Outlook for the German economy for 2021 to 2023

The outlook for the German economy is still being shaped by the COVID-19 pandemic. In the third quarter, a large portion of the prior losses in activity were recouped. However, in the final quarter of 2020 and the first quarter of 2021, the German economy will probably experience a limited setback because of the pandemic's resurgence. Subsequently, though, it is likely to resume its strong growth. This is based on the assumption that the pandemic containment measures will be quickly loosened from spring 2021 in the wake of medical advances, and ultimately expire altogether in the early months of 2022. As a result, consumption opportunities previously made impossible by the pandemic will open up again and be utilised, and the current exceptionally high level of saving will fall sharply. Consequently, the economic recovery will be driven primarily by private consumption.

In this scenario, which is considered the most likely, real gross domestic product (GDP) will see a strong calendar-adjusted rise of 3% in 2021 and 4½% in 2022, following a decline of 5½% this year. In 2023, the rate of GDP growth will then approach that of potential growth. Real GDP will return to its pre-crisis level at the beginning of 2022, and potential output will follow suit only a little later.

Consumer price inflation will decline significantly to 0.4% this year, primarily because of the temporary cut in VAT rates and the collapse in crude oil prices. In 2021, both the reversal of the VAT cut and the introduction of CO_2 emission certificates will drive up prices. After adjustment for the VAT effect, core inflation excluding energy and food will probably be somewhat higher than 1% in both years. The dampening impact of weak macroeconomic demand will outweigh the price-boosting supply-side effects of the pandemic. Subsequently, as growth in wages becomes stronger again and profit margins recover along with demand for goods, these factors will increase price pressures. In 2023, inflation could reach just over 1½%.

Public finances are playing a substantial role in stabilising the economy as a whole. As a result, the general government deficit will probably reach around 5% of GDP this year, and the Maastricht debt ratio will rise to approximately 70%. Public finances will subsequently improve as the economy recovers and the pandemic support measures come to an end.

The economic outlook is highly uncertain, particularly with regard to the pandemic and its economic impact. For this reason, the projections cover two scenarios for how the pandemic will unfold: a milder and a more severe scenario. In the first scenario, the economy will see a significantly faster and stronger recovery. In the second, by contrast, GDP will not reach its pre-crisis level until the end of 2023, with potential output taking a substantial hit. The rate of inflation will then be perceptibly lower. All in all, the risks – also looking beyond the pandemic – both to economic growth and inflation appear roughly balanced as things currently stand.

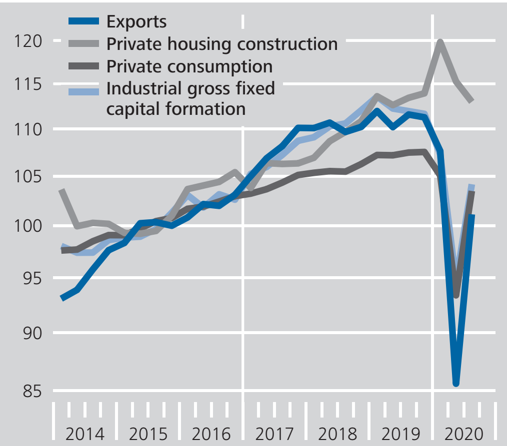
Economic outlook[1]

In Q3, German economy recovered strongly but not fully from prior pandemic-induced slump

The German economy's current situation and short-term outlook hinge on the COVID-19 pandemic. The pandemic triggered an unprecedented slump in economic activity in the second quarter of 2020. Contact-intensive services whose business operations were substantially restricted or completely halted by government-imposed containment measures and voluntary behavioural adjustments took a particularly hard hit. This restriction of consumption opportunities due to the pandemic made the saving ratio soar and placed a very substantial strain on private consumption in the first half of 2020. Exports saw an even sharper fall, primarily because of the collapse in foreign demand due to the pandemic. This – and the high degree of uncertainty over the economic outlook – caused enterprises' investment in machinery and equipment to plunge. As expected in the June projection, real GDP in the second quarter of 2020 was, overall and after seasonal and calendar adjustment, 11½% below the figure recorded for the final quarter of 2019.[2] As infections decreased and containment measures were eased, the economy saw a strong recovery in the third quarter of the year, driven by rebound effects and, to some extent, catch-up effects in the sectors previously hit by a major slump. Nonetheless, economic output was still 4% below its pre-crisis level, with substantial variation among the different economic sectors. The countermovement in the summer, which was much stronger than expected, was bolstered by fiscal and monetary policy support measures, which were not yet included in the June projection.

Key components of aggregate demand

2015 = 100, seasonally and calendar adjusted, log scale



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December 2020 projections

Year-on-year percentage change

Item	2020	2021	2022	2023
Real GDP, calendar adjusted	– 5.5	3.0	4.5	1.8
Real GDP, unadjusted	– 5.1	3.0	4.4	1.6
Harmonised Index of Consumer Prices	0.4	1.8	1.3	1.6
Excluding energy and food	0.7	1.5	1.3	1.5

Source: Federal Statistical Office. 2020 to 2023 Bundesbank projections.
Deutsche Bundesbank

Economic recovery likely to face limited setback in Q4 2020 and Q1 2021

In the final quarter of 2020 and the first quarter of 2021, the economic recovery is likely to be interrupted. The autumn resurgence of the pandemic in Germany and many of its key trading partner countries could cause economic output to decline again – albeit moderately compared with the spring – by an approximate figure of just under 1%. This is based on the assumption that containment measures will remain necessary in the first quarter of 2021, with a similar average negative impact on the economy as in the fourth quarter of 2020.[3] However, the economy is not likely to take a hit like that in the second quarter of 2020, nor is GDP expected to fall to such a low level. At

1 These projections for Germany were completed on 25 November 2020. They were incorporated into the projections for the euro area published by the ECB on 10 December 2020.
2 See Deutsche Bundesbank (2020a).
3 A further temporary tightening of the measures could potentially allow easing at a somewhat earlier stage. Provided economic activity is not restricted on a broad scale and for a long period of time, the impact on the average level of GDP relative to the baseline scenario will therefore probably remain relatively small.

present, significantly fewer sectors face such tight restrictions as in the spring. It is primarily contact-intensive segments that are being affected directly by the restrictions. In addition, the experience now gained in dealing with the pandemic is mitigating the adverse economic impact of the measures. Demand from abroad is also likely to remain more stable. As a result, losses in sectors of the economy not directly affected by restrictions, such as industry, should remain limited. This assessment is also reflected in business sentiment. In November, enterprises in the services sector (excluding trade) assessed their business situation as having markedly worsened, whereas industrial enterprises once again considered their situation to have significantly improved. Business expectations deteriorated somewhat towards the end of the period under review but remained far above the lows recorded in the second quarter of 2020.[4]

Economy to return to strong upward trajectory later in projection horizon

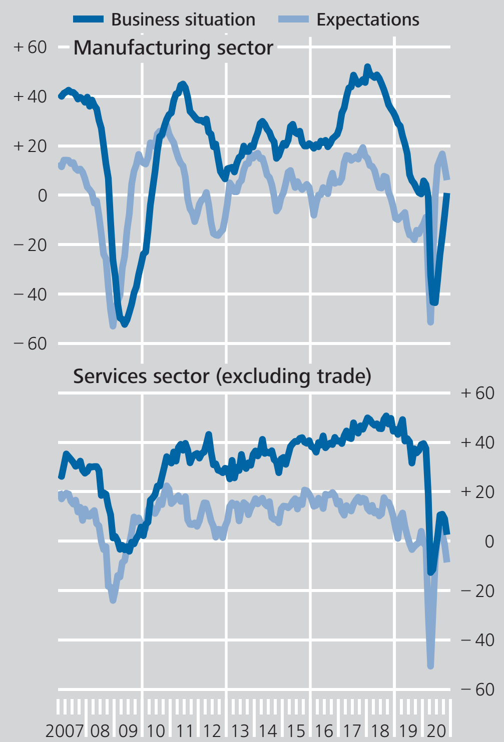
Later in the projection horizon, the German economy is likely to return to the path of recovery that was interrupted in the final quarter of 2020 and the first quarter of 2021, and to grow strongly for some time. In the baseline scenario, it is assumed that the containment measures can be quickly loosened from spring 2021 and will expire altogether in the early months of 2022. In addition to greater opportunities for outdoor activities in the second and third quarters of 2021, medical advances in combating the pandemic – most notably, widely available vaccines – will play a crucial role in this.

GDP level significantly higher than projected in June 2020

All in all, in the baseline scenario, this points to a strong, temporarily interrupted recovery for the German economy, manifesting itself in a growth path close to that of potential output. Following the sharp decline of 5½% this year, real GDP could grow at strong calendar-adjusted rates of 3% in 2021 and 4½% in 2022, before slackening off to 1¾% in 2023.[5] GDP will thus have already returned to its pre-crisis level by the beginning of 2022. This means that GDP is expected to be above the figure in the June projection across the entire forecast horizon.

