



REGIONAL COHESION IN EUROPE 2021-2022

Evidence from
the EIB Investment Survey



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Regional cohesion in Europe 2021–2022: Evidence from the EIB Investment Survey

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About the EIB Investment Survey

The European Investment Bank (EIB) Group Survey on Investment and Investment Finance is a unique annual survey of some 13 500 firms. Respondents include firms in all EU Member States and the United Kingdom, as well as a sample of US firms that serves as a benchmark. The survey collects data on firms' characteristics and performance, past investment activities and future plans, sources of finance, financing issues and other challenges that businesses face. The EIB Investment Survey uses a stratified sampling methodology to achieve a sample that is representative across all EU Member States and the US, as well as for firm size classes (micro to large) and four main sectors. The survey is designed to build a panel of observations to support time series analysis, and these observations can also be linked to firm balance sheet and profit and loss data. The survey was developed and is managed by the Economics Department of the EIB, with support for development and implementation from Ipsos MORI.

For more information, see <http://www.eib.org/eibis>.

About this publication

This is a report by the EIB Economics Department. The data source for this report is the EIB Investment Survey 2021. Results are weighted by industry group (sector), firm size class and country. Information on the methodology of the EIB Investment Survey is available at <https://www.eib.org/en/about/economic-research/surveys-data/about-eibis>.

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About the EIB Economics Department

The mission of the EIB Economics Department is to provide economic analyses and studies to support the Bank in its operations and in deciding on its positioning, strategies and policies. The department, a team of 45 economists, is headed by Director Debora Revoltella.

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Disclaimer

The views expressed in this publication are those of the authors and do not necessarily reflect the position of the European Investment Bank.

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Published by the European Investment Bank.
Printed on FSC® Paper.

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Introduction

Support for economic, social and territorial cohesion is crucial in the context of major transitions.

Providing support for cohesion has been an integral part of the European Union from the very start, and cohesion in Europe has improved (EIB, 2022; European Commission, 2022). However, looking back at the past 20 years, large-scale shocks have often worked to exacerbate gaps through their asymmetrical impact on regions and regions' differing abilities to withstand shocks. Cohesion policy can help avoid shocks turning into lasting setbacks for cohesion by strengthening resilience and supporting transformation across European regions.

During the COVID-19 crisis, strong policy action has helped to contain the economic fallout. Policy support was essential to mitigate the immediate adverse impact of the pandemic on firms. What is more, policy support in response to COVID-19 was substantial across all regions, allowing many firms to maintain investment plans and keep workers on the payroll.

Still, the COVID-19 crisis highlighted some pre-existing gaps and risks of widening divergences.

Deficiencies, for instance in digital infrastructure and skills, that existed before the pandemic made it harder for firms in some regions to react quickly to the shock. The results of the European Investment Bank (EIB) Investment Survey show that firms in more developed regions were often quicker to adapt and react to the pandemic with technology adoption and innovation. Slow reaction speeds made it harder for firms to position themselves successfully in the changed business environment following the pandemic; more generally, they make reacting to shocks more difficult and thus risk widening gaps.

The transition towards a greener and more digital economy is an opportunity to increase economic resilience across the European Union and move to a more sustainable economic model.

Cohesion policy needs to support those regions that are in a more challenging position to take advantage of the opportunities offered by structural change rather than getting left behind. In this report, we assess the risks and opportunities of the green and digital transition across regions and discuss what is needed to unlock the opportunities. Many firms in cohesion regions show ambition to invest in climate-related measures, including in energy efficiency. However, they will need to undertake these investments in an increasingly challenging environment.

This report assesses which regions are leading in transformative investments and which need to catch up.

Using the results of the EIB Investment Survey, it examines how investment was impacted by the COVID-19 shock, how firms responded to it and how they have progressed towards deeper structural transformation. In doing so, it also provides information on investment needs and gaps across regions and the challenges firms are facing, with a particular focus on transformation.



Debora Revoltella

Director, Economics Department

European Investment Bank

Regional cohesion in Europe: A snapshot

Over the past two decades, cohesion in Europe has improved, but gaps remain. High growth in less developed regions, notably in Central and Eastern Europe, has been key to driving convergence in gross domestic product (GDP) per capita. However, several middle-income regions, especially in Southern Europe, were hit heavily by the economic and financial crisis that started in 2008 and have since experienced stagnation (EIB, 2022).

Large urban centres, notably capital regions, have performed better. Capital regions have seen faster growth in GDP per capita and have typically strengthened their position as centres of economic activity and innovation. Human capital gaps between capital regions and the rest have increased in most Member States (EIB, 2022).

Employment disparities have started to narrow in recent years, but substantial differences remain. Many cohesion regions face structurally more difficult labour market conditions, indicated by lower employment rates and higher economic inactivity. The recent COVID-19 shock hit some regions harder than others, particularly those that are tourism-dependent. Firms are emerging from the crisis at different speeds, which will have consequences for competitiveness and employment.

Investments in infrastructure, innovation and skills have continued to drive convergence in recent years. However, to power future growth and convergence, infrastructure investment gaps need to be addressed in a more climate-friendly way and innovation ecosystems need to be strengthened to nurture home-grown innovation across the European Union. Investment in skills is crucial to supporting innovation and facilitating transformation at local level while ensuring that people are not left behind by structural change.

High-quality institutions and a good business environment are required to enable less developed regions to continue to catch up. Both are key factors supporting the effectiveness of investment across regions. They can facilitate the implementation of projects, unlock public and private investment and help to realise complementarities between the two.

EU cohesion policy aims to correct imbalances between countries and regions, strengthen economic, territorial and social cohesion, and increase resilience across the European Union. Cohesion policy helps to address the long-term challenge of achieving greater convergence and can offer short-term support in times of crisis. With EUR 392 billion made available for the period 2021–2027, it enables investments in national and regional programmes, including those aimed at driving growth, creating jobs, increasing social integration and achieving better cooperation. When national co-financing is taken into account, funds of about half a trillion euro will be available for programmes in EU regions and countries to support development and sustainable growth.¹ For the current cohesion planning period, 2021–2027, a priority is supporting the green and digital transition.

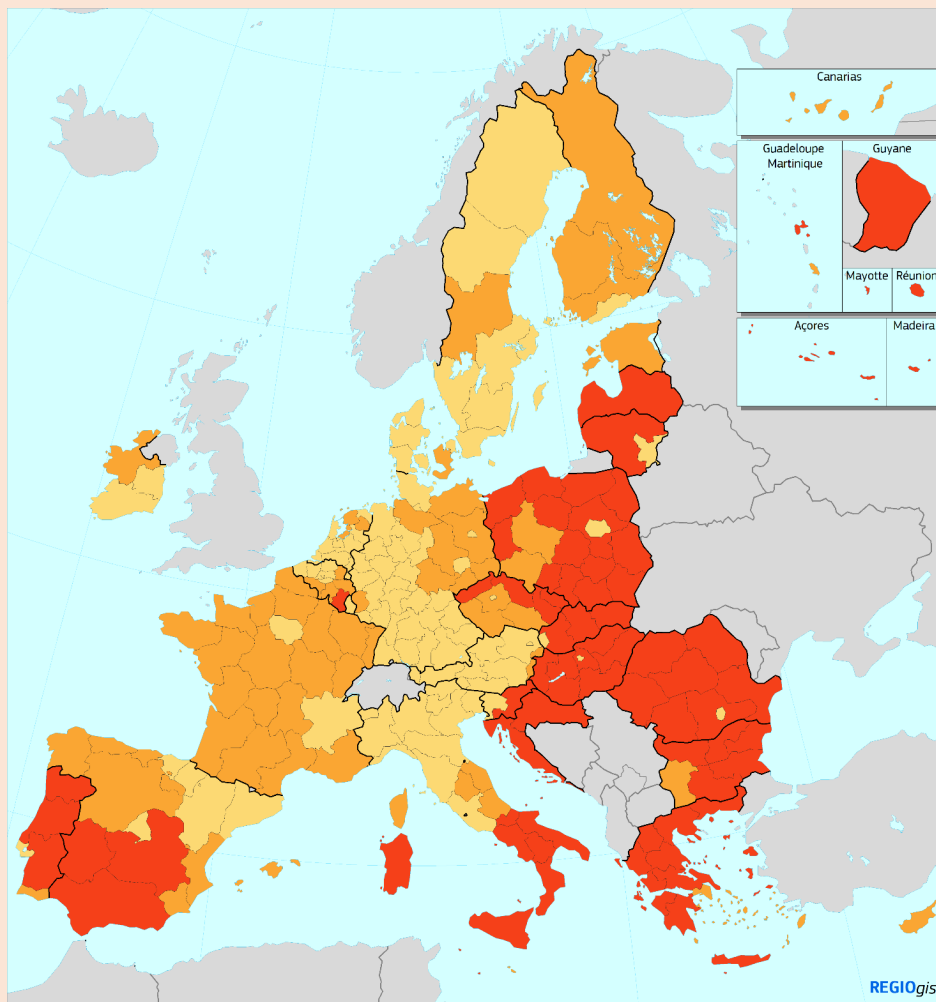
¹ For further information, see the European Commission web page [“Available budget of Cohesion Policy 2021–2027”](#).

² [Regional cohesion in Europe 2021–2022: Evidence from the EIB Investment Survey](#)

EU cohesion policy for 2021–2027 distinguishes three categories of regions at NUTS2 level:

- more developed regions, with GDP per capita greater than 100% of the EU-27 average;
- transition regions, with GDP per capita between 75% and 100% of the EU average;
- less developed regions, with GDP per capita less than 75% of the EU-27 average.

The availability of co-financing differs by type of region, with less developed regions having access to more financial support.



Investment for jobs and growth goal (ERDF and ESF+) eligibility, 2021-2027

Categories of regions

- Less developed regions (GDP/head (PPS) less than 75% of the EU-27 average)
- Transition regions (GDP/head (PPS) between 75% and 100% of the EU-27 average)
- More developed regions (GDP/head (PPS) above 100% of the EU-27 average)

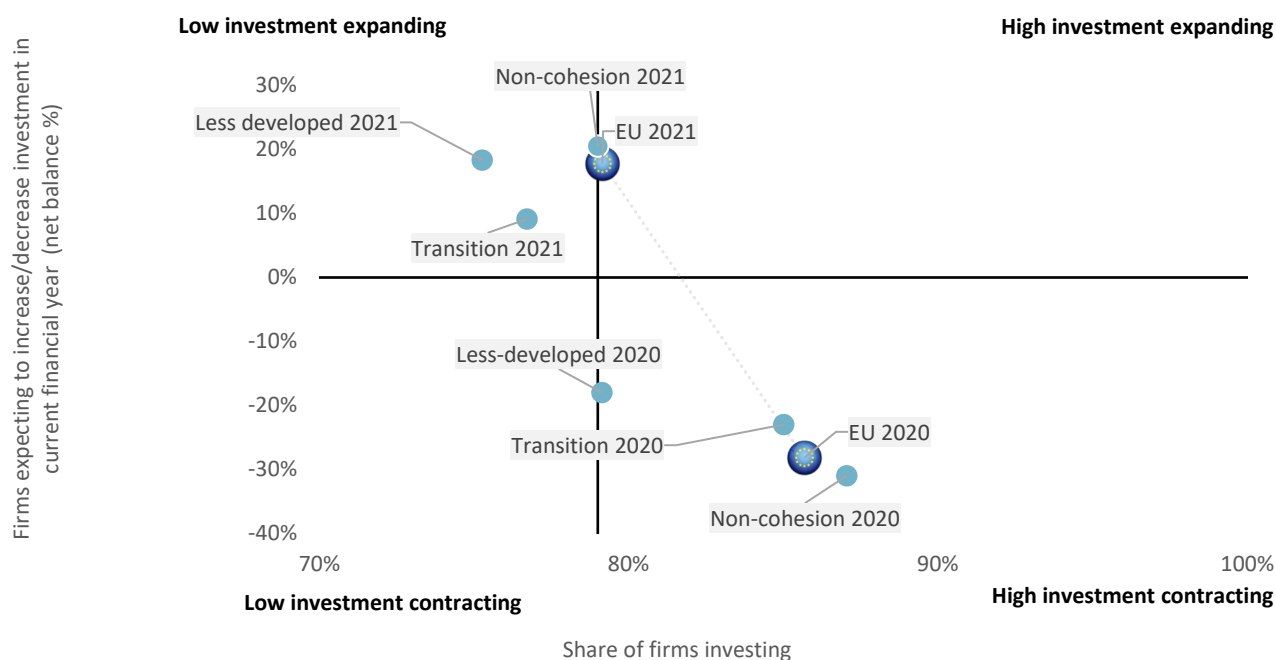
Source: European Commission, Directorate-General for Regional and Urban Policy.

Note: Thick borders separate countries. Thin borders separate NUTS2 regions. In the context of this report, we also refer to more developed regions as “non-cohesion regions” and less developed and transition regions together as “cohesion regions.” ERDF, European Regional Development Fund; ESF+, European Social Fund Plus; PPS, Purchasing Power Standards.

The COVID-19 shock and firms' reactions across EU regions

The COVID-19 pandemic strongly affected investment activity across regions, but firms began to become optimistic again last year when restrictions were eased. Firms' investment activity fell back sharply across EU regions due to the pandemic. Investment rates dropped across all EU regions and remained lowest in cohesion regions. In non-cohesion regions, almost eight out of ten firms (79%) invested; the shares were somewhat lower in transition regions (77%) and less developed regions (75%).² Investment dynamics showed signs of improvement, with more firms across all regional groups expecting to increase than decrease investment on balance, a marked shift compared with the year before. Firms in transition regions were least upbeat in their outlook.

Investment cycle, by category of region



Source: EIB Investment Survey 2021.

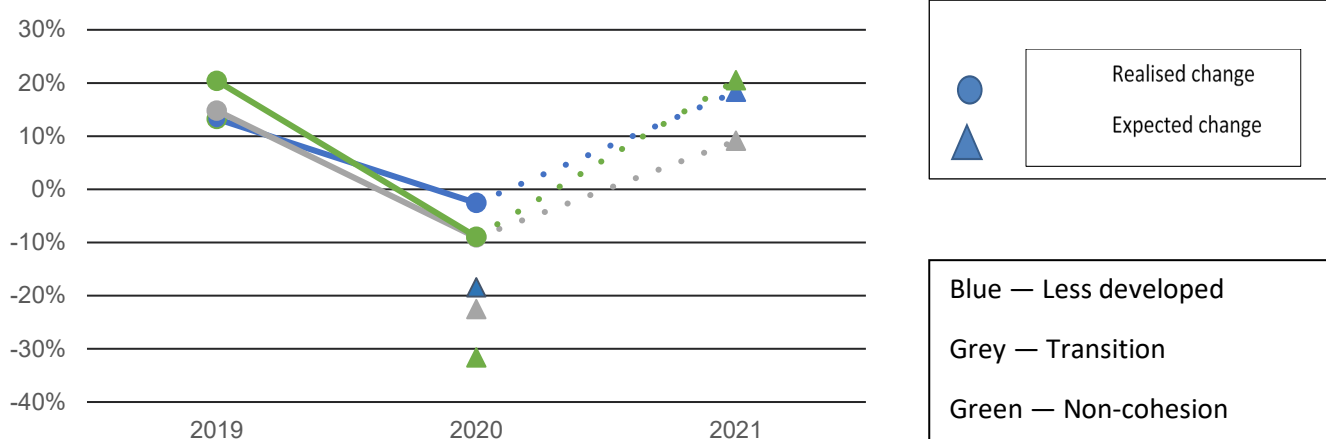
Note: Share of firms investing refers to the percentage of firms with investment per employee greater than EUR 500.

Base: All firms (excluding don't know/refused to answer responses).

