

## ■ The German economy

### ■ Macroeconomic situation

*German economy sees historic slump in Q2*

The coronavirus pandemic caused a historic decline in economic output in Germany. The Federal Statistical Office's flash estimate indicated that, after seasonal and calendar adjustment, real gross domestic product (GDP) fell by just over one-tenth (-10.1%) in the second quarter of 2020 compared with what had already been a significantly depressed previous quarter.<sup>1</sup> The decline in economic activity was unprecedented, not just in terms of its depth. In fact, measures taken by government agencies, enterprises and consumers in Germany and abroad to contain the pandemic meant that the pace of the collapse was also unprecedented, after economic activity had still been pointing upwards into the first half of March. An economic recovery was already beginning to emerge in May, however, after the first steps were taken to ease the general social distancing requirements. Current indicators suggest that this upward movement is continuing during the summer months. As a result, aggregate output is likely to expand again sharply in the third quarter. Expansionary monetary and fiscal policy measures, such as the economic stimulus package recently adopted by the Federal Government, provide additional support to the economy.

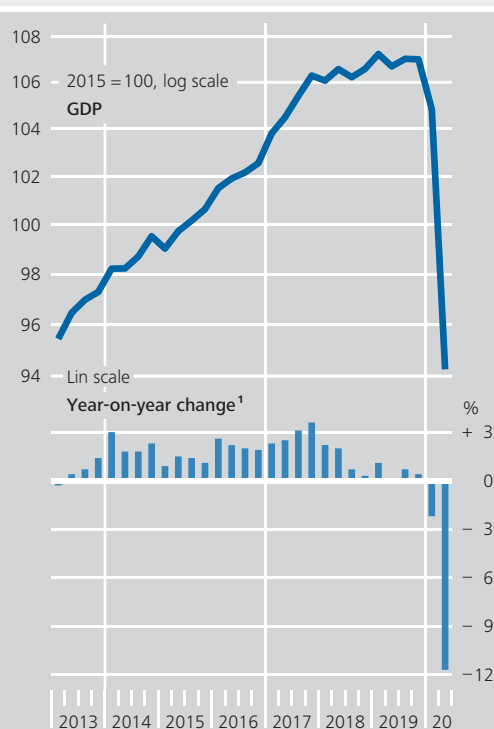
*Coronavirus crisis took its toll on large parts of German economy*

The coronavirus crisis took its toll on large parts of the German economy. Second-quarter real value added is once again expected to have contracted more strongly in the manufacturing sector than it did in the services sector. That said, the picture was probably rather mixed in the individual services sectors. Retail sales, for one, moved more or less sideways overall,

benefiting from the uptick in household spending on food as restaurants and other caterers were subject to considerable restrictions. By contrast, economic activity shrank dramatically in the hotel and restaurant sector, which was particularly hard hit by the general social distancing requirements. Other consumption-related areas such as travel agencies, other recreational and cultural service providers and passenger transport continued to be severely affected by the crisis as well. Against this backdrop, private consumption fell extremely sharply. Owing to the economic impact of the pandemic abroad (see the comments on pp. 12 ff.), exports also plummeted. Industrial investment in machinery and equipment probably saw an even steeper decline amidst uncertainty surrounding global infection rates going forward and the subdued economic outlook. Construction investment, on the other hand,

#### Overall output

Price and seasonally adjusted



Source of unadjusted figures: Federal Statistical Office. <sup>1</sup> Price and calendar adjusted.  
 Deutsche Bundesbank

<sup>1</sup> From the second quarter of 2020 onwards, the Federal Statistical Office is publishing an initial flash estimate of GDP just 30 days after the end of the quarter, which is roughly two weeks earlier than has previously been the case. The timelier publication date means that the results contain a higher share of estimates. See Federal Statistical Office (2020a).



earlier, but deliveries also showing signs of a recovery earlier. The picture was also largely homogenous in terms of the value of exports to the individual partner countries. Only the Chinese business stood out, with deliveries to this country rising significantly in value terms contrary to the general trend. This was partly because the pandemic peaked earlier in the People's Republic. The nationwide containment measures were eased there from mid-February onwards, and demand for German products recovered gradually thereafter. Breaking down total German goods exports by category of goods, the volume of capital goods exports showed the strongest decrease. The exceptionally weak motor vehicle exports had a particularly dampening effect, but German exporters also suffered a substantial decline in deliveries of intermediate and consumer goods.

Private consumption is likely to have seen a massive drop in the second quarter of 2020. Consumption expenditure fell extremely sharply in the areas particularly affected by temporary contact restrictions and the uncertainty caused by the pandemic. This is especially true of the hotel and restaurant sector. On an average of April and May – the most recent months for which statistics are available – real turnover fell by just under two-thirds compared with the first quarter. Motor vehicle dealers were also confronted with dramatic declines in sales. In the second quarter, car registrations were just over one-third down on the previous quarter. In addition to the government-enforced closure of car sales outlets in April, this decline was probably also due to the increased uncertainty, which led to many customers holding back with their new car purchases. Private expenditure on travel and other leisure and cultural services is also likely to have fallen dramatically. By contrast, real retail sales were exceptionally robust during the coronavirus crisis and only marginally down on the quarter, with developments in different trading areas balancing each other out. For example, sales in the bricks-and-mortar retail trade with textiles, clothing and footwear fell abruptly and on a massive scale

*Massive drop in private consumption*

proved quite robust in the face of the pandemic, contracting by less than the average rate overall. Meanwhile, government consumption expanded as extensive measures were rolled out to combat the pandemic, thereby supporting economic activity.

*Extremely sharp decline in exports*

In real terms, German exports of goods fell by just over one-fifth in the second quarter of 2020. Against the backdrop of the worldwide spread of the coronavirus, the decline was very broadly based in regional terms. The volume of goods delivered to the euro area and to non-euro area countries declined at a similar rate, with the euro area recording losses somewhat

as a result of the measures to curb the spread of the virus. Online and mail order sales meanwhile surged. Sales of food and beverages were also markedly higher than in the previous quarter in value terms, probably partly due to substitution effects.

China. In addition to possible catch-up effects after the measures to contain the pandemic were eased there, large deliveries of medical protective equipment were another factor (see the box on pp. 15 ff.).

*Dramatic collapse in commercial investment in machinery and equipment*

Commercial investment in machinery and equipment is expected to have plummeted dramatically in the second quarter of 2020. The sudden increase in uncertainty in the wake of the coronavirus crisis is likely to have severely dampened enterprises' willingness to invest. Furthermore, there was, at least temporarily, no need to invest in expanding capacity due to the sharp decline in demand and thus also overall capacity utilisation. This picture is confirmed by the economic indicators. Imports of capital goods, for example, fell very sharply in terms of value. Furthermore, nominal domestic sales in the capital goods sector plummeted sharply, even excluding the extremely weak motor vehicle sales. Car registrations by commercial owners and registration figures for commercial vehicles were also down markedly.

