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AT A GLANCE

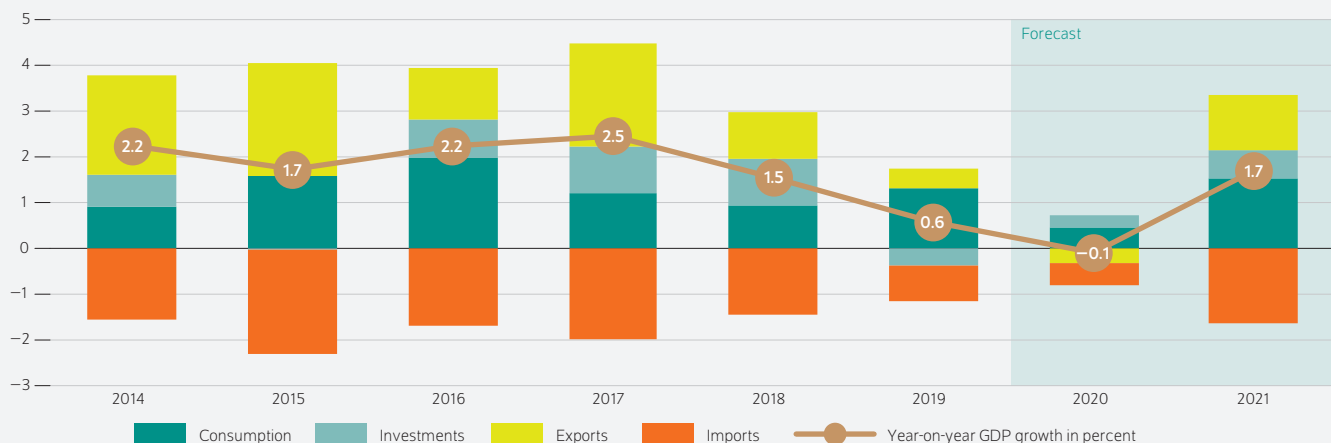
German Economy in Recession: Bridging Pinch Points, Building Confidence, Boosting Demand

By Claus Michelsen et al.

- Coronavirus pandemic hitting the global economy hard in spring 2020; exact consequences currently difficult to determine
- V-shaped recovery scenario assumes a course similar to previous epidemics with a quick return to normal economic activity, resulting in a slightly decreased economic output in Germany for 2020 overall
- L-shaped scenario, or not quickly returning to normal economic activity, would result in a deep and persistent recession
- A large-scale range of measures at a German and European level necessary; first steps in the right direction have been taken
- Most importantly, small businesses must be helped quickly and without bureaucratic red tape; demand stimulus for consumption and investments should be prepared

German economy shrinking in 2020 – consumption and exports will drive the economy again in 2021

Individual GDP components' contribution to growth in percentage points



Source: DIW Berlin Spring Economic Outlook 2020.

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FROM THE AUTHORS

“Currently, it is difficult to make a forecast. We have little official data that already reflect the effects of the Coronavirus pandemic. Our models are based on the past; it is possible that they do not adequately reflect the current situation, seeing as it is unprecedented. Moreover, it is unclear how governments will react over the course of the pandemic.”

— Claus Michelsen, DIW Berlin Chief Economic Forecaster —

German Economy in Recession: Bridging Pinch Points, Building Confidence, Boosting Demand

By Claus Michelsen, Guido Baldi, Marius Clemens, Geraldine Dany-Knedlik, Hella Engerer, Marcel Fratzscher, Stefan Gebauer, Max Hanisch, Simon Junker, Konstantin Kholodilin, Malte Rieth, and Thore Schlaak

The coronavirus hit the German economy hard in spring 2020. Economic output is expected to shrink this year. Germany is likely to experience a recession in spring and summer. This has been triggered by a number of factors.

The spread of the coronavirus is having a negative impact on production output: First, there were severe restrictions on mobility and the production of important intermediate goods in China. Since then, far-reaching quarantine and precautionary measures have been put in place in various other countries, some of which are having a dramatic impact on manufacturing processes and everyday life. As a result, not only are production and supply chains disrupted, but consumption opportunities are also significantly reduced. In addition, the measures taken, media coverage of developments, and reactions from the international financial centers have resulted in uncertainty among households and companies. Both are exercising restraint; purchases of consumer goods are being put on the back burner, as are investments in machinery and equipment. Overall, the global economy is experiencing supply- and demand-side shocks, which, in the short term, will result in a substantial loss of economic momentum.

DIW Berlin is lowering its forecast for Germany by 1.3 percentage points compared to its winter outlook, according to which the German economy was expected to gradually recover. Economic output is expected to shrink by one-tenth of one percent this year. Global economic momentum will also be nearly one percentage point weaker due to the effects of the corona pandemic.

This forecast is based on a scenario that assumes the course of an epidemic will resemble previous events such as swine flu, SARS, or bird flu: Following a significant increase in the number of infections in the coming weeks, the virus will

then be contained by quarantine measures. The negative economic consequences will mainly be felt in the first half of 2020 with a recovery expected in the second half of the year (V-scenario).

In the light of the current developments, this scenario appears more and more optimistic. There is considerable uncertainty surrounding the scenario described. The virus could spread over greater distances and more rapidly, forcing other regions and countries to place even more restrictions on daily life, just as Italy, France, Austria, Germany, and Spain have done recently. If this happens, it will significantly accelerate the downward momentum further and delay a recovery. The reactions on the financial markets also indicate a great deal of nervousness—important leading indices have fallen by historic proportions in recent days. The loss of confidence among both consumers and businesses may be even higher than might be expected based on the actual circumstances. The narrative of a severe crisis alone drastically reduces people's willingness to consume and invest. There is also the risk that the financial and debt crisis in the euro area will flare up again. If the risk premiums of individual countries rise significantly as a result of the distortions—as was recently the case for Italy—the question of debt sustainability arises again. In addition, there is a real likelihood that many companies in the euro area will go bankrupt, putting considerable pressure on commercial banks. The longer the crisis continues and the more severe its impact becomes, the greater the likelihood of a deep and persistent recession. Instead of a rapid V-shaped recovery, there would then be the danger of the economy not being able to make up the lost output, but instead moving to an L-shaped, i.e., a lower and slower growth path.

The consequences of the corona pandemic have affected different parts of the world to varying degrees. Many countries have taken measures to halt the spread of the virus and limit the economic impact. China, South Korea, and Japan, for example, have taken extensive steps to stabilize their economies and Italy has also adopted an initial package of measures costing around ten billion euros. In the US, the Federal Reserve Bank cut its key interest rate by a total of 1.5 basis points in two successive steps. Although the European Central Bank left its key interest rate for the euro area unchanged, it has announced it will increase bond purchases by 120 billion euros by the end of the year and simplify liquidity and financing conditions for banks, with the aim of improving lending, particularly to small and medium-sized enterprises. Additionally, the ECB decided to increase the volume of asset purchases to 750 billion euros until the end of this year. On balance, the sharp fall in oil prices as a result of the conflict between Russia and the other OPEC countries is also likely to cushion the blow.

