline – by about one third – in global FDI. And, although the pandemic has significant economic ramifications for developed and developing countries alike, as in the GFC the fall in FDI has been more severe in developed countries because of the larger size of the financial and M&A components.

**Figure IV.1. | FDI inflows during crises, long-term quarterly trend** (Billions of dollars)



Source: UNCTAD, FDI/MNE database ([www.unctad.org/fdistatistics](http://www.unctad.org/fdistatistics)).  
 Note: The start and end points of the global financial crisis coincide with the first liquidity intervention by central banks in the United States and the EU and the official designation of the end of the recession by the United States Government, respectively. Marks for years are at the first quarter (Q1) for each year.

Despite the similarities between the two crises in their effect on FDI, there are several key differences and some aspects for which making a comparison would be premature. For one, FDI was on an upward trajectory before the GFC, whereas heading into the pandemic the trend was generally flat. This could make the time it took for FDI to start its recovery after the GFC (about 2.5 years) an unreliable predictor for the start of a substantial recovery in the current context.

Another key difference arises from the different nature of the two crises. FDI is normally a relatively stable external source of finance in most economies, reacting to oscillations in financial markets, interest rates and exchange rates in a muted way and with a lag – certainly compared with portfolio investment flows and loans. In fact, the trough in FDI flows after the GFC was reached about 18 months after the start of the crisis. In the case of the pandemic, lockdown measures, site closures and travel restrictions affected FDI from the onset.

The experience from past crises suggests that the FDI recovery post-pandemic could take some time to gather speed. An analysis of five global and regional crises before the GFC shows that when the initial fall in FDI was limited the recovery was swift, but in the case of more significant FDI declines the downturn was protracted, lasting well beyond the point where GDP had recovered to pre-crisis levels (Poulsen and Hufbauer, 2011).

## 2. Mergers and acquisitions

M&A transactions, a significant part of FDI flows in developed economies, tend to react immediately to crises in financial markets. During the GFC the number and value of deals fell sharply, with cross-border deals declining more than domestic ones because of added uncertainty. With M&As, there are contrasting forces at play. Economic and financial conditions push M&A volumes down during times of economic distress, but corporate restructuring, asset sales and opportunistic purchases can push volumes up. The devaluation of companies and falls in exchange rates can make assets cheaper to purchase, leading to fears of fire sales. For example, during the Asian financial crisis, a string of acquisitions led to political concerns and concrete measures to protect assets. Although acquisitions increased in a few countries during the Asian crisis, the fluctuations in the overall number of deals in the region were not significantly higher than in other regions or during other periods (*WIR98*). However, individual transactions can become highly visible because of their strategic implications, especially in sensitive or strategic industries.

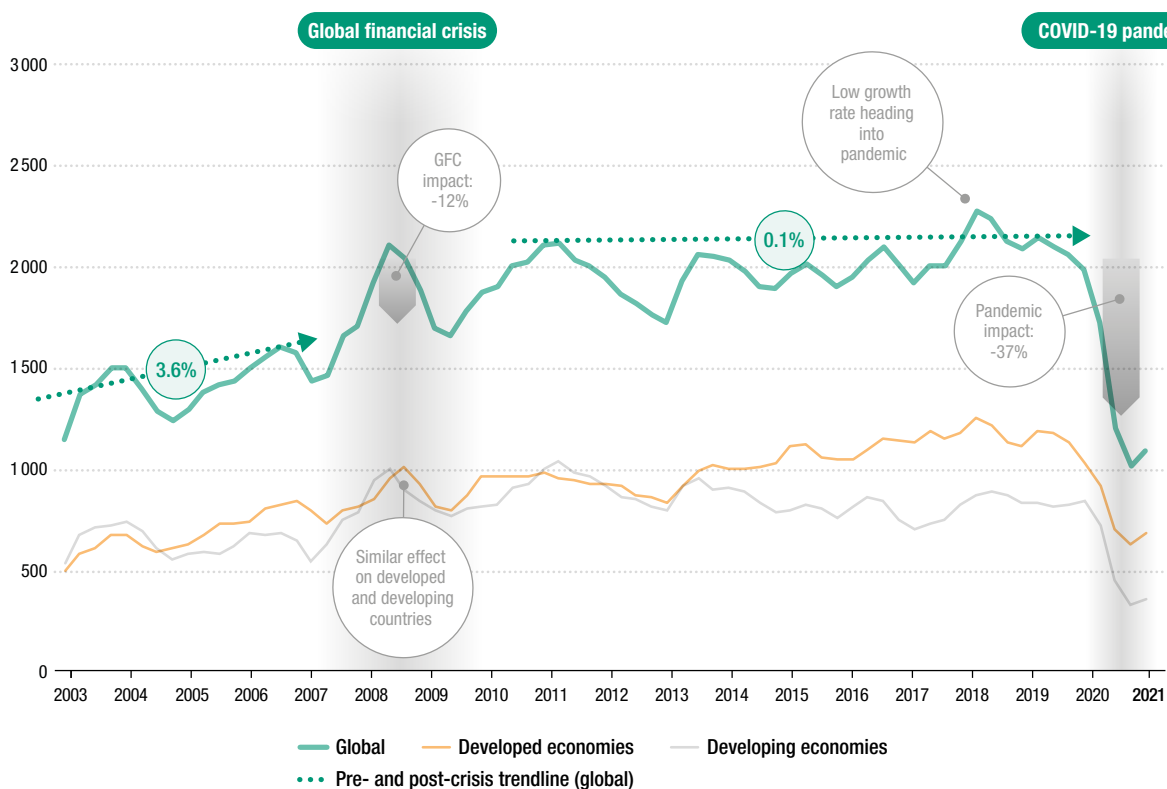
Although the number of M&A deals fell sharply after the pandemic started, their recovery was relatively swift, unlike after the GFC, which led to a more sustained downturn on account of its greater impact on financial markets. As in previous crises, there is no evidence today of fire-sale FDI at scale, despite some notable acquisitions and upticks in M&A activity in digital and pharmaceutical industries in some economies. Opportunistic acquisitions by MNEs are more common in asymmetric crises such as the Asian financial crisis; although the pandemic has had uneven effects across regions, it has brought economic hardship across the board. Nevertheless, the trend towards increased scrutiny of investment in strategic sectors, which was already underway before the pandemic, has now accelerated.

## 3. Greenfield investment

Greenfield projects directly affect the stock of physical capital and productive capacities, more so than other forms of investment. How they react during crises is thus of special relevance for developing countries. The drop in greenfield projects in manufacturing during the GFC was noticeable but not significantly outside the band within which the trend moved before the crisis (figure IV.2).



**Figure IV.2. | Greenfield project announcements in manufacturing, long-term quarterly trend** (Number of projects)



Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets ([www.fDimarkets.com](http://www.fDimarkets.com)).

Note: Marks for years are at the first quarter (Q1) for each year.

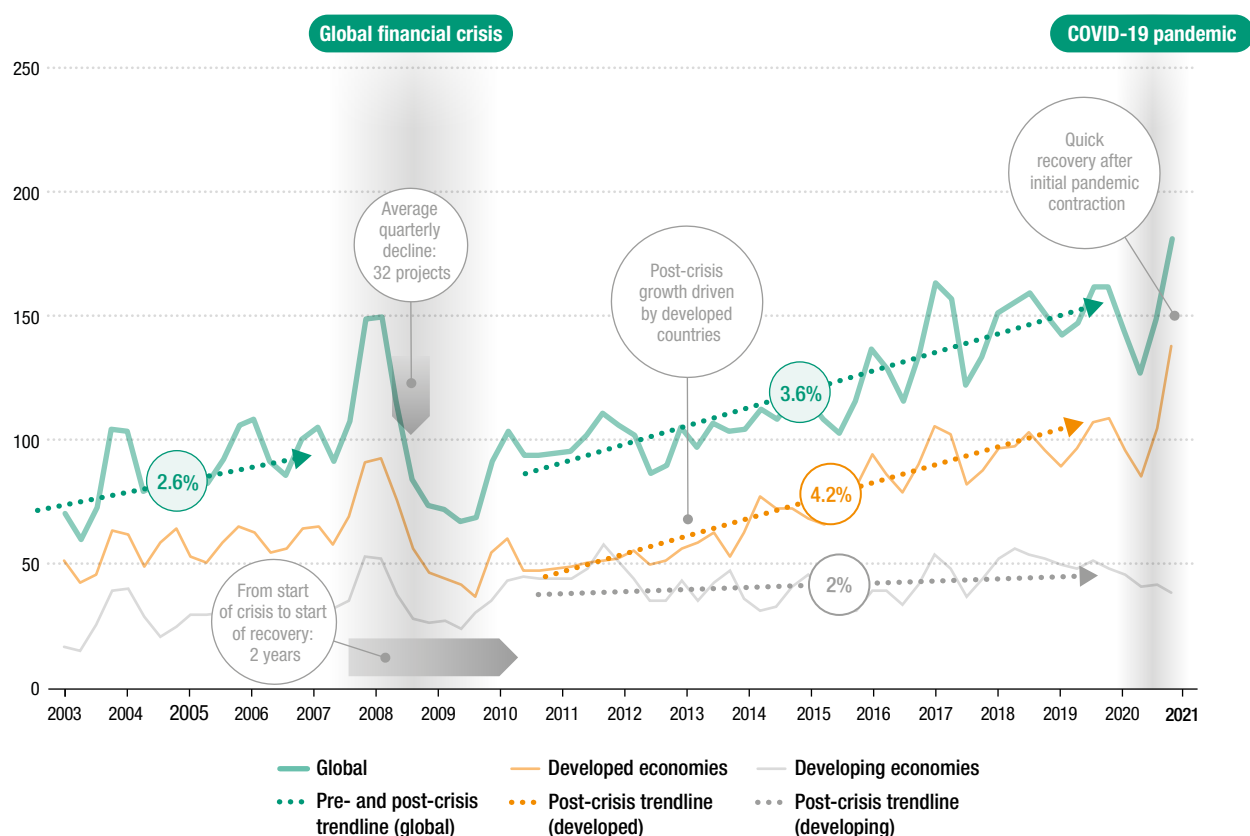
It was mostly noticeable for the four consecutive quarters of negative growth that started during the crisis. The structural loss was very limited and largely compensated by a brief growth spurt in the two years following the low point. However, growth stagnated for the rest of the decade, as it continued at a significantly lower level than before. The limited growth that remained was mostly concentrated in developed countries, with the trend line for developing countries virtually flat.

In comparison with the impact of the GFC, the decline in greenfield investment project announcements in manufacturing due to the pandemic is dramatic in both its magnitude (-37 per cent) and its immediateness. As in the GFC, the immediate decline in greenfield investment is similar for developed and developing countries (in contrast to the asymmetric effect of the crisis on total FDI).

## 4. International project finance

The number of international project finance deals dropped abruptly during the GFC. The time between the start of the crisis and the start of a substantial recovery was similar (slightly shorter) to that for broader FDI flows (figure IV.3), confirming that international project finance behaviour combines characteristics of both greenfield investment and the financial and transaction components of FDI. Unlike its effect on FDI flows and greenfield projects, the GFC did not result in a long-term contraction in the growth rate of international project finance – in part because this form of investment financing is a relatively young phenomenon and the use of the mechanism for large infrastructure and other projects

**Figure IV.3. | International project finance deals, long-term quarterly trend (Number of projects)**



Source: UNCTAD, based on data from Refinitiv SA.  
 Note: Marks for years are at the first quarter (Q1) for each year.

is still in its growth phase. However, most growth after the GFC again appeared to be concentrated in developed countries, whereas project numbers in developing countries stagnated. This can be explained, on the one hand, by the more limited fiscal space in developing countries to fund infrastructure projects and, on the other hand, by increased risk aversity – common after a shock – on the part of international project financiers.

Currently, although a dip due to the pandemic was noticeable in Q1 and Q2 of 2020, the drop is not comparable to the GFC in both intensity and duration, with growth having resumed in Q3 and Q4 and with no substantial deviation from the trend line. However, the trend in developing countries turned from stagnant to negative. The deeper impact of the GFC on international project finance compared with that of the pandemic can be explained by the link of this type of investment with financial markets, which remained subdued for longer during the earlier crisis. In contrast, the fiscal and monetary interventions in developed countries in response to the pandemic have boosted financial markets, translating into higher international project finance flows.

## 5. Investment policies

Large-scale interventions by governments around the world to stabilize economies during crises are an important factor shaping the investment landscape, either indirectly or directly (table IV.2). Macroeconomic interventions affect the fundamentals of investment. Investment-related policies, such as trade controls, production mandates or financial support for businesses affect the investment climate. Investment-specific policies directly

address the entry and operations of foreign firms. They may include investment promotion and facilitation measures, on the one hand, or restrictions and safeguards against opportunistic acquisitions in strategic or sensitive sectors, on the other. Comparing past crises with the current one reveals a significant overlap of investment policy responses, direct and indirect, as well as several key differences.

**Table IV.2. Policy responses to crises with an impact on investment – a comparison**

	Past crises	COVID-19 crisis
<b>Macro policy context</b>		
Monetary policy	Interest rate adjustments, reform and strengthening of financial systems (Asian financial crisis and other national/regional crises) Monetary easing, financial market stability (GFC)	Monetary easing, low interest rates; asset purchase programmes; long-term refinancing windows
Capital and foreign exchange	Foreign exchange and capital controls to stabilize currencies	Currency swaps, liquidity programmes; currency controls in some developing economies
Fiscal policy	Expansionary fiscal policies (Asian financial crisis) Fiscal stimulus, including transfers to the private sector, equity injections and bond purchases (GFC)	Fiscal stimulus, including additional spending, tax exemptions or deferrals; liquidity and income support; loan guarantees
<b>Investment-related policy areas</b>		
Trade	Temporary behind-the-border measures, mostly non-tariff measures to protect domestic industries; use of regional and interregional trade facilitation agreement mechanisms	Export bans and import facilitation in strategic sectors such as health; border closures for sanitary reasons
State support	State aid and bailouts, especially to activities “too big to fail”; government guarantees for impaired financial assets and bank deposits; temporary tax reductions for crisis-hit firms	Government guarantees for impaired financial assets and bank deposits; temporary tax reductions for crisis-hit firms; increased public investment in infrastructure
State investment (nationalization)	Temporary infusion of capital or acquisition of assets, and nationalizations in banking and selected high-employment manufacturing industries	Temporary acquisition of equity in companies in crisis-affected activities; nationalizations less frequent
Mandatory production	..	Health-related mandatory production measures
Competition policy	Measures against fire sales and to strengthen competition (mostly Asian financial crisis)	Measures to protect key sectors and essential security interests against non-desired acquisitions
Intellectual property measures	Measures to counter the slowdown of R&D activities and new patents	General authorization of non-voluntary licensing to speed up R&D; IP-holder-specific non-voluntary licensing to enable imports of medication
<b>Investment-specific policies</b>		
Liberalization	Relaxation of ownership rules, mode of entry and financing of operations to attract more FDI and to accelerate recovery, in some cases related to structural adjustment programmes (Asian financial crisis); only some countries increased restrictions (e.g. Argentina and Brazil in the GFC)	Liberalization efforts, largely limited to developing countries, reach a historical low point
Facilitation	Easing entry conditions and procedures to accelerate recovery from crisis, especially in export-oriented industries	Focus on the alleviation of administrative burdens and bureaucratic obstacles for firms; guidance through COVID-19-related measures; accelerated digitalization of facilitation services
Promotion and aftercare	Encouragement of investment in non-financial activities, strengthening targeting in export-oriented industries and selected value chains	Administrative and operational support during the crisis; acceleration of digitalization of services and remote services; more aftercare
Incentives	Provision of mostly fiscal incentives to non-financial activities coupled with performance requirements, targeting global value chains, especially in the automotive and electronics industries	Tax support for both foreign affiliates and their domestic suppliers through facilitation of tax filing and more benefits; financial and/or fiscal incentives to produce COVID-19-related medical equipment; incentives for conversion of production lines; sectoral focus on health and tech
Regulations and performance requirements	Regulations discouraging financialization and encouraging higher value added and more export-oriented activities	On health-related, resilience and sustainable development considerations, leading to a rise in local content policies in several developing countries
Restrictions	Foreign investment restrictions against fire sales (Asian financial crisis); restrictions on FDI in financial sector (GFC)	Introduction or reinforcement of FDI screening mechanisms across developed countries and economies in transition reach a historical high point, related to national security concerns over sensitive assets, heightened by the pandemic

Sources: UNCTAD Investment Policy Monitor (various editions); IMF country reports (various issues); IMF World Economic Outlook (various issues); OECD (2020).