Firms' investment activity proved more resilient than expected. In 2020, realised investment dropped sharply and firms were more likely to invest less than planned, but actual investment still held up better than initially expected. Looking ahead, an increased number of firms expect to invest more rather than less across all regions.

² All figures based on EIB Investment Survey data have been weighted using value added to make the sample of firms representative of the economy.

Realised and expected investment, by category of region



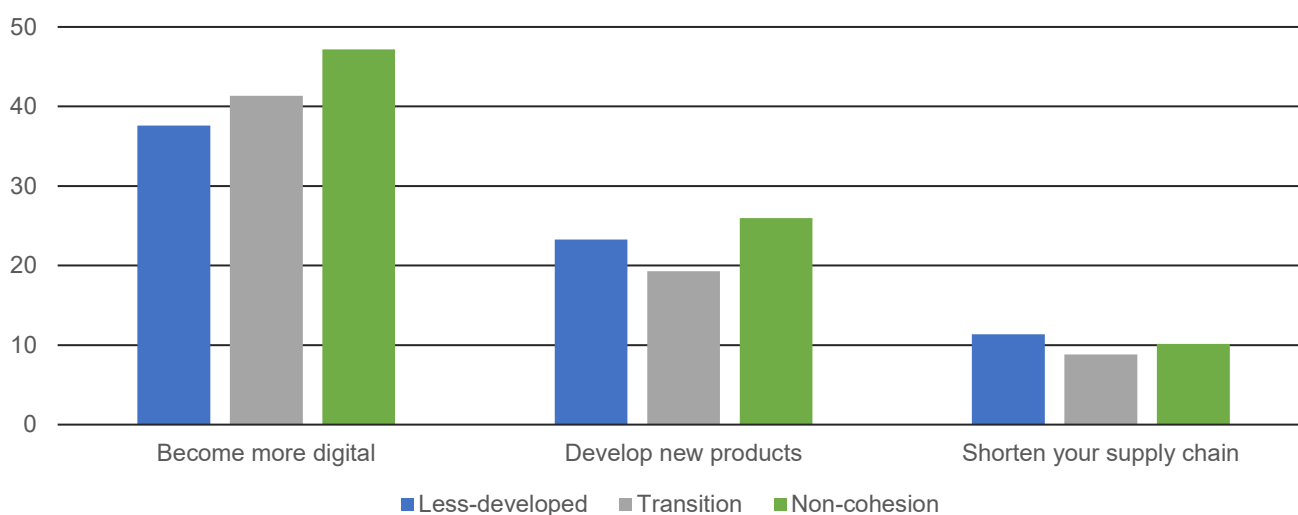
Source: EIB Investment Survey 2021.

Note: "Realised change" refers to the share of firms that invested more minus those that invested less; "Expected change" refers to the share of firms that expect to invest more minus those that expect to invest less.

Base: All firms (excluding don't know/refused to answer responses).

Firms have reacted to the pandemic and adapted to new circumstances, with those in more developed regions moving faster. Many firms have changed the way they work or what they produce. Notably, many EU firms have become more digital. About one-quarter have developed new products and 1 in 10 have shortened supply chains. However, there are some differences across regions in terms of reactivity. More firms in non-cohesion regions have taken action, particularly to advance digitalisation (47%, compared with 41% in transition regions and 38% in less developed regions). Similarly, firms in more prosperous regions were most likely to have developed new products.

Firms' reactions to COVID-19, by category of region (% of firms)



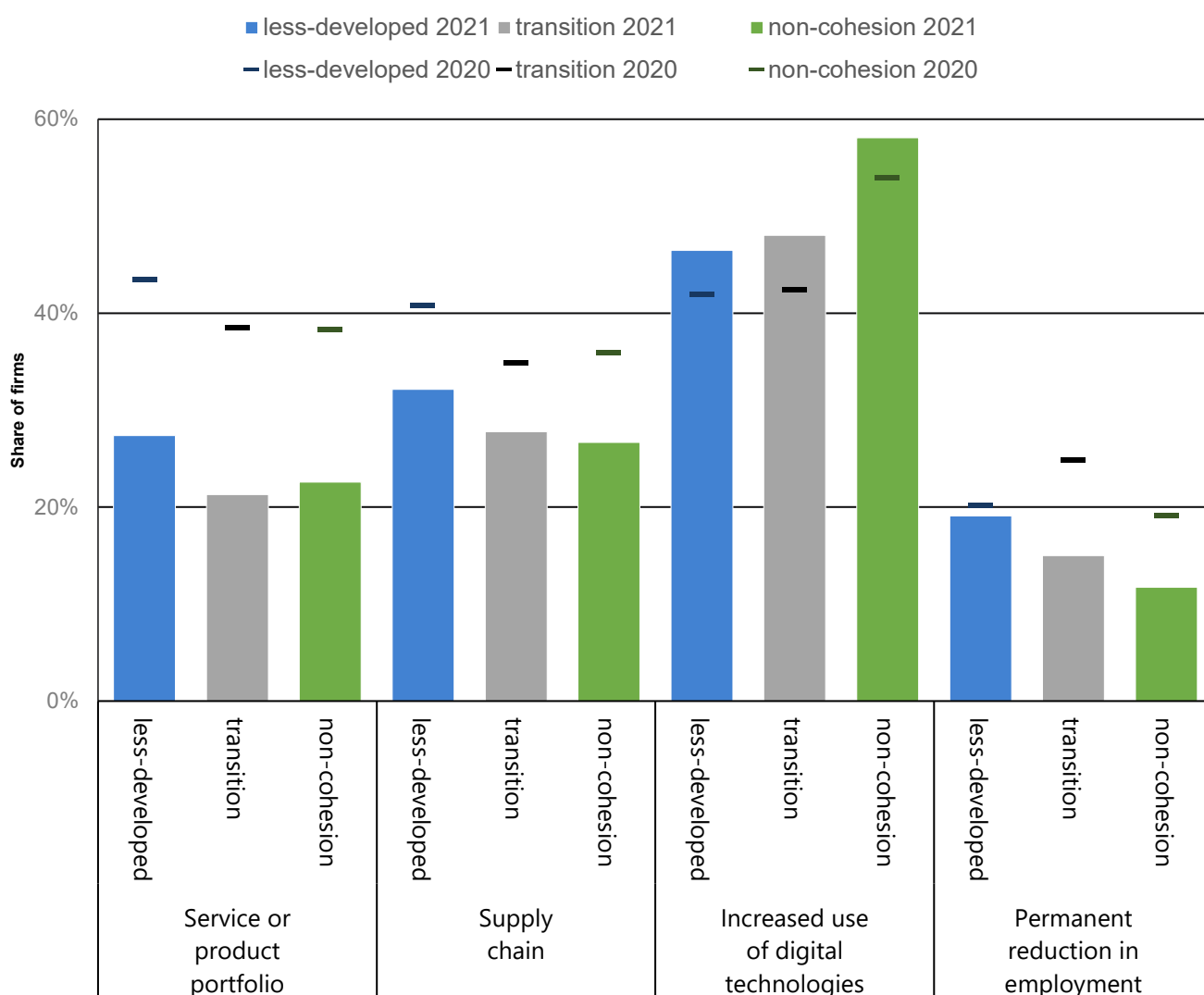
Source: EIB Investment Survey 2021.

Question: As a response to the COVID-19 pandemic, have you taken any actions or made investments to...?

Base: All firms (excluding don't know/refused to answer responses).

Firms continue to see accelerated digitalisation as a key long-term effect of COVID-19. This perception has intensified since 2020, with more firms across all regions stating that the COVID-19 crisis will lead to increased use of digital technologies. Firms in non-cohesion regions, where digitalisation is often already more advanced, are most convinced about accelerated digitalisation. The share of firms expecting long-term shifts in supply chains for products and services is largest in less developed regions. Similarly, firms in less developed regions are most likely to believe that COVID-19 will lead to a permanent reduction in employment (19%, similar to 2020), while these shares have declined in transition and non-cohesion regions, to 15% and 12% respectively.

Perceptions of the long-term impact of the COVID-19 crisis, by category of region



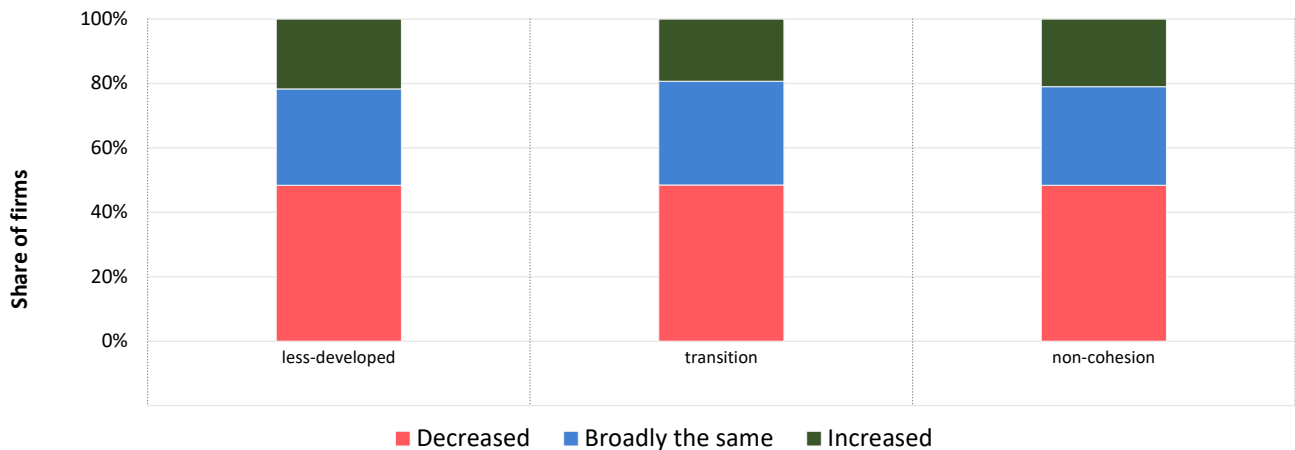
Source: EIB Investment Survey 2021.

Question: Do you expect the coronavirus outbreak to have a long-term impact on any of the following?

Base: All firms (excluding don't know/refused to answer responses).

The impact of COVID-19 on sales and investment was broadly similar across EU regions. The pandemic had a negative impact on sales for almost half of firms across all regions. With about one in five firms reporting an increase in sales, the share of firms that experienced a positive impact was broadly similar across regions, too.

Impact of the COVID-19 crisis on sales, by category of region



Source: EIB Investment Survey 2021.

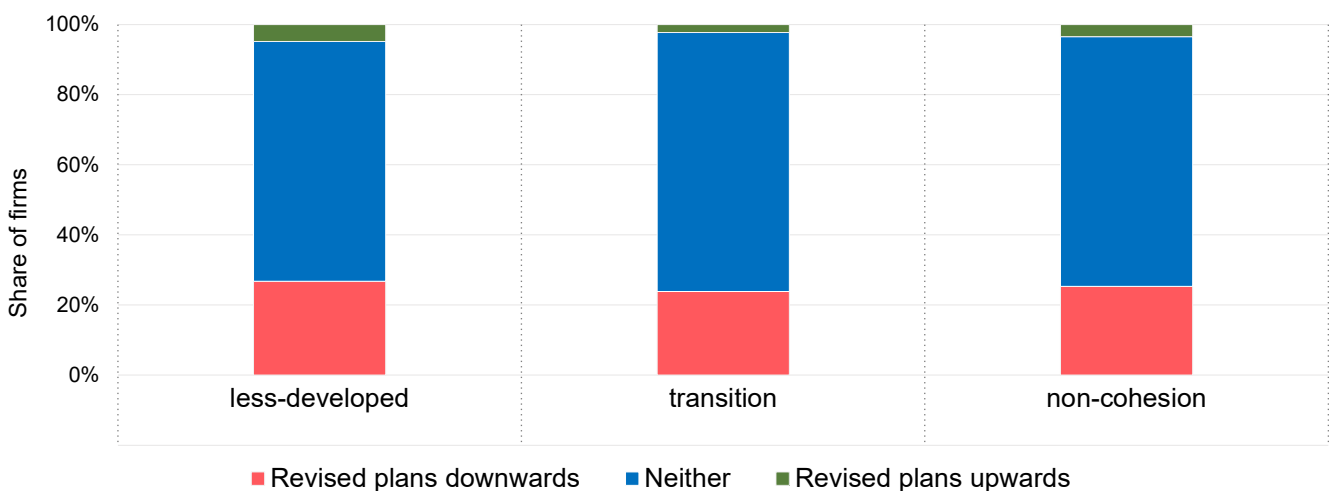
Question: What has been the impact so far of the COVID-19 pandemic on your company's sales or turnover compared to the beginning of 2020?

Base: All firms (excluding don't know/refused to answer responses).

About a quarter of EU firms revised their investment plans downwards as a result of the pandemic.

The share was higher in less developed regions (27%) than in transition regions (24%) and non-cohesion regions (25%). Hence firms scaled back investment the most in regions where the share of firms investing initially was lower. On the upside, a large share of firms across all regions were able to maintain investment plans despite the pandemic.

Impact of the COVID-19 crisis on investment, by category of region



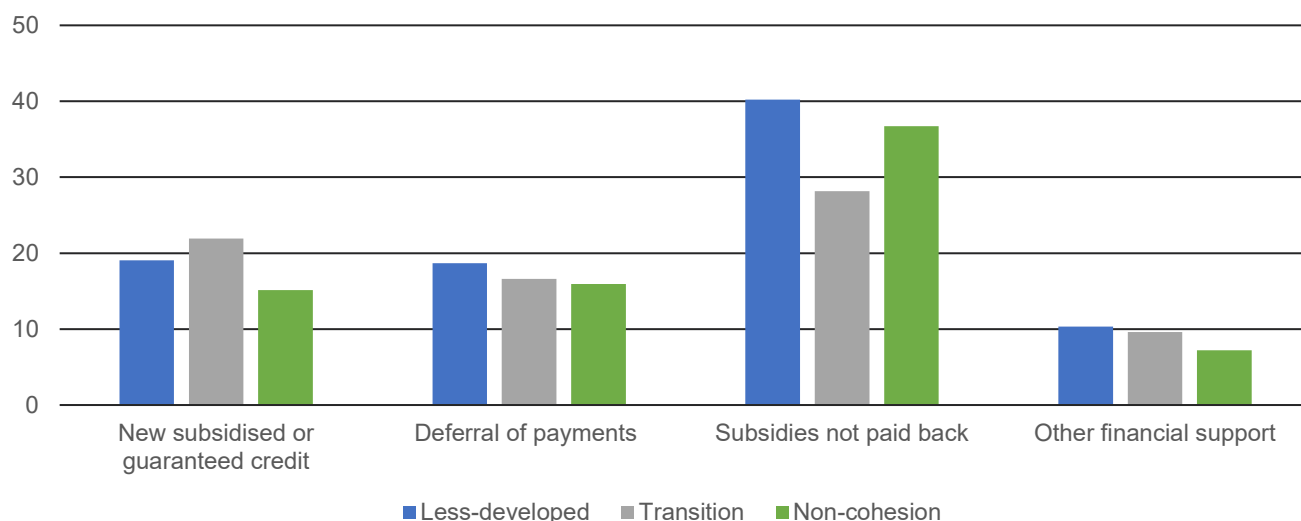
Source: EIB Investment Survey 2021.

Question: You mentioned revising your investment plans due to the COVID-19 pandemic. Did you revise them upwards or downwards?

Base: All firms (excluding don't know/refused to answer responses).

Policy support was central across EU regions to mitigating the immediate economic fallout from the COVID-19 shock, and a large share of firms benefited. Subsidies or other support measures that did not need to be repaid (including support for furlough schemes) were the most common support instruments across all regions. However, support was not equal across EU regions. Firms in transition regions were less likely to benefit from subsidies (28%) than firms in either less developed regions (40%) or non-cohesion regions (37%).

