Outlook for the German economy for 2021 to 2023

The German economy is overcoming the coronavirus crisis and is poised for the start of a strong upswing. This is contingent on the pandemic being quickly and sustainably suppressed by a successful vaccination programme, which will allow protective measures to be swiftly rolled back. As a result, households will again have access to opportunities for consumption that were previously closed off, and private consumption will see exceptionally strong growth over the rest of this year and in 2022 in particular. A portion of the involuntary savings built up during the course of pandemic will be spent, giving private consumption an additional boost. In addition to this, the upswing will be driven by exports as these benefit from the recovery in global trade, which will level off only gradually.

Given these conditions, real gross domestic product (GDP) will grow in calendar-adjusted terms, rising by slightly less than 4% this year and just over 5% next year. In 2023, this growth will decelerate but still amount to nearly 2%. Pre-crisis levels will be reattained as early as this summer. Aggregate capacity utilisation will reach an above-average level from as early as next year.

This year, the rate of inflation as measured by the Harmonised Index of Consumer Prices (HICP) will rise strongly to 2.6%. The main factors behind this are value added tax (VAT) rates, which were raised back to their previous levels, the newly introduced CO_2 emission certificates, as well as the sharp rises in prices for crude oil and food products. It is possible that inflation rates could amount to around 4% towards the end of the year. By contrast, the core rate excluding energy and food is only likely to stand at around slightly more than 1% – also adjusted for the VAT effect – as it had in the previous year. By 2023, it could rise to 1.7% as a result of the upswing, the improved labour market situation, and renewed stronger wage growth. As energy and food will then no longer exert above-average upward pressure on prices, headline inflation will likewise abate to 1.7%.

Public finances will continue to significantly bolster the economy in the current year as well. In this context, the deficit and debt ratios will continue to rise to more than 5% and more than 70% respectively. They will both then go back down considerably in the coming years, as the economy recovers and the fiscal crisis assistance measures expire or are scaled back.

Compared with the December 2020 outlook, considerably higher GDP is expected over the entire projection horizon. In line with the stronger upswing, the rate of inflation excluding energy and food is projected to also be somewhat higher over this period. Furthermore, headline consumer price inflation for this and next year is now expected to be significantly higher mainly because energy prices are rising considerably faster than anticipated back in December. While the risks to economic growth seem balanced as things stand today, the risks to price developments are tilted to the upside.

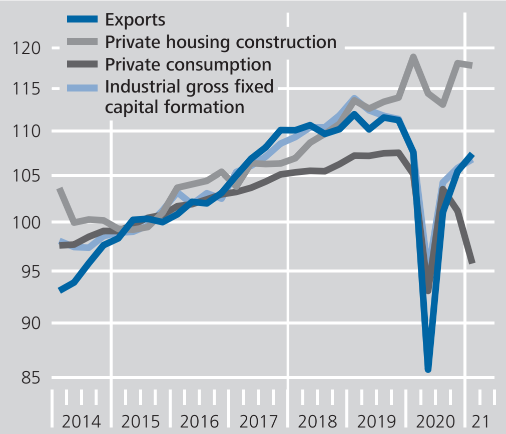
Economic outlook[1]

German economic recovery suffers considerable setback due to pandemic in Q4 2020 and Q1 2021 …

The German economy continued to suffer due to the coronavirus pandemic in the final quarter of 2020 and the first quarter of 2021. After the pandemic situation had reintensified in the autumn of 2020, government containment measures were considerably tightened once again. As during the first wave of the pandemic in the spring of 2020, this had a hard impact on certain services sectors such as hotel and restaurant services, cultural activities, and parts of the bricks-and-mortar retail trade sector in particular. As opportunities for consumption were unavailable, the household saving ratio recently nearly reattained the record level seen in the second quarter of 2020. Conversely, private consumption, which had previously experienced a robust recovery, collapsed once again. By contrast, economic sectors that were not directly affected by the pandemic containment measures, such as construction and industry, recorded surprisingly strong expansion. The latter benefited from the swift recovery in global trade, which was reflected in sharp growth in exports. However, the rapidly rising demand for industrial goods around the world in conjunction with supply-side disruptions led to increasing supply bottlenecks for some intermediate goods. Due to a shortage of semiconductors, for example, motor vehicle production had to be throttled in the fourth quarter. In the final quarter of 2020 and the first quarter of 2021 combined, real GDP fell by a total of 1.3% after seasonal and calendar adjustment. This was a marginally greater decline than had been expected in the projection from December 2020.[2] At the beginning of the year, real GDP fell short of its pre-crisis level from the fourth quarter of 2019 by 5%.

Key components of aggregate demand

2015 = 100, seasonally and calendar adjusted, log scale



Source: Federal Statistical Office.
Deutsche Bundesbank

June 2021 projections

Year-on-year percentage change

Item	2020	2021	2022	2023
Real GDP, calendar adjusted	– 5.1	3.7	5.2	1.7
Real GDP, unadjusted	– 4.8	3.7	5.1	1.6
Harmonised Index of Consumer Prices	0.4	2.6	1.8	1.7
Excluding energy and food	0.7	1.6	1.5	1.7

Source: Federal Statistical Office. 2021 to 2023 Bundesbank projections.
Deutsche Bundesbank

… but significant easing of protective measures in Q2 and Q3 2021 provides strong boost once again

In the second and third quarters of 2021, it is likely that the German economy will overcome this setback and see strong growth. The numbers of coronavirus infections have been in considerable decline since the end of April, and the pandemic containment measures have, with some regional variations, already been eased extensively. This projection assumes that the pandemic – underpinned by a successful vaccination programme in particular – will also continue to be quickly and sustainably suppressed going forward. As a consequence, the containment measures will probably be further eased to a significant extent over the coming months. This will result in substantial catch-up effects, primarily in private consumption as well as in services sectors that had been impacted especially hard by the measures. Exports should

1 This projection for Germany was completed on 26 May 2021. It was incorporated into the projections for the euro area published by the ECB on 10 June 2021.
2 See Deutsche Bundesbank (2020a).

– driven by persistently brisk foreign demand – also see additional robust growth. However, like industrial production, they are likely to still be stifled somewhat by supply bottlenecks for intermediate goods, particularly in the second quarter. The very favourable overall outlook is reflected in the considerable improvement in business expectations among German enterprises over recent months, as reported by the ifo Institute. All in all, GDP could return to its pre-crisis level as early as the third quarter of 2021.

Strong economic growth loses momentum only as of 2023

Over the remainder of the projection horizon, it is also likely that the German economy will grow with great momentum at first. The large gains in exports will level off only gradually. This, in conjunction with a high level of capacity utilisation in industry, will bolster business investment. Above all, however, private consumption will continue to see exceptionally strong growth and will remain the key driving force behind the robust upswing. This assumes that pandemic-related restrictions will expire in the first few months of next year. For a time, private consumption will then overshoot its expansionary path resulting from income growth, as a portion of the additional savings built up during the pandemic will be spent. This surge will reverse itself towards the end of the projection horizon. The saving ratio will then again rise slowly from a low starting level, which will cause private consumption to grow at a slower pace than real disposable household income over the course of 2023.[3] The latter will rise at increasingly faster rates over the projection horizon due to improvements on the labour market. The fiscal assistance that extensively mitigated income losses in 2020 and 2021 will mostly expire in 2022.

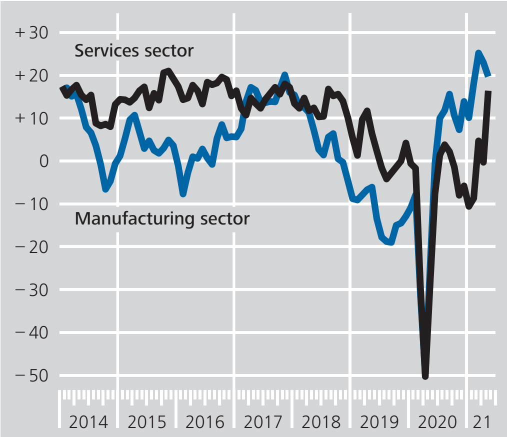
GDP level significantly higher than projected in December 2020

Overall, this presents a very favourable outlook for the German economy: the swift recovery from the crisis will continue with an upswing that proceeds strongly for a time but then