Business climate

Balances, seasonally adjusted, monthly



Source: Ifo Institute.
Deutsche Bundesbank

Technical components of the GDP growth projection

% or percentage points

Item	2020	2021	2022	2023
Statistical carry-over at the end of the previous year[1]	0.0	1.0	2.0	1.2
Fourth-quarter rate[2]	– 4.6	4.0	3.7	0.9
Average annual GDP growth rate, calendar adjusted	– 5.5	3.0	4.5	1.8
Calendar effect[3]	0.4	0.0	– 0.1	– 0.3
Average annual GDP growth rate[4]	– 5.1	3.0	4.4	1.6

Source: Federal Statistical Office. 2020 to 2023 Bundesbank projections. 1 Seasonally and calendar-adjusted index level in the fourth quarter of the previous year in relation to the calendar-adjusted quarterly average of the previous year. 2 Annual rate of change in the fourth quarter, seasonally and calendar adjusted. 3 As a percentage of GDP. 4 Discrepancies in the totals are due to rounding.
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4 See Deutsche Bundesbank (2020b).
5 Without adjustment for calendar effects, the decline in 2020 will be somewhat lower, at -5.1%, because there are more working days in 2020 than there were in 2019. In 2022 and 2023, this calendar effect will be negative (see the table above).

Revisions since the June 2020 projection

Year-on-year percentage change

Item	2020	2021	2022
GDP (real, calendar adjusted)			
December 2020 projection	– 5.5	3.0	4.5
June 2020 projection	– 7.1	3.2	3.8
Difference in percentage points	1.6	– 0.2	0.7
Harmonised Index of Consumer Prices			
December 2020 projection	0.4	1.8	1.3
June 2020 projection	0.8	1.1	1.6
Difference in percentage points	– 0.4	0.7	– 0.3

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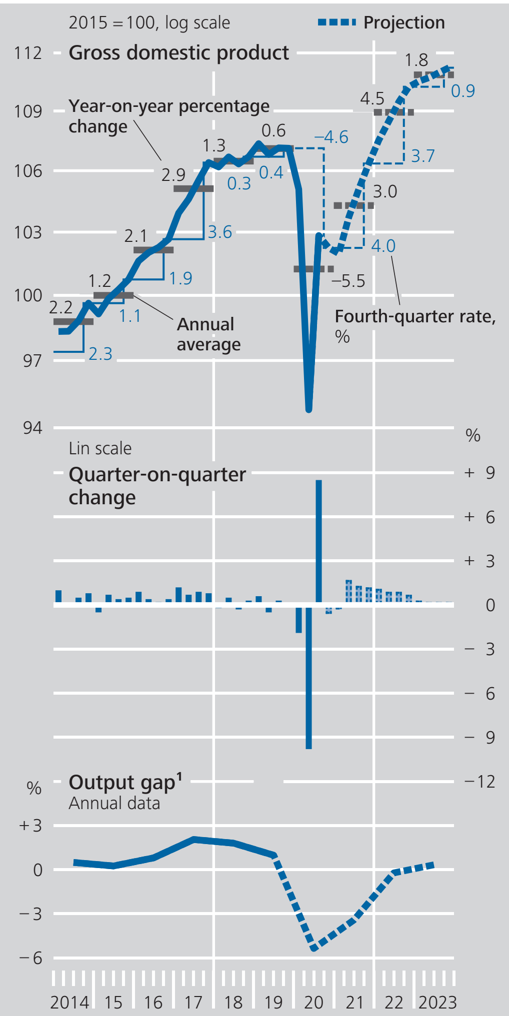
Aggregate output and output gap

Price, seasonally and calendar adjusted



Sources: Federal Statistical Office and Bundesbank calculations. 2020 to 2023 Bundesbank projections. **1** Deviation of GDP from estimated potential output.

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This is mainly because the recovery both in Germany and abroad was significantly stronger than expected in the third quarter of 2020.

Only comparatively minor losses of potential output owing to pandemic

In the baseline scenario, the pandemic will have only relatively little impact on potential output, partly thanks to the extensive monetary, fiscal and labour market policy support measures.[6] Compared with the assessment before the outbreak of the pandemic, potential output for 2023 is now estimated to be just over 1% lower. It should be noted, however, that the containment measures will be a temporary roadblock to exploiting this potential in full in 2020 and 2021 on the supply side as well. As the German economy continues its recovery, it will approach its potential output thanks to a renewed rise in demand and the elimination of supply constraints, and capacity utilisation is likely to shift into the normal range from 2022 onwards.

Exports solid pillar of economic recovery

Irrespective of the resurgence of the pandemic in many countries, German exports are likely to be a key pillar of economic activity in the final quarter of 2020. To some extent, this momentum will be supported by anticipatory effects created by the United Kingdom's withdrawal from the EU single market and the customs union with effect from 1 January 2021. Although services in particular are suffering under the newly imposed containment measures, including in other European countries, demand for goods from Germany's export range will probably also be affected. Enterprises' export expectations have fallen significantly of late. For this reason, and on account of the burdening effect Brexit will then have, exports are likely to temporarily decline somewhat at the beginning of 2021. Upon the resumption of the economic upturn in key partner countries, exports should rapidly gain pace from the second quarter of 2021 onwards and be a solid pillar of economic recovery. However, it is assumed that

6 The estimated growth rate of potential output will rise from 0.9% this year to 1.2% in 2023 owing to a renewed increase in contributions from the capital stock and total factor productivity.

Underlying conditions for macroeconomic projections

This projection is based on assumptions made by Eurosystem experts about the global economy, exchange rates, commodity prices and interest rates. They are based on information available as at 18 November 2020. The assumptions regarding economic activity in the euro area are derived from projections made by the national central banks of the euro area countries.[1] These projections incorporate the fiscal policy measures that have been either adopted or adequately specified and are deemed likely to be implemented.

With regard to the coronavirus pandemic, the baseline scenario assumes that the latest reported advances in the development of a vaccine are confirmed and that a medical response to the virus can be effectively implemented in most countries, including those of the euro area and Germany, over the projection horizon. Large-scale vaccinations are likely to be carried out as early as 2021. As a result, the containment measures, which will remain in place in the final quarter of 2020 and the first quarter of 2021, may be relaxed rapidly from the second quarter of 2021 onwards and phased out altogether in the first few months of 2022.

Global economy recovering from deep recession

As expected in the June projection, global economic activity saw a historic decline in the second quarter of 2020. The recovery in global economic activity in the third quarter is likely to have been significantly stronger than assumed back then. However, the pace of growth is likely to weaken significantly in the final quarter of 2020 and the first quarter of 2021, partly owing to the renewed sharp rise in the number of infections worldwide in the autumn. Apart from China, where gross domestic product (GDP) fell sharply at the start of the year, but then, in the second quarter, already exceeded the pre-crisis level of the end of last year, economic activity in almost all of the euro area's major trading partners is likely to remain below the level reached before the coronavirus crisis began until at least the second half of 2021.

Irrespective of how the pandemic progresses, the outlook for the United Kingdom in particular will be influenced by the form that trade relations with the European Union take once the transition period comes to an end. This projection assumes that no trade agreement will be reached by the end of the year, which means that the World Trade Organization's "most favoured nation" rules will apply from 1 January 2021.[2]

For the global economy as a whole excluding the euro area, an expansion rate of 5¾% is forecast for the coming year, following a decline of 3% this year, before economic activity grows in 2022 and 2023 at rates of 4% and 3½% respectively. A similar profile is assumed for international trade. Following a downturn of 9¼% this year, global trade (excluding the euro area) is expected to increase by 7% next year, before growing at rates of 4% in 2022 and 3½% in 2023.

Recovery process in euro area determined by course of pandemic

For the euro area, the slump in economic activity in the second quarter of 2020 was somewhat less dramatic than had been ex-

1 The projections made by the national central banks of the euro area countries were completed on 25 November 2020.
2 The previous projections had assumed the adoption of a trade agreement by the end of 2020. The assumption that has now been made matches that of the European Commission in its latest forecast (see European Commission (2020)).

Major assumptions of the projection

Item	2020	2021	2022	2023
Exchange rates of the euro				
US dollar/euro	1.14	1.18	1.18	1.18
Effective[1]	119.2	121.6	121.6	121.6
Interest rates				
Three-month EURIBOR	– 0.4	– 0.5	– 0.5	– 0.5
Yield on government bonds outstanding[2]	– 0.5	– 0.5	– 0.5	– 0.4
Commodity prices				
Crude oil[3]	41.6	44.0	45.7	46.9
Other commodities[4,5]	2.5	8.4	0.4	1.6
German exporters' sales markets[5,6]	– 10.3	6.6	4.7	3.4

1 Compared with 42 currencies of major trading partners of the euro area (EER-42 group of currencies); Q1 1999 = 100. **2** Yield on German government bonds outstanding with a residual maturity of over nine and up to ten years. **3** US dollars per barrel of Brent crude oil. **4** In US dollars. **5** Year-on-year percentage change. **6** Calendar adjusted.

