

»» SMEs between financial resilience and a digital and green investment surge – a trade-off that should not be

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COVID-19 infections continue to surge in Germany and the economic situation remains tense. The uncertainty can be felt in broad sectors of the economy and community. The spectre of investment restraint becoming entrenched because of the high uncertainty and higher corporate debt levels is hanging like a sword of Damocles over the future competitiveness of German enterprises.

The coronavirus crisis has thwarted the investment plans of countless businesses this year. Only 47% of SMEs have carried out investments for 2020 as planned, a much sharper adjustment during the year than in the years of the 2008/2009 financial crisis. The already moderate investment upturn of the past years has thus fizzled out in the SME sector. Total corporate investment has been on a downward trend in relation to economic output for a long time as well.

This shows that the crisis is exacerbating the trade-off between securing financial resilience and making essential investments in the future – at the expense of investments. In 2020 corporate investment will presumably fall to around 12% of GDP, a similarly low level as in the preceding crises since the turn of the millennium. Almost EUR 40 billion in new investment will probably be lost in SMEs alone.

The sector is not likely to be at risk of over-indebtedness. Most companies were exceptionally well-positioned before the crisis. To be sure, losses in turnover due to the coronavirus crisis put a considerable strain on enterprises' liquidity but the situation has eased since spring, and the high levels of equity they have built up since the turn of the millennium have helped them absorb losses.

On the other hand, the current situation is making it difficult for businesses to undertake the necessary capital expenditure to tap into growth areas emerging from the transition to a digital and climate-neutral economy. But this investment is particularly important to grow out of debt and secure prosperity in the future. So far, SMEs have had a hard time in both fields. The structural transition towards a digital knowledge economy is advancing and digitalisation in the SME sector has also received a boost of late.

Internationally, however, the German economy is only mid-range here, with businesses only moving forward in small steps. Digitalisation, more than anything, is being recognised as a driver of innovation. At the same time, the transition towards climate neutrality poses a great challenge and opportunity. Here, the high capital expenditure required could not just enable necessary climate action but further develop the export market for climate action technologies too.

That is why economic policymakers are now called upon as well to create the framework, provide incentives for investment and lead the way with start-up finance in order to make future growth possible in these two key areas. There are many starting points from which to attenuate the trade-off many businesses are facing. These include reducing the uncertainty for providers of capital, for example through a reliable and predictable, rising CO₂ price signal, addressing constraints such as skills shortages and lowering financing costs.

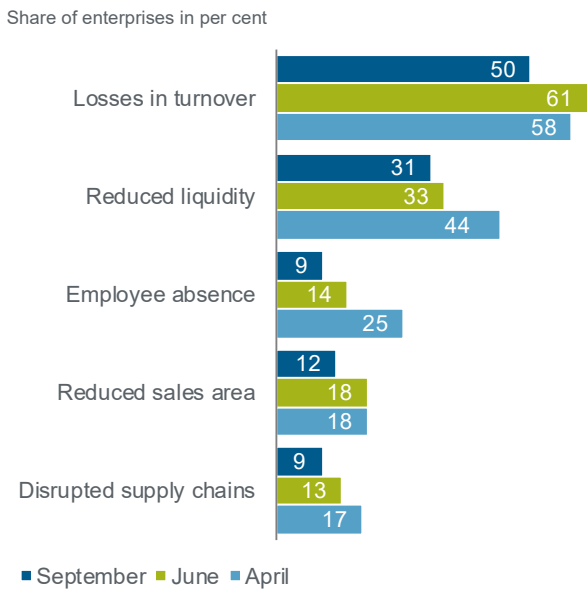
The challenges are great but now is the right time to set the course in order to come out of the crisis stronger. We must think beyond the coronavirus crisis in order to secure lasting growth and prosperity in Germany.

The COVID-19 pandemic reached Germany in March 2020. The historic collapse in economic output in the spring was unprecedented in the speed of its spread, its depth and global scale. The gradual easing of restrictions paved the way for a vigorous recovery over the summer. But broad areas of the business community remain deeply affected by the coronavirus and the further progression of the pandemic is uncertain. The return to full economic activity will be difficult, all the more so now after the renewed partial lockdown in November. Gross domestic product is not likely to return to the pre-crisis level of the final quarter of 2019 before the winter half year 2021/2022.

Small and medium-sized enterprises in particular have experienced a year full of disruptions (Figure 1). The force with which the coronavirus crisis hit SMEs in the spring was too strong.¹ Business closures, restrictions on contacts and

movement have had a significant impact on turnovers, employment, financial buffers and, not least, investment activity.

Figure 1: Impact of the coronavirus on SMEs



Sources: First to third supplementary coronavirus surveys to the KfW SME Panel 2020.

There is still great uncertainty in all sections of society. This is all the more true against the background of high and accelerating new infection rates and renewed containment measures imposed in Germany in November. Unlike in the spring, however, this time there should be much less damage to the overall economy. While hospitality, art, entertainment and recreational venues have been hit with closures again, as have most personal services, retail outlets remain open, along with schools and child daycare centres, and industrial output continues to increase on the back of the global recovery without any significant disruptions. The federal government’s compensation payouts of up to 75% of the previous year’s November turnovers should also be sufficient to cover most of the losses (‘November aid’). The second wave of infections now has to be broken fast so that the recovery can gather steam again soon.

However, the spectre of investment restraint becoming entrenched among businesses is hanging over everything like a sword of Damocles.² If confidence and optimism fail to return in the long term, then the already prolonged investment restraint could intensify.³ This would be clearly to the detriment of the innovative strength and future competitiveness of Germany’s business landscape – especially its small and medium-sized enterprises.

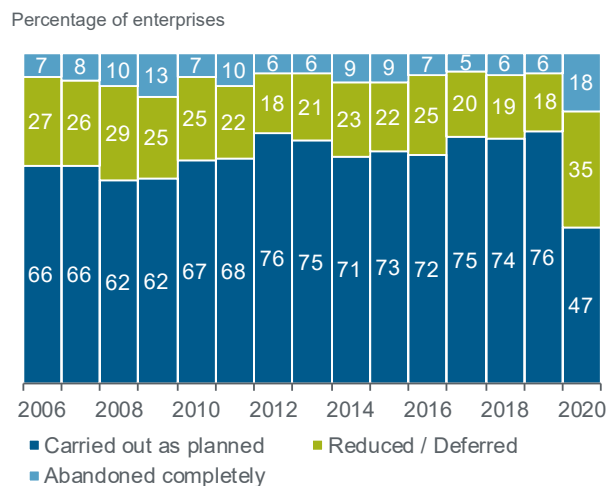
Coronavirus crisis is letting SMEs’ investment appetite sink to historic low

The coronavirus crisis has thwarted the investment plans of many small and medium-sized enterprises this year – even before they became aware of the current second wave of infections and the related containment measures.

