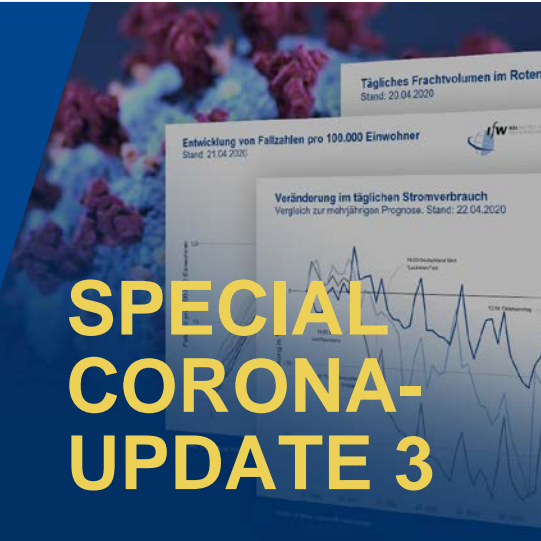


KIEL POLICY BRIEF

Jens Boysen-Hogrefe, Salomon Fiedler, Klaus-Jürgen Gern, Dominik Groll, Philipp Hauber, Nils Jannsen, Stefan Kooths, Saskia Möhle, and Ulrich Stolzenburg

Outlook for the World Economy and the German Economy: Interim Forecast Spring 2020

English Version



**SPECIAL
CORONA-
UPDATE 3**

May 25, 2020

- World output is expected to fall by 4 percent in 2020, followed by an increase of 6.5 percent in 2021.
- German GDP will drop by 7.1 percent this year and rise by 7.2 percent next year. While the low point of the crisis has likely been passed, recovery to precrisis levels of activity will continue well into next year.
- Exports, investments in equipment, and private consumption are all declining massively in Germany this year, whereas construction is almost unaffected by the corona crisis.
- At over 170 billion euros, the general government will record the highest budget deficit this year since the assumption of unification-related debt from the *Treuhandanstalt* trust fund in 1995.

OVERVIEW/ÜBERBLICK

- World output is expected to fall by 4 percent in 2020, followed by an increase of 6.5 percent in 2021. Uncertainty about the extent and the duration of the economic downturn remains high, with particular risks relating to potential financial feedback loops and resurging trade tensions.
- German GDP will drop by 7.1 percent this year and rise by 7.2 percent next year. While the low point of the crisis has likely been passed, recovery to precrisis levels of activity will continue well into next year amid sluggish investment.
- Private consumption will decline strongly this year together with exports and investment in machinery and equipment, while construction investment is expected to remain robust.
- Lower production is having an impact on the labor market, even if the effect on unemployment is to a large extent mitigated by reductions in working hours and productivity.
- In 2020, plunging revenues and additional expenditures push the general government deep into deficit from a significant surplus last year. At over 170 billion euros it will exceed the deficit in the crisis years 2009/2010.

Keywords: Economic outlook, global economy, Germany

- Die Weltproduktion dürfte im Jahr 2020 um 4 Prozent sinken und im kommenden Jahr um 6,5 Prozent zunehmen. Die Unsicherheit über Ausmaß und Dauer des wirtschaftlichen Einbruchs ist nach wie vor hoch; Risiken bestehen außerdem durch finanzielle Rückkopplungseffekte und wieder zunehmende handelspolitische Spannungen.
- Die deutsche Wirtschaftsleistung bricht in diesem Jahr um 7,1 Prozent ein und legt im kommenden Jahr um 7,2 Prozent zu. Der Tiefpunkt der Krise ist überwunden, aber der Aufholprozess zieht sich noch bis weit in das kommende Jahr, auch weil weltweit die Investitionstätigkeit schwach bleiben dürfte.
- Neben den Exporten und den Ausrüstungsinvestitionen bricht auch der private Verbrauch im laufenden Jahr massiv ein. Die Bautätigkeit ist im Großen und Ganzen von der Corona-Krise kaum betroffen.
- Die Produktionseinbrüche schlagen auch auf Beschäftigung und Arbeitslosigkeit durch, zum Großteil werden sie aber über Arbeitszeitverkürzung und Produktivitätsrückgänge aufgefangen.
- Einnahmeausfälle und zusätzliche Ausgabenprogramme drücken den Finanzierungssaldo der öffentlichen Haushalte von einem deutlichen Überschuss im Vorjahr in ein Defizit, das noch höher ausfällt als in den Krisenjahren 2009/2010.

Schlüsselwörter: Konjunktur, Weltwirtschaft, deutsche Wirtschaft, Prognose

OUTLOOK FOR THE WORLD ECONOMY AND THE GERMAN ECONOMY: INTERIM FORECAST SPRING 2020

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Philipp Hauber, Nils Jannsen, Stefan Kooths, Saskia Möhle, and Ulrich
Stolzenburg

Over the past months, the Covid-19 pandemic has progressively affected economic activity globally, including in Germany. Due to the rapidly evolving situation, time lags in the publication of conventional economic indicators and the lack of comparable historical episodes, the assessment of the economic impact has been an exceptional challenge for forecasters. To keep up with the developments, the Kiel Institute Forecasting Center prepared an interim forecast taking account of data received since the publication of the regular spring forecast (11 March), the scenario update (19 March) and the spring report of the Joint Economic Forecast (8 April) well in advance of the regular summer edition of our economic outlook, which is scheduled for mid-June.

1 GLOBAL ECONOMIC ENVIRONMENT

Real GDP and consumer prices in selected countries and regions. 2019–2021						
	Gross domestic product			Consumer prices		
	2019	2020	2021	2019	2020	2021
United States	2.3	-6.4	4.8	1.8	0.6	1.6
Japan	0.7	-3.3	2.9	0.8	0.1	1.0
Euro Area	1.2	-8.4	6.5	1.2	0.9	1.9
United Kingdom	1.4	-7.9	6.9	1.8	1.7	2.1
Advanced economies total	1.8	-6.7	5.4	1.5	0.9	1.7
China	6.1	0.4	9.7	2.9	3.7	2.3
Latin America	0.7	-5.7	4.7	8.7	7.9	7.0
India	5.3	-2.7	8.2	3.7	4.6	3.8
East Asia	4.6	-3.8	6.5	2.0	1.4	3.0
Russia	1.3	-9.0	5.1	4.5	5.0	3.5
World economy total	3.1	-4.0	6.5	3.6	3.5	3.4
<i>Addendum:</i>						
World trade volume (goods)	-0.4	-10.4	9.3	.	.	.
Oil price (Brent in US\$)	64.4	34.7	41.4	.	.	.
World economy total (weighted according to GDP at market exchange rates)	2.6	-4.9	6.1	2.9	2.6	2.9

Weighted according to GDP at PPP rates. East Asia: Emerging Asia excluding China and India. Shaded: Kiel Institute forecast.

Source: Kiel Institute forecast.

Global output is down dramatically. Global economic activity in the first months of 2020 has been increasingly affected by the Covid-19 pandemic and the measures taken to contain the spread of the disease. World output is estimated to have declined substantially in the first quarter and is expected to fall further in the second quarter as corona-related restrictions were not introduced before March in many countries and have been relaxed only cautiously so far.

The low point of the crisis may have been reached in many countries, but full recovery will take time. The Chinese economy has already started to recover, with the rebound particularly strong in the industrial sector. Based on the assumption that restrictions on economic activity can be relaxed in more and more countries in the coming months and that the situation will largely return to normal next year, we expect global output to make up lost ground in the second half of this year and in 2021. Due to the loss of income caused by the corona crisis and a sustained dampening effect on investment activity, the level of global production will, however, remain well below the path we expected at the beginning of this year. All in all, world production is expected to fall by 4 percent in 2020 and to increase by 6.5 percent next year in terms of purchasing power parities.

The recession will lead to a drastic decline of employment. The number of hours worked will fall by 6.7 percent in 2020, which is a full time equivalent of 230 million jobs, according to estimates of the International Labor Organization. To dampen the increase in unemployment, in many advanced economies short-time work schemes are used extensively for which up to a third of the employees have been registered. In countries without such programs available on a large scale, job losses are soaring, for example in the US where the unemployment rate is poised to climb to over 20 percent in the second quarter of this year.

Plunging economic activity has pushed down crude oil prices. The measures implemented to contain Covid-19 have reduced oil demand by almost 30 percent year-over-year in April. As a consequence, the oil price dropped to long-term lows despite the agreement on substantial production cuts by major producer countries including OPEC and Russia. While lower commodity prices support the purchasing power of consumers, they also lead to substantial adjustment pressures for oil companies and shortfalls in government revenues in producer countries.

Fiscal policy in advanced economies supports the economy through extensive programs, resulting in extraordinarily high budget deficits. In order to mitigate the economic fallout of the pandemic, governments have decided on additional spending and tax deferrals. Together with cyclically induced revenue shortfalls this will lead to enormous budget deficits, often in the region of 10 percent of GDP. As a result, government debt is bound to increase considerably in many countries from already high levels.

The outlook for emerging economies is particularly poor due to a combination of several negative factors. Administrative measures to contain the pandemic – some of them particularly far-reaching – led to a sharp decline of economic activity in most emerging economies. Due to often poorly developed social systems, the consequences for the population are particularly severe. In addition, export earnings in many countries have been

hit by the sharp drop in commodity prices. Tourism is also an important economic pillar in many emerging countries and is expected to recover only slowly. Finally, financial conditions have deteriorated due to massive capital outflows.

Uncertainty about the extent and the duration of the economic downturn remains high, with substantial risks relating to potential financial feedback loops and resurging trade tensions. The corona crisis particularly affects those service sectors that were relatively resilient in previous recessions. As a result, assessing the strength of the decline in output using traditional methods is subject to greater uncertainty, especially as hard indicators for output in March and April are still not available for all countries. The timing of the turnaround in production and the strength of the recovery will to a large extent depend on epidemiological developments and the adjustment of policy-responses as the pandemic evolves. Headwinds for the recovery could emerge if rising levels of nonperforming loans were to trigger doubts regarding the stability of the financial sector or the solvency of individual countries was called into question. A renewed increase in trade tensions and protectionist measures as a result of the crisis is another downside risk to the outlook.

2 GERMAN ECONOMY

Key indicators. 2018–2021				
	2018	2019	2020	2021
Gross domestic product (GDP). price-adjusted	1.5	0.6	-7.1	7.2
Gross domestic product. deflator	1.5	2.1	2.4	1.4
Consumer prices	1.7	1.4	1.4	2.0
Labor productivity (per hour worked)	0.3	-0.0	-4.0	3.8
Employment (1,000 persons)	44,854	45,236	44,828	44,796
Unemployment rate (percent) in relation to nominal GDP	5.2	5.0	6.1	6.1
Public sector net lending	1.9	1.4	-5.3	-2.2
Gross public debt	61.7	60.0	76.9	72.6
Current account balance	7.4	7.1	5.2	5.8

GDP, consumer prices, labor productivity: percentage change on previous year; unemployment rate: as defined by the Federal Employment Agency

Source: Federal Statistical Office. *Fachserie 18. Series 12*; Federal Employment Agency. *Monthly Bulletin*; Federal Employment Agency. *Employment Statistics*; shaded: Kiel Institute forecast

German GDP is expected to fall by 7.1 percent this year and to increase by 7.2 percent next year. In the first quarter of 2020, output dropped by 2.2 percent as measures to contain Covid-19 depressed economic activity from mid-March onwards. The tentative recovery in the manufacturing sector, which was still intact in January and February, was abruptly ended as industrial production plunged by 11.6 percent in March. In addition, consumer-related services were particularly hit by the shutdown measures. Overall, economic output is likely to have declined by more than 15 percent in response to the corona shock, and this level probably persisted throughout April. More recently, activity seems to have started to pick up in response to a gradual easing of the lockdown, as suggested by high frequency indicators (such as electricity consumption, pedestrian frequency or Google search queries for taxi rides), but output is still way below precrisis levels. Overall, GDP in the second quarter is expected to turn out 11.3 percent lower than in the previous quarter, marking the largest quarterly decline in the history of the Federal Republic of Germany. While the recovery is likely to continue going forward, the catch-up will progress much more slowly than the slump, and the precrisis level of economic output will not be reached before the second half of next year.