## ■ Sectoral trends

The consequences of the coronavirus crisis put a massive strain on German industry in the second quarter of 2020. Industrial output started to recover visibly in May and June, but over the spring months it was still on average around one-fifth below the previous quarter's already depressed level (-19¼%) in seasonally adjusted terms. Developments in the automotive sector stood out, with output falling by just under half. Both supply and demand forces played a role here. For example, at the height of the crisis, car dealerships were ordered to close as part of the measures to contain the pandemic. This led to a widespread breakdown of sales channels for the sector. Furthermore, many consumers are likely to have postponed their car purchases for the time being owing to a deterioration in income prospects and a sudden increase in uncertainty overall. In addition, temporary border closures severely disrupted supply chains in this industry. As a result, production in the capital goods sector overall declined disproportionately sharply. However, manufacturers of intermediate and consumer goods also reported a very significant drop in output on a quarterly average.

*Industrial output fell by one-fifth in second quarter*

*By contrast, probably only moderate decline in construction investment*

Construction investment is likely to have seen only a comparatively moderate decline in the second quarter of 2020. The fact that the measures taken to contain the pandemic had a relatively small impact on construction activity was a factor here. In addition, part of this decrease was due to the very strong first quarter, in which construction activity had been temporarily boosted by mild weather conditions. The seasonally adjusted nominal turnover in the main construction sector available up to May suggests that investment in residential property may have fallen more sharply than that in commercial buildings.

According to the ifo Institute, capacity utilisation of tangible fixed assets in manufacturing has increased again significantly since April, after having fallen rapidly before. The counter-movement in the capital goods sector was particularly strong. Manufacturers of consumer goods also reported markedly higher capacity utilisation in July compared with April's low. By contrast, capacity utilisation in the intermediate goods sector was even somewhat lower in the period under review than in the previous survey in April.

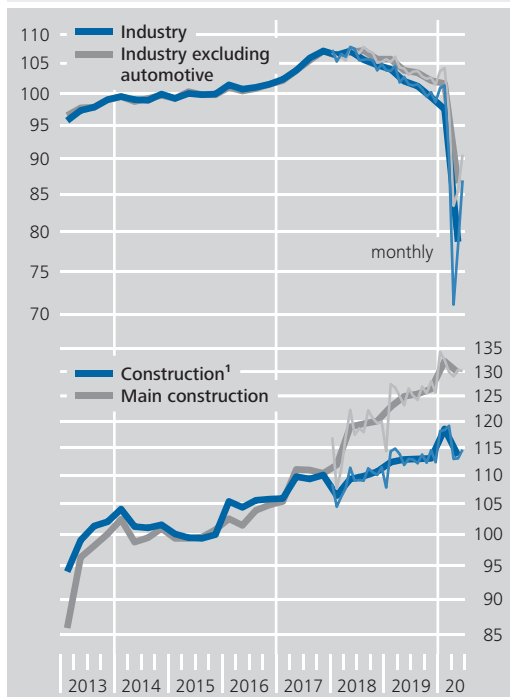
*Capacity utilisation levels up again*

*Imports of goods down by one-eighth*

In the second quarter of 2020, German imports of goods contracted by one-eighth in real terms. The contraction in the volume of imports from non-euro area countries was somewhat smaller than that in deliveries from the euro area. This was related to the very sharp rise in imports from the People's Republic of

### Output in industry and in construction

2015 = 100, seasonally adjusted, quarterly data, log scale



Source of unadjusted figures: Federal Statistical Office. <sup>1</sup> Main construction sector and finishing trades.  
 Deutsche Bundesbank

*Coronavirus crisis leaves only small traces in construction*

The construction sector has been relatively unscathed by the coronavirus crisis. In the second quarter of 2020, seasonally adjusted construction output fell by 4¼% on the quarter, significantly less than in many other sectors. In addition, some of this decline was due to weather conditions. The main construction sector experienced a markedly smaller decline in activity than the finishing trades. The fact that the sector saw no major drop in production during the crisis was probably partly because skilled workers were still available despite the partial closure of the borders. According to the ifo Institute, the share of construction firms that reported a shortage of skilled labour as hampering production remained relatively stable, even in April which was heavily affected by the general contact ban.

*Heterogeneous situation in the services sector*

Contact restrictions related to the coronavirus pandemic posed great difficulties for the services sector in the second quarter. Economic activity in this sector is likely to have declined quite substantially in the quarter as a whole,

mainly owing to the very weak April. However, there was considerable divergence in developments in the individual services sectors. According to information regarding the assessment of the business situation provided by the ifo Institute, activity in the real estate business is likely to have contracted by less than the average rate. There was also only a slight decline in real retail sales. By contrast, the decline in sales in wholesale trade, which is more heavily dependent on industrial activity, is likely to have been more pronounced (statistical data are only available for April and May). The motor vehicle trade and, above all, the hotel and restaurant sector probably lost even more turnover.

### Labour market

The coronavirus crisis took a huge toll on the labour market in the spring. Employment fell sharply over the course of the reporting quarter and unemployment rose rapidly. Measured against the depth of the economic slump, however, these adjustments were fairly modest. This is primarily because of the large-scale reductions made to working hours. Positive balances on working time accounts were scaled back significantly and short-time work was used extensively. In particular, widespread take-up of short-time work schemes stabilised both employment levels and income. With economic activity beginning to improve from May, the rise in unemployment and drop in employment slowed significantly towards the end of the reporting period. However, the situation on the labour market has not yet recovered, as it usually responds to economic changes with a certain time lag.

*Labour market severely impacted, ...*

Initial estimates by the Federal Employment Agency indicate that 6.7 million people participated in short-time work schemes for economic reasons in May.<sup>2</sup> This equates to one in

<sup>2</sup> The figure for April was 6.1 million people. At the beginning of July, the Federal Employment Agency had provisionally reported 6.8 million persons in short-time work for April. This figure has since been revised downwards with the second estimate.

... but short-time work dampens effects on unemployment and employment

five employees subject to social security contributions – an unprecedented figure in the history of the Federal Republic of Germany. The average number of hours lost per short-time worker remained comparatively high in May at 44%, albeit lower than April's figure of 49%. The volume of work lost consequently corresponded to 2.9 million full-time employees. In the past, short-time work for economic reasons has been an instrument primarily used by the manufacturing sector as cyclical volatility is particularly pronounced there. The nature of the crisis means that many services sectors are also affected this time. The Federal Employment Agency's initial provisional estimates by sector illustrate the extent of the use of short-time work in April, the month most affected by the general contact restrictions.<sup>3</sup> The automotive industry had the highest share of employees subject to social security contributions on short-time work, namely more than half, followed by business and support services (e.g. travel agencies), where the percentage was one-third. In the retail sector, the share is likely to have been more than one-fifth. The hotel and restaurant sector was also particularly hard hit, reporting short-time work for just over 1 million employees in March and April, which corresponds to a share of 92%.<sup>4</sup> The number of short-time workers is likely to have reached its peak in May. The notifications of short-time work peaked back in April at 8 million employees, and have since dropped massively to 190,000 between 1 and 26 July.