Many SMEs have deferred their investment projects for this year because of the crisis. A representative supplementary survey conducted as part of the KfW SME Panel revealed that by September 2020 already, significantly fewer investment projects had been implemented as planned than in previous years (Figure 2). But that was not due exclusively to the high uncertainty about where the economy was heading. Numerous businesses drew on funds initially planned for capital expenditure projects to fill their liquidity gap, especially in the spring.

Only 47% of businesses that started the year with the intention to invest in 2020 carried out their investment as planned. Between 2012 and 2019, that share was 75%. The proportion of SMEs that completely abandoned at least one investment project was three times the typical share in the past years (18% vs. 6% in 2019). It can hardly be expected that these rates will change dramatically in the fourth quarter of 2020. Even in the crisis years of 2008/2009, SMEs made far fewer changes to investment plans during the year in response to the crisis.

Figure 2: Changes in SMEs’ investment plans in the course of the year



Sources: third supplementary coronavirus survey to the KfW SME Panel 2020 (1–14 September 2020), KfW SME Panel 2007–2020

Moderate investment upswing in SMEs ends abruptly but sustained downward trend in number of investors continues

Even if revisions to investment plans are not unusual – and in fact quite common, as projects are regularly revised⁴, this year they have been especially pronounced. It can therefore be predicted with certainty that investment expenditure will decline noticeably in the SME sector as well as across the aggregate economy in 2020.

The investment upswing in the SME sector that has lasted for six years now is thus coming to an abrupt end. After SME investment activity stagnated for several years following the financial crisis, (nominal) new investment by SMEs increased at least slightly each year between 2013 and 2019. Most recently, small and medium-sized enterprises’ investment in

new plants, equipment and buildings (gross fixed capital formation, or new investment) increased by approximately EUR 3 billion or 1.4% year-on-year to a total of EUR 187 billion.⁵

Investment volume is (increasingly) dominated by services

The services sector was the driver of this (intermediate) high in capital expenditure (Figure 3). Its relative significance for aggregate SME investment activity increased and continues to increase steadily. Last year, service industries took a share of 55% of new investment (EUR 102 billion). The long-term average is around 48% (2004–2018).

This reflects the general shift in the business landscape towards services. There are various causes for this development. One of them is businesses outsourcing or contracting what were previously in-company services to third-party companies (for example, IT maintenance, data storage, personnel recruitment, legal affairs and tax matters). These decisions are based on considerations relating to costs, specialisation and division of tasks. Another factor is that structural developments have created an increased demand for services for some time now (driven by demographic change and the growing proportion of small households, for example). This sectoral structural change is not just impacting on investment but is leaving visible traces in the SME sector. Not least, the massive employment gains of the past years were almost exclusively achieved by service providers. At the same time, the persistently low labour productivity across the SME sector is another expression of this trend and is part of the overall picture. Small service providers are significantly less productive but are a strong driver of the aggregate trend because they are so numerous.⁶

Companies offering knowledge-intensive services⁷ stood out particularly of late, investing more than ever before. Their investment volume has even more than doubled since the

year 2004. Nevertheless, the trend of rising investment in the services segment is likely to be interrupted this year, as it is precisely the businesses from both services segments that on average recorded the sharpest losses from the coronavirus crisis (see figure below).

Number of investors is trending down – volumes increasingly concentrated on shrinking segment

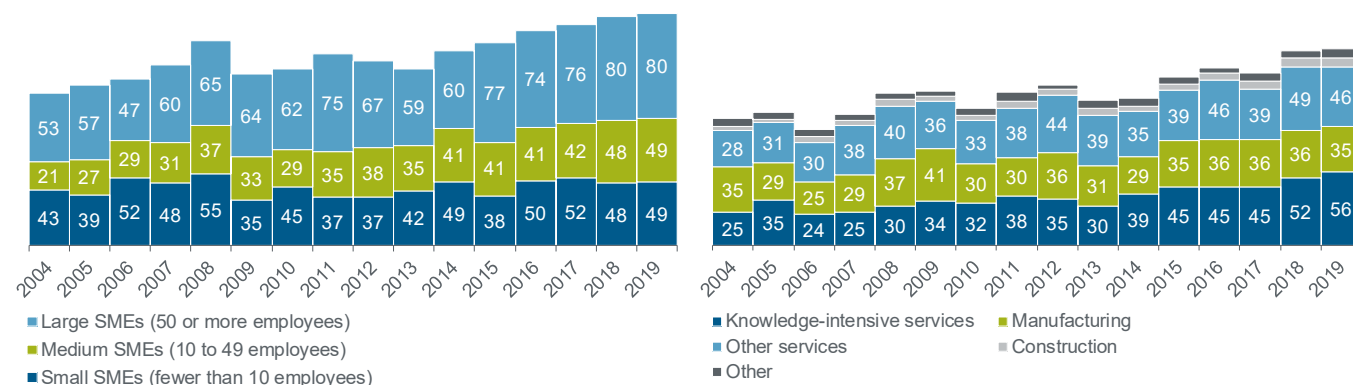
While the volume of investment was still growing in the past years, there was little change in SMEs’ appetite for new investment projects. In the years 2006 to 2008, more than half of enterprises invested in their business and similar rates have been beyond reach since then. Since the year 2009, the share of investing businesses generally remained on a sideways movement (44%) with a slight downward trend. This affects all SME segments equally. The share of investing firms has dropped again recently as well (Figure 4), to 39%, the second lowest level since 2004. Only in 2016 was the proportion lower, at 38%. In total, just under 1.5 million SMEs invested in 2019 – around 80,000 fewer than in the previous year.

Coronavirus crisis will probably drive SME investment lower than the financial crisis

How high the decline in investment will be in the SME sector as a result of the coronavirus crisis in all of 2020 cannot yet be estimated accurately. One scenario would be that the impact of the coronavirus crisis is similar to that of the financial crisis of 2009. At the time, investment expenditure in the SME sector fell by 16.1% on the previous year (EUR 34 billion). If the percentage drop in 2020 were to be equally steep, the decrease in SMEs’ investment expenditure in 2020 would amount to approx. EUR 36 billion.