COVID-19 support received, by category of region (% of firms)



Source: EIB Investment Survey 2021.

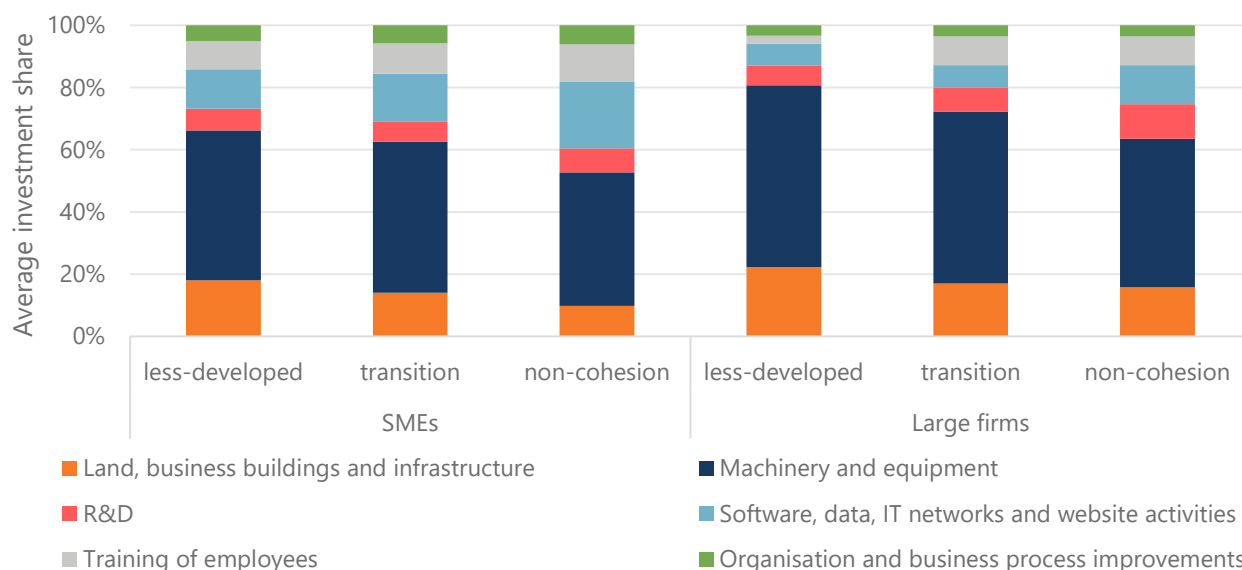
Question: Since the start of the pandemic, have you received any financial support in response to COVID-19? This can include finance from a bank or other finance provider, or government-backed finance.

Base: All firms (excluding don't know/refused to answer responses).

Investment by firms, particularly in intangible activities such as innovation, will be critical for the positioning of the EU private sector in the post-pandemic environment. EU regions continue to differ in the share of firms undertaking investment and in the focus of investment activities. Investment by firms in cohesion regions tends to focus on tangibles: buying machinery and equipment or land, buildings and infrastructure. Intangibles, such as research and development (R&D), training, improving processes or software and IT, account for some 28% of investment in less developed regions and 35% in transition regions, compared with 39% in more developed regions.

Large firms in less developed regions invest less in activities to support innovation, such as training and R&D, than their peers in other regions. Large firms in non-cohesion regions dedicate the highest share of their investment to R&D (11%, vs. 8% and 6% for large firms in transition regions and less developed regions respectively). Large firms in less developed regions continue to invest less in training their employees than peers in other regions (3%, compared with 9% in transition and non-cohesion regions), and this share has fallen (from 6% in 2020). However, across all regions, larger firms that invest in training invest more per employee in training than small and medium-sized enterprises (SMEs) that invest in training do.

Investment areas, by category of region and firm size



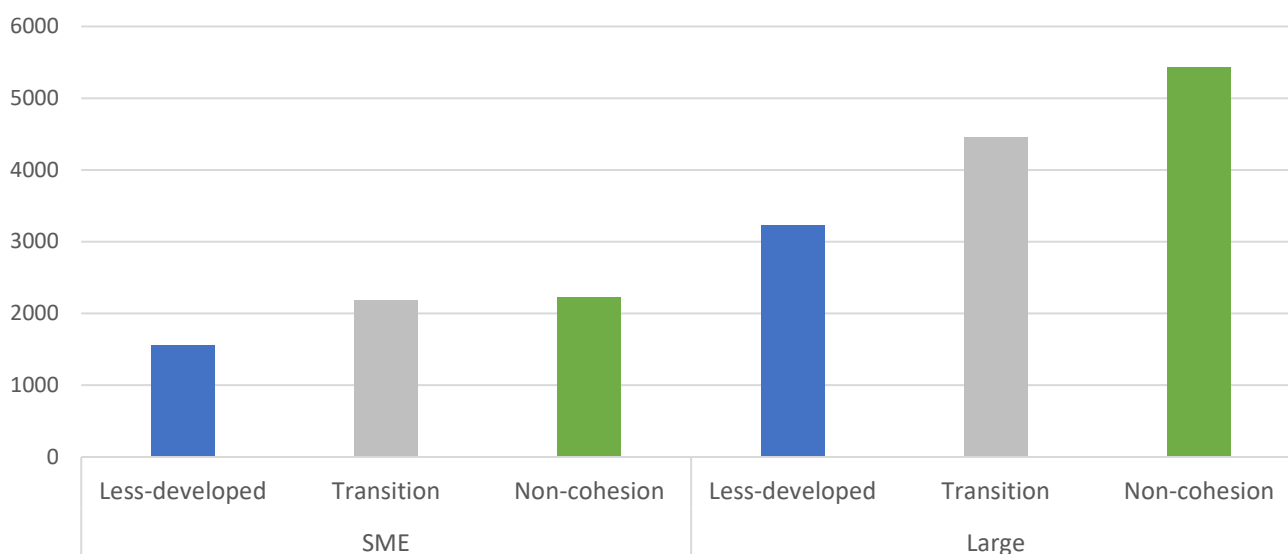
Source: EIB Investment Survey 2021.

Question: In the last financial year, how much did your business invest in each of the following with the intention of maintaining or increasing your company's future earnings?

Base: All firms that invested in the last financial year (excluding don't know/refused to answer responses).

In addition to more investment in intangibles by firms in non-cohesion regions, their investment intensity is higher. When comparing the median investment intensity of firms in non-cohesion regions with that of firms in cohesion regions, we consistently find a higher investment spend among non-cohesion firms. This remains true for different firm size classes. This pattern can be explained by the higher productivity of non-cohesion firms and the stronger demand for their goods and services that comes on the back of this.

Median investment intensity, by category of region and firm size (in EUR per employee)



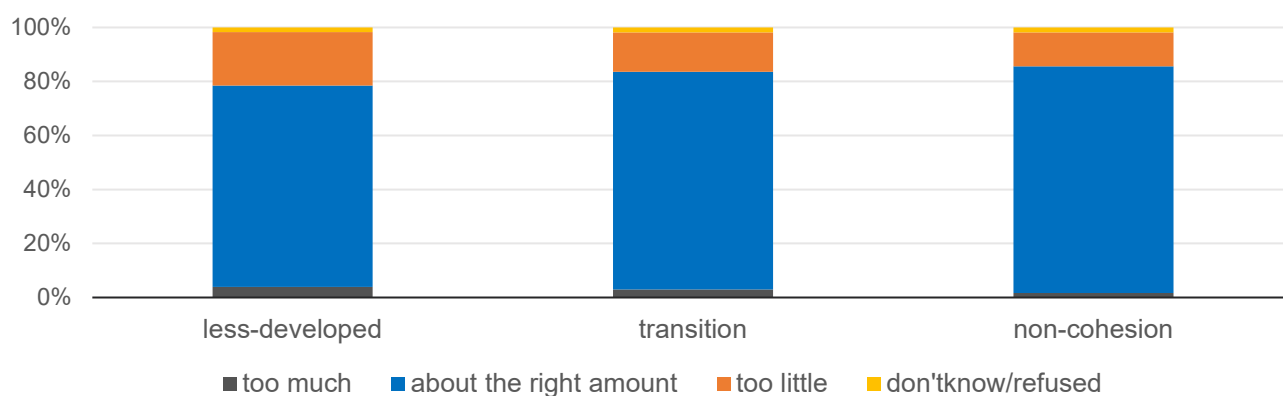
Source: EIB Investment Survey 2021.

Note: Investment intensity is total investment per (full-time) employee.

Base: All firms that invested in the last financial year (excluding don't know/refused to answer responses).

Most firms are satisfied with the amount they have invested, but perceived underinvestment remains most common in less developed regions. Overall, across the three regional groupings and despite difficult circumstances, the majority of firms think they have invested about the right amount. However, firms in less developed regions are most likely to report having invested too little over the past three years (20%, compared with 15% and 13% in transition and non-cohesion regions respectively). The higher incidence of firms reporting underinvestment coincides with a higher share of firms reporting investment obstacles and a lower share of firms investing.

Perceived level of investment, by category of region (% of firms)



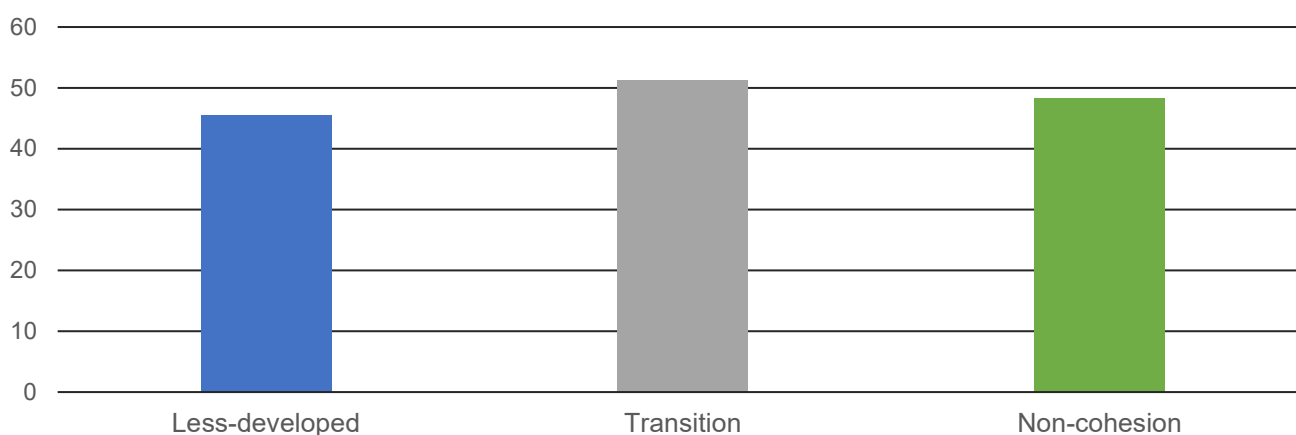
Source: EIB Investment Survey 2021.

Question: Looking back at your investment over the last three years, was it too much, too little or about the right amount?

Base: All firms (excluding "Company didn't exist three years ago" responses).

Firms in less developed regions are less likely to work at or above full capacity (45%, versus 51% of firms in transition regions and 48% of firms in non-cohesion regions). This is consistent with previous findings from the EIB Investment Survey (EIB, 2021) and may suggest that the reported underinvestment in less developed regions in particular may to a lesser extent reflect needs for capacity expansion, but rather point to quality gaps in the capital stock in many cases.

Firms working at or above full capacity, by category of region (%)



Source: EIB Investment Survey 2021.

Note: Full capacity is the maximum capacity attainable under normal conditions (the company's general practices regarding the utilisation of machines and equipment, overtime, work shifts, holidays, etc.).

Question: In the last financial year, was your company operating above or at maximum capacity attainable under normal circumstances?

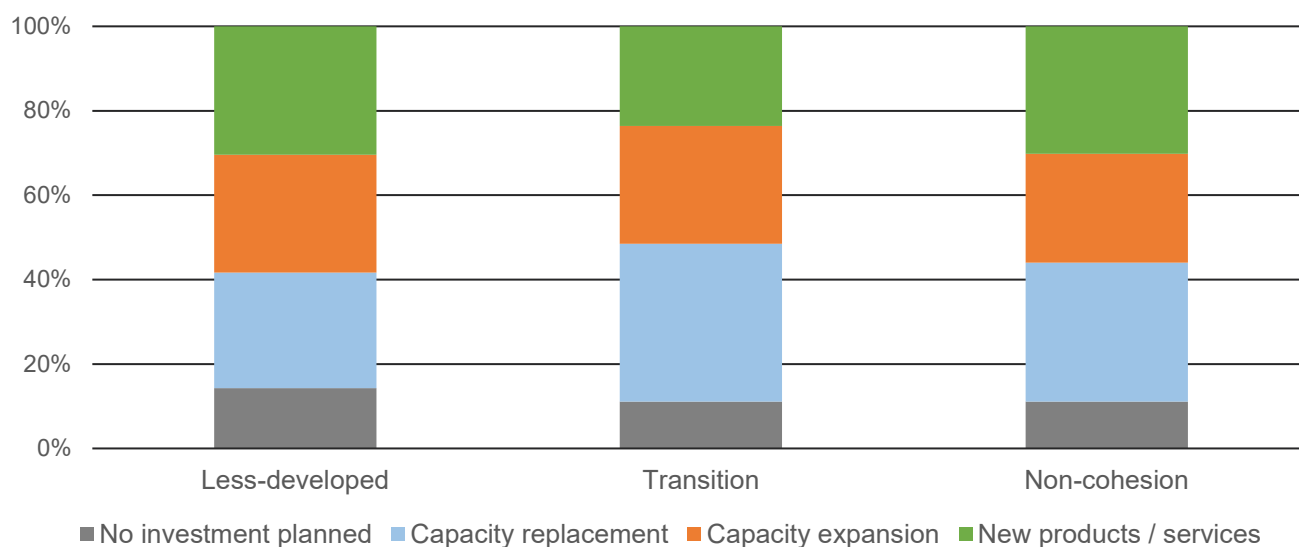
Base: All firms (data not shown for those operating somewhat or substantially below full capacity; don't know/refused to answer responses excluded).

Asked about future investment priorities over the next three years, firms in less developed regions were more likely to report that they had no investment planned (14%, versus 11% for transition regions and more developed regions). This higher share of firms having no investment planned fits with the patterns seen in previous years and risks increasing the investment gap in the future, particularly during times of accelerated structural change.

Capacity replacement is the most commonly cited priority for firms in transition and non-cohesion regions. The share of firms that aim to invest in replacing capacity is highest in transition regions (37%, compared with 27% in less developed regions and 33% in non-cohesion regions). The picture with regard to firms that aim to increase capacity is broadly similar.

Firms in less developed regions have ambitions to step up investment in new products or services. Firms in less developed regions appear to be more eager to invest in new products or services than their peers in transition regions and are similar in this regard to firms in more developed regions (both 30% of firms, compared with 24% in transition regions).

Future investment priorities, by category of region (% of firms)



Source: EIB Investment Survey 2021.