Economies with a high degree of openness, such as Germany, are likely to experience disproportionately high losses. Private consumption and investment activity, which has so far been quite strong, are likely to be cut back considerably. There are also likely to be significant repercussions for exports. Given the uncertainty and weak profits, companies will be buying significantly fewer new machines, equipment, and vehicles this year. Only the construction industry is likely to continue to benefit from the exceptional boom in residential construction and significantly larger public investment budgets. Consumption will lose at some of its ability to cushion the economy. Households will shift their spending away from durable consumer goods to everyday consumer goods. As a consequence of the now weaker employment growth and considerably more short-time work, the development of household income will be weaker in the scenario assumed here and the savings rate will increase. Furthermore, wage replacement benefits for people in quarantine are paid by the health authorities of the respective federal states, in accordance with Germany's Infection Protection Act (*Infektionsschutzgesetz*). All this spending will make a dent on public budgets, and reserves built up in recent years in unemployment insurance and in other public budgets are likely to dwindle rapidly.

However, this is no reason to initiate additional austerity measures in order to maintain a balanced budget. On the contrary, now is the time to take targeted measures, or at least make credible announcements should the crisis intensify, in order to prevent it turning into an even greater economic crisis. It is important to provide support to companies whose existence, through no fault of their owners, is threatened by a lack of demand or production disruptions. Consideration should also be given to stimulating weak demand through government spending. This financial aid should first and foremost prevent insolvencies and employee layoffs, and counteract any decreased demand or loss of confidence. Ideally, there would be a coordinated launch of such a package among the Member States in the euro area. Monetary policymakers have already responded and, in some cases, taken bold steps. Most recently, the German government followed suit and announced unlimited liquidity for companies in difficulty as a result of the corona crisis.

First, it is right to tackle friction on the supply side. If, as a result of interrupted supply chains, lower freight volumes, quarantine measures, or other difficulties in the production process, companies find themselves in a situation where their solvency is no longer assured in the short term, it seems sensible to provide the necessary liquidity in the form of guarantees and default loans in order to ensure those companies can continue trading. The announced deferral of advance tax payments is also to be welcomed as this prevents government tax demands from creating additional shortfalls in company finances. Another plausible step would be to increase the maximum loss carryback. This would also give small businesses and the self-employed the opportunity to claim for potential lost earnings and obtain additional liquidity. The liquidity provided would ensure that, at least initially, these companies could continue trading. However, for many small companies in particular, the issue is how to repay such loans if they cannot make up for the lost turnover—this is especially true for the solo self-employed. The quarantine measures might also lead to financial difficulties for some employees, for example, if they have to take unpaid leave. An unbureaucratic solution might be for the tax office to offer them tax credits.

In previous crises, extending the short-time working allowance and the group of companies entitled to it has also

proved an effective measure. This ought to help prevent redundancies and support household purchasing power. Smaller restaurants, tradespeople with small businesses and service companies, in particular, are likely to be hit hard by the lack of demand. Their reserves are likely to be used up quickly. Appropriate liquidity support should also be made available to these inherently healthy enterprises. Subsidies for small enterprises in sectors that cannot make up for lost demand could also be considered. With all of this, the major issue is whether to go for the least bureaucratic option of providing everyone with this financial assistance or whether to go down the path of needs assessment. Ultimately, there is much to be said for broad and universal support in the current situation because, like the virus itself, increased company bankruptcies in an economy with a strong international division of labor could also have disruptive effects on production.

Second, the government should move to prevent a profound crisis of confidence among companies. The resulting reluctance to invest might also be countered, initially with a credible announcement of fiscal policy interventions and, in the event of a self-perpetuating economic crisis, by implementing concrete measures. Possible options include changing the depreciation rules on capital goods. Full depreciation could be granted for a limited period in the first year that new equipment is purchased. This would be a strong incentive for companies to bring forward investment projects that were already being planned, thus boosting demand. A long-term public investment program could also have a similar effect, provided that a credible signal was sent to companies that conditions in Germany were improving sustainably. This is necessary in any case, because this crisis also shows how quickly public infrastructure can reach the limits of its capacity. The considerable need to modernize the public infrastructure, for example in the area of digitization, and the lack of human resource capacities in the health sector, daycare

centers, and schools are likely to have made crisis management in politics and public administration considerably more difficult. This all applies under the proviso that there are no significant supply-side restrictions at this point in time.

Third, the government could strengthen household demand when the immediate quarantine measures come to an end. The government is also considering abolishing the solidarity surcharge ahead of schedule. However, there is a risk that anxious households would use the additional financial scope to boost their savings. One possible means of stimulating consumption directly would be to temporarily reduce sales tax (*Mehrwertsteuer*, MwSt). A reduction of one percentage point would create around 13 billion euros in additional leeway for households and this step would also benefit households with low incomes and a higher propensity to consume. Placing a time limit on the reduction would provide a strong incentive for households to bring forward their purchases of durable consumer goods, in particular. However, such benefits must not be allowed to thwart any health protection measures adopted. This is especially true when the population is encouraged to practice social distancing wherever possible.

The monetary and fiscal policy measures already adopted are all pointing in the right direction and are bold. The promise of unlimited liquidity, in particular, sends a strong signal to companies. However, liquidity will not help them if demand is permanently disrupted. Policymakers are not only called upon to relieve pinch points, but also to strengthen the confidence of economic actors and, if necessary, take steps to boost domestic demand. Monetary policy now has virtually no room for maneuver—fiscal policy is therefore all the more important. Without further clear and coordinated interventions, this public health crisis threatens to develop into an even more far-reaching economic crisis.

EDITORIAL

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Coronavirus Causing Major Economic Shock to the Global Economy

By Claus Michelsen, Guido Baldi, Geraldine Dany-Knedlik, Hella Engerer, Stefan Gebauer, and Malte Rieth

ABSTRACT

The ongoing corona pandemic is causing a major shock to the global economy. In the coming months, many countries are expected to suffer severe economic downturns. Sealing off entire regions disrupts supply chains, resulting in production losses and falls in consumption. The global economy is expected to grow by as little as 2.5 percent this year instead of by the 3.7 percent forecasted previously. If the situation normalizes again in the course of the year, however, 3.5 percent growth will, in all likelihood, be achieved in the next year.

The impact of the coronavirus (COVID-19) will weaken the global economy considerably in the months ahead (see Figure). Production losses in China and the increasing spread of the virus will lead to substantial contractions in many economies, both in the production of goods and services, and in the demand for capital and consumer goods. At 2.5 percent, growth in global economic output is likely to be significantly weaker this year; in 2019, production increased by 3.5 percent. The global economy is expected to return to normal in the coming year.

The coronavirus crisis is intensifying the slowdown in growth. The pace of expansion has slowed, especially in the emerging markets. Towards the end of 2019, sluggish growth in the advanced economies also contributed to the slowdown in global economic development. In Europe, in particular, production lost noticeable momentum. Additionally, Japan's economic output collapsed after the VAT rate hike in October. Only the US economy expanded at rates similar to those seen in previous quarters.