Figure 3: Volume of new investment in SMEs by size class (left) and sector (right)

Size classes by number of full-time equivalent employees

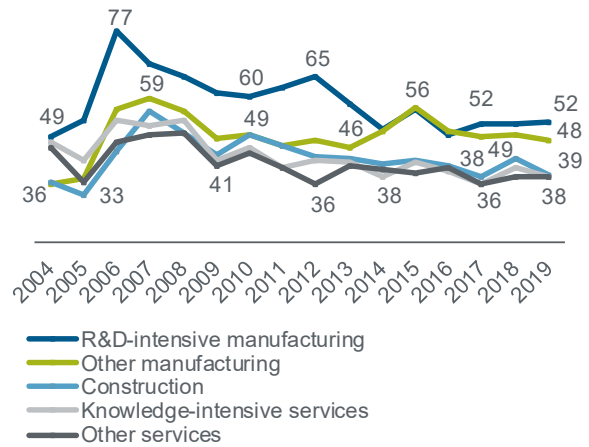
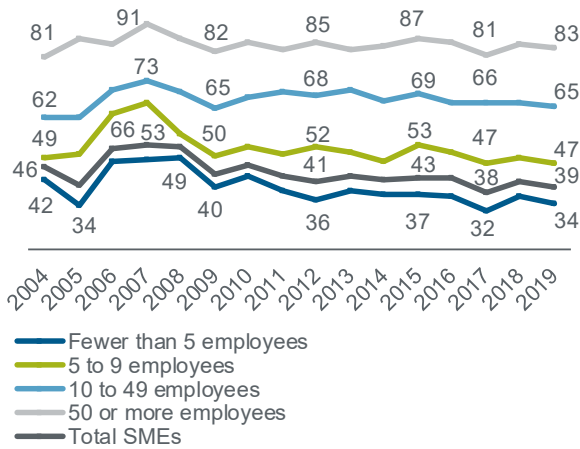


Note: The analyses by FTE employment size classes do not include companies of the remaining sectors. The analyses by sector do not include enterprises in the FTE employment size class with fewer than five employees.

Sources: KfW SME Panel 2005–2020.

Figure 4: Share of SMEs with investment projects by size class (left) and sector (right)

Size classes by number of full-time equivalent employees



Sources: KfW SME Panel 2005–2020.

An even sharper drop is possible, based on the volume of funds companies planned to invest at the beginning of the year but ultimately do not spend if projects fail to materialise (i.e. if originally planned projects are abandoned, reduced or put off – see Figure 2): That sum rose to more than EUR 60 billion in the crisis years 2008 and 2009, whereas around EUR 43 billion on average remains uninvested in a ‘normal’ year. The third supplementary coronavirus survey conducted as part of the KfW SME Panel revealed that this plan revision already amounted to some EUR 53 billion at the beginning of September 2020. It therefore appears quite likely that those earlier sums will be surpassed by the end of the year. The shares of revised plans in Figure 1 also point to this. What investment volume will ultimately fall victim to the pandemic will only be identifiable in retrospect. There is at least cause for concern that it might exceed the slump of the crisis years 2008/2009. The most recent data on investment activity at the current margin, however, also signal a marginally ‘positive’ trend. The data suggest that the decline in business investment might also be slightly lower than in the year 2009 on the back of a slightly more stable development in industrial building construction.

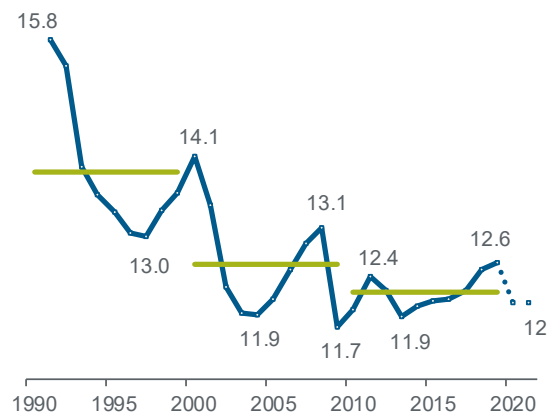
Business investment in Germany has been on a downward trend for a long time

SMEs have long been regarded as the backbone of the German economy, and for good reason. However, they account for ‘just’ 44% of businesses’ total gross fixed capital formation, a share that has been quite steady for some years now. To see the whole picture one has to broaden the view beyond SMEs to the entire business sector. In the 1990s, businesses on average still invested 13.9% of gross domestic product (GDP) in equipment, industrial buildings and other facilities⁸. The investment ratio in the 2000s then fell to 12.6% before dropping to an average 12.2% in the 2010s (see Figure 5).

The peak that preceded the financial crisis (2008: 13.1%) was never matched again, despite an uninterrupted ten-year growth phase from the year 2010, and the last upswing ended in 2019 with an investment ratio of 12.6%. In other words, even at the highest point of the past historically long upswing, the volume invested as a percentage of economic output was only as high as the average of the first decade after the millennium, even though during that time investment activity was heavily burdened by two recessions (the burst dotcom bubble of 2003 and the financial crisis of 2009). The weak investment trend since the high prior to the financial crisis is partly due to the relative drop in the cost of capital goods. Thus, the prices of capital goods rose by a cumulative 16.8% from 2008 to 2019, significantly more slowly than the general price increase (GDP deflator: +21.3%).⁹

Figure 5: Business investment in Germany

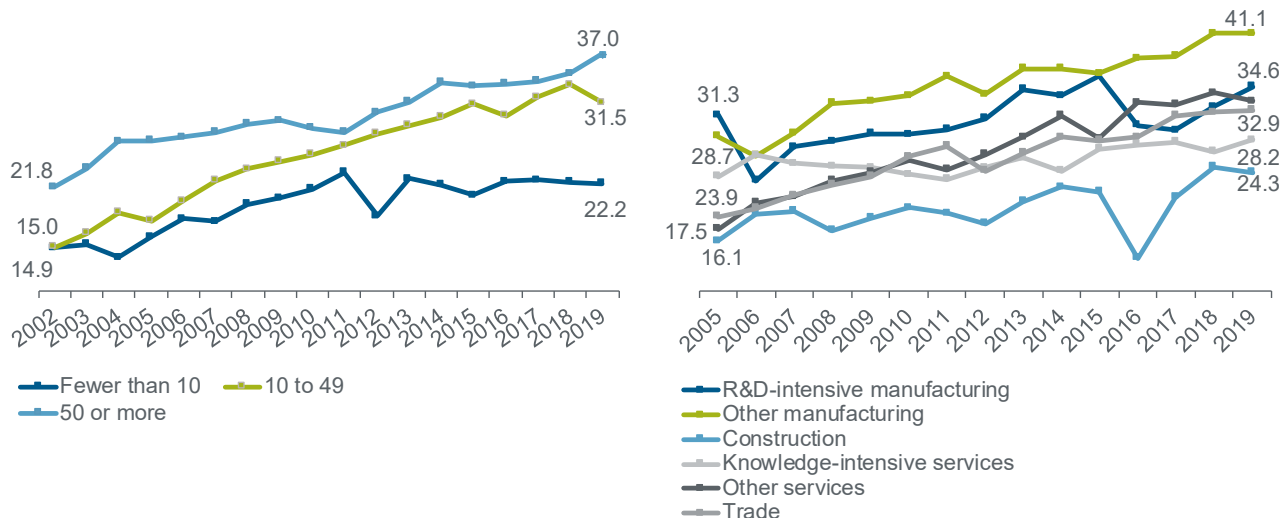
In per cent of GDP, green line represents the decade average



Source: Destatis.

