The German economy

Macroeconomic situation

German economy in deep recession

German economic output underwent a massive decline in the first quarter of 2020 owing to the coronavirus pandemic and the measures taken to contain it. According to the Federal Statistical Office's flash estimate, real gross domestic product (GDP) was 2.2% down on the quarter after seasonal and calendar adjustment. The exceptionally steep drop in GDP in the first quarter is all the more notable as economic output had probably still seen broad-based growth in the first two months of that quarter, meaning that the decline was confined to the month of March. Most of the introduced containment measures were still in place in April and substantial restrictions are likely to remain in force subsequently, even though some rules have already been relaxed and further instances of an easing have been announced for the near future. This means that aggregate output in the second quarter will be considerably lower still than in the first quarter as a whole.

Economic slump on a broad front

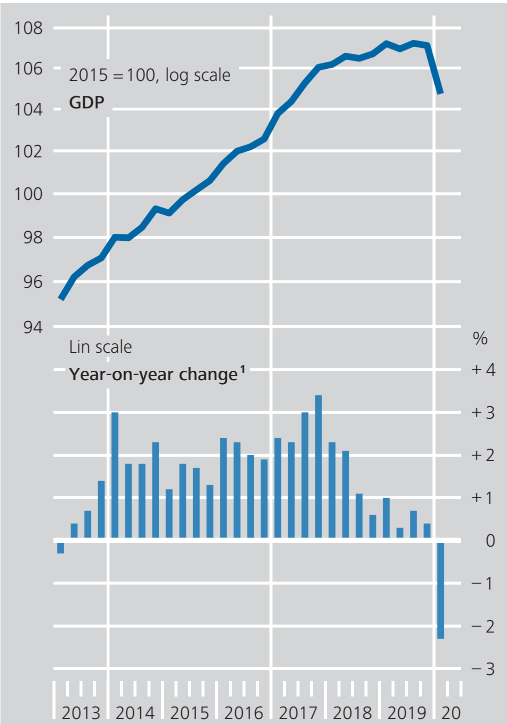
The pandemic and the measures taken to contain it in Germany and abroad have hit domestic economic activity on a broad front. On the one hand, many consumer-related service sectors have been affected, some of which had to interrupt their business activities for some time or severely restrict them. These include the hotel and restaurant sector, large parts of the bricks and mortar retail sector, travel service providers, other leisure and cultural services, and passenger transport. Consumer spending is therefore likely to have declined considerably. The restrictions in Germany have also affected output and sales in the manufacturing sector. The decline in demand from abroad and disruptions to global supply and value chains have caused additional downward pressure in this respect. Exports of goods fell by more than one-tenth in March alone. Furthermore, the abrupt change in the economic environment and the exceptionally high level of uncertainty are likely to have had a dampening effect on private investment in machinery and equipment. By contrast, the construction sector remained on an expansionary path, partly because it was possible for large parts of the construction industry to go on working. In addition, the government increased its consumption expenditure in connection with measures to tackle the pandemic.

Strong decline in exports

German exports contracted strongly in the first quarter of 2020 in real terms. Even though business with China was already depressed, seasonally adjusted exports of goods in the first two months of the year were slightly up on their average in the fourth quarter of 2019, but this was followed by a decrease of more than one-tenth in March. This decline was broadly based regionally. There was a particularly sharp

Overall output

Price and seasonally adjusted



Source of unadjusted figures: Federal Statistical Office. **1** Only calendar adjusted.

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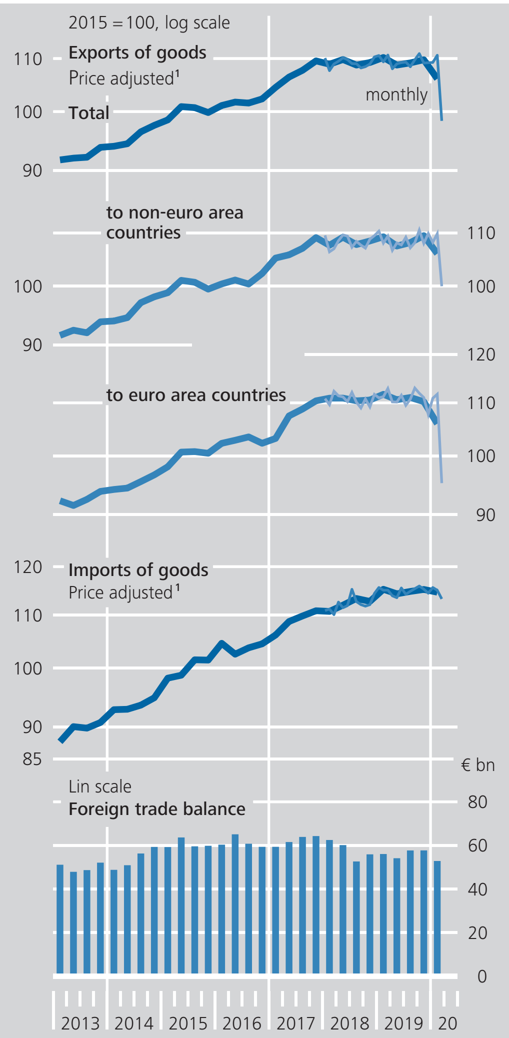
Foreign trade

Seasonally adjusted, quarterly data



Source of unadjusted figures: Federal Statistical Office. **1** Adjusted using the price indices for foreign trade.
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fall in the volume of exports of goods to euro area countries, although exports to non-euro area countries were down considerably, too. What stands out particularly when looking at the first quarter as a whole is the decline of one-eighth in the value of exported goods to the People's Republic of China, whose economy was the first to be affected by comprehensive nationwide containment measures.