3 With regard to the annual average growth rates, this is still concealed by the large overhang from 2022.

Business expectations

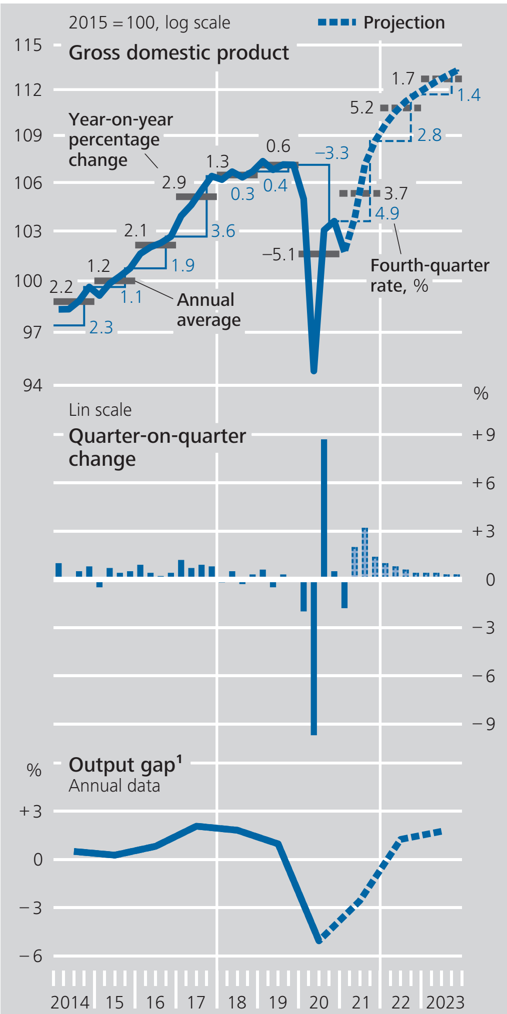
Balances, seasonally adjusted



Source: ifo Institute.
Deutsche Bundesbank

Aggregate output and output gap

Price, seasonally and calendar adjusted



Sources: Federal Statistical Office and Bundesbank calculations. 2021 to 2023 Bundesbank projections. **1** Deviation of GDP from estimated potential output.
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	2.0	3.2	0.8
Fourth-quarter rate[2]	− 3.3	4.9	2.8	1.4
Average annual GDP growth rate, calendar adjusted	− 5.1	3.7	5.2	1.7
Calendar effect[3]	0.4	0.0	− 0.1	− 0.2
Average annual GDP growth rate[4]	− 4.8	3.7	5.1	1.6

Source: Federal Statistical Office. 2021 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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Revisions since the December 2020 projection

Year-on-year percentage change

Item	2021	2022	2023
GDP (real, calendar adjusted)			
June 2021 projection	3.7	5.2	1.7
December 2020 projection	3.0	4.5	1.8
Difference in percentage points	0.7	0.7	− 0.1
Harmonised Index of Consumer Prices			
June 2021 projection	2.6	1.8	1.7
December 2020 projection	1.8	1.3	1.6
Difference in percentage points	0.8	0.5	0.1

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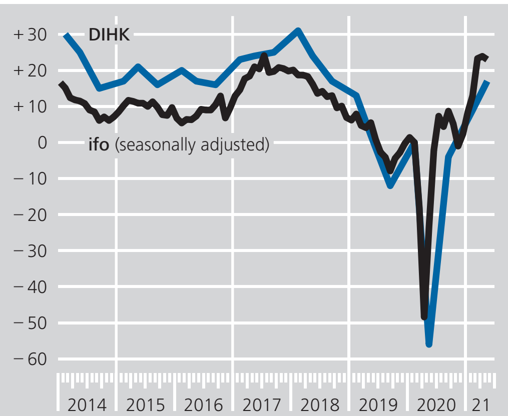
Export expectations

Balances



Sources: ifo Institute and Association of German Chambers of Industry and Commerce (DIHK).

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gradually loses momentum again towards the end of the projection horizon. Following the massive collapse of 5% last year, calendar-adjusted real GDP could be able to make significant gains this year and next, growing by slightly less than 4% in 2021 and just over 5% in 2022. In 2023, this growth will lose momentum but then still amount to nearly 2%. Here, looking at the annual averages obscures the fact that GDP will rise by almost 5% over the course of this year and that annual growth will already drop below 3% during next year. In comparison with the projection from December 2020, not only will economic output return to its pre-crisis level half a year earlier than expected, but considerably higher GDP is also anticipated for the entire projection horizon. The key factor for this is higher foreign demand resulting in greater exports.

Above-average aggregate capacity utilisation as early as 2022

As a result of the strong upswing following the coronavirus crisis, economic output will exceed long-term potential output as early as 2022, meaning that aggregate capacity will be utilised to an above-average degree. This assumes that the pandemic will depress potential output at the projection horizon by only slightly less than 1%. The growth rate of potential output is estimated at 1.0% for this year. In each of the next two years, it will then rise to 1.2% primarily as a result of renewed increased expenditure for fixed capital formation.

Exports initially see strong underlying trend growth …

In the fourth quarter of 2020 and the first quarter of 2021, exports grew to a considerably greater extent than had previously been expected. Global trade recovered despite the intensification of the pandemic in many countries, and German industry was met with brisk foreign demand. In addition, there was an improvement in the medium-term underlying conditions as the European Union and the United Kingdom reached a trade agreement before the end of the year. Furthermore, international trade relations are likely to have become more predictable following the transition to the new US administration. Against this background, enterprises’ short-term export ex-

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 May 2021. 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 which have been either adopted or adequately specified and are deemed likely to be implemented.

With regard to the coronavirus pandemic, it is assumed that the vaccination campaign in the European Union (EU) will continue successfully. This means that the containment measures may be eased quickly over the rest of the year and largely elapse in the first months of 2022.

Global economy continues recovery process

Global economic activity recovered more quickly in the final quarter of 2020 than expected in the December outlook. Although resurging infection counts in various regions of the world and the ensuing containment measures likely had a more considerable dampening effect on economic growth in the first quarter of 2021 than previously expected, global economic activity is recovering as the pandemic is gradually being overcome. It is likely to expand further over the next two years, albeit at a somewhat slower rate than in 2021.

Economic activity in the United States will receive a substantial boost from the American Rescue Plan, a comprehensive economic stimulus package.[2] The trade and cooperation agreement reached with the EU[3] shortly before the end of last year also gives reason to expect greater economic growth for the United Kingdom over the projection horizon than estimated in December.[4] It had still been assumed back then that the negotiating partners would not reach an agreement by the end of 2020. China quickly brought the pandemic under control and by the middle of last year had already returned to its expansionary path expected before the coronavirus crisis hit. By contrast, economic activity in India is likely to have seen a sharp downturn in the current quarter due to the high numbers of infections. Although a rebound is expected by the end of the year, recurrent surges in infection counts and sluggish vaccination rollouts mean that a rather subdued recovery process is expected for many emerging market economies. The outlook for the global setting is still subject to a high level of uncertainty, especially regarding the future global progression of the pandemic.

For the global economy excluding the euro area, an increase of 6¼% is estimated this year, 4¼% next year and 3¾% in 2023. Following its significant decline last year, international trade (excluding the euro area) is initially likely to see a relatively strong uptick with rates of 10¾% this year and 5% in 2022. In 2023, global trade is expected to grow at 3¾%, representing a return to comovement with global activity.

1 The projections made by the national central banks of the euro area countries were completed on 26 May 2021.
2 See Deutsche Bundesbank (2021a).
3 See Deutsche Bundesbank (2021b).
4 This is true even despite the considerable economic downturn in the first quarter of 2021 owing to stricter COVID-19 containment measures.

Major assumptions of the projection

Item	2020	2021	2022	2023
Exchange rates of the euro				
US dollar/euro	1.14	1.21	1.21	1.21
Effective[1]	119.3	122.0	122.2	122.2
Interest rates				
Three-month EURIBOR	− 0.4	− 0.5	− 0.5	− 0.3
Yield on government bonds outstanding[2]	− 0.5	− 0.2	0.0	0.2
Commodity prices				
Crude oil[3]	42.3	65.8	64.6	61.9
Other commodities[4,5]	3.2	39.0	0.1	− 8.0
German exporters' sales markets[5,6]	− 9.1	8.9	5.9	3.5

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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Progress in combatting pandemic suggests strong euro area recovery

Tight restrictions in the wake of higher infection rates were considerably less of a drag on euro area economic activity in the last quarter of 2020 and the first quarter of 2021 than in the second quarter of last year. The decline in activity was even milder than expected last December. The restrictions mainly affected the services sector, whereas the ongoing recovery in global demand provided tailwinds for industry. The latter sector is expected to bolster economic activity in the euro area over the projection horizon, too. Now that the vaccination rollout is progressing and containment measures are gradually being eased, a strong recovery is expected for the second half of this year, which will continue in the next two years at a somewhat more moderate pace. Private consumption will probably play a particular role in this regard, as it is expected to recover quickly once households resume using a larger portion of their disposable income for consumer spending as pandemic-related restrictions are lifted.[5] After rising by 5% this year, economic activity in the euro area (excluding Germany) is projected to grow by 4½% in 2022 and by 2¼% in 2023, which means that a more dynamic recovery is expected than in the December projection.

Although German exporters' sales markets expanded less strongly on average over last year than global trade, this is primarily attributable to the drop in imports from the United Kingdom in the first quarter. Over the remainder of this year and in 2022, the sales markets are likely to recover more dynamically than global trade. Growth rates will be virtually identical in 2023.

Technical assumptions of the projection

Crude oil prices rose sharply over the first quarter in light of the expected rapid rebound in global demand. On average for 2021, prices will probably be around 50% higher than the level assumed in the December projection. Derived from forward quotations, however, a marked decline is assumed for the next two years. The prices of other commodities as measured in US dollars likewise went up steeply, and they are also expected to gradually decrease by the end of the projection horizon.