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pected in the June projection. In addition, the recovery in the third quarter was stronger than forecast in June owing to the extensive easing of containment measures and the significant recovery in world trade. Following the sharp rise in the number of infections, the restrictions put in place to contain the pandemic were tightened again in the fourth quarter. Compared with the second quarter, the current containment measures focus more on restricting contact in private settings and in the areas of recreation, restaurants and accommodation, as well as parts of the retail sector. This means that the services sector has once again been severely affected, whereas the impact on industry and construction is likely to have been only marginal. The measures taken are therefore likely to have a much less dampening effect on economic activity in the final quarter of 2020 and the first quarter of 2021 than in the second quarter. Given the general assumption of this projection that the pandemic will have been gradually overcome by medical solutions by the first quarter of 2022, containment measures could successively be eased over this period. A contraction of 8.1% is projected for the euro area (excluding Germany) this year. As a result of the significantly muted expectations for the final quarter of 2020 and the first quarter of 2021, the growth rate for 2021 is now set at 4.3%, which is lower than in the June forecast. For the following years, growth of 4.1% is expected in 2022 and of 2.2% in 2023.

German exporters' sales markets, which were hit somewhat harder this year than world trade, are likely to expand less dynamically than global trade next year. The changing trade relations with the United Kingdom will also play a part in this. In 2022, the continued recovery of sales markets could slightly outpace that of world trade.

Scenarios illustrate high uncertainty about outlook for global setting

Given the high level of uncertainty about the global economic outlook on account of the pandemic, two alternative scenarios as to how the global economy might develop were constructed in addition to the baseline scenario of the projection – as in the June projection. Assuming lower economic burdens in the milder scenario, global GDP and world trade could expand distinctly more dynamically as early as next year. By contrast, if it takes longer to implement medical solutions to combat the pandemic, the economic recovery process would be slowed down considerably over the next two years. In the more severe scenario, global trade will not reach its pre-crisis level until sometime in 2023.

Technical assumptions of the projection

The assumptions regarding crude oil prices derived from forward prices indicate only a slight rise over the next three years. The prices of other commodities on a US dollar basis recovered very strongly by the third quarter[3] and are already perceptibly back

3 See Deutsche Bundesbank (2020c).

over their pre-crisis levels. They are expected to continue to rise over the next three years in line with the anticipated recovery in the global economy.

At its meeting in June, the ECB Governing Council decided to extend the pandemic emergency purchase programme (PEPP). One important reason for this was that the outlook for price stability had deteriorated in light of the pandemic. The overall envelope of the programme was increased to €1,350 billion and the horizon for net purchases was extended until at least the end of June 2021.[4] The rise in excess liquidity has led to a further decline in interest rates in the money market in recent months. Increased demand for safe assets given the renewed uptick in the number of infections and the associated deterioration in the economic outlook have also caused yields on ten-year Bunds to fall since June. Expectations of a possible recalibration of the monetary policy stance are also likely to have played a role here.[5] Market expectations point to a rather moderate rise in yields over the projection horizon. In line with the technical interest rate assumptions and given the financial system's ample liquidity levels, bank lending rates are also expected to go up only slightly over the projection horizon.[6] Financing conditions thus remain extremely favourable.

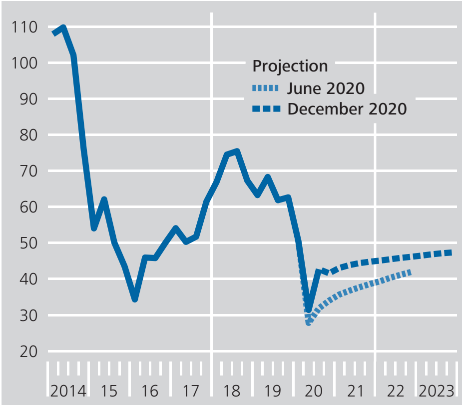
Following the June projection, the euro appreciated significantly against the US dollar; in the period used for deriving the exchange rate assumptions, it was trading at US$1.18, which was 9¼% higher than the assumptions in the June projection. Compared with 42 currencies of major trading partners, the euro has appreciated by 3¾% since June.[7]

Fiscal measures provide support during coronavirus crisis

Extensive fiscal measures were taken into consideration in the projection, accounting for 4% of GDP in the current year's deficit. The vast majority of these were taken in response to the coronavirus crisis, and these measures will largely be phased out again in subsequent years. However, a number of other decisions will then weigh on the government budget.

Oil price

US$ per barrel of Brent, quarterly averages



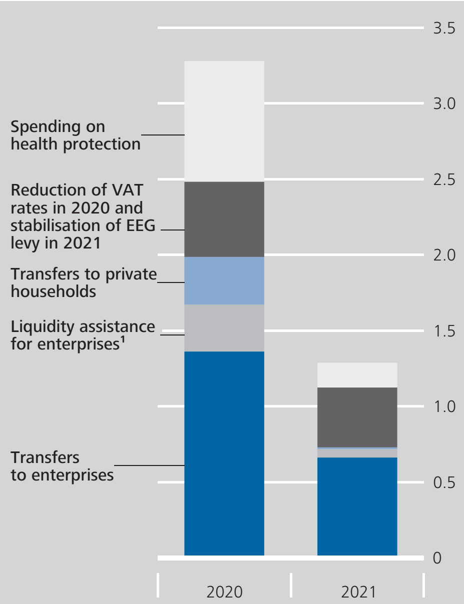
Sources: Bloomberg and ECB projections.
Deutsche Bundesbank

The aim of fiscal coronavirus measures is to support the healthcare system, enterprises and households and to stabilise the economy during the COVID-19 crisis.[8] They are increasing the general government deficit sharply this year, while next year they will

4 See Deutsche Bundesbank (2020d).
5 Recent news of advances in the development of a vaccine was accompanied by a slight upwards movement. See Deutsche Bundesbank (2020e).
6 These forecasts are based on the assumption that the economic recovery process, together with the fiscal support measures adopted for the corporate sector and households – as well as the ample supply of liquidity to the markets – will ensure that risk premia on lending rates do not rise sharply.
7 In July, the European Central Bank adjusted the weights for calculating the effective exchange rates for the euro area. The broad group of countries was expanded from 38 to 42 countries. In addition, the weights now take account of trade in services as well as trade in goods; see European Central Bank (2020). The method used by the Bundesbank to calculate indicators of the German economy's price competitiveness has been changed in line with this; see Deutsche Bundesbank (2020f).
8 The coronavirus measures are relatively narrowly defined here: they do not include, for example, climate-related expenditure from the June 2020 economic stimulus package. This is longer-term and pursues objectives that go beyond short-term crisis support.

Coronavirus response measures affecting the deficit*

As a percentage of GDP



* Bundesbank estimate. Transfers to enterprises and private households comprise all measures that provide comprehensive relief and do not entail any repayment obligation. **1** Special tax rules that shift tax revenues of enterprises along the time axis.

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have only a moderate impact, and then almost no effect from 2022 onwards.

The expenditure side mainly includes transfers by central government to enterprises, self-employed persons and those in liberal professions. In addition, the Federal Employment Agency provides relief to enterprises in terms of the social security contributions they pay on short-time working benefits (with restrictions until the end of 2021).[9] For public passenger transport companies, the government is partially compensating losses this year. The eligibility criteria for the basic allowance (unemployment benefit II) were relaxed and entitlements to unemployment benefit were extended. Parents were supported by a child bonus. Government grants will stabilise the renewable energy (EEG) levy in electricity prices next year in order to ease the burden on enterprises and households. Additional expenditure is also required in healthcare: this expenditure was initially for protective equipment, additional intensive care capacity and COVID-19 tests, and will be for vaccinations further down the line as well. In addition, central government is reimbursing hospitals for unoccupied beds in order to ensure capacity for the treatment of COVID-19 patients. Other parts of the healthcare sector were also compensated for coronavirus-related losses.

One factor on the revenue side is that VAT rates were temporarily lowered for the second half of 2020. A number of other measures essentially only shift tax revenue to a different point in time. For instance, enterprises were able to receive special VAT reimbursements in advance. Furthermore, import VAT will fall due one month later from next year onwards. Looking at taxes on earnings, enterprises are again able, amongst other things, temporarily to apply the declining balance method of depreciation when handling movable assets and to carry back losses from 2020 to a greater extent.

In addition to these measures affecting the deficit, the projection takes into account coronavirus measures that are reflected solely in the level of debt. These include, first and foremost, lending programmes with very extensive government guarantees and capital assistance. The debt effects of this are estimated to be 2% of GDP this year, which means that the use of this option is significantly below the extensive budgetary authorisations. In addition, debt (excluding the deficit effect) is temporarily rising slightly as enterprises receive tax deferrals and statutory health and public long-term care insurance schemes receive central government grants.