Note: GFC = global financial crisis. This table synthesizes measures adopted in all countries, but with a special focus on developing and transition economies.

An apparent common investment policy feature across crises is an initial impulse towards some degree of protection of domestic industry. After the GFC, the G20 played an important role in calling for continued openness to ensure that international trade and investment could support the recovery. The pandemic, in contrast, came at a time when the directional trend in global trade and investment policy was already shifting towards more protectionism, and with new vulnerabilities exposed, the call for continued openness could prove more precarious. For certain strategic industries, including innovation-driven industries as well those related to health care, the pandemic has led to the enactment of new investment barriers.

At the same time, the pandemic response also includes many investment facilitation mechanisms. These include, for example, the streamlining of investment approval procedures, a shift towards online tools and e-platforms to expedite administrative procedures for investment, pandemic-specific services of investment promotion agencies (IPAs), and incentive schemes for health-related R&D or the production of medical supplies, as well as guarantees for suppliers in value chains (*WIR20*). The experience after past crises suggests that, apart from the short-term and context-specific investment policy responses to crises, some investment policy effects may persist for some time.

\* \* \*

In conclusion, evidence on past crises shows that FDI tends to be more stable and resilient than other financial flows but, depending on the intensity of the crisis, FDI flows may not return to pre-crisis levels for some time. Nonetheless, a recovery period does offer opportunities to facilitate shifts in investment towards more sustainable development-oriented assets and activities: several past crises brought about sectoral changes in FDI driven by policy stimulus.

Past crises also show that FDI responds differently in developing regions than in developed economies. The immediate fall in flows is less pronounced in the former due to the lower share of the financial component of investment, but the longer-term effect on greenfield projects can weigh on development and the return to healthy growth take longer.

Finally, MNEs adjust to shocks relatively quickly; international production indicators including foreign sales, assets, employment and capital expenditures by MNEs suffered less in past crises than FDI flows – a situation that holds true also in the current FDI downturn. That adds to the stability that the presence of foreign affiliates can provide to a host country, especially if there are significant linkages with the local economy.

# B. INVESTING IN RESILIENCE

## 1. Resilient global supply chains

*Supply chain resilience has become a top priority for policymakers and for firms. MNEs can improve supply chain resilience through network restructuring (involving investment and divestment decisions), supply chain management solutions and sustainability measures.*

The policy debate on investment in sustainable recovery is characterized by the desire to “build back better” and to make the global economy more resilient to shocks. Increasing resilience relies to a large extent on the efforts of MNEs to address vulnerabilities in their global supply chains. It is therefore important to factor in the business perspective to understand their likely course of action.

Notwithstanding a shift in business focus from efficiency to resilience (Antràs, 2020; Javorcik, 2020), policymakers and firms have different perspectives on resilience. The former prioritize economic and social resilience, equating it with reduced global interdependence; the latter rely on the resilience of international production networks for their efficiency and competitiveness.

This section provides a framework for the analysis of the strategic options open to MNEs to achieve greater supply-chain resilience. The focus is on the assessment of the likelihood of their response translating into changes in investment volumes and patterns due to the restructuring of international production networks, including reshoring, nearshoring or diversification. Production network restructuring applies to internalized MNE production processes but can also be extended to external suppliers and outsourced operations, where reshoring equates to local supply and diversification to multisourcing.

Network restructuring is only one of multiple options available to MNEs to build more resilience in their global supply chains. MNE choices will be driven by cost-benefit considerations and depend on the prevalent international production profiles of firms in different industries and on their business fundamentals (capital and labour intensity). Growth prospects (i.e. the need for new investments) and exposure to potentially disruptive policy and technology trends will also affect the cost-benefit balance.

This framework puts manufacturing at the centre of the discussion. It also addresses issues relevant to services. Whereas physical supply-chain shocks, such as natural disasters or the current pandemic, directly affect the functioning of supply-chain networks in manufacturing, new systemic risks are emerging, such as cybersecurity risks, with potentially disruptive impacts on supply chains in the services sector, as witnessed by the recent ransomware attack that crippled a major oil pipeline in the United States.

This section builds on the discussion of the future of international production in *WIR20*, which projected several trajectories for international production in the decade to 2030 based on technology, policy and sustainability trends. These macro trends are contextual conditions in this section. The focus is on how the business response to the pandemic is expected to affect MNE location decisions and, in turn, international production networks. Focusing on business priorities adds the resilience dimension to the driving forces that are shaping the future of international production and further qualifies the direction, timing and intensity of future trajectories.

## a. A business perspective on resilience

MNEs build their international production networks with the aim to maximize economic performance. Whether it is cost reduction, market expansion or access to raw materials or factors of production, the driving force of MNE location decisions is ultimately operational efficiency and bottom-line results. This has led to the long, complex and geographically fragmented networks of production sites and suppliers that characterize modern global supply chains. Concerns about the fragility of this system of international production are not new. They are periodically reignited by new supply-chain shocks.

In the 10 years before the pandemic, several exogenous shocks led to sizeable disruptions in international production, with global supply chains acting as long-distance transmitters and even amplifiers. For example, the floods in Thailand in 2011 caused greater production losses to Japanese producer Toyota than the contemporaneous Fukushima disaster (Haraguchi and Lall, 2015).

Recently, the blockage of the Suez Canal by a container ship caused major disruptions to international trade in goods – affecting about one tenth of global manufacturing trade and leading to supply shortages of many products.<sup>2</sup>

Supply-chain resilience is now a top strategic priority for countries and MNEs. The pandemic first and foremost uncovered failings in the international supply chains of health-care equipment and medicines. These were due in part to exogeneous challenges in the market (demand peak) and policy (trade restrictions), but also to the inherent fragilities of health-care supply chains. These failings were exemplified by the prolonged global shortage of personal protective equipment after the outbreak of the pandemic. The industry's initial inability to respond promptly and effectively to the demand shock was emblematic of the configuration of its global production networks, characterized by internationally fragmented and vertically concentrated supply chains, with half of the global supply of protective masks provided by China, and a “just-in-time” business model prioritizing lean production and low inventories (Gereffi, 2020).

Beyond health care, the pandemic triggered supply-chain problems in virtually all manufacturing industries. It exposed the role of GVCs in spreading disruptions across the globe, with lockdown measures in one country affecting production in another through shortages in the supply of critical inputs, and with blockages in logistics due to limited mobility affecting exchanges of intermediate inputs between actors in global production networks. In the automotive industry, for example, a shortage of parts coming from China forced Korean carmaker Hyundai to temporarily shut down all its car plants in the Republic of Korea (Baldwin and Weder Di Mauro, 2020).

Firms are well aware of the need to act. Surveys among corporate executives confirm a perception of fragility in their global supply chains and provide a clear indication of a shift in future international production strategies towards greater resilience (table IV.3). Over 70 per cent of enterprises attest to having experienced supply-chain fragility during the pandemic. To counter the crisis, between 40 per cent and 70 per cent profess to have planned responses (additional investment, changes in supply-chain structure, consolidation of home operations) to improve resilience. Only a minority considers relocation of production a realistic option. In one survey a third of respondents mentioned plans to diversify away from China as a production location; in another, about 15 per cent indicated that they were considering reshoring production; and in a third survey some 40 per cent of respondents expected more nearshoring in the short run.

**Table IV.3. Business surveys: the pandemic and supply-chain resilience**

Survey company (Number of firms surveyed)	Direct impact due to the pandemic	Implemented response to the pandemic	Planned response to the pandemic
<b>Cappgemini (1,000)</b>	About 70 per cent of companies surveyed needed at least three months to recover from the initial shock	57 per cent of companies are increasing investment to improve supply chain resilience	68 per cent of companies indicate that, in light of the pandemic, they would prefer to buy local
<b>Euler Hermes–Allianz (1,181)</b>	94 per cent suffered a supply chain disruption		15 per cent would consider reshoring the production
<b>Gartner (260)</b>	21 per cent believe that they have a highly resilient structure as of today	33 per cent plan to move or have moved production outside China	55 per cent expect to have a highly resilient network in the next two to three years
<b>IBM (&gt; 500)</b>		25 per cent have postponed or canceled a project due to the pandemic (in particular in electronics, petroleum and travel)	60 per cent expect to consolidate operations in their home country (while only 27 per cent consider consolidating their overseas activities) 49 per cent believe that cross-border trade will increase in the next three years 41 per cent anticipate more nearshoring of their activities
<b>PwC (2,814)</b>	73 per cent surveyed were negatively affected by the crisis	62 per cent used a crisis response plan	70 per cent plan to increase resilience through additional investment

Sources: UNCTAD elaboration based on a non-exhaustive list of business surveys (Cappgemini Research Institute, 2020; Euler Hermes–Allianz, 2020; Gartner, 2021; IBM: Dencik et al., 2020; PwC, 2021).

## b. MNE resilience strategies

From the perspective of multinational firms, supply-chain resilience can be improved through strategies that form three pillars: production network restructuring, risk management solutions and sustainability enhancement measures (figure IV.4).

The first pillar, **production network restructuring**, involves production location decisions and, consequently, investment and divestment decisions. It implies the redesigning of global supply chains in two directions: reshoring and nearshoring, and diversification.

- *Reshoring and nearshoring* address the need to limit complexity and interdependence in global supply-chain networks. It does so by reducing the length of GVCs, physically confining the manufacturing footprint and the supplier base domestically or regionally, to minimize exposure to risks and ripple effects across highly integrated production networks.
- *Diversification* leverages complex networks as a means to avoid excessive concentration and to build redundancy into the system, with the goal of diversifying supply, operations and distribution channels, increasing options for resilience and moving production closer to markets.

Both resilience-seeking options – centralization or decentralization – have major implications for international production and FDI. Reshoring is associated with disinvestment, with a negative impact not only on future FDI flows but also on existing stock. Diversification would bring changes to the nature of FDI, with a shift from efficiency-seeking to market-seeking investment.

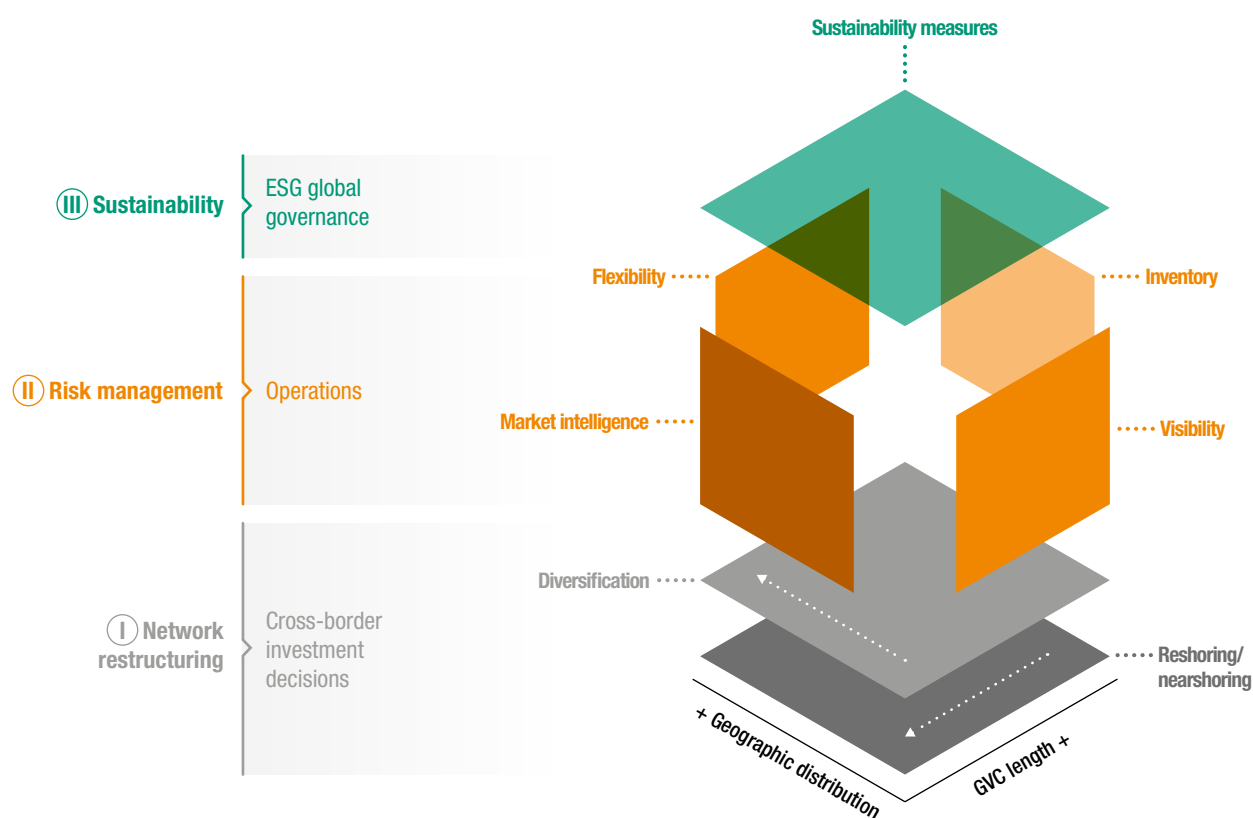
Network restructuring, in particular the risk of broad-based reshoring, has been in the spotlight since the outbreak of the pandemic.<sup>3</sup> Reshoring is perceived by home countries as the obvious way to mitigate exposure to systemic risks. For host countries, particularly developing economies, reshoring implies divestment of efficiency-seeking FDI and reduction of opportunities for future reinvestment, while diversification means more opportunities for FDI.

The second pillar is **risk management solutions**. Instead of restructuring their production network, businesses have the alternative option to strengthen the capacity of their networks to absorb shocks. For this purpose, firms can resort to various supply-chain risk management solutions. As risk management is part of firms' standard operations, they will naturally be inclined to first rely on the following tools:

- *Visibility* and transparency refer to the capacity to monitor supply-chain events to identify patterns, make informed and timely decisions – including through simulations and contingency planning – and take proactive measures to limit the impact of disruptions. New industrial digital technologies support visibility and transparency by enhancing traceability and authentication.
- *Flexibility* is the capacity to reconfigure production lines, distribute production across sites, switch between make or buy decisions, and access alternatives in transportation and logistics.
- *Sufficient backup inventory* represents a critical buffer to minimize the impact of disrupted supplies.
- *Market intelligence* and forecasting address demand-side risks by anticipating large demand fluctuations.

From a business perspective, these measures are less demanding than network restructuring. They may call for substantial investment in technology to enhance value chain control and coordination; they may require increases in productive capacity to meet buffer requirements; they may even imply a shift in operating models from “just-in-time” to

**Figure IV.4. | An integrated framework of MNEs' resilience strategies**



Source: UNCTAD.



“just-in-case” (Brakman et al., 2020). However, they do not entail structural relocation of massive physical assets. The impact on FDI is thus less significant than for production network restructuring, limited to the indirect impact of supply-chain digitalization on aspects such as the distribution of value added across locations, asset lightness and outsourcing decisions (WIR20). Nevertheless, risk management solutions are less effective for addressing the challenges posed by arising geopolitical rivalry and systemic competition.

The third pillar is **sustainability**. Resilience in supply chains goes hand in hand with sustainability. On the one hand, reinforced resilience measures are needed to address systemic risks caused by sustainability issues. On the other, sustainable business practices are important levers to improve supply-chain resilience by mitigating environmental, social and governance (ESG) risks. The FDI impact of sustainability practices can be significant, affecting the economics of international production at different levels: from introducing cross-border differences in environmental standards and regulations to inducing market-driven changes in products and processes, to changing the design of global supply chains towards more local and sustainable configurations or reorienting investment towards SDG sectors.

MNE resilience strategies are an integrated package rather than an option menu – a package in which the three pillars and their components interact with each other.