Steep decline in private consumption

A steep decline in private consumption is expected for the first quarter of 2020. Price-adjusted retail sales were, in fact, up slightly on the quarter, with opposing developments in various subsectors more or less balancing each other out. Massive declines in purchases of textiles, clothing, footwear and information and communication equipment at retail outlets were offset by a very strong increase in the procurement of food. This was probably due chiefly to extensive stockpiling. Substitution effects are also likely to have played a part in this respect in view of the order to close restaurants. Moreover, households bought significantly more goods online and by mail order. Their spending in other consumption areas was down considerably, however. This affected the hotel and restaurant sector, for example, whose business operations were largely dormant from the second half of March owing to the containment measures. Purchases of passenger cars fresh from the assembly line were also reduced to a serious extent. This is suggested by the number of new motor vehicle registrations by households, which in March contracted by just under one-third in seasonally adjusted terms. The standstill in the case of other consumption-related services, including travel agencies, hairdressers and passenger transport operators, likewise exerted strong downward pressure.

Significant decline in machinery and equipment business investment

Business investment in machinery and equipment is likely to have fallen significantly in the first quarter of 2020. This is suggested mainly by the considerably lower number of new passenger car registrations by business owners, although other capital goods producers likewise reported a decline in the value of their domestic sales in the first quarter.

By contrast, construction investment likely to be clearly higher

By contrast, construction investment is likely to have shown a clear increase in the first quarter of 2020. This is suggested by the figures for nominal turnover in the main construction sector, which are available up to February; on an average of the first two months of 2020, these show a quite considerable and broadly based rise compared with the preceding quarter. Turnover growth will probably have weakened from mid-March as a result of the coronavirus pandemic, but data on output in March indicate that the main construction sector was arguably relatively little affected by the containment measures that were introduced.

Distinct fall in imports of goods

In price-adjusted terms, German imports of goods fell distinctly in the first quarter of 2020. The contraction in the volume of imports from non-euro area countries was somewhat larger than that from euro area partner countries. In this connection, it should be noted that these declines are unlikely to have been solely due to weaker domestic demand. In actual fact, production outages in other countries and border closures in the wake of the pandemic-related measures may also have led to a temporary interruption of supply chains.

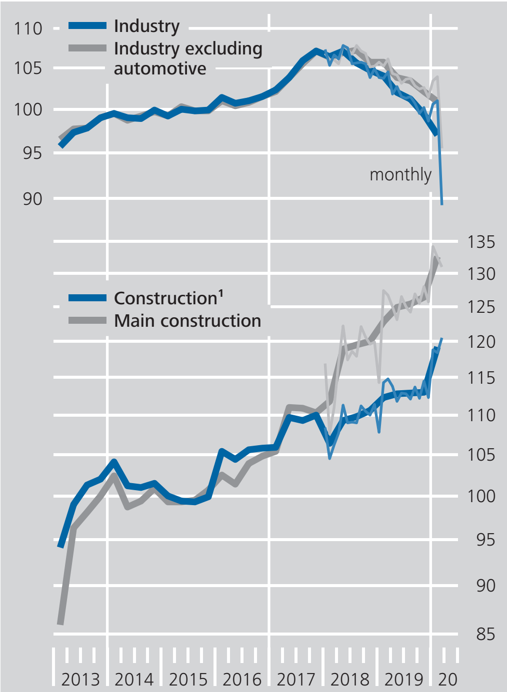
Sectoral trends

Strong decline in industrial output in first quarter

The global restrictions in connection with the coronavirus pandemic have hit German industry hard. After a good start to the year, industrial output slumped in March 2020 and was down on the month by a seasonally adjusted 11½%. In the first quarter of 2020 as a whole, output, at 2½%, was also still considerably below its level in the final quarter of 2019. The crisis left a particularly deep mark on the automotive sector (-9½%), where restrictions introduced in Germany and abroad are likely to have led to a partial failure of sales channels. In view of the rapid economic slump and greatly heightened uncertainty, it is also conceivable that many potential passenger car buyers decided to defer their purchases. Furthermore, border closures probably made the supply of inputs and intermediate goods much more difficult. In line with this, overall it was capital goods production which experienced the strongest decline. Consumer goods output was also down substantially on its level in the previous quarter. By contrast, manufacturers of intermediate goods in fact reported a marked growth in output in the quarter as a whole, although the final month of the reporting quarter saw a quite considerable fall in production here, too.

Output in industry and in construction

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



Source of unadjusted figures: Federal Statistical Office. **1** Main construction sector and finishing trades.
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Slump in capacity utilisation

According to ifo Institute data, capacity utilisation of tangible fixed assets in manufacturing fell dramatically at the start of the second quarter. This meant that, overall, it was only marginally above its record low during the Great Recession in 2009. Manufacturers of capital goods reported particularly low capacity utilisation. Capacity utilisation of tangible fixed assets in the consumer goods sector likewise reached a new low. By contrast, manufacturers of intermediate goods have so far managed to utilise their capacities to a significantly greater extent than during the last severe recession.

Construction boom continues in spite of coronavirus crisis

The construction boom in Germany defied the coronavirus crisis in the first quarter of 2020. This was mainly due to the fact that construction activity in Germany was allowed to continue largely unhindered subject to compliance with certain hygiene regulations. Benefiting from warmer-than-average weather conditions, construction output in the reporting period showed a very strong 5½% increase on the quarter, for example. Similarly strong growth in output was recorded in both the finishing trades and the main construction sector. In line with this, according to the ifo Institute, capacity utilisation in the main construction sector climbed to a new record high in the reporting period.