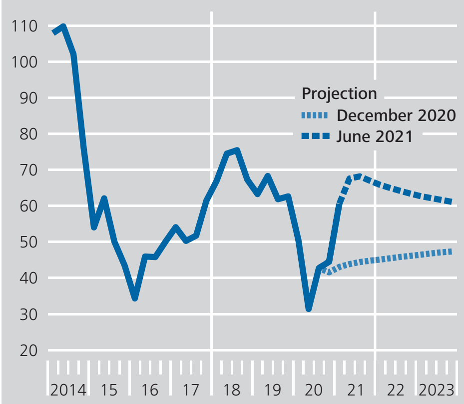
The ECB Governing Council shifted to a more accommodative monetary policy stance in December 2020 given the expected negative economic impact of a renewed increase in infection rates, increasing the envelope for the pandemic emergency purchase programme (PEPP) by €500

5 The extent to which savings accumulated owing to the pandemic were used to catch up on postponed purchases as well as additional or higher-quality services may differ across individual Member States. The speed at which each individual labour market rebounds from the consequences of the pandemic is one factor out of several in this regard.

billion to a total of €1,850 billion. It also extended the horizon for net purchases under the PEPP to at least March 2022. The objective of these purchases is to prevent a tightening of financing conditions depending on market conditions.[6] Given the continued rise in liquidity, interest rates in the money market hovered at an all-time low in recent months. By contrast, the increasing hope that the pandemic will be overcome has led, since the beginning of the year, to a marked increase in yields on ten-year Federal bonds (Bunds) via the interest rate linkage with the United States. These instruments have also seen less demand as a safe haven asset. The improved economic outlook over the forecast horizon has put forward quotations on a stronger upward path than in the December outlook. Bank lending rates are likewise expected to rise gradually. All in all, however, financing conditions will continue to remain very supportive for enterprises and consumers.

Oil price

US$ per barrel of Brent, quarterly averages



Sources: Bloomberg and ECB projections.
Deutsche Bundesbank

Since the conclusion of the December projection, the euro-US dollar rate has been impacted by the pandemic, the progress in vaccination and the monetary and economic policy measures taken on both sides of the Atlantic. In the period underlying the exchange rate assumptions, the euro stood at US$1.21 and was thus 2½% above the figure assumed in the December outlook. Compared with 42 currencies of major trading partners, the euro has appreciated only slightly.

Fiscal policy also highly expansionary in 2021

Fiscal policy measures will increase the general government deficit in 2021 by around 1% of GDP on the year, chiefly owing to additional structural expenditure. Going forward, pressure will be taken off the government budget, especially in 2022 as coronavirus support measures are discontinued.

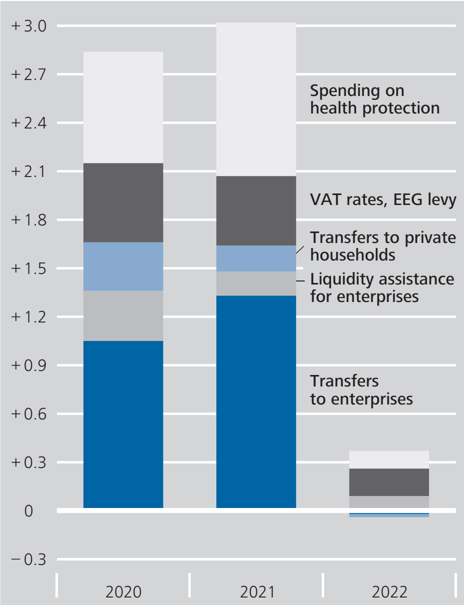
Coronavirus support measures in the narrower sense are set to weigh heavily on the deficit in 2021 at 3% of GDP, having expanded slightly compared with 2020. Most of these measures will expire in 2022. Guaranteed loans and capital injections that are only recorded in the debt level are also expected to decline from 2022. The imputations with regard to the coronavirus support measures are based on the assumptions made regarding the pandemic's trajectory, containment measures and economic growth. In this context, they are still well below the Federal budget's high spending authorisations, which comprise not only extensive additional across-the-board expenditure but also other major buffers such as business aid. Nevertheless, uncertainty surrounding their use remains extremely high.

Besides coronavirus support measures in the narrower sense, the outlook also takes into account other fiscal policy measures. Authorities at all levels of government have

6 See Deutsche Bundesbank (2021c).

Coronavirus response measures affecting the deficit*

As a percentage of GDP



* Bundesbank calculations. Coronavirus response measures are defined relatively narrowly here. For more detailed information on the definition and breakdown, see Deutsche Bundesbank (2020a), pp. 24 f.

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been implementing tax cuts; for example, since the start of 2021, the majority of taxpayers have no longer had to pay the solidarity surcharge. Moreover, the income tax scale and allowances were adjusted, which largely offsets the additional revenue generated automatically by progressive tax rates. Tax amortisation has also been accelerated (including for fixed assets in information and communication technologies).[7] By contrast, starting in 2021, additional revenue will be generated by the new certificates for CO_2 emissions from transport and building heating and by inflows from the EU's Next Generation EU (NGEU) programme. Transfers to Germany from NGEU of 0.2% of GDP each year have been earmarked for 2021 to 2023. These will generally be spent on existing programmes and in this respect will lower the government deficit.[8] Additional government investment grants (not least for climate action and digitalisation), higher child benefits and the new basic pension will put pressure on the expenditure side from 2021 in particular. With regard to social security funds, it is assumed that the Federal Government will again prevent higher contribution rates in 2022 as well by means of higher central government grants. As things currently stand, these are not envisaged for 2023, meaning that contribution rates will rise significantly, by 1½% overall through the end of the projection horizon. This increase will particularly affect additional contribution rates to health insurance institutions.

7 See Deutsche Bundesbank (2021d), p. 64 for more details on the tax measures.
8 On balance, Germany's public finances are impacted negatively by NGEU, as the expected payments to fund the NGEU as a whole significantly exceed the transfers to Germany. See Deutsche Bundesbank (2021d), p. 76.

pectations as reported by the ifo Institute have turned around sharply into positive territory during recent months. The twelve-month export expectations surveyed by the German Chamber of Industry and Commerce (DIHK) are also increasingly optimistic and almost returned to their long-term average.

… but are temporarily curbed by supply-side bottlenecks …

Exports are thus generally likely to see continued strong growth. However, the sharply rising global demand for industrial goods in conjunction with supply-side disruptions contributed to the fact that, in recent times, enterprises have complained of increasing delivery times and growing shortages of certain commodities and intermediate goods. The bottlenecks for certain semiconductor components seem to be especially pronounced. This led to production being throttled in the German motor vehicle manufacturing industry.[4] It should be assumed that these tensions will abate only gradually over the second and third quarters and will continue to dampen export growth for a time. However, in the projection, it is assumed that the supply-side bottlenecks will be resolved towards the end of the year. Enterprises should then be able to gradually work through their large numbers of orders, which will likely give exports an additional boost.

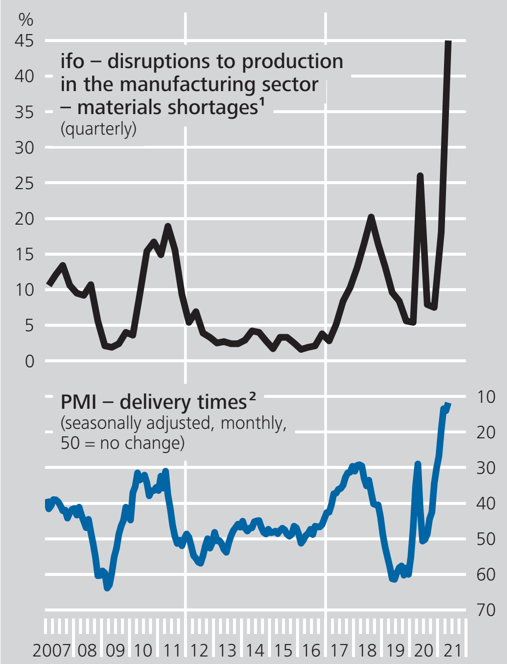
… and later lose momentum

The pace of export growth will wane again during the further course of the projection horizon. At that point in time, growth in global trade will be considerably more moderate, and German exporters will see a slight loss of market share in their sales markets. This holds especially true for trade with other euro area countries, as German enterprises will become less competitive in terms of prices due to the comparatively sharp rises in labour costs in Germany.

Initial dynamic growth in business investment as pandemic subsides

While business investment continued to rise in the final quarter of 2020 and first quarter of 2021, the rate of growth declined significantly in comparison with the extraordinarily large gains recorded in the third quarter of 2020. In this context, a role was certainly also played by the fact that investment in commercial vehicle fleets was dampened by sales channels being closed off due to pandemic containment measures as well as, potentially, difficulties regarding deliveries in the motor vehicle industry. In the second and third quarters of 2021, however, business investment should return to stronger growth. The pandemic will subside, which will reduce uncertainty surrounding sales prospects and allow for trade in motor vehicles to be reopened. In addition, industrial capacity utilisation recently rose above its long-term average for the first time in two years, meaning that capital expenditure on replacement and renovation is becoming increasingly necessary. In light of its need to catch up following the coronavirus crisis, as well as due to dynamic exports and a high utilisation rate, business investment should initially continue to see strong expansion going forward, too. Its rate of

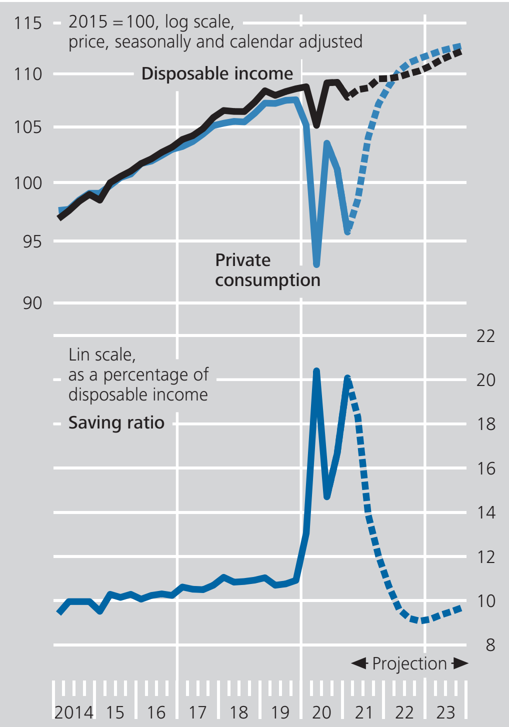
Supply-side bottlenecks



Sources: ifo Institute and IHS Markit. **1** Percentage of enterprises in the manufacturing sector reporting that their production was experiencing disruptions due to materials shortages. **2** Inverted scale; values lower than 50 are indicative of capacity constraints among suppliers and longer delivery times.
Deutsche Bundesbank

4 See Deutsche Bundesbank (2021e), pp. 51 f.

Private consumption and saving ratio



Sources: Federal Statistical Office and Bundesbank calculations. Bundesbank projections from Q2 2021.
Deutsche Bundesbank

growth will likely normalise towards the end of the projection horizon.