Employment down considerably, mini-jobs hit hardest

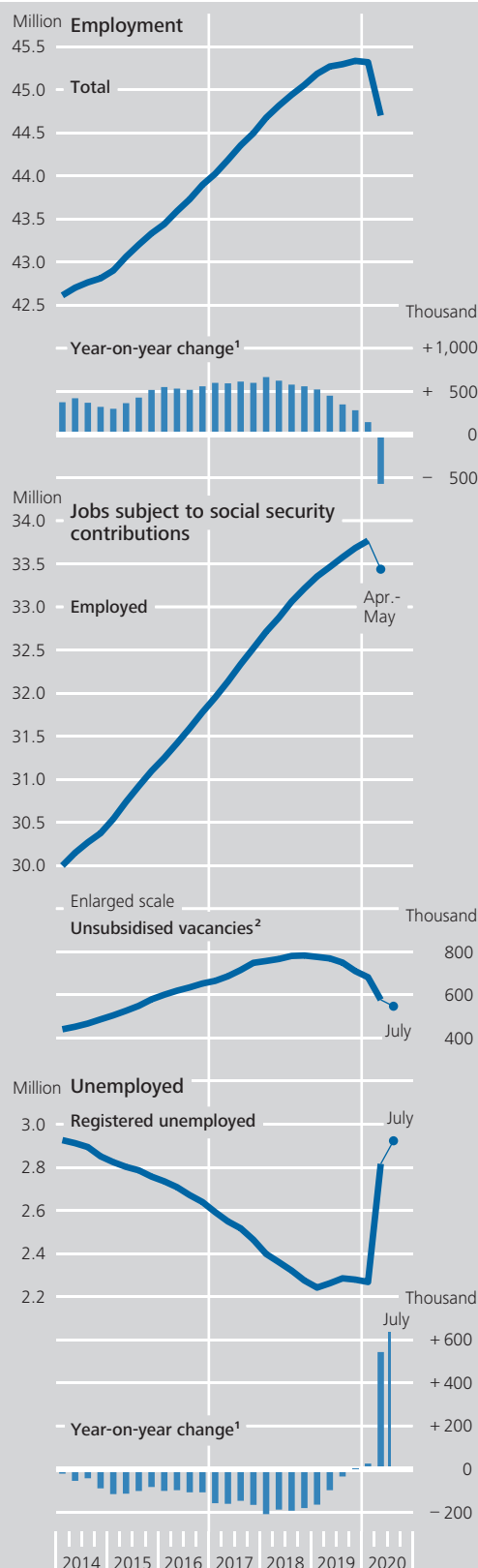
Employment declined considerably in the course of the second quarter. In June, seasonally adjusted employment was 1.6%, or just under 750,000 persons, below the level of February 2020, which marked the peak before the

<sup>3</sup> See Federal Employment Agency (2020a).

<sup>4</sup> The Federal Employment Agency has not yet published any data on realised short-time work in the hotel and restaurant sector. Reference is therefore made to the reported notifications. See Federal Employment Agency (2020b).

## Labour market

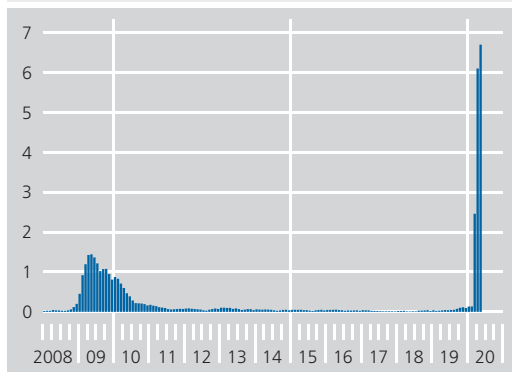
Seasonally adjusted, quarterly data



Sources of unadjusted figures: Federal Statistical Office and Federal Employment Agency. <sup>1</sup> Not seasonally adjusted. <sup>2</sup> Excluding seasonal jobs and jobs located abroad.

### Persons in short-time work for economic reasons\*

Millions, monthly data



Source: Federal Employment Agency. \* Number of short-time workers whose entitlement is based on Section 96 SGB III, un-adjusted figures. From February 2020, provisional figures.

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onset of the coronavirus crisis.<sup>5</sup> The decline covered virtually all forms of employment. Persons in exclusively low-paid part-time employment were hit the hardest in relative terms, with their number falling by 6½% between February and May alone (more recent data are not yet available). These employment contracts are the most unstable, as the firing and hiring costs for employers are relatively low and the jobs often require only a small amount of company-specific human capital. Moreover, they are disproportionately used in sectors heavily affected by the containment measures, such as the hotel and restaurant sector, trade, arts, entertainment and recreation and personal services. It is not possible to apply for short-time working for such workers. If they are persons in the education system, unemployed or pensioners, the loss of employment is not visible in the unemployment statistics. Nevertheless, the number of jobs subject to social security contributions also fell significantly over a three-month period. During this short period of time, almost one in ten jobs were lost in the hotel and restaurant sector and temporary agency employment alone.

The rise in unemployment caused by the coronavirus crisis did not continue towards the end of the period under review. The number of unemployed persons registered with the Fed-

eral Employment Agency continued to grow sharply in April and May but the ascent already flattened significantly in June. In July, unemployment then declined slightly in seasonally adjusted terms, owing to a lower number of young people registered as unemployed and more labour market policy measures than is normal for the time of year.<sup>6</sup> At 2.92 million, there were 659,000 more persons registered as unemployed than in March, when numbers were not yet significantly affected by the pandemic owing to the early cut-off date. The unemployment rate rose by 1.4 percentage points to 6.4%. First, in addition to some statistical one-off effects, the fact that labour market policy measures had to be restricted owing to contact restrictions was a factor here. This explains, in particular, the higher number of persons receiving the basic welfare allowance.<sup>7</sup> The number of underemployed persons without short-time work – a broader category – therefore increased significantly less sharply, at 480,000, in the same period than the number of registered unemployed. Second, the use of short-time work and other measures to reduce working hours had a massive dampening effect on the rise in unemployment. The number of unemployed persons receiving unemployment benefits under the statutory unemployment insurance scheme (SGB III) has risen by 400,000 since March. This corresponds to three-fifths of the total increase in registered unemployment. With regard to inflows and outflows, the rise in unemployment was due not only to the higher number of persons registering as unemployed,

<sup>5</sup> In the most recent publication, the number of persons in employment was revised upwards moderately in the period up to and including February 2020 and downwards perceptibly from March 2020, with the strongest revision in April 2020.

