

■ The German economy

■ Macroeconomic situation

Distinct decline in German economic output towards end of 2021

Economic activity in Germany declined markedly in the fourth quarter of 2021, having shown strong growth in the third quarter. According to the Federal Statistical Office's flash estimate, real gross domestic product (GDP) shrank by 0.7% on the quarter after seasonal adjustment.¹ It was thus down by 1.5% on its pre-crisis level in the fourth quarter of 2019. Real GDP grew by 2.8% in 2021 as a whole, having fallen in 2020 as a result of the pandemic. The preliminary annual outturn was revised upwards slightly.

Resurgence of pandemic depressed services sector and private consumption; industrial production and exports up despite ongoing issue of serious supply bottlenecks

The decline in economic output in the fourth quarter of 2021 was largely due to the resurgence of the pandemic. The resulting containment measures and changes in behaviour hit some services sectors hard. In addition, it appears that activity in the construction sector remained lacklustre in spite of high demand. The construction sector is currently experiencing a lack of labour and a major – albeit decreasing – materials shortage. By contrast, industry made a positive contribution. In the first three quarters of 2021, growing bottlenecks in the supply of intermediate goods had curbed industrial production despite order books being very well filled. Although surveys indicated that enterprises still considered the supply problems to be severe in the fourth quarter, the increase in industrial production suggests that they eased somewhat. On the expenditure side of GDP, one particular way in which the resurgence of the pandemic was reflected was in a clear decline in private consumption. Government consumption rose, however, probably in connection with more vaccinations and tests. Investment in machinery and equipment as well as exports are also likely to have grown in the

wake of positive developments in industry. Aggregate economic output is likely to decline again markedly in Q1 2022 due to the pandemic before picking up sharply in Q2.

Goods exports were up significantly in the fourth quarter of 2021 in price-adjusted terms. The rise is in line with high foreign demand and the latest expansion in industrial output. Broken down by region, exports to euro area countries and non-euro area countries contributed to the growth in equal measure, with the increase in the value of exports broadly based in regional terms. Broken down by category of goods, exports of capital goods recorded considerable growth, particularly for motor vehicles and motor vehicle parts, according to the price-adjusted figures available up to November. Exports of consumer goods were clearly higher, although slightly fewer pharmaceutical prod-

Goods exports up significantly

Aggregate output

Adjusted for price, seasonal and calendar effects



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

¹ Seasonal adjustment here and in the remainder of this text also includes adjustment for calendar variations, provided they can be verified and quantified.



ucts were exported. Exports of intermediate goods edged up slightly.

Investment in new machinery and equipment likely to have risen

Investment in new machinery and equipment is likely to have risen in the fourth quarter. The slight easing of supply bottlenecks and increased capacity utilisation in manufacturing are likely to have boosted investment activity. Manufacturers of capital goods experienced a steep rise in domestic sales. In addition, the value of capital goods imports climbed strongly according to the figures available up until November. Enterprises are likely to have scaled back investment in their fleets of vehicles, however. This is indicated by the number of com-

mercial passenger vehicle registrations and registration figures for commercial vehicles, which dropped sharply in the fourth quarter.

Construction investment is likely to have remained lacklustre in the final quarter of 2021. Sales figures in the main construction sector available up to November increased strongly on the previous quarter in terms of value, but in real terms the rise was significantly smaller due to high price increases. Whilst investment in commercial buildings has probably risen markedly, investment in housing construction is likely to have remained virtually stable. Finishing trades, for which no sales data are available yet for the fourth quarter, could have dampened the overall figure. This is indicated by the sharp fall in output in the finishing trades.

Construction investment likely to be lacklustre

Private consumption is likely to have gone down significantly in the fourth quarter of 2021, after it had shown a steep rise in the third quarter. The escalation of the pandemic dampened the consumption of high-contact services in particular. Sales in the hotel and restaurant sector, for example, declined strongly according to the price-adjusted figures available up to November. Real retail sales were likewise slightly lower. Bricks-and-mortar retailers of textiles, clothing, footwear and leather goods posted a particularly steep fall in sales. Sales of information and communication technology equipment and furniture, furnishings, household appliances and home improvement materials also experienced a considerable slump. This contrasted with a substantial rise in mail order and online trade. Car purchases are likely to have increased in the fourth quarter. This is indicated by the number of new private car registrations, which rose steeply according to the German Association of the Automotive Industry (VDA).

Private consumption down significantly

Imports of goods rose steeply in real terms in the fourth quarter of 2021, with imports from euro area countries and non-euro area countries expanding at a similar pace. Broken down by category of goods, the volume of consumer

Steep rise in imports of goods

goods imports saw a particularly substantial increase according to the figures available up to November. Considerably more pharmaceutical products were imported, which was probably partly connected with a greater number of vaccinations and tests. Imports of capital goods likewise increased steeply on the back of a sharp pick-up in imports of motor vehicles and motor vehicle parts.

