

Chapter 5
Climate change risks:
Firms' perceptions and responses

EUROPEAN INVESTMENT BANK INVESTMENT REPORT 2020/2021

Building a smart and green Europe in the COVID-19 era

Part II Investing in the transition to a green and smart economy

Chapter 5
Climate change risks:
Firms' perceptions
and responses



Investment report 2020/2021: Building a smart and green Europe in the COVID-19 era

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About the Report

The EIB annual report on Investment and Investment Finance is a product of the EIB Economics Department, providing a comprehensive overview of the developments and drivers of investment and its finance in the European Union. It combines an analysis and understanding of key market trends and developments with a more in-depth thematic focus, which this year is devoted to European progress towards a smart and green future in a post-COVID-19 world. The report draws extensively on the results of the annual EIB Investment Survey (EIBIS) and the EIB Municipality Survey. It complements internal EIB analysis with contributions from leading experts in the field.

About the Economics Department of the EIB

The mission of the EIB Economics Department is to provide economic analyses and studies to support the Bank in its operations and in the definition of its positioning, strategy and policy. The Department, a team of 40 economists, is headed by Debora Revoltella, Director of Economics.

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Chapter 5

Climate change risks: Firms' perceptions and responses

The transition to a carbon-neutral society presents a major opportunity for all firms. The decisions that firms will take today about tackling climate change will affect their competitiveness and show whether they will play their part in the energy transition. Firms are critical to closing the gap in the investment needed for the European Union to reach the carbon-neutrality goal. Most of the necessary investment will have to come from the private sector.

Nevertheless, less than half of European firms invest in climate measures and significant differences exist among EU members. While 50% of the firms in Western and Northern Europe invest in climate measures, only 32% of Eastern European firms do so. Furthermore, small and medium-sized enterprises (SMEs) and firms in the services and construction sectors are much less likely to invest in climate-related measures. Therefore, firms should step up their efforts.

Several factors are influencing the decisions of EU firms to invest in climate, with regulatory uncertainty and taxation being the most frequently identified obstacles. Regulatory uncertainty and taxation affect the cost-benefit analysis of climate investments, and they need to be structured in a way that supports long-term climate objectives. EU firms are also constrained by the availability of skilled staff, the high upfront cost of climate investments, and to some extent by the limited availability of finance – uncertainties about climate change and existing technologies also weigh on their decisions. These issues should be tackled to boost climate investment.

Firms might not have fully internalised climate change risks yet. Consequently, increasing firms' risk awareness could be also key to increasing investment in climate-related measures. Around one in five European firms state that they are significantly affected by physical climate risks, particularly in Southern Europe and in the infrastructure sectors. In parallel, the majority of EU firms believe that the transition to the net-zero carbon future will have little or no impact on their reputation, supply chain or market demand. While EU firms are more worried about physical and transition risk than US firms, policies to enhance awareness about the impact of climate change are necessary to adjust perceptions and to steer firms towards appropriate climate action.

COVID-19 has been the dominant force in 2020, and the related downturn in the European economy is likely to limit investment in climate-related measures. Around 43% of EU firms that planned climate-related investment are expected to postpone their plans due to the COVID-19 crisis. However, the pandemic could be turned into an opportunity, as at least 30% of the Multiannual Financial Framework (2021-2027) and NextGenerationEU funding will be spent on climate objectives. Europe's response to the economic fallout reflects the European Union's commitment to implementing the Paris Agreement and may act as a once-in-a-lifetime opportunity to accelerate the fight against climate change.

Introduction

Climate change and related policies are pressing, systemic issues that pose high risks to firms' business environments. Besides the most direct physical risks, such as operational impacts and supply shortages caused by extreme weather events, firms also face transition risks that arise from society's response to climate change. These include changes in technologies, markets and regulation. Transition risks may increase the cost of doing business by influencing energy and product prices and, consequently, may undermine the viability of existing products or services, or affect asset values.

Climate change risks are something that all economic players face. These risks are affecting, in one way or another, the competitive environment and may affect certain companies, industries and sectors more than others. Some analysts consider energy-intensive businesses and particularly energy producers to be the most vulnerable to the negative effects. Others highlight geographic risks and say, for example, firms in Southern Europe are more directly affected than firms in Northern Europe. The reality is that today no one is entirely safe from climate risks.

Nonetheless, climate change also offers several business opportunities. For example, firms can engage in energy efficiency improvements to reduce their energy costs and enhance their competitiveness. Similarly, other firms can reduce their reliance on price-volatile commodities, such as fossil fuels and precious metals, by shifting towards more sustainable solutions. Another opportunity is to invest in innovation aimed at developing new products and services that are less carbon-intensive or reduce emissions. All these actions can boost competitiveness and offer firms new market opportunities.

Climate-related risks and opportunities mean that firms cannot continue with business-as-usual strategies, and explain why there is a call for business transformation. Firms must incorporate climate change into their core strategies to take advantage of the emerging opportunities and gain a competitive edge in this changing market environment. This means not only focusing on adapting to the changes that are already here but also preparing for the significant regulatory and economic changes that are likely to materialise soon.

It is no longer enough for firms to view climate-related investments through the prism of core business investments. Firms must begin planning today or risk losing ground to more forward-looking competitors. The energy transition to the net-zero carbon economy will create winners and losers. Only the best-prepared, creative firms that have already built up expertise will thrive in the long term. Others run the risk of lagging behind.

A carbon-neutral world is inevitable and many business opportunities are emerging in the changing landscape. It is essential to analyse whether firms are prepared for the upcoming challenges. In other words, do they evaluate climate risks adequately and do they act on their perceptions by making climate-related investments? To gain a better understanding of how companies perceive the issue of climate change, the EIB Investment Survey (EIBIS) asked firms across the EU27, the United Kingdom and the United States how they perceive physical and transition climate risks, whether they invest in climate-related measures and what the obstacles are to achieving greater levels of climate investment.

The chapter is divided into four sections, all analysing the answers given by the firms in the survey. The first section presents firm-level perceptions of physical and transition climate risks. The second section evaluates investment in climate-related measures made by European firms. The third section discusses the perceived obstacles that prevent firms from investing in climate action. The final section highlights the potential impact of COVID-19 on the investment in climate-related measures and the potential mitigation effects of the NextGenerationEU package. The chapter concludes by discussing how the information collected with the EIBIS can provide useful insights for designing the policies needed to accelerate climate investment by firms and help achieve the overall climate objectives.

Do firms understand the severity of climate change risks?

Analysing how firms perceive the severity of climate risks is key to understanding their decisions to invest in climate mitigation and adaptation. As shown in the literature (such as Sorrell et al., 2006), awareness of climate risks is a core element of climate investment decisions. Firms will only invest if the perceived benefits of investment exceed the associated costs. This assessment depends directly on their perception of climate risks – if firms perceive climate risks to be severe, they are likely to evaluate the investment benefits more positively and the investment costs more negatively. Appropriate assessment and pricing of climate-related risks could lead to more informed capital allocation decisions.

Two main types of climate-related risks affect firms: physical risks and transition risks. Physical risks cause physical damage to assets. They can be an outcome of a natural disaster such as a drought, flood or a wildfire (acute risks), or can relate to longer-term shifts in the climate (chronic climate risks such as rising sea levels or temperatures). Physical risks are likely to become more severe as climate change continues (Intergovernmental Panel on Climate Change (IPCC), 2018). Transition risks are policy and regulatory risks that are driven by the introduction of stringent climate policies that affect the cost of doing business and the returns on assets. Increasingly stringent climate policies are likely to affect the profitability of carbon-intensive firms and might well result in stranded assets. Physical and transition risks are not independent from one another (Bellon, 2019). In particular, a rapid changeover to a low-carbon economy creates transition risks, but also reduces the physical risks arising from climate change.

Understanding the drivers of firms' perceptions of climate change is crucial to designing successful climate-related policies. The literature (Sullivan and White, 2019; Leiserowitz, 2006; Lorenzoni and Pidgeon 2006) suggests that the perceived risks are based on a subjective judgment of potential damage, which is driven by cultural and ideological factors such as trust in institutions and personal experience. Generally, existing studies show a tendency for individuals to perceive climate change as less threatening to themselves than to people in geographically distant locations and in different sectors than the one in which they operate. In this context, the first part of this section focuses on how European firms perceive physical climate risks and the second part analyses their perception of the transition risks. The section also provides possible explanations for the differences between the perceived risk levels likely to drive climate investment decisions.

What are firms' perceptions of physical climate risks?

As the climate continues to change, the negative effects from extreme weather events and long-term shifts in climate patterns will intensify for firms. The consequences of climate change will differ from region to region and small and medium-sized enterprises (SMEs) might be disproportionately impacted because they usually operate locally and are less able to diversify their customer base geographically. Overall, climate change will result in increased maintenance and materials costs, as well as higher prices that will affect firms' competitiveness and the economy as a whole.