<sup>6</sup> In July 2020, considerably fewer young people became unemployed after completing their training than in previous years, which could be due to final examinations being postponed during the coronavirus crisis. As a result, the number of younger unemployed persons rose significantly less than is normal for the time of the year and fell by 28,000 in seasonally adjusted terms. The decline in labour market policy measures, also usual for July, was weaker in 2020 than in previous years. The relief provided by labour market policy instruments therefore increased in seasonally adjusted terms.

<sup>7</sup> See Federal Employment Agency (2020c).

*Unemployment did not rise any further in July*



## Experimental seasonal and calendar adjustment of daily economic indicators

The coronavirus crisis has heightened demand for indicators that allow a more timely assessment of economic developments than classic economic indicators. As a consequence, increased use has recently been made of daily and weekly data, which are available quickly.<sup>1</sup> The digitalisation trend of recent years means that these data are easier to access.

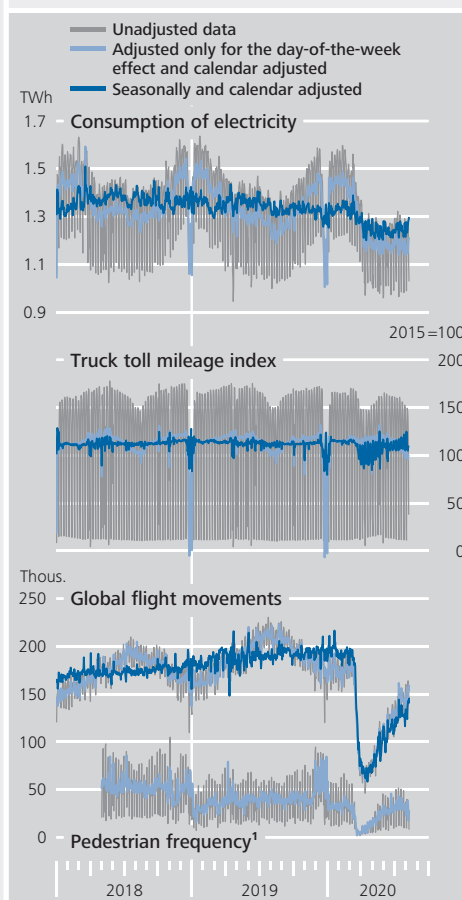
Like monthly and quarterly data, daily indicators contain periodically recurring intra-year patterns, which mask the underlying economic trend and extraordinary developments and thus render economic analysis more difficult. For instance, daily consumption of electricity in Germany displays two periodic patterns. The first is the annual pattern, the day-of-the-year effect (see the adjacent chart). Electricity consumption is highest in winter, gradually falls from January into the spring and reaches its lowest level during the time of the summer holidays, before gradually rising again until December. Looking at the year as a whole, this results in a marked U-shaped pattern, which is interrupted by a sharp drop between Christmas and the New Year.

The second periodic pattern in terms of daily electricity consumption is evident in the weekly cycle, the day-of-the-week effect (see the chart on p. 68). Significantly more electricity is typically consumed between Monday and Friday than at the weekend, especially on Sundays. There is likewise a clear decline in consumption on bank holidays and bridge days. Similar patterns are also evident in other time series for which daily data are available and make it difficult to draw conclusions about cyc-

lical developments. All this illustrates the need for seasonal and calendar adjustment of daily data. Since the intra-year profiles differ from time series to time series, such specific details can be taken into account only through a high degree of series-specific modelling.

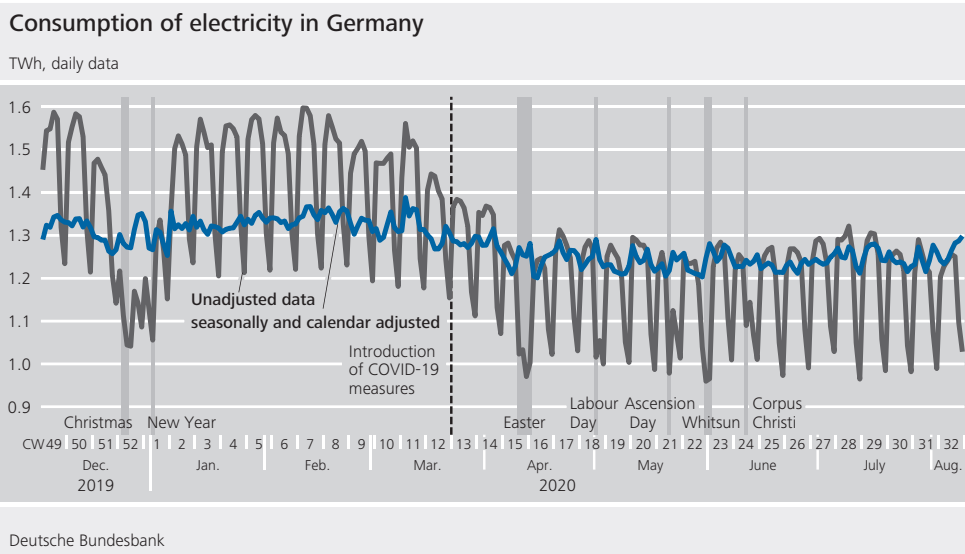
Monthly and quarterly time series dominate the official economic statistics. As a consequence, the definitions of seasonal and calendar effects and the methods and proced-

Seasonal and calendar adjustment of selected daily economic indicators



Sources: Federal Network Agency, Federal Office for Goods Transport, Federal Statistical Office, Flightradar and Hystreet.  
<sup>1</sup> The number of people on inner-city high streets. Time series is too short to adjust for day-of-the-year effect.  
 Deutsche Bundesbank

<sup>1</sup> See Deutsche Bundesbank (2020a).



ures for adjusting them are likewise tailored to these time series frequencies. There are therefore currently no European guidelines on the seasonal adjustment of weekly or daily data. Concepts for the seasonal and calendar adjustment of daily data and the software based on them are also still being developed.<sup>2</sup> An extension of seasonal and trend decomposition using LOESS (STL), which was developed at the Bundesbank, is currently being used for the seasonal adjustment of daily economic indicators – a procedure which has already proved successful in adjusting daily cash issuance.<sup>3</sup> The recurring movements within one week, one month and one year are successively eliminated and additional calendar effects are estimated and eliminated using a regression model.

Each data-based estimate requires a sufficient number of observations that reflect the situation that is being assessed at least to a similar extent. As a consequence, the procedures currently in place allow abrupt changes in the structure of weekly fluctuations to be determined only with a time lag. Looking at the daily truck toll mileage index, for instance, the week-day pattern changes as a result of temporary Saturday

driving bans in the summer months and because, in the time series, the fluctuations around Christmas and New Year deviate from the usual seasonal figure.<sup>4</sup> While this means that strong volatility sometimes remains even in the adjusted daily data, these and other irregular factors largely offset one other in monthly data. For analytical purposes, it may therefore be advantageous to consolidate several daily values and to look at, for example, weekly averages.