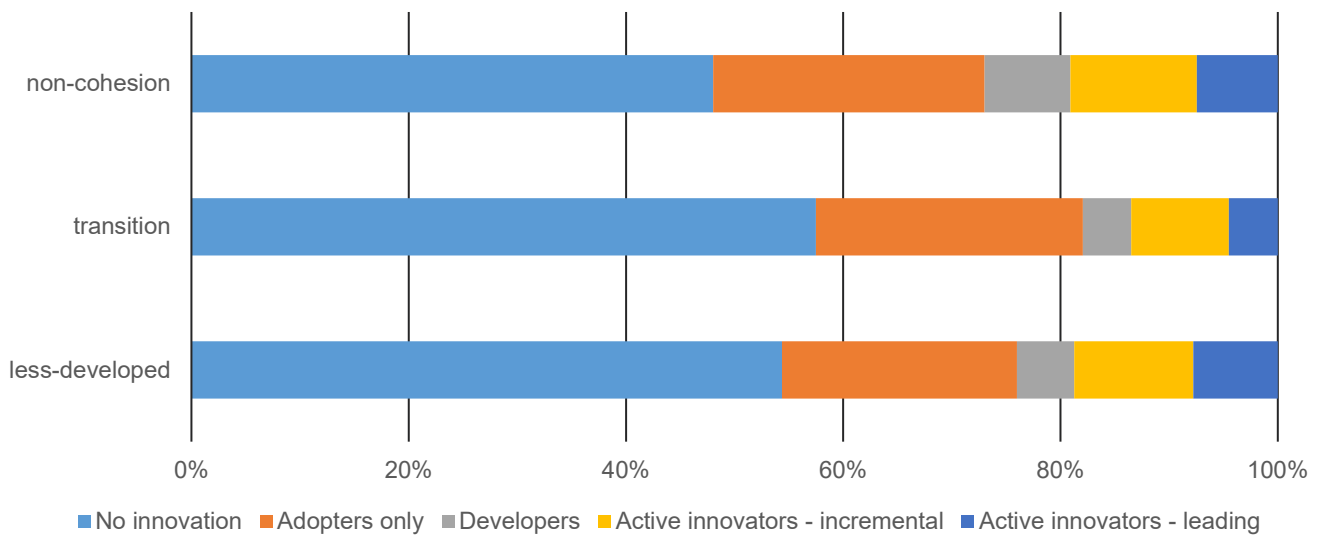
Question: Looking ahead to the next three years, which is your investment priority: (a) replacing capacity (including existing buildings, machinery, equipment, IT), (b) expanding capacity for existing products/services or (c) developing or introducing new products, processes, services?

Base: All firms (excluding don't know/refused to answer responses).

Innovation activities

At present, many firms in cohesion regions lag behind in innovation. The share of firms not undertaking innovation activity remains lowest in non-cohesion regions (48%), where many knowledge-intensive activities tend to cluster. Transition regions record the highest share of firms doing no innovation (57%), followed by less developed regions (54%). Over time, fewer firms engaging in innovation activities in cohesion regions has led to an increasing innovation divide across EU regions (European Commission, 2022). Tackling innovation gaps will require investment, notably in intangibles, but also strengthening of local innovation ecosystems.

Innovation profiles, by category of region (% of firms)



Source: EIB Investment Survey 2021.

Note: Innovation profiles are based on firms' investment in R&D and their reported innovation or introduction of new products or services. Firms classified as developers, incremental innovators and leading innovators all invest in R&D. For further information on the classification, see EIB (2021) and Veugelers et al. (2019).

Questions: What proportion of total investment was for developing or introducing new products, processes, services? Were the products, processes or services new to the company, new to the country, new to the global market? In the last financial year, how much did your business invest in research and development (including the acquisition of intellectual property) with the intention of maintaining or increasing your company's future earnings?

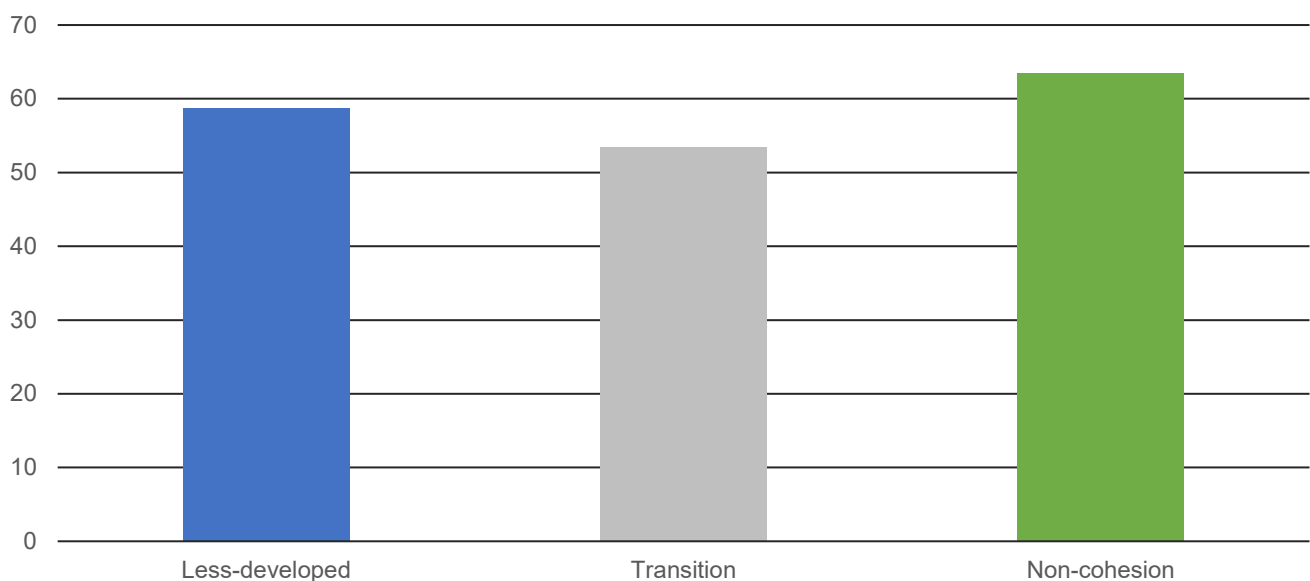
Base: All firms (excluding don't know/refused to answer responses).

Digitalisation activities

The COVID-19 crisis made many firms realise the importance of digital transformation. Before the pandemic, while the implementation of advanced digital technologies was considered an important contributor to market success, it was usually associated with the most innovative and modern companies. The pandemic, however, has made digital transformation integral to many firms' survival. Digitalisation has become a key source of resilience, helping to prevent business disruption by facilitating remote work and enabling continued economic activity with customers, suppliers and employees.

Digital technology adoption rates are higher in non-cohesion regions. In 2021, 63% of firms in non-cohesion regions implemented at least one advanced digital technology, compared with only 53% of firms in transition regions and 59% in less developed regions. The higher share of firms adopting digital technologies in non-cohesion regions also reflects differences by firm size. Firms on average tend to be larger in more developed regions, and large firms have tended to digitalise faster across all regions.

Firms using advanced digital technologies, by category of region (%)



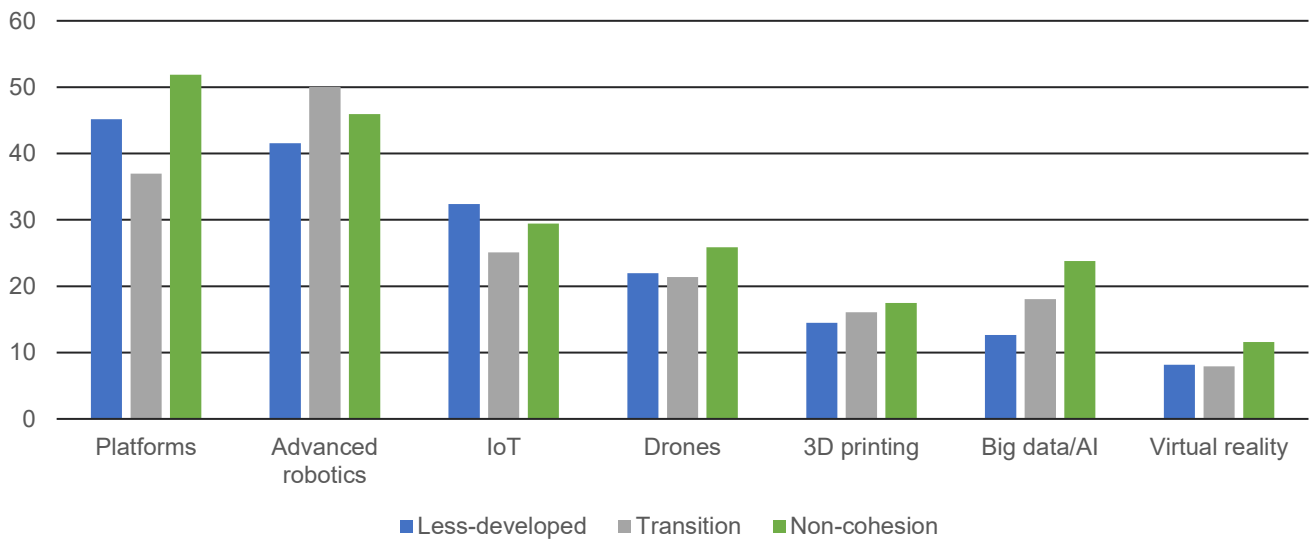
Source: EIB Investment Survey 2021.

Note: The figure is based on a survey question asking firms about advanced digital technologies: whether or not they have heard about them, if they have implemented them in parts of their business or if their entire business is organised around them. A firm is identified as using advanced digital technologies if at least one of them has been implemented in parts of the business.

Base: All firms (excluding don't know/refused to answer responses).

Patterns for specific digital technologies differ across regions, but firms in more developed regions lead on most. Technology adoption patterns reflect industrial specialisation, but also firms' technological awareness, digital infrastructure and the availability of human capital. Big data and analytics, often associated with productivity improvements, are clearly more prevalent in non-cohesion regions (24%, vs. 18% in transition regions and 13% in less developed regions).

Firms adopting specific digital technologies, by category of region (%)



Source: EIB Investment Survey 2021.

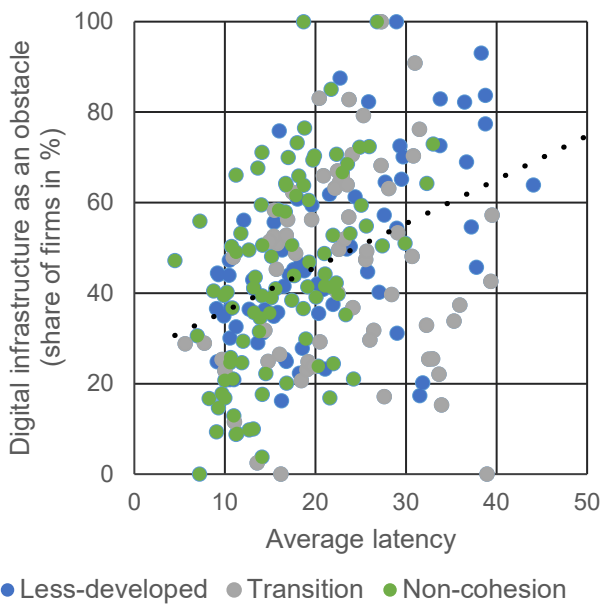
Note: AI, artificial intelligence; IoT, internet of things.

Question: Can you tell me for each of the following digital technologies if you have heard about them, not heard about them, implemented them in parts of your business or whether your entire business is organised around them?

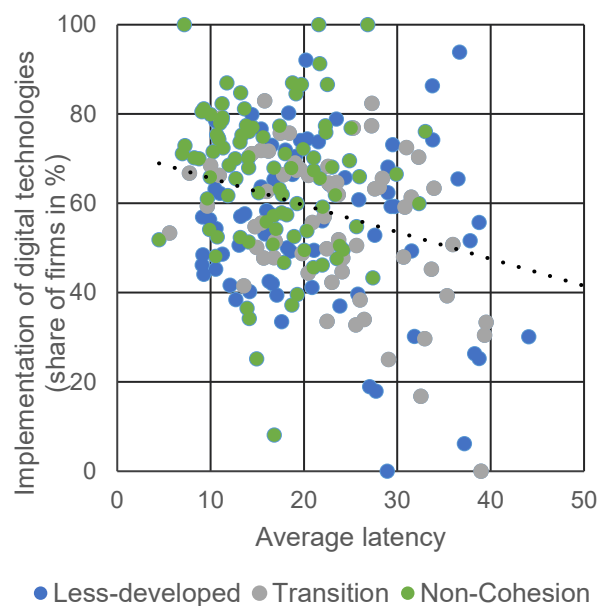
Base: All firms (excluding don't know/refused to answer responses).

The reasons why firms fail to adopt digital technologies quickly include poor-quality digital infrastructure. Where internet speeds are slower, fewer firms have adopted advanced digital technologies. At the same time, more firms in these areas report the limited availability of digital infrastructure as an obstacle to investment.

Quality of digital infrastructure and digital infrastructure as investment barrier, by NUTS2 region



Quality of digital infrastructure and adoption of digital technologies, by NUTS2 region



Sources: EIB Investment Survey 2021; European Data Journalism Network.

Lack of access to digital infrastructure is on average less often reported as a major obstacle to investment than some other issues, but this differs across regions. For example, firms operating in regions with low average latency (a proxy for a good broadband connection) tend to have higher rates of digital adoption as well as a lower share of firms complaining about digital infrastructure. This indicates that many EU regions have the potential to unlock investment in the digital transformation of businesses by making access to faster broadband more widespread.

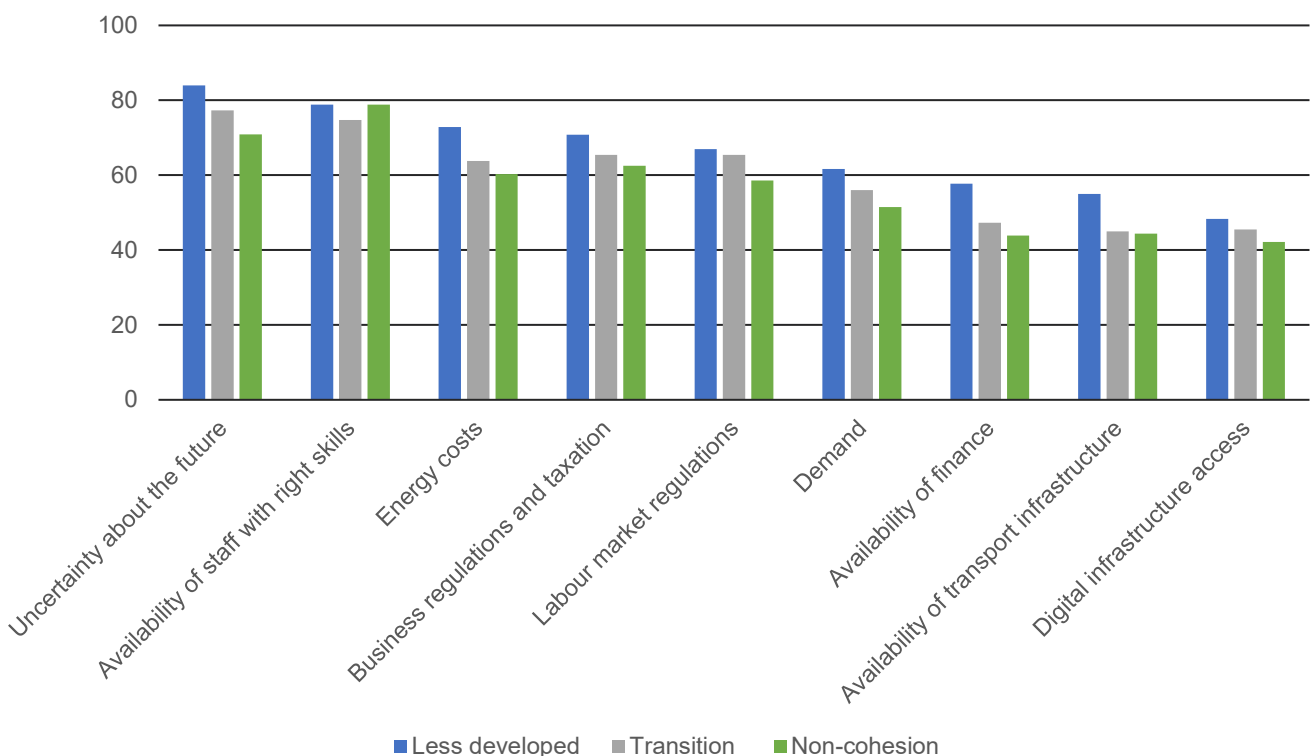
Obstacles to investment

The obstacle to investment most frequently reported across the European Union is limited availability of skilled staff. In transition regions, this posed a problem for 75% of firms. It is an even greater problem in less developed and non-cohesion regions (79% each). Limited availability of skilled staff can have various causes, including demographic factors and increasing demand for skills that are less readily available on the market, for example to support digitalisation activities.