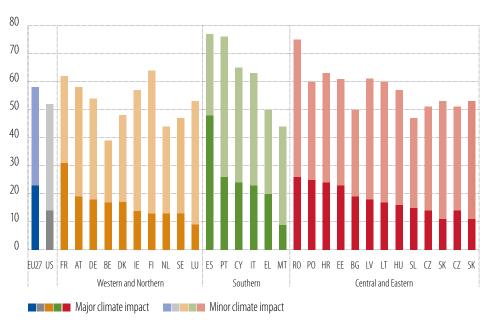
Climate change impacts all economic sectors, with some more vulnerable to acute events and others to chronic risks. In particular, acute events appear to have more of an impact on buildings and all kinds of infrastructure because of their design (low resistance to storms, for instance) or location (if they are built in areas prone to floods, landslides or avalanches). Some sectors, including energy, agriculture and tourism, are vulnerable to both acute and chronic risks. In the energy sector, climate change is shifting energy supply and demand patterns, often in opposite directions. Furthermore, droughts limit the output of hydropower plants. Agricultural production is also substantially affected – for crop yields and the locations where crops can be grown. Similarly, in tourism, climate change affects the timing of holidays, specifically those related to winter sports.

The economic consequences of climate change will differ from region to region, depending on how regional economies are structured. For example, regions that depend heavily on tourism, such as Southern and Central Europe, are most vulnerable. Southern Europe is expected to be hit hardest due to high temperatures, water shortages and extreme weather events that may cause lower or more variable agriculture yields. In this region, the risks of fire and disease are also higher, resulting in deteriorated ecosystems. Moreover, fire seasons are expected to be even longer and more severe in the future. Similarly, the energy sector will have to invest more in tackling the increasing need for air conditioning in Southern Europe. By contrast, climate change might prove less destructive in the northern parts of Europe because of the reduced demand for heating, the possibility of diversifying into new crop varieties and the increase in tourism.

While physical risks driven by climate change may be extremely severe for businesses, firms only partially take them into account. This disparity between the potential threats and how they are perceived may be attributed to the nature of climate risks and the social context in which those risks occur. As described by Bellon (2019), climate risks are often seen as remote, deniable and manageable – "remote" because climate change is frequently seen as a risk to future generations, with the more immediate effects disregarded; "deniable" because climate risks are uncertain and can often be denied and ignored; and "manageable" because firms tend to overstate their ability to adapt to climate change in the future.

Figure 1

Share of firms whose business activities are affected by physical climate risks, by country (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

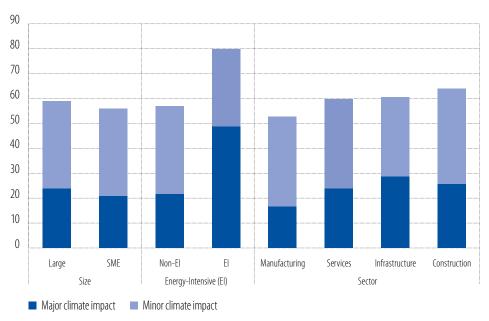
Question: Thinking about climate change and the related changes in weather patterns, would you say these weather events currently have a major impact, a minor impact or no impact at all on your business?

The discrepancy between the short investment horizons of firms and the long-term, often underestimated, impact of climate risks is likely to result in insufficient investment in adaptation measures. Since climate investments compete with other types of investment, this discrepancy is likely to discourage firms from investing in adaptation. Furthermore, even if climate risk forecasts do exist, managers are often reluctant to act until a natural disaster occurs (Connell, Miller and Stenek, 2009). As a result, unless the firm is located in an area characterised by high risks of natural disasters, it is unlikely to perceive the climate as a risk or to make subsequent investment in climate measures. To capture how the

business sector perceives the severity of physical climate risks, the EIBIS asked firms to evaluate whether they have been affected by climate extreme events.

Nearly three in five European firms consider themselves to be vulnerable to physical risks, with less than a quarter perceiving the risk as major. In the United States, a lower share of firms (52%) state that the climate impacts their business activities, with less than 15% saying they face a major risk (Figure 1). In the EU regions, firms in Southern and Central and Eastern Europe feel the impact of extreme climate events more. Across EU countries, Spain displays the highest percentage of firms that say the climate could affect their activities. Around 77% of Spanish firms cite climate events as a risk (with almost 50% considering them a major risk). Firms in Portugal and Romania are also worried about climate risks (Figure 1). In Western and Central Europe, the share of firms in France that consider climate change to be a major risk stands out at 31%. The figure rises to 62% overall when minor impacts are considered. The share of French firms considering climate to be a major risk is high compared to the other countries in this region, where the share of firms citing the importance of physical risks oscillates at around 45%, and only 20% of firms consider climate change to be a major risk.

Figure 2
Share of firms whose business activities are affected by physical climate risks, by sector and size (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

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?

Firms in energy-intensive¹ sectors as well as firms with operations more vulnerable to extreme weather events are more likely to single out physical risks (Figure 2). Almost 80% of firms in energy-intensive sectors indicate the impact of weather events on their business activities. Furthermore, firms with operations more vulnerable to extreme weather events – such as the infrastructure sectors, including electricity, utilities, transport, construction and services (most likely accommodation) – perceive physical risks as significant. Infrastructure sectors are also the most energy-intensive and their operation depends

¹ Energy intensive sectors are the following (using the four-digit NACE classification codes for economic activities): 3511, 3520, 3521, 3522, 3523, 3610, 4950, 4950, 4950, 3530, 2410, 2420, 2431, 2432, 2433, 2434, 2442, 2014, 2013, 2351, 2016, 5100, 5110, 5121, 5223, 5223, 5223. With the exception of energy producers (gas, coal and electricity) that are considered as infrastructure sectors, the majority of these NACE codes comprise firms that operate in the manufacturing sector.

heavily on weather conditions, as is the case for instance in hydropower electricity production and water utilities. Contrary to what might have been expected given the disproportionate effects of climate change on SMEs, firms in all size classes perceive climate change effects in a similar fashion.

How do firms perceive transition climate risks?

Limiting global warming to well below 2°C compared to pre-industrial levels will require a transformation of business models, ultimately leading to the reprioritisation of economic activities. Besides tackling physical risks, firms will also have to prepare for the transition risks caused by the shift to a net-zero emissions future. Transition risks arise from the need to transform and to adapt to new regulations, with changing market preferences and standards emerging as a country embarks on the path to decarbonisation.

Firm assets that are carbon-intensive or heavily reliant on fossil fuels are the most exposed to transition risks. These risks potentially increase the likelihood of assets becoming stranded. Although the stranded assets discussion often focuses on fossil fuels, it is not only the firms that extract oil, gas and coal that could be put at risk by the transition. Firms that use fossil fuels for production, or are otherwise energy or carbon-intensive, could also be affected by new climate legislation, technological advances or a shift in demand.

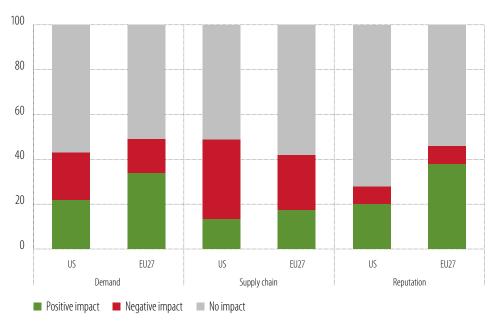
However, the energy transition may also bring opportunities. From a cost perspective, these opportunities result from the efforts to reduce energy costs, for instance by investing in resource efficiency or by implementing renewable technologies. Resource or energy efficiency activities could cast light on "low-hanging fruit" – actions or initiatives that are simple, ready for operation, and require very little investment. These include the introduction of automation, insulation materials and ventilation and air conditioning, or more capital-intensive investments that improve production processes. From a profitability perspective, opportunities include potential profits that could be captured through the development of new technologies, products and services, which would open up new markets and sources of funding.

Transition risks are expected to increase over time because the EU climate framework obliges countries to take action to stay on track with the Paris Agreement. This action will gradually lead to stricter environmental regulations, placing a heavy burden on firms that fail to integrate climate change into their strategies. To capture how they see the transition to a net-zero emissions future, the EIBIS asked firms to provide their views on three core business elements: market demand, supply chain and reputation. Since transition risks may have varying effects on the selected areas, the firms were asked to state whether the energy transition will have a positive, negative or no impact at all on their business activities.

The EIBIS shows that EU firms tend to disregard the relevance of transition risk for their own business. Most firms perceive transition risk as having little or no impact on their business. This is observed across the three core business elements – demand, supply chain and reputation (Figure 3). US firms hold similar views. Still, a higher share of all firms associate the climate transition with a positive rather than negative effect on their reputation and demand. This is not the case for the supply chain where more firms expect a negative effect than a positive one. Differences also emerge in the European Union, with firms located in countries in Central and Eastern Europe appearing to be less concerned about the effects that the transition will have on their business activities (Figure 4), especially on their supply chain and reputation.

² These areas were selected based on the recommendations of the report of The Task Force on Climate-related Financial Disclosures (2019).