Private consumption is exceptionally hit in the current downturn. The extraordinary economic picture this year is characterized above all by the sharp contraction in private consumer spending as a result of policy measures and changes in behavior in response to the pandemic. While exports and investment in equipment are also likely to fall at a record pace in the second quarter, wide fluctuations in these expenditure aggregates are not unusual. Private consumption, by contrast, has generally been a stabilizing factor in economic downturns in the past. In the corona crisis, on the contrary, the slump in economic output is to a large extent driven by private households (voluntarily or involuntarily) reducing consumption. Since disposable incomes are set to decline much less sharply, the savings ratio will temporarily jump to a record level of over 20 percent.

Corporate investment will remain subdued for some time to come, whereas construction investment is proving robust. Corporate spending on capital goods is projected to shrink by around 25 percent in the second quarter. Its recovery is expected to be relatively slow as economic uncertainty will remain high for the time being, the crisis is weakening companies' equity bases, and the conditions for corporate financing (loans, bonds) will also deteriorate due to higher risk premiums. By contrast, construction investment will be much less affected by the crisis and is forecast to continue to grow this year. Monthly figures on construction output for March indicate that there has been no significant negative impact of corona-related restrictions on construction activity.

Foreign trade is depressed, with trade in services also being substantially affected. In the first quarter, both exports and imports fell more sharply than at any time since the global financial crisis with the contraction concentrated in the month of March. Trade in services fell even more sharply than trade in goods in response to travel restrictions. This too is a special feature of the current crisis – even during the Great Recession German services exports remained robust and fell far less than goods exports. Starting in the second half of this year, we expect exports to recover as the global economy and world trade pick up again. However, global investment is projected to remain weak for some time to come, which will continue to weigh on German exports going forward. Imports will also recover, in line with the expected pick-up in private consumption and investment and a gradual revival of travel. As a result of the sharp drop in oil prices, the terms of trade improve significantly this year.

Lower production is having an impact on the labor market, even if the effect on unemployment is mitigated to a large extent by reductions in working hours and productivity. The slump in production this year is reflected to a large extent in falling hourly productivity and per capita working hours. The number of short-time workers will reach record levels, even if the experience from previous crises suggests that it will be significantly lower than companies have indicated in advance (more than 10 million); we are projecting an annual average of 2.8 million short-time workers. The number of registered unemployed is, however, also rising, peaking at 3 million people or 6.7 percent. Although unemployment will decline again next year in the course of the economic recovery, it will not yet reach its precrisis level. Contractual earnings are likely to increase at a much slower pace this year and next. Actual gross wages and salaries per employee will even fall slightly this year as a result of short-time work and other operational measures to reduce wage costs.

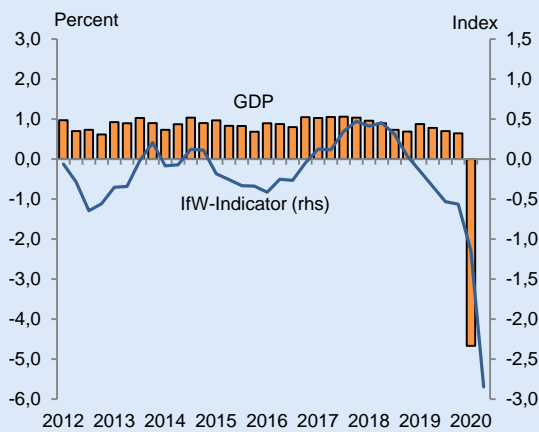
Fiscal policy increases expenditures substantially in response to the crisis. Governments at the federal and *Länder* level have initiated emergency aid for the self-employed and companies, and have significantly expanded short-time working schemes. At the same time, revenues are falling substantially due to lower activity and income. As a result, the general government budget in 2020 will record the largest deficit in relation to GDP in reunified Germany (-5.3 percent), with the exception of 1995 when the state assumed unification-related debt from the *Treuhandanstalt* trust fund. In addition, credit guarantees, loans and company participations are now being issued on a large scale. Although these instruments initially do not affect net lending, they do raise gross debt, which is projected to jump to over 75 percent of GDP this year. In 2021, the public budgets are likely to remain in deficit, but the debt ratio is expected decline again slightly as economic output increases and tax deferrals are repaid.

3 DATA ANNEX

3.1 GLOBAL ECONOMIC ENVIRONMENT

3.1.1 World Economy

Figure 1:
World economic activity, 2012–2020



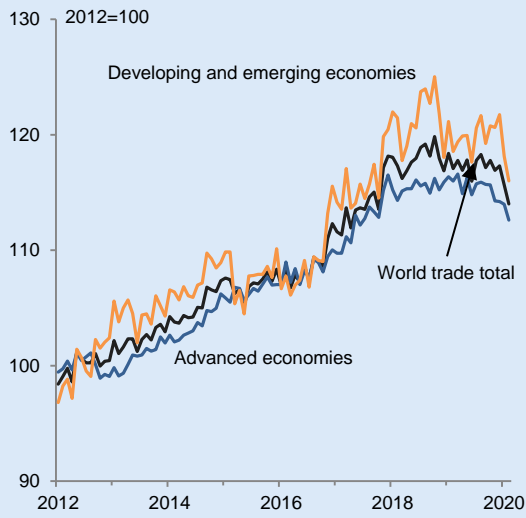
Source: OECD, Main Economic Indicators; national sources; Kiel Institute calculations.

Figure 2:
Business expectation by groups of countries, 2007–2020



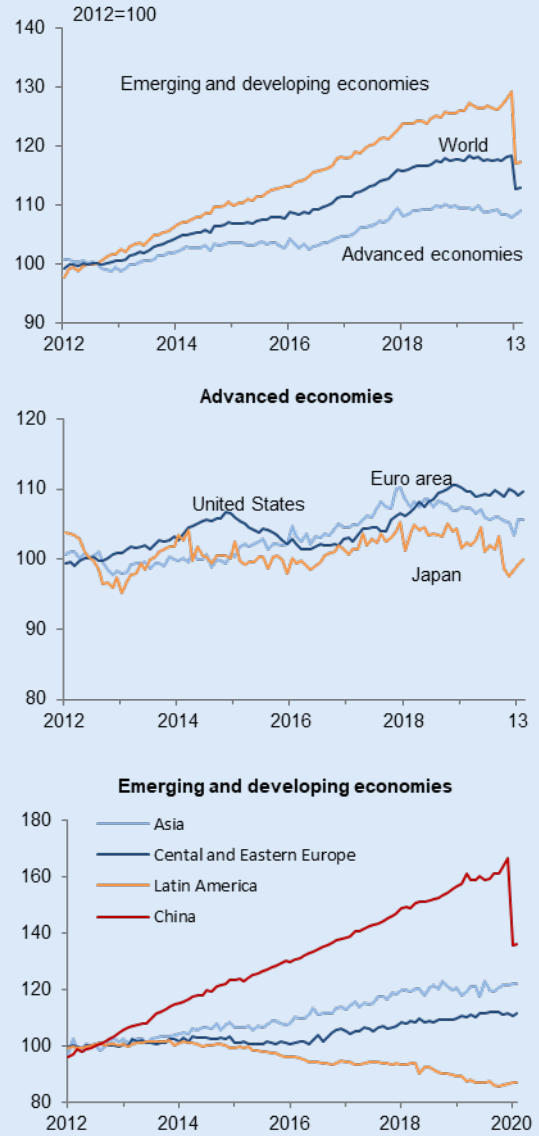
Source: OECD, Main Economic Indicators; national sources; Kiel Institute calculations.

Figure 3:
World trade, 2012–2020



Monthly Data.
Source: CPB, *World Trade Monitor*, Kiel Institute calculations.

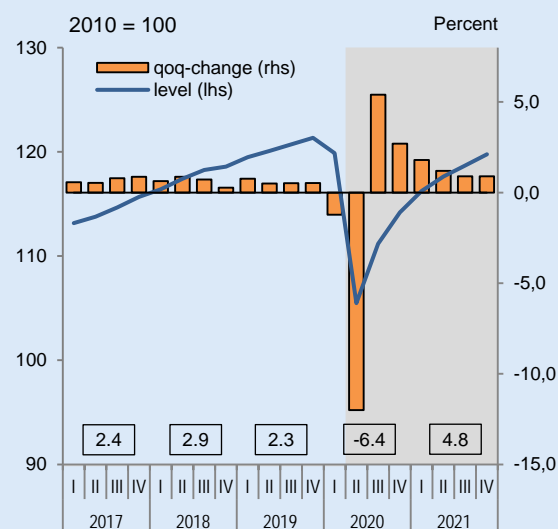
Figure 4:
Industrial production by groups of countries and regions, 2012–2020



Monthly data. Last value: February 2020.
Source: CPB, *World Trade Monitor*, Kiel Institute calculations.

3.1.2 United States

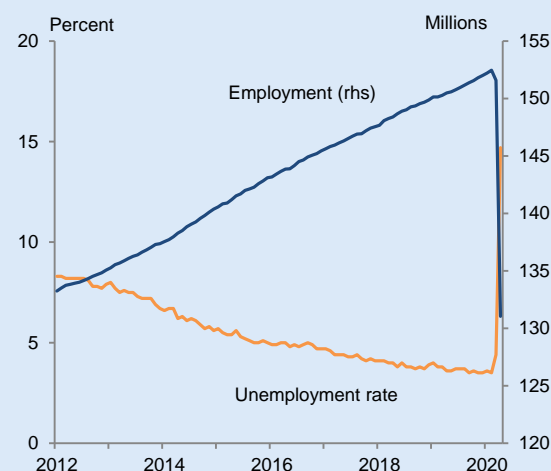
Figure 5:
Gross domestic product, 2017–2021



Quarterly data, price, seasonally and calendar adjusted, qoq-change; annual rate of change (boxes).

Source: Bureau of Economic Analysis; shaded: Kiel Institute forecast.

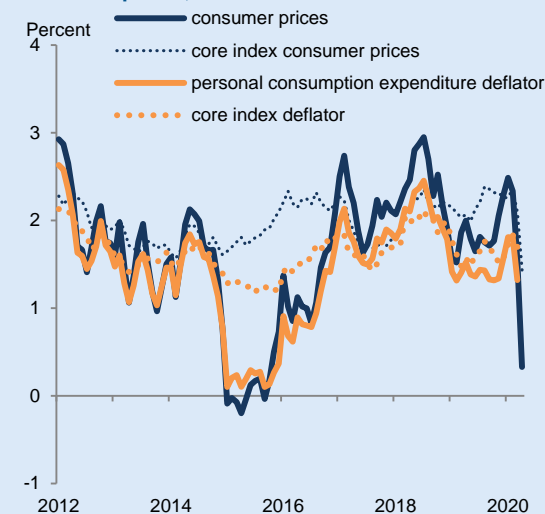
Figure 7:
Labor market, 2012–2020



Monthly data; seasonally adjusted.