Firms in less developed regions report more obstacles to investment. This suggests that firms in these regions face a more challenging business environment.

Three areas in which less developed regions stand out in terms of constraints on investment are energy costs, transport infrastructure and the availability of finance. Each of these is an issue in less developed regions in particular, with the differences compared with transition and non-cohesion regions being relatively large.

Obstacles to investment, by category of region (% of firms)



Source: EIB Investment Survey 2021.

Question: Thinking about your investment activities, to what extent is each of the following an obstacle? Is it a major obstacle, a minor obstacle or not an obstacle at all?

Base: All firms (data not shown for firms that chose "not an obstacle at all"; don't know/refused to answer responses excluded).

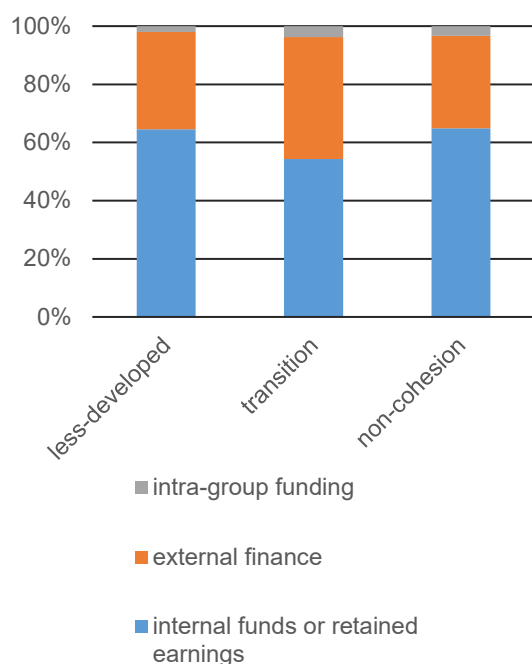
Investment finance

Internal financing remains the major source of investment financing across EU regions. Firms in transition regions use external financing sources to a greater extent than other regions (42%, compared with 34% in less developed regions and 32% in non-cohesion regions).

Bank loans account for the largest share of externally financed investment across all regions. Bank loans make up almost half of the financing used in less developed regions (49%), with larger shares in non-cohesion and transition regions (58% and 69% respectively). Firms in less developed regions are more likely to rely on other bank financing, which may not always be the most suitable for investment purposes owing to higher costs and a stronger short-term focus. Loans from family, friends and business partners are also more often used to finance investment in less developed regions.

Grants are most significant as a source of financing in less developed regions. They account for some 13% of external financing, compared with 2% and 6% in transition and non-cohesion regions respectively. In particular, grants tend to be an important source of financing for large firms in less developed regions.

Sources of investment finance (%)

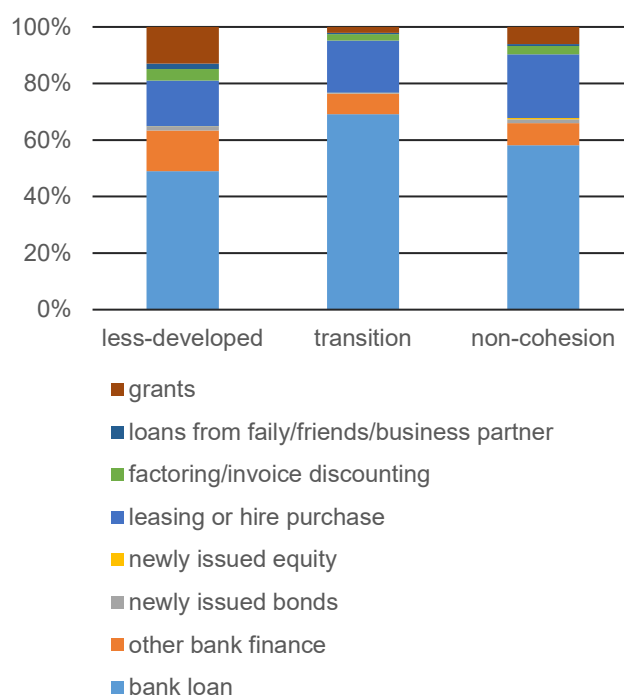


Source: EIB Investment Survey 2021.

Question: What proportion of your investment was financed by each of the following?

Base: All firms that invested in the last financial year (excluding don't know/refused to answer responses)

Type of external financing used for investment activity (%)



Source: EIB Investment Survey 2021.

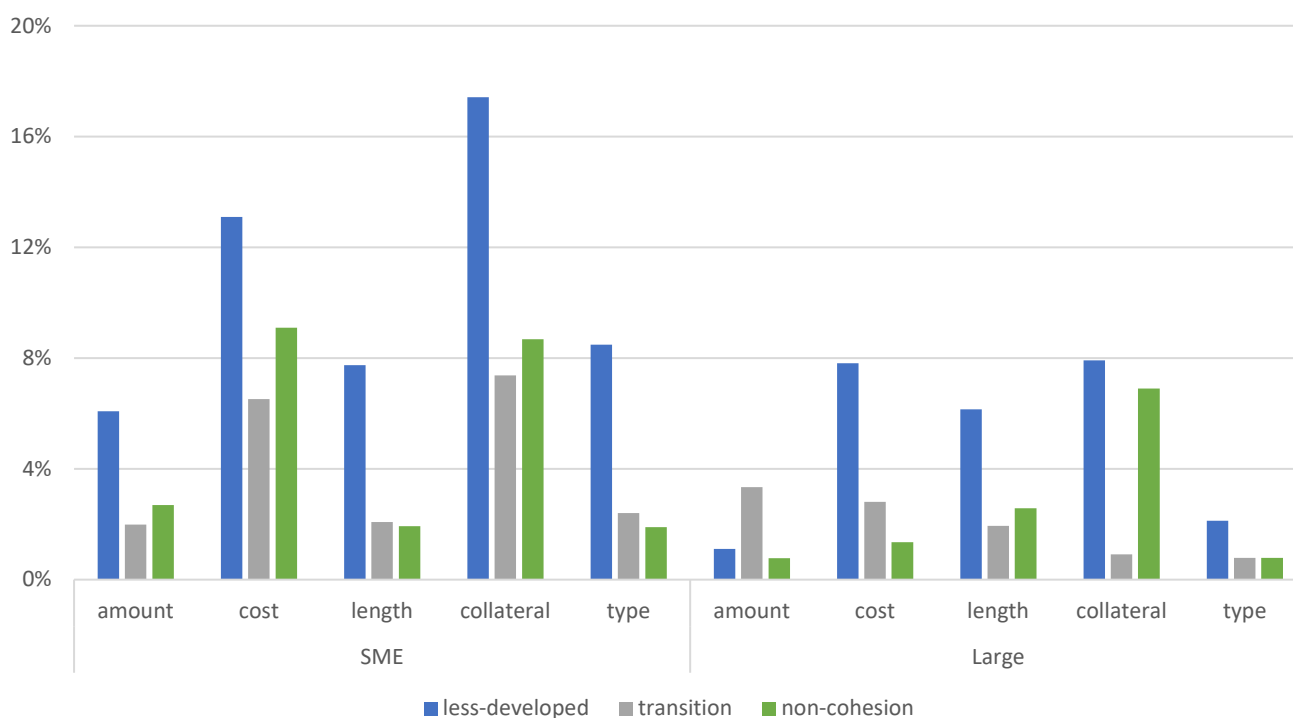
Question: Approximately what proportion of your external finance does each of the following represent?

Base: All firms that invested in the last financial year (excluding don't know/refused to answer responses)

Satisfaction with the finance that firms receive is high across the European Union. Most firms appeared to be happy with the amount and conditions of the finance they had received. However, a few firms that had used external financing in the past financial year were dissatisfied.

Levels of dissatisfaction tend to be higher among firms in less developed regions and SMEs in particular. Major sources of dissatisfaction are cost and collateral, with 13% and 17%, respectively, of SMEs experiencing dissatisfaction. Among large firms, 8% were unhappy about both features. Levels of dissatisfaction in transition and non-cohesion regions are notably lower for both.

Dissatisfaction with aspects of external financing, by category of region and firm size (% of firms)



Source: EIB Investment Survey 2021.

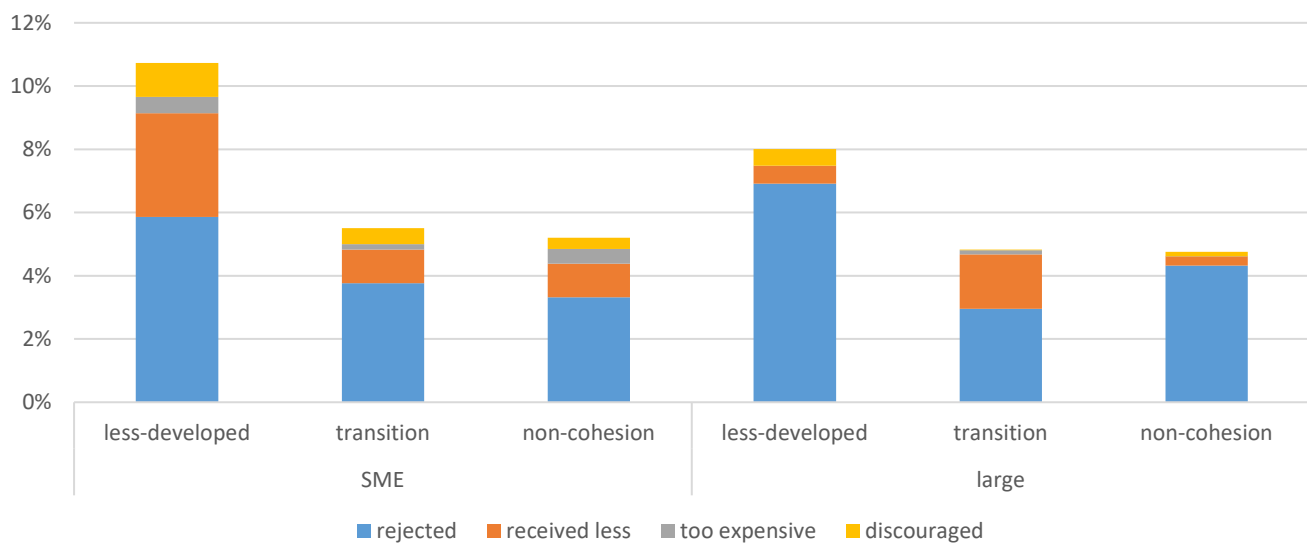
Question: How satisfied or dissatisfied are you with ...?

Base: All firms that used external financing in the past financial year (excluding don't know/refused to answer responses).

Firms are more likely to be finance constrained in less developed regions. The share of firms that were constrained in terms of their access to external financing in 2021 differs across regions. It is about twice as large in less developed regions (9%) as in transition and non-cohesion regions (both 5%). Difficulties in accessing (adequate) finance may be one reason for persistently lower investment rates. A lack of access to finance can thus hamper firms' transformation and successful positioning in a changing environment.

Finance constraints are most prevalent among SMEs in less developed regions. SMEs in these regions are more than twice as likely (11%) as their peers in transition and non-cohesion regions to be considered finance constrained (both 5%). In less developed regions, 8% of large firms are finance constrained. The higher share of finance-constrained firms in less developed regions fits with the higher share of firms there perceiving the availability of finance as an obstacle to investment.

Finance-constrained firms, by category of region (%)



Source: EIB Investment Survey 2021.

Note: Finance-constrained firms include those dissatisfied with the amount of finance obtained (received less), firms that sought external financing, but did not receive it (rejected) and those that did not seek external financing because they thought borrowing costs would be too high (too expensive) or they would be turned down (discouraged).

Climate change and energy efficiency

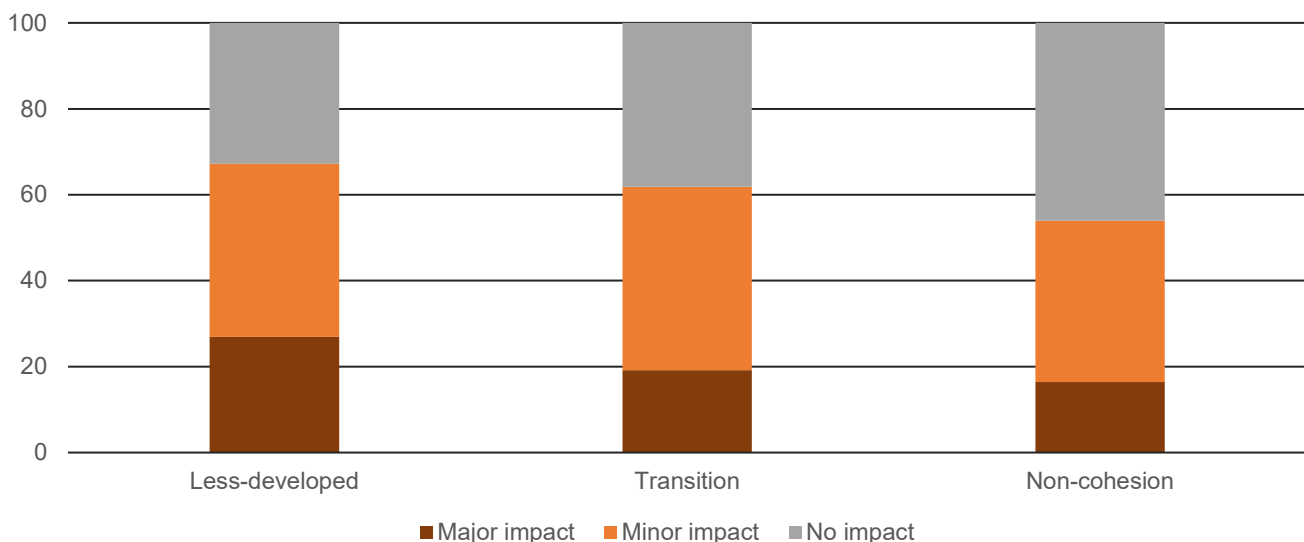
Supporting the climate transition and digitalisation is a key priority for EU cohesion policy.

Cohesion policy for 2021–2027 includes a number of elements intended to ingrain climate action in investment in cohesion regions. For example, investments in infrastructure with a longer lifespan need to be “climate proof” and the principle of “do no significant harm” should be followed.³

Many firms in less developed regions are already feeling the impact of climate change. They are more likely to state that climate change has a major impact on their business than firms in the other regions, and they more often consider that the impact of climate change is major (27% report a major impact and another 40% a minor impact). Firms in transition regions are more likely to assert that climate change has a minor impact (19% report a major impact and 43% a minor one). Firms in non-cohesion regions are more likely to say that climate change has no impact at all on them. This may reflect a mix of cooler weather conditions, some adaptive measures having been taken already and firms’ greater confidence in their capacity to further adapt.