Figure 3
Impact of the energy transition on market demand, supply chain and reputation for firms in the United States and European Union (% of firms)

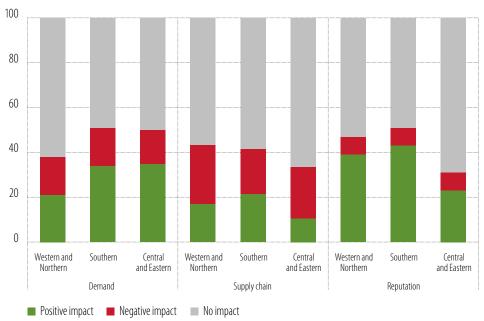


Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

Question: What impact, if any, will this transition to a reduction in carbon emissions have on over the next five years?

Figure 4
Impact of the energy transition on demand, supply chain and reputation by EU region (% of firms)



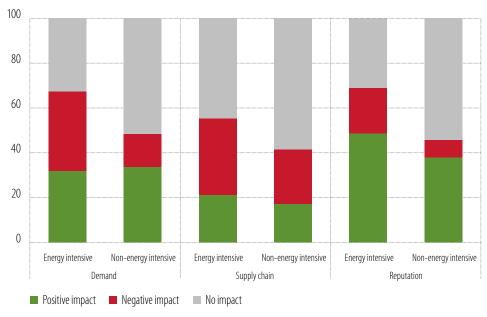
Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

Question: What impact, if any, will this transition to a reduction in carbon emissions have on over the next five years?

Firms' energy intensity plays a part in whether they think they are exposed to climate risks. EU firms in energy-intensive sectors believe that the energy transition will significantly affect market demand and supply chains, with slightly more firms seeing negative effects than positive ones (Figure 5). Energy-intensive sectors are often subject to regulations related to local air quality, water, soil pollution and safety. Firms risk losing their licence to operate or becoming less competitive (due to the higher cost of doing business) if they do not comply with the appropriate regulations. As a result, firms in energy-intensive industries are more likely to state that the anticipated regulations will have an impact on their core business areas. In sectors that are not energy-intensive, firms consider these impacts limited and expect the overall net effect to be positive. In terms of reputation, all types of firms seem to believe that the energy transition will have a net positive effect.

Figure 5 Impact of the energy transition on demand, supply chain and reputation, energy-intensive and non-energy-intensive sectors (% of firms)



Source: EIBIS 2020.

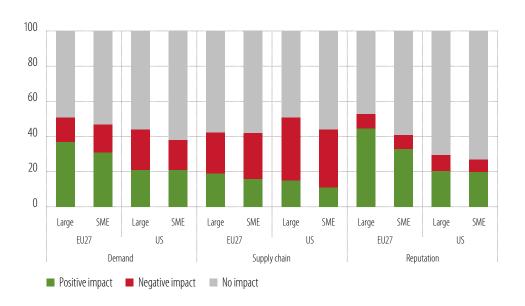
Base: All firms (data not shown for those who said don't know/refused to answer).

Question: What impact, if any, will this transition to a reduction in carbon emissions have on over the next five years?

To meet the long-term climate objectives, energy-intensive sectors need to accelerate their decarbonisation transition. In recent decades, these industries have made significant improvements in resource and energy efficiency. Nevertheless, meeting the EU 2050 climate goals requires further and much more developed low-carbon innovation. Such substantial decarbonisation involves not only technological changes, through low-carbon innovation, but also requires a broader socio-technical transition that entails changing user behaviour, culture, policy, industry strategies, infrastructure and science (Wesseling et al., 2017).

Large firms tend to view more positively the impact of the energy transition on demand for their products (37%) and their reputation (39%) (Figure 6). This is in line with the findings of multiple studies that show that large firms are more likely to engage in corporate social responsibility and pay attention to their environmental footprint given the pressure from consumers and investors (Perrini, 2007). The positive views may be driven by the fact that these firms are often subject to regulations such as the EU Emissions Trading System (ETS) and have already accounted for the energy transition objectives in their business strategies.

Figure 6
Impact of the energy transition on demand, supply chain and reputation, by firm size (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

Question: What impact, if any, will this transition to a reduction in carbon emissions have on over the next five years?

While the majority of the EU firms state that the energy transition does not affect their supply chains, those that do observe an impact tend to hold negative views. Nearly three in five EU firms (58%) state that the energy transition will have no impact on their supply chains (Figure 3). Some 25% of firms in the European Union expect the transition to hurt their supply chains. This share is higher in the United States (some 35%). The negative perception could be explained by the fact that the energy transition might increase supply costs (costs of energy and non-energy raw materials). If suppliers incur greater costs due to new regulations, they might try passing them onto their consumers.

Roy A

Which firms report an impact from climate change?

This box presents the results of simple econometric modelling aimed at understanding how firms' characteristics correlate with their own perception of physical and transition risks.

Accordingly, climate risk perceptions are regressed against firm-specific and country-specific attributes:

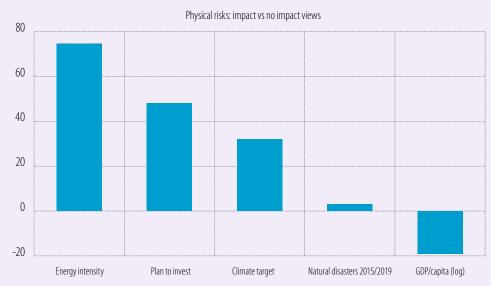
Climate Risk_{i,k} = $\alpha + \beta$ Firm Characteristics_{i,k} + γ Geography_k + $\epsilon_{i,k'}$

where Climate $Risk_{i,k}$ indicates either: a) perceptions of physical risks, such as extreme weather events or b) perceptions of transition risks, related to the effects on the firm's market demand, supply chains and reputation. These risks are reported by firm i in country k. Firm Characteristics_{i,k} is a vector of firm-specific attributes. These attributes include the firm's size (log of sales) and energy intensity (dummy representing energy-intensive sectors), and whether the firm has defined climate targets.

 $\mathsf{Geography}_k$ is a vector of country-specific attributes. For example, the physical risk equation includes the impact of gross domestic product (GDP) per capita and the frequency of extreme events on climate perceptions. The transition risk equation includes the country transition risk scores estimated by the EIB Economics Department. These scores are defined in a unit interval, ranging from 0 (best performer) to 1 (worst performer) after taking into each country's performance in emission and energy intensities, renewable penetration, fossil fuel rents³ and climate policy objectives.

Figure A.1

Differences in predicted probabilities of perception of physical risks (percentage points)



Note: The predicted probabilities were estimated using a logit model that accounts for clustered error terms. The figure presents coefficients that are significant at a level lower than 10%. The dependent variable takes the value of 1 if firms consider the impact of climate events as minor or major risks to their business activity and zero otherwise. Explanatory variables (other than the impacted predictor) are set at their mean.

Figure A.1 presents the difference in the estimated probabilities associated with a number of predictors (firm characteristics). For each of those predictors, it shows how the predicted probability (of firms citing that climate change has an impact on their business) responds to changes in firm characteristics (from 0 to 1 for discrete variables or by one unit for continuous variables), while holding all other independent variables at their means.

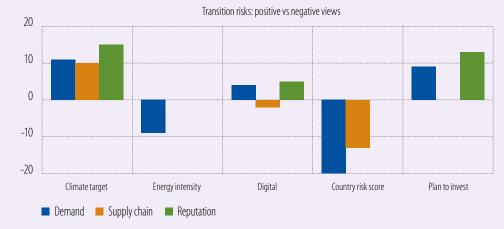
The probability of firms assessing that climate change has an impact on their business is greater when they are energy-intensive, have plans to invest in the next three years or have set climate targets. Firms are also more likely to identify the risks of climate events if they are located in countries more directly exposed to those events. By contrast, the probability of firms identifying physical risks as relevant for their business activity is inversely related to the GDP per capita of their country of operation. Higher-income countries most likely have a greater capability (fiscal space) to tackle physical risks, making firms and the public feel that their domestic infrastructure is more resilient to physical climate risks.

Focusing on transition risks (Figure A.2 compares the probability of holding positive views vs. negative ones), firms with climate targets are more likely to cite positive impacts of the transition to a carbon-neutral future on their demand, supply chain and reputation. This is also observed (except for supply chains) for firms that adopt digital technologies and plan to invest in climate measures,

³ Fossil fuel rents are the difference between the value of fossil fuel production at world prices and the total cost of their production.

which would most likely like to benefit from the first-mover advantage and see this as a climate opportunity. Conversely, in countries where the transition risks are higher, as reflected by their climate performance, the probability of firms holding negative views about the energy transition is higher, especially for their demand and supply chain. This is also the case for energy-intensive firms that tend to hold more negative than positive views on the impact of transition on their market demand.

Figure A.2
Differences in predicted probabilities of perceived transition risks for selected outcomes (percentage points)



Note:

The predicted probabilities were estimated using an ordered logit model that accounts for clustered error terms. The figure presents coefficients that are significant at a level lower than 10%. The dependent takes the value of 1 if firms believe that the transition to net-zero carbon future will have a negative impact, 2 if they do not perceive any impact and 3 if they see this transition as a positive development for their demand, supply chain and reputation.

How do firms respond to climate change risks?