At the start of 2020, the economic outlook initially brightened somewhat, most likely as a result of the settlement of the trade dispute between China and the US. In some emerging markets, such as India and Brazil, monetary policy was eased again considerably at the end of 2019, most probably making companies there more optimistic. With most labor markets still in good shape, consumer confidence also continued to rise in January 2020.

However, the indicators do not yet reflect the supply and demand shocks caused by the spread of the novel coronavirus. The impact is most evident in the tumbling share prices at most of the world's trading centers, suggesting that an economic slump is imminent. The increased volatility also signals huge uncertainty on financial markets.

The underlying assumption of this forecast is that the spread of COVID-19 will be similar to previous pandemics. This means the number of infections is initially expected to rise significantly.

Table

Real GDP, consumer price inflation, and unemployment rate in the world economy

In percent

	GDP				Consumer prices				Unemployment rate in percent			
	Change over previous year in percent											
	2018	2019	2020	2021	2018	2019	2020	2021	2018	2019	2020	2021
Euro area	1.9	1.2	-0.2	1.5	1.7	1.3	1.2	1.4	8.1	7.5	7.7	7.5
without Germany	2.0	1.4	-0.1	1.4	1.7	1.2	1.3	1.3	10.3	9.5	9.7	9.5
France	1.7	1.2	-0.1	1.7	1.9	1.1	1.5	1.2	9.1	8.5	8.4	8.3
Italy	0.7	0.2	-0.8	0.8	1.2	0.7	0.8	1.1	10.6	10.0	10.3	10.3
Spain	2.4	2.0	0.3	1.7	1.7	0.7	1.0	1.5	15.3	14.1	14.5	13.9
Netherlands	2.5	1.7	0.4	1.6	1.6	2.7	1.5	1.4	3.8	3.4	3.8	4.0
United Kingdom	1.3	1.4	0.8	1.4	2.4	1.8	1.9	2.2	4.2	3.9	4.1	4.2
USA	2.9	2.3	0.8	1.7	2.4	1.8	2.0	2.0	3.9	3.7	3.7	3.6
Japan	0.3	0.8	-0.3	0.6	0.8	0.6	0.3	0.6	2.5	2.4	2.4	2.4
South Korea	2.7	2.0	1.1	1.6	1.6	0.5	0.9	1.0	3.8	3.7	3.7	3.6
Central and Eastern Europe	4.6	4.0	2.9	3.3	2.2	2.7	2.9	3.0	3.7	3.3	3.3	3.3
Turkey	2.9	0.1	1.5	1.6	16.3	15.2	12.8	12.1	11.0	13.9	13.7	13.5
Russia	2.2	1.3	1.1	1.6	2.9	4.5	3.7	4.2	4.8	4.6	4.5	4.4
China	6.7	6.2	4.6	5.8	2.5	3.3	3.6	3.6	4.1	4.1	4.1	4.1
India	6.7	5.1	5.0	5.7	3.9	3.7	4.3	4.0				
Brazil	1.3	1.1	1.0	1.3	3.8	3.8	3.4	3.7	12.3	12.1	11.8	11.7
Mexico	2.1	-0.1	0.1	0.9	4.9	3.4	2.7	2.9	3.4	3.5	3.4	3.3
Advanced economies	2.2	1.8	0.4	1.5	2.0	1.5	1.5	1.6	4.8	4.5	4.6	4.5
Emerging markets	5.5	4.6	3.8	4.7	3.6	4.1	4.2	4.2	5.1	5.2	5.2	5.1
World	4.2	3.5	2.5	3.5	3.0	3.0	3.1	3.2	5.0	4.9	4.9	4.9

Sources: National statistical offices; DIW Berlin Spring Projections 2020.

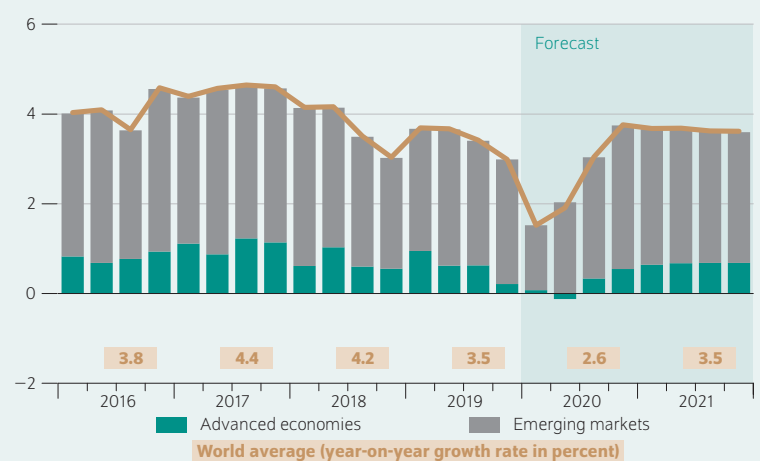
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The quarantine measures, travel restrictions, and loss of working hours are likely to massively limit global production and existing supply chains this year, particularly for industry. The service sector, especially transport, tourism, and the financial sector, are also likely to suffer heavily. The downturn in industrial production which began already in 2018 will initially worsen and then further curb investment activity, which has been declining in recent years anyway. The production-side impact of COVID-19 will further exacerbate this year's already weak global trade. The restrictions imposed on the public in many places as well as the uncertainty arising from the spread of the virus are also expected to result in weaker private consumption, despite the temporary increase in retail sales from panic buying. Following the economic downturn in the first half of the year, precautionary measures will eventually be relaxed, gradually reducing production-side frictions and easing the various restrictions in place. The global economy is expected to normalize from the second half of 2020.

Fiscal policy, which was already mildly expansionary even before the corona crisis, and the numerous public support packages, in particular, are likely to cushion the effects of the coronavirus on production.

In addition, there were clear monetary policy stimuli, some coordinated between central banks. For example, some important central banks have already lowered interest rates and expanded or relaunched bond purchasing programs. It

Figure

World real GDP growth
Quarter-on-quarter, in percent

Sources: National statistical offices; DIW Berlin Spring Projections 2020.

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The spread of the coronavirus will lead to significant economic dislocations, especially in 2020.

can be assumed that further measures will follow. The measures will go some way towards offsetting worsening financing conditions and provide some support for the global economy.

Given the tense economic situation, further monetary policy easing is likely to increase consumer prices only gradually. The strong position of the labor markets and the recent rises in wages in many places, coupled with continued moderate inflation, can be expected to support real disposable income and thus private consumption.

Conflicts within OPEC+¹ and the resulting expansion of the crude oil supply by Saudi Arabia have led to a considerable drop in oil prices. Although likely to support manufacturing production and private consumption, this will also hamper growth in oil-exporting economies such as Russia and the US.