## 2. Implications for global investment

*Network restructuring is costly and not a short- or medium-term solution for most firms that have complex global supply chains. In the longer term, resilience will become more important in location decisions, potentially leading to a gradual rebalancing of international production networks. In the short term, reshoring, relocation and diversification are likely to accelerate only as a result of political pressure or concrete policy interventions.*

### a. Supply-chain risks and network restructuring

MNEs face growing vulnerabilities due to the massive expansion of their global supply chains over the past decades. These are mainly related to their *geographic coverage*, adding “discrete” sources of risks; *interdependence*, enhancing systemic impact through contagion and ripple effects; and *concentration*, magnifying the value at risk. Production network restructuring can limit the exposure to one or more sources of systemic risks.

Reshoring reduces the length of the production process, enabling the shift from internationally specialized to more local and shorter supply chains. It directly mitigates exposure to systemic risks, across and between borders, by reducing the number of countries contributing to the production process, their interdependence and the role of international trade in the exchange of intermediate inputs. Simpler and shorter value chains are also more manageable from an operational perspective (Srai and Ané, 2016).

The transition from longer to shorter supply chains thus reduces two of the three sources of fragility in global supply chains: geographic coverage and interdependence. However, reshoring and nearshoring imply the concentration of risks domestically and regionally. This reduces the probability that production is hit by a systemic shock, but it increases the value at stake if an adverse event does occur. In addition, it renders less effective some risk management measures that leverage diversification and market proximity, such as flexibility and market intelligence.

Diversification implies a shift from concentrated production processes to localized and geographically distributed production, closer to final markets. Distributed production is often enabled by Industry 4.0 technologies such as additive manufacturing (Laplume et al., 2016;

Srai et al., 2020; *WIR20*). Geographic distribution mitigates frailties related to concentration and interdependence. It also increases flexibility, allowing the switching of production across sites, and possibly enhances market intelligence through proximity.

On balance, from a pure risk management perspective, diversification is preferable to reshoring. Whereas the latter builds resilience through simplification and subtraction of risks, the former builds resilience through redundancy and addition of options. Diversified production networks are more flexible and better equipped to cope with unexpected shocks, but they also require additional investment and efforts in coordination and control to manage higher complexity. Reshoring and diversification are, fundamentally, the two options available to MNEs for restructuring global production networks, not only for resilience reasons but also in response to other shocks, such as a rise in trade tariffs (Balistreri et al., 2018).

## **b. Network restructuring costs and benefits, by industry**

A sharper focus on resilience will not change the way businesses make their strategic choices. Location decisions will still be based on considerations of (economic) cost and (risk) benefit. What will change is the relative weight of the two sides of the equation, with MNEs expected to relinquish some cost efficiency to secure resilience gains.

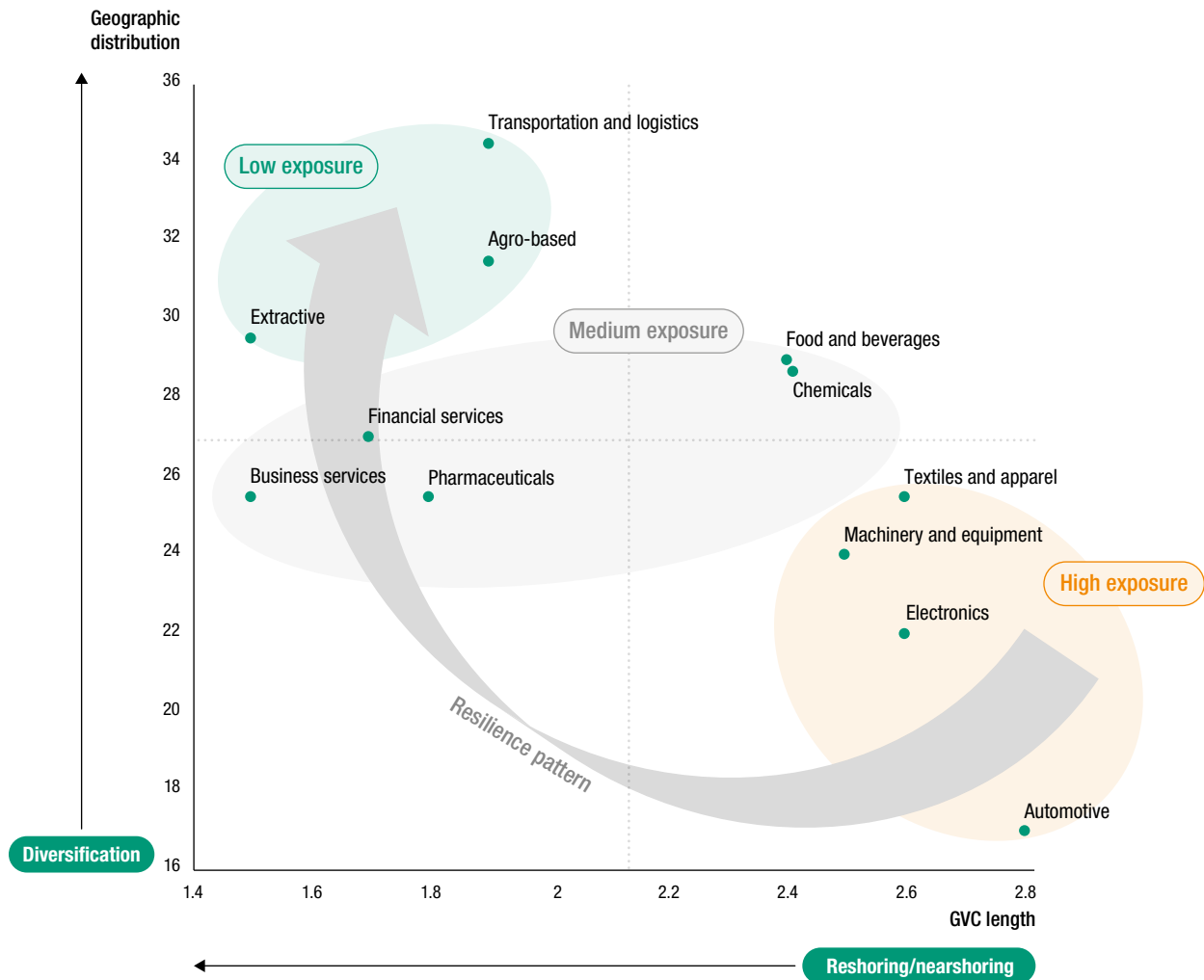
Cost-benefit considerations are MNE-specific. However, several standard features of the system of international production, both on the risk side and on the cost side, make it possible to provide a high-level assessment of the likelihood of network restructuring measures across industries.

UNCTAD framework for the analysis of international production configurations (*WIR20*: chapter IV.B) maps industries by the length and geographic distribution of their GVCs. Length is measured by the number of cross-border intermediate production steps. Geographic distribution reflects the degree of participation in the production process across countries, as measured by the relative concentration of value added. A higher geographic distribution of value added is associated with redundancy, either through multi-sourcing or replicated production. Network restructuring for resilience could be traced as a broad diagonal move from long and concentrated configurations to short and distributed ones (figure IV.5) – a move enabled by reshoring/nearshoring (reducing exposure on the dimension of length) and diversification (reducing exposure on the dimension of geographic distribution).

Mapping the position of industries according to their archetypical supply-chain configuration provides a high-level assessment of their exposure to risk. The industry aggregations analysed account for about 60 per cent of the total announced value of greenfield investment (2015-2019). The most exposed include the typical GVC-intensive industries – automotive, electronics, machinery and equipment, and textiles and apparel. These account for about 20 per cent of greenfield investment across all industries, but almost 50 per cent when considering manufacturing investment only. They typically are a mainstay of industrialization strategies in developing economies and play a larger role in international production and development than their investment size suggests. A push towards production network reconfiguration in these industries could have important development implications.

In the cluster of industries characterized by medium exposure, one group (food and beverages and chemicals) is characterized by long but regionally diversified production networks. These are regional processing industries, typically organized in regional value chains, replicating on a local scale the long and vertically specialized GVC model. Another group of industries has shorter and concentrated global supply chains, where operations are distributed but the bulk of value is shared among a few locations.

**Figure IV.5. Network configurations by industry** (selected industries)



Source: UNCTAD.

Note: GVC length is measured by the number of production stages involved in a specific GVC. Geographic distribution reflects the degree of concentration of value added and is measured as the average of the number of countries that account for 80 per cent of global value added in gross export and the number of countries that account for at least 0.5 per cent of global value added in gross exports. Values are reported in *WIR20* (table IV.4).

This structure is consistent with more knowledge-intensive industries, such as pharmaceuticals, but also with services industries characterized by few high value adding hubs and many operational spokes. This cluster includes some of the industries subject to stronger policy pressure to restructure.

Industries with low exposure are either upstream industries contingent on natural resources that cause dispersed production (extractive and processing industries, and agriculture-based industries), or lower value added proximity services instrumental to local operations or delivery (service industries such as transportation and logistics, and retail and wholesale). These activities typically have short value chains and value added generated by location-specific assets.

The set of GVC-intensive industries – the group most exposed to supply-chain risk – is also characterized by the highest economic barriers to production network restructuring. All these industries have highly (cost-)efficient network configurations, as reflected also by the capital and labour intensity of their typical investment project (table IV.4a).

**Table IV.4a. Relevant business indicators by industry, 2015–2019** (Selected industries)

Exposure level	Industry	Share of total value of announced cross-border greenfield investment (%)	Capital intensity	Labor intensity
			Average investment size (Millions of dollars)	Average number of jobs per million dollars invested (Number)
<b>High-risk exposure</b>	Automotive	8	58	4.6
	Electronics	6	45	4.3
	Machinery and equipment	2	15	5.5
	Textiles and apparel	3	16	6.7
<b>Medium-risk exposure</b>	Business services	9	19	3.8
	Chemicals	13	116	1.1
	Financial services	3	25	2.6
	Food and beverage	3	43	3.6
<b>Low-risk exposure</b>	Pharmaceuticals	2	36	2.4
	Agro-based	0	40	5.0
	Extractive industries	4	391	0.7
	Transportation and logistics	5	57	1.9

Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

**Table IV.4b. Relevant business indicators by sub-industry, 2015–2019** (High-risk exposure industries)

Industry	Sub-industry	Share of total value of announced cross-border greenfield projects in the industry (%)	Capital intensity	Labor intensity
			Average investment size (Millions of dollars)	Average number of jobs per million dollars invested (Number)
<b>Automotive</b>	Components	28	36	7.0
	OEM	54	134	3.1
<b>Electronics</b>	Batteries	13	159	3.1
	Communications equipment	10	21	8.5
	Computer	4	15	8.6
	Household appliances	3	32	7.3
	Semiconductors	30	194	1.4
<b>Machinery and equipment</b>	Engines and turbines	11	34	4.2
	Industrial equipment	68	13	6.1
	Medical devices and equipment	21	19	4.6
<b>Textiles and apparel</b>	Apparel	88	14	6.2
	Textiles	12	51	9.2

Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

Capital-intensive industries, such as automotive and electronics, leverage economies of scale generated by concentrated and specialized production hubs to optimize operational efficiency and costs of supply. Labour-intensive industries, such as textiles and apparel, exploit labour-cost differentials across countries to minimize costs of production. As a result, capital-intensive industries are more exposed to reshoring pressures, preserving economies of scale at the cost of efficiencies from international arbitrage opportunities. Labour-intensive industries lean towards diversification and redundancy, affecting economies of scale but opening possibilities to capture further location cost advantages.

Yet, even if firms may be able to absorb shocks to variable costs, the impact on fixed costs and the inability to recuperate sunk costs add a critical factor preventing network restructuring as a short- or medium-term solution (Anràs, 2020). The physical relocation of fixed (tangible) assets incurs sunk costs associated with dismissing productive capacity and financing costs associated with the establishment of new facilities, particularly for more capital-intensive activities. Overall, network restructuring measures to build resilience expose MNEs in GVC-intensive industries to significant, and potentially prohibitive, pressure on costs.

Some industries facing less extreme cost-benefit trade-offs – for example industries characterized by relatively smaller investment size (machinery and equipment) – are more likely to undergo some reconfiguration. The pharmaceutical industry may also be exposed to business and policy pressure for relocation.

Overall, most industries are unlikely to embark on a systematic and broad-based process of network restructuring in the absence of policy pressures or incentives in that direction. But there is some heterogeneity (table IV.4b). Focusing on industries with the highest risk exposure: in the automotive industry, the manufacturing of components is less capital intensive than original equipment manufacturing, suggesting a more fragmented and commodified production process. In electronics the dichotomy is even more pronounced, with relatively small-scale investment projects in the manufacturing of computers, communication equipment or household appliances, and highly capital-intensive projects in semiconductors and batteries. Mass production and high concentration put these industries among those most exposed to policy monitoring as witnessed, for example, by an executive order issued in February 2021 in the United States that aimed to address vulnerabilities in the supply chain for essential goods, including critical minerals, pharmaceuticals, semiconductors and batteries for electric vehicles. Machinery is also a broad industrial category, ranging from relatively highly capital-intensive projects in engines and turbines to smaller-scale investment in manufacturing of equipment, including industrial equipment as well as medical devices. This is another industry under strong pressure to address supply-chain vulnerabilities.

\* \* \*

A cost-benefit analysis based on business considerations demonstrates the complexity of reconfiguring MNEs' international production networks in response to the pandemic. In the short term, supply-chain restructuring – reshoring, relocation, diversification – is likely to become a reality only as a result of political pressure or concrete policy interventions, and where incentives or subsidies change the economic equation. Public support can subsidize capital investment to fully or partially offset sunk costs associated with relocation of fixed assets. Any such interventions will prioritize supply chains for essential goods in the health-care sector and for strategic growth sectors.

In the absence of policy drivers, most MNEs are likely to focus on enhancing supply-chain risk management practices that do not involve production network reconfiguration. Increasing inventories is one of the most common measures. Especially in industries that have pushed harder on just-in-time business models, such as the automotive industry, there are strong pressures to increase safety stocks.<sup>4</sup>

The longer-term effects of the search for increased resilience will be more significant. They will become part of the broader transformation process already set in motion before the pandemic because of technology, policy and sustainability trends. This process is expected to steer GVCs towards more reshoring, regionalization and distributed manufacturing (*WIR20*; Enderwick and Buckley, 2020).

In conclusion, the move towards more resilient global supply chains will not manifest itself in the form of short-term emergency restructuring but as a long-term gradual rebalancing, with resilience becoming a more important consideration in location decisions for new international investments. The business case for rebalancing is more credible than that for restructuring. New investments are not affected by sunk costs, and potential losses on variable costs are limited to incremental volumes. Thus, the drive to increase supply-chain resilience will not lead to a “rush to reshore” but could become a “drag on development”, with new investments in international networks no longer looking for locations offering low-cost factors of production to the same degree.

# C. INVESTMENT PRIORITIES FOR SUSTAINABLE RECOVERY

## 1. Focusing investment on productive capacity

*Setting priorities for promoting investment in sustainable recovery implies focusing on infrastructure and industries that are key to recuperate lost ground and restart growth in productive capacity.*

Policymakers worldwide have pledged to build back better after the pandemic, to work towards more resilient economies and to put sustainable development centre stage. Stimulus plans and recovery investment packages in economies that can afford them and post-pandemic development strategies in economies with fewer means focus on physical and social infrastructure, on digital development and on the energy transition. These are sound investment priorities: (i) they are very much aligned with SDG investment needs; (ii) they concern sectors in which public investment plays a naturally bigger role, making it easier for governments to act; and (iii) they are known to have a high economic multiplier effect, i.e. each dollar of investment yields more growth benefits. The last point is especially relevant given that a key function of recovery spending is to provide demand-side stimulus.

In considering investment priorities for sustainable recovery and the role of private investment, and international private investment flows in particular, it is nevertheless worth casting a wider net. The COVID-19 pandemic has brought the productive capacities agenda to the fore. It has disproportionately affected those working in low-productivity sectors, which worsens inequality, reverses gains in poverty reduction and increases vulnerable employment (Andreoni and Chang, 2021).