Figure 6: SMEs' equity ratios by size class (left) and sector (right)

Shares of enterprises in per cent; size class by number of full-time equivalent employees



Sources: KfW SME Panel 2003–2020.

Coronavirus is weighing on financial robustness but no sign of broad over-indebtedness

After the financial crisis, SMEs took around two years to recover from the slump in investment and go back to investing roughly the same volume as before the crisis. At present, however, it is doubtful whether SMEs will return to previous levels at the same pace after the coronavirus crisis. The top managers' current experience with the crisis might prove to be an obstacle to a quick catching-up process. Their desire for financial stability could prevent forward-looking investment. They might focus more on replenishing their liquidity reserves and strengthening their equity base.

Yet for most SMEs and, basically, for all segments, the situation prior to the crisis was outstanding (Figure 6). The high equity levels which SMEs have built up since the turn of the millennium, and which lifted the average equity ratio¹⁰ to a new record of 31.8% in 2019, have made them much more resilient to crises and should help them absorb losses in their balance sheets for a longer period of time in the current situation.

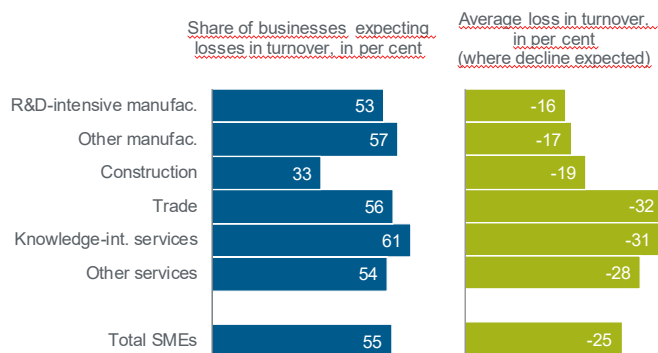
Nonetheless, the coronavirus crisis is set to put an end to the sustained positive trend in equity ratios this financial year. The expected high turnover losses are eating into many businesses' equity buffers. More than half of SMEs – around 2 million enterprises – expect their turnovers to fall this financial year. The predicted declines amount to a total of around EUR 545 billion.

Service businesses, which represent the majority of SMEs with a share of 76%, will probably account for a large portion of turnover losses in 2020 (Figure 7). In the segment of knowledge-intensive service providers, around six in ten SMEs expect their turnover in 2020 as a whole to decline. The affected businesses anticipate losses of nearly one third of their previous year's turnover (-31%). Other service

providers and retail businesses¹¹ hold similarly pessimistic expectations. In both sub-sectors of the manufacturing industry¹² the majority of SMEs also reported negative turnover expectations (53% and 57%). On average, however, the affected enterprises expect their turnover to decline by a lower percentage than is the case in other sectors (-16 and -17%).

Figure 7: Turnover expectations in the SME sector for 2020 by segment

(As at September 2020)



Note: The figure illustrates the expected decline in turnover in 2020 as a whole compared with turnover in 2019.

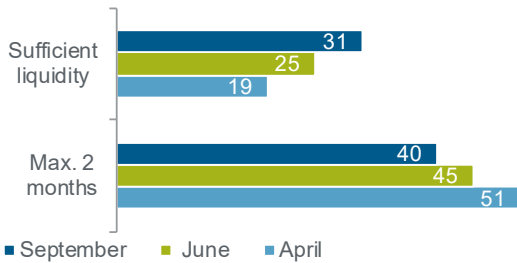
Source: KfW SME Panel 2020 in conjunction with the third supplementary coronavirus survey to the KfW SME Panel 2020 (1–14 September 2020).

Of course, these losses in turnover also weigh on companies' liquidity, even if the situation has eased since the spring (Figure 8). What has contributed to this, besides the relaxing of the pandemic containment measures in the summer, were multiple legislative initiatives and measures adopted by the Federal Government to support enterprises in Germany. These include, for example, the option to defer commercial rent payments, social security contributions or taxes. The

emergency coronavirus support measures for micro-businesses and solo entrepreneurs that have been offered since April may also have helped to bridge liquidity bottlenecks.¹³

Figure 8: Liquidity remaining until closure of business

With steady turnover losses, shares of enterprises in per cent



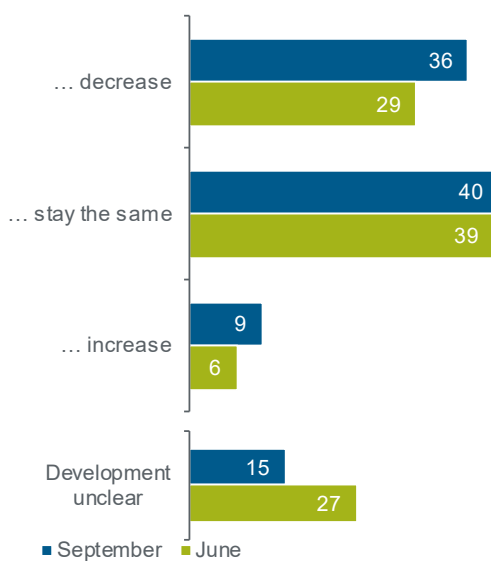
Source: First to third supplementary coronavirus survey of the KfW SME Panel 2020.

Nonetheless, a considerable number of SMEs had to take out loans in the course of the crisis in order to bridge liquidity shortfalls. The resulting higher debt levels subsequently weighed on their equity ratios. Thus, some 36% of SMEs expect their equity ratio to fall in the current financial year (Figure 9). However, 40% of SMEs still expect their equity ratio to main steady and 9% of SMEs even expect it to increase in 2020.

In an overall assessment, there is reason to expect that higher levels of borrowing and pressure on companies' equity base will lead to an increase in debt levels in the business sector during the ongoing coronavirus crisis, to be sure. But the foundation on which the SME sector rests is so solid – also thanks to its performance in the year 2019 – that the risk of over-indebtedness across the breadth of the SME sector remains manageable.

Figure 9: In 2020 the equity ratio will ...

Share of enterprises in per cent



Source: Second and third supplementary coronavirus survey of the KfW SME Panel 2020.