Overall, global economic growth will be noticeably weaker, particularly this year, due to the effects of the coronavirus. Throughout the remainder of the forecast period, the global

economy should pick up speed again and production gains will make up for some of the earlier losses. Private consumption is likely to remain the main driver of global expansion. The global economy is expected to grow by 2.5 percent this year and by 3.5 percent next year (see Table). Compared to its winter economic outlook, DIW Berlin is lowering its forecast for 2020 significantly, by 1.2 percentage points, and slightly for 2021.

Downside risks have increased significantly since the beginning of the year. Thus, the forecast scenario, which presumes the current pandemic will play out similarly to previous pandemics, is becoming increasingly unlikely. The comprehensive restrictions on public life in many economies will noticeably increase the downward trend, causing serious recessions in some countries. The extent of the economic crisis depends on the economic policy responses. In addition, further trade conflicts could occur, for example between the United States and the European Union. Last but not least, there is still the possibility of a hard Brexit at the end of the year if the EU and the United Kingdom do not agree on a trade agreement before then.

¹ OPEC+ consists of the original OPEC member states plus ten other oil-producing countries, including Russia.

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Coronavirus Plunges the German Economy into Recession

By Claus Michelsen, Marius Clemens, Max Hanisch, Simon Junker, Konstantin Kholodilin, and Thore Schlaak

ABSTRACT

The spread of the coronavirus worldwide is exerting considerable pressure on the economy. Compounded by the lack of quality data, model uncertainty, and uncertainty over government responses, economic forecasts are subject to even greater uncertainty than usual. It is difficult to predict how the pandemic will progress. Figures on the impact of the virus, obtained by comparing it with previous epidemics, for example, provide rough approximations at best. Based on the model calculations, Germany can expect to suffer huge economic losses. Given the information available, it is reasonable to assume that economic output will actually be one percentage point lower than recently projected in the winter outlook. As a result, GDP will decline by 0.1 percent this year. If the higher number of working days this year is factored in, in line with general international practice, economic output will fall by as much as 0.5 percent. The corona pandemic will plunge Germany into recession, albeit the exact size of the downturn remains unclear.

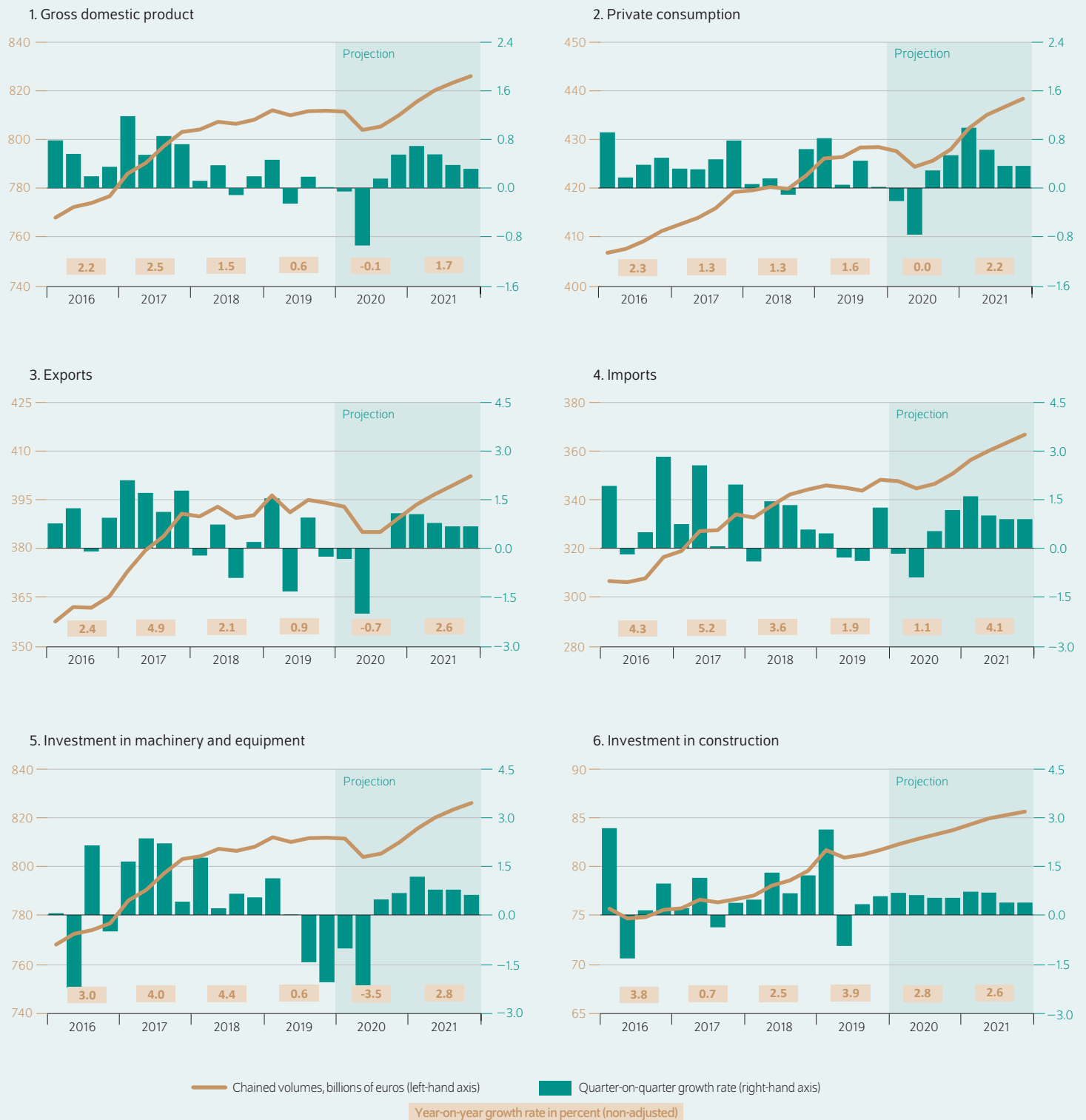
The coronavirus is placing a huge burden on people's lives, causing economic upheaval. China was first to be hit by the impact of the virus. The stringent quarantine measures taken in China are likely to have helped contain the virus. Everyday life and work, however, have come to a standstill across major parts of the country. Supply chains have been disrupted and many companies worldwide that rely on the timely supply of intermediate goods from China are being forced to scale back their production. The Chinese have limited themselves to buying immediate necessities only. In February, for example, very few automobile purchases were made. This reserved consumer spending will hit German manufacturers with major interests in the Chinese market. The German economy is likely to feel the impact in the first half of the year, although it is difficult to give precise figures on this (see Figure). While the epidemic appears to have peaked in China, the number of people infected in other countries is on the rise. This will lead to major cuts in production in Europe, too, and many consumers will massively scale back on a range of activities. All in all, the economic fallout from the coronavirus could lead to a reduction in growth of more than one percent, shrinking economic output by 0.1 percent; if it were not for the comparatively high number of working days, the negative impact on the growth rate would be far more pronounced at 0.5 percent.