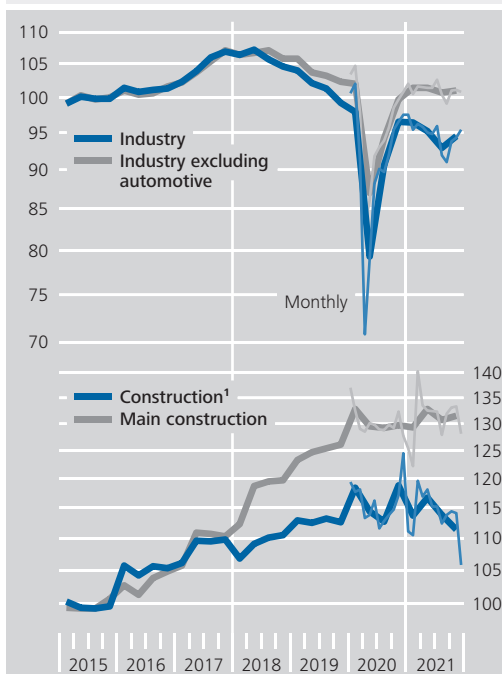
■ Sectoral trends

Possible turn-around in industry

After seasonal adjustment, industrial output was up significantly in the fourth quarter of 2021 compared with the third quarter (+1¾%). This could mark a turning point. Before this, industrial output had fallen sharply since the beginning of 2021. Growing bottlenecks in the supply of intermediate goods had prevented industry from benefiting from the high demand for industrial products. The recent rise in industrial output suggests a slight easing of the supply bottlenecks. This is consistent with the fact that delivery times increased to a smaller extent according to surveys conducted by IHS Markit. However, the share of enterprises in the manufacturing sector reporting production delays due to supply bottlenecks rose further in the fourth quarter according to ifo Institute surveys. The higher industrial output in the fourth quarter was attributable to a rise in the production of capital goods. Motor vehicle production, in particular, experienced a significant increase following a strong slump. Other transport equipment was up substantially, too. By contrast, there was a clear drop in the manufacture of machinery and equipment and the production of computer, electronic and optical products was slightly lower. The production of consumer goods remained broadly unchanged, although more pharmaceutical products were produced. Intermediate goods production declined slightly. Overall, industrial output was still down by 4¾% on the pre-crisis level of the fourth quarter of 2019.

Output in industry and in construction

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



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

According to the ifo Institute, capacity utilisation of tangible fixed assets in manufacturing rose slightly between the surveys in October and January and was distinctly above its long-term average. Manufacturers of capital goods saw a particularly steep rise in capacity utilisation. This is consistent with the robust growth in capital goods production. Producers of consumer goods also experienced a marked increase in capacity utilisation, however, whereas there was a slight fall in the intermediate goods sector.

Slight increase in industrial capacity utilisation

Construction output was clearly down again in the fourth quarter after adjustment for seasonal variations (-2%). This was due to considerably less production in the finishing trades. It should be noted, however, that initial data often undergo substantial revision. The slightly higher output in the main construction sector was not enough to offset the decline in the finishing trades. Sluggish activity in the construction sector might be related to a shortage of

Construction output clearly down again

labour. The percentage of enterprises in the main construction sector reporting a disruption to production due to a lack of staff reached a new high, according to surveys by the ifo Institute. By contrast, various economic indicators suggest favourable conditions for growth in construction in the fourth quarter. Although high from a long-term perspective, the share of firms suffering from material shortages was in decline. At the same time, demand for construction work remained brisk, with the reach of the order books in the main construction sector as determined by ifo Institute surveys attaining a new record high. This resulted in a further steep rise in the cost of construction work, however. Equipment utilisation edged up again and remains at a high level from a long-term perspective.

Distinct adverse effect on services sector

Economic output in the services sectors is likely to have fallen markedly due to the resurgence in pandemic activity. On an average of October and November – the last period for which figures are available – price-adjusted sales in the hotel and restaurant sector were down sharply compared with the third quarter. Real retail sales declined only slightly in the fourth quarter, which was due mainly to the fact that mail order and online trade was up substantially. Motor vehicle trade is also likely to have been sluggish. According to data provided by the German Association of the Automotive Industry (VDA), new passenger car registrations dropped significantly due to the strong decline in commercial vehicle registrations. By contrast, data available up to November show that price-adjusted wholesale sales rose slightly in line with developments in industry. Results of ifo Institute surveys assessing the situation indicate weak business activity in most of the remaining services sectors.

■ Labour market

Labour market recovery continued in Q4

The factors that curbed economic activity in the fourth quarter had barely any impact on the labour market. Employment continued to

recover, and both unemployment and the use of short-time working arrangements fell substantially. Leading indicators suggest only a comparatively mild dip in the labour market in the first quarter of 2022, despite the currently high infection rates.

Employment levels rose significantly in the last few months of 2021. On an average of the fourth quarter, the seasonally adjusted number of persons in work rose by 157,000 on the quarter overall, representing an increase of 0.3%. The employment losses at the beginning of the pandemic were therefore already recouped for the most part. Nonetheless, the number of persons in employment was still down by ½% compared with the beginning of 2020. Employment subject to social security contributions presents a much more favourable picture. The core form of employment, which received massive support through the use of short-time work during the crisis, is now just over 1% higher than the high pre-crisis employment level. By contrast, exclusively low-paid part-time employment plays a role as a flexibility reserve; it moved in line with the severity of the containment measures during the pandemic. The importance of its role also left a mark in wholesale and retail trade and the hotel and restaurant sector, which were particularly hard hit by the measures.