In addition to such changes in the weekly pattern, estimating calendar effects for daily time series is a particular challenge. As a rule, the time series changes markedly not only on the bank holidays themselves, but also on the preceding and following days. In the case of fixed bank holidays, i.e. ones that always fall on the same date, the effect

<sup>2</sup> Extensions of the X-11 approach and ARIMA model-based seasonal adjustment as well as structural time series models are particularly promising (see, for example, Ladiray et al. (2018)). Extensions of the seasonal-trend decomposition using LOESS (STL) also provide promising results (see Cleveland et al. (1990), Ollech (2018)). The aim is to implement suitable procedures in the JDemetra+ seasonal adjustment software, which is being developed as part of a cooperation between the National Bank of Belgium (NBB) and the Bundesbank.

<sup>3</sup> See Deutsche Bundesbank (2018).

<sup>4</sup> See Cox et al. (2020).



### Empirical measures on the dependence between time series with daily observations and selected economic indicators\*

On the basis of changes from the preceding period (seasonally and calendar adjusted)

Indicator	Aggregation to					
	monthly data			quarterly data		
	Reference period from ... to June 2020	Correlation	Reliability of sign as a percentage <sup>1</sup>	Reference period from ... to Q2 2020	Correlation	Reliability of sign as a percentage <sup>1</sup>
Consumption of electricity	Feb. 2015	0.33	53.9	Q2 2015	0.74	66.7
Industrial output		–	–		0.72	61.9
GDP, real						
Truck toll mileage index	Feb. 2008	0.52	47.0	Q2 2008	0.86	71.4
Industrial output		0.52	55.7		0.55	67.4
Retail, real		–	–		0.78	73.5
GDP, real						
Global flight movements	June 2016	0.94	57.1	Q4 2016	0.98	80.0
Exports, real		–	–		0.98	73.3
GDP, real						
Pedestrian frequency	June 2018	0.69	40.0	Q4 2018 <sup>2</sup>	–	–
Retail, real						

\* Aggregation through averaging. <sup>1</sup> Agreement of signs of change from the preceding period as a percentage of all observations. <sup>2</sup> The small number of observations means that no meaningful correlation can be calculated.

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sometimes depends on which day of the week it falls on. For instance, energy consumption falls more sharply on Labour Day if it falls on a weekday rather than on a Sunday, which may, in turn, make it more difficult to estimate holiday effects (referred to as cross effects).

For a comprehensive picture of the state of the economy, adjusted time series based on daily, monthly or quarterly data are analysed together. It is sometimes difficult to compare seasonally adjusted time series with different frequencies. One reason for this is that several periodic patterns overlap in daily data, as already explained using the example of electricity consumption; these patterns are often more closely interlinked with each other and with other time series components than is the case with monthly and quarterly data. Amongst other things, this can lead to observations being classified as outliers in the seasonal adjustment of daily data that are not identifiable as outliers in monthly time series of the same indicator. It is also important to note that additive time series decomposition may be use-

ful for daily data, whereas multiplicative time series decomposition might be better for monthly data.<sup>5</sup> Another challenge is the aggregation of seasonal and calendar-adjusted daily data to monthly data, which is carried out to allow comparisons. This is true of electricity data where a simple summation causes residual seasonality in the monthly series as months differ in length. The above-mentioned aspects make it more difficult to maintain the relationship between time series of different frequencies, even if the same adjustment methods are used in all periods.

One of the main reasons why daily data are interesting is that they are available more quickly than other series that have a lower frequency, but correlate with them. The empirical correlation of indicators with daily observations with selected monthly and quarterly economic indicators is shown in the table above. Monthly and quarterly averages of daily data were calculated.

<sup>5</sup> This applies, for example, to the truck toll mileage index. See Deutsche Bundesbank (2020b).

Looking, for example, at the respective rates of change compared with the previous period in terms of actual electricity consumption and industrial output, the correlation is comparatively low on a monthly basis. On a quarterly basis, it is significantly higher, driven by the large rates of change in the second quarter of 2020. Moreover, at 54%, the reliability of the sign in the period-to-period comparison is low on a monthly basis, but increases to 67% on a quarterly basis. This means that, on average, the signs of the change over the quarter do not match in around one in three cases.<sup>6</sup> By contrast, global flight movements are highly correlated with real exports on a monthly basis, while the reliability of the sign is fairly low.<sup>7</sup> When viewed on a quarterly basis, the correlation between flight movements and both real exports and real gross domestic product is 0.98. The reliability of the sign is 73% and 80%, respectively.

Given the challenges outlined above, seasonal adjustment of high-frequency indicators and their use in the timely monitoring of economic events is currently still experimental. Meanwhile, the trend towards greater digitalisation means that the use of same-day indicators as supplementary information for economic analysis, especially in periods of rapid economic change, is likely to increase further.<sup>8</sup> This requires further methodological work, which should also help harmonise procedures at the European level, for example by supplementing the European guidelines on seasonal adjustment.

<sup>6</sup> This is likely to be the case more often if the rates of change are close to zero.

<sup>7</sup> Unlike the indicator of the reliability of the sign, the calculated correlations are vulnerable to outliers such as the COVID-19 effect. When viewed up to December 2019, the correlation between flight movements and foreign trade is only 0.23, for instance. The reliability of the sign is 47%.

<sup>8</sup> See European Commission (2020).

but also to jobseekers not being recruited into employment.

*Leading indicators recovered significantly, but still in contractionary territory*

Leading labour market indicators have recovered significantly since their low in April but they remain in contractionary territory. This is true of both the ifo employment barometer and the employment and unemployment components of the labour market barometer of the Institute for Employment Research (IAB), which all try to capture developments over the next three months from different perspectives. According to the indicators, employment is expected to decline further in the third quarter, but at a slower pace than in the recent past, and unemployment is likely to rise slightly. The aggregate supply of jobs as determined in the IAB's survey of companies fell considerably up to June 2020. The number of job vacancies reported to the Federal Employment Agency was also down in the period up to July. One factor is likely to have been that many enterprises only gradually verified the accuracy of data on

current job vacancies at the Federal Employment Agency and reported the withdrawal of vacancies. The inflow of new job offers reported to the Federal Employment Agency is a fairly positive signal for the labour market. After these had more than halved from March to April alone, more vacancies are now being reported to the Federal Employment Agency again. In July, the level was only around one-fifth below the pre-crisis level. The Federal Employment Agency's BA-X job index, which records existing and new vacancies reported to the Federal Employment Agency, thus stabilised, too.