Overall economic momentum in Germany, which is being knocked off course by the effects of the coronavirus, has not begun to slow as yet. In fact, had the coronavirus pandemic not occurred, the industrial recession would have gradually come to an end. At the start of the year, production was back on track again, and the number of new orders pointed towards a continued upwards trend, as did available sentiment indicators that had not yet picked up the effects of the coronavirus. Consumer-related service providers would have benefited notably from increased consumption caused by appreciable increases in nominal income. These increases themselves are the result of effective fiscal policy measures¹

¹ Cf. Marius Clemens, "Öffentliche Finanzen: Haushaltsspielräume verflüchtigen sich nach und nach – Investitionsprogramm wäre sinnvoll," DIW Wochenbericht 50 (2019): 952–960 (in German; available online; accessed on March 13, 2020. This applies to all other online sources in this report unless stated otherwise.).

Figure

Gross domestic product and use of GDP Seasonally and working day adjusted



Sources: Federal Statistical Office; DIW Berlin Spring Projections 2020, forecast from Q1 2020 onward.

Table 1

Use of GDP, quarter-on-quarter growth rates

Price, seasonally and working-day adjusted, in percent

	2019				2020				2021			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Private consumption	0.8	0.1	0.5	0.0	-0.2	-0.8	0.3	0.6	1.0	0.6	0.4	0.4
Public consumption	1.0	0.5	1.3	0.3	0.4	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Gross fixed capital formation	1.6	-0.3	-0.1	-0.2	0.3	-0.3	0.6	0.6	1.0	0.7	0.6	0.5
Investment in machinery and equipment	2.6	-0.9	0.4	0.6	0.7	0.6	0.6	0.6	0.7	0.7	0.4	0.4
Construction investment	1.2	0.0	-1.4	-2.0	-1.0	-2.5	0.5	0.7	1.2	0.8	0.8	0.6
Other investment	-0.5	1.0	1.0	1.1	1.3	0.8	0.8	0.8	1.3	0.7	0.7	0.7
Change in inventories ¹	-1.0	0.2	-0.9	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic uses	-0.1	0.3	-0.4	0.7	0.0	-0.4	0.4	0.6	0.9	0.6	0.5	0.4
Net exports ¹	0.5	-0.5	0.6	-0.6	-0.1	-0.6	-0.2	0.0	-0.2	-0.1	-0.1	-0.1
Exports	1.6	-1.3	1.0	-0.2	-0.3	-2.0	0.0	1.1	1.1	0.8	0.7	0.7
Imports	0.5	-0.3	-0.4	1.3	-0.1	-0.9	0.6	1.2	1.6	1.0	0.9	0.9
GDP	0.5	-0.2	0.2	0.0	0.0	-0.9	0.2	0.6	0.7	0.6	0.4	0.3
Gross value added	0.5	-0.3	0.1	0.1	0.0	-0.9	0.2	0.6	0.7	0.6	0.4	0.3
Manufacturing	-1.1	-1.4	-0.9	-0.9	-0.7	-3.4	0.1	1.3	1.4	1.3	0.8	0.5
Construction	1.1	-0.5	1.3	0.5	2.2	-0.3	0.5	0.5	0.8	0.7	0.5	0.4
Trade, accomodation, transport	2.5	-0.4	0.1	0.2	-0.2	-1.0	0.2	0.6	1.1	0.8	0.6	0.6
Business and production services	0.6	0.1	0.0	0.0	-0.3	-1.0	0.2	0.7	0.8	0.5	0.4	0.4
Public admin, community and social services	0.2	0.2	0.6	0.6	0.3	0.7	0.2	0.1	0.0	0.0	0.0	0.0

¹ Contribution to GDP growth in percentage points.

Source: Federal Statistical Office; DIW Berlin Spring Projections 2020, forecast from Q1 2020 onward.

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Table 2

Main economic indicators for the German economy

	2016	2017	2018	2019	2020	2021
Real GDP ¹ (percent change over previous year)	2.2	2.5	1.5	0.6	-0.1	1.7
Domestic employment (1000 persons)	43,655	44,248	44,854	45,253	45,427	45,627
Unemployed (ILO concept)	1,775	1,621	1,469	1,377	1,406	1,369
Unemployed (BA concept)	2,691	2,533	2,340	2,267	2,270	2,211
Unemployment rate ² (ILO concept)	4.1	3.8	3.4	3.2	3.3	3.2
Unemployment rate ² (BA concept)	6.1	5.7	5.2	5.0	5.0	4.8
Consumer prices	0.5	1.5	1.8	1.4	1.0	1.6
Unit labor costs ³	1.2	1.2	2.5	3.4	2.3	1.3
Government budget balance ⁴						
in billion EUR	37.1	40.3	62.4	49.8	11.4	-7.1
in percent of GDP	1.2	1.2	1.9	1.4	0.3	-0.2
Current account balance, in percent of GDP	8.5	7.8	7.4	7.1	6.8	6.2

¹ Price-adjusted, chain-linked.

² As a share of domestic labor force (ILO), resp. Civilian labor force (BA).

³ Compensation of employees (national concept) per hour worked over real GDP.

⁴ According to ESA 2010.

Sources: National and international institutions; DIW Berlin Spring Projections 2020, 2020 and 2021: forecast.

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as well as the labor market situation, which, until recently, has been good. Employment growth continues, albeit with less momentum, and wages are rising markedly, especially in relation to general inflation. The global economy was also stabilizing and, given the progress in US-China trade talks and the mitigation of serious risks from Brexit, the prospects for German exports had been positive. Investment, despite having been somewhat restrained recently, would have risen slightly again in the course of the general upturn and in a less risky environment.

Based on this scenario, the effects of the coronavirus are likely to unfold roughly as outlined below. The impact of the virus could be less drastic, however, provided the spread of the virus in Europe is slowed down or if—contrary to what is assumed here—the economy can quickly make up for deferred spending and production losses. We must not, however, rule out the effects of the coronavirus causing significantly more damage to the economy, as public life is currently grinding to a halt across large parts of Europe, which could continue for a longer period of time.

Assuming the collapse of the German stock market or the intensity of reporting on the coronavirus, a comparison with similar past events allows conclusions to be drawn about the magnitude of the impact of the coronavirus. Using empirical models, the following scenario is assumed: The first signs of disrupted supply chains from China and the slump in demand affecting industrial production in Germany were seen as early as February. By March the impact was already very evident. Once production in China begins to normalize again and demand is back on track, these restrictions will gradually start to disappear from the next month onwards.