Source: US Department of Labor, *Employment Situation*.

Figure 6:
Consumer prices, 2012–2020



Monthly data; change over previous year. Core index: consumer prices excluding energy and food.

Source: US Department of Labor, *Consumer Price Index*.

Table 1:
United States: key indicators, 2019–2021

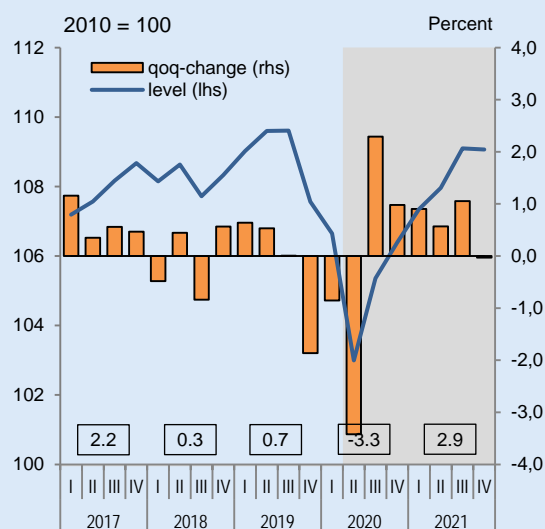
	2019	2020	2021
Gross Domestic Product	2,3	-6,4	4,8
Domestic expenditure	2,4	-6,7	5,0
Private consumption	2,6	-8,2	6,0
Government expenditure	2,3	2,4	2,2
Gross fixed capital formation	1,3	-10,9	5,3
Machinery and equipment	1,3	-13,0	8,8
Intellectual property rights	7,5	-3,6	5,9
Structures	-4,3	-17,9	4,7
Residential Investment	-1,5	-11,2	-0,4
Change in inventories	0,1	0,1	-0,2
Net exports	-0,1	0,3	-0,2
Exports	0,0	-12,1	5,0
Imports	1,0	-12,8	6,5
Consumer prices	1,8	0,6	1,6
Unemployment rate	3,7	12,9	8,1
Current account balance	-2,3	-2,3	-2,3
Government budget balance	-4,6	-16,7	-9,2

Percent. GDP: volumes, change over previous year, percent. — Net exports, inventories: contribution to growth, percentage points. — Unemployment rate: unemployed in relation to labor force. — Current account balance, government budget balance: percent of nominal GDP.— Budget balance: fiscal year.

Source: US Department of Commerce, *National Economic Accounts*; US Department of Labor, *Employment Situation and Consumer Price Index*; US Department of the Treasury, *Monthly Treasury Statement*; own calculations; shaded: Kiel Institute forecast.

3.1.3 Japan

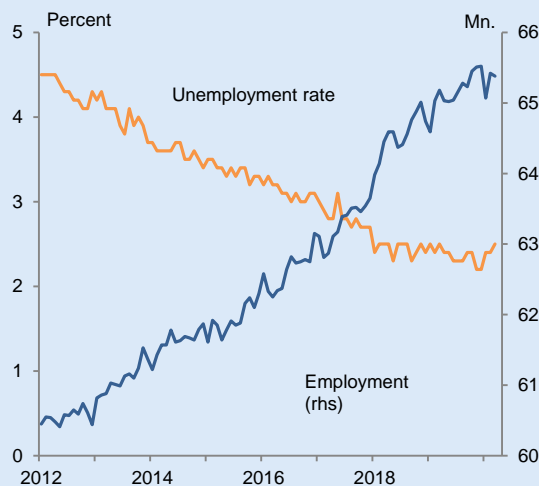
Figure 8:
Gross domestic product, 2017–2020



Quarterly data, price, seasonally and calendar adjusted, qoq-change; annual rate of change (boxes).

Source: Cabinet Office, *National Accounts*; shaded: Kiel Institute forecast.

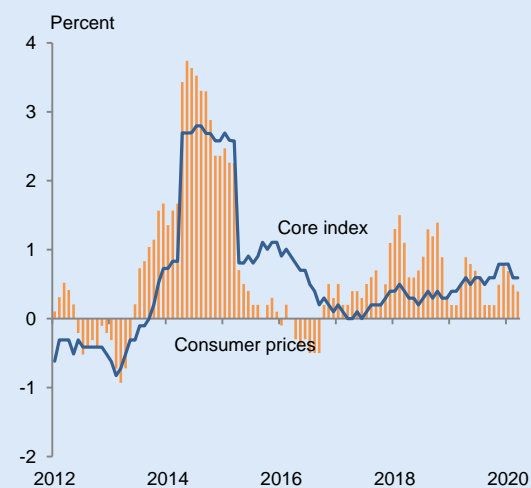
Figure 10:
Labor market, 2012–2020



Monthly data; seasonally adjusted.

Source: Department of Labor.

Figure 9:
Consumer prices, 2012–2020



Monthly data; change over previous year. Core index: consumer prices excluding energy and fresh food.

Source: Statistics Bureau of Japan.

Table 2:
Japan: key indicators, 2019–2021

	2019	2020	2021
Gross Domestic Product	0,7	-3,3	2,9
Domestic demand	0,8	-3,1	2,8
Private consumption	0,2	-3,6	3,1
Government consumption	1,9	1,6	0,6
Gross fixed investment	1,3	-5,0	4,0
Enterprises	0,7	-7,9	2,8
Residential investment	2,0	-9,3	2,3
Public investment	2,8	6,8	7,9
Inventories	0,1	-0,1	0,0
Net exports	-0,1	-0,2	1,5
Exports	-1,6	-8,9	5,3
Imports	-0,6	-7,4	4,8
Consumer prices	0,8	0,1	1,0
Unemployment rate	2,4	3,4	2,7
Current account balance	3,4	3,5	3,3
Fiscal balance	-2,7	-8,5	-3,8

Percent. GDP: volumes, change over previous year. percent. — Net exports, inventories: contribution to growth, percentage points. — Unemployment rate: Unemployed in relation to labor force. — Current account balance, fiscal balance: percent of nominal GDP.

Source: Cabinet Office, *National Accounts*; OECD, *Main Economic Indicators*; Kiel Institute calculations; shaded area: Kiel Institute forecast.

3.1.4 Euro Area

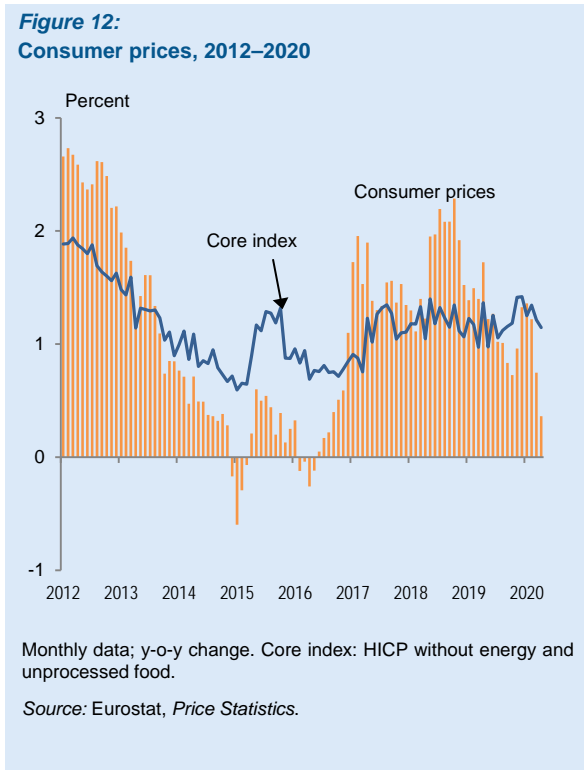
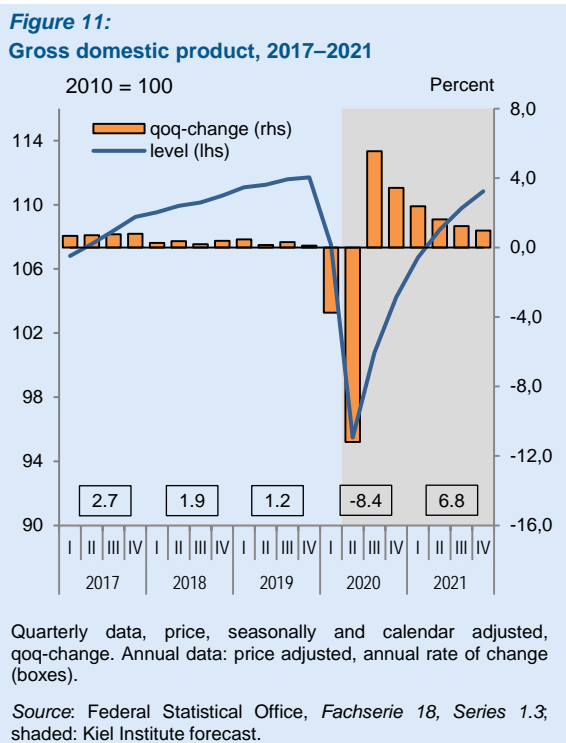
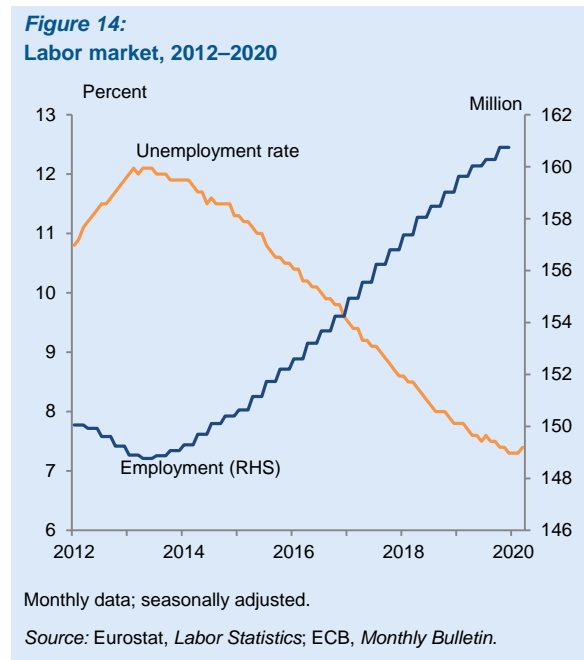


Table 3:
Euro Area: key indicators, 2018–2021

	2018	2019	2020	2021
Gross Domestic Product	1,9	1,2	-8,4	6,8
Final Domestic Demand	1,6	1,8	-6,5	5,8
Private Consumption	1,4	1,3	-9,4	6,7
Government Consumption	1,1	1,7	2,9	2,0
Gross Fixed Capital Formation	2,4	5,5	-8,8	7,4
Change in Stocks	0,0	-0,5	0,1	0,1
Net exports	0,4	-0,5	-2,3	1,0
Exports	3,3	2,5	-11,3	9,8
Imports	2,7	3,8	-7,6	7,8
Consumer Prices	1,7	1,2	0,9	1,9
Unemployment Rate	8,2	7,5	10,1	9,6
Current Account Balance	2,9	2,8	1,7	2,0
Government Budget Balance	-0,5	-0,6	-9,5	-4,5

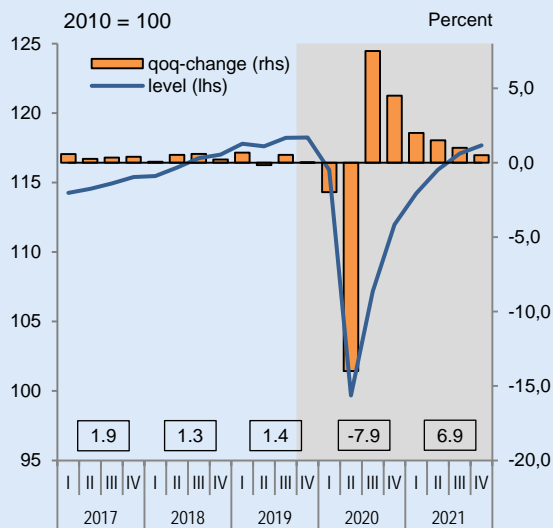
GDP: volumes, change over previous year, percent. Net exports, inventories: contribution to growth, percentage points. Unemployment rate: unemployed in relation to labor force, percent. Current account balance, government budget balance: percent of nominal GDP.