Employment up again significantly in fourth quarter, jobs subject to social security contributions well above pre-crisis levels

The share of employment shifted across the sectors during the crisis and these trends have also continued in the past few months. On an average of October and November, the IT sector, business-related services (excluding temporary agency employment) and construction registered the largest increase in employment subject to social security contributions compared with the previous quarter. The previous relatively strong recovery in the hotel and restaurant sector ground to a halt again with the Delta wave of the pandemic. A slight improvement was observed in other services sectors. The number of employees in manufacturing remained no more than stable, however. Temporary agency employment, whose employees

Jobs subject to social security contributions remain on upward trajectory in several services sectors

are often deployed in industry, even declined somewhat.

Short-time working scaled back further

Cyclical short-time working declined further up to November last year, albeit at a slower pace than in the third quarter. According to the initial estimate by the Federal Employment Agency, 574,000 persons were still in economically induced short-time work in November, almost one-tenth of the highest level in April 2020. However, a slight increase may be expected again in the coming months due to the intensification of the pandemic. The number of persons named in notifications of short-time work rose in November, but an even greater increase was noted in December and January. Nonetheless, registrations were down considerably on the level seen during the second coronavirus wave last year. Wholesale and retail trade and the hotel and restaurant sector were once again primarily affected.

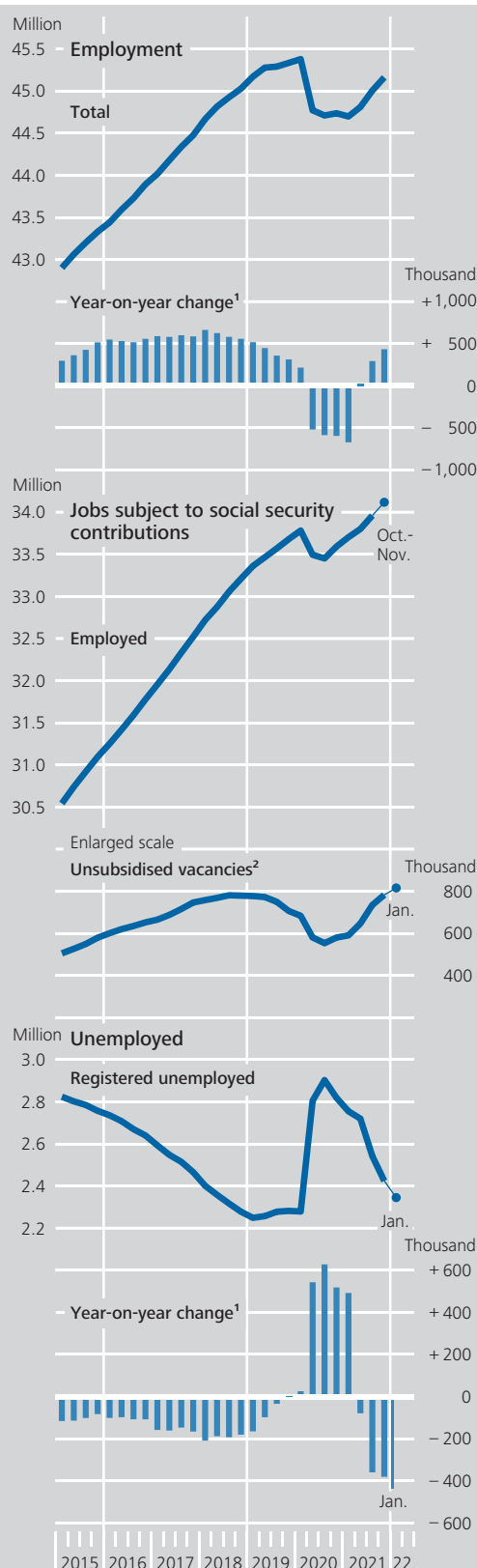
Unemployment almost down to pre-crisis level

Registered unemployment was also down significantly. In the quarter under review, it declined by 117,000 persons in seasonally adjusted terms, with the unemployment rate falling by 0.2 percentage point. In January 2022, the number of unemployed persons continued to drop to a new total of 2.34 million, or 5.1%, thus almost matching the low of the first quarter of 2020 again. However, the pandemic has caused a rise in the share of unemployed persons receiving the basic allowance for job seekers or those who are long-term unemployed. These persons have often not received any vocational training and, in particular, face the threat of their labour market-related skills becoming worthless. This makes it more difficult for them to return to employment, even in view of the ongoing shortage of qualified personnel. On the other hand, the number of unemployed persons claiming insurance benefits who are relatively easy to place is already lower than immediately before the outbreak of the pandemic.