Short-term outlook for investment is unfavourable, an investment surge is needed: Financial stability should not go at the expense of future competitiveness

Even though SMEs generally still rest on a solid financial basis, business investment in 2020 can be expected to drop much more sharply than GDP across the aggregate economy as a result of the coronavirus crisis. The investment rate is set to fall to around 12%. A recovery at the rate of GDP growth can be expected at best for 2021, so the rate will remain on this low level, only insignificantly higher than in previous crises since the turn of the millennium. The opposite would be necessary: an investment surge. With the **transformation** towards a **digital** and **climate-neutral** economy, Germany is facing challenges of similar magnitude as during the time of unification. In the 1990s, the business investment-to-GDP ratio averaged just under 14%, around 2 percentage points higher than today. Based on the GDP expected for 2020, that difference represents a contribution of a good EUR 66 billion. Tackling the challenges in the two key fields of action, digitalisation and climate neutrality, can lay the foundation on which the German business landscape can continue to be successful and competitive in future as well.

As was the case 30 years ago, mastering this challenge will require a considerable investment surge. Opportunities exist to actively design change and successfully rise up to the challenges of the future. So therefore, despite the understandable desire to safeguard and build businesses' financial resilience, it is all the more important to ensure that the experience of the current crisis does not cause businesses to refrain from making essential investments in the future. Productivity and competitiveness, above all, would suffer in the long term. That is why the necessary framework and incentives for enterprises now have to be put in place.

After all, the previously described trade-off which many businesses are facing and the continuing COVID-19 pandemic carries the danger of becoming a longer-term barrier to growth and prosperity. If they now cancel investments in the future because of excessive uncertainty, they will pay the price in the medium to long term. Planning plays a significant role, especially because of the inherently future-oriented nature of investments. If they have no plans in the drawer, that can lead to a downward spiral. When the economy rebounds again, enterprises will be unable to respond fast enough and will miss growth opportunities.

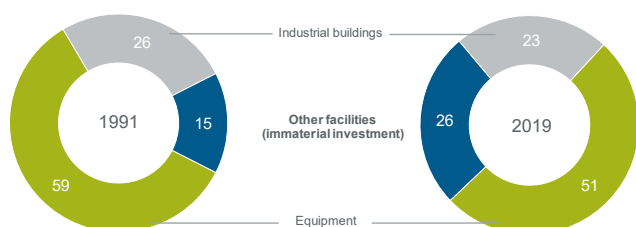
Structural transition to a digital knowledge economy is advancing: More SMEs are starting digitalisation projects but expenditure is stagnating

Investment in digitalisation is a key driver of innovation activity. The potential of digitalisation and innovation to increase the competitiveness of broad sections of the economy, strengthen economic growth and restart languishing productivity growth is enormous. Therefore, it is positive that across the aggregate economy, the long positive trend in immaterial investment demonstrates that many enterprises have embraced the structural transition to a digital knowledge economy.

To be sure, investment in physical capital continues to shape the weak overall development of business investment activity, with a continuing dominant structural share of 74% (most recent data, Figure 10). Between 2008 and 2019, real growth in investment in equipment and industrial buildings continued below GDP growth, probably due in great part to the uncertainty that has increased sharply in a constant stream of new waves for more than ten years now.¹⁴ By contrast, in the same period the immaterial investment that characterises the digital structural transformation increased at a rate 2¾ times faster than real GDP (other facilities 2019: +38.8% on 2008). Currently it already accounts for 26% of business investment, much more than in the past (1991: 15%; 2008: 21%).

Figure 10: Composition of all business investment over time

Share of types of investment in per cent



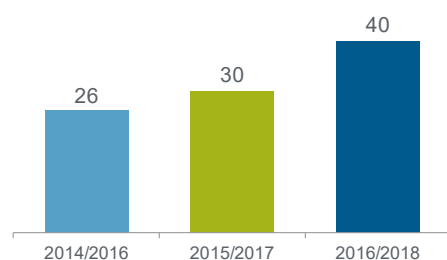
Source: Destatis.

That gives rise to hope. Still, the vast majority of small and medium-sized enterprises, in particular, are still taking small steps on the road to digitalisation. The main obstacles cited by businesses are data protection and data security requirements, lack of in-house IT skills combined with a skills shortage, problems in implementing projects and poor internet connectivity.¹⁵ But financing obstacles due to higher risks and the difficulty of predicting the returns of such projects also play an important role.¹⁶

It is true that businesses have recently been more active in initiating digitalisation projects, as revealed by the latest KfW SME Digitalisation Report.¹⁷ Thus, in the period of 2016–2018 around 40% of SMEs (some 1.5 million businesses) successfully completed digitalisation projects – a noteworthy rise of 10 percentage points, or 380,000 firms, on the previous period (Figure 11).

Figure 11: Digitalisation projects in the SME sector

Shares of enterprises in per cent



Source: KfW SME Panel / KfW SME Digitalisation Report 2019.

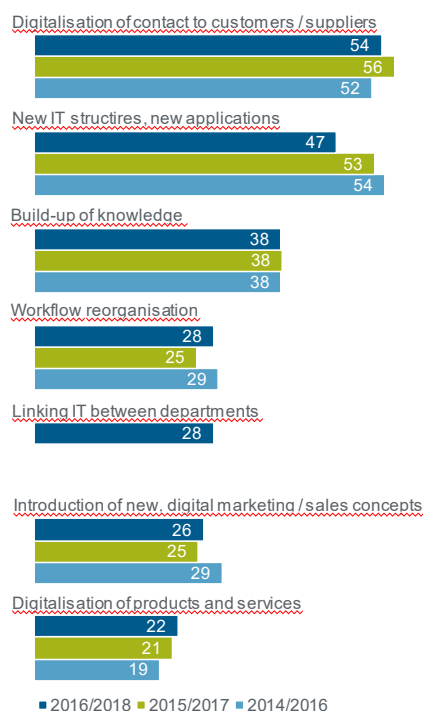
However, in 2018 SMEs spent only a good EUR 19 billion on digitalisation. That is only a fraction of what they spent on

traditional innovations (EUR 34 billion) or machinery and equipment (EUR 220 billion) in that year. Another cause for concern is that average digitalisation expenditure has not risen in the past three years and remains at EUR 17,000.

Most of the projects completed (Figure 12) involve digitalising the interaction with the business environment, closely followed by projects aimed at renewing IT infrastructure and introducing new applications. Thus, digitalisation efforts remain focused on achieving efficiency gains. Sophisticated digital transformation projects are much less common. Projects that involve reorganising workflows, digitally integrating functional areas or rolling out digitalised products and services are usually concentrated in the small group of large enterprises that undertake their own R&D. Large SMEs and those that conduct R&D are also much more likely than other businesses to actively build digitalisation expertise that often makes more sophisticated projects possible in the first place.