In addition to the coronavirus measures, the projection takes other fiscal measures into account. It is assumed that health insurance institutions will raise their supple-

9 The remaining expenditure on short-time working benefits is largely regarded as an automatic stabiliser (similar to unemployment benefit I).

mentary contribution rates sharply over the projection horizon (by almost 1½ percentage points on average compared with 2020, of which almost 1 percentage point will be in 2022). The contribution rate to the Federal Employment Agency will rise by 0.1 percentage point in both 2022 and 2023 to its planned level of 2.6%. In addition, the contribution rate to the statutory pension insurance scheme will have to be increased at the end of the projection horizon so that the reserve meets its lower limit. By contrast, revenue from income-related taxes is set to undergo a significant reduction, particularly as the solidarity surcharge will be partly abolished in 2021. On the expenditure side, the increase in child benefit from 2021 onwards and the new basic pension will make themselves felt. In addition, higher government capital transfers will be made not least in order to reduce the use of carbon energy sources and to foster digitalisation. The planned, credit-financed "Next Generation EU" (NGEU) off-budget entity has already been taken into account: Germany will receive grants from this, which will predominantly be used for existing programmes according to announcements by the Federal Government. The inclusion of NGEU has virtually no direct impact on the projection of Germany's public finances owing to its small volume (rising from 0.1% of GDP in 2021 to 0.2% in 2023).[10]

10 Overall, Germany will be burdened more heavily in future due to the EU budget. Owing to Brexit, net financial contributions will increase from 2021. In the longer term, the crisis programmes will also weigh on Germany: payments to finance the NGEU grants significantly exceed the NGEU grants the country will receive. The EU debt will have to be serviced by Member States, which is not reflected in the national fiscal indicators. See pp. 37 ff.

exports will pick up somewhat less sharply than German exporters' sales markets. Compared with other euro area Member States, the price competitiveness of German enterprises will diminish as a result of stronger wage growth and higher domestic inflation.

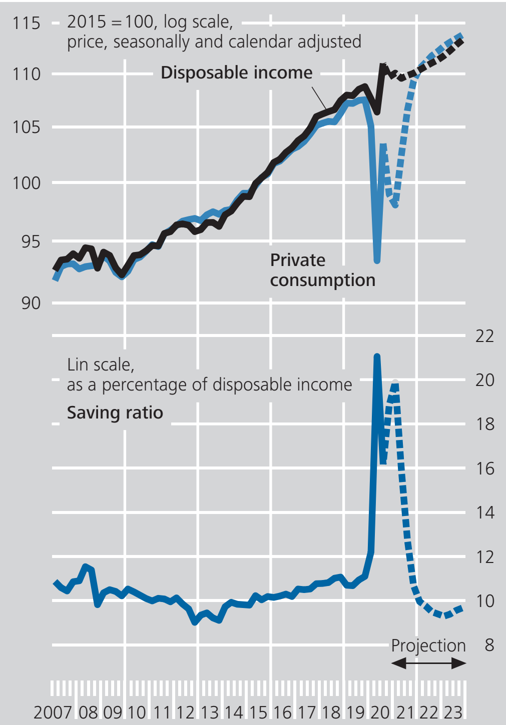
Business investment will continue recovery after damper in Q4

The strained infection situation and the resulting uncertainty for sales prospects are likely to initially weigh on the propensity of many enterprises to invest. The gloomier export outlook is also slowing the recovery in industrial activity. As a result, production capacity utilisation will remain weak for the time being, which means that only a small amount of investment in renewing and expanding capacities will be required. However, as soon as the economy returns to its recovery path in the second quarter of 2021, foreign demand rises and underutilisation falls, business investment should also regain momentum with a certain time lag. By the end of the projection horizon, business investment will then probably have returned to a level that corresponds to normal economic conditions.

Private consumption characterised by pandemic-induced involuntary saving

Private consumption remains heavily dependent on the pandemic situation. In the first half of 2020, consumers' spending fell significantly more sharply than their disposable income, and the saving ratio mirrored this development, rising very steeply. While classic precautionary motives played a comparatively minor role, this development was primarily due to involuntary consumption restraint resulting from the pandemic and the measures taken to contain it: consumption opportunities were either not available or were not used by consumers owing to the risk of infection (see the box on pp. 26 f.). Although the saving ratio fell again markedly in the third quarter and private consumption made up a significant amount of ground, in the final quarter of 2020 and the first quarter of 2021, the pandemic situation, which has again become significantly more strained, is likely to restrict private consumption once more, result-

Private consumption and saving ratio



Sources: Federal Statistical Office and Bundesbank calculations. 2020 to 2023 Bundesbank projections.
Deutsche Bundesbank

ing in an increase in the saving ratio.[7] However, private consumption is likely to suffer far less than in the second quarter of 2020. If, from the second quarter of 2021 onwards, the pandemic is gradually overcome by medical solutions, involuntary saving should diminish in significance. Private consumption would then recover very dynamically. Subsequently, then, some of the involuntary savings accumulated during the pandemic are likely to be spent in addition, and consumption will probably be caught up on. As this would be a temporary effect, private consumption is likely to lose significant momentum at a high level towards the end of the projection horizon.

Overall, housing construction investment little affected by coronavirus crisis

Housing construction investment has proved relatively robust to the pandemic over the course of 2020 thus far given that there have been only few restrictions on the supply side and demand has been affected only slightly. The second wave, too, has so far had only a small impact on sentiment in the construction sector. Following a slight decline in the final quarter of 2020 and the first quarter of 2021, housing construction investment should return to an expansionary path that is in line with economic recovery from the second quarter of 2021 onwards. The improvement in the labour market and wages, which have been gradually rising more sharply again, will provide impetus.

House price dynamics robust during crisis but looking to weaken going forward

The coronavirus pandemic has also so far left little mark on price dynamics in the housing market. This is partly due to the fact that demand for housing in connection with the pandemic fell only briefly. Households' disposable income, a key determinant of demand, rose substantially again as early as the third quarter of 2020. In addition, a temporary shift in demand towards housing due to the pandemic-induced relocation of professional and private activities to the home might have triggered a certain additional price impulse. Moreover, residential real estate is likely to remain an attractive form of investment in the low interest rate environment. On the supply side, meanwhile, there were hardly any disruptions that might have caused price-driving effects. Looking ahead, however, price dynamics are likely to weaken. For example, the affordability of credit-financed housing has deteriorated further in the light of the ongoing upward pressure on prices, despite the still highly favourable financing rates. In addition, the trend shift in demand for housing to areas outside urban centres, where the housing supply could be expanded more easily, could pick up steam as a result of the pandemic. Nevertheless, inflation rates will probably level off only gradually given the usual price inelasticity of housing.

Government investment initially still growing dynamically

Real government investment will continue to develop dynamically this year and next. Priority areas will include transport and digital infra-

7 Expenditure made in anticipation of VAT rates being raised back to their previous levels at the turn of the year is expected to support private consumption in the fourth quarter of 2020. In return, however, this temporal shift in consumption will dampen consumption at the beginning of next year.

structures, childcare and schools. However, the coronavirus crisis will also weigh on the financial situation of central, state and local governments in the medium term, and the reserves in the fund to promote municipal investment will be depleted. It is therefore assumed that growth will decelerate markedly thereafter.

Government consumption increasing sharply this year

Real government consumption has been rising sharply this year as a result of the coronavirus pandemic. Compensation payments to hospitals for unoccupied beds as well as expenditure on personal protective equipment are considerably increasing intermediate consumption. In the years that follow, government consumption will initially stagnate and then grow moderately, as the one-off additional expenditure in connection with the coronavirus pandemic will no longer be a factor. Moreover, in view of the structural deficits of the central, state and local governments, slower growth is assumed, especially in the case of intermediate consumption.

Imports set to pick up substantially in wake of strong demand

Following a significant decline this year, imports will pick up substantially over the entire projection horizon in the wake of sharply rising demand from households and enterprises. Moreover, in 2022 and 2023, some of the involuntary savings could be spent on additional foreign travel, which had been cut back particularly sharply during the crisis. This expenditure by Germans abroad is treated as imports of services.