Labour shortages returned to many industries with the recovery in the third and fourth quar-

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.
 Deutsche Bundesbank

Labour supply falls due to unfavourable age structure effect and lower levels of migration during pandemic

ters of 2021. The situation was exacerbated by the impact of a negative age structure on labour supply. This results from the demographic situation in Germany and has become increasingly noticeable since 2020. It is also the main reason for the lower labour force participation rate. By contrast, only a few persons have withdrawn from the labour market during the crisis due to “discouraged worker” effects. Immigration is also down on previous years, however. The sequencing of pandemic-induced closures and openings is clearly reflected in the monthly immigration statistics published by Germany’s Federal Statistical Office. Statistics for net migration to Germany recovered quickly with the easing of respective measures. In the second half of 2020 and the second half of 2021, the number of migrants was even higher than in the second half of 2019² but this was not enough to compensate for the low level of immigration in the first six months of both 2020 and 2021. The labour force is currently markedly smaller overall than before the pandemic.

Recruitment plans expansionary in both short and medium term

The leading labour market indicators deteriorated over the past few months. The unemployment barometer of the Institute for Employment Research (IAB) is currently in neutral territory. This would suggest unemployment remaining at the current low level over the next few months, but not declining further. By contrast, the employment barometers of the ifo Institute and the IAB show that the willingness of enterprises to recruit new staff is down only moderately. Overall, the expansionary recruitment plans of enterprises continue to predominate in the short term but there are fundamental signs of employment growth as well. The reported number of vacancies subject to social security contributions has already been rising for one and a half years and is now higher than at the beginning of 2020. A very high number of job vacancies are being reported to the Federal Employment Agency. However, the vacancy period for open positions has likewise already returned to the record level seen before the crisis. This is consistent with the various reports of labour shortages. Furthermore, a lack

of personnel during the Omicron wave could distinctly curb the number of hours worked in the first quarter.

■ Wages and prices

Negotiated wages climbed more sharply in the fourth quarter of 2021 than in the third quarter. Including additional benefits, they were up by 1.5% on the year in the fourth quarter, compared with 1.0% in the previous quarter. In both quarters, these growth rates were, however, depressed by delays in paying out bonuses and negative base effects as a result of high coronavirus bonuses a year earlier. Basic remuneration, which more accurately reflects the underlying momentum of developments in negotiated wages, rose slightly more strongly both in the third and fourth quarters, at 1.4% and 1.8% on the year, respectively. Actual earnings are likely to have risen considerably more robustly than negotiated wage rates in line with the marked reduction in short-time work in the fourth quarter.

Negotiated wages rose more sharply in Q4 than in Q3; actual earnings probably climbed considerably again

Looking at 2021 as a whole, negotiated wages rose significantly less, at just 1.5%, than in the year before. This was chiefly because the pandemic resulted in modest wage agreements. Actual earnings, meanwhile, rose a hefty 3.2% according to provisional calculations by the Federal Statistical Office, mainly as a result of the marked drop in short-term work. The wage drift was consequently well into positive territory again, at 1.6 percentage points, after a clear decline in 2020.

Wage drift well into positive territory again in 2021

In the ongoing year, the rise in negotiated wage rates is still largely influenced by wage agreements concluded in previous years. At the

² 5% more persons moved to Germany on balance in the second half of 2020 compared to one year earlier. It was 55% fewer in the first half of the year, however. The decline of just over one-third in the first half of 2021 compared to the pre-crisis year was likewise considerable. According to statistics up to November 2021, on balance 42% more persons have already moved to Germany than in the corresponding period of 2019.

Small 2022 wage round in an environment of high inflation rates

time the agreements were made, there was a great deal of uncertainty surrounding the economic outlook, and inflation rates were low. The situation will likely be different in this year's small wage round for roughly 8 million employees. However, the trade unions' wage demands are currently only slightly higher than last year, at 5% to 6% for a period of 12 months. Nonetheless, they could potentially be higher in the future. The German Mining, Chemical and Energy Industries Union (IG BCE), for instance, has not yet specified its concrete wage demand for the chemical industry, but has indicated that it is aiming for a perceptible increase in real wages given high inflation rates and a high inflation outlook, amongst other factors. Later in the year, wage negotiations will take place, inter alia, in the insurance sector, in the printing industry, the steel industry, the private transport industry and, in the fourth quarter, in the metal and electrical engineering industry. The favourable macroeconomic outlook, increasing labour market shortages and high inflation rates could then help bring about markedly higher wage agreements than in the recent past.

Planned increase of general minimum wage to €12 per hour raises pressure on aggregate wages

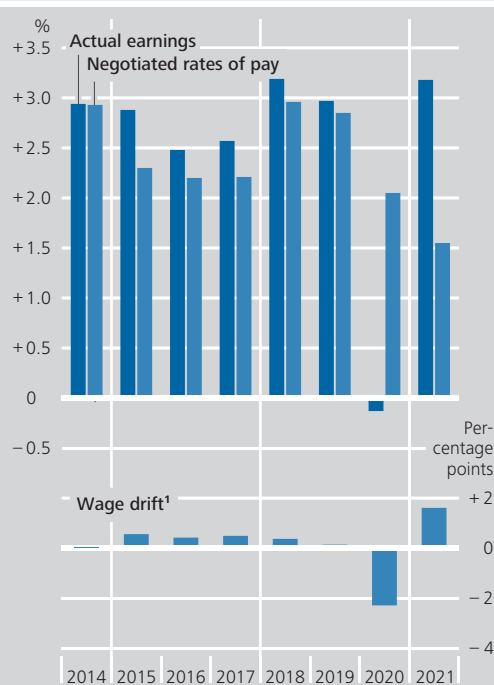
The general statutory minimum wage has stood at €9.82 per hour since 1 January 2022, and is set to increase to €10.45 per hour on 1 July 2022. The Federal Labour Minister is aiming to lift it to €12 per hour from 1 October 2022. This political intervention in the wage-setting process would raise pay distinctly in the lower wage brackets as well as having a marked impact on the wage brackets above, thus presumably increasing upward pressure on aggregate wages. Looking at the historical relationships, the macroeconomic effects will probably be manageable (see the box on pp. 54 f.). However, in the current environment of very high inflation rates, a potentially stronger pass-through of wages to prices cannot be ruled out.