Private consumption is a strong driver of the economic recovery in the short term …

The pattern of private consumption expenditure over time will be heavily influenced by the pandemic. In the final quarter of 2020 and the first quarter of 2021, private consumption fell sharply in light of the difficult situation regarding the pandemic and the stringent measures taken to contain it. The more severe limitations on opportunities for consumption led once again to a surge in the household saving rate. During the first wave of the pandemic in the spring of 2020, it could already be observed that pandemic-related reasons – such as fear of infection and, in particular, unavailable opportunities for consumption – were the primary reasons for spending cuts and involuntary saving. By contrast, traditional precautionary motives based on potential losses of income only played a subordinate role.[5] Private consumption should quickly recover in the second and third quarters of 2021. Recently, there has been a considerable decline in the number of coronavirus infections. Progress in the vaccination campaign should sustainably suppress the development of the pandemic over the summer, enabling containment measures to be relaxed further on a broad scale. Consequently, pandemic-related reasons for saving will swiftly lose significance.

… and receives boost in the medium term due to partial spending of involuntary savings

Going forward, private consumption will also initially rise significantly faster than suggested by disposable household income, and the saving ratio will drop off rapidly. If, as assumed, all noteworthy pandemic-related restrictions have been unwound in the first few months of 2022 and decisions regarding saving and consumption are no longer directly influenced by the pandemic, the saving ratio will return to its pre-crisis level. It will then continue to fall, as it is assumed that around one-quarter of the involuntary savings that were accumulated during the pandemic will be used for additional consumption expenditure over the rest of the projection horizon (see the box on pp. 25 ff.). By the end of 2022, the saving ratio will have bottomed out and will increase again back towards its pre-crisis level. As a result, there will be a perceptible slowdown in the pace of growth in private consumption at the end of the projection horizon. In the long term, the saving ratio will likely reach a similar level to that recorded before the pandemic. However, this will first occur beyond the projection horizon. Only then will private consumption again grow more strongly in line with disposable income.

Steep upward trajectory for housing investment

The underlying trend in housing investment followed a steep upward trajectory in the last quarter of 2020 and the first quarter of 2021.[6] This is likely to continue during the second and third quarters as the large number of new orders and building permits at the beginning of

5 See Deutsche Bundesbank (2020b).
6 Housing investment declined slightly in the first quarter of 2021. Owing to the end of the VAT rate reduction at the turn of the year, some investment had been brought forward and thus did not occur in the first quarter. In addition, relatively unfavourable weather conditions hampered construction activity in the first two months.

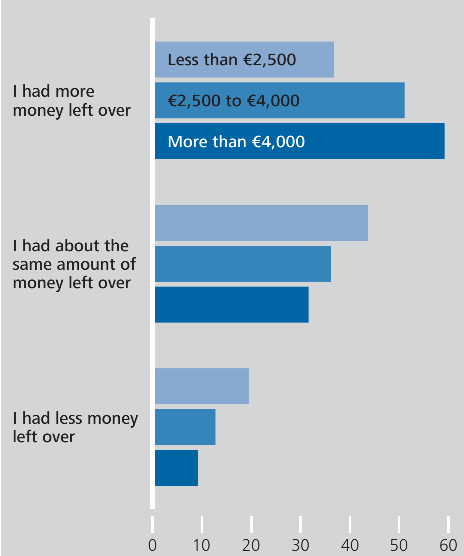
Households' motives for saving during the pandemic and their implications for the projection

Over the course of the economic cycle, private consumption expenditure normally varies less strongly than macroeconomic activity. A different picture has emerged during the coronavirus crisis, however: against the backdrop of the ups and downs caused by the pandemic, private consumption actually even exhibited more pronounced swings than gross domestic product (GDP). It thus proved a key driver of the fluctuations in economic output. Looking at the determinants of private consumption reveals that this cannot be ascribed to changes in households' available income. During the pandemic-induced crisis, disposable incomes were shored up by extensive government aid. As these remained stable, the cutbacks to spending made by households occasioned an exceptional rise in the saving ratio, particularly in the first wave of infections in the second quarter of 2020 and again in the final quarter of 2020 and first quarter of 2021.

The results from the most recent wave of the Bundesbank Online Panel Households (BOP-HH) survey in March 2021 can be used to investigate the reasons behind the higher level of savings in the past 12 months.[1] Half of the participants reported that over the last 12 months they had had, on average, more money left over at the end of the month than they did before the pandemic. This response was given more frequently by participants with higher household incomes (and older respondents).[2] Almost all of these individuals (95%) cited restricted opportunities for consumption as a result of measures to contain the pandemic – mandatory store closures or travel restrictions, for instance – as a significant reason for their increased saving. In addition, just over one in five respondents restricted their expenditure on goods and services for fear of contracting coronavirus. By contrast, not even one out of every ten respondents stated worries about loss of income as a reason for saving more money. The gap between this classical precautionary motive and involuntary consumer restraint as a result of the pandemic widened

Financial situation of households

%, by net household monthly income



Source: Bundesbank Online Panel Households, March 2021. Responses of 2,402 survey participants to the question: "Think for a moment about how your household's financial situation over the last 12 months compares to its financial situation before the coronavirus pandemic began. Which of the following statements applies to you? My/our household has had, on average, more money/about the same amount of money/less money left over at the end of the month".
Deutsche Bundesbank

1 See Deutsche Bundesbank (2021f). For results after the first wave of infections see Deutsche Bundesbank (2020b) or – for the euro area – Dossche and Zlatanos (2020).
2 Nevertheless, more than one-third of participants from lower-income households and more than one-third of younger participants (ages 16 to 29) also had more money left over on average than before the pandemic.

Reasons for higher level of savings

%, multiple responses possible

Concerns about loss of income	7
Coronavirus restrictions	95
Fear of infection	22
Other	7

Source: Bundesbank Online Panel Households, March 2021. Responses of 1,208 survey participants (50.3%) who over the last 12 months had, on average, more money left over at the end of the month than they did before the coronavirus pandemic.

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considerably in comparison to the earlier survey round in August 2020.[3]

The findings from the BOP-HH thus suggest a tight link between pandemic activity and the saving ratio. Data from the national accounts also reveal a co-movement over time. This relationship carries implications for the projection: the saving ratio – and thus also private consumption – are likely to normalise swiftly once falling pandemic activity allows for previously unavailable consumption options to be opened up again. The projection assumes that pandemic-related restrictions will come to an end in the opening months of 2022. The saving ratio will then return to at least its pre-crisis level. Another highly significant factor is whether the savings built up involuntarily over the course of the pandemic remain parked in household wealth or are used for additional consumption. The latter scenario raises the question of what the scale and timeframe for this spending might be.[4]

In order to get closer to answering these questions, those BOP-HH participants who had additional savings owing to the pandemic were asked to imagine that the pandemic was over. They were then asked what they would like to use the extra savings accrued during the pandemic for. In total, 70% of respondents said they would spend at least some of their "coronavirus savings" on goods and services. The other usages are regarded as not directly consumptive in nature; no more than one-third of individuals chose any one of these other usages.[5] Since respondents from households with a higher income probably built up more savings during the crisis and those with a lower income probably fewer, the responses were first weighted by household income.[6] In the case of multiple responses, the survey does not reveal what share of savings would be associated with each of the use options. The results were therefore additionally weighted by usage. Two extremes were considered.

(1) The first case assumes that only those persons planning to use their extra savings exclusively to buy goods and services will spend their coronavirus savings. In terms of the share of savings being used for additional consumer spending, this therefore constitutes the lower bound scenario.

(2) The second case assumes that the savings of each individual are distributed evenly across the selected uses. When savings are also invested in, for instance, real estate or shares, the proportion

3 At that point in time, around one-fifth of respondents were still citing classical precautionary motives, whereas 49% spent less because opportunities for consumption were closed off and 34% because they were afraid of catching the virus. In addition, in the August 2020 round, reasons for higher savings varied more widely by household income and age. See Deutsche Bundesbank (2020b).
4 The additional savings accumulated beyond what was anticipated in the December 2019 projection could amount to around €210 billion at the end of 2021.
5 The other possible answers (with the percentage of respondents who selected them given in brackets) were: invest in real estate (12%), invest in things other than real estate – e.g. shares, funds, current account – (30%), make gifts (9%), make donations to charitable causes (16%), pay off debts (13%), other (25%). Participants could choose more than one response.
6 Not only did households with higher incomes more frequently have money left over than before the pandemic than those with low incomes; they are also likely to have involuntarily saved larger sums. Weighting was by the mean for each income bracket relative to the mean income across all groups. For details of the income groups, see Deutsche Bundesbank (2021f), p. 25.

spent on goods and services is likely to be below average. Considered in terms of the share of coronavirus savings being expended again, this therefore constitutes the upper bound.