Current account surplus down markedly going forward

The current account surplus, which fell significantly in the second quarter of 2020 from more than 7% to just under 5% of GDP, already soared to just under 8% again in the third quarter. In the final quarter of 2020 and the first quarter of 2021, it could even temporarily rise somewhat more. The main reason for this is economic developments initially being less favourable in Germany compared with many non-European trading partners. As a result, imports from these countries are growing more slowly than German exports to these countries. By contrast, surpluses should decline markedly

Key figures of the macroeconomic projection

Year-on-year percentage change, calendar adjusted[1]

Item	2019	2020	2021	2022
GDP (real)	0.6	− 5.5	3.0	4.5
GDP (real, unadjusted)	0.6	− 5.1	3.0	4.4
Components of real GDP				
Private consumption	1.6	− 6.6	3.8	7.0
Memo item: Saving ratio	10.9	17.1	14.8	9.7
Government consumption	2.7	4.6	0.0	1.0
Gross fixed capital formation	2.6	− 4.0	1.1	6.5
Business investment[2]	1.7	− 9.1	1.7	9.3
Private housing construction investment	4.0	1.4	− 1.5	3.3
Exports	1.0	− 10.5	6.5	4.3
Imports	2.6	− 9.5	5.1	7.1
Memo item: Current account balance[3]	7.2	7.1	7.6	6.5
Contributions to GDP growth[4]				
Domestic final demand	1.9	− 3.4	2.2	5.2
Changes in inventories	− 0.7	− 1.0	− 0.1	0.0
Exports	0.5	− 4.9	2.8	1.9
Imports	− 1.1	3.9	− 1.9	− 2.8
Labour market				
Total number of hours worked[5]	0.6	− 4.7	1.8	2.6
Employed persons[5]	0.9	− 1.0	− 0.6	1.3
Unemployed persons[6]	2.3	2.7	2.9	2.5
Unemployment rate[7]	5.0	6.0	6.4	5.5
Memo item: ILO unemployment rate[8]	3.2	4.2	4.7	3.8
Wages and wage costs				
Negotiated pay rates[9]	2.9	2.2	1.5	2.1
Gross wages and salaries per employee	2.9	− 0.3	2.3	2.7
Compensation per employee	3.0	0.1	2.3	2.9
Real GDP per employed person	− 0.3	− 4.5	3.6	3.1
Unit labour costs[10]	3.3	4.8	− 1.2	− 0.2
Memo item: GDP deflator	2.2	1.6	1.9	1.4
Consumer prices[11]	1.4	0.4	1.8	1.3
Excluding energy	1.4	1.0	1.7	1.4
Energy component	1.4	− 4.6	3.0	1.2
Excluding energy and food	1.4	0.7	1.5	1.3
Food component	1.5	2.3	2.5	1.7
Residential property prices[12]	5.8	6.6	5.4	4.3

Sources: Federal Statistical Office; Federal Employment Agency; Eurostat; 2020 to 2022 Bundesbank projections. **1** If calendar effects present. For unadjusted data see the table on p. 32. **2** Private non-residential fixed capital formation. **3** As a percentage of nominal GDP. **4** In arithmetical terms, in percentage points. Discrepancies in the totals are due to rounding. **5** Domestic concept. **6** In millions of persons (Federal Employment Agency definition). **7** As a percentage of the civilian labour force. **8** Internationally standardised as per ILO definition, Eurostat differentiation. **9** Unadjusted figures, monthly basis (pursuant to the Bundesbank's negotiated wage index). **10** Ratio of domestic compensation per employee to real GDP per employed person. **11** Harmonised Index of Consumer Prices (HICP), unadjusted figures. **12** Unadjusted figures.

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Households' saving behaviour during the pandemic

Projections of private consumption expenditure are decisively shaped by expectations about households' disposable income and their saving ratio.[1] The saving ratio rose exceptionally sharply in the first half of 2020. This was probably not driven to any significant degree by classical precautionary motives. An econometric analysis for the euro area showed, in fact, that only a relatively small percentage of the increase in the saving ratio in the second quarter of 2020 can be explained by concerns about future job losses and loss of income.[2] On the contrary: much of the rise is attributed to involuntary saving caused by the pandemic. Saving motives in Germany are likely to have been similar.

Participants' responses to the Bundesbank Online Panel Households (BOP-HH) in August 2020 shed some light on the reasons why households were reluctant to consume in the first half of 2020.[3] Just under one-half of respondents said that they had reduced their consumption expenditure in connection with the restrictions imposed during the pandemic. Only just under one-sixth of respondents stated that this was primarily a result of a direct drop in income. In all other cases, motives affecting the saving ratio were decisive, with only around one-fifth citing classical precautionary motives driven by fears of a future loss of income. Reasons directly related to the pandemic played a much greater role. Just under one-half of respondents reduced their consumption expenditure because a number of consumption options were not available or only partially available in the spring – for example, because businesses were ordered to close or as a result of travel restrictions. This involuntary consumption restraint was particularly pronounced among higher-income households. This differs from the findings on the classical precautionary motive. Where consumption expenditure was reduced because households feared future income losses, the percentages were higher for lower-income households than for higher-income ones. Quite independently of the level of income, just over one-third also refrained from spending on certain goods and services for fear of catching the virus. Even without containment

Reasons for reduced consumption expenditure

%, multiple answers possible

Income has decreased	16
Income could decrease in future	20
Goods/services unavailable due to lockdown	49
Concern about catching the virus	34
Some past consumption expenditure no longer necessary/imprudent	45

Source: Bundesbank Online Panel Households, August 2020. Responses of 935 (about 46%) of survey participants who have reduced their consumption expenditure as a result of restrictions imposed during the coronavirus pandemic.

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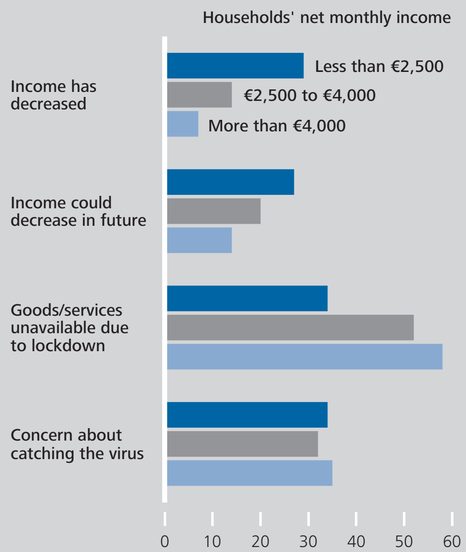
Selected reasons for reduced consumption expenditure in relation to income

%, multiple answers possible



Source: Bundesbank Online Panel Households, August 2020. Answers from 892 (some 46%) of survey participants who have reduced their consumption expenditure as a result of the restrictions imposed during the coronavirus pandemic and stated their household income.

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1 See Deutsche Bundesbank (2007).
2 See Dossche and Zlatanos (2020). The level of classical precautionary saving is nevertheless high by historical standards.
3 For more information on the BOP-HH, see Beckmann and Schmidt (2020). See also Bernard et al. (2020), who evaluated data from the survey wave in May 2020. For a similar survey-based analysis, see the German Council of Economic Experts (2020).

measures that directly limit certain consumption opportunities, private consumption is therefore likely to suffer perceptibly if consumers see themselves as being exposed to an increased risk of infection.[4]

The insights gleaned from the household survey can be applied to the projections of the saving ratio and private consumption. Saving resulting from classical precautionary motives depends mainly on developments in the labour market. Once the labour market experiences a sustained recovery, the stimulus for the saving ratio is likely to wane. However, the greater importance of involuntary saving and cautious behaviour for fear of infection mean that future developments in the saving ratio as a whole – and thus also in private consumption – are likely to remain closely linked to assumptions regarding the pandemic. Both motives should decline as infection rates come down and containment measures can be incrementally lifted. Another question is what happens to the involuntary savings created during the pandemic once the health crisis is over. As this form of saving is not really in line with households' preferences, one might, in principle, expect at least a certain part of it to be spent later. The saving ratio will therefore fall below its long-run average for some time. However, as the additional savings have been built up mainly by households with higher incomes, the assumption for such catch-up effects incorporated in the projection tends to be conservative. These households have a comparatively low propensity to consume in relation to their income,[5] and a large part of their involuntary savings could lead to wealth remaining elevated for some time.

4 Roughly 45% of those questioned said that they considered some of their previous consumption expenditure to be unnecessary or imprudent. This could be because consumption options were not available during the lockdown (for instance travel). It could, however, also indicate that consumption behaviour has been adjusted, potentially permanently, in response to the pandemic.
5 See Drescher et al. (2020).

over the remainder of the projection horizon. Owing to the then strong domestic activity, imports will consistently rise more strongly than exports. The current account balance could therefore decline to 6½% of GDP by 2022, and subsequently continue to decrease.

Labour market

Labour market recovered slightly in Q3, short-time work sharply reduced

The labour market proved to be fairly robust to the economic turmoil caused by the pandemic. Fluctuations in employment and unemployment were comparatively moderate compared with the massive slump in the number of hours worked. This was due, in particular, to the extensive use of short-time work schemes to bridge the working hours lost, measures agreed by employers and trade unions to safeguard jobs, and stabilising government measures, as well as the rapid economic recovery which followed the slump in the second quarter. Accordingly, despite the renewed sharp rise in economic output, only a small number of new employees were hired in the third quarter, and, instead, short-time work was cut back massively. In October, the employment level was still around 1½% below the pre-pandemic level.