Inflation rate hit record level at end of 2021

Consumer price inflation continued to accelerate in the final quarter of 2021. Between October and December, the Harmonised Index of Consumer Prices (HICP) rose by an average of

Rates of pay and wage drift

Year-on-year change, on monthly basis



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

1.2% on the quarter in seasonally adjusted terms. This compares with a gain of 1.0% in the third quarter. The higher inflation rate was chiefly due to energy prices, which increased even more sharply than before in line with crude oil prices. Growth in prices for food, services and non-energy industrial goods remained strong, but was slightly down on the previous quarter. The HICP rose very significantly by 5.4% on the year, following 3.5% in the third quarter. Excluding energy and food, the inflation rate grew from 2.1% to 3.6%, thus also reaching its highest level since the euro area was established.

At 3.2%, average consumer price inflation for 2021 increased very considerably on the year. One factor was that the base effect of the temporary reduction in VAT rates in the second half of 2020 significantly increased inflation rates in the corresponding period of 2021.³ Another

On an annual average, consumer prices rose very considerably in 2021

³ See Deutsche Bundesbank (2021b).

The macroeconomic impact of the planned increase in the general statutory minimum wage to €12 per hour

Under the coalition agreement, the general statutory minimum wage is set to be raised to €12 an hour. This increase, according to reports, is scheduled to take effect on 1 October 2022 and would be in addition to the regularly scheduled hike to €10.45 per hour with effect from 1 July 2022. It will occur outside the usual framework and without the involvement of the Minimum Wage Commission. Contrary to the provisions of Section 9(2) of the Minimum Wage Act (*Mindestlohngesetz*), it will probably not just track the past years' aggregate negotiated wage developments. This administrative intervention in the wage structure is likely to lead to changes in hours worked, employment, labour force participation, and inflation and GDP trends. These impacts can be quantified using the Bundesbank's macroeconomic model. The starting point here is the direct stimulus on wages of the minimum wage hike, calculated in a back-of-the-envelope manner.

Impacts on aggregate wage growth are caused primarily by changes in the wages of the directly affected employees and their spillover effects on the upstream wage brackets. The set of directly affected employees is broken down into three groups: full-time and part-time employees subject to social security contributions, and marginally employed persons. In order to quantify the respective share of directly affected employees subject to social security contributions working either full-time or part-time in the fourth quarter of 2022, trends in effective wages are extrapolated up until then.¹ The share of directly affected marginally employed persons was kept unchanged in the calculations. The direct macroeconomic wage impact is composed of the directly af-

ected employees' share of the aggregate wage bill and their percentage pay rise. Under further assumptions regarding the wage distribution in the €10.45 to €12 per hour range at the time of the minimum wage hike, the direct impact on the wage level ends up being just over 0.4%.² This is joined by knock-on effects on employees earning more than €12 per hour. According to econometric estimates, these effects amount to an additional 0.4%. Recourse was taken here to the results based on the introduction of the minimum wage in 2015.³

On the whole, based on this back-of-the-envelope calculation, the minimum wage hike in autumn 2022 – excluding the impact of possible further adjustment responses in the labour market – can be expected to push up the aggregate wage bill by 0.8%. This means that the planned minimum wage hike would have a somewhat weaker impact on the aggregate wage bill than the introduction of the minimum wage in 2015. Although the group of affected employees is larger this time since

¹ Data on the number of persons for wage bins are available in the statistics of the Federal Employment Agency broken down by gross monthly earnings but not by hourly wages. At an hourly wage of €12, full-time employees would earn, in arithmetical terms, average gross wages of around €1,900 per month. For part-time employees subject to social security contributions, the minimum wage threshold would rest at a gross monthly wage of around €1,000 in arithmetical terms. Civil servants were not incorporated into the calculations.

² In this calculation, it is assumed that half of the directly affected workers receive the minimum wage of €10.45 in force at that time immediately prior to the minimum wage hike in autumn 2022 and the wages of the other half are evenly distributed in the range between that figure and €12.

³ See Hammer and Hertweck (2022). By assumption, the estimated knock-on effect is proportional to the wage impact among the directly affected employees.

the minimum wage bites more deeply into the wage distribution, the average percentage increase in gross hourly wages will probably be smaller than in 2015.