Services sector particularly hard hit by pandemic

The measures introduced in Germany to contain the coronavirus pandemic hit the services sector with great force in March. The declines in sales in this sector were probably spread quite unevenly across the various sectors. The same was true of the retail trade, where – in spite of the steep decline in March – price-adjusted sales in the first quarter of the year were in fact slightly up on the final quarter of 2019 in seasonally adjusted terms. Clear growth in the food, beverages and tobacco as well as online and mail order subsectors offset the slump in sales of textiles, clothing and footwear, and information and communication technology (ICT) equipment due to the ordered closure of businesses. Wholesale business, for which statistical data on turnover are available only up to February, is likely to have suffered markedly, above all owing to the weakness of industry. This, at least, is suggested by the assessment of the business situation in this sector which, according to the ifo Institute, was deteriorating from March onwards. The economic constraints that were introduced are likely to have had a comparatively strong impact on motor vehicle sales. This is also implied by the number of new car registrations, which was down by more than one-third in March. Other services sectors, too, suffered massively from the pandemic-related containment measures. According to the ifo Institute, the assessment of the business situation in this sector was already deteriorating to a disproportionately large extent in March. In the hotel and restaurant sector, where the introduction of general contact restrictions led to a virtually complete cessation of economic activity, sentiment was already in free fall at that point.

Labour market

Labour market hit significantly by effects of pandemic measures

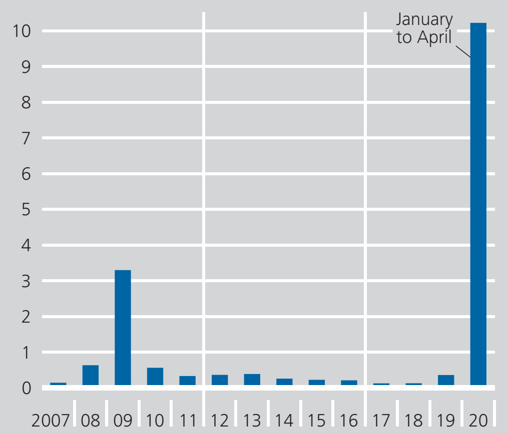
The measures to contain the pandemic are having a considerable impact on the labour market. The indicators do not give a full picture so far, however, and there is still major uncertainty about the scale of the effects. The latest data on unemployment and some leading indicators already relate to developments in April. The position for data on employment is March, however, and as long ago as February for the details. The time lag for data on the actual use of short-time work is especially long, as firms often initially register for short-time work as a precaution and then leave a decision on whether to implement it till later. An application for compensation has to be submitted to the Federal Employment Agency within three months. The number of persons notified for short-time work has already reached an unprecedented level. Even so, there is still considerable uncertainty about the actual number of persons in short-time work.

Short-time work is the adjustment tool of the hour

It is likely that the short-time work scheme (Kurzarbeit) is currently playing a significantly greater role as an adjustment tool for reducing working hours than it did in the Great Recession of 2008-09. Just under 1½ million people were receiving this wage substitute when the recession was at its peak, for an average reduction in working hours of around one-third. Since then, the number of employees subject to social security contributions has risen by more than 6 million to 33.8 million. Unlike the last time around, when it was predominantly the manufacturing sector that made use of short-time work, large swathes of the services sector are also being affected this time. Furthermore, the loss of work per person owing to mandatory business closures is likely to be significantly higher than it was last time, at least in the short term. From the beginning of March to 26 April, the Federal Employment Agency processed 10.14 million applications for short-time work. The number of notifications is merely a ceiling, as prior notification of short-time work is a necessary condition for enterprises to subsequently claim short-time working benefits. Assuming that the current registration pattern mirrors that in the past, around 6 million people may have been in short-time work in April. A survey from the first half of April conducted on behalf of the Hans Böckler Foundation suggests somewhere in the region of 4 million short-time workers in Germany nationwide.[1] First, the number of short-time workers will probably go back down again in the near future owing to the gradual opening of business life in the services sector. Second, given a continuing weak international environment, it may be assumed that short-time work will soon be playing an increasingly important role in manufacturing in particular. The widespread working time accounts and overtime hours in this sector are likely to be dropping rapidly at present. These have to be reduced first before use can be made of short-time working.

Applications for short-time work

Number of persons in millions, annual total



Source: Federal Employment Agency
Deutsche Bundesbank

Sudden sharp rise in unemployment in April

In the first quarter of this year, registered unemployment remained largely unchanged in seasonally adjusted terms. Taking an average of the first quarter, where the last reporting date of 12 March was still prior to the introduction of the far-reaching contact restrictions, 2.27 million persons were registered as unemployed. In April – the cut-off date was 14 April – seasonally adjusted unemployment jumped by 373,000 on the month to 2.64 million. This pushed up the unemployment rate by 0.8 percentage point to 5.8%. This rise was due more or less entirely to the coronavirus pandemic, although this increase overstates the economic consequences. According to calculations by the Federal Employment Agency, almost half of the increase in unemployment can be explained by statistical one-off effects alone.[2] Leaving aside short-time work, for which the data are not yet available, total underemployment as calculated by the Federal Employment Agency is less influenced by these effects; at 244,000 persons, it went up considerably – but much less strongly – than registered unemployment. This increase was due not only to the higher number of persons registering as unemployed, but also to persons who were out of work not being recruited into employment. Especially pronounced, at 234,000, was the increase in the number of unemployed persons claiming insurance benefits, almost three-quarters of which was for economic reasons. By contrast, the rise in the number of unemployed persons receiving the basic welfare allowance was due chiefly to the reduction in labour market policy measures.