Overall, this places the share of additional savings built up during the pandemic which will be used for consumer spending in future at a lower bound of 25% and at an upper bound of 45%. The midpoint of this range, 35%, was set as the baseline for the projection. This would mean that the saving ratio would fall markedly short of its pre-crisis level for a time.

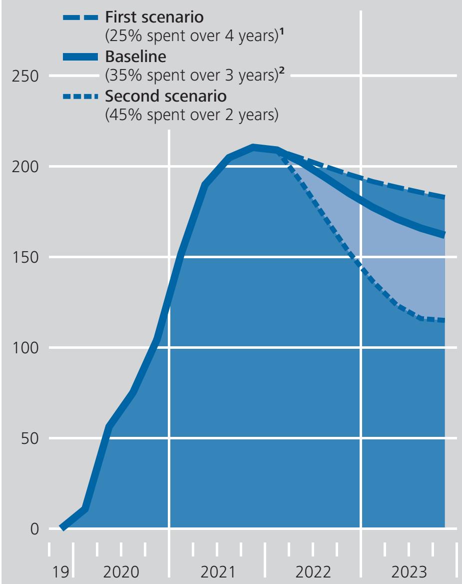
The results of the BOP-HH do not allow us to draw any inferences as to what timeframe this additional consumer spending would occur over, however. Higher-income households probably account for a large portion of the coronavirus savings; they could spread additional expenditure – on holidays, for example – over an extended period of time. In the light of this, it is assumed here that the saving ratio will drop below its pre-crisis level in the first quarter of 2022 and remain there for three years.[7]

Over a longer horizon, the saving ratio should then revert back to a higher figure, probably somewhere close to its pre-crisis level. Nearly 70% of all people who participated in the BOP-HH plan to use a similar share of their income for consumer spending as before the pandemic.[8] This suggests that the pandemic will not have long-lasting effects on consumers' saving and consumption habits.

Given the importance for the projection of the assumptions made here, a sensitivity analysis was carried out to gauge macroeconomic effects of applying different assumptions as regards the share of savings spent and the length of time over which this spending occurs. Working on the basis of the extremes described above, a first scenario assumed spending of just 25% of coronavirus savings (the lower bound) over a longer period of time spanning from 2022 to 2025. A second scenario posited 45% of savings accumulated during the pandemic (the upper bound) being expended on consumption within just two years.

Additional savings accumulated owing to pandemic*

€ billion



* Calculated as the difference between households' cumulative savings during the pandemic and the December 2019 projection. From Q2 2021, Bundesbank projections. **1** 12.5% spent up to end of forecast horizon. **2** 23% spent up to end of forecast horizon.

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The Bundesbank's macroeconometric model was used to simulate how these alternative trajectories for private consumption would affect GDP and the Harmonised Index of Consumer Prices (HICP). In line with the projection baseline, allowance was made for the likely prospect of a greater-than-usual portion of the consumer spending financed by the additional savings flowing into im-

7 This would see just under one-quarter of coronavirus savings being eroded over the projection horizon. This is in a similar magnitude to the figure applied for the December 2020 projection.
8 The remaining answers were almost evenly distributed: 18% stated that they would increase their consumer spending in the long term, while 13% wish to decrease it.

ports, since it is likely that more money will be spent on holidays abroad in particular. This would lessen the impact on GDP. Furthermore, enterprises were assumed to pass wage adjustments in response to the altered macroeconomic demand through to their prices without factoring in any productivity effects. This was done to take account of the specificities of the current setting, insofar as businesses are likely to strive to recoup at least part of the profits lost during the coronavirus crisis by charging higher prices.[9] Additional price effects stemming from the tight goods market in 2022 and 2023 assumed in the baseline have not been included, however. Note also that the price reaction in the model generally occurs with a lag. As a result, the impact on the inflation rate in the two-year horizon considered here is comparatively modest only.

In the (first) scenario premised on the lower bound, private consumption climbs less strongly in 2022. Real GDP would fall short of the baseline level by around 0.2% in both 2022 and 2023. By contrast, in the (second) scenario based on the upper bound, real GDP would exceed the baseline level by around 0.6% in 2022 and would still be 0.3% above it in the following year. The effects on prices are weaker, meanwhile. In the first scenario, HICP inflation would be barely any lower than the baseline. However, the stronger economic upswing in the second scenario leads, with a slight lag, to a higher rise in prices. The HICP rate would be one-tenth over the baseline in 2023. It is clear from the results yielded by these simulations that the projection was pitched cautiously: in the first scenario, the downward deviations from the baseline would be smaller than the upward deviations in the second scenario.

9 On the modelling of price equations in the macroeconomic model, see Deutsche Bundesbank (2019a).

the year indicates that demand for housing construction remains robust.[7] Given the expected recovery in the labour market, demand will probably remain upbeat over the rest of the projection horizon, too, which will bolster housing investment. The persistently favourable interest rate environment will provide additional stimulus. In addition, some of the savings built up involuntarily during the pandemic will be used to invest in real estate, giving the latter a temporary boost.[8] Towards the end of the projection horizon, housing investment should expand at a considerably more moderate pace owing, amongst other things, to the net decline in the number of new households being formed as a result of demographic changes.

Government investment will be stepped up again significantly in 2021 and increase moderately thereafter

Government investment will remain dynamic this year. More funding is earmarked, in particular, for transport infrastructure, childcare and schools. Growth will subsequently decelerate, not least because local government budgets are stretched and a number of investment programmes, such as the fund to promote municipal investment, are set to expire.

Coronavirus crisis driving government consumption; considerable additional spending again in 2021, which will tail off in the following years

As a result of the coronavirus pandemic, real government consumption will increase sharply this year, too, driven by additional spending on vaccinations and testing. Government consumption will then drop significantly in 2022 as spending in response to the pandemic largely tails off. At the end of the projection period, the ratio of real government consumption to GDP will return to a similar level as before the coronavirus pandemic in 2019.

7 Although incoming orders in housing construction showed a quarter-on-quarter decline, they were considerably higher than their pre-crisis level in the fourth quarter of 2019. However, shortages in the supply of building materials, which have recently increased sharply, could hold back housing construction.
8 Results from the March 2021 wave of the Bundesbank Online Panel Households (BOP-HH) survey suggest that this share is substantial, but still smaller in comparison to consumer spending (see the box on pp. 25 ff.).

Imports rise sharply

Imports will rise sharply during the projection period. Their growth will mainly be driven by the need for intermediate inputs for the increasing production of export goods and growing business investment, which also have a particularly high import content. Moreover, from next year, higher household consumption will provide a strong stimulus. Households are likely to spend some of the savings they have involuntarily built up during the pandemic on travelling abroad. This will boost Germany's services imports.

Current account surplus to fall to just over 6% of GDP

This year, Germany's current account surplus could clock in at around the same level as in 2020, when it amounted to 6.8% of nominal GDP. The trade surplus will decline somewhat more perceptibly. This is first and foremost a reflection of the substantial deterioration in the terms of trade in the wake of higher prices for crude oil and other commodities. The timing of the recovery of export demand and domestic demand will initially go some way towards offsetting this effect. Although exports have already been picking up again sharply for some time, imports are being held back a little longer by limited consumption opportunities. Over the remainder of the projection period, especially in 2022, domestic demand, and thus also imports, will rise briskly. The current account surplus will fall to just over 6% of GDP.

Labour market

Labour market very robust in Q4 2020/Q1 2021, but extensive use of short-time working hours

Despite the major resurgence of the pandemic and the containment measures subsequently taken in the fourth quarter of 2020 and the first quarter of 2021, the labour market proved extremely stable.[9] To adapt to the reduced economic activity, working hours were shortened, especially through the use of short-time working arrangements. In the first quarter of 2021, on average, around three million employees subject to social security contributions once again received short-time working benefits to

9 See Deutsche Bundesbank (2021e), pp. 53-58.

Key figures of the macroeconomic projection

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

Item	2020	2021	2022
GDP (real)	− 5.1	3.7	5.2
GDP (real, unadjusted)	− 4.8	3.7	5.1
Components of real GDP			
Private consumption	− 6.2	0.6	8.9
Memo item: Saving ratio	16.2	16.1	9.6
Government consumption	3.7	3.0	− 1.8
Gross fixed capital formation	− 3.5	5.0	5.0
Business investment[2]	− 8.2	5.9	7.0
Private housing construction investment	2.4	3.3	2.6
Exports	− 10.2	10.0	6.2
Imports	− 9.0	9.9	7.1
Memo item: Current account balance[3]	6.8	6.7	6.2
Contributions to GDP growth[4]			
Domestic final demand	− 3.2	2.1	5.2
Changes in inventories	− 0.8	0.9	0.0
Exports	− 4.8	4.4	2.9
Imports	3.7	− 3.7	− 2.9
Labour market			
Total number of hours worked[5]	− 5.2	1.5	3.8
Employed persons[5]	− 1.0	− 0.1	1.1
Unemployed persons[6]	2.7	2.7	2.4
Unemployment rate[7]	5.9	5.8	5.2
Memo item: ILO unemployment rate[8]	4.2	4.2	3.5
Wages and wage costs			
Negotiated pay rates[9]	2.2	1.6	1.8
Gross wages and salaries per employee	0.0	2.6	3.2
Compensation per employee	0.6	2.7	3.0
Real GDP per employed person	− 4.2	3.7	4.1
Unit labour costs[10]	5.0	− 1.0	− 1.0
Memo item: GDP deflator	1.6	2.3	1.6
Consumer prices[11]	0.4	2.6	1.8
Excluding energy	1.0	1.9	1.6
Energy component	− 4.5	8.4	3.3
Excluding energy and food	0.7	1.6	1.5
Food component	2.3	2.9	2.1

Sources: Federal Statistical Office; Federal Employment Agency; Eurostat; 2021 to 2022 Bundesbank projections. **1** If calendar effects present. For unadjusted data see the table on p. 36. **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.