In order to quantify the macroeconomic impact of the minimum wage hikes, in simulations run using the Bundesbank's macroeconomic model, gross hourly wages were increased by 0.8% relative to the baseline, starting in the fourth quarter of 2022.⁴ Higher wage costs cause consumer prices to increase gradually. Annual average prices for 2024 are around one-and-a-half-tenths of one percent above the baseline.⁵ After four years, they are likely to be around one-quarter percent higher.⁶ Another impact of the wage hike is that households see an increase in their disposable income and step up their real consumer spending.⁷ Following the minimum wage hike, therefore, real gross domestic product initially rises marginally above the baseline. Higher domestic production costs, on the other hand, dampen price competitiveness. Real exports consequently fall below their initial level. This thus makes up for the small positive impact of domestic demand on gross domestic product.

The macroeconomic impacts of the minimum wage hike are based on the estimated elasticities of the macroeconomic model. Since the minimum wage hike was announced well in advance, the higher wage costs could be passed through to consumer prices more quickly than suggested by the model elasticities. In the current environment of higher inflation rates, firms' rising production costs could also be reflected in consumer prices more strongly than in the past.

Impact of raising the minimum wage to €12*

Deviation from the baseline (%)

Item	2023	2024
Gross wages and salaries ¹	+ 0.84	+ 0.89
Total number of hours worked	- 0.29	- 0.19
Real GDP	+ 0.02	- 0.01
HICP	+ 0.06	+ 0.14

* Based on a simulation using the macroeconomic model and on an assumed increase in the minimum wage as of 1 October 2022. ¹ Including endogenous feedback effects. Per hour worked.

Deutsche Bundesbank

⁴ The size of the shock to gross hourly wages is derived from the 0.8% wage bill effect described above. Hours worked remain, by assumption, initially unchanged.

⁵ 2024 represents the end of the horizon of the Bundesbank's latest macroeconomic projections, which have been used as the baseline. See Deutsche Bundesbank (2021a).

⁶ The long-run elasticity of consumer prices to wage changes of around 0.3 also corresponds more or less to the results presented in Deutsche Bundesbank (2019).

⁷ Although, owing to the higher wage costs, firms reduce their demand for labour to a certain degree, this only partly makes up for the aggregated income effects via higher hourly wages.

Import, export, producer and consumer prices

Seasonally adjusted, quarterly data



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

factor was that energy prices picked up substantially over the course of the year. Prices for non-energy industrial goods and services also accelerated unexpectedly sharply, especially from mid-year onwards. This was due to high price pressures in upstream stages of the supply chain resulting from pandemic-related supply bottlenecks, increased transport costs and higher commodity prices. Given the high demand, this was passed through to consumers. This meant that the rate excluding energy and food also rose significantly (from 0.7% to 2.2%). Overall, the rate of inflation in 2021 was above average, even excluding one-off effects such as the VAT base effect. By contrast, the of-

ficial consumer price statistics suggest that the increase in rents was similarly moderate as in the previous year, at 1.3% (for developments in housing prices in 2021, see the box on pp. 57 f.).

At the beginning of 2022, consumer price momentum picked up again substantially. Energy prices, in particular, rose strongly owing to considerably higher prices for gas and electricity, though prices of other HICP components also continued to rise on a broad basis. In a year-on-year comparison, the inflation rate therefore declined only relatively little, from 5.7% in December to 5.1% in January, despite the elimination of the VAT base effect.⁴ Core inflation, too, was still well above its long-term average in January, at 2.8%. In the coming months, inflationary pressures are likely to remain high, given the considerable price increases in upstream stages of the supply chain.

High price increases continued on a broad front in January

Order books and outlook

German economic output is likely to contract markedly again in the first quarter of 2022. This is due to the resurgence of the pandemic caused by the Omicron variant. In contrast to previous waves of the pandemic, the services sector is unlikely to be the only sector to see activity impaired by containment measures and behavioural adjustments. In fact, working hours lost due to the pandemic could also have a distinctly dampening effect on economic output – in other sectors, too.⁵ Nevertheless, positive effects are expected from the industrial

In the first quarter of 2022, economic output is likely to contract markedly again

⁴ The Federal Statistical Office conducted its regular update of the HICP expenditure weights in January 2022. In view of the coronavirus pandemic, it again used more up-to-date data sources than usual (see Federal Statistical Office (2022)). Overall, the changes were more moderate than a year earlier (see Deutsche Bundesbank (2021c)). This was evident, inter alia, in a smaller difference between the January HICP rate and the national consumer price index (CPI), which is designed such that weights are not updated (January rate: 4.9%).

⁵ According to a flash poll conducted by the Association of German Chambers of Industry and Commerce (DIHK) among 370 firms, one in four firms recently reported suffering from considerable staff shortages. See Association of German Chambers of Commerce and Industry (DIHK) (2022).

Housing prices in Germany in 2021

Housing price growth accelerated considerably last year, with housing in non-urban regions, too, likely to have become significantly more expensive. Alongside the price effects of the persistently high demand for housing, the costs of materials for new housing rose substantially owing to delivery bottlenecks, amongst other factors. Nonetheless, the housing supply grew strongly. Given weaker developments in some fundamentals, overvaluations in the housing market rose during the reporting year.¹

In Germany as a whole, residential real estate prices rose by 11.3%, according to data provided by the Association of German Pfandbrief Banks (vdp). The housing price index of the Federal Statistical Office likewise rose strongly on an average of the first three quarters of 2021, at 10.6% over the same period a year earlier. Hypoport AG's Europace house price index (EPX) likewise indicates strong rates of increase in housing prices in 2021, at 12.8%. All three indicators are thus showing the highest rate of price increase since the beginning of the recent upswing in the residential property market.