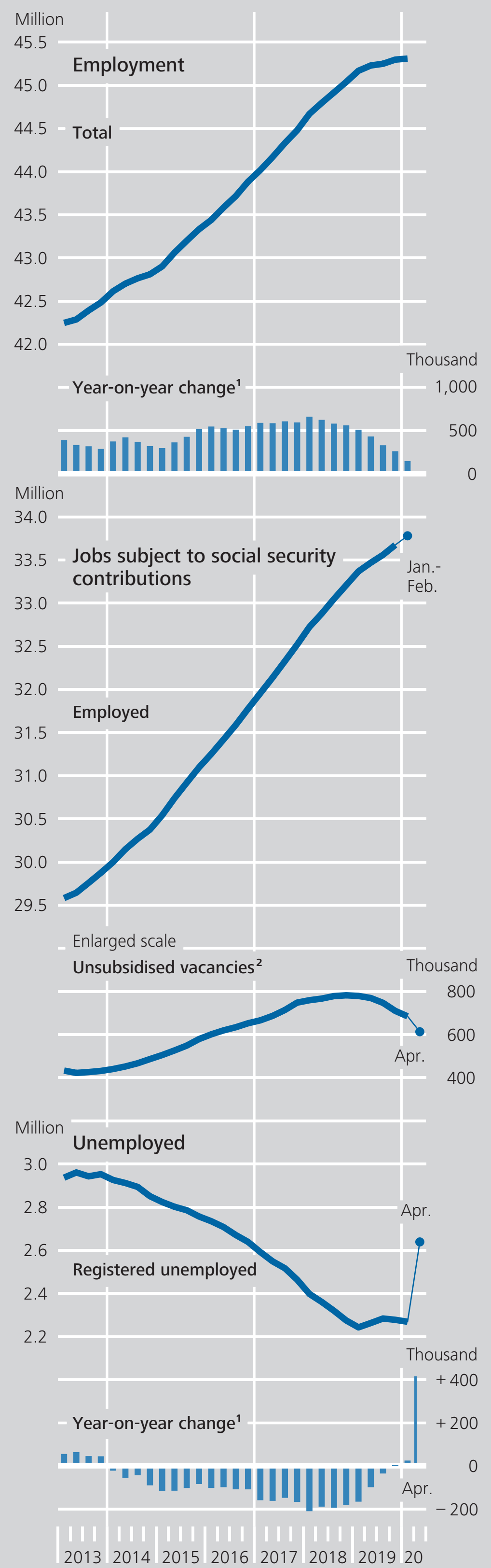
Ten years of continuous employment growth came to an end in March

The restrictions in economic life since mid-March have become evident in the employment statistics only to a small degree so far. The total number of persons in work in Germany declined slightly in March, marking the end of ten years of virtually uninterrupted employment growth. In seasonally adjusted terms,

1 See Hans Böckler Foundation (2020)
2 The fact that many labour market policy measures could not be carried out owing to contact restrictions was a key factor in the rise in unemployment. As persons affected by this are not available on the labour market during the measures and therefore not included in the registered unemployment figure within the meaning of Section 16 of the Third Book of the Social Security Code – although they are indeed included in total underemployment – such persons were newly registered as unemployed in April owing to the coronavirus pandemic. Another effect lifting the unemployment figure is the absence of availability checks by the Federal Employment Agency, which in normal circumstances would have led to persons being taken off the unemployment register because of their unavailability. See statistics provided by the Federal Employment Agency (2020).

Labour market

Seasonally adjusted, quarterly data



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

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employment was down by 41,000 persons, or around 0.1%, on the month. This trend reversal is primarily based on the developments for payroll employees, with the number of persons employed in relatively unstable low-paid parttime jobs possibly having undergone a marked reduction first. There was a fall in the number of self-employed persons in March, as was already the case in the months before.

Slump in leading indicators

In April, the leading labour market indicators reflected the gloomy outlook for the next few months. The ifo employment barometer, which surveys the recruitment plans of trade and industry over the coming three months, plunged deep into negative territory in all the subsectors, after the March survey had only partly reflected the measures to combat the pandemic. The number of job vacancies reported to the Federal Employment Agency was 11% down on the average of the first quarter. As many enterprises probably do not, in the present situation, verify the accuracy of the current job vacancy information reported to the Federal Employment Agency, the number of posts that are actually vacant is likely to be smaller. This is also indicated by the sharp decline in the intake of new job offers, which more than halved, as well as the survey on jobs on offer in the economy as a whole, which was already down by one-fifth in the first quarter. As a result, the Federal Employment Agency's BA-X job index, which records stock figures as well as the inflow of reported vacancies, plummeted. The survey-based IAB labour market barometer on employment and unemployment, which focuses on various regional effects, likewise showed an exceptionally sharp fall.

Wages and prices

Growth in negotiated pay rates and actual earnings slowed in the first quarter

In the first quarter of 2020, negotiated pay rates rose slightly more slowly than in the fourth quarter of 2019. This was due, first, to the moderate incremental increases from the longer-term collective wage agreements of previous years and, second, to the low wage agreements in new settlements. Including ancillary agreements, negotiated rates of pay rose by 2.4% year on year in the first quarter, following growth of 2.5% in the final quarter of 2019. The increase in actual earnings is likely to have been considerably smaller still owing to the economic downturn and the resulting short-time work in many industries as well as the reduction in paid overtime.

Pay round of 2020: priority is protecting jobs

The severe recession is also gradually having an impact on agreements in the current wage round. The focus shifted from significant improvements in pay to protecting jobs. In the most recent collective wage agreement in the metalworking and electrical engineering industries, for instance, the trade union IG Metall decided not to make any demands for regular wage increases. Instead, management and the trade unions agreed to top up earnings for employees in short-time work to a level of 80% of their previous net remuneration. In addition, employees are entitled to additional paid days off to care for young children. In return, firms were given greater leeway to make working hours more flexible, for instance by reducing weekly working hours to up to 28 hours with partial wage compensation. Other industries have similar arrangements for topping up short-time working benefits. As a result of contact restrictions and ongoing economic uncertainty, some wage negotiations, like those in the main construction sector, were postponed.

