

## Supply bottlenecks are significantly impacting all areas of the SME sector

No. 351, 11 October 2021

Author: Dr Jennifer Abel-Koch, phone +49 69 7431-9592, jennifer.abel-koch@kfw.de

The German economy will grow at a significantly slower pace this year than was forecast just a few months ago. This is due not least to supply bottlenecks for materials and inputs, which have also affected broad areas of the German SME sector. Nearly half of all small and medium-sized enterprises are currently feeling the impact of materials shortages. A recent survey by KfW Research revealed that almost 80% of manufacturing and construction firms have been hit by supply bottlenecks.

Not only do supply bottlenecks lead to increased procurement costs, they also hamper production and service provision. Around one in four German SMEs are unable to meet delivery deadlines and one in ten even have to turn down orders for lack of material. The sometimes drastic increases in the cost of raw materials such as steel, timber or plastics and inputs such as microprocessors are forcing 26% of all SMEs to adjust their prices. Among manufacturers and construction firms, six in ten have to raise the prices for their customers. The supply bottlenecks in the SME sector have had a relatively minor impact on employment up to now. So far only around 4% of small and medium-sized enterprises have had to reduce their workforce, among other things by reducing overtime, granting leave or through short-time work arrangements.

Most SMEs do not expect the supply bottlenecks to be resolved any time soon. Only around 5% of affected enterprises believe that the situation will normalise by the end of the year 2021. By contrast, some 18% of SMEs expect the bottlenecks to persist well into the year 2022.

Many businesses affected by supply bottlenecks see export restrictions on scarce raw materials as a possible way of alleviating the material shortage in Germany. That, however, would probably lead to trade policy reactions and is more likely to worsen than improve the situation for German enterprises. The further reduction of trade barriers and the conclusion of new trade agreements by the European Union would be more conducive to achieving the goal of securing access to scarce resources and materials.

### Supply bottlenecks are weighing on the growth outlook

The German economy is set to grow at a slower pace this year than was expected just a few months ago. Several economic research institutes have recently downgraded their economic forecasts. KfW Research also expects gross domestic product to grow at a rate of 3.0% across 2021, instead of the 3.5% predicted in May.<sup>1</sup> The weaker growth

outlook this year is primarily due to the shortages of raw material supplies and inputs that have now hit broad sections of the economy – including Germany's SMEs.

### One in every two SMEs is affected

At present, nearly half of all small and medium-sized enterprises are feeling the impact of shortages in the supply of raw materials and inputs (Figure 1). Counting only those SMEs that actually procure inputs, material bottlenecks actually affect around three quarters of businesses. These are the findings of a recent special survey conducted as part of the KfW SME Panel. Manufacturing has been hit particularly hard, with four in five businesses affected by supply bottlenecks. The impact on the construction sector is no less severe, where 78% of businesses face material shortages. The share of affected SME wholesalers and retailers is a slightly lower 63%. In the services sector, which is less dependent on inputs, around four in ten small and medium-sized enterprises nonetheless face supply bottlenecks.