The productive capacity of an economy depends on many diverse factors. The concept refers to the productive resources, entrepreneurial capabilities and production linkages that together determine a country's ability to produce goods and services that will help it grow and develop.<sup>5</sup> Productive capacity is of critical importance for all countries, at all income levels, as a key ingredient for economic growth and development.

Productive capacity can be broken down into several component factors. This report uses UNCTAD's Productive Capacities Index (PCI) to identify investment types relevant for each component (table IV.5). The PCI covers 193 economies for the period 2000–2018, capturing the set of productive capacities and their specific combinations across 46 indicators and 8 components, 7 of which are relevant for investment.<sup>6</sup> As such it provides a useful framework to map investment relevant for building productive capacities.

Although the components of productive capacity are similar for all countries, their relative importance and hence priorities for investment depend on stages of development. Investment in productive capacity can come from many sources. Amid resource constraints caused by the pandemic, which are affecting developing economies particularly severely, foreign private investment in productive capacities will have a significant role to play for a sustainable recovery.

**Table IV.5. Investment in productive capacity**

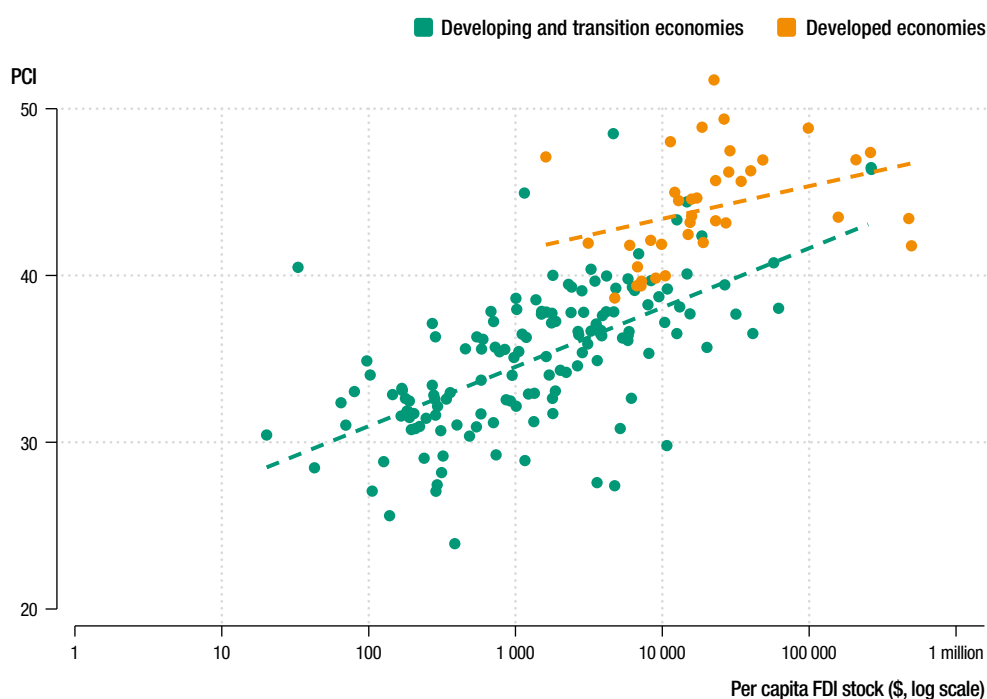
Component	Scope of investment
Energy	Electricity generation and distribution
Human capital	Education, health and water and sanitation
ICT	Telecom and digital infrastructure
Natural capital	Agriculture, resources, and processing industries
Private sector development	Financial and business services
Structural change	Industrial upgrading
Transportation	Connectivity infrastructure

Source: UNCTAD.

Note: Investment in productive capacities encompasses a wide array of elements. This report uses a framework that divides investment in productive capacity in seven distinct components (see UNCTAD, 2020 and <https://pci.unctad.org>) and aligns them with sectors of greenfield and international project finance investment.

Foreign investment in productive capacities can be particularly effective in developing economies because it embodies both tangible and intangible assets such as know-how, technology and access to networks that enhance the impact of the investment. Figure IV.6 shows how the correlation between productive capacity and FDI is significantly stronger in developing economies than in developed ones. Notwithstanding the importance of other sources of investment in productive capacity, this section focuses on the roles of greenfield FDI and international project finance in sustainable recovery.

**Figure IV.6. Correlation between productive capacity and FDI stock**



Source: UNCTAD.

## 2. Investment trends in productive capacities

Investment in several areas where FDI can make an important contribution to the growth of productive capacity has been hard hit during the pandemic, especially in structurally weak economies.

The pandemic has had a major negative effect on investment in productive capacities. All components of the PCI received lower foreign investment in 2020 than in 2019, with the exception of ICT, where investment increased with the acceleration in digital adoption (figure IV.7).

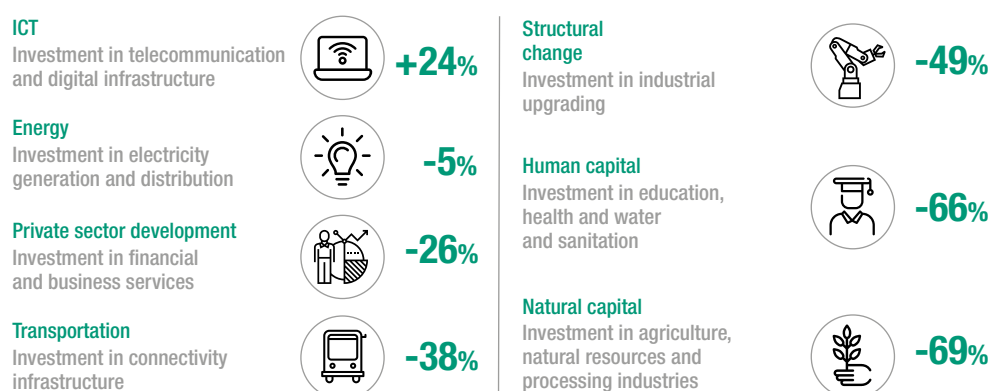
The pandemic has severely affected new greenfield investment in productive capacity sectors, especially in developing economies and least-developed countries (LDCs). This compounds a persistent investment gap, after a substantially flat pre-pandemic trend in the value of greenfield projects relevant for productive capacities (table IV.6).

The increase in investment in ICT was driven mostly by developed economies, whereas developing economies saw only a mild 4 per cent increase. Example projects include the construction of a cloud region in Poland by Google (\$1.8 billion) and the expansion of a 4G network in Nigeria by MTN (\$1.6 billion). Investment in the energy component of productive capacity fell by less than investment in other sectors; again, the milder decline was mostly due to robust investment in developed economies supported by several megaprojects in renewable energy, while developing economies suffered a 44 per cent fall.

Investment in agriculture and resource processing, relevant for the development of the natural capital component in the productive capacity index, saw the largest decline during 2020. This was due to both demand-side constraints as a large part of the world experienced economic contraction and to supply-side bottlenecks caused by the closure of project sites and mobility restrictions.

The human capital component, which encompasses education, health care, and water and sanitation infrastructure and services, may see more potential following the pandemic. Cross-border greenfield investment in this component is still small as a share of total investment in productive capacity. The health-care sector, in particular, is one in which private investment increasingly complements public investment.

**Figure IV.7. Pandemic impact on investment in productive capacity: a snapshot**



Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets ([www.fDimarkets.com](http://www.fDimarkets.com)).

Note: Trends in energy and transportation are based on international project finance data. Trends in all other components of PCI are based on greenfield data. Tables IV.7 and IV.8 present in detail the trends for all components from both sources.



Table IV.6.

## Greenfield investment announcements in productive-capacity sectors, 2019 and 2020

Sector	Total				Developing and transition economies			
	Pre-pandemic trend (%)	2019 (Billions of dollars)	2020 (Billions of dollars)	Pandemic impact (%)	Pre-pandemic trend (%)	2019 (Billions of dollars)	2020 (Billions of dollars)	Pandemic impact (%)
<b>Total</b>								
Value	-9	346	249	-28	6	222	128	-43
Number of projects	2	4 477	3 428	-23	-24	1 989	1 362	-32
<i>Energy</i>								
Value	37	113	99	-12	81	61	41	-33
Number of projects	27	560	529	-6	73	255	171	-33
<i>Human capital</i>								
Value	14	5.9	2.3	-61	-17	3.9	1.6	-59
Number of projects	27	336	119	-65	-7	146	96	-34
<i>ICT</i>								
Value	32	44	62	41	-24	23	28	21
Number of projects	10	1 528	1 282	-16	-22	561	468	-17
<i>Natural capital</i>								
Value	-8	116	41	-65	-8	90	32	-64
Number of projects	-20	261	155	-41	-20	149	97	-35
<i>Private sector development</i>								
Value	-43	24	19	-19	-44	16	13	-19
Number of projects	-33	1 028	716	-30	-40	516	331	-36
<i>Transportation</i>								
Value	-0.2	43	26	-39	-7	28	12	-57
Number of projects	-0.1	764	627	-18	-14	362	199	-45

Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com).

Note: Pre-pandemic trend refers to the change in average annual investment in the 2015–2019 period compared with the 2010–2014 period.

International project finance is a key source of investment in productive capacity, especially for large-scale projects in energy, transport infrastructure and natural capital. The impact of the pandemic on investment in productive capacity through international project finance has been less severe than the impact on greenfield investment. Nevertheless, in developing economies, the number of new projects fell significantly, especially compared with the robust growth seen before the pandemic (table IV.7).

The acceleration in digital adoption during the pandemic led to an increase by almost half in project finance in ICT. Yet, as in greenfield investment, this was driven entirely by developed economies while developing economies experienced a 43 per cent decline. Investment in energy projects in developing countries increased because of a few large renewable energy projects, including the La Gan Offshore Wind project in Viet Nam. Saudi Arabia also unveiled a multibillion-dollar project with significant participation by foreign investors for the development of a hydrogen gas plant fueled by renewable sources. Finally, investment in transport infrastructure projects decreased in value significantly worldwide and almost halved in developing economies.

**Table IV.7. International project finance in productive-capacity sectors, 2019 and 2020**

Sector	Total				Developing and transition economies			
	Pre-pandemic trend (%)	2019 (Billions of dollars)	2020 (Billions of dollars)	Pandemic impact (%)	Pre-pandemic trend (%)	2019 (Billions of dollars)	2020 (Billions of dollars)	Pandemic impact (%)
<b>Total</b>								
Value	-6	501	313	-38	-11	183	159	-13
Number of projects	47	1 140	1 131	-1	34	526	463	-12
<i>Energy</i>								
Value	26	177	168	-5	39	69	85	23
Number of projects	94	826	852	3	80	338	311	-8
<i>Human capital</i>								
Value	-26	8.4	3.5	-58	34	1.7	0.4	-76
Number of projects	-13	37	30	-19	14	13	13	0
<i>ICT</i>								
Value	177	20	30	46	53	9.8	5.6	-43
Number of projects	82	29	40	38	-22	8	7	-13
<i>Natural capital</i>								
Value	-5	202	53	-74	10	52	42	-20
Number of projects	-5	170	142	-16	-4	118	98	-17
<i>Transportation</i>								
Value	-41	93	58	-38	-49	50	27	-47
Number of projects	-8	78	67	-14	-6	49	34	-31

Source: UNCTAD, based on data from Refinitiv SA.

Note: Pre-pandemic trend refers to the change in average annual investment in the 2015–2019 period compared with the 2010–2014 period.

Productive capacity investment trends in LDCs are highly volatile because of the small number of projects. The decrease in 2020 was especially visible in greenfield investment (-62 per cent to \$16 billion); in project finance, values increased slightly (6 per cent to \$24 billion), driven by a few megaprojects in transport infrastructure and energy (table IV.8). For example, Railnet International (United States) initiated a project worth \$11 billion for the construction of a railway line in Zambia. In Ethiopia, Lotus Energy (Australia) launched a hybrid solar power plant project and a waste-to-energy plant project. In the Lao People's Democratic Republic, a \$1.7 billion clean-coal power project with investment from Singapore was launched. The energy and ICT sectors saw increases in greenfield investment in LDCs. Greenfield investment announced in energy rose because of three projects totaling \$3.4 billion by a single Chinese investor in Myanmar. In ICT, China Mobile started a \$1 billion project to set up a mobile data network in Nepal.

For LDCs, the decline in manufacturing investment is especially relevant given its importance for structural change.<sup>7</sup> Structural change is at the core of the productive capacities construct and crucial for sustainable economic development. For lower-income developing economies, structural change fundamentally entails transitioning into manufacturing industries and away from an exclusive reliance on natural resources. The need for many countries to address productive capacity bottlenecks has led to a growing number of countries pursuing structural change through industrial policies (*WIR18*), including through the establishment of special economic zones (*WIR19*). For these policies to be effective,

**Table IV.8. Investment in productive capacity in LDCs, 2019 and 2020**

Sector	Greenfield investment			International project finance		
	2019 (Billions of dollars)	2020 (Billions of dollars)	Pandemic impact (%)	2019 (Billions of dollars)	2020 (Billions of dollars)	Pandemic impact (%)
<b>Total</b>	<b>20</b>	<b>11</b>	<b>-44</b>	<b>23</b>	<b>24</b>	<b>4</b>
Energy	3.5	6.4	83	7.1	12	66
Human capital	0.2	0.01	-95	0	0.01	-
ICT	0.3	1.9	533	2.1	0	-100
Natural capital	11.3	1.7	-85	8.9	1.0	-89
Private sector development	0.8	0.6	-25	-	-	-
Transportation	3.8	0.6	-84	5.0	11	126

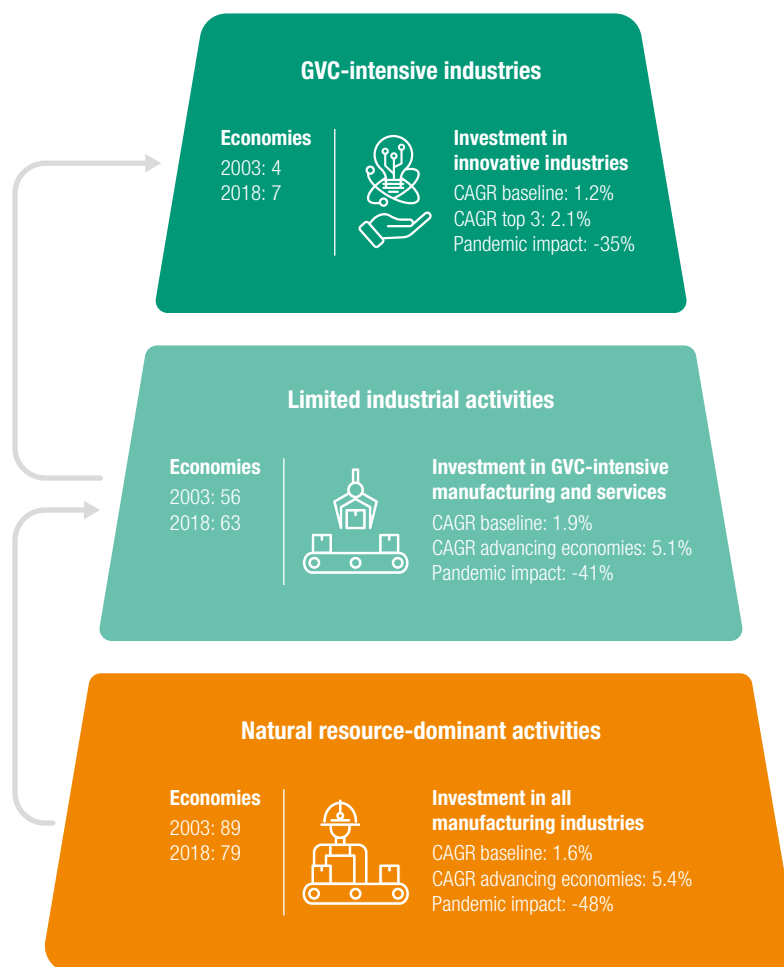
Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets ([www.fDimarkets.com](http://www.fDimarkets.com)) for announced greenfield FDI projects and Refinitiv SA for international project finance deals.

it is fundamental to attract FDI oriented to structural change. All investment that facilitates a move to higher value added activities can be classified as structural change investment. Its scope thus varies depending on the existing capacity for domestic value addition in each economy.