Despite plummeting oil prices, the annual HICP rate went up perceptibly in the first quarter of 2020

In the first quarter of 2020, consumer prices (HICP) continued to increase moderately, by a seasonally adjusted 0.3% on the quarter. Food prices, in particular, went up markedly, and prices of industrial goods excluding energy rose somewhat again, while the previously strong growth in service prices abated. Lower energy prices had a dampening impact, although they did not fall as sharply in the reporting period as might have been expected given the massive slump in crude oil prices. Looking at the year-on-year figure, headline inflation still gained significant momentum, at 1.5%, compared with 1.1% in the final quarter of 2019. Excluding energy and food, however, inflation fell from 1.6% to 1.3%, partly as a result of lower travel prices.

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.

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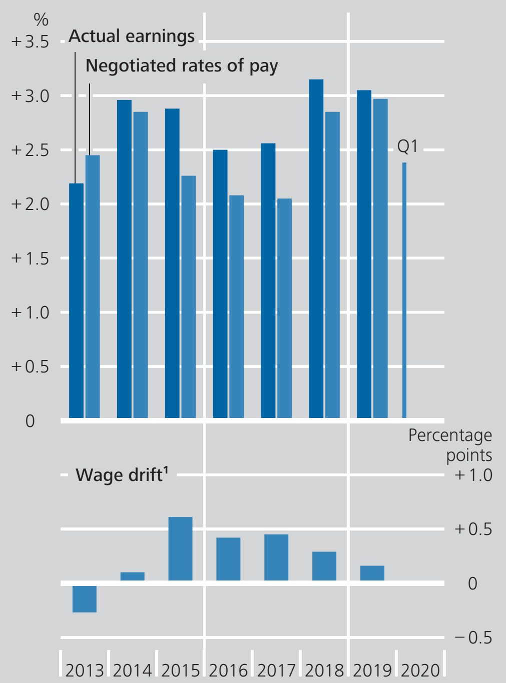
So far, COVID-19 is having no significant impact on the inflation trend or the quality of HICP data

Up to the end of March, the COVID-19 pandemic and the measures taken to contain it were reflected in the inflation rate mainly in the form of lower energy prices. By contrast, there was no clearly identifiable change in the general price trend. This is likely to be related to the fact that the global containment measures have a multiplicity of price effects, some of which work in opposite directions. Furthermore, certain prices – especially in the leisure

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). **1** The wage drift is calculated as the annual change in the ratio of actual earnings to negotiated rates of pay.

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sector – are rarely adjusted. Nor were there any significant restrictions on the collection of price data until March. This took place around the middle of the month, which, in some cases, was before stringent restrictions were imposed throughout Germany.[3] It was only in April that there were mounting reports of difficulties in the on-site collection of prices and the non-availability of individual price representatives. This chiefly concerned the services sector (e.g. visits to the hairdresser) and travel (e.g. package holidays and hotel accommodation). In some cases, the price representatives in question had to be approximated using alternative sources or estimated on the basis of past values in accordance with harmonised European methods.[4] According to the Federal Statistical Office, HICP quality has been assured to date.[5] However, when interpreting HICP figures over the next few months, greater attention should be paid to potential distortions as a result of such imputations.[6]

April inflation markedly lower owing to energy

Against this backdrop, inflation declined to 0.8% in April, down from 1.3% in March, reflecting a further sharp drop in energy prices.[7] By contrast, food prices rose significantly. The core rate, i.e. the annual inflation rate excluding energy and food, weakened from 1.3% to 1.0%. However, this was mainly due to the evident decline in prices for clothing and package holidays, with the current travel restrictions meaning that the latter are based on a pure extrapolation using the monthly rate for April 2019. Over the next few months, the recent sharp drop in the oil price is likely to continue to significantly dampen inflation rates.

Order books and outlook

German economy in accelerated tailspin in the second quarter of 2020

The German economy remains firmly in the grip of the coronavirus pandemic in the second quarter. Economic output is likely to be significantly lower still than the average of the already depressed first quarter. This is mainly due to the fact that the containment measures will have an impact for a considerably longer period than in the first quarter, when they primarily affected the second half of March. Despite the instances of easing that have been initiated, social and economic life in Germany is still very far from a situation that used to be regarded as normal. The available economic indicators paint a correspondingly gloomy picture. For instance, sentiment among both enterprises and consumers recently fell to its lowest level since observations began in the Federal Republic of Germany. Timely high-frequency indicators also point to economic activity in the second quarter having remained strongly subdued thus far

3 See also Federal Statistical Office (2020a).
4 See Federal Statistical Office (2020b). According to this information, around 27% of the German HICP basket was based on estimates in April 2020.
5 See Federal Statistical Office (2020c).
6 Extrapolating with constant past index values may, for example, lead to a tendency towards zero inflation. Adopting the previous year's monthly inflation rates for goods with a pronounced seasonal profile may cause calendar effects to be neglected.
7 The rate of inflation as measured by the consumer price index (CPI) was 0.9%, down from 1.4%.