### The causes of material bottlenecks are manifold ...

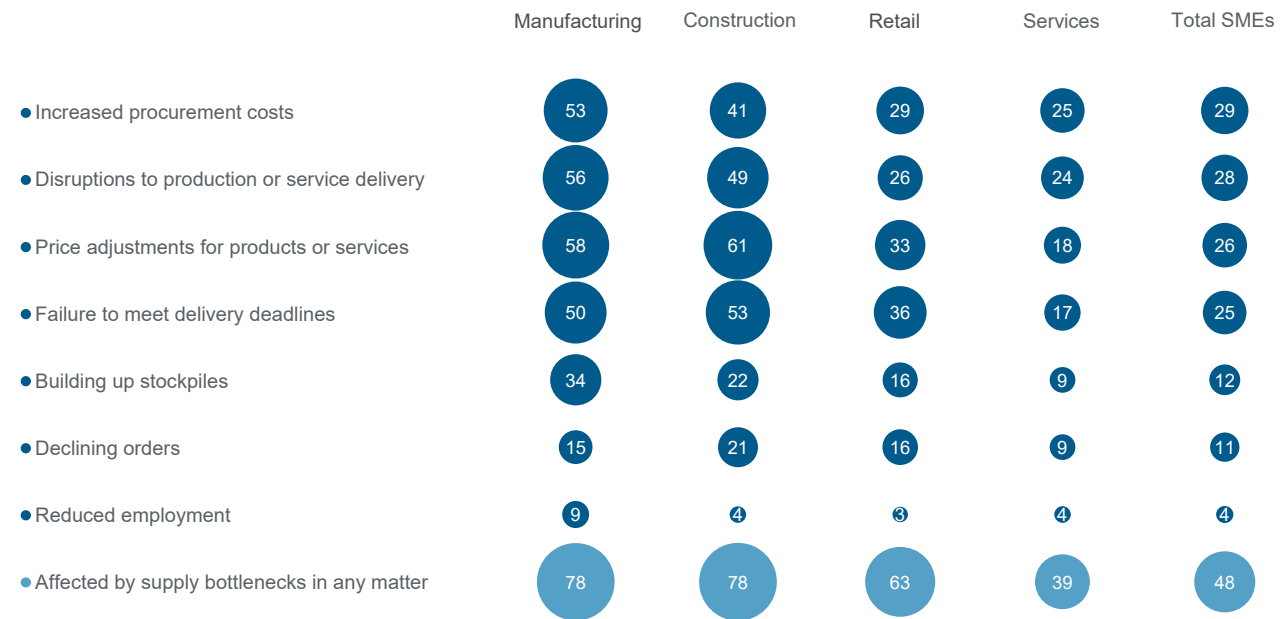
One reason the SME sector has been hit on a broad scale is that many materials and inputs are currently not available in the required quantities. Not just microprocessors are hard to come by, so are simple control elements, as well as steel, aluminium, copper and other metals, plastics and packaging materials and also timber for construction and the furniture industry.

The causes are manifold. A major reason is that many businesses scaled back their capacity during the coronavirus crisis. They can now respond only slowly to the rebound in demand, which is being additionally fuelled by extensive economic stimulus packages. For example, it takes several hundred work stages and several months to turn sand into silicon and eventually into microchips. Expanding production capacity requires high investment in technologically complex equipment, which has long delivery times as well. At the same time, stockpiles of semiconductors tend to be kept low because their quality deteriorates when they are stored for longer periods.

Disruptions to international freight services, among other things from the temporary closure of major Chinese seaports in an effort to contain regional outbreaks, are among the reasons for the supply bottlenecks. They are a particular problem for heavily diversified and globally organised value chains such as those found in the semiconductor industry. This is being exacerbated by trade conflicts, especially between the US and China, but also between the US and the

**Figure 1: Half of all SMEs are impacted by supply bottlenecks**

Percentage of businesses affected by supply bottlenecks in the manner described



Source: Supplementary survey to the KfW SME Panel in September 2021.

European Union. These conflicts did not go away by any means when Joe Biden took office and they are not confined to steel or aluminium.<sup>2</sup>

Individual events such as the wildfires in California, the infestation of large numbers of trees with bugs or the loss of semiconductor factories to fires, water shortages and power outages have further exacerbated the situation for individual materials and inputs.

**... as are the impacts on businesses**

The existing supply bottlenecks are affecting SMEs in different ways (Figure 1). Increased procurement costs are the most common impact reported by small and medium-sized enterprises. While it is also the most common way supply bottlenecks are impacting on the services sector, in other sectors they are mainly affecting production, delivery deadlines and prices.