Recovery to be interrupted in Q4 2020 and Q1 2021

In the final quarter of 2020 and the first quarter of 2021, the renewed temporary tightening of restrictions on economic activity will also hamper recovery in the labour market. Short-time work is likely to rise again in the sectors of the economy affected by closures, even though, overall, it will remain well below the level seen in the second quarter. Employment will fall slightly and unemployment could reach a somewhat higher level at the beginning of 2021 than in the second quarter of 2020.

As the economy picks up, working hours, in turn, will rise again first from the second quarter of 2021 onwards. The number of hours worked will grow, above all, as a result of the

Labour market during the pandemic

Seasonally adjusted

1 Increase in unemployment rate in percentage points.
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As economy recovers, working hours will first return to normal, followed by employment, too

reduction in short-time work and working time accounts being filled up. From the second half of next year onwards, growing success in combating the pandemic is likely to increase the planning certainty of enterprises and thus also their willingness to recruit new staff. Even so, on an annual average for 2021, the employment level will still fall significantly short of the previous year's level at the beginning of the year due to a considerable carry-over effect. By comparison, employment growth will be fairly robust in 2022. On the other hand, the growth in working hours per person in employment will decelerate as these converge towards pre-crisis levels.

Unemployment set to fall from mid-2021, but will not reach pre-crisis levels over projection horizon

Contrary to employment, annual average unemployment for 2021 will be higher than the previous year's level. Although it will decline at an accelerated pace from mid-2021 onwards, it will not reach its pre-crisis level over the projection horizon. Its very low pre-pandemic level was the result of a long and mature upswing.

Labour force participation and immigration temporarily depressed by pandemic; however, catch-up effects in 2022

The labour supply is not heavily influenced by the pandemic, but it is influenced to some extent. The labour force is growing at a much slower pace in 2020 than previously and will even fall slightly in 2021. Some members of the workforce withdrew from the labour market, at least temporarily, when they lost their jobs. This is particularly the case for those who are not entitled to payments from the Federal Employment Agency, for example, because they were previously in low-paid employment. Labour force participation is therefore likely to show signs of a dip in the short term. Furthermore, immigration to Germany, which had played a major role in the upturn in employment in recent years, was considerably hampered by the pandemic-related restrictions. This year, net immigration to Germany will be roughly half as high as it was in 2019. From mid-2021 onwards, immigration is likely to go back up, which means that net migration to Germany could return to 250,000 persons over the course of the year. A minor catch-up effect is assumed in 2022. Together with rising labour force participation, this would lead to an increase in the size of the labour force.

Supply constraints to increase again in medium to long term

Looking ahead to 2023 and beyond, however, it can be assumed that the underlying demographic developments will increasingly curtail the size of the labour force, despite high immigration and a growing propensity amongst individuals to participate in the labour force. Accordingly, employment will barely be able to rise further and labour supply constraints from the pre-crisis period will return.

Labour costs and prices

Increase in negotiated pay rates depressed by crisis and not stronger again until 2022

Negotiated pay rates rose more slowly during the crisis than previously. Against the backdrop of the significant economic slump, in the 2020 pay round, employers and trade unions mostly agreed on job-protecting measures and low pay agreements. In the coming year, too, employers and trade unions will predominantly agree on small wage increases in the light of the still subdued economic activity and higher unemployment. Employers and trade unions will not return to higher pay agreements until 2022 onwards when there is continued economic recovery.[8]

Actual earnings down in 2020 mainly due to short-time work, but then up at accelerated pace

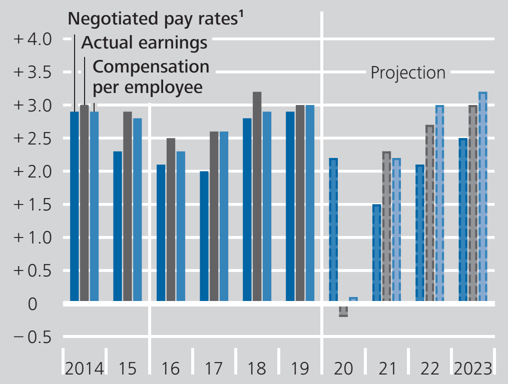
The impact of labour market adjustments on actual earnings has been even more pronounced than on the negotiated pay rate. In particular, the large-scale deployment of short-time work schemes reduced the paid working hours per person in employment. The loss of earnings in some sectors was mitigated by negotiated or voluntary supplements by employers,[9] which, in contrast to short-time working benefits, are a component of gross wages and salaries in the national accounts. Nevertheless, average actual earnings fell exceptionally sharply in the second quarter of 2020 and slightly for 2020 as a whole. As short-time work declines and working hours thus gradually increase, actual earnings will rise again more significantly, little by little. In the last year of the projection horizon, in addition to the then normalised economic framework data, intensified labour market shortages will also lead to substantial wage growth. Rising employer social contribution rates for the statutory health, unemployment and pension insurance schemes will additionally increase compensation per employee in 2022 and 2023 and contribute to upward pressure on prices.

Unit labour costs characterised by delayed recovery in productivity and wages

Unit labour costs are rising exceptionally steeply this year due to the crisis. This reflects the fact that labour productivity per person in employment is falling sharply, while labour costs are changing comparatively little.[10] As the economy begins to recover, labour productivity is then likely to initially rise more strongly than labour costs. Unit labour costs will therefore fall markedly, especially in the coming year. Domestic inflation as measured by the GDP deflator will not be impacted by the sharp fluctuations in unit labour costs. Instead, these will be largely cushioned using aggregate profit margins. In 2023, unit labour costs will provide a more robust signal of domestic price pressures once more. As things currently stand, unit labour costs are likely to then rise markedly and enterprises' profit margins could also improve again somewhat. The GDP deflator could thus increase by around 1¾%.

Negotiated pay rates, actual earnings and compensation of employees

Year-on-year percentage change, monthly basis



Sources: Federal Statistical Office. 2020 to 2023 Bundesbank projections. **1** According to the Bundesbank's negotiated wage index.
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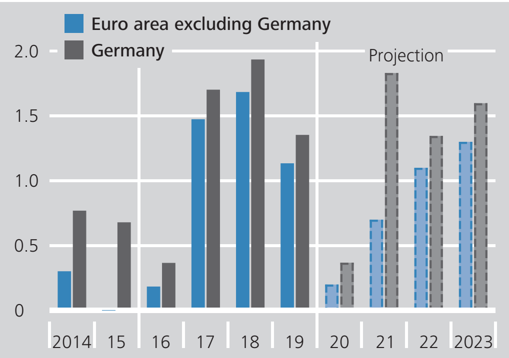
Underlying inflation trend in 2020 moderate as a result of the VAT cut …

Consumer inflation continued to decline over the second and third quarters, sinking to -0.7% in November as measured by the Harmonised Index of Consumer Prices (HICP). Besides falling energy prices, the VAT cut from July to December, of which probably just over 60% has been passed through to consumers, is also having an impact.[11] Setting aside this change to tax legislation, which was not included in the June projection, prices have developed roughly as expected over the last few months. For instance,

8 All past pay agreements included in the Bundesbank's negotiated pay rate statistics (around 500 collective wage agreements and provisions governing civil servant pay) are factored into the projections of negotiated wage increases. They are extrapolated beyond their contractual term, taking into account the overall economic situation and industry-specific features.
9 Special coronavirus payments, which are not subject to tax and social security insurance, also supported actual earnings in 2020.
10 At present, the large-scale deployment of short-time work, in particular, is reducing labour productivity. Here, as in the table on p. 25, the development of productivity and wages is described per capita. On an hourly basis, productivity will decline less sharply due to reduced working hours per person in employment and wages will rise considerably. The various approaches have little impact on unit labour costs.
11 See Deutsche Bundesbank (2020b).

Consumer prices*

Year-on-year percentage change



Sources: Federal Statistical Office, Eurostat and Bundesbank calculations. 2020 to 2023 Bundesbank projections (for Germany) and calculations based on Eurosystem projections (for the euro area excluding Germany). * Based on the Harmonised Index of Consumer Prices.

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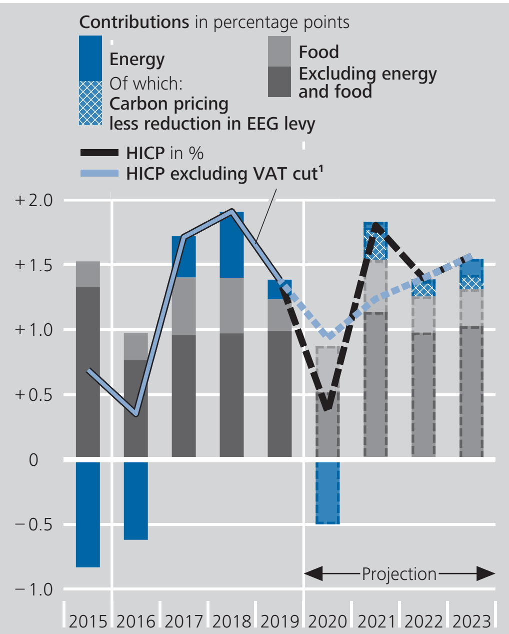
Contributions to headline HICP inflation, by component

Year-on-year change



Sources: Federal Statistical Office and Bundesbank calculations and projections. **1** Estimated impact of temporary VAT cut in 2020: −0.6 percentage point (corresponds to just over 60% of the mechanical pass-through); a symmetrical effect is assumed for 2021.