Source: Eurostat, *National Accounts*; Kiel Institute calculations; shaded: Kiel Institute forecast.



3.1.5 United Kingdom

Figure 14:
Gross domestic product, 2017–2021



Quarterly data, price, seasonally and calendar adjusted, qoq-change; annual rate of change (boxes).

Source: Cabinet Office, *National Accounts*; shaded: Kiel Institute forecast.

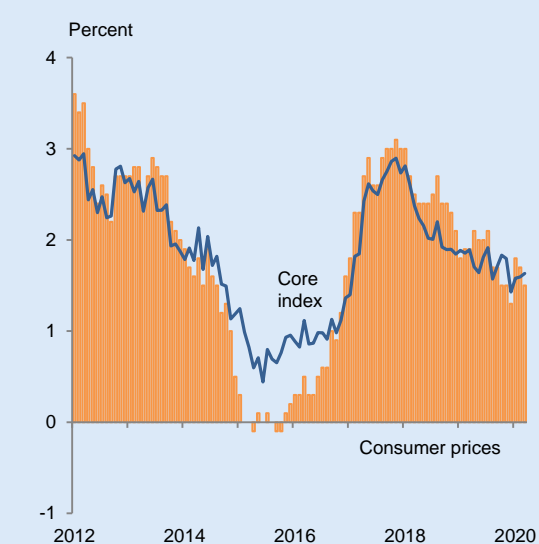
Table 4:
United Kingdom: key indicators, 2018–2021

	2018	2019	2020	2021
Gross Domestic Product	1,3	1,4	-7,9	6,9
Domestic expenditure	1,2	1,6	-8,4	6,9
Private consumption	1,6	1,1	-11,5	7,9
Government consumption	0,4	3,5	4,5	2,4
Gross fixed investment	-0,2	0,6	-12,0	6,0
Inventories	0,3	0,2	-0,5	0,3
Net exports	-0,2	0,0	0,6	0,1
Exports	1,2	4,8	-14,0	13,0
Imports	2,0	4,6	-15,0	12,0
Consumer prices	2,5	1,8	1,7	2,1
Unemployment rate	4,1	3,8	6,0	4,8
Current account balance	-3,9	-3,8	-3,0	-3,2
Government budget balance	-1,8	-2,6	-10,0	-5,0

Percent. GDP: volumes, change over previous year, per-cent. Net exports, inventories: contribution to growth, percentage points. Unemployment rate: unemployed in relation to labor force. Current account balance, government budget balance: percent of nominal GDP.

Source: Office for National Statistics, *Economy*; shaded: Kiel Institute forecast.

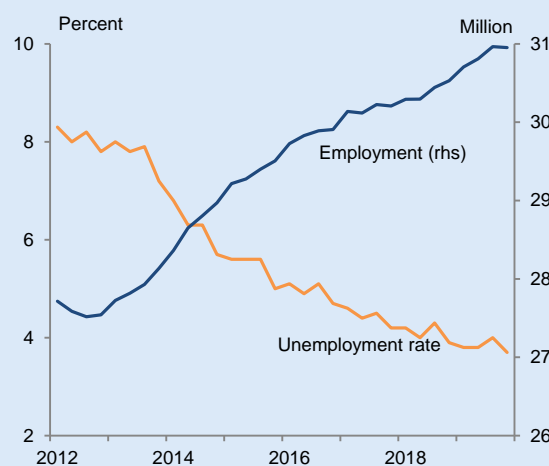
Figure 15:
Consumer prices, 2012–2020



Monthly data, change over previous year. Core rate: consumer prices excluding energy and fresh food.

Source: Office for National Statistics, *Economy*.

Figure 16:
Labor market 2012–2020

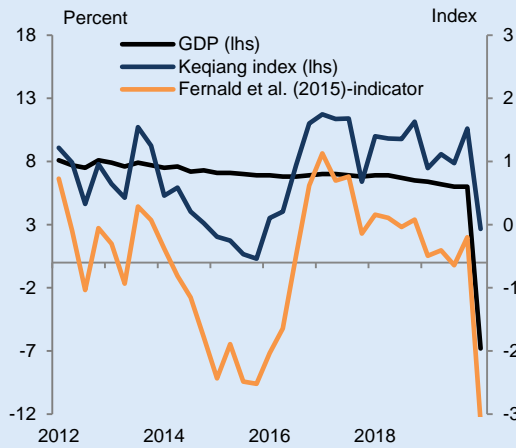


Quarterly data, seasonally adjusted.

Source: Office for National Statistics, *Economy*.

3.1.6 China

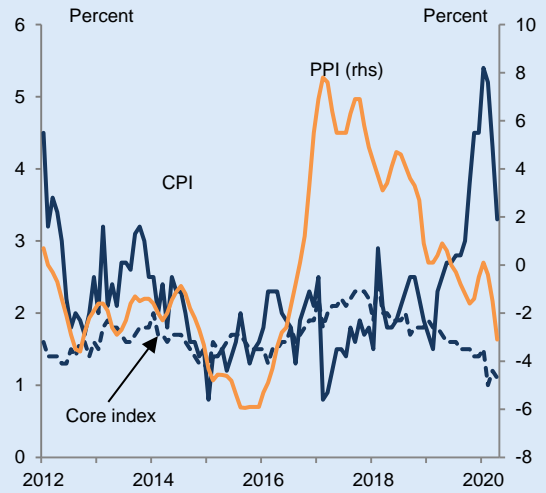
Figure 17:
GDP and alternative activity measures, 2012–2020



Quarterly data. GDP: year-on-year percentage change; Keqiang-index: arithmetic mean of the year-on-year growth rates of bank lending, electricity consumption and freight cargo; Fernald et al. (2015)-indicator: first principal component of the year-on-year growth rates of electricity production, railway cargo, retail sales and raw material prices (see Fernald et al. (2015). *Is China Fudging its Figures? Evidence from Trading Partner Data*. Federal Reserve Bank of San Francisco, Working Paper 2015-12).

Source: National Bureau of Statistics; People's Bank of China; Kiel Institute calculations.

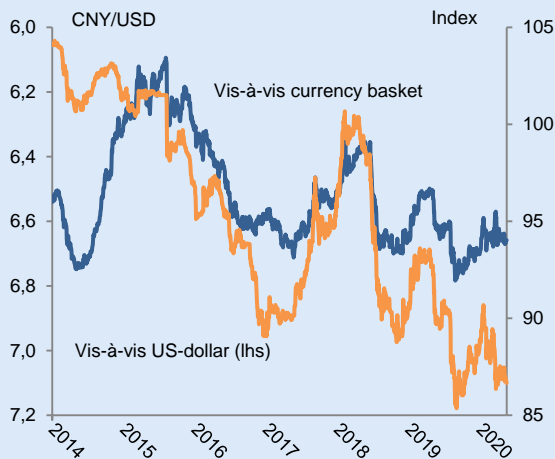
Figure 19:
Inflation, 2012–2020



Monthly data; y-o-y growth rate. Core index: CPI excluding food and energy.

Source: National Bureau of Statistics.

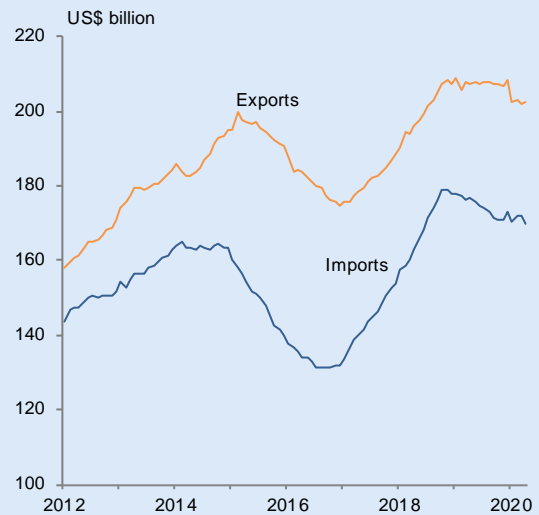
Figure 18:
Exchange rates, 2014–2020



Daily data.

Source: Thomson Reuters; China Foreign Exchange Trade System; Kiel Institute calculations.