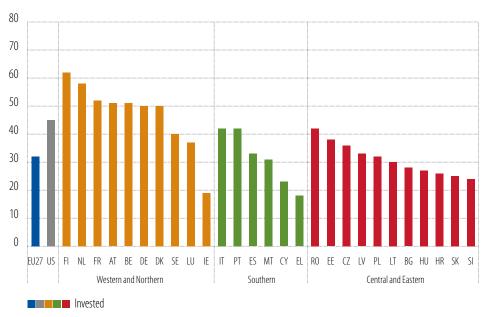
Firms have a crucial role to play in tackling the climate emergency and addressing the associated climate risks. There are two main options for addressing climate risks (through investment in mitigation measures or in adaptation measures), but each option addresses very different challenges. Mitigation measures reduce emission levels, preventing rapid temperature increases. As a result, they address a global challenge that does not respect borders and requires international action. Adaptation is a response to, rather than a slowing of, climate change. It diminishes risks that are likely to be much more localised. Combating climate change requires investment in both mitigation and adaptation. Firms should develop and implement mitigation strategies that target global challenges, while also addressing local risks driven by climate change.

Climate investment can be a business opportunity for companies. Technological improvements or innovations that support the transition to a lower-carbon, more energy-efficient economic system can have a significant impact on businesses. For example, the development and use of emerging technologies such as renewable energy, battery storage, energy efficiency and carbon capture and storage will affect the competitiveness of businesses, their production and distribution costs, and ultimately the demand for their products and services from end users.

Climate investment is likely to differ by geography and sectors. This is because climate investment requires an awareness of climate effects, upfront capital and needs to compete with other potential investment projects – all of which tend to differ by country and industry.

⁴ For more information on mitigation and adaptation measures and investment trends in these areas, please see Chapter 4.

Figure 7
Share of firms investing in climate-related measures to tackle climate change risks (%)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

Question: Has your company already invested to tackle the impacts of weather events and reduction in carbon emissions?

Nearly half of European firms invest in climate measures, but there is a considerable difference among regions. In 2020, 45% of European firms invested in climate measures, whereas the proportion for US firms was much lower at 32% (Figure 7). Climate investment in the European Union differs significantly between regions. While 50% of firms in Western and Northern Europe invest in climate measures, only 32% of Eastern European firms do so.

The differences between individual EU countries are even more pronounced. Firms in Finland and the Netherlands are at the forefront of climate investment: 62% of Finnish firms and 58% of Dutch firms invest in climate measures (Figure 7). By contrast, other EU countries are lagging behind in this area, with only 24% of Slovenian firms, 23% of Cypriot, 19% of Irish and 18% of Greek firms making this kind of investment.

Geographic differences in climate investments may be attributed to differences in the enabling environment in the EU Member States. As shown in Figure 8, investment in climate-related measures is positively correlated with the climate policy framework⁵ of the country (Germanwatch, 2019). Finland, the country with the highest share of firms that invest in the climate, is ranked second for the stringency of climate policy and the prevailing conditions for climate-related investments. At the other end of the spectrum is Bulgaria – a country where only 28% of firms invest in climate measures and the climate policy is the least stringent. This relationship shows that the policies implemented by governments can play an important role in supporting investment in climate-related measures.

⁵ The index category "Climate Policy" covers the most recent developments in national climate policy frameworks, including (1) national climate policy and (2) international climate policy, and the qualitative data for these is assessed annually in a comprehensive research study by Germanwhatch (2019).

Figure 8
Country-level climate policy stringency, and share of firms that invest in climate-related measures

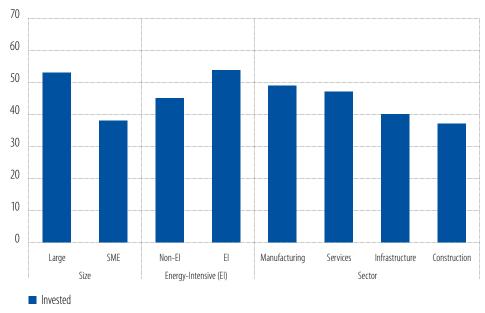


Source: EIBIS 2020 and Germanwatch.

 $Note: \qquad \textit{Countries are ranked based on their climate policy performance. Higher scores indicate a better enabling environment for a countrie of the policy performance of t$

climate investment.

Figure 9
Firms' characteristics and investment in climate-related measures (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

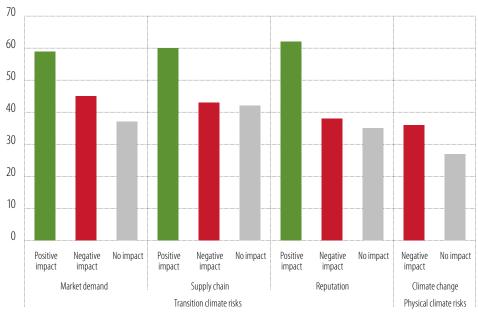
Question: Has your company already invested to tackle the impacts of weather events and reduction in carbon emissions?

Large European firms and firms in manufacturing and infrastructure are much more likely to invest in climate-related measures. More than half of large firms make climate investments, while only 38% of SMEs do so (Figure 9). This difference is probably because energy tends to be an important cost driver for large firms. Firms in energy-intensive sectors are more likely to invest to address climate risks. Manufacturing and infrastructure sectors also invest more often in climate-related measures: 49% of manufacturing firms and 47% of infrastructure firms do so. These firms tend to be large, are subject to significant investment costs, and are often covered by the EU Emissions Trading System. Investing in climate-related measures may significantly reduce their costs, and they are therefore more likely to invest despite upfront costs. This stands in contrast to, for example, construction firms, 37% of which invest in climate measures.

The EIBIS shows that European firms aware of physical and transition risks tend to invest more in climate-related measures. In 2020, 36% of the European firms whose business is affected by climate change – those that consider the climate to pose major or minor risks – invested in climate measures. The share of firms that see no impact but still invested is only 27% (Figure 10). Furthermore, the share of firms investing rises among firms that see the energy transition as an opportunity.

Around three in five EU firms that expect the energy transition to have a positive impact – on market demand, their supply chain or their reputation – invest in climate-related measures. In contrast, the shares are much smaller for firms that don't expect the transition to impact their business activities: 37% for market demand, 42% for the supply chain and 35% for reputation (Figure 10). (Smaller) differences exist when comparing firms with a negative perception of the transition to those that do not see any impact. Seeing the energy transition as an opportunity may significantly increase the share of firms that invest in climate measures.

Figure 10
Climate investment by firms, according to their perception of physical and transition risks (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

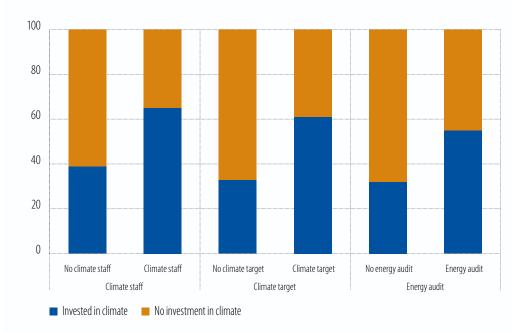
Question: Has your company already invested to tackle the impacts of weather events and reduction in carbon emissions?

Understanding firm-specific climate needs could help increase climate investments. The gap between firms' objective responses to the transition and physical climate risks and their subjective perceptions decreases when firms are better informed about their climate needs (Sorrell et al., 2004). Firms may gain

access to important information by having dedicated staff members responsible for climate issues, setting internal climate targets and completing an energy audit.

A clear positive link exists between implementing measures to improve access to information about climate needs and investment in climate-related measures. European firms that make efforts to improve their information (dedicated staff members, energy audit and climate targets) are more likely to invest in climate measures (Figure 11). Around 65% of firms that have dedicated climate staff, 61% of firms that have internal climate targets and 55% of firms that had an energy audit in the past four years invested in climate measures. In contrast, only 39% of firms that do not have dedicated climate staff, 33% of firms that do not set internal climate targets and 32% of firms that have not had an energy audit in the past four years invested in climate measures.

Figure 11
Climate characteristics of the firms and climate investment (% of firms)



Source: EIBIS 2020.

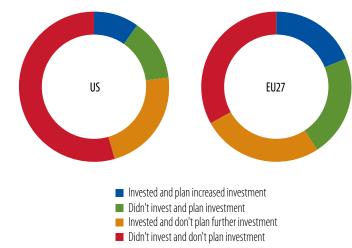
Base: All firms (data not shown for those who said don't know/refused to answer).

Question: Has your company already invested to tackle the impacts of weather events and reduction in carbon emissions?

Looking ahead, two in five European firms suggest that they have plans to invest more or to invest for the first time to address climate issues. More European firms plan to invest in climate measures than in the United States, where only 23% of firms plan investment (Figure 12). Focusing on the distribution of firms that have plans to invest, 19% of firms have invested in the past and plan further investment and 21% plan to invest for the first time. The respective shares stand at nearly 10% and 13% for the United States. However, it is important to mention that the majority of the European firms (three in five) do not plan climate investment in the next three years. More than half of firms that invested in climate in the past do not plan to do so again.