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net food prices have risen sharply, not least owing to adverse weather conditions and higher costs for preventing the spread of infection. Looking at non-energy industrial goods and services, the weak demand caused by the pandemic did lead to significant price reductions in specific segments such as clothing and travel. On the other hand, however, the dampening impact on prices was limited overall as it was counteracted by higher costs stemming from measures aimed at containing the number of infections or supply shortages. Excluding the VAT cut, annual average core inflation in 2020 therefore still stands at just over 1%, which is consistent with the average recorded over the past few years. Taking into account the tax cut, the core rate is likely to be 0.7%. Headline HICP inflation will probably rise by 0.4%.

… and will be overshadowed in 2021 by VAT cut reversal and climate package measures

The underlying inflation trend will remain subdued next year. Both aggregate demand and wage growth will remain muted at first, only becoming apparent in the inflation rate with a time lag. Furthermore, the costs incurred in connection with the measures to contain the pandemic will become less significant. However, the subdued underlying trend will be overshadowed by the reversal of the VAT cut. This is based on the assumption that, in response to the tax change, prices will be raised as sharply in January 2021 as they were lowered in July 2020.[12] Moreover, additional climate package measures will enter into force at the beginning of 2021. The introduction of carbon emission certificates in the transport and heating sectors will see a steep rise in prices for refined petroleum products and gas, which will only be partially offset by cuts to electricity prices.[13] The climate package also involves an increase in motor vehicle tax, which is included in the services component and thus the core inflation rate; this will also drive prices up. Headline HICP inflation should therefore already start to return to perceptibly positive ter-

12 Based on the current state of knowledge, towards the end of 2020, there are no plans to adjust prices to the level prior to the VAT cut, nor to raise them significantly beyond this level.

13 The climate package has been included in the projections since December 2019; see Deutsche Bundesbank (2019). The price path envisaged at the time for the carbon emission certificates was lower than today's figures. Besides this, in June 2020, the EEG levy, which is an important component of electricity prices, was capped in 2021 and 2022. Together, the climate package measures and the cap on the EEG levy will probably boost the HICP by 0.3 percentage point in 2021.

ritory from the beginning of 2021. As things currently stand, the second half of the year may well see fairly high inflation rates of around 2½% as prices in 2020 were dampened by the VAT cut.

Economic recovery reflected by pick-up in underlying inflation trend in 2022 and 2023

From the beginning of 2022, these legislative changes will barely influence consumer price inflation,[14] and the HICP rate will probably reflect the economic situation more closely again. This applies to both the core rate and the headline rate, as energy and food prices are not likely to put a great deal of upward pressure on prices. However, prices should pick up owing to renewed wage growth. In addition, profit margins, which had previously been depressed, should also recover as aggregate demand rises. This is all the more true given that market concentration could increase in individual segments as a result of business closures in the wake of the pandemic. The remaining suppliers in these areas would then be able to increase their margins more easily. Overall, core and headline inflation – adjusted for legislative changes – could therefore climb from just over 1% in 2021 to 1.3% in 2022 before increasing further to around 1.5% or slightly more in 2023.

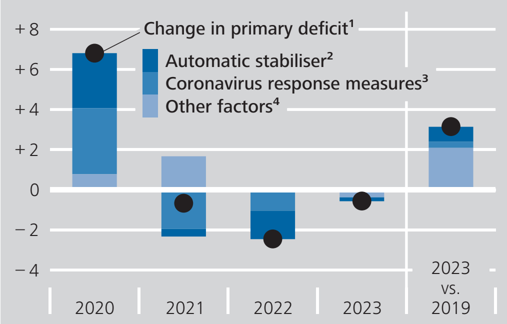
Public finances

Ups and downs in government deficits

Public finances are stabilising economic developments to a considerable degree this year. According to this projection, the government budget deficit will stand at around 5% of GDP after recording a surplus of 1.5% of GDP in 2019. The deficit will decline only slightly next year as the expiry of the measures to deal with the coronavirus pandemic is offset by expansionary fiscal policy elsewhere. In 2022, as coronavirus measures continue to expire and the economy recovers, the government deficit will then fall significantly. In 2023, the deficit will move towards 1% of GDP. Overall, the uncertainty surrounding the forecast remains high as a result of the coronavirus crisis.

Stabilising effect of the general government budget*

As a percentage of GDP, year-on-year change



* Bundesbank estimates. A positive change shows fiscal expansion. **1** Government deficit excluding interest expenditure. **2** Change in cyclical deficit. **3** For a further breakdown, see p. 22. **4** All other factors that influence the primary deficit (including measures not directly relating to the coronavirus crisis).

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Structural situation in 2023 less favourable than before the coronavirus crisis

In structural terms – i.e. adjusted for cyclical and other temporary effects – public finances are likely to be in worse shape at the end of the projection horizon than before the crisis. The structural surplus of ½% of GDP in 2019 will be transformed into a structural deficit of around 1% of GDP in 2023, mainly owing to strong growth in spending on pensions, health and long-term care, as well as plans for the decarbonisation and digitalisation of the economy. Interest expenditure will have somewhat of a counterbalancing effect. Despite the higher debt ratio, it will continue to fall sharply, as interest rates on the high levels of new borrowing induced by the crisis are assumed to be negative on average. As a result, the average interest rate on government debt will fall again significantly, and could amount to just ½% in 2023.

2020: automatic and active fiscal stabilisation

The coronavirus pandemic, in particular, is shaping developments in 2020. The downturn is causing taxes and social contributions from regular employment to fall whilst, at the same time, expenditure on short-time working and unemployment benefits is rising. The measures taken to combat the coronavirus are having an

14 Prices for carbon emission certificates will be raised only moderately in 2022 and 2023, with ongoing reductions in electricity prices dampening the impact on headline energy inflation in 2022.

Key figures of the macroeconomic projection – non-calendar adjusted

Year-on-year percentage change

Item	2019	2020	2021	2022
GDP (real)	0.6	− 5.1	3.0	4.4
GDP (real, calendar adjusted)	0.6	− 5.5	3.0	4.5
Components of real GDP				
Private consumption	1.6	− 6.4	3.8	7.0
Memo item: Saving ratio	10.9	16.8	14.5	9.4
Government consumption	2.7	4.6	0.0	1.0
Gross fixed capital formation	2.5	− 3.3	1.3	6.8
Business investment[1]	1.6	− 8.1	− 23.2	9.6
Private housing construction investment	4.0	2.3	− 1.4	3.2
Exports	1.0	− 9.7	6.5	4.1
Imports	2.6	− 8.9	5.1	7.0
Memo item: Current account balance[2]	7.1	7.2	7.7	6.6
Contributions to GDP growth[3]				
Domestic final demand	1.9	− 3.1	2.2	5.3
Changes in inventories	− 0.7	− 1.1	− 0.1	− 0.1
Exports	0.5	− 4.6	2.8	1.9
Imports	− 1.1	3.6	− 1.9	− 2.7
Labour market				
Total number of hours worked[4]	0.6	− 4.2	1.9	2.4
Employed persons[4]	0.9	− 1.0	− 0.6	1.3
Unemployed persons[5]	2.3	2.7	2.9	2.5
Unemployment rate[6]	5.0	6.0	6.4	5.5
Memo item: ILO unemployment rate[7]	3.2	4.2	4.7	3.8
Wages and wage costs				
Negotiated pay rates[8]	2.9	2.2	1.5	2.1
Gross wages and salaries per employee	2.9	− 0.3	2.3	2.7
Compensation per employee	3.0	0.1	2.3	2.9
Real GDP per employed person	− 0.3	− 4.1	3.6	3.0
Unit labour costs[9]	3.4	4.4	− 1.3	− 0.1
Memo item: GDP deflator	2.2	1.6	1.9	1.4
Consumer prices[10]	1.4	0.4	1.8	1.3
Excluding energy	1.4	1.0	1.7	1.4
Energy component	1.4	− 4.6	3.0	1.2
Excluding energy and food	1.4	0.7	1.5	1.3
Food component	1.5	2.3	2.5	1.7
Residential property prices	5.8	6.6	5.4	4.3

Sources: Federal Statistical Office; Federal Employment Agency; Eurostat; 2020 to 2022 Bundesbank projections. **1** Private non-residential fixed capital formation. **2** As a percentage of nominal GDP. **3** In arithmetical terms, in percentage points. Discrepancies in the totals are due to rounding. **4** Domestic concept. **5** In millions of persons (Federal Employment Agency definition). **6** As a percentage of the civilian labour force. **7** Internationally standardised as per ILO definition, Eurostat differentiation. **8** Monthly basis; pursuant to the Bundesbank's negotiated wage index. **9** Ratio of domestic compensation per employee to real GDP per employed person. **10** Harmonised Index of Consumer Prices (HICP).