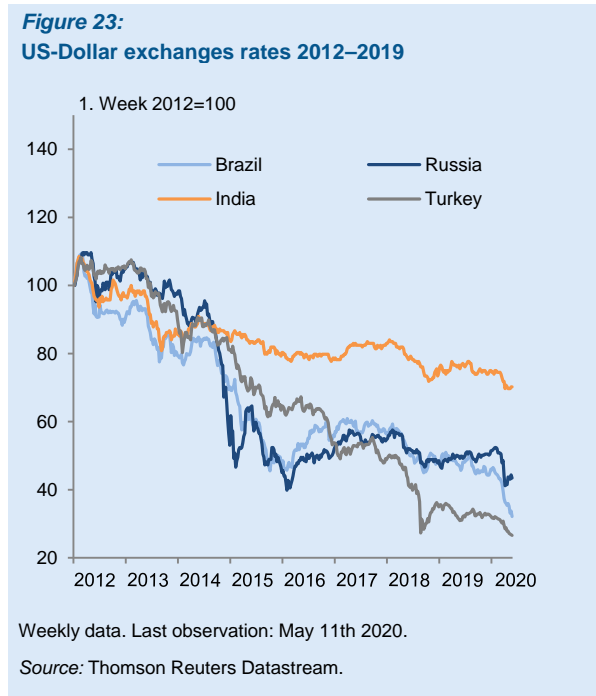
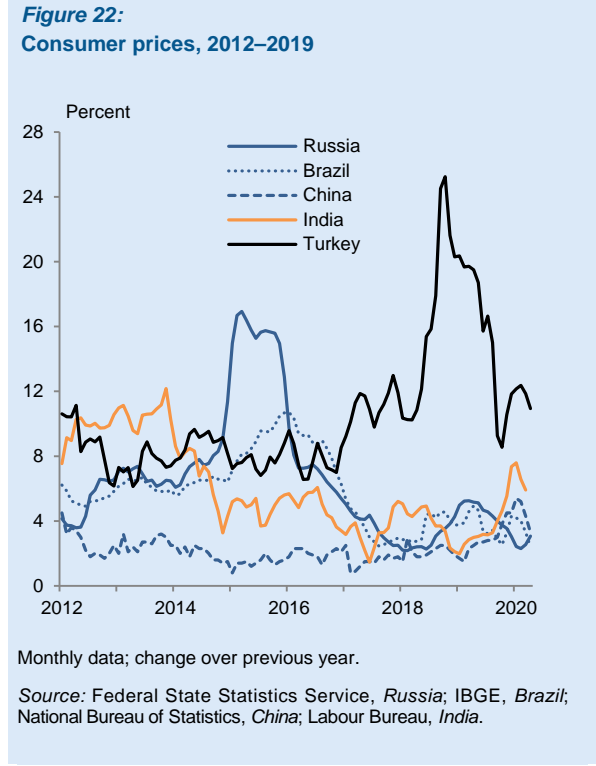
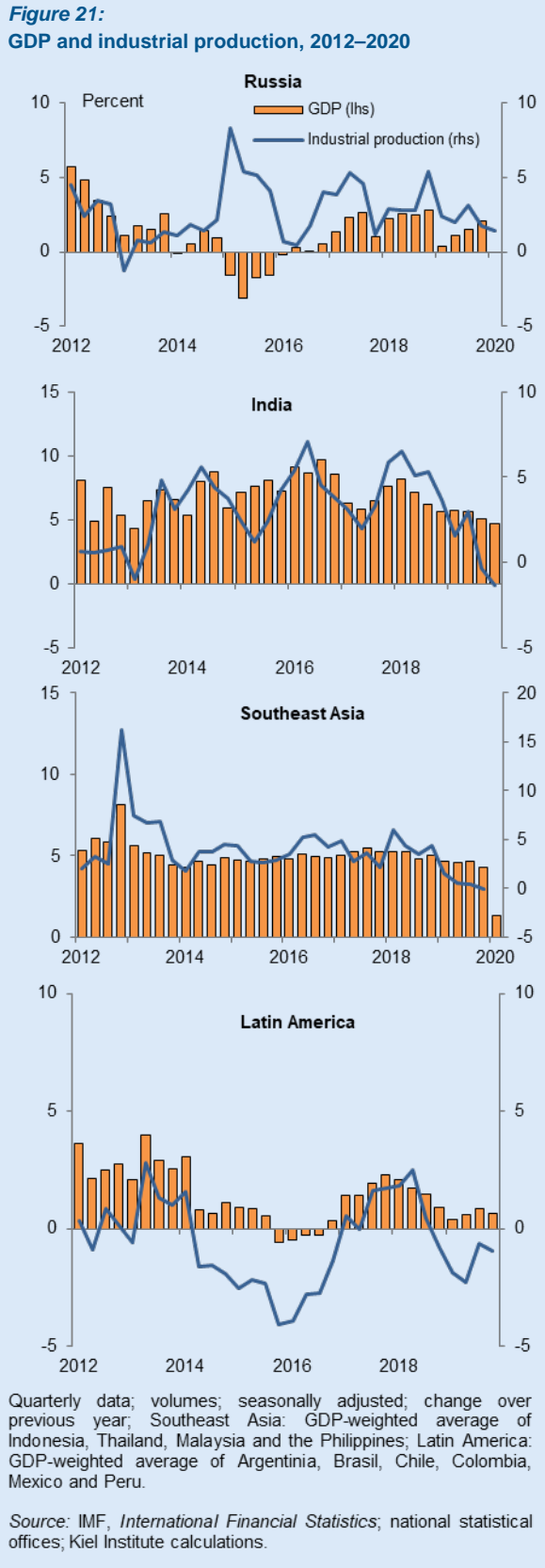
Figure 20:
Exports and imports, 2012–2020



Monthly data, 12-month moving average.

Source: General Administration of Customs; own calculations.

3.1.7 Emerging Economies



3.1.8 Forecast Summary Tables

Table 5:
Key assumptions, 2019–2021

	2019				2020				2021			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Key interest rate												
United States	2.25	2.25	1.75	1.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Japan	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10	-0.10
Euro area	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Exchange rates												
US-dollar/euro	1.14	1.12	1.11	1.11	1.10	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Yen/US-dollar	110.2	109.9	107.3	108.7	108.8	108.0	108.0	108.0	108.0	108.0	108.0	108.0
Oil price (Brent, US-dollar)	63.20	68.90	61.90	63.40	50.5	25.8	30.0	32.4	36.0	39.6	43.2	46.8
HWWI-Index indust. commodities	123.6	126.4	126.2	120.6	119.1	109.6	112.9	113.4	114.1	114.8	115.5	116.2

Key interest rate: Fed Funds Rate (United States); overnight rate (Japan); main refinancing operations (euro area).

Source: HWWI, *Commodity Price Index*; IMF, *International Financial Statistics*; Federal Reserve Bank, *Intended Federal Funds Rate*; ECB, *Monthly Bulletin*; shaded: Kiel Institute forecast or assumption.

Table 6:
Real gross domestic product and consumer prices in the world economy, 2019–2021

	Weights	Real GDP			Consumer prices		
		2019	2020	2021	2019	2020	2021
World economy	100.0	3.1	-4.0	6.5	3.6	3.5	3.4
Advanced economies	42.6	1.8	-6.5	5.3	1.5	0.9	1.7
China	18.2	6.1	0.4	9.7	2.9	3.7	2.3
Latin America	6.8	0.7	-5.7	4.7	8.7	7.9	7.0
India	7.4	5.3	-2.7	8.2	3.7	4.6	3.8
East-Asian emerging economies	4.9	4.6	-3.3	6.6	2.0	2.0	2.9
Russia	3.2	1.3	-9.0	5.1	4.5	5.0	3.5
<i>Addendum:</i>							
World trade volume		-0.4	-10.4	9.3			
World economy (at market exchange rates).		2.6	-4.9	6.1	2.9	2.7	2.9

Weighted according to GDP at PPP rates. East Asia: Emerging Asia excluding China and India. Shaded: Kiel Institute forecast.

Source: IMF, *International Financial Statistics*; OECD, *Main Economic Indicators*; Kiel Institute forecast.

Table 7:**Real gross domestic product, consumer price and unemployment rate in advanced economies, 2019–2021**

	Weights	Real GDP			Consumer prices			Unemployment rate		
		2019	2020	2021	2019	2020	2021	2019	2020	2021
European Union	36.4	1.5	-7.8	6.5	1.4	1.2	2.1	7.0	9.5	8.9
Euro area	26.3	1.2	-8.4	6.8	1.2	0.9	1.9	7.5	10.1	9.6
United Kingdom	5.9	1.4	-7.9	6.9	1.8	1.7	2.1	3.8	6.0	4.8
Sweden	1.1	1.3	-5.0	4.2	1.7	1.3	1.7	6.8	8.5	7.5
Poland	1.1	4.1	-4.0	5.4	2.1	3.0	3.5	3.3	5.0	4.5
Switzerland	1.5	0.9	-7.6	5.9	0.4	-0.5	1.0	4.5	5.2	4.8
Norway	0.8	1.2	-8.1	5.2	2.2	1.6	2.3	3.4	4.0	3.7
United States	41.2	2.3	-6.4	4.8	1.8	0.6	1.6	3.7	12.9	8.1
Canada	3.4	1.6	-7.0	4.0	1.6	1.4	2.0	5.6	5.9	5.8
Japan	11.0	0.7	-3.3	2.9	0.8	0.1	1.0	2.4	3.4	2.7
South Korea	3.1	2.0	-4.0	4.8	0.4	0.6	1.3	3.7	4.5	4.0
Australia	2.7	1.9	-5.0	4.0	1.9	1.6	1.8	5.2	6.2	5.9
Total	100.0	1.8	-6.5	5.3	1.6	0.9	1.8	5.1	9.0	7.3

Based on GDP at prices and exchange rates of 2018 in percent. Change over previous year in percent. European Union and Norway: Harmonized Index of Consumer Prices (HICP). Standardized unemployment rate in percent (ILO); country groups weighted according to the size of the labor force in 2018.

Source: Eurostat, VGR; OECD, *Main Economic Indicators*; IMF *World Economic Outlook Database*; Statistics Canada, *Canadian Economic Account*; shaded: Kiel Institute forecast.

Table 8:
Real gross domestic product, consumer prices and unemployment rates in the European Union, 2019–2021

	Weights	Real GDP			Consumer prices			Unemployment rate		
		2019	2020	2021	2019	2020	2021	2019	2020	2021
Germany	24.8	0.6	-7.4	7.2	1.4	1.2	2.3	3.2	4.3	4.5
France	17.4	1.3	-9.8	7.5	1.3	1.0	2.0	8.5	11.0	10.5
Italy	13.1	0.3	-11.0	6.7	0.6	0.3	1.4	10.0	11.2	11.4
Spain	8.9	2.0	-11.4	7.7	0.8	0.4	1.4	14.1	23.0	19.8
Netherlands	5.7	1.8	-5.4	5.5	2.7	1.8	3.0	3.4	4.7	4.6
Belgium	3.4	1.4	-6.9	6.3	1.3	0.6	1.6	5.4	7.4	8.0
Austria	2.9	1.5	-5.8	5.2	1.5	1.4	2.2	4.5	5.9	5.1
Ireland	2.4	5.5	-4.6	5.1	0.9	0.8	1.5	5.0	6.8	7.3
Finland	1.7	1.0	-3.9	4.6	1.1	1.0	2.0	6.7	7.9	7.5
Portugal	1.5	2.2	-6.9	5.8	0.3	0.4	1.4	6.6	8.6	8.1
Greece	1.4	1.9	-7.7	5.6	0.5	0.5	1.5	17.3	18.3	16.3
Slovak Republic	0.7	2.4	-6.0	6.4	2.8	2.4	3.2	5.8	7.4	7.6
Luxembourg	0.4	2.3	-3.8	5.0	1.7	1.3	2.1	5.6	6.5	5.6
Slovenia	0.3	2.4	-4.1	5.5	1.7	1.5	2.4	4.6	5.5	5.5
Latvia	0.3	3.9	-1.7	4.1	2.2	1.9	2.6	6.3	8.1	8.3
Lithuania	0.2	2.2	-3.7	4.8	2.7	1.8	2.7	6.3	8.0	7.8
Estonia	0.2	4.4	-3.2	5.0	2.3	1.5	2.4	4.4	5.9	6.1
Cyprus	0.2	3.2	-5.0	4.2	0.6	0.5	1.4	7.1	9.6	7.5
Malta	0.1	4.4	-3.8	3.9	1.5	1.1	2.1	3.4	4.0	3.9
Sweden	3.5	1.3	-5.0	4.2	1.7	1.3	1.7	6.8	8.5	7.5
Poland	3.7	4.1	-4.0	5.4	2.1	3.0	3.5	3.3	5.0	4.5
Denmark	2.2	2.2	-4.8	5.0	0.7	0.4	0.8	5.1	6.4	5.8
Czech Republic	1.5	2.4	-5.1	5.0	2.6	2.8	3.0	2.0	3.5	2.9
Romania	1.5	4.2	-3.5	4.5	3.9	3.7	3.8	3.9	5.1	4.6
Hungary	1.0	4.9	-4.3	5.2	3.4	3.5	4.0	3.5	5.5	4.5
Bulgaria	0.4	3.7	-5.2	5.5	2.4	2.6	3.0	4.3	6.5	5.9
Croatia	0.4	3.0	-8.0	9.0	0.8	0.7	1.4	6.7	8.8	7.8
European Union	100.0	1.5	-7.8	6.5	1.4	1.2	2.1	7.0	9.5	8.9
<i>Addendum:</i>										
European Union 15	89.5	1.2	-8.3	6.7	1.2	0.8	1.9	8.0	10.7	10.1
Accession countries	9.0	4.3	-5.1	6.2	2.5	2.9	3.3	3.8	5.5	5.0
Euro Area	85.7	1.2	-8.4	6.8	1.2	0.9	1.9	7.5	10.1	9.6
Euro Area ex Germany	60.9	1.5	-8.8	6.6	1.1	0.8	1.8	9.0	12.1	11.3

Based on GDP at prices and exchange rates of 2018 in percent. Change over previous year in percent. Harmonized Index of Consumer Prices (HICP). Standardized unemployment rate in percent (ILO); country groups weighted according to the size of the labor force in 2018. Accession countries since 2004.