Climate investment plans of firms also vary among EU members. The share of firms that have investment plans is higher in Western and Northern Europe (Figure 13). In Finland, 68% of firms are planning climate investment in the next three years, of which 76% have already invested and would like to continue to invest, and 24% plan to invest for the first time. The share of firms with climate investment plans is also high in Belgium (51%) and Germany (48%). At the other end of the spectrum are Slovakia and Greece. In Slovakia, 18% of firms are planning climate investments, while in Greece only 22% are.

Figure 12
Past and planned investment in climate-related measures in the European Union and the United States (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

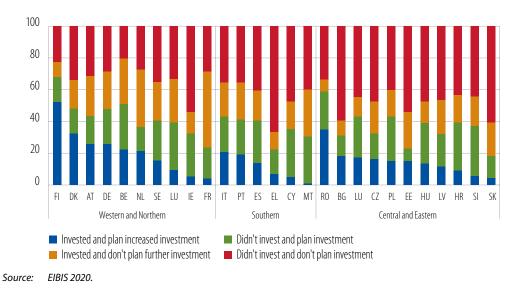
Question: Has your company already invested to tackle the impacts of weather events and reduction in carbon emissions?

Does your company plan to invest (more) to tackle these impacts in the next three years?

Fewer firms in Southern and Central and Eastern Europe have invested in climate measures. That is expected to change, however, in the future. Around 30% of firms in Malta and Cyprus and nearly 27% of firms in Spain that have not invested in climate in the past plan to do so in the next three years (Figure 13). The situation is similar in the eastern part of the continent: 31% of Slovenian firms, 30% of Croatian firms and nearly 28% of Polish companies that have not invested in the past plan to invest in the next three years. These large shares are likely related to the current climate investment gaps between the EU members. While many Western and Northern European countries have already invested in climate measures in the past, this investment been much more limited in Southern and Central and Eastern

Figure 13
Investment in climate-related measures and planned investment in EU members (% of firms)

Europe, and firms in these are regions more likely to have immediate climate investment needs.



Box B

Which firms plan to invest in climate action?

Similarly to Box A, this box presents the results of simple econometric modelling aimed at understanding how firms' characteristics correlate with their plans for climate investment.

Accordingly, investment decisions are regressed against a few simple firm-specific variables:

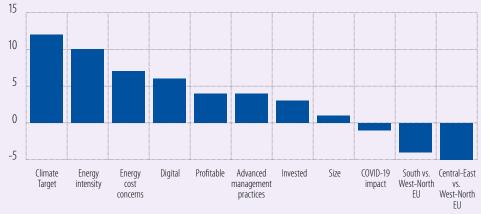
Investment Decision_{i,k} =
$$\alpha + \beta$$
 Firm Characteristics_{i,k} + γ Geography_k + $\varepsilon_{i,k'}$ (1)

where Investment Decision $_{i,k}$ indicates plans to invest in climate-related measures in the next three years. These are reported by firm i in country k. Firm Characteristics $_{i,k}$ is a vector of firm-specific attributes, including the firm's size and sector; whether they are digital, young (less than ten years of operations), and profitable; whether they have climate targets; and whether they have implemented advanced management practices. Geography $_k$ indicates a vector of regional dummies that control for unobserved regional-specific factors that might drive firms' responses. The dummies represent Western and Northern Europe, Southern Europe and Central and Eastern Europe.

Figure B.1 presents the difference in the estimated probabilities associated with a number of predictors (firms' characteristics). For each of those predictors, it shows how the predicted probability (of firms planning to invest in climate-related measures in the next three years) responds to changes in firm characteristics (from 0 to 1 for discrete variables or by one unit for a continuous variables), while holding all other independent variables at their means.

The probability of firms planning to invest in climate measures in the next three years is higher for firms that have set climate targets, are energy-intensive, have energy cost concerns and have adopted digital technologies. The probability differential is also positive (although smaller) for firms that follow advanced management practices, are profitable, have invested previously in the climate and are larger in size. By contrast, firms located in Southern Europe have significantly smaller climate investment plans than those located in Western and Northern Europe, a development that is even more pronounced for those in Central and Eastern Europe. Finally, companies with a negative outlook on the overall consequences of the COVID-19 crisis are also likely to develop climate investment plans.

Figure B.1
Differences in predicted probabilities of firms reporting plans to invest in climate measures (percentage points)



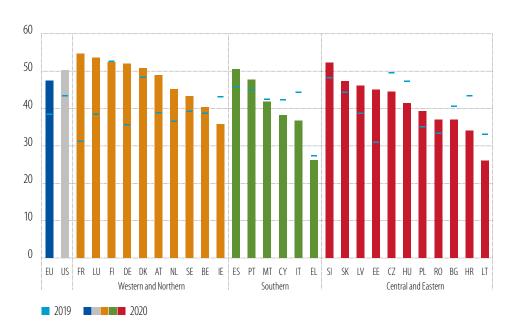
Note: The predicted probabilities were estimated using a logit model that accounts for clustered error terms. The figure presents coefficients that are significant at a level lower than 10%. The dependent variable takes the value of 1 if firms plan to invest in climate measures in the next three years and zero otherwise. Explanatory variables (other than the impacted predictor) are set at their mean.

How do firms perceive investment in energy efficiency measures?

Improved energy efficiency is key to limiting climate change. The International Energy Agency (IEA) projects that more than 40% of the reduction in global carbon emissions until 2040, relative to baseline, could be achieved with higher energy efficiency (IEA, 2018). Furthermore, energy efficiency is one of the cornerstones of EU energy policy (European Commission, 2018), and is closely linked to its three main pillars: security (security of supply, import independence, safe production), sustainability (reducing greenhouse gas emissions) and competitiveness (affordable energy for end users, contribution to growth and jobs).

However, many opportunities for investment in energy efficiency are missed, despite being financially sustainable and requiring limited capital spending. Several financial and non-financial barriers limit the adoption of cost-effective energy efficiency measures, and the limited adoption contributes to the energy efficiency gap. Investment barriers to energy efficiency measures are multi-faceted, diverse and often specific to individual technologies and sectors (Sorrel et al., 2004). In addition to these barriers, existing literature suggests that when assessing an energy efficiency investment, firms tend to focus on the direct energy impacts of the energy efficiency measures and neglect significant non-energy benefits (indirect impacts). The EIBIS provides a number of useful insights on European firms' attitudes towards energy efficiency and potential pathways for greater investment.

Figure 14
Investment in climate-related measures and planned investment in EU members (% of firms)



Source: EIBIS 2020. Base: All firms.

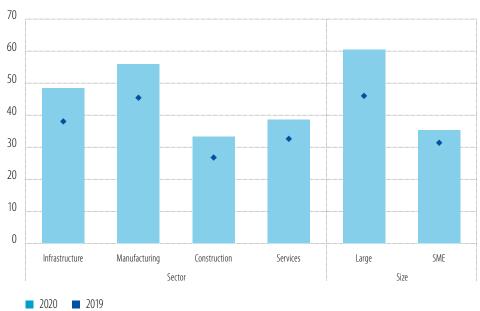
 $Question: \ What proportion of the total investment was primarily for measures to improve energy efficiency in your organisation?$

Nearly half of EU firms have implemented energy efficiency measures. In 2020, the share of firms investing in energy efficiency increased by almost 10 percentage points to 47% (Figure 14) and came closer to the share observed in the United States (50%). Firms in Western and Northern Europe invest the most (48%), followed by firms from Southern Europe and Central and Eastern Europe (around 40% for both regions). Across the EU countries, France displays the highest percentage of firms that invest in energy efficiency (55%) and is followed closely by Luxembourg (54%), Finland (52%) and Spain (52%). By contrast, Croatia (34%), Greece (26%) and Lithuania (26%) are at the other end of the spectrum.

Large firms and manufacturing and infrastructure firms are the most likely to invest in energy efficiency. While 60% of large firms invest in energy efficiency, only 35% of SMEs do so (Figure 15). Similarly, the manufacturing sector displays the highest share of firms investing in energy efficiency (69%), followed by the infrastructure sector (63%). Construction is the sector with the lowest share of firms that invest in energy efficiency – less than half of construction firms make energy efficiency investments. This is most likely because energy tends to be a core cost component for large firms and energy-intensive sectors. Investment in energy efficiency may significantly reduce their variable costs.

The untapped potential of energy savings is high, as EU firms consider their building stock to be of relatively low quality. In 2019, EU firms reported that slightly more than a third of their commercial building stock is of high or highest energy efficiency standards (EIB, 2020). Moreover, since 2016, their view of the building stock has become more pessimistic. Firms located in Central and Eastern Europe tend to report that their building stock meets lower energy efficiency standards.

Figure 15
Share of firms that invested in energy efficiency by firm characteristic (%)



Source: EIBIS 2020 and 2019.

Base: All firms.

Question: What proportion of the total investment was primarily for measures to improve energy efficiency in your organisation?