All regions will be affected by climate change. Studies show that climate change is going to substantially impact regions across the EU in the decades to come. For example, heatwaves and droughts are expected to become more frequent under various warming scenarios and look set to particularly affect Southern, Central and South-Eastern European (Tapia et al., 2015; for an overview, see European Commission, 2022). Northern and Western Europe are likely to get wetter, with increased risk of flooding in many areas. To mitigate some of these risks, stepping up efforts to transition towards a net-zero economy will be crucial.

Impact of climate change, by category of region (% of firms)



Source: EIB Investment Survey 2021.

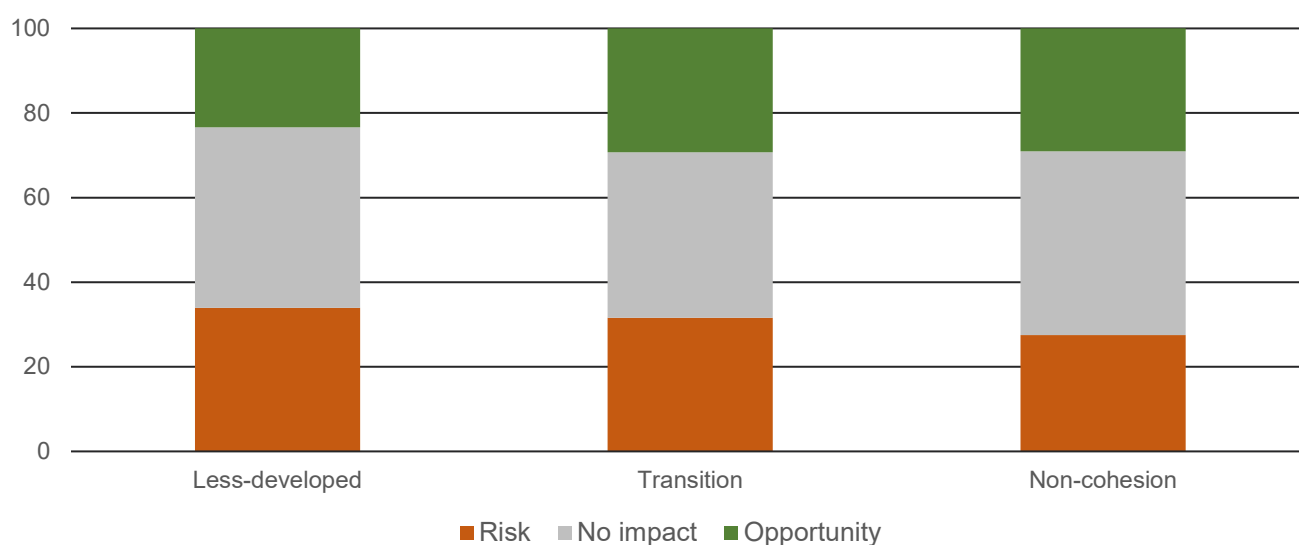
Question: Thinking about climate change and the related changes in weather patterns, would you say these weather events currently have a major impact, a minor impact or no impact at all on your business?

Base: All firms (excluding don't know/refused to answer responses).

³ For further information on the environment and climate in cohesion policy, see the European Commission web page [“Cohesion Policy 2021–2027”](#).

At present, many firms in cohesion regions are somewhat pessimistic about the impact of the transition towards a low-carbon economy on their business. On average, more see the climate transition as a risk than an opportunity in less developed and transition regions. Only in non-cohesion regions do a slightly higher share of firms view the transition as positive for their business on balance. These findings corroborate previous EIB Investment Survey findings on firms' views about the impact of the transition on various aspects of their business, with firms in less developed regions appearing least optimistic (EIB, 2020). At the same time, the findings underscore the need to increase awareness about and preparedness for both physical risks and the pathways to transition.

Perceptions of the likely impact of transition, by category of region (% of firms)



Source: EIB Investment Survey 2021.

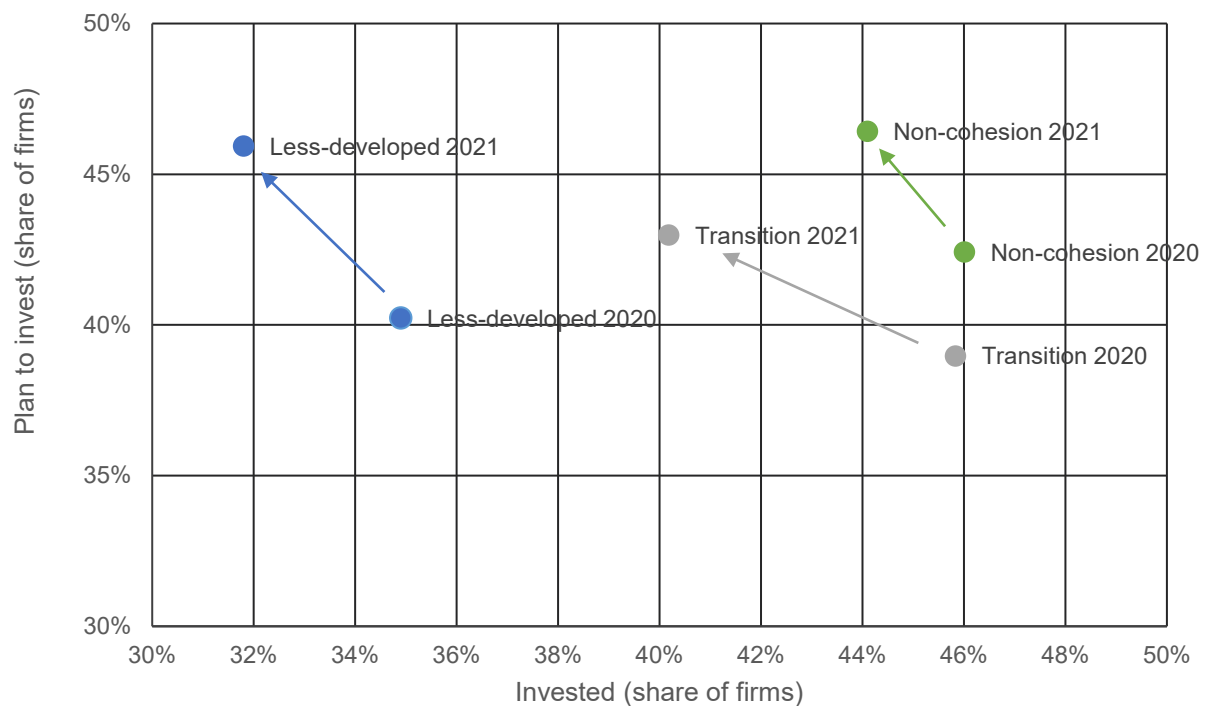
Question: Thinking about your company, what impact do you expect this transition to stricter climate standards and regulations will have on your company over the next five years?

Base: All firms (excluding don't know/refused to answer responses).

Fewer firms in less developed and transition regions are taking clear steps to tackle climate change risks. The EIB Investment Survey asks firms if they have already invested or if they plan to invest in the next three years to tackle the impacts of weather events and to reduce carbon emissions. More firms in non-cohesion regions than firms in the other regional categories (44%, versus 40% in transition regions and 32% in less developed regions) have invested in tackling the impact of weather events and reducing carbon emissions. Less developed regions have the highest share of firms that neither have invested nor plan to invest in tackling climate change, leaving them more vulnerable to (increasing) physical risks and in a less advantageous position to leverage the transition as an opportunity.

The COVID-19 shock took a toll on climate-related investment, but many firms see the need to take action. Compared with 2020, fewer firms across all regions invested in climate-related measures. The drop was stronger in cohesion regions, which already had lower levels of climate-related investment. However, many firms see the need to act to protect themselves against physical risks posed by climate change and achieve lower emissions. More firms state that they plan climate-related investments across all regions. However, the slowing economic recovery and the economic repercussions of the war in Ukraine mean that many firms face an increasingly challenging environment for the realisation of these investment plans.

Evolution of climate change investments and plans, by category of region



Source: EIB Investment Survey 2021.

Question: Now, thinking about investments to tackle the impacts of weather events and to deal with the process of reducing carbon emissions, which of the following applies?

Base: All firms (excluding don't know/refused to answer responses).

Key obstacles to investment in activities to tackle climate change are uncertainty about the regulatory framework and the costs of investment activities. Both issues are more pronounced in cohesion regions (EIB, 2021). Different types of uncertainty — technological and associated with the regulatory environment — appear to be less prevalent among firms in non-cohesion regions.

The twin transition: Risks and opportunities

The twin transition towards a greener and more digital economy presents opportunities for greater environmental sustainability, increased economic resilience and productivity gains across the European Union. However, firms are at different stages of the digital and green transition across EU regions. Some are in a less advantageous starting position and face a more challenging environment in which to undertake transformative investments. Many firms are aware of the need to become more digital in the emerging post-COVID-19 environment, but firms in poorer regions have typically been slower to react with further digitalisation. This reflects, among other things, poorer digital infrastructure and other obstacles to investment. As for climate change, many firms are already experiencing adverse effects but still struggle to see the opportunities presented by a transition towards a net-zero economy.

A key cause for concern about the twin transition is its potential impact on jobs. The twin transition will entail deep structural transformation, and work in a greener and more digital economy will be different, requiring, for instance, new qualification profiles and skillsets. Risks to employment posed by digitalisation stem from job automation. The likelihood of jobs being automated differs across occupations, depending on the tasks performed. Jobs that involve a lot of routine tasks are typically considered to carry a higher risk of being automated. People working in carbon-intensive activities are more at risk of job loss during the green transition. Regions with larger shares of employment in carbon-intensive industries are at a higher risk of seeing jobs disappear as a result of the shift towards a carbon-neutral economy over the coming years.

Some regions are more likely to face job losses caused by both automation and greening. We analysed the distribution of twin transition risks for the categories of EU region.⁴ It should be noted that the analysis does not provide an indication of net employment effects. Rather, it aims to identify vulnerabilities with a spatial focus.

High risks from automation are more prevalent in less developed regions. In contrast, non-cohesion regions tend to have lower shares of jobs at risk of being automated. This reflects, among other things, a higher share of high-skilled and typically less routine employment, for example in knowledge-intensive services, in more developed regions. These types of jobs tend to be less susceptible to automation at the current stage of technological development. In particular, capital regions, where many of these jobs cluster, tend to show a lower level of risk posed by automation.

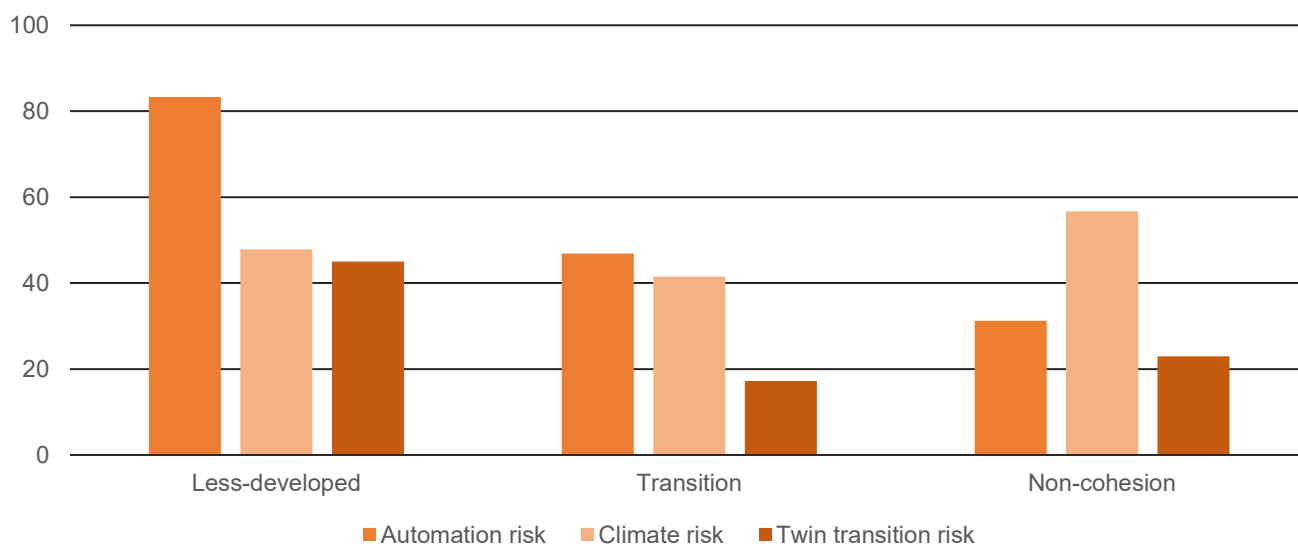
Risks to jobs from the green transition affect regions across cohesion groups, but are spatially more concentrated. Carbon-intensive activities, such as coal mining, are highly concentrated in certain regions. These can be found across all categories of region and include areas, for example, in Germany (such as Lausitzer Revier), Poland (Silesia), Czech Republic (Moravskoslezsky and Severozápad) and Spain (for example Asturias and Castilla y León). While risks posed by automation are expected to affect all EU

⁴ This analysis considers the following industries carbon intensive: B, mining; C17, manufacturing of paper and paper products; C19, manufacturing of coke and refined petroleum; C20, chemicals and chemical products; C24, basic metals; C25, fabricated metal products; and D, electricity–steam cooling. The associated employment is based on Eurostat’s structural business statistics. For further details on the methodology used to estimate the risks associated with the twin transition, see EIB (2020).

regions relatively broadly, the employment risks arising from the green transition tend to be more concentrated spatially, affecting regions where production sites are based.⁵

Less developed regions are more likely to have high exposure to both types of risks. This underscores the importance of cohesion support, including for a just transition leaving no region behind and supporting those particularly affected by structural change during the years to come.⁶

Exposure to transition-related risk, by category of region (% of regions)



Source: EIB ECON.

Note: The chart shows the shares of regions exposed to a high level of risk of job loss related to automation/climate transition/the twin transition — that is, facing a level of risk above the EU median (unweighted). A high exposure to twin transition risk means that a region has a relatively high risk of job loss caused by both greening and automation. Due to differences in the methodologies used to estimate employment risks posed by automation and the green transition, employment at risk cannot be cumulated. See EIB (2020) for discussion.

The green transition also presents employment opportunities. These are, for instance, linked to renewable energies or construction work related to renovation activities and infrastructure upgrades (EIB, 2021; European Commission, 2022). However, unlocking these new jobs will require investment across regions.