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even greater impact (see pp. 21 f. for more information about the fiscal policy measures that these entail).

2021: only moderate decline in deficit at first, despite onset of economic recovery

In 2021, the deficit will fall to around 4% of GDP. The economic cycle will have only slightly less of a negative impact on the government budget. Although economic activity will pick up, labour market developments, which are particularly important for the government budget, will lag behind. The fact that most of the coronavirus measures will be phased out by the end of 2021 will, in itself, significantly reduce the deficit. However, decisions that increase the deficit will be taken elsewhere. Furthermore, expenditure on pensions, healthcare and long-term care insurance will rise sharply.[15]

2022: Stabilising effect of government budget declining more sharply

In 2022, the deficit will then fall more sharply to around 2% of GDP, mainly as the economic recovery will be having a greater impact on the government budget. Moreover, most of the pandemic support measures will now have expired. Social spending will continue to grow fairly sharply, but will be offset by rising social contribution rates.

Debt ratio up to around 70% in 2020, but set to fall significantly again later

The debt ratio, i.e. government debt over GDP, will rise to around 70% in 2020 (2019: 59.6%). Government deficits are financed primarily through additional government borrowing. Financial assets such as reserves belonging to social security funds are being deployed only to a small extent. In addition, the government-guaranteed coronavirus assistance loans, government capital injections and higher cash reserves are pushing up debt (coronavirus-related one-off effects which generally have no impact on the deficit). Moreover, nominal GDP in the denominator of the debt ratio is declining. The debt ratio will fall only slightly in 2021. Over the remainder of the period, however, it will then decline more sharply to around 65% in 2023.

15 The interaction between the 2018 pension package and the volatile wage and employment developments during the coronavirus crisis means that pensions are growing more strongly than wages; see also Deutsche Bundesbank (2020g).

From 2022 onwards, local government deficits will thus be significantly lower again and the coronavirus-related one-off effects will be reduced. Moreover, the portfolios of government-owned bad banks will continue to decline and nominal GDP will expand very significantly at times.

Risk assessment and alternative scenarios

Uncertainty remains unusually high, particularly with regard to how the pandemic will unfold

The outlook for the German economy in terms of economic activity and consumer prices remains unusually uncertain overall. Compared to the spring, more is now known about the virus, the measures to prevent its spread and the effects on the behaviour of economic agents and the economy itself. However, it remains difficult to gauge how the pandemic will unfold and what the macroeconomic consequences will be. In a situation like this, alternative scenarios help to illustrate the complex uncertainties surrounding the medical situation and its economic impact.[16]

Risks from external environment and overall risks are balanced

However, risks to the macroeconomic outlook are not limited to those arising directly from the pandemic. The German economy is also heavily dependent on global trade. The uncertainties that currently exist here are mainly centred around future trade relations between the EU and the United Kingdom as negotiations on the structure of a future trade deal are still ongoing. Although the projection already errs on the side of caution by assuming there will be a need to fall back on the World Trade Organization's "most favoured nation" rules (see the box on pp. 19 ff.), there are also downside risks relating to the economic implications this might have. There is a certain degree of hope that foreign demand will become more buoyant if the uncertainties that have surrounded global trade linkages for some time decline because, for instance, US trade policy is becoming more predictable. From today's perspective, this would result in a broadly balanced distribution of upside and downside risks to the GDP and inflation outlook in the context of the international environment. This is also true from an overall perspective, as the risks associated with the pandemic are also broadly balanced. Although deviations would be more

Key figures of the various macroeconomic scenarios

Year-on-year percentage change, calendar adjusted[1]

Item	2020	2021	2022	2023
Baseline scenario				
GDP (real)	– 5.5	3.0	4.5	1.8
Unemployment rate[2]	6.0	6.4	5.5	5.2
Consumer prices[3]	0.4	1.8	1.3	1.6
Excluding energy and food	0.7	1.5	1.3	1.5
Milder scenario				
GDP (real)	– 5.3	5.6	4.3	1.7
Unemployment rate[2]	5.9	6.0	5.1	4.9
Consumer prices[3]	0.4	1.8	1.5	1.7
Excluding energy and food	0.7	1.5	1.4	1.7
More severe scenario				
GDP (real)	– 5.7	– 0.2	3.2	2.4
Unemployment rate[2]	6.0	7.2	6.6	6.1
Consumer prices[3]	0.4	1.7	1.1	1.2
Excluding energy and food	0.7	1.4	1.0	1.0

Sources: Federal Statistical Office; Federal Employment Agency; Eurostat; 2020 to 2023 Bundesbank projections. **1** If calendar effects present. **2** As a percentage of the civilian labour force. **3** Harmonised Index of Consumer Prices (HICP), unadjusted figures.

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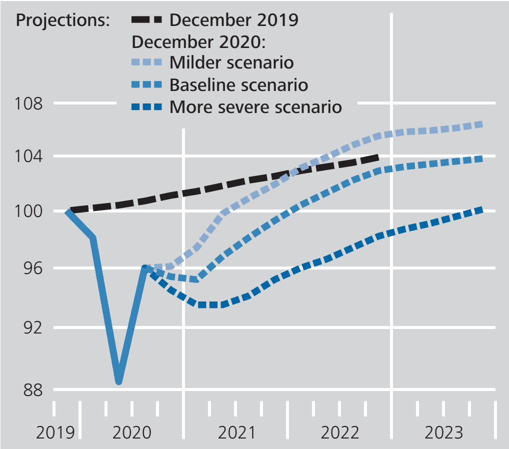
Scenarios for real GDP

Q4 2019 = 100, log scale



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16 See Deutsche Bundesbank (2020a).

serious in the more severe scenario than in the milder scenario, the milder scenario is somewhat more likely to occur.

Milder scenario: more successful implementation of medical solutions …

In the milder scenario, medical solutions are available more promptly in Germany and abroad and are implemented more quickly. For example, large parts of the population might already receive a vaccination in the course of next year. The number of infections falls rapidly. Under these conditions, the containment measures could be fully phased out by the end of 2021.

… brings about a faster and stronger recovery

In this scenario, German enterprises' foreign demand recovers more quickly and private consumption in Germany expands earlier and more sharply. GDP already reaches its pre-crisis level in mid-2021; growth in 2022 and 2023 is nonetheless similar to that of the baseline scenario. The labour market picks up more quickly and unemployment falls to pre-pandemic lows by the end of the forecast horizon. Against this backdrop, potential output will remain largely unimpaired. The output gap will already have closed by the end of 2021 and will be in significantly positive territory from 2022 onwards. Although the price-driving effects of the costs of combatting the pandemic are smaller, given the more favourable macroeconomic environment, the inflation rate will nevertheless be somewhat higher than in the baseline scenario, especially in 2022 and 2023. In this scenario, public finances will develop much more favourably. The main reason for this is the more upbeat economic situation, which will lead to higher revenue from taxes and social contributions and lower expenditure on unemployment benefits.

More severe scenario: pandemic is not quickly overcome and constraints remain in place, …

The more severe scenario assumes that the developments in the crisis remain serious. Despite more stringent countermeasures, the pandemic is insufficiently contained in the final quarter of 2020 and the first quarter of 2021; over the next few years, too, these attempts achieve only limited success. The time taken to implement medical solutions in Germany and abroad spans the entire projection horizon, for instance because vaccines' effectiveness diminishes or because vaccination rates are not sufficiently high. Containment measures have to remain in place until the end of 2023, although they are eased little by little.

… causing serious and lasting damage to potential output

In this scenario, aggregate output will be affected substantially and on a sustained basis, despite even stronger support from public finances. This is because demand for German exports will be persistently weak and private consumption will remain depressed for a long time owing to the constraints and an increased propensity to save. The labour market situation will barely improve. In a scenario like this, GDP will be very slow to recover, only returning to its pre-crisis level at the end of the projection horizon, if at all. The impact on potential output and its growth would be severe and lasting. In this scenario, aggregate capacity remains underutilised over the entire projection horizon. Under these conditions, although combatting the pandemic will cause considerable costs for enterprises, leading to price increases, persistently weak demand for goods and the slack in the labour market will significantly dampen pressure on wages and prices and limit the scope for passing through higher costs. On balance, then, consumer price inflation will be markedly weaker than in the baseline scenario. Public finances will be significantly worse off in this scenario. The less favourable economic situation will push up the deficit ratio. It is assumed that enterprises will continue to receive direct assistance and that some coronavirus assistance loans will default. In addition, enterprises will rely more heavily on government assistance loans and equity capital.

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