Around 24% of SMEs are experiencing disruptions to production or service delivery. In the manufacturing sector, shortages of raw materials or inputs are hampering production for well over half of all businesses. As a result, production is unable to keep up with incoming orders. The volume of manufacturing orders received in July 2021 was a seasonally and calendar-adjusted 15.7% higher than in February 2020, before the coronavirus pandemic, while production in the same month was around 5.5% below the pre-crisis level.<sup>3</sup>

Growing demand and scarce supplies are leading to price increases, which are very pronounced for some raw materials and inputs. For example, in August 2021 the price of coniferous timber was up 124% and pig iron and crude steel by around 58% year on year. The prices of inputs rose by

17.1% on average between August 2020 and August 2021. Energy prices have also soared.<sup>4</sup> Against this background, many enterprises are forced to adjust the prices of their products or services – around one in four businesses in the SME sector. In the construction industry, some 61% of companies will not be able to avoid adjusting prices for their customers. Here, as is the case in manufacturing, higher prices are the most common consequence of the current supply bottlenecks. This clearly illustrates the correlation between supply shortages and consumer price inflation, which stood at 3.9% in August 2021 year on year.<sup>5</sup>

**Firms are unable to meet delivery deadlines and have to decline customers' orders**

In many cases, the supply bottlenecks are also making it impossible to meet delivery deadlines. Around 25% of all SMEs are currently defaulting on deliveries. At 36%, failure to meet delivery deadlines is the most common impact of disrupted supply chains. Around 11% of SMEs even have to decline orders from customers because they lack the necessary materials. This is a particular problem in the construction industry, which comprises craft businesses from window makers to roofers, where one in five firms are forced to decline orders.

The supply bottlenecks have so far led to job cuts primarily in the manufacturing sector. Nearly one in ten businesses have decreased their workforce at least temporarily by reducing overtime, granting workers leave or through short-time work arrangements. A shortage of materials is much less likely to lead to job cuts in other sectors. However, some businesses probably reduced their workforce already during the coronavirus crisis and, although they are not making further cuts, they are also unlikely to rehire as initially planned. Material

bottlenecks are therefore likely to have a more dampening effect on employment than a share of around 4% would suggest.

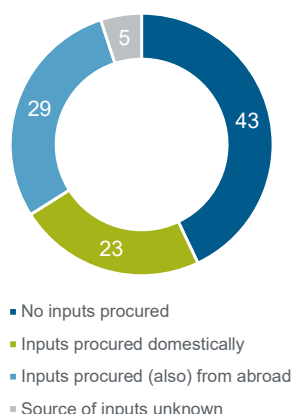
Around 12% of all SMEs – 34% in manufacturing – are attempting to increase their stockpiles of raw materials and inputs in the face of possible supply bottlenecks. That share may appear low but is definitely plausible given the massive price increases for certain raw materials and inputs – if they can be obtained at all.

### Service providers are less dependent on inputs

One reason that current supply shortages affect the services sector less than other sectors is that more than half of services businesses do not procure a significant amount of materials, inputs or services. This applies in particular to many small-scale law, tax accountancy and auditing firms, education and training providers and providers of health and social services.

### Figure 2: Some SMEs do not procure any inputs

Percentage of businesses that procure inputs or services in the domestic and/or foreign market



Source: Supplementary survey to the KfW SME Panel in September 2021.

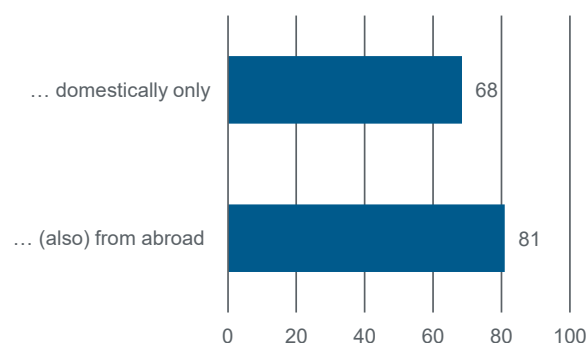
Across the SME sector, which to a large extent is composed of services businesses, around four in ten businesses do not procure any inputs (Figure 2). The fact that supply bottlenecks still have such an impact on SMEs underscores the magnitude of the problem.