In contrast, the economic burdens in the majority of other countries and in Germany are only gradually starting to unfold. These effects are, however, all the more noticeable since they also originate from Germany's neighboring countries and from Germany itself. Production-side disruptions are, in fact, caused by some of the measures intended to protect people from the virus, e.g., quarantine measures, the decision to stay home from work, or the need to look after children at home following restrictions on childcare. The economy also suffers indirect losses associated with the tightly interwoven production chains. Loss of production in

one place—caused by employees not being able to perform their jobs, for example—will mean a lack of the intermediate goods required to produce goods elsewhere, restricting production further. Another factor is decreasing household spending in many places. In Germany, this is curbing domestic consumption and imports, whereas in other countries, it is German exports that are suffering, for example. This is the case because consumers initially refrain from spending unless absolutely necessary. The labor market is also affected by this economic downturn, with many companies at the very least deferring decisions about employing new staff, while others are resorting to short-term employment contracts while sales volumes are low. Accordingly, the development of earned incomes is likely to be sluggish, reducing consumption as a consequence. Despite its attempts to make up for these income shortfalls by extending the terms of reduced-hours compensation, for example, the government is unable to fully offset these losses. The potential impact of this waning demand has already been seen in China's automobile market, which at times was on the verge of collapsing. Accordingly, consumption and exports in Germany can be expected to fall substantially until early summer, after which they will begin to pick up again (see Table 1). Without implying that production losses can, for the most part, be offset, the gradual disappearance of these economic stress factors will go some way towards stimulating momentum again in the latter half of the year and into the coming year. In light of this, we can expect to see 1.7 percent growth for 2021, which exceeds the trend growth rate (see Table 2). This year's economic upheavals have led to a 0.8 percent drop in capacity utilization; from next year, the production gap will slowly start to close.

However, we cannot rule out a far more negative scenario than that presented here. First, there is very little available information on the corona pandemic. Neither the sentiment indicators nor official figures on production output, for example, can reflect the situation to date in its entirety. Second, we have absolutely no way of knowing what the true extent of the impacts of the pandemic will be, or whether the situation can be expected to normalize by the summer months or not. This, in part, also depends on the success of policy measures aiming to reign in income losses of workers, self-employed persons and small businesses. A deeper, longer lasting recession is therefore certainly conceivable.

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APPENDIX: NATIONAL ACCOUNTS DATA

The Main National Accounts Data for the Federal Republic of Germany Forecast for 2019 to 2021

	2019	2020	2021	2019		2020		2021	
				1st half of year	2nd half of year	1st half of year	2nd half of year	1st half of year	2nd half of year
1. Origin of GDP									
Percentage change over previous year									
Domestic employment	0.9	0.4	0.4	1.1	0.7	0.4	0.3	0.4	0.5
Hours worked, per working day	−0.3	−1.5	0.1	0.5	−1.0	−1.0	−2.1	0.2	0.1
Working days	0.0	1.5	0.1	−0.8	0.8	0.5	2.4	0.0	0.2
Labor volume, calendar-monthly	0.6	0.3	0.7	0.8	0.5	−0.1	0.7	0.6	0.8
Labor productivity¹	0.0	−0.4	1.0	−0.3	0.2	−0.1	−0.7	0.7	1.3
GDP, price adjusted	0.6	−0.1	1.7	0.4	0.7	−0.2	0.0	1.3	2.1
2. Disposition of GDP in current prices									
a) Billion EUR									
Final consumption expenditure	2,493.4	2,541.0	2,637.4	1,214.3	1,279.1	1,241.3	1,299.7	1,283.0	1,354.4
Private consumption expenditure²	1,794.0	1,809.2	1,876.0	876.6	917.4	886.5	922.7	913.4	962.6
Government consumption expenditure	699.4	731.8	761.4	337.7	361.7	354.9	376.9	369.6	391.8
Gross fixed capital formation (GFCF)	746.9	773.2	811.9	359.5	387.3	368.7	404.5	387.1	424.9
Construction	239.8	235.3	243.9	115.8	124.1	111.9	123.5	115.1	128.7
Machinery and equipment	373.3	396.5	419.4	180.4	192.9	189.7	206.8	201.4	218.0
GFCF in other products	133.7	141.3	148.6	63.3	70.4	67.1	74.2	70.6	78.1
Change in stocks³	−12.2	−10.4	−11.7	6.2	−18.4	0.4	−10.8	0.4	−12.1
Domestic uses	3,228.1	3,303.7	3,437.6	1,580.1	1,648.0	1,610.4	1,693.3	1,670.5	1,767.2
Balance of exports and imports	207.7	201.7	186.6	108.7	99.0	112.0	89.7	104.0	82.6
Exports	1,612.1	1,609.8	1,658.9	803.1	809.0	801.3	808.5	818.0	840.9
Imports	1,404.4	1,408.0	1,472.3	694.4	709.9	689.3	718.8	714.0	758.3
GDP	3,435.8	3,505.4	3,624.2	1,688.7	1,747.0	1,722.4	1,783.0	1,774.5	1,849.7
b) Percentage change over previous year									
Final consumption expenditure	3.5	1.9	3.8	3.1	3.8	2.2	1.6	3.4	4.2
Private consumption expenditure²	2.9	0.8	3.7	2.7	3.1	1.1	0.6	3.0	4.3
Government consumption expenditure	5.1	4.6	4.0	4.3	5.8	5.1	4.2	4.1	4.0
Gross fixed capital formation (GFCF)	5.5	3.5	5.0	6.5	4.6	2.5	4.4	5.0	5.0
Construction	1.9	−1.9	3.6	3.1	0.9	−3.4	−0.5	2.9	4.3
Machinery and equipment	8.4	6.2	5.8	9.6	7.4	5.1	7.2	6.1	5.5
GFCF in other products	4.4	5.7	5.2	4.5	4.2	5.9	5.5	5.1	5.2
Domestic uses	2.9	2.3	4.1	3.7	2.1	1.9	2.7	3.7	4.4
Exports	1.7	−0.1	3.1	1.3	2.0	−0.2	−0.1	2.1	4.0
Imports	1.8	0.3	4.6	3.6	0.0	−0.7	1.2	3.6	5.5
GDP	2.7	2.0	3.4	2.5	2.9	2.0	2.1	3.0	3.7
3. Disposition of GDP, adjusted for prices									
a) Chain-linked estimated in billion EUR									
Final consumption expenditure	2,365.0	2,380.2	2,430.3	1,162.9	1,202.2	1,172.8	1,207.3	1,193.6	1,236.7
Private consumption expenditure²	1,708.0	1,708.0	1,744.9	838.8	869.2	840.3	867.7	854.2	890.7
Government consumption expenditure	657.2	672.2	685.4	324.1	333.0	332.5	339.6	339.3	346.2
Gross fixed capital formation (GFCF)	683.9	691.0	710.5	330.8	353.1	331.1	359.9	340.1	370.4
Construction	232.9	224.8	231.1	112.7	120.2	106.9	117.9	109.0	122.1
Machinery and equipment	324.4	333.6	342.2	157.8	166.6	160.8	172.8	165.4	176.7
GFCF in other products	126.5	131.7	136.4	60.3	66.3	62.8	68.8	65.1	71.3
Domestic uses	3,048.0	3,071.2	3,141.1	1,500.9	1,547.0	1,506.9	1,564.3	1,537.2	1,603.9
Exports	1,570.9	1,559.6	1,600.6	784.8	786.1	777.7	781.9	790.7	810.0
Imports	1,379.4	1,395.2	1,452.5	680.6	698.8	683.2	711.9	706.4	746.0
GDP	3,240.7	3,237.8	3,293.0	1,605.4	1,635.1	1,602.0	1,635.8	1,622.6	1,670.4
b) Percentage change over previous year									
Final consumption expenditure	1.8	0.6	2.1	1.5	2.2	0.9	0.4	1.8	2.4
Private consumption expenditure²	1.6	0.0	2.2	1.3	1.8	0.2	−0.2	1.7	2.6
Government consumption expenditure	2.6	2.3	2.0	1.9	3.2	2.6	2.0	2.0	1.9
Gross fixed capital formation (GFCF)	2.6	1.0	2.8	3.4	1.9	0.1	1.9	2.7	2.9
Construction	0.6	−3.5	2.8	2.0	−0.6	−5.1	−1.9	1.9	3.5
Machinery and equipment	3.9	2.8	2.6	4.4	3.4	1.9	3.7	2.9	2.3
GFCF in other products	2.7	4.0	3.6	2.9	2.6	4.3	3.8	3.6	3.6
Domestic uses	1.0	0.8	2.3	1.6	0.5	0.4	1.1	2.0	2.5
Exports	0.9	−0.7	2.6	0.2	1.6	−0.9	−0.5	1.7	3.6
Imports	1.9	1.1	4.1	2.7	1.2	0.4	1.9	3.4	4.8
GDP	0.6	−0.1	1.7	0.4	0.7	−0.2	0.0	1.3	2.1