Figure 12: Digitalisation projects in the SME sector

Only businesses with digitalisation projects; shares of enterprises in per cent



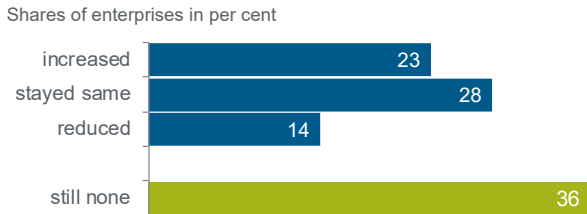
Source: KfW SME Panel / KfW SME Digitalisation Report 2019.

Coronavirus has recently driven digitalisation in SMEs: Ideas and creativity are needed

But the ongoing crisis, too, is bringing a lot of change and has stirred the imagination of many businesses. At first glance, the coronavirus crisis has triggered a surge in digitalisation. Some 23% of small and medium-sized enterprises have stepped up their digitalisation efforts in the course of the coronavirus crisis (Figure 12). At the same time, only 14% have reduced their digitalisation efforts. Many enterprises have stayed in business during the lockdown by enabling their employees to work from home.¹⁸ Many have also switched to digital sales channels.¹⁹ The creativity unleashed by the special situation is also evident from the fact that 27%

of businesses have introduced innovations in the course of the crisis. These are primarily new or improved processes, at 21%, but also updated products and business model innovations frequently based on digital technologies, which each account for 14%.²⁰

Figure 13: Change in digitalisation activities in the SME sector during the coronavirus crisis



Source: Third supplementary coronavirus survey of the KfW SME Panel 2020.

However, most of these activities centre on projects that were crucial to the businesses' survival during the crisis, and quick and easy to implement. Many longer-term and more in-depth digitalisation and innovation projects, on the other hand, will likely be spread out over a longer period or deferred. This could be seen in past economic crises and is already becoming apparent with respect to the execution of research and development projects. Moreover, the tense liquidity situation and debt levels, which have risen in the course of the crisis, are also likely to hamper the implementation of such projects when the crisis is over. That will make it more difficult for businesses to choose between building their crisis resilience and improving their competitiveness.

SMEs must become climate-neutral by 2050

Without a doubt, a major challenge lies in transitioning the economy towards climate neutrality. Climate change is one of the most pressing challenges of our time, for both society and policymakers. Businesses are increasingly feeling the consequences as well, facing rising energy needs to cool down equipment and buildings during periods of heat, as well as damage caused by extreme weather events, for example. In order to make an effective contribution to the fight against global climate change, Germany has committed to pursuing greenhouse gas neutrality as a long-term goal by 2050 with the Federal Climate Change Act of December 2019. SMEs, too, have a responsibility here.

With respect to climate action, however, so far little is known about the role which relevant investment projects play for small and medium-sized enterprises. Only the total volume of investment in environmental protection in the producing sector (without construction) is known but that includes large-scale enterprises. In the year 2018, that investment volume was EUR 10.5 billion (+25% on the previous year). This represented 11.5% of the total invested by enterprises in the producing sector (without construction). Of this, EUR 2.4 billion was invested in climate action (+9% on the previous year). Most of the climate action investment – EUR 1.1 billion – was for measures involving the use of renewable energy. These include wind generators and photovoltaic systems, for example. A further EUR 1.0 billion was

invested in energy efficiency improvement and energy saving measures, which includes thermal insulation of buildings and combined heat and power technology.²¹

If we were to use these data to make an approximate estimate of climate action investment in the SME sector (approx. 2.6% of the EUR 222 billion invested by SMEs overall in 2019), that would amount to a volume of roughly EUR 5.8 billion in climate action investment by SMEs for the year 2019. So far, however, there are no reliable data on this.

KfW surveys show that investment aimed at saving energy or improving energy efficiency has gained importance among SMEs in the past (Figure 14). A visible shift in awareness is underway among SMEs – after all, this is a sub-segment of climate-friendly investment, the positive (business) effects of which are also obvious for small businesses' decision-makers, despite generally rather more difficult incentive structures. Besides preserving finite resources, what awaits them is greater independence from energy price fluctuations and, not least, falling energy costs as a reward for additional efforts.

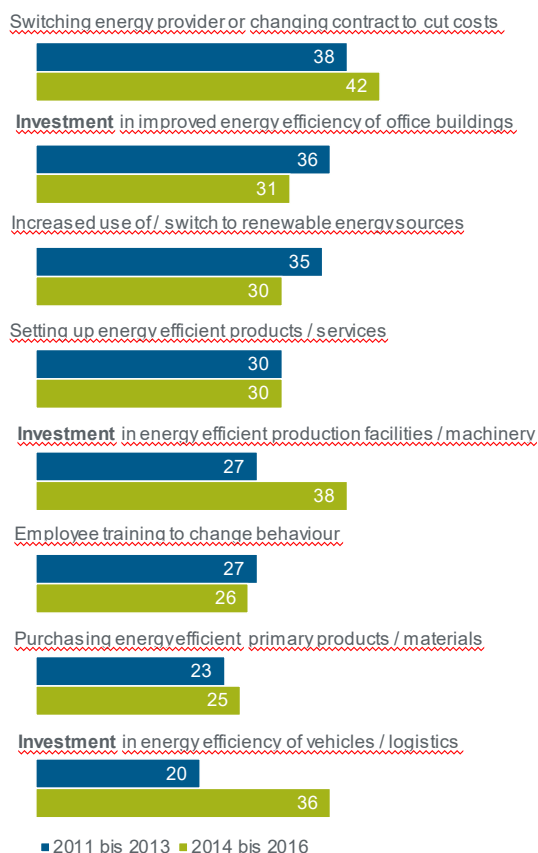
Between 2014 and 2016 (in the absence of more recent data), 37% of all SMEs implemented measures aimed at improving energy efficiency and saving energy costs.²² Whereas less cost-intensive and easy-to-implement measures tended to dominate in the past, there were sharp increases particularly in capital-intensive energy efficiency measures. But these measures only describe a portion of all measures adopted to prevent or reduce greenhouse gas emissions.