### Supply bottlenecks are impacting on importers even more

Around 23% of SMEs procure inputs exclusively from domestic suppliers. A further 29% of small and medium-sized enterprises also procure raw materials, inputs or services from abroad.<sup>6</sup> These importers are feeling the impact of supply bottlenecks even more strongly. Some 81% of them are affected, compared with 68% of firms that operate exclusively in the domestic procurement market (Figure 3). The greater impact on importing firms is also evident when we take into account further business characteristics such as size and sector.

### Figure 3: Supply bottlenecks hit importing businesses harder

Percentage of businesses affected by supply bottlenecks among business that procure raw materials, inputs or services ...



Source: Supplementary survey to the KfW SME Panel in September 2021.

The fact that importing companies have been impacted more than average indicates yet again that compensating regional shortages with international trade is currently working only to a limited extent – whether as a result of problems in international freight transport or because of trade restrictions imposed by individual countries. This is also reflected in import prices, which in August 2021 were 16.5% above the level of the previous month. Only during the oil crisis of September 1981 was there a higher year-on-year variation.<sup>7</sup> Higher energy prices currently also play an important role in the increase in import prices, although inputs imported from abroad are also a key driver.

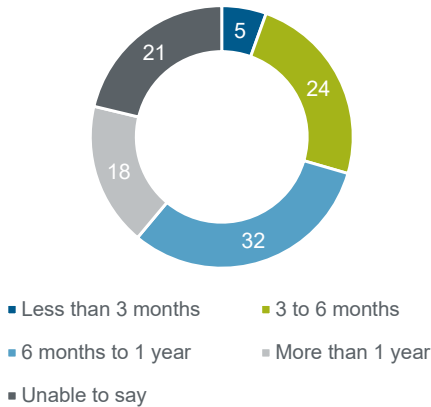
### SMEs do not believe the supply bottlenecks will be resolved quickly

Small and medium-sized enterprises do not expect the supply bottlenecks to be resolved any time soon (Figure 4). Only around 5% of the affected small and medium-sized enterprises expect the supply bottlenecks to end in the next three months – meaning by the end of 2021. Around one quarter do not expect missing materials to be available in sufficient quantities again until three to six months from now and one third rather expect a normalisation in six to twelve months. Nearly one in five enterprises currently grappling with supply bottlenecks are convinced that the situation will take at least a year to normalise – which means towards the end of the year 2022. There are hardly any differences between sectors with the exception of construction. Here, around 40% of businesses find it difficult to estimate the likely duration of the bottlenecks.

SMEs are thus slightly more pessimistic about the situation than some economic forecasts assume. In its autumn forecast the ifo Institute, for example, estimates that the current supply bottlenecks will become less significant by the end of the year 2021 and the German Institute for Economic Research also expects the production backlog to dissolve around the turn of the year.<sup>8</sup>

**Figure 4: No one expects a quick resolution**

Estimated time until resolution of supply bottlenecks, percentage of affected businesses



Source: Supplementary survey to the KfW SME Panel in September 2021.

**Export restrictions – or more free trade?**

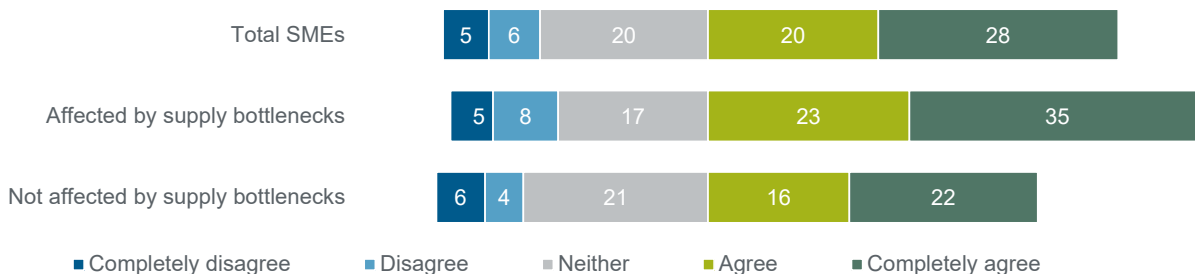
The tense situation in many businesses and the economic risks resulting from the current supply bottlenecks are leading to louder calls for government intervention. In the construction industry, for example, issues include removing penalties in the event of delays in the completion of works or the option of passing price increases on to public clients.<sup>9</sup> The demand for export restrictions on scarce materials has also been

raised repeatedly. Nearly half of all SMEs favour such a response from the European Union, which regulates the member states' joint trade policy. Businesses impacted by supply bottlenecks in particular favour import facilitation measures and export restrictions in order to address material shortages (Figure 5).