APPENDIX: NATIONAL ACCOUNTS DATA

Continued: The Main National Accounts Data for the Federal Republic of Germany Forecast for 2019 to 2021

	2019	2020	2021	2019		2020		2021	
				1st half of year	2nd half of year	1st half of year	2nd half of year	1st half of year	2nd half of year
4. Price level of national expenditure (2015 = 100)									
Percentage change over previous year									
Private consumption expenditure ²	1.3	0.9	1.5	1.3	1.3	0.9	0.8	1.4	1.6
Government consumption expenditure	2.5	2.3	2.0	2.4	2.5	2.4	2.2	2.1	2.0
Gross fixed capital formation (GFCF)	2.9	2.5	2.1	3.0	2.7	2.5	2.5	2.2	2.1
Construction	1.3	1.6	0.9	1.1	1.5	1.8	1.5	1.0	0.7
Machinery and equipment	4.4	3.3	3.1	4.9	3.9	3.2	3.4	3.2	3.1
Exports	0.8	0.6	0.4	1.1	0.4	0.7	0.5	0.4	0.4
Imports	-0.1	-0.9	0.4	0.9	-1.1	-1.1	-0.6	0.2	0.7
GDP	2.2	2.1	1.7	2.1	2.2	2.2	2.0	1.7	1.6
5. Distribution of Income									
a) Billion EUR									
Primary income of private households ²	2,406.8	2,442.8	2,512.1	1,188.2	1,218.7	1,210.6	1,232.1	1,238.1	1,274.0
Employers' social contributions	326.3	334.4	346.3	158.0	168.3	162.3	172.1	168.0	178.3
Gross wages and salaries	1,522.8	1,562.6	1,614.7	727.0	795.8	748.4	814.2	773.0	841.6
Other primary income of private households ⁴	557.7	545.7	551.1	303.2	254.5	299.9	245.8	297.1	254.0
Primary income of other institutional sectors	491.5	504.6	533.9	222.2	269.4	222.9	281.7	236.8	297.1
Net national income (primary income)	2,898.4	2,947.4	3,045.9	1,410.3	1,488.1	1,433.6	1,513.9	1,474.9	1,571.0
Consumption of fixed capital	637.0	659.8	683.4	316.1	320.9	327.4	332.4	339.1	344.3
Gross national income	3,535.4	3,607.2	3,729.3	1,726.4	1,809.0	1,760.9	1,846.3	1,814.0	1,915.4
Memorandum item:									
Net national income (factor costs)	2,561.5	2,601.1	2,692.0	1,242.0	1,319.6	1,260.7	1,340.5	1,298.2	1,393.8
Property and entrepreneurial income	712.4	704.1	731.0	357.0	355.4	349.9	354.1	357.1	373.9
Compensation of employees	1,849.1	1,897.1	1,961.0	885.0	964.1	910.7	986.3	941.1	1,019.9
b) Percentage change over previous year									
Primary income of private households ²	2.9	1.5	2.8	2.8	3.1	1.9	1.1	2.3	3.4
Employers' social contributions	5.1	2.5	3.6	5.4	4.9	2.7	2.3	3.5	3.6
Gross wages and salaries	4.2	2.6	3.3	4.5	4.0	2.9	2.3	3.3	3.4
Other primary income of private households ⁴	-1.7	-2.2	1.0	-2.3	-1.0	-1.1	-3.4	-0.9	3.3
Primary income of other institutional sectors	0.2	2.7	5.8	-0.2	0.5	0.4	4.6	6.2	5.5
Net national income (primary income)	2.4	1.7	3.3	2.3	2.6	1.6	1.7	2.9	3.8
Consumption of fixed capital	4.6	3.6	3.6	4.5	4.8	3.6	3.6	3.6	3.6
Gross national income	2.8	2.0	3.4	2.7	3.0	2.0	2.1	3.0	3.7
Memorandum item:									
Net national income (factor costs)	2.3	1.5	3.5	2.2	2.5	1.5	1.6	3.0	4.0
Property and entrepreneurial income	-2.6	-1.2	3.8	-3.4	-1.9	-2.0	-0.4	2.1	5.6
Compensation of employees	4.4	2.6	3.4	4.6	4.2	2.9	2.3	3.3	3.4
6. Income and expenditure of private households									
a) Billion EUR									
Mass income	1,492.7	1,542.6	1,603.9	716.9	775.8	742.4	800.2	774.3	829.6
Net wages and salaries	1,021.8	1,049.6	1,092.6	483.0	538.8	498.3	551.3	518.7	573.9
Social benefits	606.1	633.2	656.9	300.7	305.3	313.3	319.9	327.5	329.4
Fewer levies on social benefits	135.1	140.2	145.6	66.7	68.3	69.2	71.0	71.9	73.7
Other primary income ⁴	557.7	545.7	551.1	303.2	254.5	299.9	245.8	297.1	254.0
Other transfers received (net) ⁵	-97.2	-97.6	-100.9	-49.3	-47.9	-48.9	-48.8	-50.5	-50.4
Disposable income	1,953.3	1,990.6	2,054.1	970.8	982.5	993.4	997.2	1,020.8	1,033.2
Memorandum item:									
Adjustment for the change in net equity of households in pension funds reserves	60.4	61.1	61.7	29.4	31.0	29.7	31.4	30.0	31.7
Private consumption expenditure	1,794.0	1,809.2	1,876.0	876.6	917.4	886.5	922.7	913.4	962.6
Saving	219.7	242.5	239.8	123.6	96.1	136.6	105.9	137.4	102.3
Saving ratio in percent ⁶	10.9	11.8	11.3	12.4	9.5	13.4	10.3	13.1	9.6
b) Percentage change over previous year									
Mass income	4.6	3.3	4.0	4.6	4.6	3.5	3.1	4.3	3.7
Net wages and salaries	4.7	2.7	4.1	5.0	4.5	3.2	2.3	4.1	4.1
Social benefits	4.6	4.5	3.7	4.2	5.0	4.2	4.8	4.5	3.0
Fewer levies on social benefits	5.9	3.8	3.8	5.5	6.3	3.8	3.8	3.8	3.9
Other primary income ⁴	-1.7	-2.2	1.0	-2.3	-1.0	-1.1	-3.4	-0.9	3.3
Disposable income	2.9	1.9	3.2	2.7	3.1	2.3	1.5	2.8	3.6
Private consumption expenditure	2.9	0.8	3.7	2.7	3.1	1.1	0.6	3.0	4.3
Savings	2.4	10.4	-1.1	2.2	2.8	10.5	10.2	0.6	-3.3