## ■ Wages and prices

Negotiated wage growth in the second quarter was again weaker than in the preceding quarter. This was largely attributable to social partners' reaction to the ongoing pandemic and its economic impact. As a result, low wage agree-

*Negotiated wage growth less strong, actual earnings probably down*

ments were concluded in some cases, gradual increases negotiated last year were postponed by several months and wage negotiations in sectors with expiring collective agreements (and thus possible wage increases) were delayed. In addition, there were moderate incremental wage increases from longer-term collective wage agreements of previous years. Including ancillary agreements, negotiated rates of pay rose by 1.9% year-on-year in the second quarter, following an increase of 2.3% in the first quarter. Actual earnings are likely to have declined owing to widespread short-time work and the reduction in paid overtime.

*2020 wage round: focus mostly on protecting jobs, but also clear wage demands in some cases*

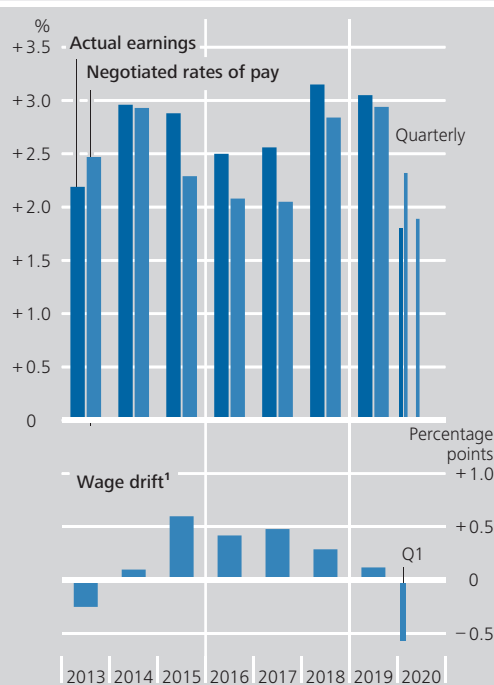
In most cases, the social partners continued to prioritise protecting jobs over raising wages in the second quarter. For instance, previously agreed wage increases were postponed by three months in the printing industry and by one year in textile services. In several sectors, the social partners agreed on ways of topping up short-time working benefits. However, negotiations are currently proving more contentious in sectors with higher wage demands: in the main construction sector, the industrial trade union, IG BAU, demanded wage increases of 6.8%, but no less than €230 of monthly additional income, and compensation for travel time to and from construction sites. As no agreement was reached, arbitration was initiated. Negotiations with office cleaning companies, in which IG BAU demanded a significant rise in the sectoral minimum wages of €1.20 per hour and a wage hike of 6.5% for all other pay categories, were broken off without any agreement.

*Incremental minimum wage increase to €10.45 per hour in July 2022*

In June, the Minimum Wage Commission unanimously recommended that the Federal Government raise the statutory general minimum wage significantly. The Federal Minister for Labour and Social Affairs announced that he would follow this recommendation. The minimum wage is to be raised in four steps by a total of €1.10, or 11.8%, to €10.45 per hour from July 2022. With this high number of steps and the scale of the increases, the Commission

### Rates of pay and wage drift

Year-on-year percentage change, on monthly basis



Sources: Federal Statistical Office (actual earnings) and Deutsche Bundesbank (negotiated rates of pay). <sup>1</sup> The wage drift is calculated as the annual change in the ratio of actual earnings to negotiated rates of pay.  
 Deutsche Bundesbank

has deviated from the former calculation method, which was heavily geared towards the past trend in negotiated wages. It remains to be seen how the large raise will affect future wage negotiations and the employment situation of unskilled workers. This particularly applies to eastern Germany, where the higher minimum wage will affect a much larger proportion of employees than in western Germany.

The inflation rate was primarily dampened by the decline in energy prices in the second quarter of 2020. In seasonally adjusted terms, consumer prices as measured by the Harmonised Index of Consumer Prices (HICP) remained more or less unchanged after rising by 0.3% in the first quarter of 2020. Developments by category of goods exhibited two divergent trends. Energy prices declined significantly in the second quarter amidst a sharp drop in crude oil prices related to the coronavirus pandemic. Inflation in non-energy industrial goods also

*Inflation rate mainly dampened by energy in Q2*

### Import, export, producer and consumer prices

Seasonally adjusted, quarterly



Source of unadjusted figures: Federal Statistical Office. **1** Producer price index for industrial products in domestic sales. **2** Harmonised Index of Consumer Prices. **3** Not seasonally adjusted.

Deutsche Bundesbank

tailed off somewhat, in line with prices at the upstream stages of the economy. Food prices, meanwhile, rose significantly once again, and services also became markedly more expensive. The latter were especially hard hit by the containment measures introduced in response to the coronavirus crisis. Numerous services even had to be suspended temporarily, meaning that in some cases, particularly for these consumption segments, prices had to be estimated.<sup>8</sup> Although the Federal Statistical Office has stated that the quality of the HICP data was assured overall, potential distortions as a result of estimates of the HICP sub-components in question should nonetheless be taken into consideration

in the interpretation.<sup>9</sup> Quarter-on-quarter inflation slowed to 0.7%, down from 1.6% at the beginning of the year. By contrast, core inflation excluding energy and food declined only slightly, from 1.3% to 1.1%.

The temporary cut in VAT rates was clearly reflected in consumer prices in July.<sup>10</sup> The headline inflation rate fell to 0.0% from a level of 0.8% in the previous month.<sup>11</sup> Energy prices declined more sharply once again despite higher crude oil prices. Electricity and gas tariffs, which are not normally adjusted in the summer, also became cheaper. Food inflation, which was previously very high, declined roughly in line with the VAT rate. Compared with the previous year, prices for industrial goods excluding energy even fell markedly again for the first time since 2005. Special offers probably also played a role here alongside the reduction in VAT. By contrast, services inflation remained virtually constant. This is partly because just under half of all services are exempt from VAT, whereas VAT is generally payable on goods. However, the inflation rate for services subject to VAT also fell only slightly. One factor that likely played a role here is that many services sectors were particularly affected by restrictions relating to the coronavirus pandemic, such as additional hygiene and safety measures and a drop in sales, meaning that they had to bear higher costs. The decline in

*July inflation rate significantly depressed by VAT cut*

<sup>8</sup> From April, official price measurement increasingly had difficulties regarding the on-site collection of prices and the non-availability of entire consumption segments, especially in the services sector (e.g. visits to the hairdresser) and in travel (e.g. package holidays or private hotel accommodation). In some cases, missing price data were estimated (imputed) on the basis of past values in consultation with Eurostat. The share of consumer prices in the German HICP for which no data could be obtained was the highest in April, at 27%, and fell steadily from 13% in May to 8% in June (see Federal Statistical Office 2020b).

<sup>9</sup> Following the resumption of business activity, hairdressers and beauticians, in particular, experienced above-average inflation.