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Labour market during the pandemic

Seasonally adjusted

Sources: Federal Statistical Office, Federal Employment Agency and Bundesbank projections. **1** All recipients of short-time working benefits: cyclical short-time working benefits, seasonal short-time working benefits and transfer short-time working benefits.
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compensate for economic difficulties. In addition, the loss of working hours per short-time worker was even higher at the beginning of this year than last spring. Employment and unemployment, on the other hand, remained virtually constant.[10] Although the constraints stemming from the pandemic in the last quarter of 2020 and the first quarter of 2021 were larger than assumed in the December projection, all in all, the labour market responded more positively than expected at the time.

Labour market will brighten in the second and third quarters of this year

In the wake of the economic recovery, the labour market will already start to show substantial improvement in the second and third quarters of the current year. At first, employees' working hours will go back up significantly as short-time working arrangements are unwound and, in some segments, working time accounts are replenished and overtime hours are worked. On average for 2021, the initially depressed level of employment will probably cause this year's level to fall slightly short of last year's. Mirroring employment, unemployment is likely to decline at a much brisker pace over the next few months. Labour market policy measures that were previously sidelined owing to the pandemic are expected to be resumed, particularly after the summer holidays. This will also reduce the number of people registered as unemployed. Labour productivity per hour worked is likely to recover rapidly.

Employment and hours worked to rebound strongly next year

Strong aggregate demand will probably further stimulate the labour market in the course of 2022. Strong demand for labour will see employment subject to social security contributions rise to well over its pre-crisis level. The number of hours worked will be expanded significantly again and will almost return to its level before the pandemic. Unemployment will continue to fall rapidly.

Labour supply will also increase in 2022, labour force participation and immigration will recover

The labour supply will rise again markedly in 2022 following a slight dip in 2020 and 2021. During the crisis, a number of people withdrew from the labour force. As the recovery takes place, most of them are expected to return to the workforce as the structural conditions have not become significantly worse.[11] Immigration is likely to pick up again quickly from its tem-

10 Reductions in self-employment and in exclusively low-paid part-time employment were balanced out by an increase in employment subject to social security contributions.
11 Those who withdrew from the labour force were mainly people working exclusively in low-paid part-time jobs with no claim to unemployment benefits, such as students with part-time jobs, and people who took on care duties (primarily women). However, the supply of childcare and nursing care has not deteriorated structurally as a result of the crisis. Opportunities to earn additional income should arise again fairly quickly once most of the measures to contain the pandemic have been lifted. A number of older employees will probably have left the labour force permanently, however.

porary lull. Following net immigration of 209,000 people in 2020, immigration of 250,000 people per year is assumed over the projection horizon. Including a catching-up effect, the figure could temporarily hit 300,000 in 2022. Overall, the number of people in employment in 2022 is likely to go up again slightly more sharply before the effects of demographic change slow the pace from 2023 onwards.

Renewed increase in supply bottlenecks in the medium term; functioning of the labour market not permanently impaired by the pandemic

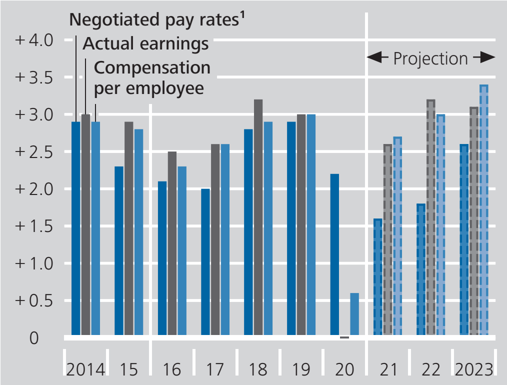
In the last year of the projection period, the supply bottlenecks that were already perceptible before the crisis are likely to have an impact on the labour market. In the course of 2023 already, employment growth will probably hit a wall as the aggregate labour supply ceases to expand. Instead, contrary to the long-term trend, hours worked per employee are expected to continue rising towards the end of the projection horizon, too, thus climbing above the level recorded before the start of the pandemic. The pandemic is not expected to notably impair the functioning of the labour market. The large-scale deployment of short-time working schemes prevented extensive lay-offs and the loss of firm-specific human capital during the crisis, thus stopping unemployment from becoming entrenched. This helped employees first and foremost. However, people seeking to change careers or sectors, those just starting their careers and immigrants are at greater risk. Assistance grants and professional development measures are particularly helpful for these groups. These adjustments will still take quite some time. Despite high demand for labour, unemployment could therefore still be slightly up on its pre-crisis level at the end of the projection horizon.

Labour costs and prices

The wage increases recently agreed by wage bargainers have been low. Against the backdrop of the coronavirus crisis, one of the key aims was to preserve jobs. Another goal was to partner structural change in major industries

Negotiated pay rates, actual earnings and compensation of employees

Year-on-year percentage change, monthly basis



Source: Federal Statistical Office and Bundesbank projections. **1** According to the Bundesbank's negotiated wage index.
Deutsche Bundesbank

Rise in negotiated wages initially sluggish owing to the crisis, but significantly stronger again towards end of projection horizon

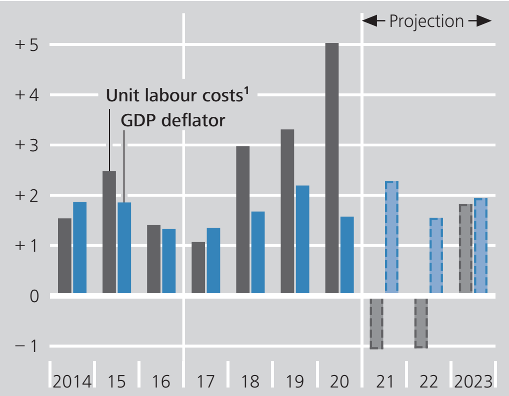
through the temporary use of collectively agreed reductions in working hours. The wage increases resulting from the current negotiations and from those scheduled for later this year are expected to be low on the whole.[12] Over the next two years, however, higher wage settlements will be reached owing to the strong economic upturn, which will lead to high capacity utilisation and a marked decline in unemployment. However, the duration of the previously concluded agreements containing lower wage growth means that this will not be reflected in noticeably larger increases in negotiated wages until the last year of the projection period.[13] Nonetheless, at the same time, negotiated rates of pay will not achieve the same strong growth as before the crisis.

The adjustments in the labour market are having a substantially larger impact on actual earnings than on negotiated pay rates. Last year,

12 In major sectors, only a few pay negotiations are scheduled for the second half of 2021. Even so, the high projected inflation rates in the fourth quarter could contribute to higher wage settlements than assumed here (see the section about the risks on p. 37).
13 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.

Unit labour costs and GDP deflator

Annual percentage change, calender adjusted



Sources: Federal Statistical Office and Bundesbank projections. **1** Ratio of domestic compensation per employee to real GDP per employed person.
Deutsche Bundesbank

Actual earnings to rebound sharply from as early as 2021 as use of short-time working arrangements dwindles and hours worked increase

actual earnings stagnated, chiefly on account of the major increase in the use of short-time working arrangements. However, they are set to recover significantly more rapidly in 2021. As short-time work is successively scaled back and hours worked therefore gradually increase, actual earnings will pick up quickly. Wage drift will thus return to clearly positive territory this year already. Over the next two years, performance-related bonus payments and paid overtime resulting from the upbeat economic situation will increasingly add to positive wage drift. In 2023, actual earnings will also experience strong growth off the back of rising staff shortages. Mounting social security contribution rates for employers – especially for the statutory health insurance scheme – will then raise labour costs (measured by compensation per employee) once again.

Unit labour costs to normalise; domestic inflation fairly perceptible

After rising sharply last year in the wake of the crisis, unit labour costs will probably recede slightly this year and next. This is a reflection of a lagged macroeconomic adjustment process. During the crisis, both employment and wages remained relatively stable – not least thanks to the use of labour market policy instruments. Labour productivity per person suffered considerably from the strongly depressed level of economic activity. As a result, unit labour costs soared. This was offset by a sharp drop in aggregate profit margins. During the subsequent recovery, economic activity will already start to expand strongly this year, while wage growth will remain subdued for a little longer. This will allow unit labour costs to return to normal. At the same time, profit margins will show an almost identical recovery this year and next. In 2023 unit labour costs will then go back up markedly and enterprises could expand their profit margins again slightly in the light of the favourable macroeconomic environment. Because fluctuations in unit labour costs are largely cushioned by profit margins over the entire projection horizon, domestic inflation as measured by the GDP deflator will vary relatively little. However, it will be fairly perceptible. In 2023, the GDP deflator could go up by almost 2%.