Source: Eurostat, *National Accounts*; shaded: Kiel Institute forecast.

Table 9:
Real gross domestic product and consumer prices in selected emerging economies, 2018–2021

	Weights	Real GDP				Consumer prices			
		2018	2019	2020	2021	2018	2019	2020	2021
Indonesia	6.0	5.2	5.0	-1.1	7.2	3.3	2.8	3.1	3.5
Thailand	2.2	4.1	2.4	-7.2	4.4	1.1	0.7	-1.0	1.7
Malaysia	1.7	4.7	4.3	-3.9	6.5	1.0	0.7	1.2	2.1
Philippines	1.6	6.3	6.1	-5.4	7.5	5.2	2.5	2.6	3.2
Total	11.6	5.1	4.6	-3.3	6.6	2.8	2.0	2.0	2.9
China	43.8	6.6	6.1	0.4	9.7	2.1	2.9	3.7	2.3
India	18.2	6.1	5.3	-2.7	8.2	3.4	3.7	4.6	3.8
Asia total	73.5	6.2	5.7	-0.9	8.9	2.6	3.0	3.7	2.8
Brazil	5.5	1.3	1.1	-5.3	4.8	3.7	3.7	3.1	3.0
Mexico	4.2	2.1	-0.1	-6.2	3.9	4.9	3.6	3.0	3.6
Argentina	1.4	-2.5	-2.2	-8.8	5.3	34.3	53.5	50.0	40.0
Colombia	1.3	2.5	3.3	-3.3	5.3	3.2	3.5	3.5	3.6
Venezuela	0.5	-3.0	-30.0	-15.0	-5.0	-	-	-	-
Chile	0.8	4.0	1.0	-5.6	5.7	2.7	2.3	3.0	2.9
Peru	0.8	4.0	2.2	-4.5	5.2	1.3	2.1	1.7	2.3
Latin America total	14.5	1.6	0.7	-5.7	4.7	7.0	8.7	7.9	7.0
Russia	7.0	2.2	1.3	-9.0	5.1	3.7	4.5	5.0	3.5
Turkey	3.8	2.8	0.2	-8.0	7.7	16.3	15.2	12.0	8.5
South Africa	1.3	0.8	0.4	-7.0	5.5	4.1	4.3	4.5	5.0
Total	100.0	5.1	4.4	-2.5	7.9	3.8	4.4	4.7	3.7

In percent. Weights: According to 2018 GDP at purchasing power parities. GDP: price adjusted; changes compared to the previous year. Consumer prices: changes compared to the previous year. Asia total, Latin America total: based on listed countries.

Source: IMF, *International Financial Statistics*; OECD, *Main Economic Indicators*; national statistics; Kiel Institute calculations; shaded: Kiel Institute forecast.

3.2 GERMAN ECONOMY

3.2.1 Overview

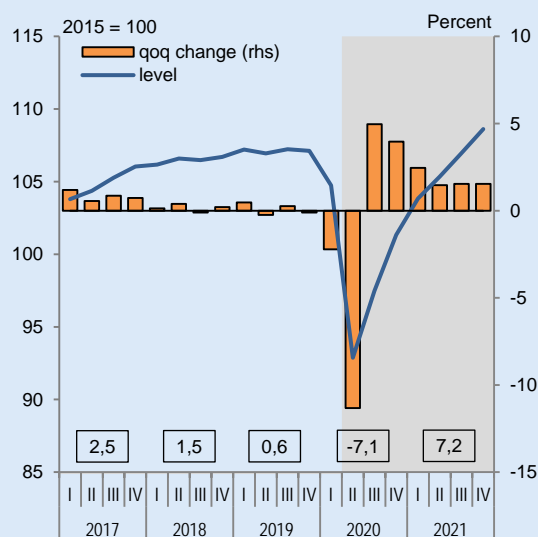
Table 10:
Key indicators, 2018–2021

	2018	2019	2020	2021
Gross domestic product (GDP), price-adjusted	1.5	0.6	-7.1	7.2
Gross domestic product, deflator	1.5	2.1	2.4	1.4
Consumer prices	1.7	1.4	1.4	2.0
Labor productivity (per hour worked)	0.3	-0.0	-4.0	3.8
Employment (1.000 persons)	44,854	45,236	44,828	44,796
Unemployment rate (percent)	5.2	5.0	6.1	6.1
in relation to nominal GDP				
Public sector net lending	1.9	1.4	-5.3	-2.2
Gross public debt	61.7	60.0	76.9	72.6
Current account balance	7.4	7.1	5.2	5.8

GDP, consumer prices, labor productivity: percentage change on previous year; unemployment rate: as defined by the Federal Employment Agency

Source: Federal Statistical Office, Fachserie 18, Series 12; Federal Employment Agency, Monthly Bulletin; Federal Employment Agency, Employment Statistics; shaded: Kiel Institute forecast.

Figure 24:
Gross Domestic Product, 2017–2021



Quarterly data, price, seasonally and calendar adjusted, qoq change. Annual data: price adjusted, annual rate (boxes).

Source: Federal Statistical Office, Fachserie 18, Series 1.3; shaded: Kiel Institute forecast.

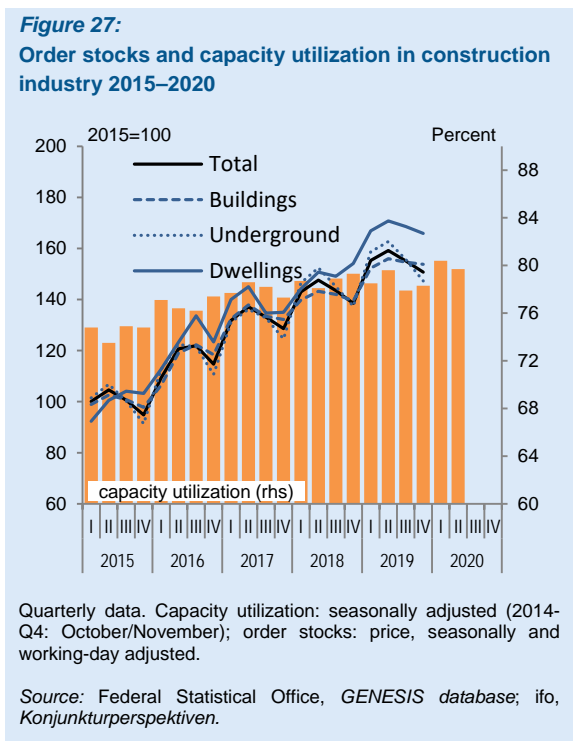
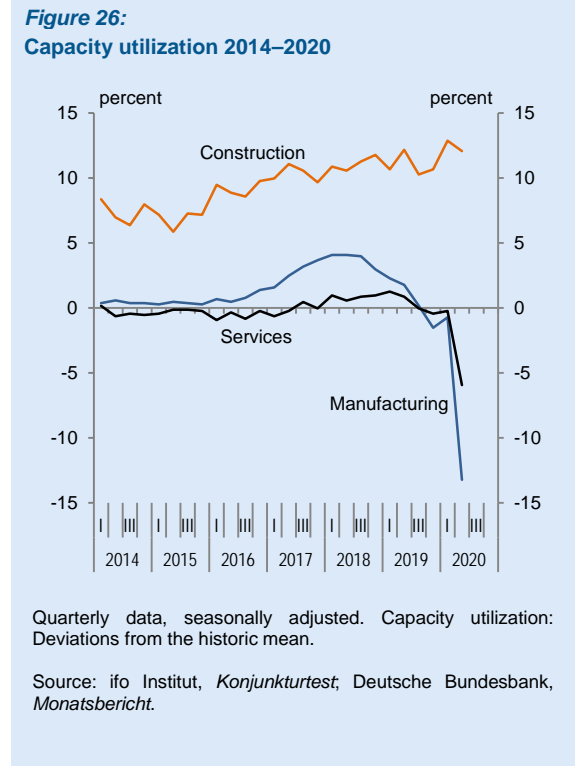
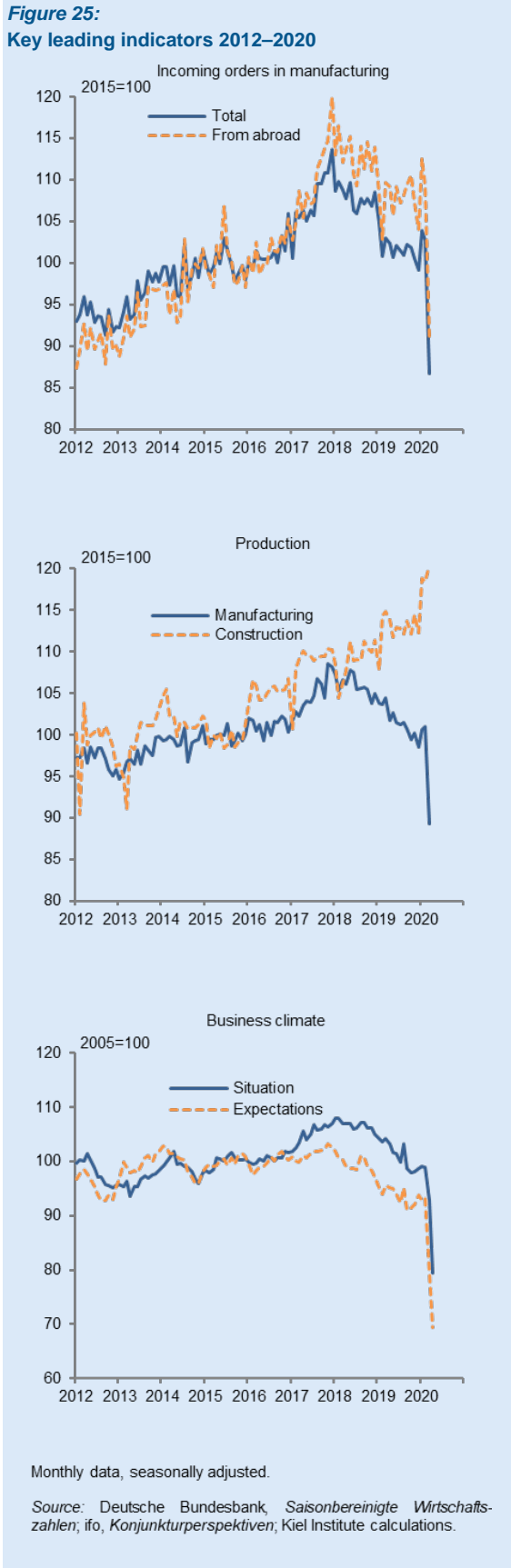
Table 11:
Statistical decomposition of GDP growth rates, 2018–2021

	2018	2019	2020	2021
Original rate	1.5	0.6	-7.1	7.2
Working day effect (ppt)	0.0	0.0	0.4	0.0
Working day adjusted rate	1.5	0.6	-7.5	7.1
Statistical overhang	1.1	0.2	0.0	2.3
Q4 y-o-y rate	0.6	0.4	-5.4	7.2

Volumes. In percent; Statistical overhang, y-o-y rate: based on seasonal and working day adjusted quarterly values.