<sup>10</sup> On 3 June 2020, the coalition government announced that it would cut VAT from 1 July to 31 December 2020. To this end, the standard VAT rate for goods and services was reduced from 19% to 16% and the reduced VAT rate for goods was lowered from 7% to 5%. See pp. 95 ff.

<sup>11</sup> The inflation rate as measured by the national Consumer Price Index (CPI) was -0.1%, down from 0.9%.

industrial goods excluding energy meant that inflation excluding food and energy shrank from 1.1% to 0.7% overall.<sup>12</sup>

*Dampening effect of VAT cut will only last until the end of 2020*

The temporary VAT cut will probably push inflation rates into negative territory in the second half of 2020. VAT rates are scheduled to return to their previous levels in January 2021, however, which should mean that inflation rates return to (clearly) positive territory.<sup>13</sup>

## ■ Order books and outlook

*German economy on a road to recovery in Q3 2020, ...*

The significant slump in the first half-year will probably give way to very strong growth in the German economy in the third quarter of 2020. From today's perspective, the clear and broad-based recovery in aggregate output that began right after the slump bottomed out in April looks set to continue. The orders situation in industry has improved considerably of late. The sharp rise in short-term expectations for exports and production suggests that industrial output and exports of goods will continue to recover during the summer months. Sentiment has also improved significantly in other sectors of the economy. This picture is confirmed by timely "hard" indicators – the truck toll mileage index continued to increase markedly in July. According to data provided by the German Association of the Automotive industry (VDA), the number of passenger cars manufactured in Germany surged at the beginning of the summer and was therefore barely below February's pre-crisis level after seasonal adjustment. The recovery in industrial activity should stimulate industrial investment in machinery and equipment again. Private consumption is likewise expected to contribute robustly to the overall recovery, primarily because the pandemic-related restrictions have been eased considerably and infection rates appear to be under control. Not just that: the situation in the labour market has also stabilised somewhat recently. An added boost will be provided by fiscal measures, in particular the temporary VAT cut adopted as part of the recent economic stimulus package,

which are helping loosen consumers' purse strings. The Bundesbank's weekly activity index (WAI), which is based on a selection of high-frequency and timely indicators from various economic sectors (see the box on pp. 67 ff.), shows that German economic output is clearly picking up again following the trough caused by the coronavirus crisis.<sup>14</sup>

However, the economy is likely to recover much more slowly than it contracted during the extremely abrupt and deep crash. Although the economy is making up ground, activity levels will remain well short of pre-crisis levels in the third quarter and beyond, not least because the pandemic still has not been contained in many countries around the world and these countries are still suffering the economic consequences. This is hurting German exports. Another factor to consider is the acute uncertainty surrounding infection rates going forward, which is dampening the willingness of enterprises in Germany and abroad to invest. This is likely to impede a full-blown recovery in demand for German industrial products. Economic activity will remain constrained in a number of domestic services sectors until effective medical treatment such as a vaccine becomes available.

*... but is still far off the pre-crisis level*

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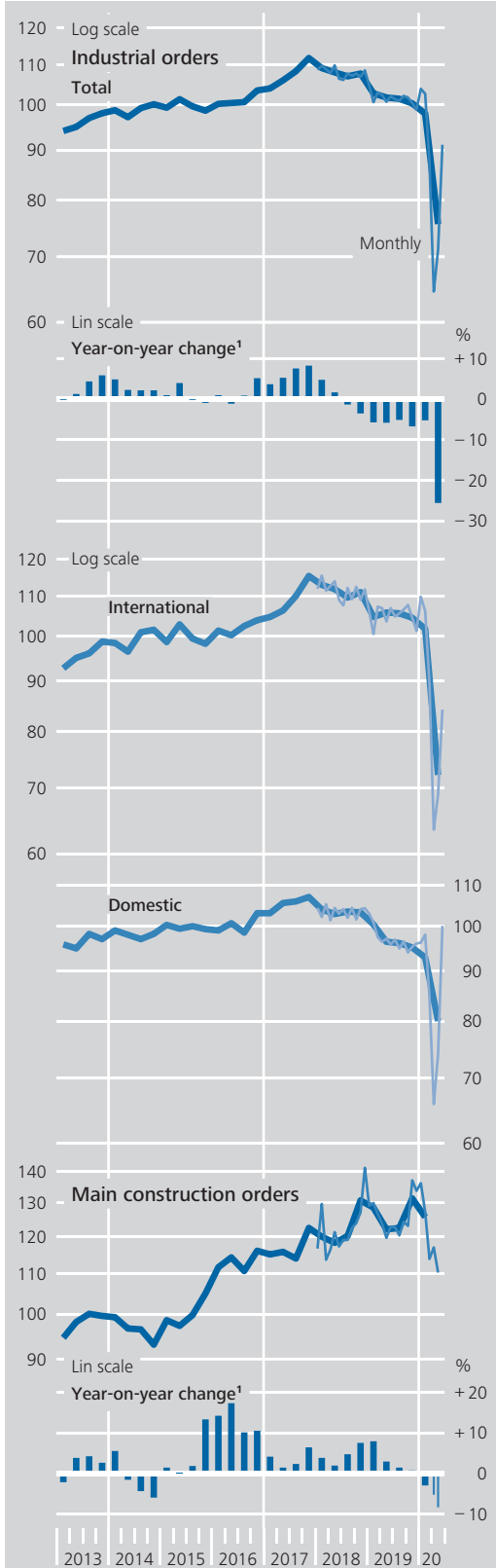
<sup>12</sup> Non-availability of price representatives owing to the coronavirus pandemic played almost no role in the reporting month of July. According to the Federal Statistical Office, only just under 3% of the German HICP basket of goods had to be estimated.

<sup>13</sup> The renewed rise in tax rates from January 2021 would, in purely arithmetical terms, increase the HICP rate by 1.8 percentage points up to June 2021, followed by a positive base effect of also 1.8 percentage points from July 2021. Based on the latest June projection, which expects an inflation rate of 1½%, the HICP rate could therefore climb to just over 3% in the second half of 2021. However, in contrast to this purely mechanical perspective, the changes to the VAT rate will probably not be passed on to consumers in full and there is likely to be a time lag, as already seen in July, which could lead to less pronounced volatility in consumer prices.