Foreign investment is closely correlated with structural change, as illustrated by the higher levels of FDI in developing economies that have made significant progress in industrialization over the past two decades. The analysis in figure IV.8 considers trends in investment related to structural change in developing economies from 2003 to 2018. Developing economies are grouped into three categories on the basis of on their dominant economic activities, using the thresholds in UNCTAD's PCI in 2003 and 2018.<sup>8</sup> The analysis shows which economies graduated to higher levels of value addition through structural change during this 15-year period and compares the FDI trend in these economies with the average. What qualifies as structural change investment varies for each category and becomes narrower as countries graduate to each successive category. For economies with the lowest value-addition profile, investment in most manufacturing industries can affect structural change positively. The baseline growth rate of structural change investment for these economies from 2003 to 2018 has been low, especially considering the high investment needs. In the economies that transited upwards from this category, the investment growth rate was more than three times the baseline. For economies characterized by limited industrial activities, investment in GVC-intensive manufacturing and services is more relevant to effect structural change. As in the previous category, economies that managed to transition upwards had a significantly higher growth rate in investment targeting structural change. At the upper end of the ladder are economies already involved in higher value added GVC activities. In these countries, only FDI in innovation-intensive activities qualifies as investment related to structural change. The growth rate for structural change investment in this group was higher for the top three economies, ranked by improvement in their structural change scores compared with the baseline.

Despite the importance of FDI for structural change, efficiency-seeking investment has been stagnant over the past 15 years in many economies with the highest needs. The average annual growth rate of manufacturing investment in these economies between 2003 and 2018 was merely 1.6 per cent. The pandemic is further exacerbating the challenge of structural change for developing economies. Economies on the lowest rung of the value-addition ladder are being hit the hardest. Promoting investment in structural change should thus be an urgent priority for development policymakers.

**Figure IV.8. | The role of investment in structural change in developing economies**



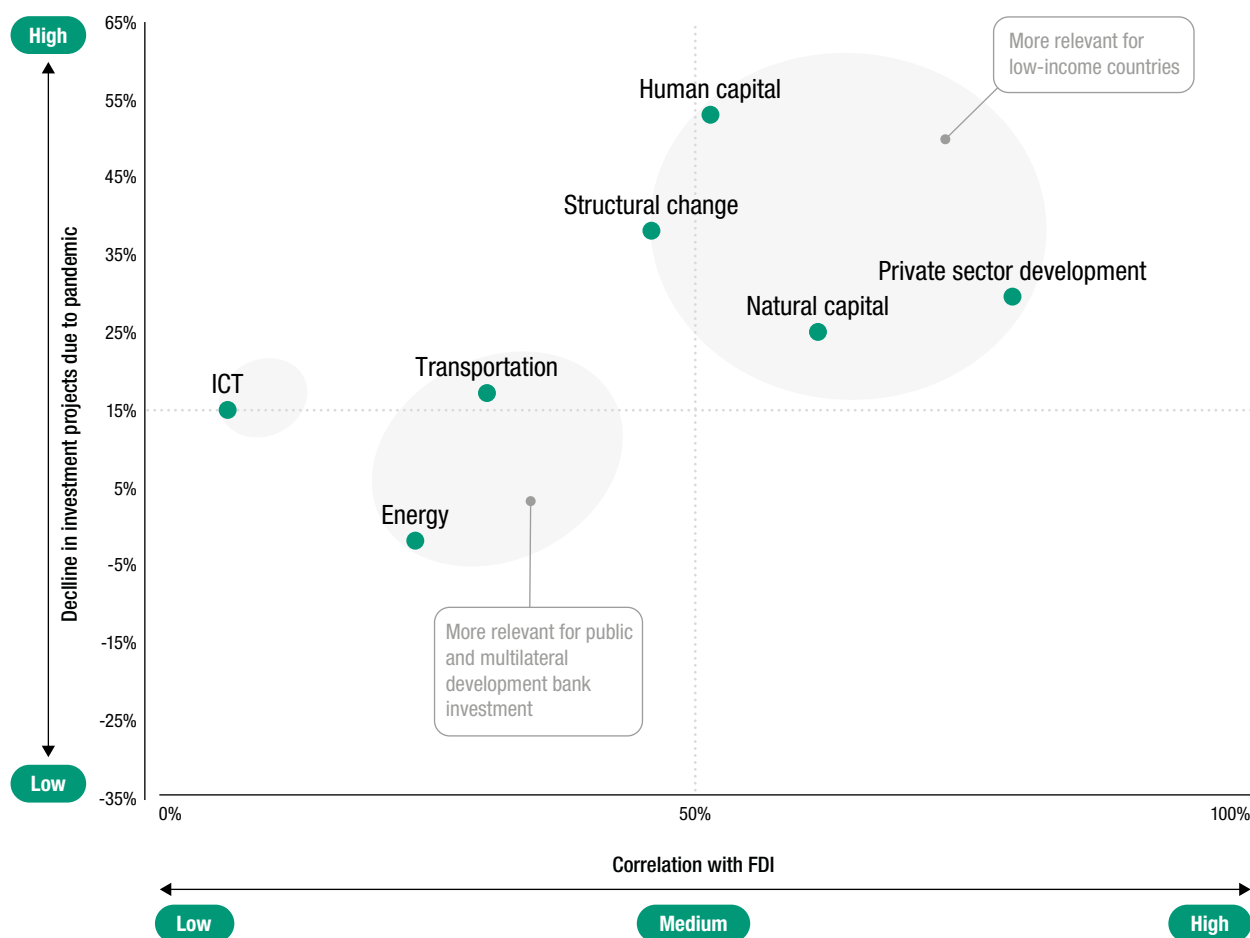
Source: UNCTAD.

Note: Labels depict three categories of developing economies based on their standing on the structural change component of UNCTAD's PCI. Compound annual growth rate (CAGR) calculated between 2003 and 2018. Pandemic impact is the decrease in structural investment in 2020 from 2019 for each group of economies. The definition of investment in structural change varies depending on the category of economy. Advancing economies are those that progressed to higher categories of the value addition ladder in 2018 compared to 2003 based on pre-determined thresholds of the structural change component of the PCI.

Figure IV.9 plots the relative importance of foreign investment in each component of the PCI against the impact of the pandemic on foreign investment. It shows that several components of the index that have been shown to benefit relatively more from FDI, in particular private sector development, structural change and human capital, have also been among the hardest hit during the pandemic.

Transport infrastructure and energy are traditionally more dependent on domestic resources, and policy factors often limit the potential for greenfield FDI. To enhance investment in these components, policymakers need to target investment from all sources, including international project finance, bilateral and multilateral financing, and official development assistance. For ICT, similarly, domestic telecommunication operators have tended to account for the largest share of infrastructure investment, although in low-income countries investment by foreign operators has played a more important role (*WIR17*) – a role that could increase in importance with the need to accelerate digital adoption in the wake of the pandemic.

**Figure IV.9. Productive capacity and investment: perspectives on sustainable recovery priorities**



Source: UNCTAD, based on information from the Financial Times Ltd, fDi Markets (www.fDimarkets.com) for announced greenfield FDI projects and Refinitiv SA for international project finance deals.  
 Note: Decline in investment projects due to pandemic is based on the difference in the number of total greenfield and international project finance projects in each component of the PCI in 2020 compared with 2019.

\*\*\*

In conclusion, greenfield investment and project finance in sectors key for the growth of productive capacity have been hard hit during the crisis caused by the pandemic, especially in structurally weak economies. The sectors where foreign investment plays the most important role for the development of productive capacity and that have seen the biggest declines in 2020 are those linked to human and natural capital, private sector development and structural change. Physical and digital infrastructure – priorities in most recovery plans – have not been negatively affected by the pandemic to the same degree. Although promoting investment in infrastructure, including green infrastructure and renewable energy, is an important priority, stimulating investment in international production and industry will be equally important to grow productive capacity.

# D. LEVERAGING THE PUBLIC INVESTMENT PUSH

## 1. Support programmes for post-pandemic recovery

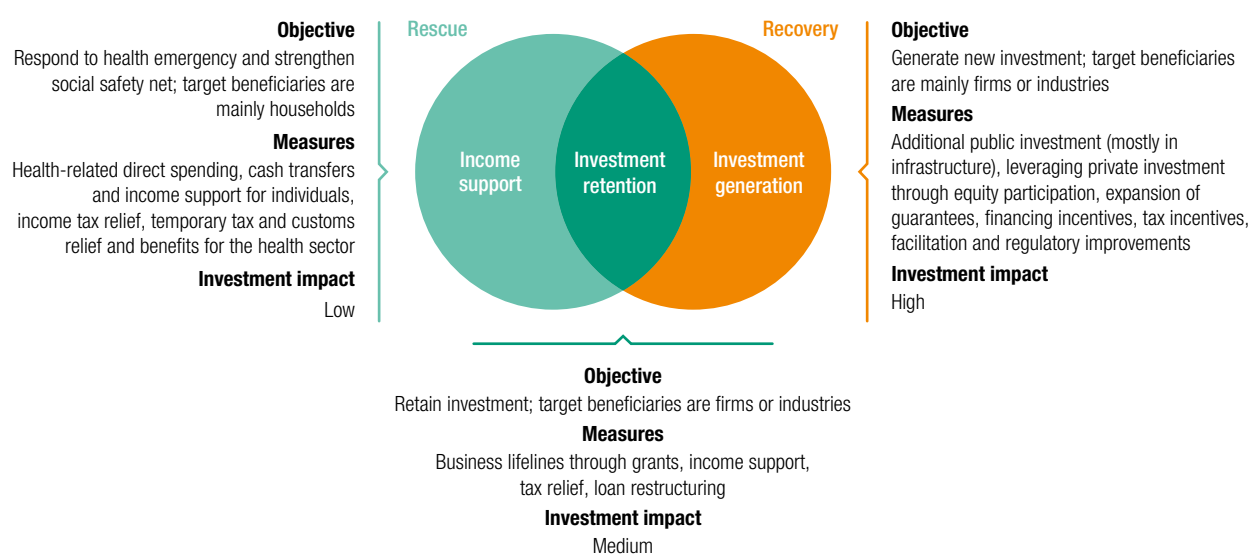
*Recovery investment packages being adopted around the world are oriented in large part towards infrastructure, renewable energy and health systems. As such, they could provide a significant impulse to sustainability investment.*

Around the world, national governments, regional economic cooperation organizations and multilateral institutions have adopted or are developing major economic stimulus programmes in response to the crisis caused by the COVID-19 pandemic, consisting of rescue packages (i.e. income support and business lifelines) and recovery packages (i.e. longer-term investment plans).

From an investment perspective, both rescue packages for business and investment packages play an important role in recovery, analogous to “investment retention” and “investment generation” (figure IV.10). Government measures that support firms through the crisis – whether through tax relief, subsidies, capital injections or loan guarantees – ensure that capital stocks are preserved. Packages that include public investment in infrastructure add directly to that stock.

To date, the worldwide fiscal outlays in response to the pandemic – excluding the budgetary impact of automatic stabilizers – are running to about \$16 trillion, which represents approximately 15 per cent of global GDP.<sup>9</sup> Drawing on the IMF’s Fiscal Monitor and distinguishing between immediate consumption and longer-term plans, the value allocated

**Figure IV.10. | An investment perspective on pandemic support programs**



Source: UNCTAD.

to investment generation packages is so far limited to between \$2 trillion and \$3.5 trillion, between 10 and 20 per cent of the total value of outlays in response to the pandemic. Adding the investment retention component to the package covers more than 60 per cent of the total funding.

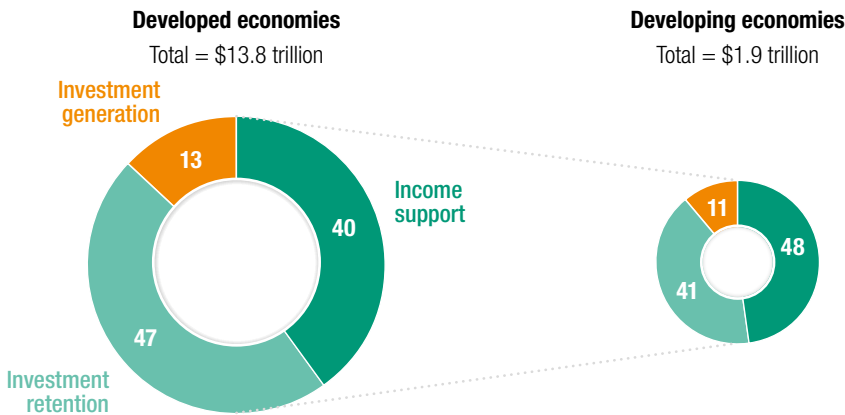
The size and composition of rescue and recovery packages differs significantly between developed and developing countries. Developing countries account only for one tenth of the total (figure IV.11).

Support programmes also vary significantly between countries, depending on fiscal space, the phase of the pandemic and the severity of its economic impact. The share of funds allocated to investment generation ranges from near zero in several countries in Latin America that are still in the midst of battling the virus to almost 20 per cent in Asian economies that have been less affected or have emerged from it. It can be expected that the relative focus on recovery investment will increase as waves of the pandemic are contained and vaccination programmes gain traction. Conversely, recurring incidences of infections could derail or delay relatively advanced plans.

The additionality of public investment announcements in many countries is difficult to assess, because many spending plans are extensions of existing plans. For instance, as part of its post-pandemic recovery strategy, the Government of India expanded the sectoral coverage of its Performance-Linked Incentives scheme, which provides support for industrial development. In Nigeria, elements of its Economic Sustainability Plan related to digital development are an acceleration of the existing programme. Accelerating infrastructure or industrial development plans ensures that investment is targeted at strategic development objectives and facilitates implementation as it makes use of existing project pipelines.

Links with pre-existing plans are evidence that recovery investment packages are not just about sustainable recovery along SDG lines. They have a strong industrial policy imprint – in both developing and developed economies. For example, in the United States, the proposed \$2.2 trillion infrastructure bill plans to allocate about a third of the total to transportation infrastructure, a tenth to manufacturing and some five per cent each

**Figure IV.11. Stimulus programs: rescue and recovery** (Trillions of dollars and per cent)



Source: UNCTAD, based on IMF Fiscal Monitor (April 2021).  
 Note: The total of \$15.7 trillion and corresponding shares were estimated by examining the pandemic support packages of 20 major economies, plus the EU support package, which represent just 90 per cent of the total value reported by the IMF Fiscal Monitor (April 2021). These major economies include Argentina, Australia, Brazil, Canada, China, Egypt, France, Germany, India, Indonesia, Italy, Japan, Mexico, Nigeria, the Republic of Korea, the Russian Federation, South Africa, Turkey, the United Kingdom and the United States. Shares are calculated based on measures that have sufficient information (specific target and disaggregation of amount). Classification of measures is based on a taxonomy matching the description of the categories in figure IV.10.

to broadband expansion, R&D and energy transformation. China's new five-year plan, adopted early this year with the cycle coinciding with the country's emergence from the pandemic, combines investment in infrastructure and the energy transition with its dual-circulation industrial development objectives. France's Plan de Relance, at \$112 billion, allocates 36 per cent to green programmes and much of the rest to infrastructure, including industrial infrastructure.

Although investment generation – the core component of the investment push – is relatively limited so far, significant programmes aimed at stimulating longer-term investment to boost post-pandemic economic growth are still in the making (for example, the planned infrastructure investment package in the United States is not yet included in the calculations above, based on the IMF's Fiscal Monitor). In addition, many financing mechanisms in the recovery packages are aimed at leveraging additional private sector investment through public-private partnerships or project finance arrangements.

In infrastructure projects with public and private participation, on average, \$1 of public investment (in equity or direct transfer) can generate between \$2.2 and \$3 of total equity through private participation (table IV.9). This capacity to raise additional private equity is comparable across different types of infrastructure and development levels (from low-income to higher-middle-income countries). The total investment impact potential of public recovery spending can be further increased through leverage, with average debt/equity ratios in infrastructure project finance varying between 2.5 and 3.5, depending on the sector and the industry risk profile. As a result of the equity multiplier and the debt leverage, \$1 of direct public support to infrastructure projects can, under the right circumstances, mobilize \$10 of capital investment through public-private financing schemes.<sup>10</sup> An important caveat is that these circumstances are country specific; multipliers tend to be lower in developing countries.