An isolated view of Germany or the EU makes trade restrictions such as an export ban definitely appear expedient as it prevents timber logged in domestic forests and urgently needed by German builders from being exported to the US or China. In order to be successful, however, such a policy would require other countries where the necessary raw materials are available to refrain from adopting the same approach to ensure the supply of the local economy. If these countries also impose restrictions on the export of raw materials or respond with other retaliatory measures, the result could be mutually intensifying protectionist measures that could unleash a full-blown trade conflict. Eventually, that would further complicate the balancing of regional shortages and most likely worsen rather than improve the situation of German businesses. This logic is also likely to have influenced the response of the approx. 30% of businesses that do not favour or even reject export restrictions.

**Figure 5: Half of all SMEs favour export restrictions on scarce raw materials and inputs**

"The EU should facilitate the import of scarce raw materials and intermediate products and restrict exports."

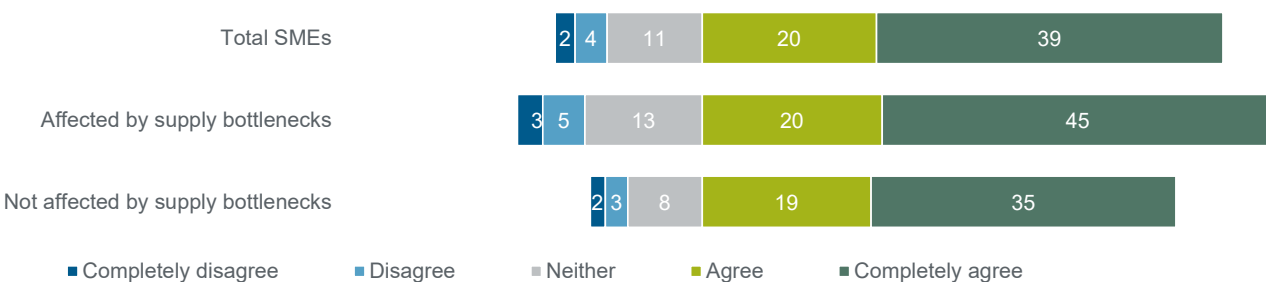


Note: Percentage of enterprises that agree with the statement. Missing to 100%: share of businesses that have answered the question with 'I can't say'.

Source: Supplementary survey to the KfW SME Panel in September 2021.

**Figure 6: Should the EU reduce trade barriers further?**

"The EU should reduce further trade barriers and negotiate new trade deals in order to secure access to scarce raw materials and inputs."



Note: Percentage of enterprises that agree with the statement. Missing to 100%: share of businesses that have answered the question with 'I can't say'.

Source: Supplementary survey to the KfW SME Panel in September 2021.

Around 31% of gross value added and 28% of the workforce in Germany depend on exports. The German economy is internationally well integrated and has greatly benefited from globalisation in the past.<sup>10</sup> With regard to access to raw materials, too, further trade liberalisation is probably more expedient for Germany and Europe than imposing export restrictions that are very likely to result in the imposition of export restrictions by other countries. This applies all the more as Germany is a net importer of raw materials.

Around 60% of SMEs would endorse a EU trade policy that is geared towards a further reduction of trade barriers and drives the conclusion of new trade agreements forward in order to secure access to scarce raw materials. Among businesses currently impacted by supply bottlenecks, that share is even 65% (Figure 6).

From the perspective of businesses, restricting exports of own raw materials while liberalising raw materials exports of other countries would understandably be the best solution for addressing material shortages. But it would hardly be an enforceable trade policy and further trade liberalisation would hence be the more expedient solution for securing access to scarce raw materials and inputs.