In 2021, housing prices in urban areas rose perceptibly. According to calculations based on bulwiengesa AG data for 127 German towns and cities, prices were up by 7%, thus picking up at a somewhat accelerated pace relative to the two previous years, in which growth rates had moderated. In the seven major cities, the rate of price increase was only slightly higher, at 7½%.² According to vdp data, too, housing inflation picked up in the seven major cities, but was below that of Germany as a whole.

There was hardly any acceleration in the increase in rents for new tenancies in the reporting year. Calculations based on bulwiengesa AG data indicate a 2½% rise in the price of rents for new tenancies in

towns and cities. In the seven major cities, rents rose only marginally faster, at 2¾%. According to vdp data, rents for new lettings in Germany as a whole picked up somewhat more sharply than in the seven major cities.

The key determinants of demand in the housing market developed only moderately in the reporting year. Disposable income rose by a modest 1.8% after hardly rising at all in 2020. However, there are few signs of economic growth remaining permanently stunted by the pandemic, and the labour market has thus far rebounded quickly and strongly from the coronavirus crisis.³ The interest rate on mortgage loans averaged across all lock-in periods remained virtually unchanged at its all-time low of 1.3% in 2021. Adjusted for longer-term inflation expectations, the interest rate dropped marginally, following two years in which it had already moved slightly into negative territory. Since income growth lagged behind property price rises and interest rates provided no meaningful relief, affordability deteriorated in light of the sharp rise in prices.⁴

Expansion of the housing supply made progress in the reporting year, though the pace was curbed by pandemic-induced bottlenecks in deliveries of intermediate goods. Shortages of commodities and building materials drove up the costs of materials for

¹ This box deals with residential property price developments in the context of the real economy. For more on the financial stability aspects of residential real estate financing, see Deutsche Bundesbank (2021d).

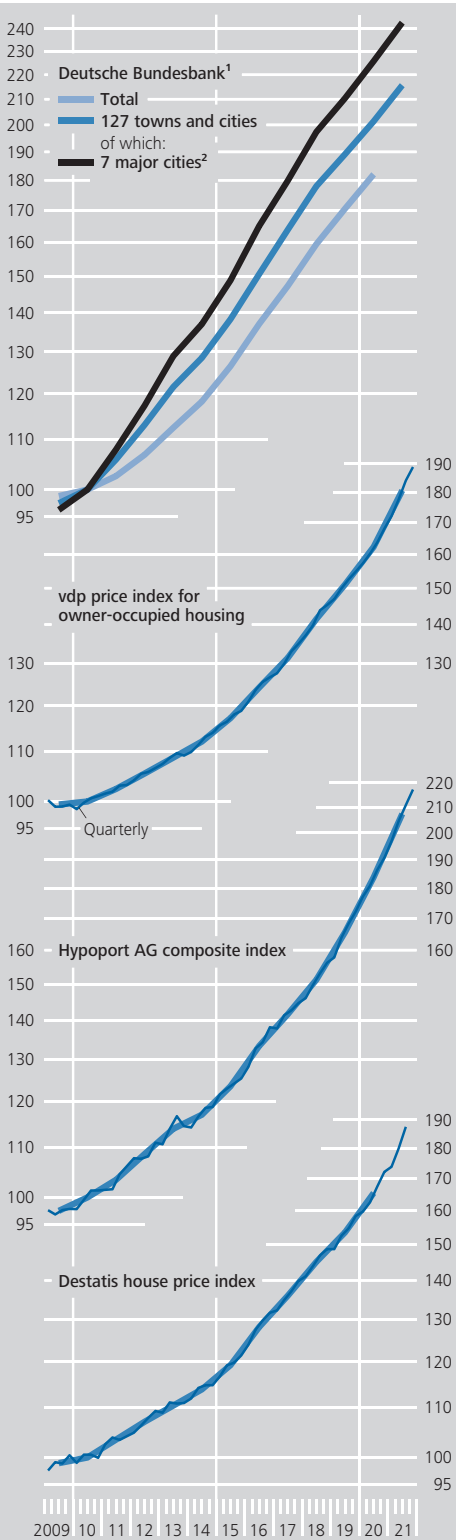
² The seven major cities are Berlin, Cologne, Düsseldorf, Frankfurt am Main, Hamburg, Munich and Stuttgart.

³ See Deutsche Bundesbank (2021e).

⁴ See the Bundesbank's system of indicators for the German residential property market, which is available at <https://www.bundesbank.de/en/statistics/sets-of-indicators/system-of-indicators-for-the-german-residential-property-market/system-of-indicators-for-the-german-residential-property-market-795268>

Price indices for housing

2010 = 100, annual data, log scale



1 Weighted by transaction. Bundesbank calculations based on price data provided by bulwiengesa AG. **2** Berlin, Cologne, Düsseldorf, Frankfurt am Main, Hamburg, Munich and Stuttgart.
 Deutsche Bundesbank

construction work by a massive 13.4% in the third quarter of 2021 as compared to the same period a year earlier. Calculated excluding value added tax (VAT), construction prices in the reporting year rose at a highly accelerated rate of 7.7%.⁵ Despite the bottlenecks in the construction sector, the additional supply is likely to reach the previous year's number of building completions, when just under 310,000 housing units were added. At an estimated 380,000, the number of construction permits was higher than a year earlier.