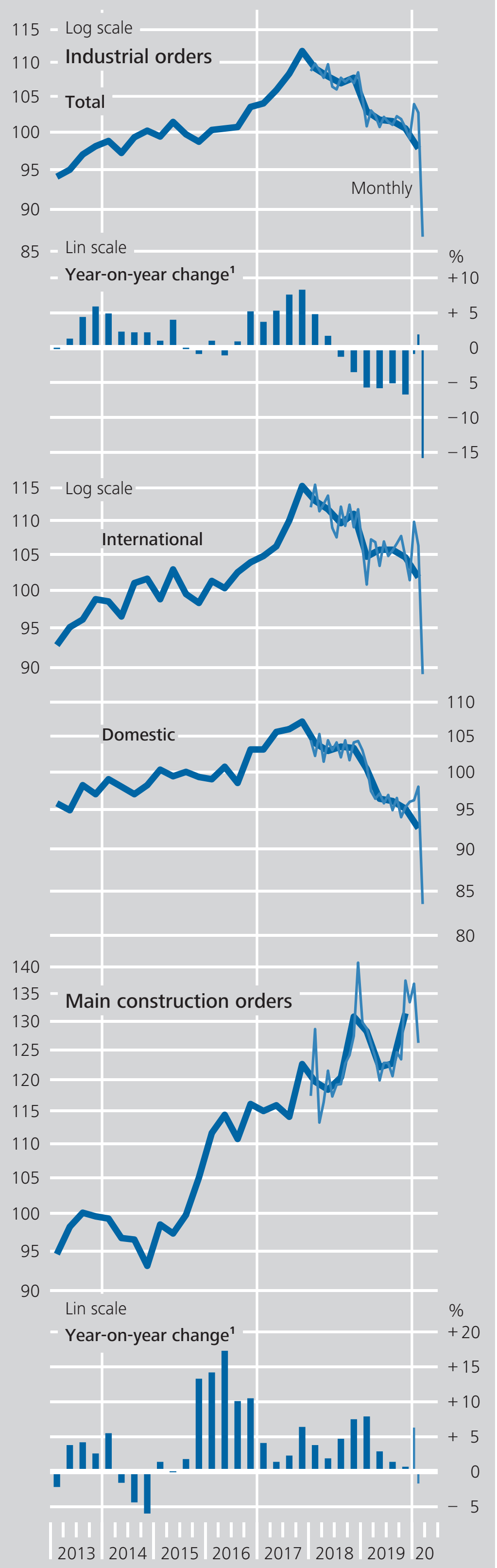
(see also the box on pp. 68 ff.). This applies both to the services sector, where, for a time, business activity was – and, in some cases, still is being – massively restricted by the containment measures put in place, and to industry, which has to cope with a slump in incoming orders from Germany and abroad. This, in conjunction with lower capacity utilisation and the extremely high uncertainty, suggests that commercial investment in machinery and equipment will be sharply curtailed in the second quarter. By contrast, the construction sector appears to be comparatively robust. In addition, government activities are providing positive stimuli.

Sentiment in the German economy at all-time low

Sentiment in the German economy deteriorated abruptly and to an unprecedented extent as a result of the coronavirus pandemic. The business climate index fell to an all-time low in April 2020 according to the ifo Institute. Though the assessment of business conditions was still marginally above the record low experienced during the Great Recession in 2009, business expectations were more pessimistic than ever before. Broken down by sector, the business climate in the services sector (excluding trade) was well below the level seen during the last recession. This pattern was especially pronounced for hotel and restaurant services, which were hit harder than most by the contact restrictions imposed to curb the spread of the coronavirus. Sentiment in the retail and wholesale trade also reached new lows, although they are comparable to the lows seen during past downturns. Industrial business confidence deteriorated sharply, but was still slightly higher than at its all-time low some 11 years ago when industry was at the centre of the economic downturn. Nonetheless, short-term export and output expectations both reached a new all-time low. Surveys in the main construction sector testify to somewhat less pessimistic sentiment than the average of the other industries. However, this can be attributed mainly to the still fairly positive assessment of business conditions. By contrast, construction enterprises have never looked to the

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.
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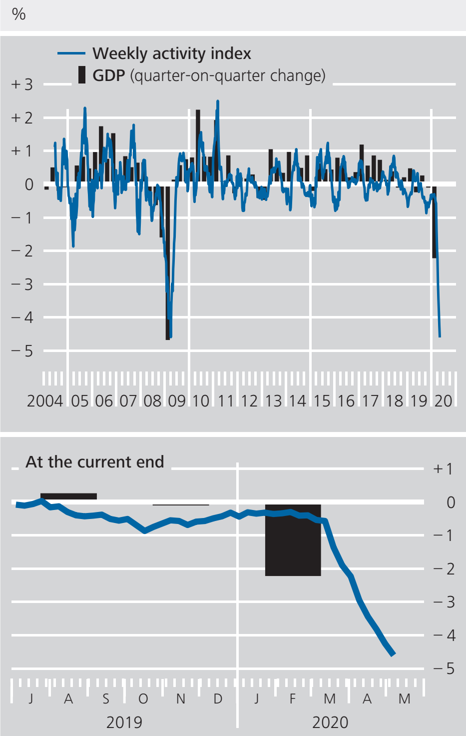
A weekly activity index for the German economy

The coronavirus pandemic and the measures adopted to contain it have plunged the German economy into recession with astonishing speed. Nevertheless, there still exists major uncertainty about the exact scale of the pandemic's impact on the economy. The speed of the slump and the lack of experience concerning the nature of the underlying economic shocks make it especially difficult to assess the economic consequences in a timely manner. However, particularly in the current situation, an assessment of this kind is an essential requirement for making sound economic and health policy decisions.

Traditional models for short-term macroeconomic analysis and forecasting rely on the dynamic relationships that the indicators have shown with each other in the past.[1] The unprecedented nature of the current crisis is likely to have changed these relationships, meaning that the models are arguably currently not appropriately specified for reliable estimates of the current situation or for short-term forecasts. Added to this is the fact that most economic indicators are published with a – sometimes marked – time lag. For example, key figures on industrial output in March – the point at which the coronavirus pandemic first began to have a major impact on economic activity in Germany – did not become available until early May.[2] Economic developments at the current end are changing so rapidly at the moment, however, that there is a need for indicators to be available more quickly.