In this context, even the initial public investment push of \$2 trillion to \$3.5 trillion clearly has major potential for growth, depending on how much of the funding is leveraged to bring in additional private capital. A significant part will be spent through public procurement mechanisms that do not involve public-private partnerships. Under conservative assumptions that one third of the currently adopted public investment plans are deployed through various forms of partnership with the private sector, the investment potential could still reach \$10 trillion. By way of comparison, that would represent about one third of the investment gap estimated for the SDGs at the time of their adoption (*WIR14*).

Several caveats apply that will affect the ultimate size and impact of the investment push. Evidence on several major economies with detailed recovery investment programmes shows that plans often overlap with pre-existing investment targets (e.g. in industrial policies or infrastructure development plans) – i.e. they are not fully additional.

**Table IV.9. Private and public equity in infrastructure, low- and middle-income countries**  
(Number and per cent)

Project equity structure	Number of observations	Private equity as share of public-private funding (%)	Multiplier, ratio between private equity and public funding
Projects with public and private equity	203	67	2.0
Projects with public and private equity, and direct government support	367	55	1.2

Source: UNCTAD, based on World Bank PPI database.

Note: Each observation is an infrastructure project located in low- and middle-income countries involving both private financing and a form of public financing. The first row considers public financing as public equity, whereas the second adds direct government support as part of public equity, following the model built by Fay et al. (2021). Direct government support may take the form of capital subsidy, revenue subsidy or in-kind contributions such as land (as defined by the PPI database).

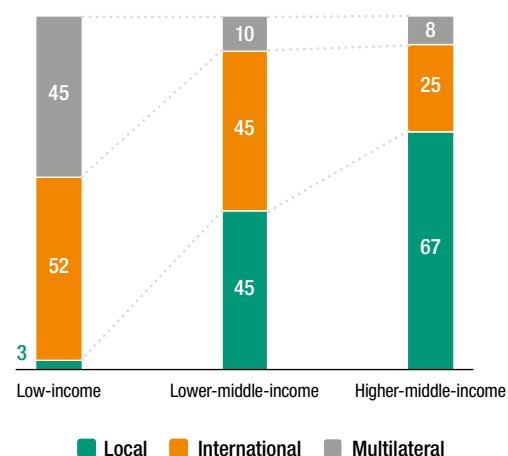


Furthermore, typical mechanisms aimed at stimulating finance for investment (e.g. loan guarantees) are being used in large part for rescue purposes (e.g. working capital extensions). Finally, and importantly, for several programmes there is, as of yet, relatively little detail on implementation timelines, orientation and governance.

Yet, the comparison between recovery investment packages and the push for investment in SDG sectors implicit in the goals remains relevant. It certainly holds with respect to the orientation of planned recovery investment (insofar as spending details are known); the bulk is targeted at physical and digital infrastructure, renewable energy and other ways of greening economies. The obvious discrepancy with SDG investment needs remains the asymmetry between developed and developing countries. More than 90 per cent of the total recovery investment value is contained in the plans adopted by and for developed countries, and the remainder mostly by few large (upper-middle-income) emerging markets. That makes it even more important to leverage private sector participation to boost investment in lower-income developing countries, including through international project finance schemes.

In fact, in lower- and lower-middle-income developing countries, where domestic finance is scarcer, international project finance and funding through multilateral development banks – which also deploy private participation leveraging mechanisms – provide most of the debt financing in infrastructure projects (figure IV.12). Multilateral institutions have already significantly increased their assistance as part of pandemic rescue and recovery financing, although total funds available for recovery investment in low-income countries to date amount to only a fraction of the global total (table IV.10).

**Figure IV.12.** Source of debt, by developing status (Per cent)



Source: UNCTAD, based on the World Bank PPI database.

**Table IV.10. Multilateral development bank facilities, pandemic response**

Multilateral development bank	Assistance (Billions of dollars)	Details
African Development Bank	4.8	Assistance approved and implemented from March 2020 to February 2021 (Source: AfDB database).
Asian Development Bank	16.8	COVID-19-related assistance disbursed as of February 2021 (Source: ADB COVID-19 policy database).
Asian Infrastructure Investment Bank	12.0	Investments approved as of the end of 2019 (\$8.4 billion committed and \$2.9 billion disbursed). Between April 2020 and 16 October 2021, the AIIB COVID-19 Crisis Recovery Facility offers up to \$13 billion of financing to public and private sector entities facing, or at risk of facing, adverse impacts from the pandemic.
The European Bank for Reconstruction and Development	13.1	As of January 2021, invested €11 billion in 2020 through 411 projects, to 38 economies for pandemic responses. This represents a 10 per cent increase in annual business investment relative to 2019.
Inter-American Development Bank	21.6	Loans and guarantees for 2020 (as compared with \$13 billion in 2019).
World Bank	160.0	COVID-19 response financing committed April 2020-June 2021. In 2020: \$77.1 billion (\$25.4 billion in Africa, \$12.8 billion in Latin America and the Caribbean, \$9.2 billion in Central Asia, \$10.5 billion in East Asia and Pacific, \$14.4 billion in South Asia, \$4.8 billion in the Middle East and North Africa – including for projects other than pandemic response).
<b>Total</b>	<b>228.4</b>	

Source: UNCTAD, various sources as cited.

In conclusion, the COVID-19 pandemic has significantly set back progress on the SDGs over the past year. It has also caused a sharp decline in investment flows to SDG-relevant sectors and projects (see chapter I and UNCTAD's *SDG Investment Trends Monitor*). Nevertheless, the prospect of a large injection of public funds for long-term investment in sustainable recovery could provide some momentum, first to recuperate lost ground and then to accelerate progress on the SDGs. UNCTAD's Action Plan for Investment in the SDGs has long called for similar programmes, indicating priority sectors and mechanisms aimed at maximizing impact, including through the leveraging of additional private sector investment as a multiplier to complement public efforts.

Overall, given their size, the recovery investment packages – wherever they are deployed – are likely to shape global investment patterns for several years to come. The main mechanism through which this will occur is through international project finance. The next section looks at specific challenges that could arise in the effective use of international project finance to maximize its sustainable recovery impact.

## 2. Maximizing sustainable and inclusive impact

*With most public funds directed towards infrastructure industries, international project finance will be an important vehicle for the roll-out of recovery programmes. The use of this mechanism presents an opportunity to draw in additional private sector capital, but also a set of new challenges for sustainability financing.*

The large recovery investment packages being adopted in many countries and regions, and the parallels that they display with the long-advocated push for investment in the SDGs, could bode well for sustainable development financing in the coming years. The positive impact of the new investment drive will depend on five factors (table IV.11). First (factor 1), public investment recovery packages should achieve a high degree of additionality and, ideally, function as a lever to generate additional private investment. Second (factor 2), the orientation of the investment should be as much as possible towards high-impact projects, including those in developing countries.

Given the dimensions of and asymmetries in recovery spending, spillover effects are likely to be important. Countries and regions could be affected by massive recovery spending elsewhere, either as a result of macroeconomic imbalances or micro-level strains, such as upward pressures on infrastructure prices. Therefore, a third factor (factor 3) in ensuring sustainable and inclusive impact is ensuring that negative spillover effects are minimized and positive spillovers, especially to developing countries with limited financial leeway, are maximized.

Impact condition	International project finance challenge
1. Additionality	The need to safeguard existing projects with swift and efficient support
2. Orientation	Pressure on private funds to shift to lower-risk geographies and sectors
3. Spillovers	Upward pressure on the cost of financing projects in developing countries
4. Implementation	Limits to absorptive and operational capacity
5. Governance	Pressure on ESG standards

Source: UNCTAD.

A fourth factor (factor 4) is managing implementation. The efficient and effective deployment of funds will be essential to optimize stimulus effects. Much will depend on governance and on the economy's capacity to absorb investment. Many recovery investment programmes still offer little detail on implementation schedules; most rescue measures have a duration of one to two years and recovery plans three to four years, while structural transformation plans commonly have five-year time spans. Given the magnitude of spending plans, these time frames will be challenging.

Finally, the pandemic has caused financial distress for businesses around the world; the pressure on private sector participants in infrastructure projects to win bids can be enormous. Under such circumstances it is important that environmental, social and governance (ESG) standards are safeguarded (factor 5).

One of the most important mechanisms through which recovery funds will be converted into sustainable investments on the ground is project finance. This mechanism is also the principal lever through which additional private sector financial resources – accessed from global financial markets and international sponsors – can be brought in to multiply the total funds available.

In project finance, private and public partners share risks and develop large projects using a financially and legally independent special-purpose vehicle, which isolates the risks of the project in a tailor-made and self-sustainable financial structure that shields equity sponsors from much of the project risks. Equity sponsors provide as little equity as necessary and rely on debt finance to a significant degree, averaging a project debt-to-equity ratio of 70/30.<sup>11</sup> Creditors thus provide the majority of capital and, because of the non-recourse nature of projects, take on comparatively more risk than in traditional corporate finance of firms.

The current financial market environment for corporate lending is extremely friendly. Interest rates are exceptionally low, and financing volumes present all-time highs as financial markets provide debt to support corporate recovery from the pandemic (Moody's, 2021). The early months of 2021 have seen an increase by more than 25 per cent year-on-year in rated high-yield borrowing (i.e. loans and bonds), the fastest increase in decades.

However, project finance debt has several characteristics that could give rise to a new set of challenges for sustainable recovery financing (table IV.11). In particular, these will affect the pre-conditions for the maximization of sustainable and inclusive impact of recovery investment packages.

### **a. Factor 1: Additionality weighed against the need to support existing projects**

The degree to which public recovery investment packages are additional to previous spending plans was discussed briefly in the previous section. Building recovery packages on existing plans or accelerating prior commitments may reduce additionality, but it has the advantage of consistency, strategic focus and access to an existing pipeline of planned projects.

Similar balanced considerations apply to additionality concerns that may arise specifically from the nature of international project finance. Many existing projects – at any stage in the pipeline from ideation to operation – have run into difficulties due to the pandemic, either because the parameters of their business case have changed or because their construction has been delayed or because their cash flows are affected by lockdowns and usage restrictions. Clearly, any consideration of additionality of recovery investment support must start from “not subtracting” – i.e. safeguarding where possible the existing stock of projects.

Unexpected and severe exogenous shocks like the pandemic have hurt the financial business cases of existing projects. In many, banks and sponsors will need to renegotiate the terms of loan contracts and find refinancing. Renegotiating such terms is more difficult under tighter financing conditions, which can cause delays (James and Vaaler, forthcoming). These delays could be significantly longer in developing countries and in international project finance deals.

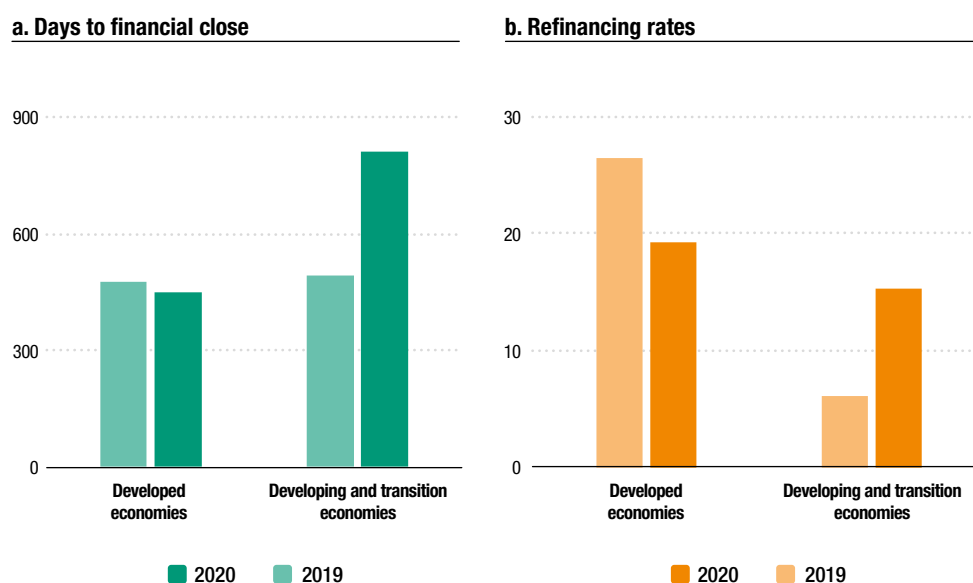
To illustrate, recent data on the number of days from project announcement to closing on debt financing show a sharp increase for developing and transition economies from, on average, 495 days in 2019 to 812 days (figure IV.13). Developed-country projects, in contrast, closed 25 days earlier than in 2019. The strongest effect was seen in cross-border deals in developing and transition economies for which delays in deal closure almost doubled, from 562 to 973 days, indicating a tightening of financing conditions for developing-country projects.

Projects in the construction phase may be delayed operationally because of the pandemic. Among Belt and Road Initiative infrastructure projects, which have remained relatively stable throughout the crisis, 11 projects amounting to \$14.8 billion have been delayed, while 32 projects are on hold or have been cancelled entirely – although this is only a small fraction of the total (Refinitiv, 2020). Supply and procurement delays could lead to payment delays and defaults by contractors, forcing costly refinancing.

Finally, existing projects in operation are facing capacity utilization restrictions imposed by policy responses to the pandemic, decreasing the cash flows necessary for the repayment of non-recourse debt. If cash flows for a large number of projects suffer sustained pandemic-related losses, a wave of defaults and financial restructurings could be triggered.

The Cameroon Nachtigal Hydropower Project, the largest project of its kind to be built on the African continent through a project finance scheme, is a recent example. The hydropower plant's construction began in 2018 and operations were scheduled to begin in 2023. However, Électricité de France, a major stakeholder, foresees significant delays in

**Figure IV.13.** Financing delays and refinancing by region, 2019–2020  
(Number of days and per cent)



Source: UNCTAD, based on data from Refinitiv SA.

the project, valued at \$1.2 billion, because of the impact of the pandemic (EDF Résultats Semestriels, 2020). Project closing is now expected in June 2024 (World Bank, 2021).

If refinancing can be arranged swiftly, projects can be saved from default. Often, however, projects end up in protracted bargaining and operational stalemate. The complex contractual structures and the large number of parties involved in project finance render refinancing difficult, time consuming and costly. Refinancing delays often cause further cost escalations (Flyvbjerg, 2009). In many cases, public intervention is required to re-establish a financially feasible structure. Unnecessary cost escalations on existing projects will further reduce the additionality of recovery investment funds.

Looking at year-to-year refinancing rates in project finance, numbers at the global level are not alarming yet, although there are some asymmetries. While refinancing rates in developed countries actually declined in 2020, refinancing in developing countries almost tripled, from 5 per cent to 13 per cent of closed deals. Asia and Latin America were particularly affected, with refinancing rates of 15 per cent and 12 per cent, up from 7 per cent and 3 per cent.

Since refinancing is characterized by longer time lags, it is early to draw conclusions on the basis of this data. More sensitive indicators, such as project suspensions and ratings, provide some further evidence. Project setbacks in the Middle East and North Africa region, an important recipient of international project finance for development, show that suspensions increased from fewer than 200 projects in 2019 to 609 in 2020. Of these projects, 261 cited plan reviews and 237 cited financial issues as justifications for suspension.

In the last 12 months, Moody's reported 184 COVID-19-related rating actions in the project finance and infrastructure sector, including 32 negative actions (28 downgrades and 4 possible downgrades) and only 16 positive actions (13 upgrades and 3 possible upgrades). The hardest-hit sector has been airports, with 108 such actions. Outlook changes in the infrastructure and project finance industry reflected the negative sentiment, with 24 negative outlooks and only 5 positive outlooks (Moody's, 2021).

These leading indicators could be looming signs of refinancing needs for existing projects, which could result in a considerable part of the funds dedicated to financing new projects for recovery flowing into the necessary bailout of existing installations. To avoid protracted cost escalation and gridlock, it is pivotal to deliver fast and efficient public refinancing support. Efficient support to existing projects also has an important signaling function in the climate for international project finance, which will affect countries' capacity to attract further private sector funds in new projects.