Transformation requires extensive investment

In the past 30 years, greenhouse gas emissions in commerce and industry have already fallen noticeably. Germany's goal of climate neutrality, however, requires emissions to be reduced at a much faster rate. Lower prices of fossil fuels as a result of the pandemic currently pose additional barriers to the mobilisation of necessary investment. Climate action scenarios that model pathways towards a climate-neutral Germany show that existing industrial buildings and the energy supply of industry and commerce must become entirely emissions-free by 2050. Unavoidable process-related greenhouse gas emissions released from chemical reactions in certain production processes or from the non-energetic use of fossil energy resources (for example in the chemical and cement industries) must be offset with natural and artificial sinks (such as afforestation or carbon capture and storage). The necessary structural transformation requires extensive investment. According to the study carried out by the Federation of German Industries entitled 'Klimapfade für Deutschland' (Climate Paths for Germany), the industrial sector alone will have to invest around EUR 230 billion more by 2050 (compared with the business-as-usual scenario).²³

Figure 14: Specific measures aimed at improving energy efficiency / saving energy costs

Shares of enterprises in per cent, multiple responses were possible



Source: Special surveys of the KfW SME Panel 2013 and 2017.

The transition towards a climate-neutral economy is a major challenge but it also offers opportunities for growth and employment. This applies, in particular, to the export of climate-friendly technologies, as more and more industrialised countries have committed to the goal of reaching climate neutrality. In this field, Germany is in a good starting position. In 2017 Germany was the second largest exporter of climate-smart goods after China, with a share of 11% of global trade.²⁴

Economic policy must create the conditions, set incentives and provide start-up finance

In order to harness growth opportunities and come out of the crisis stronger, it is now important to set investment incentives for the transformation towards a digital and climate-neutral economy. Economic policy must provide stimulus here in order to counteract the trade-off. It must reduce uncertainty for providers of capital or reduce financing costs in order to better reconcile the overall economic objective (climate action, digitalisation) with the business rationale, in which positive and negative externalities do not play a role.

In order to promote digitalisation even under the conditions of the coronavirus crisis, there are five starting points for economic policy strategies. First, targeted incentives must be put in place for businesses to invest in digital transformation. In

addition, it will also be absolutely essential to work on the enabling conditions. A lack of skilled labour and IT expertise are hampering companies' digitalisation activities. Basic and advanced training will therefore require greater effort as well. In addition, the provision of fast, uninterrupted internet connectivity must be accelerated. Service in rural areas in particular often remains problematic. Mobile telephony must also be improved. As a number of digital markets are already in the hands of large technology groups, new competitors often find it difficult to enter these markets. Start-up projects of the public sector (such as GAIA-X) are therefore necessary to make markets still in the process of emerging contestable for German and European enterprises. Not least, data protection/data security is also a barrier to digitalisation. Many companies have already fallen victim to cybercrime. But in addition to building the expertise that enables them to protect themselves and act in a data protection compliant manner, they must also take into account a European dimension. The digital markets in Europe are heavily fragmented. That makes it difficult for businesses to act Europe-wide and thus reach a critical size to be competitive in global markets.

On the financing side, it must be noted that for promotional loans, exemption from liability and interest rate reductions are the relevant steering mechanisms – also with the aim of increasing the incentive effect in the short term. For innovations and digitalisation, strengthening the combination of promotional loans with grants should also be considered. Explicit research projects must be promoted with the aid of grants. Given the higher debt levels it should also be examined whether the development of new financing instruments that do not add to companies' debt levels, such as leasing or mezzanine instruments, could be an option. In order to step up the introduction of radical innovations in Germany and thereby advance the structural transformation, the high needs for growth capital with regard to the VC market in particular need to be better met. To achieve this, more private capital must be mobilised (for example through crowding-in models, tax incentives and risk diversification approaches) and the VC ecosystem must be strengthened (for example by bolstering the absorptive capacity of the stock market or enhancing options for employee equity participation). In general, it is important for promotional policy to maintain a balance between incentives for investment in fixed assets on the one hand and investment in digitalisation and innovation on the other hand.

Investors need planning certainty in order for the economic transformation towards climate neutrality to succeed. In addition to continuous promotion of innovation and investment, a reliable and projectably rising CO₂ price signal is an essential factor for success so that climate-friendly technologies can prevail cost-effectively in the long term over fossil alternatives that damage the climate. That is why Germany's approach of putting a price on CO₂ from heating and transport is of great importance and requires consistent continuation and further development of the EU emissions trading scheme. Until there

is a globally harmonised CO₂ price and so long as the levels of ambition for climate action outside the EU differ considerably, compensation mechanisms for businesses that compete internationally will be essential to ensure acceptance of the transformation (prevention of carbon leakage).

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¹ KfW Research has so far observed and analysed the consequences of the coronavirus crisis for small and medium-sized enterprises in three supplementary surveys as part of the KfW SME Panel. The surveys were conducted in the first week of April, the first week of June and the first week of September 2020. In each wave the Financial Services Division of GfK SE surveyed representative small and medium-sized enterprises online on the current impacts of the coronavirus crisis on behalf of KfW Group. All enterprises that had already participated in an earlier wave of the KfW SME Panel and had provided a valid email address were surveyed. Responses from approx. 3,000 to 3,400 enterprises were evaluated in each of the surveys. As the supplementary survey was linked to the main database of the KfW SME Panel, its results provide a representative picture of the current coronavirus impact. The KfW SME Panel (KfW-Mittelstandspanel) has been conducted since 2003 as a tracking survey of small and medium-sized enterprises in Germany. The basic population includes all private-sector companies from all industries with annual turnovers of up to EUR 500 million. The KfW SME Panel is the only representative survey of the German SME sector, making it the most important source of data on issues relevant to the SME sector and for informing policymakers. Further information can generally be obtained at www.kfw.de/mittelstandspanel. The findings of the first two supplementary surveys can be found here: Schwartz, M., and Gerstenberger, J., (2020), SMEs are firmly in the grip of the coronavirus crisis but (still) holding on strong, Focus on Economics No. 286, KfW Research. Schwartz, M., and Gerstenberger, J., (2020), Coronavirus crisis in Germany's SMEs: Return to full economic activity still far off, but gradual opening has eased pressure on liquidity, Focus on Economics No. 294, KfW Research.

² For details on the impact of uncertainty on economic activity see: Orthey, M. (2020), [Uncertainty and economic activity in Germany](#), Focus on Economics No. 300, KfW Research.

³ Specifically on the consequences of uncertainty for SME investment activity, see Gerstenberger, J. and Schwartz, M. (2014), [Unsicherheit kostet mittelständische Investitionen: Sichere Rahmenbedingungen nötig \(Uncertainty hampers SMEs' investment, a secure framework is necessary\)](#), Focus on Economics No. 66, KfW Economic Research (in German). – Schwartz, M. and J. Gerstenberger (2015), [Ageing of SME owners is putting a damper on investments](#), Focus on Economics No. 85, KfW Economic Research.