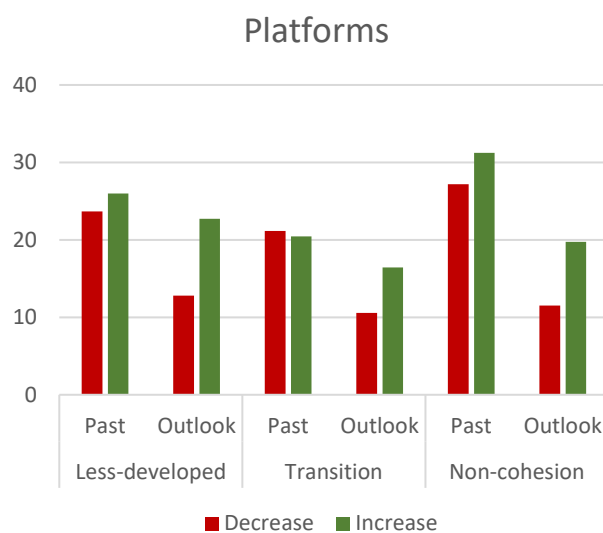
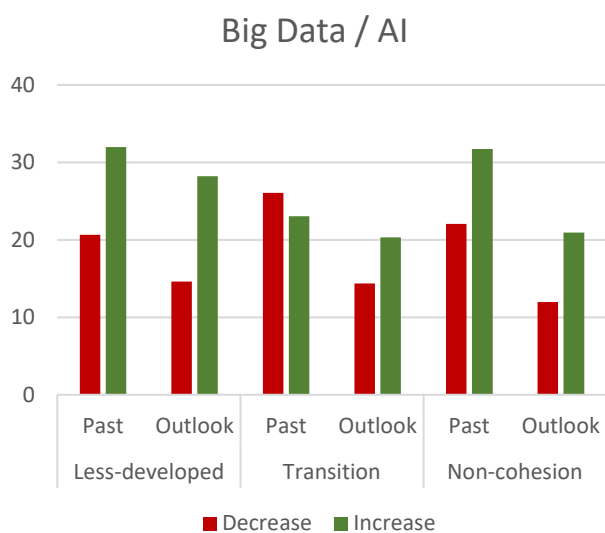
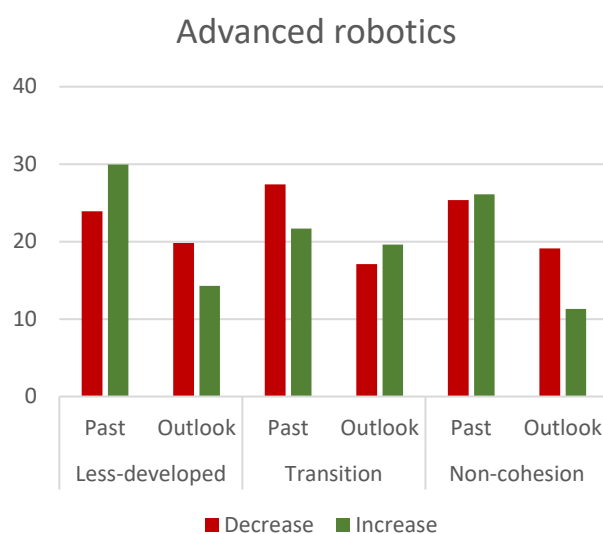
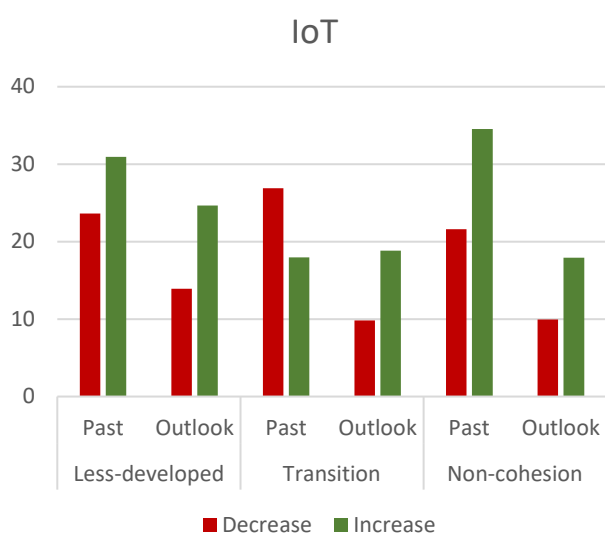
So far, digital technologies have changed the content of jobs but have not led on balance to job destruction. Technological change has typically led to more and better employment in the long run. The available evidence does not support fears of “the end of work” being ushered in by digital technologies. The net effects of technological change during the past few decades appear to be neutral or even positive once the processes of adjustment between firms and sectors are taken into account (Craglia et al., 2018). The computerisation of work from 1999 to 2010 seems to have led to increased employment in the European Union in net terms (Gregory et al., 2019), and the introduction of industrial robots does not appear to be associated with a significant decrease in manufacturing employment in Europe (Graetz and Michaels, 2018; Klenert et al. 2020). Before the COVID-19 crisis, the employment rate had reached a record high of around 73%.

⁵ It should be noted that the sectoral approach used to assess the employment risks posed by transformation differs from the perception-based measures used to capture concern about transition-related risks. The latter, as used by the EIB Investment Survey, looks at businesses challenges and concerns more broadly and captures concerns across the economy, rather than jobs at risk in specific sectors.

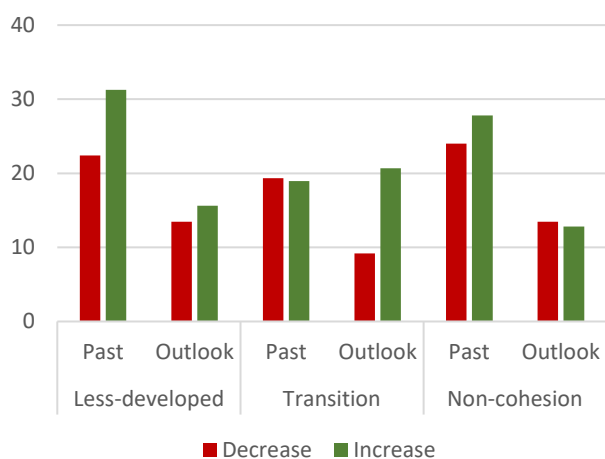
⁶ On EU support for a just transition, see the European Commission web page [“The Just Transition Mechanism: making sure no one is left behind”](#).

EIB investment survey results further corroborate the job creation effects of digital firms (EIB, 2022). Digital firms have been more likely to add jobs than their non-digital peers over the past three years across all cohesion groups (European Commission, forthcoming). Notably, job creation is visible across the different digital technologies adopted by firms. Digital firms have created “better” jobs, paying higher wages than their non-digital peers across all regions in Europe. They are also more likely to reward good performance by their employees (EIB, 2022).

Past and expected employment effects of advanced digital technologies, by category of region (% of firms)



3D printing



Source: EIB Investment Survey 2021.

Note: The chart shows the share of firms that have increased/decreased employment in the past and their employment outlook by adoption of specific digital technologies.

Base: All firms (excluding don't know/refused to answer responses).

The firms that are most advanced in implementing digital technologies are more optimistic about the job creation effects of those technologies. However, some digital technologies are expected to lead to job reductions. While the introduction of advanced robotics in recent years has increased employment in less developed and non-cohesion regions, firms expect robotics to reduce jobs in the future, particularly in less developed regions. To some extent, this chimes with discussions about the pandemic having worked to accelerate job automation (Chernoff and Warman, 2021) and firms in less developed regions in particular more often expecting structural employment losses linked to the pandemic (see the earlier section above on COVID-19). In contrast, other digital technologies, such as platforms, big data and artificial intelligence, are expected to have a neutral or positive effect on employment across all regions.

The results indicate that risks of large-scale job losses coincide with opportunities for firms to leverage the digital transition to create employment. These risks and opportunities coexist across all regions. The findings emphasise the need for cohesion policy to help in unlocking the opportunities presented by the digital transition across regions, including where digitalisation is currently less advanced. They also emphasise the need to prepare people to move to jobs that are less likely to be susceptible to automation. Here, offering (re)training opportunities can play an important part in supporting the digital transition while ensuring that people are not left behind by change (EIB, 2020).

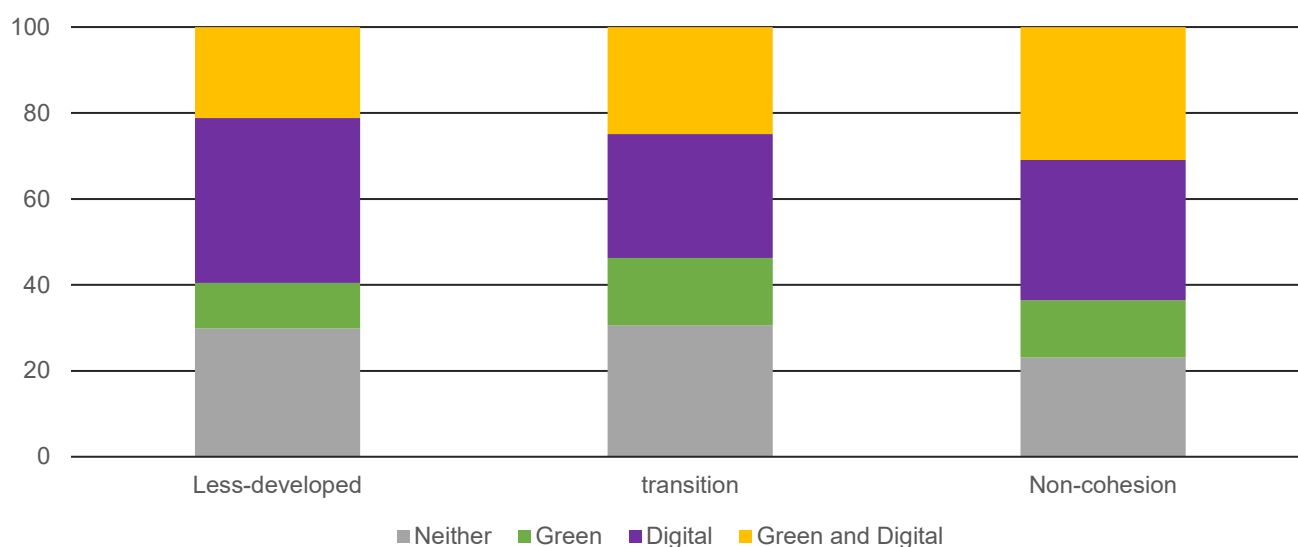
Leveraging opportunities presented by the twin transition

The previous sections identified significant differences in digital and green investment across regions and assessed exposure to the risks posed by structural change. This section aims to understand which firms are forging ahead with the digital and green transition and which are falling behind. To this end, we classify firms as having four corporate profiles based on their green and digital investments.

- “Neither” are firms that have not invested in greening or digitalisation.
- “Green” are firms that have invested to tackle the impacts of weather events and reduce carbon emissions.
- “Digital” are firms that have implemented at least one advanced digital technology.
- “Green and digital” are those firms that have invested in both greening and digitalisation.

The share of “green and digital” firms is highest in non-cohesion regions (31%, versus 25% in transition regions and 21% in less developed regions). What is more, the share of “neither” firms is higher in transition regions and less developed regions than in non-cohesion regions.

Green and digital profiles, by category of region (% of firms)



Source: EIB Investment Survey 2021.

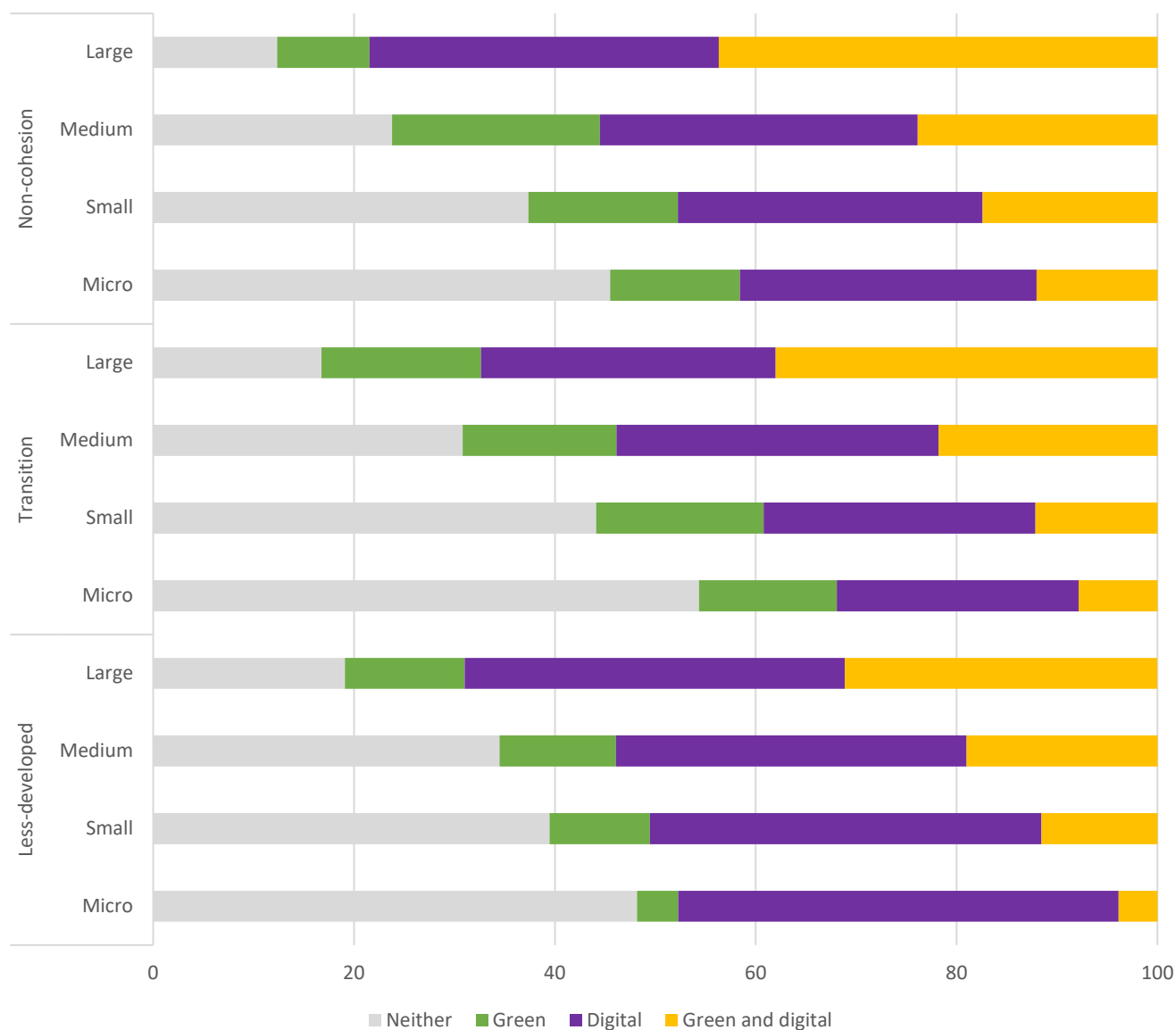
Base: All firms (excluding don't know/refused to answer responses).

Larger firms are more likely to be both digital and green than small ones across all regions.

While only 10% of micro firms and 16% of small firms are green and digital, this share increases markedly for medium-sized firms (23%) and large firms (41%). The relationship between firm size and digitalisation and greening activities can be explained by the fact that investments in digital and green technologies can be risky and involve high fixed costs. Costs and risks are easier to

bear if they are spread over larger revenue streams. What is more, micro firms are less likely to be both digital and green in less developed regions than in cohesion or transition regions.