A new weekly activity index (WAI) for Germany has been developed at the Bundesbank to assess the impact of the COVID-19 crisis on economic activity in a timely manner.[3] The current situation and initial results are discussed below. Based on an index published by the Federal Reserve Bank of New York,[4] the WAI is composed of seven high-frequency (recorded daily and weekly), rapidly available indicators. These are augmented by data on monthly industrial output and quarterly gross domestic product (GDP). One key selection criterion for in-

Weekly activity index and GDP growth



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1 See Deutsche Bundesbank (2018).
2 Survey-based indicators – on the business climate, for instance – also show a certain delay in their publication and/or are not collected frequently enough to provide an instant reflection of quickly changing developments. For instance, the monthly ifo business climate index for March, which was published on 25 March, was still based in part on business survey responses that had been submitted prior to the introduction of the far-reaching lockdown measures. It was therefore only the publication of the April figure that revealed the full extent of the slump in sentiment among German firms.
3 These insights are based on current work in progress; see Eraslan and Götz (2020).
4 See Lewis et al. (2020).

cluding an indicator in the index was that it should display sufficient explanatory power in relation to economic activity. Furthermore, the indicators have been compiled in such a way that they cover as many different economic sectors as possible. The high-frequency indicators electricity[5] and toll (road charge)[6] capture the production sector, while G-unemployment[7] and G-short-time work,[8] variables that are produced from Google searches, relate to the labour market. The toll (road charge) indicator also reflects the trade sector. The flights indicator[9] creates a point of reference for global activity, the air pollution variable[10] serves as a metric for mobility, and the cash indicator[11] captures a part of consumer behaviour. As some indicators display a marked seasonal or calendar pattern, they are subjected to seasonal and calendar adjustment in advance.

The WAI is constructed in two stages: first, the indicators used are made comparable by means of data transformation. The outcome is a (weekly available)[12] 12-week growth rate of its rolling 12-week averages for each high-frequency indicator. The rate may therefore be interpreted at the end of the quarter as a quarterly growth rate. The dataset that is now available contains not only these weekly indicators but, with industrial output and GDP, also a monthly indicator and a quarterly indicator. In a second step, the WAI is calculated by means of a principal component analysis using the EM algorithm[13] as a weekly factor of this mixed-frequency dataset. As a by-product, the EM algorithm also provides factor-based, weekly estimates for missing observations of those indicators that enter into the dataset at a lower frequency, i.e. industrial output and GDP. A rapidly available estimation for GDP growth at the current end can thus also be derived from the WAI.

Looking back over a longer period of time, the WAI displays a close coincident movement with the quarterly growth rate of GDP.[14] As a result of the standardisation performed on the data, the values of the WAI are centred around zero; in other words, they are to be construed as deviations from their long-term average. Consequently, positive values point to an above-average increase in real economic activity, whereas a negative WAI indicates a below-average growth or decline in economic output. Generally speaking, the values of the WAI may be interpreted as the rolling 12-week growth rates of real economic activity. Thus, an index value of 3 in any given week indicates that the average growth rate of economic activity over the past 12 weeks in comparison with the preceding 12-week period was 3 percentage points above the long-term average. At the end of the quarter, this approximately corresponds

5 Realised electricity consumption (excluding industrial grids and producers' own use, in MWh, source of unadjusted figures: Federal Network Agency (Bundesnetzagentur (2020)).
6 Daily truck toll mileage index (Lkw-Maut-Fahrleistungsindex) (source of unadjusted figures: the Federal Office for Goods Transport (Bundesamt für Güterverkehr (BAG)), Federal Statistical Office (2020d)).
7 Google search term "unemployment" (relative search frequency, source of unadjusted figures: Google-Trends (2020)).
8 Google search term "short-time work" (relative search frequency, source of unadjusted figures: Google-Trends (2020)).
9 Worldwide number of flights (comprises inter alia passenger and cargo flights, source of unadjusted data: Flightradar24 (2020)).
10 Nitrogen dioxide concentration in the air (average of all available cities and towns in Germany, source of unadjusted values: European Environmental Agency (EEA) (2020)).
11 Cash withdrawals (in euro, source: Bundesbank calculations).
12 A weekly average was previously formed for daily data so that they are available at weekly frequency.
13 EM is here an abbreviation of "expectation maximisation". See Dempster et al. (1977); Stock and Watson (2002).
14 The correlation between the quarter-end values of the WAI and the quarterly GDP growth rate over the entire estimation period (mid-2004 to the present) amounts to around 0.9.

to the quarterly growth rate of economic activity according to the WAI.

In the current situation, the WAI and the estimate of GDP growth derived from it supply valuable and, above all, timely information on how the coronavirus pandemic is impacting economic activity in Germany. From mid-March, the WAI shows a dramatic decline in real economic activity: the index value for the last week in March stands at -2.2, which corresponds to a WAI-implied decline in GDP of 1.9% in the first quarter compared with the preceding quarter. This means that the signal given by the WAI at the end of March was quite close to the Federal Statistical Office's flash estimate.[15] During the month of April, the WAI showed a further marked fall and amounts to -4.6 at the current end.[16] This suggests that economic activity in Germany continued to slow significantly up to the middle of May.

15 According to the Federal Statistical Office's flash estimate of 15 May 2020, the first quarter saw a 2.2% decline in real GDP after seasonal and calendar adjustment compared with the preceding three-month period.
16 Last updated: 12 May 2020.

future with less confidence than at the end of the period under review.