⁴ Revising investment plans is a normal part of business activity and in itself not a cause for concern. Many factors can play a role in determining that adjustments are made to original plans in the course of the year. These may include changes in sales price expectations, unexpected financing difficulties, uncertainty as to how demand will develop, and cost increases. Specifically in SMEs – because ownership and management are in the same hands – crucial investment decisions are closely tied to the company owner. Personal experience, abilities, risk appetite, industry expertise, goals and problem solving behaviour are just some of the owner-specific attributes that may influence decisions on capital expenditure. For more see for example: Van den Bongard, I. and Schwartz, M. (2017), [Korrektur von Investitionsplänen im Mittelstand: Auch zu optimistische Erwartungen spielen eine Rolle \(Correction to SMEs' investment plans: Overly optimistic expectations also play a role – in German\)](#), Focus on Economics No. 174, KfW Research.

⁵ Aggregate investment expenditure (sum of new and second-hand plant, equipment and buildings) also increased gradually of late. SMEs invested around EUR 36 billion in second-hand goods in 2019, unchanged from the previous year. In the aggregate, the volume of total investment in the SME sector thus increased by EUR 3 billion (1.1%) to a nominal EUR 222 billion. That is the highest level recorded in the KfW SME Panel since 2003.

⁶ More details on the general structural transformation in the SME sector can be found at Schwartz, M. (2017), [KfW SME Panel 2017: Germany's SMEs continue to break records – sectoral transformation poses new challenges](#), KfW Research, KfW Research.

⁷ Knowledge-intensive services comprise service sub-sectors with an above-average share of university graduates in total employment, or services with a strong focus on technology. These include, for example, architecture and engineering firms, law firms, tax and management consultancies, data processing and telecommunication services. The definition is based on what is known as the NIW/ISI list of research-intensive industries and services, which in turn follows the Federal Statistical Office's 'Classification of Economic Activities (WZ 2008)'.

⁸ This latter category captures investment expenditure on intangible assets of the digital knowledge economy such as research and development, software, databases and copyright.

⁹ So even if the volume of business investment in 2008 had grown at the same rate as the volume of GDP, the investment ratio calculated in corresponding prices would have fallen. But even considering the price effect, companies' investment activity could not keep up with the growth of GDP in the most recent upswing phase. Business investment increased since 2008 by a cumulative 13.7% in real terms while real GDP increased by 14.1% at the same time up to 2019.

For details on the current development of equity ratios in SMEs see ¹⁰ Gerstenberger, J. and Schwartz, M. (2020), [KfW SME Panel 2020: Coronavirus pandemic has dampened expectations for 2020 – SMEs entered the crisis from a strong position](#), KfW Research. – Gerstenberger, J. (2020), [Corona-Krise setzt Eigenkapitalquoten der Mittelständler unter Druck \(Coronavirus crisis is putting pressure on SMEs' equity ratios – in German\)](#), Economics in Brief No. 199, KfW Research.

¹¹ Other services includes many SME retailers or wholesalers. Among them are businesses operating in the areas of nursing care, training, culture and sport. Enterprises in the areas of health and social services as well as the hospitality and hotel industry are also in this group.

¹² Here, manufacturing comprises R&D-intensive manufacturing and other manufacturing enterprises. Research- and development-intensive (R&D intensive) manufacturing is defined as those manufacturing sub-sectors whose average research and development intensity (R&D intensity: ratio of R&D expenses to turnover) is higher than 3.5%. The definition is based on what is known as the NIW/ISI list of research-intensive industries and services, which in turn follows the Federal Statistical Office's 'Classification of Economic Activities (WZ 2008)'. Engineering, medical technology, instrumentation and control technology, vehicles, pharmaceuticals and office equipment are of particular quantitative importance.

¹³ Economic surveys by the Ifo Institute have revealed that around one fourth of enterprises requested liquidity assistance in April and May. Service providers and wholesale and retail companies accounted for the highest shares, at 30% each. For details see: <https://www.ifo.de/node/55914>

¹⁴ What remained well below GDP growth was real growth of investment in physical capital, which is necessary particularly for capacity expansions (industrial buildings 2019: +3.2% on 2008; equipment 2019: +8.9% on 2008). The sharp rise in uncertainty in consecutive new waves for more than two years now has probably had a particularly adverse impact on this (2009: financial crisis; 2012: Euro crisis; June 2016: Brexit referendum; November 2016: Trump's election to the US presidency; since 2017 increasing protectionism and geopolitical rivalries, mainly originating in the US). A trend reversal is not in sight for the time being, and uncertainty has even been growing since this year as a result of the coronavirus pandemic.

¹⁵ Zimmermann, V. (2019), [Business Survey 2019. More and more businesses have firm plans for digitalisation, hurdles also more widely acknowledged](#), KfW Research

¹⁶ Cf. Zimmermann, V. (2020), [How SMEs fund their innovation and investment expenditure – a comparison](#), Focus on Economics No. 280, KfW Research.

¹⁷ Details on the status quo and development of digitalisation in the SME sector can be found in Zimmermann, V. (2020), [KfW SME Digitalisation Report 2019: Digitalisation projects are gaining traction in the SME sector but digitalisation expenditure has remained low for years](#), KfW Research.

¹⁸ Abel-Koch, J. (2020), [Coronavirus crisis drives shift to flexible and digital working in SMEs](#), Economics in Brief No. 197, KfW Research.

¹⁹ Zimmermann, V. (2020), [SMEs are responding creatively to the coronavirus crisis](#), Focus on Economics No. 291, KfW Research.

²⁰ Zimmermann, V. (2020), [Innovation during the coronavirus crisis: necessity is the mother of invention](#), Focus on Economics No. 295, KfW Research.

²¹ Cf. Federal Statistical Office (2020): Press release No. 229 'Investition in Umweltschutz 2018: Jeder vierte Euro für den Klimaschutz' ('One in four euros for climate action' – our title translation, in German) https://www.destatis.de/DE/Presse/Pressemitteilungen/2020/06/PD20_229_325.html

²² For details see the results of two supplementary surveys in the KfW SME Panel on the topic of energy costs and energy efficiency: Schwartz, M. and Brüggemann, A. (2018), [As energy prices fall, SMEs have lower costs – and increased efforts for energy efficiency and energy cost savings](#), Focus on Economics No. 223, KfW Research. Schwartz, M. and Braun, M. (2013), [Energy costs and energy efficiency in the SME sector](#), Focus on Economics No. 40, KfW Research.

²³ Cf. prognos et al. (2018): Klimapfade für Deutschland. Study commissioned by the Federation of German Industries (BDI).

²⁴ Cf. German Federal Environment Agency (2020): Die Umweltwirtschaft in Deutschland (*Germany's environmental industry* – our title translation, in German)