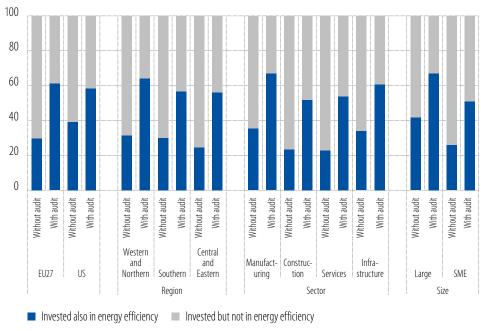
Firms need to be made aware of the benefits of energy efficiency if the uptake of measures is to increase, In 2020, the share of firms investing in energy efficiency measures was considerably higher for firms that had an energy audit (Figure 16). On average, three in five EU firms (61%) that carried out an energy audit also invested in energy efficiency. The relationship between energy efficiency investments and energy audits is more pronounced in large⁶ firms (67%), those that operate in the infrastructure and manufacturing sectors (60% and 67%, respectively) and those that are located in Western and Northern Europe.

The crucial role of energy audits also becomes apparent when assessing the investment decisions of firms that did not have an energy audit. Firms that did not have an audit appear to invest substantially in areas other than energy efficiency, possibly because they fail to understand the potential direct and

⁶ According to Article 8 of the Energy Efficiency Directive (EED 2012/27/EC), energy audits are mandatory for large firms in the European Union. However, various Member States apply different criteria for granting exemptions from the rule, such as annual energy consumption, share of energy costs in sales, level of sales, assets or application of an energy management system.

indirect benefits of energy-saving technologies. In other words, audits help firms overcome the information barriers to energy efficiency investments.

Figure 16
Share of firms investing in energy efficiency, with and without an energy audit (%)

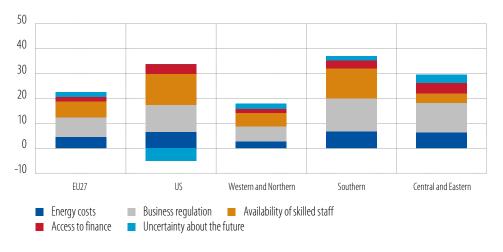


Source: EIBIS 2020.

Base: All firms (data not shown for those who said no/don't know/refused to answer).

Question: Can I check, in the past four years has your company had an energy audit? By this, I mean an assessment of the energy needs and efficiency of your company's building or buildings.

Figure 17
Net balance of various obstacles to investment, between the share of firms that invest in energy efficiency and those that invest but not in energy efficiency (%)

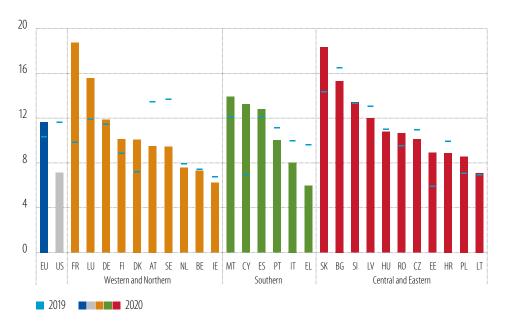


Source: EIBIS 2020. Base: All firms.

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

Energy costs and uncertainty about business regulation stand out as two long-term obstacles to energy efficiency investment. In the United States, these obstacles weigh more heavily, as does the uncertainty of business regulation in Southern Europe (Figure 17). The remaining long-term barriers, such as access to finance, availability of skilled staff and uncertainty about the future, seem to affect investment decisions in a similar fashion, regardless of the investment area.

Figure 18
Share of firms' total investment in energy efficiency (%)



Source: EIBIS 2019 and 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

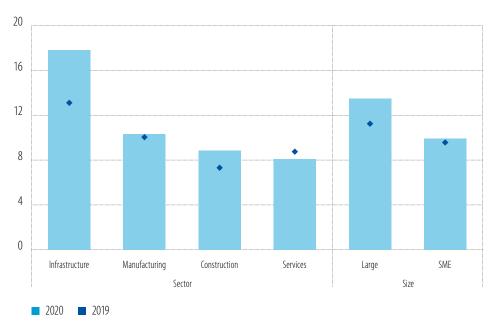
Question: What proportion of the total investment was primarily for measures to improve energy efficiency in your organisation?

The share of EU firms that invested in energy efficiency measures, as well as the share of investment spent on such measures, increased from 2019 to 2020. By contrast, in the United States, the proportion of investment spending on efficiency measures fell in 2020. Overall, EU firms spend 12% of their investment budget on energy efficiency measures, whereas US firms spend 7% (Figure 18).

The share of firms' total investment budget that goes to energy efficiency improvements varies widely across EU members. In 2020, firms in France spent more on energy efficiency projects (19%) than firms in any other EU country and especially those in Greece and Ireland, which invested only 6% of their investment budget (Figure 18). Firms in France showed a significant increase in spending (9 percentage points) from the previous year. Firms' spending also varied significantly across most EU countries, possibly because some energy efficiency investments only occur once. The share of investment spending on energy efficiency declined considerably in firms in Southern Europe (such as Greece, Italy and Portugal) and in two countries in Western and Northern Europe (Austria and Sweden).

Spending on energy efficiency improvements is higher in the infrastructure and manufacturing sectors and in larger firms, for which energy is a significant cost. In 2020, firms in the infrastructure and manufacturing sectors spent 18% and 10%, respectively, of their total investment budget on measures to improve their energy savings (Figure 19). By contrast, firms in the services sector and the construction sector spent less, 9% and 8% respectively, of their total investment budget. Similarly, the share of energy efficiency investment is higher for larger firms than for smaller firms. The increase in the share of 2020 investment that went to energy efficiency measures is more pronounced in manufacturing firms and large firms.

Figure 19
Share of firms' total investment in measures to improve energy efficiency (%)



Source: EIBIS 2020 and 2019.

Base: All firms (data not shown for those who said don't know/refused to answer).

Question: What proportion of the total investment was primarily for measures to improve energy efficiency in your organisation?

What concerns do firms have about climate-related investment?

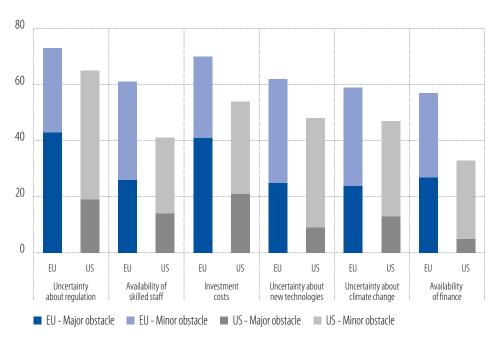
Looking at how firms adapt to climate change is not enough – we must also examine how various factors affect their investment decisions. There are myriad uncertainties and issues that firms confront when making decisions that affect, or are affected by, climate change. Stadelmann and Michaelowa (2011) link these factors to the enabling environment and classify them under three main headings:

- the core business environment, which is relevant for all types of businesses;
- the broader investment climate, including education, financial markets and infrastructure. The investment climate is partially related to the low-carbon transition, through climate change education or investments in electricity grids; and
- targeted policies that encourage the business sector to invest in low-carbon technologies.

Taking the Stadelmann and Michaelowa (2011) methodology into consideration, the EIBIS 2020 asked firms to share their views on the role that six factors play in their climate investment decision-making processes. These factors are: 1) uncertainty about regulation and taxation; 2) uncertainty about future technologies; 3) uncertainty about climate change effects; 4) investment costs; 5) availability of finance; and 6) skilled staff. While the resulting analysis examines only a limited number of variables, it is intended to identify their relative importance in climate investment decision-making.

EU firms are more likely to identify obstacles to climate investments than US firms (Figure 20). For all six different obstacles, the share of EU firms identifying each of them as an obstacle (major and minor) is higher than the corresponding US share. Besides, the severity of these obstacles is much higher for EU firms than in US firms.

Figure 20
Obstacles to climate investment, in the European Union and the United States (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer)

Question: To what extent is the following an obstacle to investing in activities to tackle weather events and emissions reduction? Is it a major obstacle, minor obstacle or not at obstacle at all?

Across EU firms, uncertainty about regulation and taxation is the factor most frequently identified (73%) as reducing the likelihood of investment in climate (Figures 20 and 21). Regulations and taxation are important for firms' investment decisions. They affect the cost-benefit analysis of climate investments, and therefore need to be structured to facilitate long-term climate objectives. Stricter environmental regulations tend to encourage firms to cut pollution by making it costly to pollute (for example via a carbon tax or a regulatory standard that mandates the adoption of costly low-carbon equipment). Support schemes do the same by providing economic incentives. Uncertainty about regulation will cause investment decisions to be delayed or abandoned, as firms try to have the full picture of expected cost-benefits before proceeding with the investment.

Tax rates currently have little or no relation to the energy content or externalities (such as carbon emissions or air pollution), while there is great uncertainty about the future development of Emissions Trading System prices in Europe. In parallel, generous support schemes in many EU countries have been revised and are affecting investors' decisions. Taxation has remained unchanged since the beginning of 2000, despite major developments in Europe's climate and energy policies and targets, and the emergence of clean-energy technologies. These are the factors most likely to drive firms to cite uncertainty about regulation and taxation more often than other barriers.

The other issues that EU firms highlight as constraining their investments are the high upfront cost of climate investments (69%) and the availability of skilled staff (60%). Investments in climate cover a broad spectrum of activities and their costs range from hundreds of millions of euros to a couple of thousand. For example, the replacement of machinery can cost several million euros, whereas the cost of changing lighting as part of an energy efficiency strategy is much lower.