<sup>14</sup> The WAI describes how trend-adjusted economic activity has evolved over the past 13 weeks compared with the previous 13 weeks. See Deutsche Bundesbank (2020a). Current figures can be found online at <https://www.bundesbank.de/en/statistics/economic-activity-and-prices/weekly-activity-index/weekly-activity-index-for-the-german-economy-833976>

### Demand for industrial goods and construction services

Volumes, 2015 = 100, seasonally adjusted, quarterly data



Source of the unadjusted figures: Federal Statistical Office.  
 1 Only calendar-adjusted.  
 Deutsche Bundesbank

Sentiment in the German economy has recently brightened significantly. The ifo business climate index partially recovered from its all-time low at the start of the second quarter and rose for the third time in a row in July 2020. However, the individual index components have evolved in very different ways in recent months. Business expectations rose significantly, while the assessment of the current business situation improved perceptibly more slowly. Large differences were observed across the individual sectors. In the manufacturing sector, business expectations and the assessment of the current business situation were particularly divergent. By contrast, enterprises in the retail trade sector were even roughly as positive again in their assessment of the business situation as before the crisis. The hotel and restaurant sector, which had previously been particularly hard hit by the containment measures, recently also reported a massive improvement in its assessment of the business situation, which was nevertheless deep in negative territory and was thus far from its pre-crisis level. Business conditions in the main construction sector improved only marginally; however, even at the lowest point of the recession, they remained well in positive territory.

*Sentiment in the German economy considerably improved*

The orders situation in German industry has improved slightly of late. Following the dramatic downward slide in March and April, incoming orders rose sharply again in May and June in seasonally adjusted terms. However, this only made up for just over two-thirds of the slump caused by the pandemic. The recovery is likely to have continued in July. According to the ifo Institute's survey results, the assessment of the stocks of outstanding orders improved perceptibly at the beginning of the third quarter. However, on average, new orders over the spring months were down on the previous quarter's level by just under one-quarter. Broken down by region, the inflow of new orders from abroad fell particularly sharply, with both demand from the euro area and from non-euro area countries declining to a similar extent. By contrast, the decline in do-

*Recent slight improvement in the orders situation in industry*



mestic orders was noticeably smaller. This discrepancy, however, was partly attributable to large-scale domestic orders. Looking at the industrial sectors, there was a shortage of new orders mainly for enterprises in the intermediate and capital goods sectors. By contrast, the consumer goods sector experienced a markedly smaller reduction in demand for its products.

*Construction sector still in very good shape in Q3*

Construction activity in Germany is likely to remain buoyant in the third quarter of 2020. In April and May – the most recent months for which statistics are available – incoming orders in the main construction sector saw a steep seasonally adjusted fall compared with the previous quarter. This was largely due to weaker demand for construction work in housing and commercial buildings construction, which was probably related to the considerably heightened uncertainty caused by the coronavirus pandemic. However, this decline was from a very high level, meaning that construction firms' order books are likely still well filled. At the same time, the number of building permits for housing construction, which is also an important leading indicator for the sector, rose again over the same period. More timely indicators also signal that construction activity did not decline perceptibly in the period under review. According to the ifo Institute, the utilisation

of equipment in the main construction industry remained much higher than average in July and the reach of orders even rose slightly.

Household consumption is likely to increase sharply in the third quarter of 2020, recouping a large part of the losses suffered previously. In particular, positive stimuli are expected in retail and motor vehicle trade as well as in the hotel and restaurant sector. One important factor here is that the containment measures have been eased considerably and that the labour market outlook for employees has not deteriorated further recently. The temporary reduction in VAT, which was agreed as part of the Federal Government's latest fiscal package, is also helping loosen consumers' purse strings. The consumer climate index, calculated by the Gesellschaft für Konsumforschung (GfK) and forecast for the month of August, recovered further from its record low. There was a particularly significant increase in propensity to purchase in July and a surge in private new passenger car registrations. However, private consumption is likely to initially remain markedly below its pre-crisis level. It is burdened by the still high level of uncertainty, and some areas of consumption are still subject to restrictions relating to the pandemic. This is particularly true of the travel industry, passenger transport and other leisure and cultural services.

*Private consumption is likely to recoup a large part of the pandemic-induced shortfall in Q3*

## ■ List of references

Cleveland, R. B., W. S. Cleveland, J. E. McRae and I. Terpenning (1990), STL: A Seasonal-Trend Decomposition Procedure Based on Loess, *Journal of Official Statistics*, 6, pp. 3-73.

Cox, M., J. Triebel, S. Linz, C. Fries, L. F. Flores, A. Lorenz, D. Ollech, A. Dietrich, J. LeCrone and K. Webel (2020), Täglicher Lkw-Maut-Fahrleistungsindex aus digitalen Prozessdaten der Lkw-Mauterhebung, *Wirtschaft und Statistik*, No 4/2020, pp. 63-76.

Deutsche Bundesbank (2020a), A weekly activity index for the German economy, *Monthly Report*, May 2020, pp. 68-70.

Deutsche Bundesbank (2020b), A description of the method used for the seasonal adjustment of the daily truck toll mileage index, <https://www.bundesbank.de/resource/blob/832910/8c03beb2b30f8f26d8a72286b437916e/mL/lkw-maut-fahrleistungsindex-data.pdf>.

Deutsche Bundesbank (2018), Seasonal adjustment of daily data, Monthly Report, March 2018, p. 40.

European Commission (2020), A European Strategy for Data, <https://ec.europa.eu/digital-single-market/en/policies/building-european-data-economy>.

Eurostat (2015), ESS guidelines on seasonal adjustment, Luxembourg: Publications Office of the European Union.

Federal Employment Agency (2020a), Auswirkungen der Corona-Krise auf den Arbeitsmarkt, Berichte: Arbeitsmarkt kompakt, Nuremberg, July 2020, p. 7.

Federal Employment Agency (2020b), Berichte: Blickpunkt Arbeitsmarkt – Monatsbericht zum Arbeits- und Ausbildungsmarkt, Nuremberg, May 2020, p. 10.

Federal Employment Agency (2020c), Auswirkungen der Corona-Krise auf die Arbeitslosigkeit – Berechnung des Corona-Effekts, Berichte: Blickpunkt Arbeitsmarkt – Monatsbericht zum Arbeits- und Ausbildungsmarkt, Nuremberg, July 2020, p. 12.

Federal Statistical Office (2020a), Gross domestic product in the 2nd quarter of 2020 down 10.1% on the previous quarter, press release No 287 of 30 July 2020, available at: [https://www.destatis.de/EN/Press/2020/07/PE20\\_287\\_811.html](https://www.destatis.de/EN/Press/2020/07/PE20_287_811.html).

Federal Statistical Office (2020b), Impact of the corona crisis on the CPI/HICP price collection, method report of 13 August 2020, [https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/Methods/corona-cpi-hicp.pdf?\\_\\_blob=publicationFile](https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/Methods/corona-cpi-hicp.pdf?__blob=publicationFile).

Ladiray, D., J. Palate, G. L. Mazzi and T. Proietti (2018), Seasonal Adjustment of Daily and Weekly Data, in G. L. Mazzi, D. Ladiray and D. A. Rieser, (eds.), Handbook on Seasonal Adjustment, Luxembourg: Publications Office of the European Union, pp. 757-783.

Ollech, D. (2018), Seasonal Adjustment of Daily Time Series, Deutsche Bundesbank Discussion Paper No 41/2018.