Housing price overvaluations increased in the reporting year. Owing to the, in some cases, still uncertain longer-term impacts of the pandemic – such as on disposable incomes – and looking at the exceptionally strong rises in construction prices, assessing housing prices is currently fraught with a particularly great degree of uncertainty. According to current estimates, in 2021 real estate prices in urban areas were between 15% and 40% above the level suggested by the socio-demographic and economic fundamentals.⁶ In the reporting year, the price-rent ratio for housing units in towns and cities was just over 30% above its longer-term mean, and in the seven major cities, around 40% above its longer-term mean. According to evaluations of the indicators that are currently available for the reporting year, price deviations were up considerably for Germany as a whole, too. Both in terms of the price-income ratio and according to estimation results for the long-run relationship between real estate prices, incomes and interest rates, housing prices in Germany stood at between 20% and 35% above the benchmark.⁷

5 Including the VAT hike in January 2021, construction prices rose by 9.1% in the reporting year.

6 For an explanation of the underlying panel estimation approach used, see Deutsche Bundesbank (2020a).

7 For an explanation of the valuation approaches used, see Deutsche Bundesbank (2020b).

sector. Here there are signs of a further easing of supply bottlenecks, and demand for industrial products remains high. The percentage of manufacturing firms to see output curtailed by delivery bottlenecks according to ifo Institute surveys declined distinctly in January. Manufacturing firms also had markedly higher production plans and export expectations than in the fourth quarter of 2021.

Sentiment among businesses recently improved again for the first time in some time

The ifo business climate index picked up again somewhat in January, for the first time since mid-2021. Business expectations even improved significantly in most sectors. They fell short of the average for the fourth quarter only in the main construction industry. By contrast, businesses took a worse overall view of the current business situation than a quarter earlier, with only manufacturing bucking this trend. The main reason for the muted assessment of the situation in the services sector and in wholesale and retail trade is likely to be the rise in infection rates as a result of the Omicron wave. In manufacturing, meanwhile, a let-up in disruptions to supply chains is likely to have had a positive impact.

Industrial orders down due to a lack of large orders but still at a high level

Industrial orders fell steeply on the quarter in the fourth quarter of 2021, mainly because relatively few large orders were received. Excluding large orders, however, demand rose slightly. Broken down by sector, the volume of orders received by manufacturers of capital goods dropped steeply. Demand for motor vehicles and motor vehicle parts rose markedly, however. Orders of intermediate goods fell slightly. By contrast, new orders received by producers of consumer goods rose sharply. Broken down by region, demand from non-euro area countries fell significantly. Domestic orders dropped slightly. The inflow of orders from the euro area picked up slightly. Despite the decline, industrial orders were still considerably higher than the pre-crisis level measured in the fourth quarter of 2019. Especially when compared with industrial output, which is still well below its pre-crisis level, demand for German industrial goods remains high. The reach

Demand for industrial goods and construction services

Volumes, 2015 = 100, seasonally and calendar adjusted, quarterly data



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

of the order books in manufacturing marked a new record high in January 2022, according to ifo Institute survey results.

Construction industry remains at capacity limit

The construction industry was likely still operating at its capacity limit at the beginning of the year. New orders in the main construction industry were down significantly in October and November – the latest months for which figures are available – compared with the strong third quarter. Whilst incoming orders in public building construction rose smartly, orders fell substantially in commercial building construction and in housing construction. Incoming orders in the civil engineering industry rose somewhat. Building permits also declined somewhat from a high level. Nonetheless, the reach of the order books in the main construction industry attained a new high in January, according to ifo Institute survey data. Utilisation of equipment and machinery increased further and was consequently even further above its long-term average. The percentage of enterprises whose construction activity was hampered by a lack of staff or materials declined of late, but was still very high in a long-term comparison.

Household final consumption expenditure is likely to fall again in the first quarter. Private owners registered considerably more vehicles in January than in the fourth quarter. Nonetheless, consumer sentiment remained depressed during the reporting period, according to the results of a GfK survey. Consumption of high-contact services continues to be dampened by the pandemic. The high rates of price increase are also likely to be weighing on private consumption.

Pandemic continues to weigh on private consumption in the first quarter

In light of very strong demand, the German economy is likely to rebound robustly in the second quarter, provided the pandemic subsidies and supply bottlenecks continue to ease. Therefore, the economic outlook appears only marginally less favourable from today's perspective than anticipated in the December 2021 projections despite the heightened burdens as a result of the pandemic and the high inflation rate.⁶ While GDP growth is likely to be markedly lower in 2022, the fundamental upward trajectory of the German economy is not in doubt.

GDP likely to pick up sharply again in the second quarter, fundamental upward trajectory of the German economy as described in the December projection not in doubt

⁶ See Deutsche Bundesbank (2021a).

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