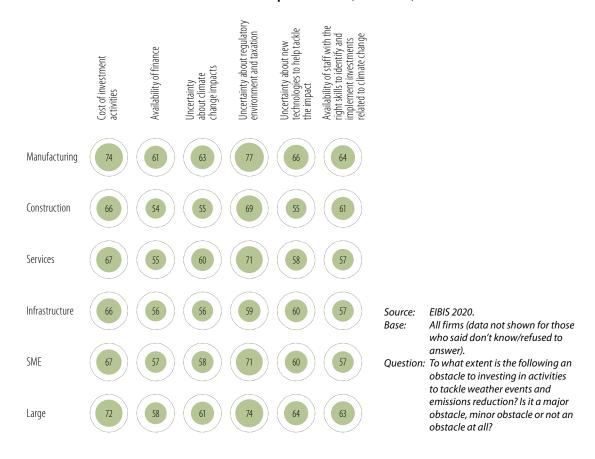
These specific factors lead firms to cite the upfront costs as an obstacle to investment. At the same time, firms often do not consider climate change investment to be a core business investment activity.

In doing so, they neglect low-risk investments that have a predetermined, often short, payback period. To overcome this issue, firms need specific expertise to conduct the necessary due diligence and to successfully identify climate opportunities. EU firms acknowledge this fact. Some 60% of them report that a lack of skilled human resources prevents them from investing in climate measures.

Another type of uncertainty that firms name when assessing climate investments is that of new technologies (62%). This likely reflects firms' concerns about the price, availability and reliability of future clean-energy technologies. These three components are affected by the evolution of learning new technologies, which in turn depends on the policies taken to accelerate that learning. The slower the progress of technological learning, the higher the likelihood firms will adopt a wait-and-see attitude.

Uncertainty surrounding the actual impact of climate change (59%) also weighs on firms' investment decisions. Uncertainty about climate change is a defining characteristic of climate change economics and affects the investment decision-making of firms, but only 59% consider it to be an investment barrier. Although there is a broad consensus that global warming is underway, the lack of widespread information on climate change risks and their complicated nature makes it difficult for firms to react adequately. This explains why uncertainty about climate change is not the most important impediment in their investment decisions.

Figure 21
Obstacles to climate investment in the European Union (% of firms)



Limited availability of finance is a challenge for 57% of EU firms, which highlights the importance of favourable financing conditions. The current period of low-interest rates makes firms more willing to pursue financing. Additional factors that drive their investment decisions could be upfront costs, financial frictions, incentives and their capital structure. The availability of finance remains an important driver

for investment in climate. For example, Kalantzis and Revoltella (2019) suggest that firms tend to use external funds to finance their investment in energy efficiency improvements. Furthermore, as found by Cooremans (2011), investment in climate measures is not considered to be strategic, so internal financial resources are less likely to be used for this purpose. As a result, highly indebted firms that face higher financial constraints will tend to complain more about the limited availability of finance, unless they benefit from financial incentives or a better enabling environment for climate investments.

US firms cite the limited availability of finance less often (33%) as an impediment to climate investment. By contrast, over three-quarters of firms in Southern Europe report limited finance as an impediment to climate investment. In fact, limited availability of finance is reported as a challenge for them more than any other EU country.

Rox C

Which firms report investment obstacles?

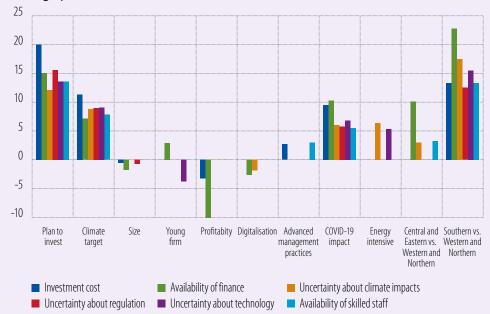
This box presents an econometric analysis aimed at identifying the links between firms' characteristics and the reported investment obstacles. The analysis accounts for six types of investment obstacles: a) investment cost; b) availability of finance; c) uncertainty about climate impacts; d) uncertainty about regulation and taxation; e) uncertainty about the available technology; and f) availability of staff. The analysis followed a similar regression to the one used for the determinants of investment:

Investment Obstacle_{i,k} =
$$\alpha + \beta$$
 Firm Characteristics_{i,k} + γ Geographyr + $\epsilon_{i,k}$, (1)

where Investment Obstacle_{i,k} indicates one of the aforementioned obstacles. These are reported by firm i in country k. The rest of the model, as well the variables employed, follows the specification used in Boxes A and B.

Figure C.1

Differences in predicted probabilities of firms reporting selected investment obstacles (percentage points)



Note:

The predicted probabilities were estimated using a logit model that accounts for clustered error terms. The figure presents coefficients that are significant at a level lower than 10%. The dependent variable takes the value of 1 if firms consider the specific investment barrier either as a minor or major barrier and zero otherwise. Explanatory variables (other than the impacted predictor) are set at their means.

Figure C.1 presents the difference in the estimated probabilities associated with a number of predictors (firms' characteristics). For each of those predictors, it shows how the predicted probability (of firms reporting each of these selected investment obstacles) responds to changes in firm characteristics (from 0 to 1 for discrete variables or by one unit for continuous variables), while holding all other independent variables at their means.

The probability of firms reporting all the selected investment obstacles as either a minor or a major obstacle is greater when firms have plans to invest in the next three years, have set climate targets, say that the coronavirus pandemic has affected their investment plans negatively (reduced investments), and are located in Southern Europe compared to firms located in Western and Northern Europe. Firms in Central and Eastern Europe are less likely to identify obstacles to climate investment than those in Southern Europe, and they mostly focus on a lack of access to finance and to a lesser extent on the uncertainty about the impact of climate change and the availability of skilled staff.

Other firm-specific variables show statistically significant correlations with only some of the obstacles. For instance, younger firms appear to be more concerned about a lack of access to finance and less about the uncertainty about future technologies, while profitable firms are less likely to cite investment costs and a lack of access to finance as investment obstacles. Similarly, digital firms are less likely to consider a lack of access to finance and uncertainty about the impact of climate change as barriers to their investment decisions. Finally, firms in energy-intensive sectors tend to highlight the importance of the uncertainty about future technologies and climate impacts in their investment decisions.

How the COVID-19 crisis is affecting firms' climate-related investments

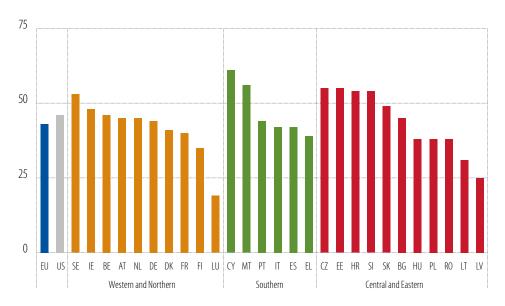
The measures taken in 2020 to fight the ongoing pandemic have severely affected the functioning of the global economy. Trade and investment channels have been disrupted, the movement of people has been seriously restricted, and businesses have been forced to operate at reduced capacity or to temporarily abandon their activities.

In parallel, confidence levels have fallen markedly and labour markets have been disrupted. Furthermore, the crisis is likely to be felt for a prolonged period. Various institutions (the International Monetary Fund, the European Central Bank and the European Commission) expect the GDP of the European Union to shrink dramatically in 2020, resulting in a significant increase in government debt. The repercussions of the crisis will likely involve a fall in investment, including a fall in investment in climate-related measures. The EIBIS 2020 offers some initial insight into future investment trends (see Chapter 2).

According to EIBIS, the COVID-19 crisis will likely significantly impact firms' plans to invest in climate-related measures (Figure 22). Around 43% of the EU firms that planned climate investment stated that the pandemic will negatively affect their investment plans. However, this number is slightly than in the United States, where 46% of firms that planned climate investment said they will reduce it because of the pandemic.

There are significant differences among EU members on how the COVID-19 crisis will affect the plans of firms that wanted to invest in climate-related measures. The most negative effects are observed in countries whose economies rely to a large extent on tourism, particularly Cyprus, Malta and Croatia. In Cyprus, 61% of firms said they were unlikely to follow through on their investment plans. In Malta the figure was 56%, and in Croatia 54%. On the other end of the spectrum are Luxembourg and Latvia. In Luxembourg, the share of firms that planned climate investment, but whose plans were negatively impacted by the coronavirus, is 19%, while in Latvia it is 25%. In general, the pandemic has taken the greatest toll on climate investment in countries most exposed to sectors, like tourism, that experienced the biggest downturn.

Figure 22
Impact of the pandemic on future investment plans in climate-related measures in the United States, the European Union and its Member States (% of firms)

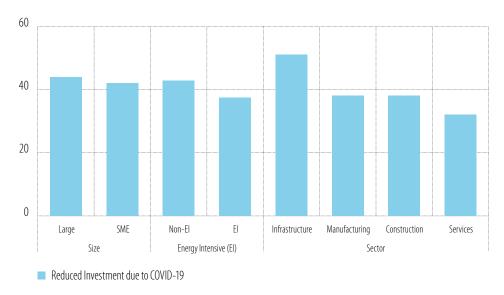


Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

Question: Does your company plan to invest (more) to tackle climate change and related policy impacts in the next three years? Has your company's overall investment expectations for 2020 changed due to coronavirus?