## **b. Factor 2: Pressure to shift to lower-risk and lower-impact geographies and sectors**

The asymmetry in stimulus between developed and developing economies risks tilting the business case for project finance deals in favour of the former, potentially diverting private resources from high-impact projects in developing countries.

The regional distribution of new project finance announcements in 2020 and early 2021 shows early signs of such a shift. Developed countries saw an increase of 13 per cent in total project numbers in 2020, while projects in developing and transition economies decreased by 6 per cent (table IV.12).<sup>12</sup> The asymmetry is even more marked in value terms. Although the value of projects in developed countries also decreased (by 21 per cent), values in developing and transition economies fell by 43 per cent. In times of crisis, financial institutions tend to reduce their cross-border lending disproportionately, amplifying the effect on countries with less developed financial markets and higher perceived risk. In fact, announced *international* project finance deals (those with international sponsors)

Table IV.12.

**Announced international project finance deals by region, total and cross-border, 2019 and 2020 (Percentage change)**

Region	Total deals, change		Cross-border deals, change	
	Value	Number	Value	Number
<b>Total</b>	<b>-35</b>	<b>3</b>	<b>-42</b>	<b>-5</b>
<b>Developed economies</b>	-21	13	-28	8
<b>Developing and transition economies</b>	-45	-6	-51	-18
Africa	-65	-24	-74	-39
Asia	-42	-3	-40	-2
Latin America and the Caribbean	-36	4	-48	-10
Transition economies	-34	-13	-18	-47

Source: UNCTAD, based on data from Refinitiv SA.

in developing and transition economies saw a decline of 17 per cent in number and 47 per cent in value. The reduction in cross-border lending activity could be an early sign of a “flight home” of project finance loans from developing to developed markets.<sup>13</sup>

In particular, African and Asian countries announced considerably fewer projects than before the COVID-19 pandemic. The value of announced project finance decreased dramatically, by 56 per cent in Africa, 42 per cent in Asia and 36 per cent in Latin America and the Caribbean. The World Bank Private Participation in Infrastructure (PPI) database, which focuses on projects in developing countries that benefit from private and public participation, shows even stronger decreases.

Country-level year-to-year project finance figures exhibit a naturally high volatility because of the large value of individual infrastructure projects. A single large project can have a significant impact on yearly values. In addition, project finance deals have long lead times for negotiation. As such, 2020 data give only an early indication of the potential redirection of private project finance investment flows. However, the data do point to the risk of high levels of recovery spending in developed markets, along with a potentially deteriorating lending environment in LDCs, redirecting projects into low-risk countries.

The pandemic has also affected project finance sectors to varying degrees. Project finance is highly dependent on predictable and stable cash flows. Some industries have been harder hit than others in their ability to generate such long-term cash flows. Urban infrastructure, for example, has taken heavy losses because of the crisis response. Where long-term prospects deteriorate, private actors could prioritize sectors with lower vulnerability to pandemic restrictions (e.g. natural resources, mining), which often have lower impact for sustainable development.

In 2020, one of the few pockets of growth in project finance was in the telecommunication sector, where the number of announced deals grew by 34 per cent. Fueled by technology changes and efforts to increase digitalization, this trend is likely to continue. For instance, Fu (2020) analyses the role of digital technologies in developing countries in enhancing the resilience of value chains, enabling social distancing and fostering new drivers of growth for post-pandemic recovery. Her findings highlight the importance of the opportunities granted by the digital economy, while exposing the gap in digital capabilities and infrastructure, as well as in the ability to invest in them. She calls for international technological and financial cooperation and policy coordination to help developing countries address

the impact of the shock and to develop their digital competencies post-pandemic. Ibeh (2020) also looks at the role of digital technologies for post-pandemic recovery zooming in Africa and puts forward policy recommendations in four areas: organizational capabilities, financing and scaling, digital infrastructure and regulatory conditions.

Renewable energy installations also continue to grow; they are now the biggest international project finance sector in terms of the number of deals, but the average value of individual projects is relatively low. However, the overall value of newly announced international project finance in other so-called SDG investment sectors – including infrastructure, utilities, water and sanitation, food and agriculture, health and education – decreased by 36 per cent, with substantial declines in developing countries in the sectors of education (-57 per cent), power (-20 per cent) and water (-33 per cent) (see chapter I). The values of announced projects in Africa, for example, decreased by 79 per cent in education, 84 per cent in health and 76 per cent in power projects. International project finance announcements across infrastructure-related sectors (excluding renewables) dropped by 62 per cent in value because of the COVID-19 crisis. The negative effect of the crisis is mirrored in PPI data, which exhibits decreases of 45 per cent in water, 79 per cent in roads and 82 per cent in other transport projects.

If vaccination programmes in lower-income developing countries continue to lag those in developed markets by as wide a margin as today, with further risks of periodic restrictive measures to cope with new flare-ups of the pandemic, private sector investors will remain reluctant to direct funds towards sectors where future cash flows are uncertain, including education, urban transport and other infrastructure.

### **c. Factor 3: Spillover risks: upward pressure on financing costs for projects in developing countries**

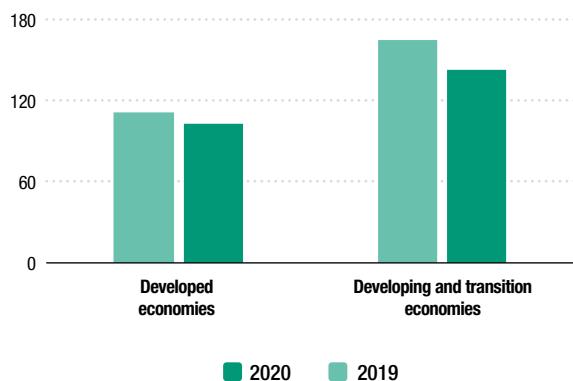
In the current environment of extremely low interest rates and with vast amounts of capital available for investment in financial markets, the risk of increased financing costs for projects in developing countries appears counter-intuitive. However, low interest rates in global markets do not translate automatically to lower-cost project finance.

When banks provide non-recourse debt, they account for potential cash-flow risks by (i) increasing the required equity share from sponsors, (ii) increasing the premium on the interest rate and (iii) decreasing the maturity of the loan. All three measures constitute a deterioration of financing terms for sponsors and reduce the cash flows that discount to the net present values of projects.

Data on debt-to-equity ratios and loan spreads in 2020 and early 2021 still present few signs of a credit tightening in project finance. Projects financed in 2020 in both developed and developing countries recorded similar levels of debt as in 2019. Only in early 2021 did debt ratios drop from 85 to less than 80 per cent in developing and transitioning economies (while remaining stable for developed economies). Similarly, loan spreads remained broadly stable in both developing and developed countries. In fact, spreads declined from 212 to 184 basis points in developed countries and from 289 to 214 in developing countries, also because of extensive support by multilateral lending institutions and export credit agencies.

However, the uncertainty surrounding financing terms for projects going forward is becoming evident in the maturity of project finance loans (figure IV.14). Loan maturities have declined by more than 8 months in developed countries and by more than 24 months in developing countries (to about 20 months in Africa and Asia, and almost 30 in Latin America and the Caribbean). Again, some important SDG sectors were among the sectors most strongly affected by shorter loan maturities (e.g. education, 60+ months;

**Figure IV.14.** Average loan maturity by region, 2019–2020 (Number of months)



Source: UNCTAD, based on data from Refinitiv SA.

health, 50+ months; water, 40+ months; and transport, 30+ months – on average). The shortening maturities in international lending could be an early sign of financial institutions reducing their overseas exposure, a reaction documented in financial research (Giannetti and Laeven, 2012; Dorobantu and Müllner, 2019).

Scarce data on the financing structures of projects in developing countries closed in 2020 reveal private commitments fell by 12 per cent and non-traditional sources were called upon to fill this gap (e.g. development finance institutions). Although government equity participation in developing countries initially decreased in 2020, in the early months of 2021 government equity shares in developing countries increased from 15 to 27 per cent, a further indication of looming financing constraints for developing countries.<sup>14</sup>

Adding to, and potentially aggravating, the deteriorating financing terms in developing countries is the perception of higher political risk by equity sponsors and creditors as a result of the pandemic. Increased policy and governance instability in countries where the pandemic is still ongoing or where rapid recovery prospects are weak will make it comparatively more difficult and costly for developing countries to attract private foreign investment (Gallagher, 2021). In the pre-pandemic era, developing countries required ownership of 20–40 per cent of total equity to signal commitment and reduce lenders' concerns of political risk (James and Vaaler, 2018). If concerns about long-term political stability increase, so will requirements for credible commitment for developing countries seeking to attract foreign investment.

Finally, the credit ratings of developing countries could be affected by recovery spending, exacerbating budgetary strains on developing countries. Often, the problems associated with credit rating revisions extend beyond the cost of finance. Most banks have internal or regulatory limits (Basel III) that restrict their non-recourse lending volumes to non-investment-grade countries. As a result, potential downgrades of sovereign credit rating in developing countries would lead not only to higher costs but also to deteriorating access to lending. The downgrade of sovereign credit ratings in countries aiming to use international project finance would result in higher costs for borrowing, shorter maturities and less favourable debt ratios (Esty, 2002). Projects rated A to AAA achieve median debt ratios of between 80 (A) and 88 per cent (AAA). A downgrade to BBB results in a loss of 8 per cent of debt (a 72 per cent debt ratio) and a downgrade to CCC in a loss of 10 per cent (a 70 per cent debt ratio). This would cause the same project to require more than double the amount of public equity to attract the required credit – in other words, the same amount of public recovery funds would buy only half the infrastructure.

#### **d. Factor 4: Implementation challenges: absorptive and operational capacity limitations**

Recovery investment packages in developed countries and higher-income emerging markets will place significant stress on the absorptive capacity of economies and high demand on the delivery capabilities of companies. This has several implications. First, the sheer size of the proposed infrastructure investment injection is daunting.

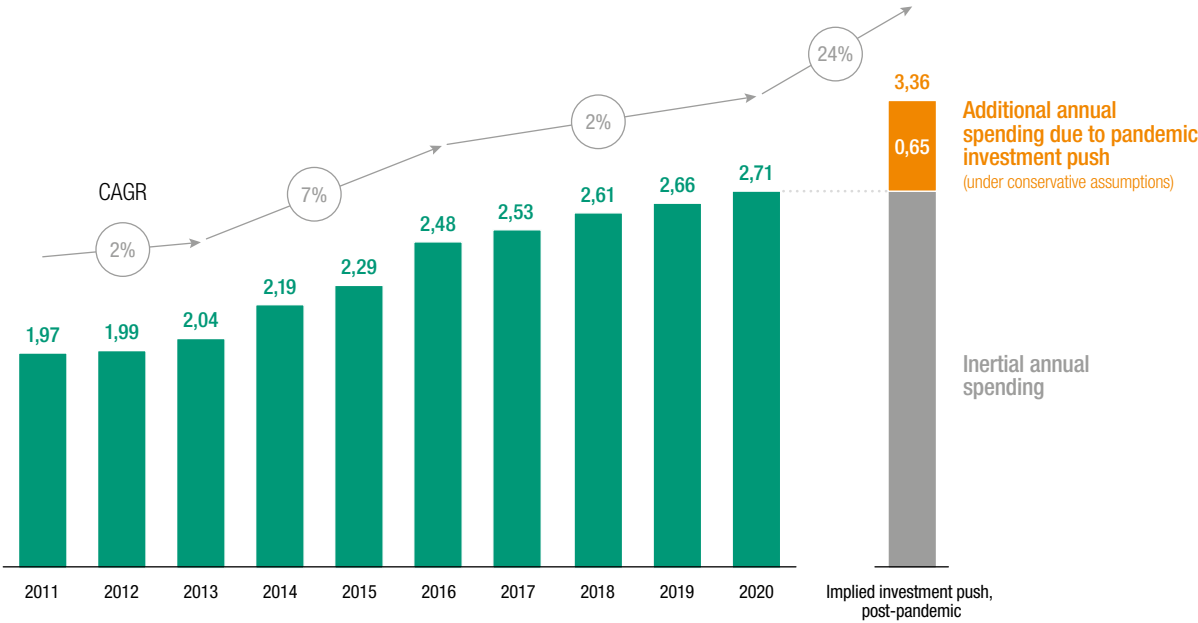


Global infrastructure investment, tracked by the Global Infrastructure Hub, has averaged growth of 2.7 per cent per year over the past decade, translating into annual increments of \$50–60 billion. A growth peak of 8.6 per cent in 2016 resulted in an increase to existing spending of just under \$200 billion. As documented in the previous section, the cumulative value of infrastructure investment packages for the recovery is between \$2.0 trillion and \$3.5 trillion, with those plans that include some detail on implementation setting out timetables for rollouts over three to four years. From these numbers, it is clear that the strain on the delivery capacity of both public institutions and firms will be enormous, with the annual investment push amounting to, at a minimum, triple the growth achieved in the peak year of the last decade (figure IV.15).

The track record of most countries on efficient deployment of funds available for infrastructure investment is sketchy. Delays and cost overruns are commonplace throughout the developed and developing world, with few exceptions. Megaprojects are especially at risk, with many experiencing financial distress requiring refinancing that further adds to cost escalations (Flyvbjerg, 2011). Average cost overruns have been estimated at more than 25 per cent.<sup>15</sup>

Lengthy planning and procurement processes and procedures for tenders or for the establishment of public-private partnerships affect the speed with which government institutions can deploy funds. For example, even before the pandemic, EU structural funds available for investment in member states were taken up at a rate of less than 60 per cent of available financial resources, with some countries showing absorption rates below 40 per cent. There is evidence that, after a crisis, the institutional context matters even more for efficient project implementation.<sup>16</sup> Given the ubiquity of project delays and cost overruns in infrastructure development, it can be expected that these findings on absorptive capacity limitations apply throughout the world.

**Figure IV.15. Total spending in infrastructure, historical and expected** (Trillions of dollars and per cent)



Source: UNCTAD, based on Global Infrastructure Hub and Oxford Economics.

Note: CAGR = compound annual growth rate. The additional investment push has been computed from an average estimated value of \$2.5 trillion allocated to investment generation measures by post-pandemic stimulus packages, assuming a rollout of four years. Conservatively, the simulation does not account for the multiplier effect of public financing, which has potential to increase the total investment push to over \$10 trillion, resulting in additional annual spending of \$2.5 trillion – a doubling of the historical infrastructure spending.

These absorptive capacity constraints will have significant implications for the effective use of international project finance. Specialist infrastructure investment funds are estimated to have raised nearly \$800 billion of private finance over the last decade. More than a quarter of that total is still unspent.<sup>17</sup> Partly as a result, private funds are being used to buy existing infrastructure assets in secondary markets, rather than for the construction of new infrastructure.

Absorptive and operational capacity issues will have further consequences, potentially adding to spillover effects for developing countries. In developed economies, public funds directed towards infrastructure can mostly be delivered by domestic companies, thus retaining capital within the country and creating domestic jobs. In the case of developing countries, however, technological capabilities for high-quality and high-tech infrastructure are often acquired externally. As discussed above, asymmetric recovery spending could reduce the willingness and capacity of project developers to pursue projects in developing countries. If high-quality sponsors flock to publicly subsidized projects in developed countries, this could cause a negative selection effect of sponsors in developing countries, leading to increased reliance on less efficient, capable or environmentally sustainable partners.

### **e. Factor 5: Governance risks: pressure on ESG standards**

In times of high uncertainty, the nature of infrastructure investments with high sunk costs create the “hiding hand problem”: after the negotiations, once a project is underway, the bargaining position of public and private participants shifts in favour of the latter.<sup>18</sup> When projects face financial difficulties, they require quick refinancing in order to avoid protracted gridlock and cost escalation. This characteristic of projects can be abused by opportunistic contractors to force bailouts. If project developers face financial pressure because of the pandemic, they may be incited to bid opportunistically and seek ex-post bailouts, which increases the importance of government due diligence on sponsors and proposed projects.

The disruption caused by the pandemic has changed how engineering and construction firms bid for infrastructure projects, according to 89 per cent of responding firms that took part in a recent survey. As these firms seek income and work continuity, their approach to pricing is more aggressive or below cost. In the medium to long term, this invites a higher level of risk as contractors attempt to make projects profitable (McKinsey, 2021). Such efforts could negatively affect the environmental or social outcomes of projects.