### Raw materials security will continue to be a topic into the future

In all likelihood, adjustments of supply and demand will dissolve the current supply bottlenecks, even if this can take a few more months. Nonetheless, the supply of raw materials and inputs is a topic that is likely to remain on the agenda of businesses and policymakers. The issue will revolve around how raw materials can be extracted responsibly, used efficiently and recycled, as well as how global supply chains can be made more resilient.

### Supplementary survey as part of the KfW SME Panel

The current analysis is based on a supplementary survey performed as part of the KfW SME Panel.

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 sectors 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.

For the supplementary survey, the Financial Services Division of GfK SE surveyed small and medium-sized enterprises during the period from 1 to 10 September 2021 on the current impacts of the supply bottlenecks 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 contacted.

Responses from a total of 2,400 enterprises were evaluated. As the supplementary survey was linked to the main database of the KfW SME Panel, its results provide a representative picture of the current impact of the supply bottlenecks.

Further information can be obtained at [www.kfw-mittelstandspanel.de](http://www.kfw-mittelstandspanel.de).

<sup>1</sup> Cf. Scheuermeyer, P. (2021), *KfW Business Cycle Compass August 2021*, KfW Research.

<sup>2</sup> An example from the semiconductor industry illustrates this. The US is currently blocking the export of Dutch machinery for the production of microchips to China, cf. Schmutz, C. G. (2021): *Wie die niederländische Firma ASML in den technologischen kalten Krieg zwischen den USA und China geraten ist (How the Dutch firm ASML got caught up in the technological cold war between the US and China – our title translation, in German only)*, Neue Zürcher Zeitung dated 30 July 2021, <https://www.nzz.ch/wirtschaft/asml-deren-maschine-produziert-die-leistungsaehigsten-mikrochips-ld.1637842>.

<sup>3</sup> Cf. Destatis (2021): *Manufacturing in July 2021: new orders up 3.4% on the previous month*, press release #415 from 6 September 2021, and Destatis (2021): *Production in July 2021: +1.0% on the previous month*, press release #416 from 6 September 2021.

<sup>4</sup> Cf. Destatis (2021): *Producer prices in August 2021: +12.0% on August 2020*, press release #442 from 20 September 2021.

<sup>5</sup> Cf. Destatis (2021): *Consumer price index for Germany*, as at 10 September 2021.

<sup>6</sup> The remaining approx. 5% of SMEs are unable to make any statements on the origin of their inputs.

<sup>7</sup> Cf. Destatis (2021): *Import prices in August 2021: +16.5% on August 2020*, press release #457 from 29 September 2021, and Destatis (2021): *Import prices in July 2021: +15.0% on July 2020*, press release #405 from 27 August 2021.

<sup>8</sup> Cf. Wollmershäuser, T., Brandt, P., Grimme, C., Lay, M., Lehmann, R., Link, S., Möhrle, S., Sandqvist, P., Šauer, R., Stöckli, M. and Wohlrabe, K. (2021): *ifo Economic Forecast Autumn 2021: Supply Bottlenecks in Manufacturing Slow Overall Economic Recovery*, ifo Schnelldienst digital 13/2021 from 22 September 2021.

<sup>9</sup> German Confederation of Skilled Crafts (2021): *Dringender Handlungsbedarf bei Baumaterial-Mangel (Urgent need to address shortage of construction material – our title translation, in German only)*, interview dated 11 May 2021, <https://www.zdh.de/presse/veroeffentlichungen/interviews-und-statements/dringender-handlungsbedarf-bei-baumaterial-mangel/>

<sup>10</sup> Cf. Abel-Koch, J. and Ullrich, K. (2021): *Low globalisation momentum requires adjustment of German companies' growth strategies*, Focus on Economics No. 349, KfW Research and Prognos (2021): *Globalisierung in der Krise 2021 (Globalisation in crisis 2021, our title translation, in German only)*, study commissioned by KfW Group.