Figure 23
Impact of COVID-19 on future investment plans in climate-related measures, by sector and firm size (% of firms)



Source: EIBIS 2020.

Base: All firms (data not shown for those who said don't know/refused to answer).

Question: Does your company plan to invest (more) to tackle climate change and related policy impacts in the next three years? Has your company's overall investment expectations for 2020 changed due to coronavirus?

The COVID-19 crisis is expected to affect climate-related investment negatively across all sectors. In the manufacturing sector, for instance, half of firms state that they will reduce their forthcoming investments. In services and infrastructure, a slightly smaller, but still significant, share of firms (38%) are likely to reduce their investments due to the pandemic. These sectors have been hit hardest by the crisis. The impact is felt across different sizes of firms. Around 40% of large firms and SMEs will not go ahead with their investment plans. Overall, the crisis could put the European energy transition at risk. The transition requires extensive investment by firms in climate mitigation and adaptation measures.

While COVID-19 is likely to hurt climate investment, the situation could be turned into an opportunity. Since the scale of the coronavirus crisis began to emerge, the European Union has been leading calls for governments to make the recovery as sustainable and resilient as possible. This means immediately addressing the core issues of the global recession and soaring unemployment, and doing so in a way that also takes into account the key challenge of building cleaner and more secure energy systems.

The European Union has responded to the pledges for a green recovery. On 21 July 2020, the heads of state or government of the 27 European Union Member States, together with the European Council president and the president of the European Commission, reached an agreement on a EUR 1.074 billion long-term budget and a €750 billion COVID-19 recovery fund. The recovery fund, known as NextGenerationEU, is to be allocated among EU members and consists of EUR 360 billion in loans and EUR 390 billion in non-repayable grants. At least 30% of the total expenditure (long-term budget and recovery fund) will be spent on climate objectives. The money will be disbursed only on projects that meet certain green criteria, for example, involvement in sectors important for the energy transition such as green transport and sustainable energy. Furthermore, fossil fuels and nuclear power will be excluded from the funding.

The focus on a green recovery reflects the European Union's commitment to implementing the Paris Agreement and the United Nations Sustainable Development Goals. If implemented properly, the recovery package could be a win-win strategy and a once-in-a-lifetime opportunity to accelerate the fight against climate change. National governments, which have power over spending decisions, should ensure that they step up actions for a green and inclusive recovery, speed up the transition to a low-emissions economy and leverage finance to invest in the green recovery. If they manage to do so, the negative impact of COVID-19 on climate investment is likely to be diminished.

Conclusion and policy implications

As climate change continues and new, more stringent climate policies are being adopted by Europe to meet the Paris Agreement goals, firms will increasingly face a variety of physical and transition risks. However, as the EIBIS shows, only one in five European firms perceive physical risks to be a major risk, and the vast majority do not think the transition to a net-zero economy poses a risk to their business activities. In the United States, the perception of physical risks is even lower, despite the frequent occurrence of extreme weather events in recent years. The same applies to transition risks, but this could be driven by the intention of the United States to withdraw from the Paris Agreement at the time of the survey.

The severity of these risks depends highly on the region and sector that firms operate in. As seen in the EIBIS, firms located in Southern Europe feel more that they are at physical risk from climate change. Their perceptions are likely driven by the frequency of wildfires, floods and heat waves, as well as by the limited ability of their countries to tackle those risks. The dependency of their economies on sectors vulnerable to extreme weather events, such as tourism and agriculture, could be an additional factor. Similarly, carbon and energy-intensive firms perceive transition risks to be higher, especially in Western and Northern Europe. By contrast, the majority of firms in Central and Eastern Europe perceive the impact of the climate change transition to be limited, which is most likely driven by the slower transformation of their energy systems.

Overall, it is evident that most firms do not take into account the already foreseeable physical and transition risks of climate change. Firms may believe that climate change will impact their country or region to a lesser extent than more distant places. In that case, they underestimate the indirect risks to which they are exposed through their global supply chains and markets. Neglecting those risks presumably reduces the motives of firms to invest in adaptation and mitigation measures and puts their long-run prosperity and overall EU climate objectives in jeopardy.

The climate emergency leaves firms with two options: begin planning today and gain a competitive edge, or risk losing ground to more forward-thinking competitors. Prudent steps taken to address climate change now can improve a company's competitive position relative to its national or international peers, and can also help them to earn a seat at the table to influence climate policy. With more climate policies coming from national governments and increasing scientific clarity, now is the time for businesses to craft corporate strategies that address climate change.

Firms with a strong history of reducing emissions, such as those operating in energy-intensive sectors, are already shifting their climate focus from managing risks to exploring new business opportunities. These firms understand better that new markets will be created and that the existing ones will change. This is reflected in the EIBIS, which suggests that energy-intensive firms have invested the most in climate-related measures and are planning to do so in the future. Climate change and the energy transition will create winners and losers, and this is clear to firms in energy-intensive sectors.

The nature of future climate legislation will be the most important factor in shaping the competitive landscape that firms will face. It will determine how the market rewards innovators of climate-friendly products and services, as well as how it punishes laggards. More than ever, integrating climate issues into corporate strategy is a core element of managing risk and seizing the competitive advantage. However many obstacles to climate investment exist, as confirmed by the EIBIS.

According to the EIBIS, the uncertainty about regulation and taxation stands out among the obstacles to climate investment that are cited by both US and EU firms. The other issues that EU firms note as constraining their investments are limited availability of skilled staff and the high upfront cost of climate investments. By contrast, firms overall perceive the uncertainty about climate change, together with a lack of access to finance, as a relatively minor obstacle to climate investment. Lack of finance was mainly identified as an impediment for firms in Central and Eastern Europe, as well as in some crisis-hit countries.

The European Union and national governments have a crucial role to play in minimising obstacles to climate investment. For example, they could minimise regulatory uncertainty, communicate climate policy goals and develop a comprehensive framework that supports these goals as soon as possible. Otherwise, the uncertainty will cause a majority of firms to adopt a wait-and-see strategy by delaying their investments until information is more reliable. Ambiguous government policies prevent firms from committing to long-term climate change mitigation strategies. The European Union must invest massively during the current decade to stay on track with the Paris goals.

At this stage, it is also crucial to improve the awareness of climate change and the impact of related policies among European firms. As seen in the EIBIS, firms that are more aware of these impacts and that also have a climate strategy in place – either by setting climate targets, having designated climate staff, or understanding their energy profile through an energy audit – are those that invest the most. This is why it is necessary to promote informational campaigns to highlight the importance of the climate risks and present them as something that will affect firms in the near future, and not only in the long term.

Although insufficient capital for climate action was not cited as frequently as other climate investment obstacles, it could benefit from appropriate policy measures. Climate finance has been expanding rapidly over the past decade, and EU governments have a crucial role to play in encouraging further growth. Several policies, both market and non-market, could be employed to close the investment gap and reach the climate targets. For instance, governments could directly finance climate action by providing subsidies for renewable energy sources and energy efficiency measures, as well as providing blended finance. They could also take steps to remove environmentally harmful subsidies. Such actions could enhance the cost competitiveness of clean-energy investments. Furthermore, governments could drive capital markets towards greater investment in climate measures. This includes mechanisms that are likely to affect larger, listed firms, such as the introduction of green bond standards, and mechanisms that may increase the capital available for climate projects by SMEs, such as green credit lines.

Governments could also put pressure on firms by influencing third parties, particularly investors. Highlighting to SMEs the importance of environmental, social and governance factors and making climate-related financial risk disclosures obligatory could be important steps in the right direction. The European Commission has already engaged in initiatives that aim to tackle these two issues and has adopted the first key element of the sustainable action plan – the EU taxonomy.

The EU taxonomy and the Task Force on Climate-related Financial Disclosures (TCFD) are two important initiatives aiming to boost sustainable investments. The EU taxonomy increased transparency and provided clear definitions of sustainable investments. The suggestions of the TCFD will increase the climate-related information that investors, lenders, insurers and other stakeholders have about firms. Through appropriate policy measures that support the TCFD implementation, regulators can improve the assessment, pricing and management of climate-related risks. Investors can make informed capital allocation decisions and lenders, insurers and underwriters will be better able to evaluate their risks and exposure over the short, medium and long term.

Finally, climate change is a global challenge that requires collective efforts by countries and sectors. In this context, the European Union as a whole and the individual Member States must continue their efforts to encourage governments and firms in non-EU countries to match the ambitious climate goals of the European Union. This would reduce uncertainty about climate policies worldwide. In parallel, national governments should ensure closer collaboration between the public and private sectors. This collaboration could be achieved through multiple mechanisms, for instance, the involvement of firms from multiple sectors in the development of the national adaptation plans. Moreover, coordination among government agencies for the environment, finance and economic development and with the private sector is key to addressing interconnected climate risks.

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Data annex

Glossary of terms and acronyms