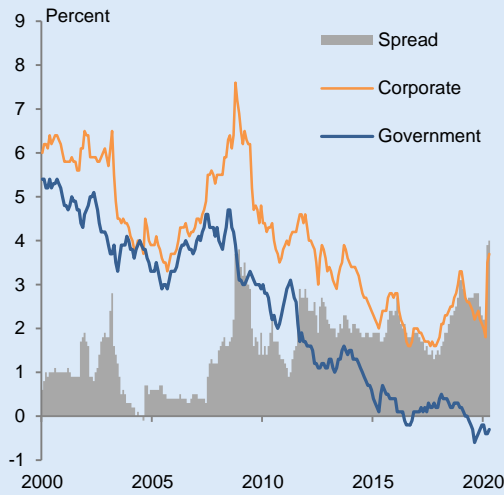
Source: Federal Statistical Office; Fachserie 18, Series 1.3; own calculation; shaded: Kiel Institute forecast.

3.2.2 Leading Indicators



3.2.3 Monetary conditions and prices

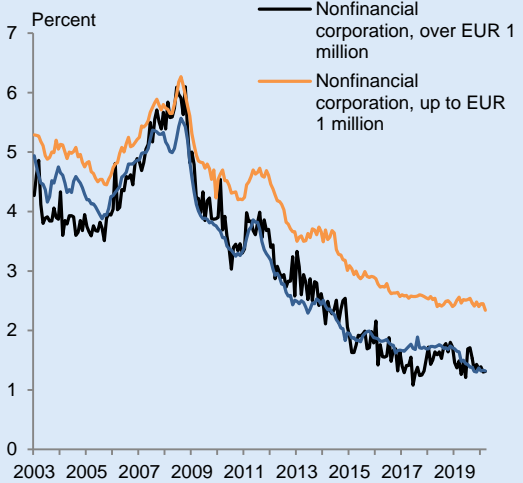
Figure 28:
Bond yields, 2000–2020



Monthly data, average maturities above three years.

Source: Deutsche Bundesbank, *Monthly Reports*; Kiel Institute calculations.

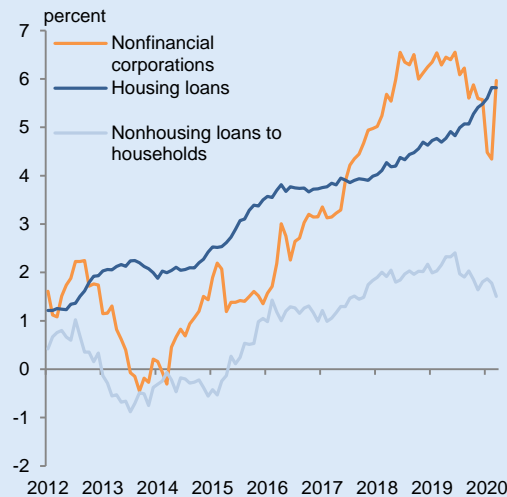
Figure 30:
Bank lending interest rates, 2003–2020



Monthly data; new business, 1–5 years, fixed.

Source: Deutsche Bundesbank, *MFI interest rate statistics*.

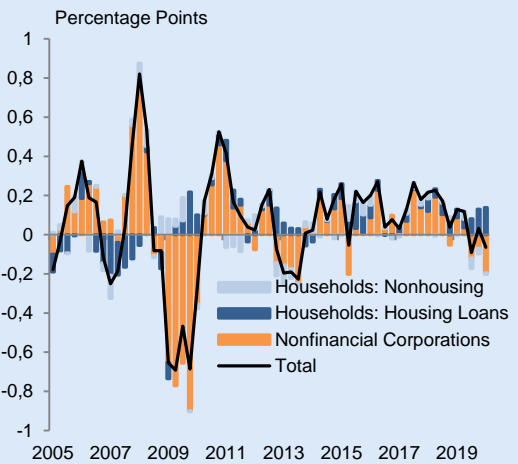
Figure 29:
Credit growth, 2012–2020



Monthly data. y-o-y-change.

Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; Kiel Institute calculations.

Figure 31:
Credit impulse, 2005–2020

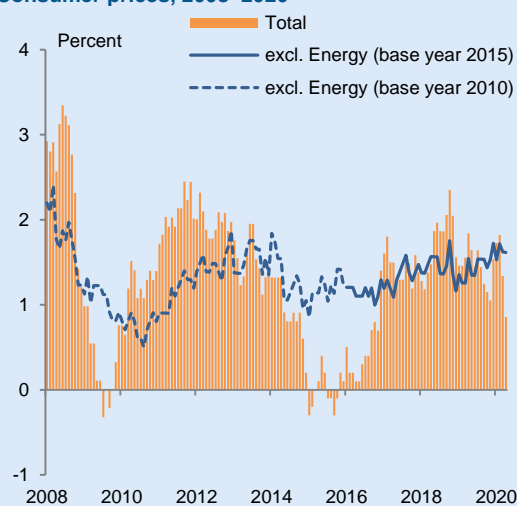


Quarterly data; calculations follow Biggs et al. (2009), Credit and economic recovery, DNB Working Paper 218, De Nederlandsche Bank, Amsterdam.

The credit impulse is the change of the credit growth relative to the growth in GDP.

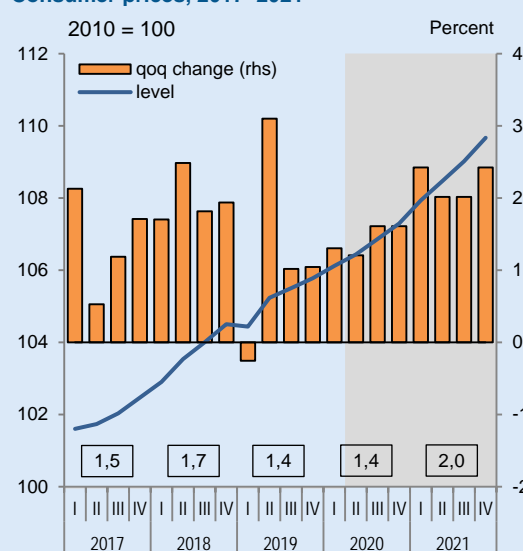
Source: Deutsche Bundesbank, *Seasonally Adjusted Business Statistics*; Kiel Institute calculations.

Figure 32:
Consumer prices, 2008–2020



Monthly data; year-on-year change.
After the introduction of the new base year 2015, the Statistisches Bundesamt has not yet published all new time series for the period before 2015. We therefore fall back on the old data for that period of time.
Source: Deutsche Bundesbank, *Time series databases*; Kiel Institute calculations.

Figure 33:
Consumer prices, 2017–2021



Quarterly data, seasonally adjusted, qoq change, annualized. Annual data: price adjusted, annual rate (boxes).

Source: Federal Statistical Office, *Fachserie 18, Series 1.3*; shaded: Kiel Institute forecast.

Table 12:
International environment, 2018–2021

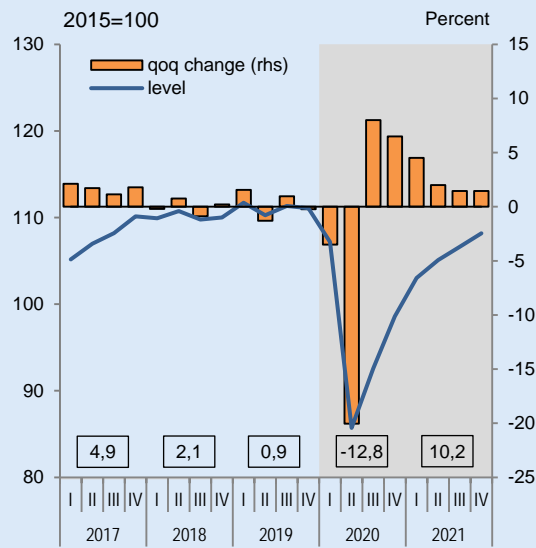
	2018				2019				2020				2021			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ECB key interest rate	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Long-term interest rate	0.60	0.50	0.40	0.40	0.10	-0.10	-0.50	-0.40	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.40
US-dollar/euro exchange rate	1.23	1.19	1.16	1.14	1.14	1.12	1.11	1.11	1.10	1.09	1.09	1.09	1.09	1.09	1.09	1.09
Price competitiveness	90.2	90.0	90.8	90.4	89.3	89.4	89.2	88.6	88.6	89.5	89.8	89.8	89.8	89.6	89.4	89.2
Export markets	0.7	0.7	0.5	0.5	0.6	0.5	0.5	0.4	-3.8	-8.9	5.7	3.1	1.8	1.2	0.7	0.7
Oil price	66.9	74.5	75.1	68.8	63.2	68.9	61.9	63.40	50.5	25.8	30.0	32.4	36.0	39.6	43.2	46.8

ECB key interest rate: main refinancing operations; long-term interest rate on 9–10 year bonds; price competitiveness: against 36 trading partners, based on the deflators of total sales, index: 1991:I = 100, increasing values indicate deterioration of price competitiveness; export markets: GDP growth in 41 countries, weighted with shares in German exports, change over previous quarter. Oil Price: US-Dollar per barrel North Sea Brent.

Source: ECB. Monthly Bulletin; Deutsche Bundesbank. Monthly Bulletin; IMF, International Financial Statistics; Kiel Institute calculations; shaded: Kiel Institute forecast or assumption.

3.2.4 External trade

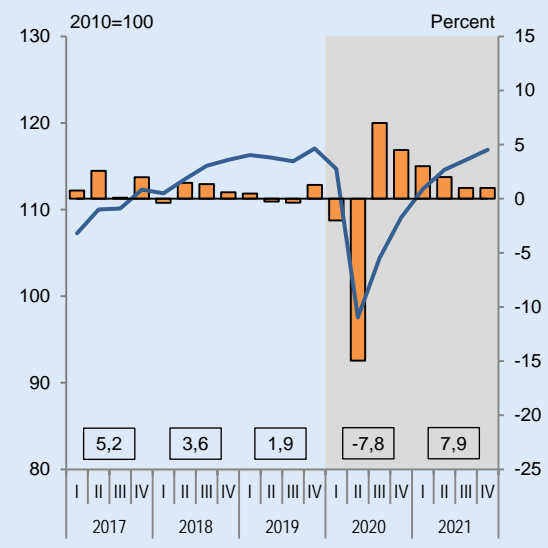
Figure 34:
Exports, 2017–2021



Quarterly data; price, seasonally and calendar adjusted, qoq change (rhs). Annual data: price adjusted, annual rate (boxes).