Green and digital profiles, by category of region and firm size (% of firms)



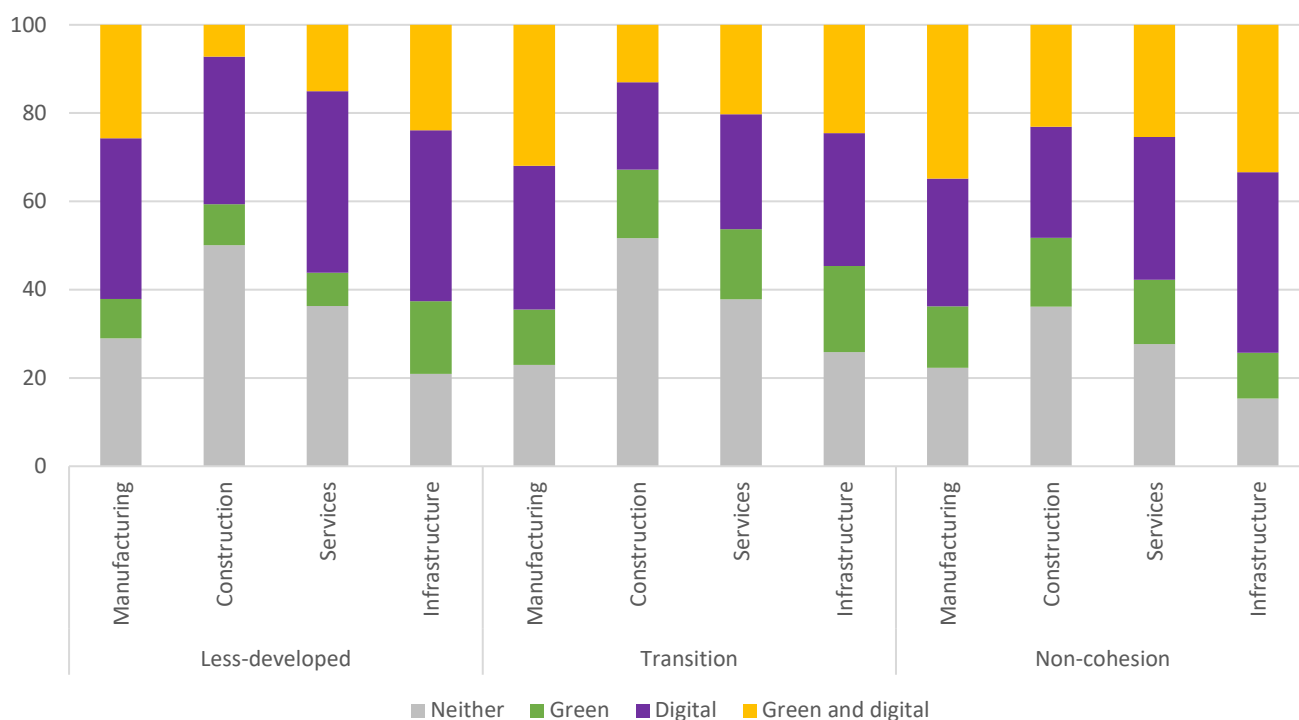
Source: EIB Investment Survey 2021.

Note: See p. 29 for an explanation of green and digital corporate profiles.

Base: All firms (excluding don't know/refused to answer responses).

Most of the green and digital firms are active in manufacturing (33%) or infrastructure (30%). The high share of these firms in manufacturing may be partly explained by the greening of the transport sector. The construction sector has the highest share of firms that have invested in neither greening nor digitalisation (41%), followed by the service sector (31%).

Green and digital profiles, by category of region and sector (% of firms)



Source: EIB Investment Survey 2021.

Note: See p. 29 for an explanation of green and digital corporate profiles.

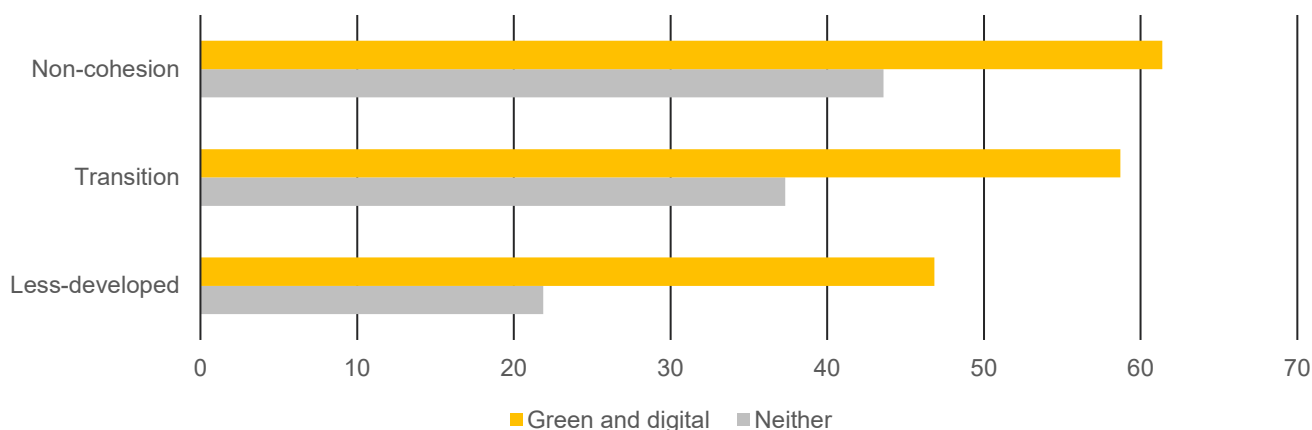
Base: All firms (excluding don't know/refused to answer responses).

Green and digital firms can offer attractive employment opportunities. We found differences in the average wages paid by firms to their employees across firm profiles and region categories. Green and digital firms tend to pay higher wages on average to their employees than those that have not invested in greening or digitalisation. This holds true across all regions, and the wage divide between green and digital and “neither” firms seems to be comparable. Wage differences are likely to reflect a mix of productivity, firms’ business perspectives and employees’ qualification profiles.

Firms undertaking transformative investments in green and digital continued to invest in their workforce. During the pandemic, employment in most firms remained more or less constant, helped by policy support such as furlough or short-time work schemes. However, many firms cut back their investment in workforce training (EIB, 2022). A decrease of similar magnitude in the share of firms investing in training can be observed across categories of region in the EIB Investment Survey results for 2021. However, in cohesion regions, the cuts came on top of structurally lower levels of firms investing in training.

Training investment by firms forging ahead with the green and digital transition proved more resilient. Green and digital firms were more likely to invest in their workforce, preparing for the future against the background of the COVID-19 shock. The firms leading the green and digital transition more often invest in training across all regional categories, by contrast with firms investing in neither green nor digital transformation; see also the EIB’s latest report on digitalisation in Europe (EIB, 2022).

Firms investing in training, by category of region and green and digital profile (% of firms)



Source: EIB Investment Survey 2021.

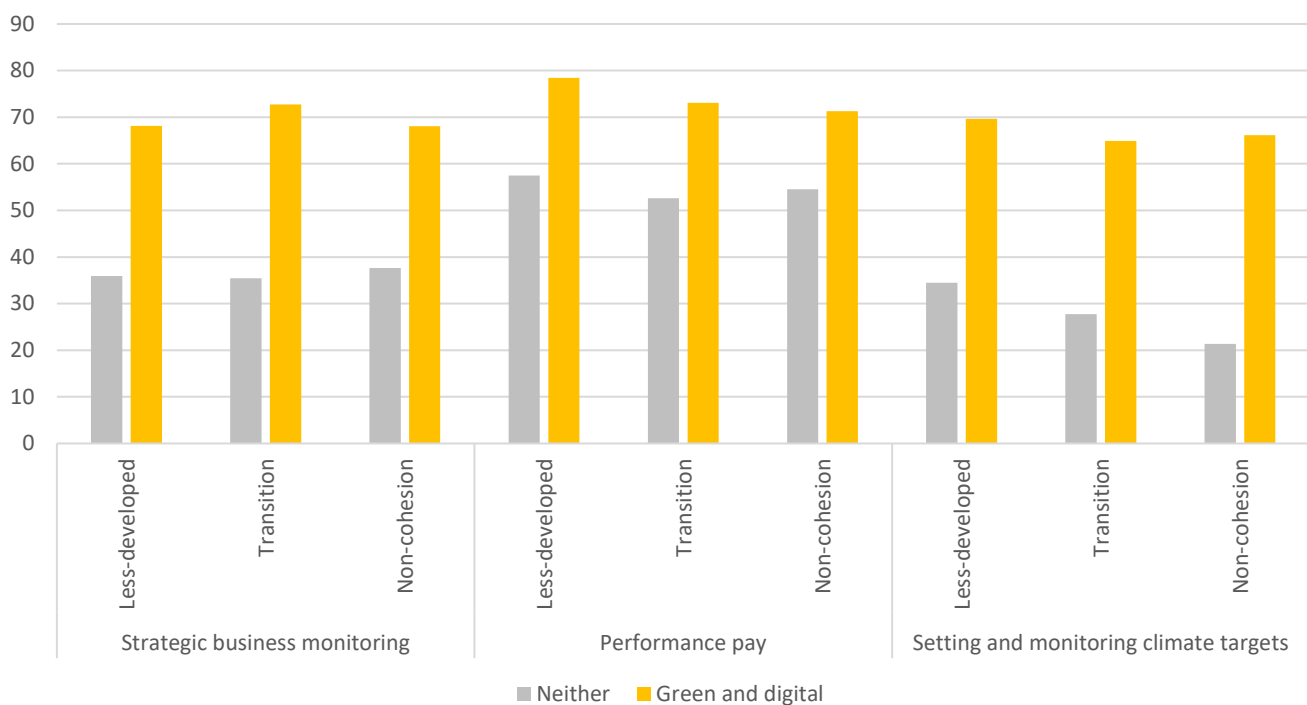
Note: See p. 29 for an explanation of green and digital corporate profiles. The figure shows the percentages of firms that invested more than EUR 50 per employee in training.

Base: All firms (excluding don't know/refused to answer responses).

Investment in human capital, including by firms, plays a key role in enabling successful transformation. It is a key factor underpinning long-term convergence and increasing resilience to shocks. Moreover, it is essential to unlocking employment opportunities linked to structural economic shifts. Leaving human capital disparities unaddressed creates a risk of deepening social divisions, but also deepening the divides between leading and lagging firms and regions. Firms at the forefront of the twin transition often actively invest in human capital and create incentives to acquire new skills.

In addition, innovations are needed not only in technology but also in business practices and consumer behaviour. The results of the EIB Investment Survey clearly indicate that firms investing in both green and digital transformation not only score better on management practices in general but are also more likely to embrace efforts to address climate change as part of their company culture. “Ingraining green” can be crucial to improving sustainability performance but also to leveraging business opportunities stemming from transformation.

Management practices, by category of region and green and digital profile (% of firms)



Source: EIB Investment Survey 2021.

Note: See p. 29 for an explanation of green and digital corporate profiles.

Question: In 2020, did your company...?

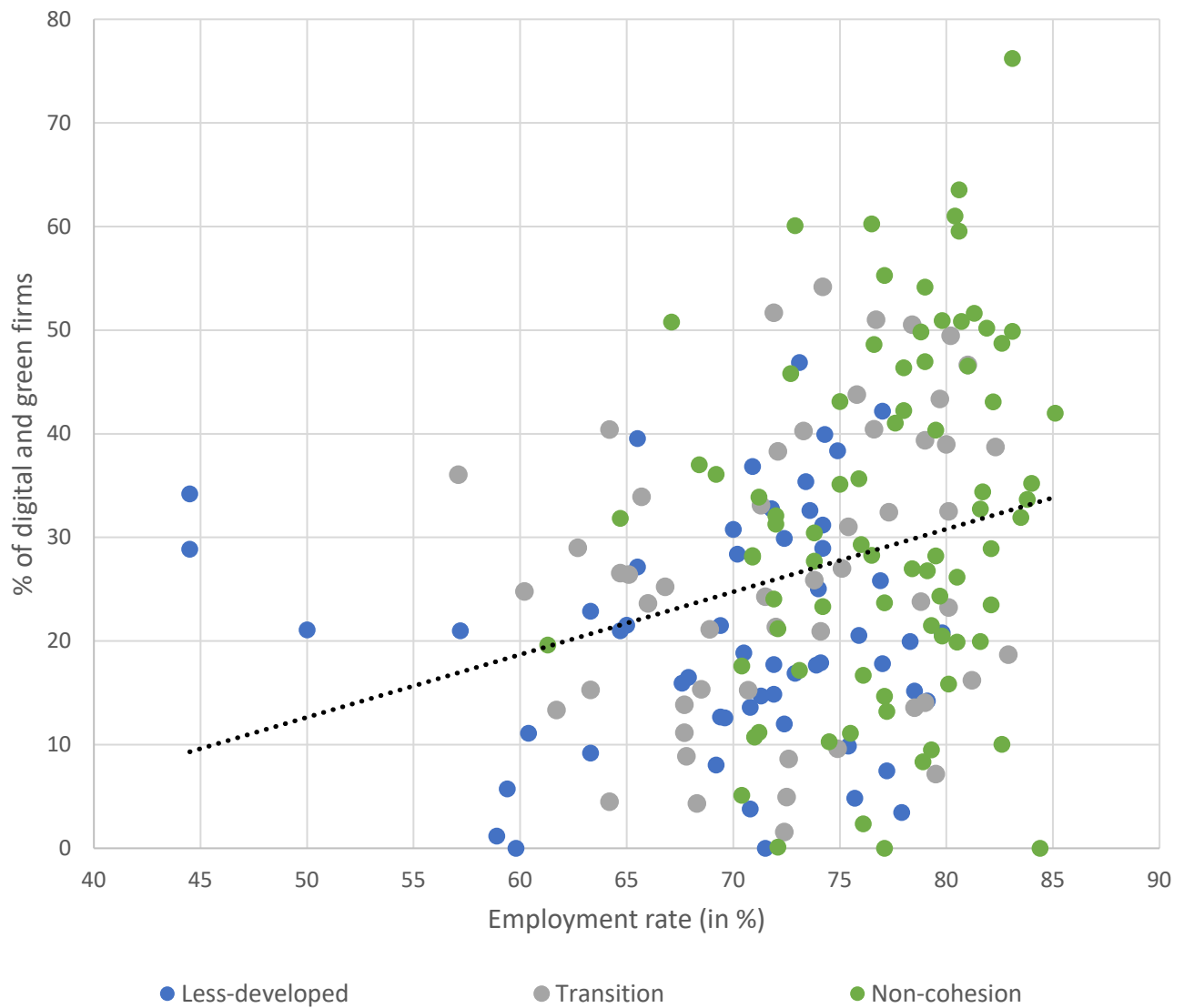
Base: All firms (excluding don't know/refused to answer responses).

Investments to address gaps in human capital will be key to realising a successful and inclusive transition across EU regions and promoting cohesion. Firms tend to be more inclined to invest in human capital when they are confident that they will be able to realise the benefits of the investment. Green and digital firms, already transforming and therefore more optimistic about the changes to come, are more likely to have confidence that they will see a return on their investments in human capital.

To mitigate disparities, including in human capital, and unlock the opportunities presented by transition on a more equitable basis, improvements to the business environment remain key. Such improvements would serve to support entrepreneurial dynamics and the growth of successful firms and to create opportunities in the labour market.

To tackle obstacles to investment by firms, public investment — for example in upgrading infrastructure and addressing other bottlenecks — will be needed and can help to unlock investment complementarities, thus fostering successful regional transformation. Lagging public investment has resulted in persistent infrastructure gaps in cohesion regions that exacerbate the more challenging business environment faced by firms. Breaking these loops will require, in addition to finance, efforts to increase capacities to undertake transformative investments, particularly in the public sector and in the least developed regions.

Prevalence of digital and green firms and employment rate, by category of region



Sources: EIB Investment Survey 2021; Eurostat.

Note: See p. 29 for an explanation of green and digital corporate profiles.

Base: All firms (excluding don't know/refused to answer responses).

Glossary

EIB Investment Survey 2021	The current wave of the EIB Investment Survey, with interviews carried out between April and July 2021
Investment	A firm is considered to have invested if it spent more than EUR 500 per employee on investment activities with the intention of maintaining or increasing the company's future earnings
Investment cycle	Based on the expected investment in current financial year compared to last one, and the proportion of firms with a share of investment greater than EUR 500 per employee.
Large firms	Firms with at least 250 employees
Less developed regions	NUTS2 regions with GDP per capita less than 75% of the EU-27 average
Non-cohesion regions, or more developed regions	NUTS2 regions with GDP per capita greater than 100% of the EU-27 average
NUTS2	Nomenclature of territorial units for statistics (NUTS) level 2 specifies the basic regions for the application of regional policies
SME	Firms with between 5 and 249 employees
Transition regions	NUTS2 regions with GDP per capita between 75% and 100% of the EU-27 average

Note: The EIBIS 2021 survey wave was implemented in spring/summer 2021, with respondents asked about activities in the past financial year, i.e. the 2020 calendar year or the financial year mostly covering 2020.

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pdf: ISBN 978-92-861-5367-9

08/2022 – EN