Orders situation in industry has deteriorated considerably

The orders situation in German industry deteriorated markedly in March after a good start to the year. As a consequence, average industrial orders in the first quarter of 2020 also fell sharply on the quarter. Broken down by region, compared with the first two months of the quarter, strong negative impulses in March came chiefly from demand in the euro area, which was especially hard hit by the coronavirus pandemic. However, the volume of new orders from within Germany and from non-euro area countries also shrank at a double-digit rate. Looking at the various sectors of industry, incoming orders in the capital goods sector fell quite considerably in March – again compared with the first two months of the quarter. Here, weak demand in the automotive industry had a particularly pronounced impact; this sector was disproportionately hard hit by the slump in demand in the wake of the pandemic as well as by disruptions of international supply chains, in part as a consequence of temporary closures of borders. Manufacturers of intermediate goods also reported a sharp fall in new orders. By contrast, demand among producers of consumer goods remained largely at the same level as in the two previous months. However, this was due to incoming orders in the pharmaceuticals industry, which rose sharply, presumably as a result of the pandemic. Ifo Institute surveys also show a quite considerable fall in incoming manufacturing orders overall at the end of the period under review.

Construction industry comparatively robust

In the second quarter of 2020, the German construction industry is likely to prove visibly more robust in the face of the coronavirus crisis than other sectors. Output is likely to be down on the first quarter, which benefited from the mild weather. The contact restrictions that were imposed dampened productivity in this sector, and the closing of borders may have significantly aggravated the labour shortage in the industry. Furthermore, the containment measures are likely to have resulted in delays in the issue of new building permits. However, operations appear to have continued as normal on German building sites. This is evident, above all, in the utilisation of machinery and equipment in the main construction sector, which ifo Institute data for April 2020 show to have been only marginally shy of the high marked shortly after the new year. In addition, construction firms' order books were in excellent shape shortly before the onset of the crisis. Averaged across January and February – the latest months for which statistical data are available – incoming orders in the main construction sector remained at the exceptionally high level of the previous quarter in seasonally adjusted terms. In line with this, the reach of orders in the main construction sector remained very high into April, according to the ifo Institute.

Private consumption particularly hard hit by pandemic containment measures

Private consumption has been particularly hard hit by the measures to contain the coronavirus pandemic. In April especially, they resulted in a sharp curtailment of consumers' consumption options and, consequently, probably also consumer spending. In the meantime, some of the constraints have been eased considerably. Nonetheless, consumer behaviour is unlikely to return to normal rapidly in the second quarter given the ongoing epidemiological risk and a dramatic deterioration in the outlook for the labour market and incomes. Recent surveys by the market research institution Gesellschaft für Konsumforschung (GfK) point in a similar direction. According to the surveys, consumers' income expectations and their propensity to purchase, in particular, were in free fall in April. As a consequence, the GfK consumer climate index forecast for the month of May fell to its lowest level since the time series began in 1983.

Recovery on the cards, but scale and speed uncertain

There is currently much to suggest that macroeconomic developments will pick up again over the course of the second quarter as measures are eased and that a recovery will gather pace. However, there is a very high degree of uncertainty about what lies ahead for the economy. This will depend, along with other factors, not only on the evolution of the pandemic and the measures taken to contain it, but also on the resultant changes in consumption and investment behaviour.

List of references

Dempster, A.P., N.M. Laird and D.B. Rubin (1977), Maximum Likelihood from Incomplete Data via the EM Algorithm, Journal of the Royal Statistical Society: Series B (Methodological), 39: 1-22.

Deutsche Bundesbank (2018), Models for short-term economic forecasts: an update, Monthly Report, September 2018, pp. 15-28.

Eraslan, S. and T. Götz (2020), An unconventional weekly economic activity index for Germany, mimeo.

European Environmental Agency (EEA) (2020), concentration of nitrogen dioxide in the air, available for download at https://www.eea.europa.eu/themes/air/air-quality-and-covid19

Federal Network Agency (2020), Realisierter Stromverbrauch, available for download at https://smard.de/home/downloadcenter/download_marktdaten/726

Federal Statistical Office (2020a), Inflation rate at +1.4% in March 2020, press release no 132 of 16 April 2020, https://www.destatis.de/EN/Press/2020/04/PE20_132_611.html;jsessionid=9C797356F815B503B73C41A2F7291AF7.internet8731

Federal Statistical Office (2020b), Impact of the corona crisis on the CPI/HICP price collection in reporting month April 2020, method report of 14 May 2020, https://www.destatis.de/EN/Themes/Economy/Prices/Consumer-Price-Index/Methods/corona-cpi-hicp.pdf?__blob=publicationFile

Federal Statistical Office (2020c), Inflation rate at +0.9% in April 2020, press release no 165 of 14 May 2020, https://www.destatis.de/EN/Press/2020/05/PE20_165_611.html

Federal Statistical Office (2020d), truck toll mileage index, available for download at https://www.destatis.de/DE/Themen/Branchen-Unternehmen/Industrie-Verarbeitendes-Gewerbe/Tabellen/Lkw-Maut-Fahrleistungsindex-Daten.html

Flightradar24 (2020), number of flights around the world, available for download at https://www.flightradar24.com/data/statistics

Google-Trends (2020), Google search term "unemployment" and "short-term work", available for download at https://trends.google.de/

Hans Böckler Foundation (2020), Corona-Krise: 14 Prozent in Kurzarbeit -40 Prozent können finanziell maximal drei Monate durchhalten – Pandemie vergrössert Ungleichheiten, press release of 21 April 2020.

Lewis, D.J., K. Mertens and J.H. Stock (2020), Weekly Economic Index, https://www.newyorkfed.org/research/policy/weekly-economic-index

Statistics provided by the Federal Employment Agency (2020): Auswirkungen der Corona-Krise auf die Arbeitslosigkeit – Berechnung des Corona-Effekts, Berichte: Blickpunkt Arbeitsmarkt – Monatsbericht zum Arbeits- und Ausbildungsmarkt, Nuremberg, April 2020, pp. 12 ff.

Stock, J.H. and M.W. Watson (2002), Macroeconomic Forecasting Using Diffusion Indexes, Journal of Business & Economic Statistics, 20:2, pp. 147-162.