Surprisingly strong increase in inflation rate at start of 2021 owing to one-off effects

In the first quarter of 2021, consumer price inflation (as measured by the HICP) surged from -0.6% in the previous quarter to +1.7%. Among the factors that contributed to this were the end of the VAT rate reduction and the new CO_2 emission certificates. The magnitude of these effects was roughly as expected in the December projection.[14] What came as a surprise, by contrast, was a statistical one-off effect which resulted from the annual adjustment to the weighting of the individual HICP components and which had a stronger impact than usual owing to the coronavirus crisis.[15] This one-off effect raised headline inflation by just over 0.3 percentage point in the first quarter of 2021. Besides this, prices for crude oil and

14 For more information about the price effects stemming from the temporary reduction in VAT rates, see Deutsche Bundesbank (2021c, 2020g). The impact of the Climate Package on inflation and economic growth has already been included in the forecast since December 2019 (for more information on this, see Deutsche Bundesbank (2019b)). After the previous forecast was published, however, two things happened. First, the carbon price was raised significantly. Second, supported by additional revenue stemming from the higher carbon price, a cap was placed on the levy imposed by the German Renewable Energy Act (Erneuerbare-Energien-Gesetz – EEG), which is an important component of energy prices, for 2021 and 2022, with the prospect of additional relief for 2023. Taking these measures together, the inflation rate could rise by 0.3 percentage point in 2021.
15 See Deutsche Bundesbank (2021h).

– owing to the unusually cool weather in the second quarter – also those for agricultural products went up unexpectedly. This meant that in May, too, the inflation rate exceeded the expectations of the December projection by just over one-half percentage point.[16] But core inflation (excluding energy and food), which is expected to stand at 1.6%, was also up by a quarter of a percentage point on the previous projection. This is primarily attributable to a stronger than anticipated rise in prices for industrial goods excluding energy.

Inflation rates temporarily very high in second half of 2021

In the second half of the year, the annual inflation rate will probably rise steeply. This is primarily linked to the price-driving base effect of the temporary reduction in the VAT rates the year before. Although the statistical one-off effect mentioned above will drag down inflation from July to October, it will then have an amplifying effect in November.[17] Overall, as things stand, at the end of the year, inflation rates could briefly hit the 4% mark.

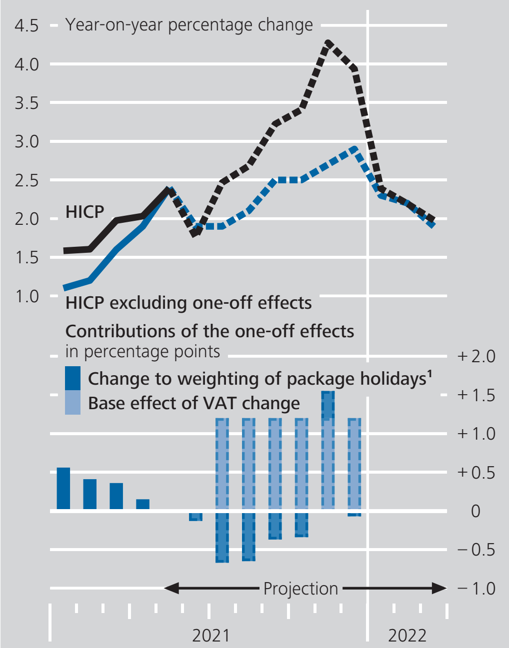
Relatively high inflation rate also in 2021 as a whole, but core inflation excluding one-off effects still subdued

In 2021, inflation is likely to stand at 2.6% on an annual average. Energy, in particular, will become more expensive, as will food. The rate excluding energy and food will climb from 0.7% to 1.6% in 2021 owing to the change in VAT rates. Factoring out tax effects, the rate would probably stand at just over 1%, as was the case last year, which is significantly lower than in 2019 (+1.4%). A key factor is the delayed, price-dampening impact of the reduced aggregate demand. It will not be offset by higher prices for commodities and increased transport costs, which are primarily reflected in industrial goods excluding energy.

Core inflation elevated in 2022 and 2023 in the wake of strong upturn

In 2022, core inflation could be almost as high as in 2021, despite the absence of the one-off effects. One major reason for this is the above-average degree of overall capacity utilisation. In addition, there are likely to be lagged adjustments to the higher commodity prices. In 2023, wage growth and capacity utilisation will increase somewhat. Against this backdrop, the core rate may climb further.

Impact of selected one-off effects on the inflation rate in 2021



Sources: Federal Statistical Office and Bundesbank calculations and projections. **1** Change in the contribution of the HICP sub-index for package holidays owing to a change in the weighting of this sub-component in 2021 compared to 2020.
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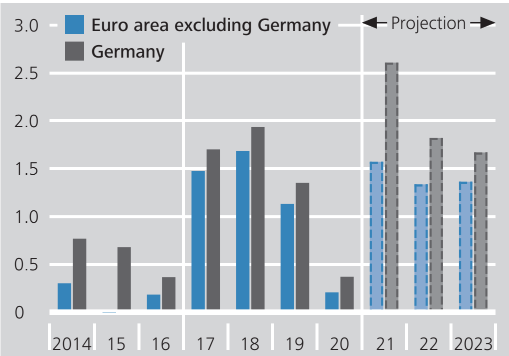
Consumer prices*

Year-on-year percentage change



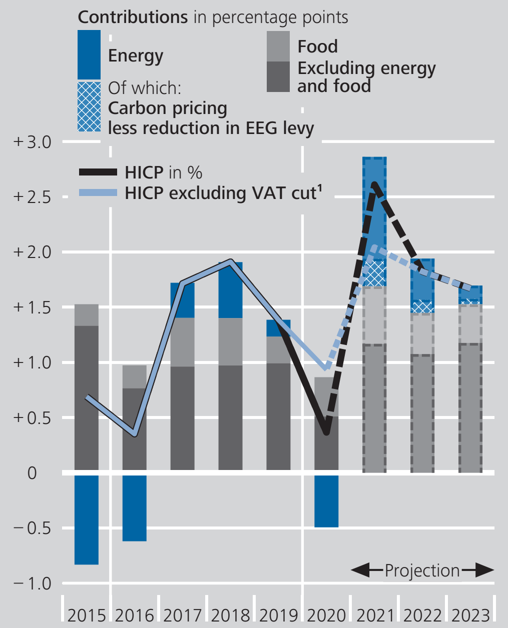
Sources: Federal Statistical Office, Eurostat and Bundesbank calculations. 2021 to 2023 Bundesbank projections (for Germany) and calculations based on Eurosystem projections (for the euro area excluding Germany). * Based on the Harmonised Index of Consumer Prices.
Deutsche Bundesbank

The headline inflation rate is likely to continue receding markedly in 2022 as the one-off ef-

16 The aforementioned statistical effect had no notable impact in May.
17 On an annual average, the amplifying and dampening impacts of the one-off effect practically balance each other out.

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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Headline inflation rate to align with core rate by 2023 as one-off effects wear off

fects largely wear off.[18] However, energy and food prices will probably still see above-average growth as consumer prices are responding to this year's price increase for crude oil and agricultural products with a (partial) lag. As a result, the headline inflation rate will remain significantly above the core rate. This gap is not set to close until 2023, when both rates will stand at 1.7% according to the projection. Although food prices will rise by more than average due to higher wage increases, energy prices will see below-average growth. Here, the dampening effect of the assumed decline in crude oil prices will prevail over the continued rise in CO_2 prices and rising forward rates for electricity.

Public finances

Public finances continue to give significant economic support in 2021

Public finances have continued to provide significant support to the economy in 2021. On the back of this, the general government budget deficit will rise to around 5½% of GDP (2020: 4½% of GDP). This increase is primarily attributable to measures unrelated to the coronavirus pandemic. For instance, the partial abolition of the solidarity surcharge and the increased child benefits are boosting households' disposable income. Furthermore, government grants are encouraging private investment in climate action. The fiscal stabilisation brought about by temporary one-off coronavirus-related measures will increase slightly. However, the fact that the cyclical impact on the government budget is set to be somewhat less negative than in 2020 will have a deficit-reducing effect.[19] Public finances will respond to the economic rebound with a lag over the course of the year, chiefly due to wage and labour market developments, which are particularly relevant for the government budget.

Subsequent significant decline in government deficit, particularly in 2022

According to this projection, the deficit is then set to fall significantly to 1½ of GDP in the coming year. This is because coronavirus-related measures will largely have been unwound as the crisis has broadly been overcome. In addition, the economic upswing will provide substantial relief for government finances, and the cyclical impact on the government budget will be slightly positive. In 2023, the deficit will fall a little further. This is due, in particular, to steeply increasing contribution rates for the statutory health insurance scheme.

Structural government deficit towards end of projection horizon

Compared with the pre-crisis year of 2019, the structural situation of government finances will be less favourable at the end of the projection horizon: the structural surplus of ½% of GDP in 2019 will turn into a structural deficit (some-

18 The relief provided by the EEG levy will partially offset the rise in CO_2 prices in 2022 and 2023.
19 In times of crisis it is especially difficult to gauge cyclical influences on the government budget. This holds, not least, for profit-related taxes; they usually respond to economic developments with, in some cases, a time lag. However, as things currently stand, the models used to estimate the cyclical impact on the government budget are likely to respond too slowly as, for instance, enterprises' advance payments already decreased sharply in 2020.

where in the region of 1½% of GDP).[20] A key factor here is that pension and healthcare expenditure as well as investment grants are rising steeply. Around one-third of the structural deficit is attributable to social security funds, primarily the pension insurance scheme. The deficit also anticipated for the next few years in this area will then have to be offset by higher contribution rates, according to the current rules, because the reserves will largely have been exhausted.