APPENDIX: NATIONAL ACCOUNTS DATA

Continued: The Main National Accounts Data for the Federal Republic of Germany Forecast for 2019 to 2021

	2019	2020	2021	2019		2020		2021	
				1st half of year	2nd half of year	1st half of year	2nd half of year	1st half of year	2nd half of year
7. Government revenues and expenditures									
a) Billion EUR									
Revenues									
Taxes	825.8	839.8	866.2	415.6	410.2	422.3	417.5	435.0	431.2
Direct taxes	457.3	460.7	471.4	232.8	224.4	234.4	226.2	239.4	232.0
Indirect taxes	368.6	379.1	394.8	182.8	185.8	187.9	191.2	195.6	199.2
Net social contributions	597.8	613.5	634.3	289.9	307.9	298.1	315.3	308.2	326.1
Property income	21.7	21.5	21.4	13.2	8.5	13.1	8.4	13.1	8.2
Other transfers	24.3	23.9	24.4	11.1	13.1	11.4	12.5	11.6	12.8
Capital transfers	12.2	12.5	12.8	5.3	6.9	5.4	7.0	5.6	7.2
Sales	126.6	130.6	134.7	59.3	67.3	61.2	69.4	63.1	71.6
Other subsidies	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Total revenues	1,608.6	1,641.9	1,693.9	794.6	814.0	811.6	830.3	836.7	857.2
Expenditures									
Intermediate consumption	179.8	188.6	196.6	81.6	98.2	86.0	102.6	89.8	106.8
Compensation of employees	271.7	282.0	291.6	130.1	141.6	135.6	146.5	140.2	151.4
Social benefits in kind	299.7	313.1	325.4	148.0	151.8	155.1	158.0	161.4	164.0
Property income (interests)	27.5	24.6	23.2	14.5	13.0	12.7	11.9	11.9	11.3
Subsidies	31.7	32.8	40.9	14.4	17.3	15.0	17.9	18.9	22.0
Social benefits	546.2	572.0	594.5	270.9	275.3	282.8	289.1	296.4	298.1
Other transfers	78.3	86.2	90.5	38.8	39.5	43.1	43.1	45.2	45.3
Gross capital formation	85.3	90.5	96.3	37.8	47.5	40.0	50.6	42.6	53.7
Capital transfers	39.6	41.7	43.0	13.3	26.3	14.2	27.5	14.8	28.2
Acquisitions less disposals of non-financial non-produced assets	-1.2	-1.2	-1.2	-0.5	-0.7	-0.5	-0.7	-0.5	-0.7
Other taxes on production	0.3	0.3	0.3	0.1	0.1	0.1	0.1	0.1	0.1
Total expenditures	1,558.8	1,630.5	1,701.0	748.9	809.8	783.9	846.6	820.8	880.3
Balance	49.8	11.4	-7.1	45.7	4.1	27.7	-16.3	15.9	-23.0
b) Percentage change over previous year									
Revenues									
Taxes	3.1	1.7	3.1	2.8	3.4	1.6	1.8	3.0	3.3
Direct taxes	2.7	0.7	2.3	2.5	2.9	0.7	0.8	2.1	2.5
Indirect taxes	3.6	2.9	4.1	3.2	4.0	2.8	3.0	4.1	4.2
Net social contributions	4.4	2.6	3.4	4.6	4.2	2.8	2.4	3.4	3.4
Property income	2.1	-1.1	-0.5	1.7	2.6	-0.8	-1.4	0.0	-1.3
Other transfers	-2.0	-1.5	2.1	-3.4	-0.8	2.1	-4.5	2.1	2.1
Capital transfers	-6.8	2.3	2.3	-4.5	-8.5	2.4	2.2	2.4	2.2
Sales	5.3	3.2	3.1	6.7	4.1	3.2	3.2	3.2	3.1
Other subsidies	-8.4	0.0	0.0	-23.2	4.1	0.0	0.0	0.0	0.0
Total revenues	3.6	2.1	3.2	3.6	3.6	2.1	2.0	3.1	3.2
Expenditures									
Intermediate consumption	6.1	4.9	4.2	5.5	6.7	5.3	4.5	4.4	4.1
Compensation of employees	4.8	3.8	3.4	4.6	4.9	4.2	3.4	3.4	3.4
Social benefits in kind	4.8	4.5	3.9	4.2	5.5	4.8	4.1	4.1	3.8
Property income (interests)	-13.2	-10.7	-5.7	-10.4	-16.1	-12.8	-8.4	-6.4	-5.0
Subsidies	7.3	3.4	24.6	3.7	10.5	3.7	3.2	26.6	22.9
Social benefits	5.0	4.7	3.9	4.5	5.5	4.4	5.0	4.8	3.1
Other transfers ⁷	4.5	10.1	5.0	6.2	2.8	11.0	9.2	5.0	5.0
Gross capital formation	8.8	6.2	6.4	13.4	5.5	5.8	6.5	6.6	6.2
Capital transfers ⁷	-6.3	5.3	3.2	2.4	-10.1	6.8	4.5	4.2	2.7
Acquisitions less disposals of non-financial non-produced assets ⁷	-5.2	0.0	0.0	-6.9	-3.9	0.0	0.0	0.0	0.0
Other taxes on production ⁷	10.0	0.0	0.0	17.6	6.1	0.0	0.0	0.0	0.0
Total expenditures	4.6	4.6	4.3	4.7	4.5	4.7	4.5	4.7	4.0

1 GDP (price-adjusted) per man-hour.

2 Including private organizations without pecuniary reward.

3 Including net increase in valuables.

4 Entrepreneurial income/operating surplus and received minus paid asset income.

5 Transfers, received minus paid.

6 Current savings as percentage of disposable income.

7 Absolute change over previous year in billion EUR.

8 All administrative units including social security.

Sources: Federal Statistical Office (Fachserie 18: Volkswirtschaftliche Gesamtrechnungen); Forecast by DIW Berlin.