# E. CONCLUSIONS AND POLICY IMPLICATIONS

The experience of the impact of past crises on FDI and the behaviour of international investors teaches that MNEs, especially the largest ones, are quite resilient and that foreign affiliates and investment projects bring a degree of stability to host economies as a result. Nevertheless, the recovery from an investment downturn can take some time to gather speed. Today, cross-border M&As, due to their closer relationship with financial market trends, have already recovered and look set to increase significantly in 2021. But greenfield investment, which has a bigger growth and employment impact and is especially important for the industrialization prospects of developing countries, are taking longer to recover. International project finance is a hybrid, influenced by financial market trends because of its debt component, but with lengthy gestation periods because of its focus on large-scale infrastructure projects.

The distinction between these three types of international investment is useful in gauging the responses to date of investment policymakers. Early reactions to the crisis caused by the COVID-19 pandemic – as in the case of past economic crises – included measures to address concerns about opportunistic M&A transactions and fire sales of companies in strategic industries. Greenfield investment in manufacturing and services has been affected by contrasting policy reactions. On the one hand, business support packages have functioned as investment retention measures, and in some countries specific investment facilitation measures have been put in place during the pandemic to support ongoing projects and continue to attract new ones. On the other hand, policy pressures towards increased supply chain resilience and greater national or regional autonomy, especially in strategic sectors and industries producing essential goods, are putting longer-term strains on (efficiency-seeking) greenfield investment. Finally, international project finance is coming to the fore now, as a key mechanism through which large-scale recovery investment packages will be deployed to leverage public funds through private sector participation.

The investment priorities of policymakers at this stage revolve around two sets of objectives, both frequently summarized under the heading “building back better”. The first, already mentioned, relates to the need to build more resilient supply chains. This became a top priority early on during the pandemic, made urgent by shortages of essential goods caused by the dispersed supply chains of pharmaceuticals and medical equipment. It was reinforced subsequently when supply chain bottlenecks caused production stoppages and factory closures also in other industries, such as the automotive industry. The resulting policy pressures are mostly just an intensification of a pre-existing trend in developed economies towards discouraging the offshoring of production and bringing back manufacturing (*WIR20*).

The second set of objectives relates to the focus of recovery investment packages on the energy transition, green technologies and industries, digital infrastructure and Industry 4.0 ecosystems, physical infrastructure, and health systems. These investment targets clearly show that the goals of the large-scale investment packages that have been or are being adopted extend well beyond demand stimulus and aim at effecting lasting change.

This chapter provides fresh perspectives on both sets of priorities. On supply chain resilience, it has put forward a framework for the analysis of the various options available to MNEs to reduce exposure to shocks and to improve their capacity to respond. It concludes that, in the absence of policy measures either forcing or incentivizing the relocation of productive assets, MNEs are unlikely to embark on a broad-based restructuring of their international production networks to improve supply chain resilience in the short term. The impact on fixed and variable costs, and possibly irrecoverable sunk costs, would be prohibitive and MNEs will first exhaust other, less costly, tools for supply chain risk mitigation.

The immediate impact on FDI patterns of a shift towards more resilient supply chains is therefore expected to be limited. Longer-term, however, with resilience considerations becoming part of investment drivers and determinants – i.e. one of the criteria in MNE decisions about investment and location – it will lead to a gradual rebalancing of international production networks towards higher levels of diversification and regionalization and, quite possibly, less offshoring.

For many countries, the gradual shift towards more resilient international production networks can present an opportunity. Closeness and stable supply routes to regional markets will become more important relative to low labour costs as investment determinants. Also, resilience-seeking diversification can lead to the inclusion of more countries in global supply chains. However, the push for supply chain resilience also presents risks, especially for countries that rely heavily on attracting efficiency-seeking FDI to grow export sectors. Although resilience is not expected to lead to a rush to reshore, the gradual process of rebalancing of international production networks could become a drag on development for some countries.

In some industries the process may be more abrupt. While policy pressures and concrete measures to push towards production relocation are not likely across the board, in strategic and sensitive sectors they are already materializing. As mentioned earlier, they are mostly an intensification and acceleration of developments that were already underway, made manifest through trade tensions and decoupling trends that pre-date the pandemic. This is where the recovery investment packages connect with the resilience drive and the push for greater self-reliance: while investment in sustainable infrastructure features prominently, almost all investment packages include clear domestic or regional objectives for industrial development.

Looking at recovery investment priorities, the chapter has argued that, although the choice to focus on physical and social infrastructure, the digital economy and the energy transition is a sound investment priority, it is worth taking a broader perspective. Investment in infrastructure, telecommunication and renewable energy has been relatively resilient during the pandemic. While the value of infrastructure investment declined, the number of projects financed held up comparatively well, and digital and renewable energy were the only sectors that registered some growth in 2020. Other sectors, across manufacturing and services industries, as measured by the decline in new investment flows, were hit much harder. A slow recovery of investment in these sectors – in which FDI often plays a relatively more important role – will dampen the demand-side stimulus effect of the infrastructure investment push and put a brake on productive capacity growth, which is key for economic dynamism in all countries, but especially for the development prospects of the poorest. Thus, initiatives to promote and facilitate new investment in industry, especially in sectors that help private sector development and structural change, will be important to complement recovery investments in infrastructure.

The sheer size of recovery investment packages is likely to affect global investment patterns in the coming years. The cumulative value of recovery funds intended for long-term investment worldwide is already approaching \$3.5 trillion, and sizeable initiatives are still in the pipeline. Taking into account the potential to use these funds to draw in additional

private funds (including equity and debt), the total “investment firepower” of recovery plans could exceed \$10 trillion. For comparison, that is close to one third of the total 15-year SDG investment gap estimated at the time of their adoption (*WIR14*).

Of course, the bulk of recovery finance has been set aside by and for developed economies and a few large emerging markets. Developing countries account for only about 10 per cent of total recovery spending plans to date. However, the magnitude of plans is such that there are likely to be spillover effects – positive and negative – to most economies. And international project finance, one of the principal mechanisms through which public funds will aim to generate additional private financing, will channel the effects of domestic public spending packages to international investment flows – including FDI, but also portfolio flows and loans.

The use of international project finance as an instrument for the deployment of recovery funds can help maximize the investment potential of public efforts. However, it also raises new challenges that are specific both to this instrument and to the circumstances under which recovery plans will be rolled out. The chapter has highlighted five factors that will determine the impact that investment packages will have on sustainable and inclusive recovery: additionality, orientation, spillovers, implementation and governance. Each presents potential pitfalls that should be addressed:

- First, it will be important to intervene swiftly and efficiently where necessary to safeguard existing projects that have run into difficulty during the crisis, in order to avoid cost overruns and negative effects on investor risk perceptions, as a basis to maximize the additionality of funds.
- Second, support for and lending to high-impact projects in developing countries will need upscaling, as the deployment of recovery funds in developed economies will otherwise tend to draw international project finance to lower-risk and lower-impact projects.
- Third, bilateral and multilateral lenders and guarantee agencies need to make efforts to counter upward pressure on project financing costs and potential credit tightening in lower-income developing countries caused by spillover effects of spending in developed countries, increased risk aversity of private sector financiers and possible ratings downgrades.
- Fourth, because recovery investment plans imply a massive increase in global infrastructure investment (at a minimum, three times the biggest annual increment of the last decade, for several years), they will require major improvements in implementation capacity, as well as project contracts that take into account increased risks of delays and cost overruns.
- Fifth, governance mechanisms and contracts need to anticipate risks to social and environmental standards on projects entered into by firms that offered aggressive pricing to ensure work continuity during the crisis or – post-pandemic – on projects that might be rushed into as a result of the expected infrastructure spending spree.

Some of the policy recommendations that follow naturally from the challenges associated with such a large boost of infrastructure investment for sustainable recovery are not new. Admonitions to focus public spending on high-impact projects that will otherwise not attract sufficient private sector funds, to ensure high standards of governance and to use public funds and official development assistance blended with private capital to maximize development impact have long been part of the policy prescription for infrastructure financing. They also feature in UNCTAD’s Action Plan for Investment in the SDGs (proposed in *WIR14* and subsequently updated in the Investment Policy Framework for Sustainable Development and then in *WIR20*). The action plan – aimed at mobilizing finance, channeling it towards sustainable development and maximizing its positive impact – focuses on much the same sectors (e.g. infrastructure, green, health) that are now central to sustainable recovery plans.

This chapter has presented three aspects of investment in sustainable recovery. The first is the need for building more resilient economies. The second is the need to promote investment not just in infrastructure but also in industry and international production. The third is the need to address the specific challenges that will arise with the roll-out of recovery investment plans – in particular because of their expected reliance on international project finance. Translating this into a framework for policymakers, the first two aspects relate to strategic priority setting, the last aspect to implementation (figure IV.16).

For policymakers, the starting point is the strategic perspective, in the form of industrial development approaches. Industrial policy will shape the extent to which firms in different industries will be induced to rebalance international production networks for greater supply chain resilience (from a firm perspective) and greater economic and social resilience (from a country perspective). Industrial policy will also be the basis for the promotion and facilitation of investment in industry. As shown in this chapter, most recovery investment packages, in both developed and developing countries, dedicate a sizeable share of funds to industrial infrastructure, digital development and new technologies.

**Figure IV.16. Investing in Sustainable Recovery: a Policy Framework**

Level	Objectives	Actions	Tools (illustrative)
Strategic approach/ industrial policy	Increasing economic and social resilience	<ul style="list-style-type: none"> <li>Inducing firms to invest in more resilient supply chains</li> </ul>	<ul style="list-style-type: none"> <li>Strategic investment promotion, facilitation and regulation</li> <li>Building strategic pipelines of bankable projects</li> </ul>
	Balancing industrial and infrastructure investment	<ul style="list-style-type: none"> <li>Promoting and facilitating investment in strategic growth industries</li> <li>Boosting investment in infrastructure (including industrial), green energy, new technologies</li> </ul>	
Implementation of recovery investment plans (Addressing recovery-specific international project finance challenges)	Mobilizing funds	<ul style="list-style-type: none"> <li>Refinancing to safeguard existing projects and maximizing additionality</li> </ul>	<ul style="list-style-type: none"> <li>Innovative SDG financing approaches and financial instruments</li> <li>Instruments to leverage public sector finance to mobilize private funds</li> <li>ODA-leveraged and blended financing</li> <li>Home-host country IPA networks</li> <li>SDG-oriented investment incentives</li> <li>Regional SDG investment compacts</li> <li>IPA–SDG investment development agencies</li> <li>SDG zones, clusters and incubators to increase absorptive capacity</li> <li>SDG impact indicators</li> </ul>
	Channeling funds towards sustainable development	<ul style="list-style-type: none"> <li>Orienting recovery funds towards high-impact projects and supporting developing countries</li> <li>Countering upward cost pressures on projects in developing countries</li> </ul>	
	Maximizing positive impact	<ul style="list-style-type: none"> <li>Increasing absorptive and implementation capacity</li> <li>Ensuring good governance to maintain high ESG standards</li> </ul>	

IPFSD\*

Action Plan for Investment in the SDGs\*

Source: UNCTAD.

\* The list of tools includes selected elements of UNCTAD’s Investment Policy Framework for Sustainable Development (IPFSD) and its Action Plan for Investment in the SDGs.

For developing countries, industrial development strategies are also the basis for building a viable pipeline of bankable projects. The importance of building such pipelines and the shape they should take was described in detail in *WIR14* on Investing in the SDGs. The lack of so-called shovel-ready projects in many countries remains a key barrier to attracting more international project finance. The risk now is that, in the absence of projects that have gone through the phases of design, feasibility assessment and regulatory preparation, the roll-out of recovery investment funds will incur long delays, diminishing the stimulus impact (or even becoming pro-cyclical).

At the level of execution, addressing recovery investment challenges can usefully draw on initiatives included in the Action Plan for Investment in the SDGs, at the level of funds mobilization, channelling and impact management. Refinancing projects and ensuring additionality integrates innovative SDG financial instruments and instruments to leverage public sector finance. Upscaling support for high-impact projects in developing countries cuts across blended finance mechanisms and bilateral partnerships to promote investment in sustainable development. Countering credit tightening in developing-country projects integrates SDG-oriented investment incentives. Instruments to bolster absorptive capacity for investment in sustainable development include SDG zones, clusters and incubators. And ensuring high social and environmental standards should be based on SDG impact indicators – for which UNCTAD has developed a set of core indicators for firm-level reporting (UNCTAD, 2019).

In sum, UNCTAD believes that the drive on the part of all governments worldwide to “build back better” and the substantial recovery programmes that are being adopted by many can boost investment in sustainable growth. The goal should be to ensure that recovery is sustainable, and that its benefits extend to all countries and all people.

Public recovery investment support packages are one of two sets of forces that can provide momentum to investment in sustainable development. The other is the rapid growth of sustainable finance in global financial markets. The next chapter looks at sustainability trends in the upstream part of the investment chain.

# NOTES

- <sup>1</sup> The three types of investment discussed in this section correspond to three data sets. FDI is based on UNCTAD's FDI database. Greenfield investments and international project finance are announced projects as reported in the FDI Markets and Refinitiv databases, respectively.
- <sup>2</sup> "Blocked Suez Canal raises new threat to global supply chains", Nikkei Asia, <https://asia.nikkei.com/>.
- <sup>3</sup> Lori M. Wallach, "Is the era of hyperglobalisation at last over? The state steps in to save global economies", *Le Monde Diplomatique*, May 2020; Mohamed A. El-Erian, "Navigating Deglobalization", *Project Syndicate*, 11 May 2020; "Globalisation unwound", *The Economist*, 16 May 2020.
- <sup>4</sup> "Global chip shortage puts car supply chain under the microscope", *Financial Times*, 26 January 2021, [www.ft.com](http://www.ft.com).
- <sup>5</sup> The development of productive capacities has been a core part of UNCTAD's work for many years and the basis of a significant part of its technical assistance work. UNCTAD (2021) presents UNCTAD's Productive Capacities Index, which has been used to identify productive capacity investment components for this report.
- <sup>6</sup> The eighth component of the PCI relates to the strength of public institutions, less relevant in the context of private sector investment data.
- <sup>7</sup> For further details on how productive capacity gaps in LDCs and LLDCs are hampering development, please see UNCTAD (2020), *Productive Capacities Index: Focus on Landlocked Developing Countries*.
- <sup>8</sup> Developing and transition economies are placed in categories on the basis of benchmarks on the structural change component of UNCTAD's PCI: natural resource dominant activities, 0 to 18; limited industrial activities, 18 to 24; GVC-intensive activities, 24+.
- <sup>9</sup> See also the United Nations' *Financing for Sustainable Development Report 2021*.
- <sup>10</sup> This value is higher than but comparable to the impact of multilateral development bank financing through mobilizing additional private capital, estimated by Broccolini et al. (2019) to be about 7.
- <sup>11</sup> Their equity investment tends to increase with higher project risk factors, which depend on investment experience, project costs and industry outlook (Vaaler, James and Aguilera, 2008).
- <sup>12</sup> Closed deals (of projects announced before the COVID-19 outbreak) remained remarkably stable. In developing countries, the same number of projects (318) were realized in 2020 as in 2019. In developed countries, a small increase from 586 to 588 was recorded.
- <sup>13</sup> Such negative effects on cross-border lending in times of high uncertainty and systematic risk have been documented extensively in the financial literature (Giannetti and Laeven, 2012; Dorobantu and Müllner, 2019).
- <sup>14</sup> Based on the World Bank PPI half year report, <https://ppi.worldbank.org/en/ppi>.
- <sup>15</sup> See "How to get infrastructure right", *The Economist*, 1 January 2021.
- <sup>16</sup> A study on the performance of transport infrastructure projects before and after the GFC, which tested 22 EU projects completed before the financial crisis and 25 delivered afterwards, found that the quality of the institutional environment mattered more than before the crisis for on-time and on-cost delivery (Moschouli et al., 2019).
- <sup>17</sup> See "Is an infrastructure boom in the works?", *The Economist*, 1 January 2021.
- <sup>18</sup> For a recent discussion of the implications, see Müllner and Puck, 2018.