Debt ratio to continue rising initially in 2021, but then to decline significantly

The debt ratio is set to rise to over 70% this year (2020: 69.7%). This is attributable, first and foremost, to the high central, state and local government deficits. In addition, in light of the generous draft budget, it is assumed that central government's cash reserves will increase further still. This rise will be reined in by nominal GDP growth in the denominator and the continued deleveraging of state-owned bad banks' portfolios. The debt ratio will subsequently decline to around 65% by 2023. Although deficits are anticipated for the next few years, these will then be significantly lower. Furthermore, coronavirus-related one-off effects (assistance loans, equity injections and higher cash reserves) will be scaled back to some degree, and the portfolios of state-owned bad banks will continue to shrink. Lastly, the nominal GDP growth in the denominator will significantly depress the debt ratio.

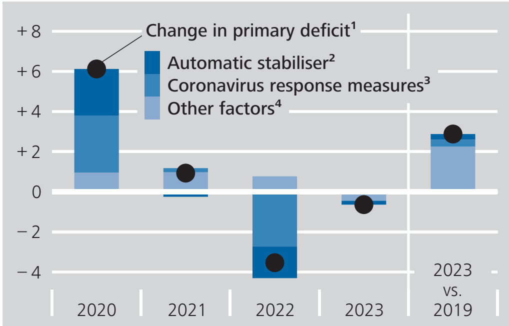
Risk assessment

Reduced pandemic-related uncertainty

The German economic growth and consumer price inflation outlook presented here is subject to various uncertainties. The future trajectory of the pandemic and its macroeconomic consequences remain difficult to assess. However, chiefly on account of the ongoing vaccination campaign, uncertainty in this area has already decreased substantially. In contrast to the two macroeconomic projections from June and December 2020, therefore, no alternative scenarios with different assumptions regarding the development of the pandemic were prepared for Germany.[21]

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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All in all, risks to economic growth more or less balanced but risks to outlook for inflation rate tilted to the upside

However, uncertainties surrounding the indirect repercussions of the pandemic and the imminent recovery phase are now coming to the fore. No historical benchmark exists for this situation, either, and surprises are to be expected. The effect of the reopening of many economic sectors on the price outlook is particularly uncertain. All in all, the risks appear to be more or less balanced from today's perspective, while the risks to the inflation outlook are tilted to the upside.

Uncertainties in the short term regarding pace of easing restrictions; risk of medium-term setback due to virus mutations

With regard to the direct impact of the pandemic, risks materialising in the short term can be identified in both directions. Depending, first and foremost, on how the vaccinations progress, non-medical containment measures could either be withdrawn earlier and on a

20 Cyclical factors and temporary one-off effects (broadly in line with coronavirus-related measures in the period under review) have been stripped out of the structural variables.
21 In the Eurosystem's June projection, scenarios for the euro area as a whole based on different assumptions regarding the pandemic and the impact of the coronavirus crisis on potential output in the long term were calculated (see European Central Bank (2021)). The macroeconomic implications of these various scenarios for Germany will probably, on the whole, be similar to those for the euro area in its entirety.

Key figures of the macroeconomic projection – non-calendar adjusted

Year-on-year percentage change

Item	2020	2021	2022
GDP (real)	– 4.8	3.7	5.1
GDP (real, calendar adjusted)	– 5.1	3.7	5.2
Components of real GDP			
Private consumption	– 6.0	0.6	8.9
Memo item: Saving ratio	16.2	16.1	9.6
Government consumption	3.7	3.0	– 1.8
Gross fixed capital formation	– 2.7	5.1	5.3
Business investment[1]	– 7.4	6.1	7.6
Private housing construction investment	3.3	3.4	2.4
Exports	– 9.4	10.1	6.1
Imports	– 8.4	9.9	7.0
Memo item: Current account balance[2]	7.0	6.8	6.3
Contributions to GDP growth[3]			
Domestic final demand	– 3.0	2.1	5.2
Changes in inventories	– 0.9	0.9	– 0.1
Exports	– 4.4	4.4	2.8
Imports	3.5	– 3.7	– 2.9
Labour market			
Total number of hours worked[4]	– 4.7	1.5	3.5
Employed persons[4]	– 1.0	– 0.1	1.1
Unemployed persons[5]	2.7	2.7	2.4
Unemployment rate[6]	5.9	5.8	5.2
Memo item: ILO unemployment rate[7]	4.2	4.2	3.5
Wages and wage costs			
Negotiated pay rates[8]	2.2	1.6	1.8
Gross wages and salaries per employee	0.0	2.6	3.2
Compensation per employee	0.6	2.7	3.0
Real GDP per employed person	– 3.8	3.8	4.0
Unit labour costs[9]	4.5	– 1.0	– 1.0
Memo item: GDP deflator	1.6	2.3	1.6
Consumer prices[10]	0.4	2.6	1.8
Excluding energy	1.0	1.9	1.6
Energy component	– 4.5	8.4	3.3
Excluding energy and food	0.7	1.6	1.5
Food component	2.3	2.9	2.1

Sources: Federal Statistical Office; Federal Employment Agency; Eurostat; 2021 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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broader basis, or remain in place for longer and on a larger scale. Significant setbacks could occur over the entire projection horizon if the virus mutates in a way that substantially reduces the efficacy of the vaccine. The longer it takes to overcome the pandemic on a global scale, the greater this risk will be. Quite aside from weaker foreign demand, immediate protective measures could also then impair the German economy once again.

Upside risks to economic activity and inflation if pent-up demand sees stronger surge

In terms of recovery in the sectors affected by the restrictions, the speed at which currently inaccessible consumption opportunities open up once more is not the only relevant factor. The degree to which consumers use these again also plays an important role. Pent-up demand could be released sooner and more strongly overall in the event that households spend the additional savings they have accumulated during the pandemic more quickly or on a larger scale, for instance. The model-based simulation results suggest that the projection has been pitched relatively cautiously in this regard. Should this be the case, economic activity, in the first instance, but also inflation may be higher (see the box on pp. 27 f.). However, note that there is significant sectoral variation in terms of postponed consumption and the competition situation. Specifically in the sectors that have been subject to lengthy restrictions, short-term peaks in demand and supply shortages could trigger additional price surges. This would be especially true if the crisis resulted in more insolvencies than expected, dampening supply in the short term and increasing market concentration in the medium term.

Uncertainties about global supply bottlenecks in commodities and intermediate goods in the industrial sector

Tensions resulting from renewed demand after the crisis are currently making waves in global industry. In Germany, too, increasing delivery times and rising prices for important commodities and intermediate goods are hindering recovery and generating cost pressure at the upstream input stages, impacting on consumer prices. Should global supply bottlenecks dissipate more quickly than expected, economic output could return to a higher level sooner. However, if these shortages are prolonged, recovery may be more subdued and consumer prices could simultaneously climb more steeply.

Upside risks if economy overshoots expectations in key partner countries, but also increased risks from asymmetrical recovery of global economy

Many economies worldwide are currently in a similar situation to that of Germany. Should the economic recovery in key partner countries overshoot expectations, the German economy would generally profit from this due to its strong focus on exports. At the same time, though, some risks to the world economy would increase – the global recovery from the coronavirus crisis is already occurring at a highly uneven pace. While some economies such as those of the United States, the United Kingdom and China largely have the pandemic under control, this is far from the case in many emerging market economies. The resulting asymmetries are being exacerbated significantly further still by, in some cases, vast differences in the degree of monetary and fiscal policy expansion. They could, for example, create turmoil with negative real economic feedback loops on the financial markets. Taken in isolation, therefore, the asymmetries entail downside risks to the outlook for both the global and the German economies. Given a more dynamic pace of recovery in the leading economic areas, these risks could intensify.

Higher inflation rates if crude oil price does not decline as assumed

The sharp upturn in global demand also meant that the crude oil price, which had slumped at the start of the pandemic, made a strong recovery. The projection is based on the assumption that the crude oil price will fall noticeably from its elevated level again over the projection horizon in line with forward prices. This places a significant dampener on the projected price increase and contrasts somewhat with the expected continuation of the global economic recovery. If oil prices remain at their current level or rise further – in the wake of a potentially even stronger expansion of the global economy, for example – the inflation rate will be higher.

Ambitious climate targets likely to cause steeper rise in energy prices

Greater risks to the outlook for more steeply increasing energy prices are likely to result from climate action policy. Following a fundamental ruling from the Federal Constitutional Court, the Federal Government recently substantially increased Germany’s climate targets. However, the necessary measures have not yet been specified. The existing fixed price for CO_2 emission rights could conceivably be significantly increased in the near future, for example. These or similar measures would increase energy prices further.[22] The implications for economic growth during the projection horizon largely depend on the extent to which climate policy is coordinated with international partners, and how additional government receipts are put to use.

Inflation expectations could rise and exert further inflationary pressure

The exceptionally high inflation rates by German standards projected for the second half of 2021 could ultimately shift economic agents’ inflation perceptions and expectations. As a result, wage and price-setting behaviour could change and exert further inflationary pressure. This would especially be the case if headline price inflation in the near future were to be even higher than estimated here in the light of the existing upside risks.

22 For model simulations of the macroeconomic effects of the rollout of carbon pricing, see Deutsche Bundesbank (2019b). The calculations used were based on draft legislation. One of the measures taken as the legislative process progressed was that CO_2 prices were hiked.

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