Source: Federal Statistical Office, *Fachserie 18, Series 1.3*; shaded: Kiel Institute forecast.

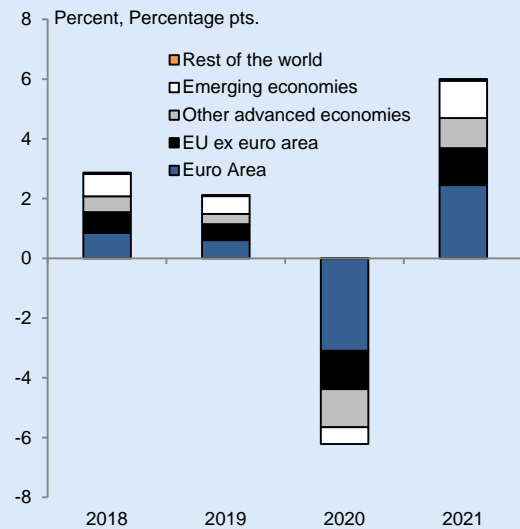
Figure 36:
Imports, 2017–2021



Quarterly data: price, seasonally and calendar adjusted, qoq change (rhs). Annual data: price adjusted, yoy change in percent (boxes).

Source: Statistisches Bundesamt, *Fachserie 18, Reihe 1.3*; grau hinterlegt: Kiel Institute forecast.

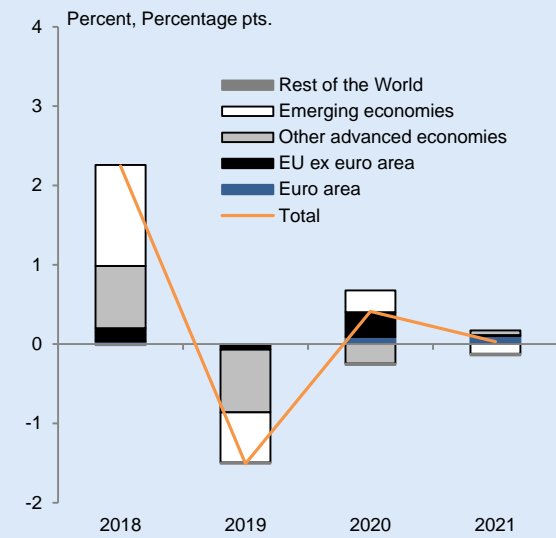
Figure 35:
German export markets, 2018–2021



Annual data, volumes; GDP growth in 59 countries, weighted with shares in German exports.

Source: Federal Statistical Office, *Fachserie 7 Series 1*; national sources; Kiel Institute calculations and forecast.

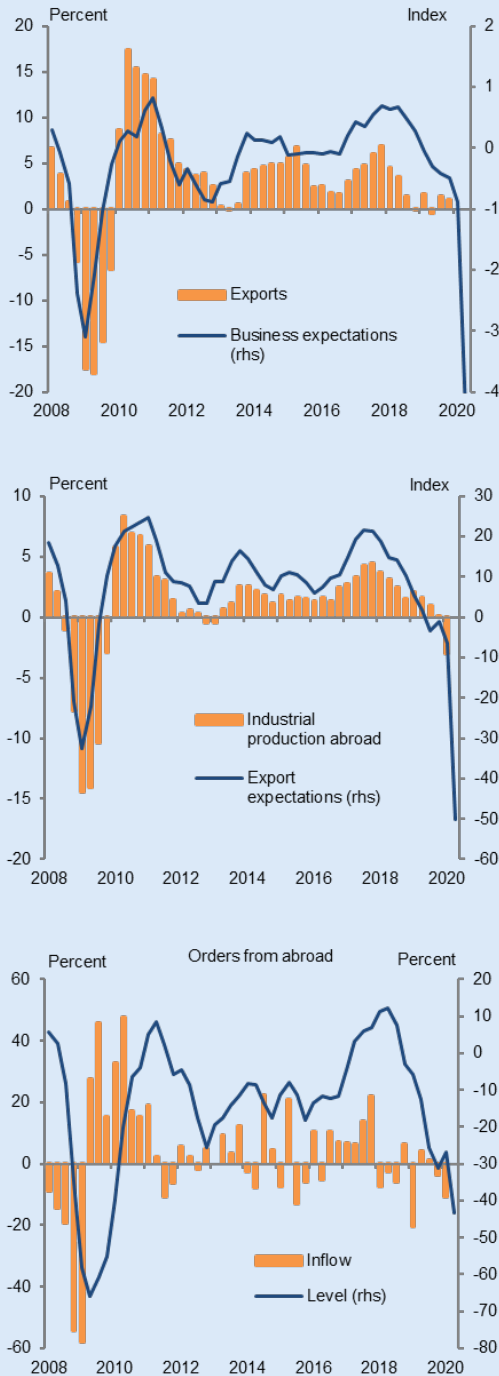
Figure 37:
Price competitiveness, 2018–2021



Annual data; against 51 countries based on consumer prices; weights according to Germany's price competitiveness indicator against 56 trading partners based on consumer price indices from the Deutsche Bundesbank. Increase implies worsening of price competitiveness.

Source: Bundesbank, *Monthly Report 8.2017*; national sources; Kiel Institute calculations and forecast.

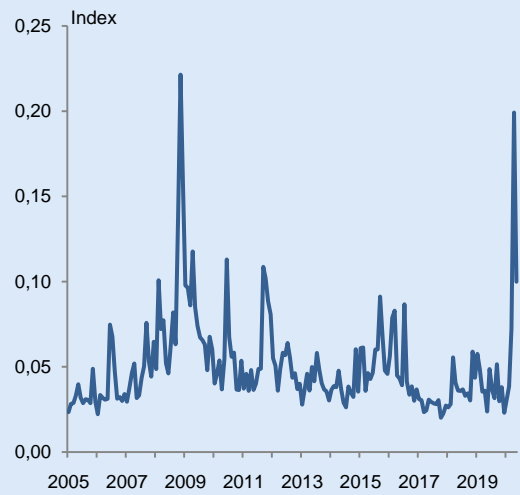
Figure 38:
Leading export indicators, 2008–2020



Quarterly data; exports, industrial production, volumes, change on previous year; order inflow: volumes, annualized change on previous quarter; export expectations, foreign orders on hand: volumes; business expectations, industrial production: based on 42 countries weighted by shares of German exports.

Source: Deutsche Bundesbank, Saisonbereinigte Wirtschaftszahlen; Thomson Financial Datastream; ifo, *Konjunkturperspektiven*; Kiel Institute calculations.

Figure 39:
Uncertainty in German export markets, 2005–2020



Monthly data; realized stock market volatilities based on daily stock price indices in 46 countries, weighted by shares of German exports. Last value: 15.05.2020

Source: National sources; Kiel Institute calculations.

3.2.5 Domestic expenditure

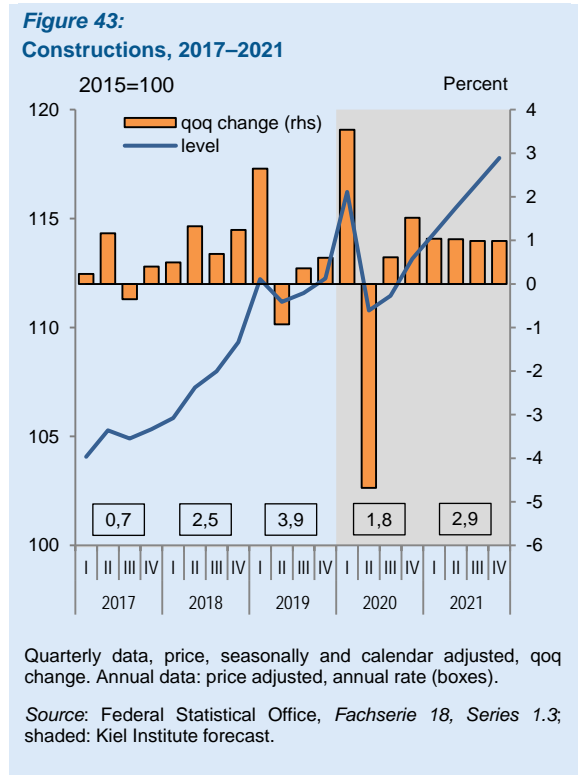
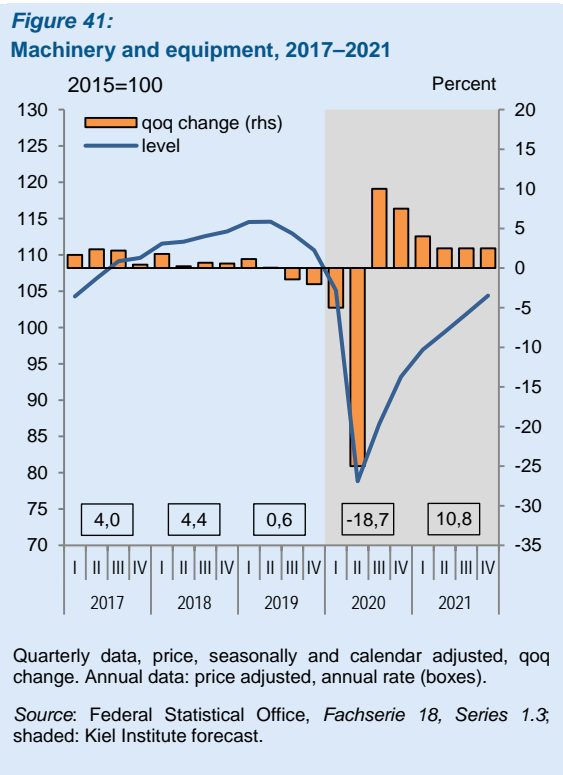
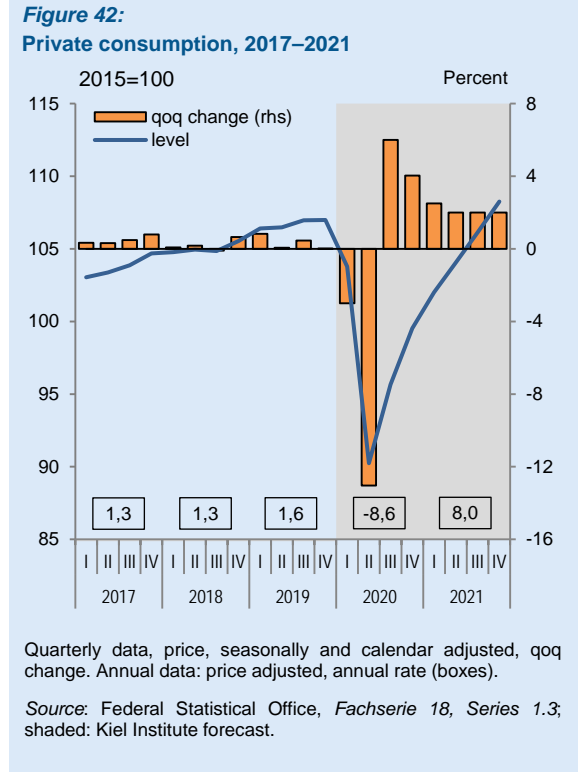
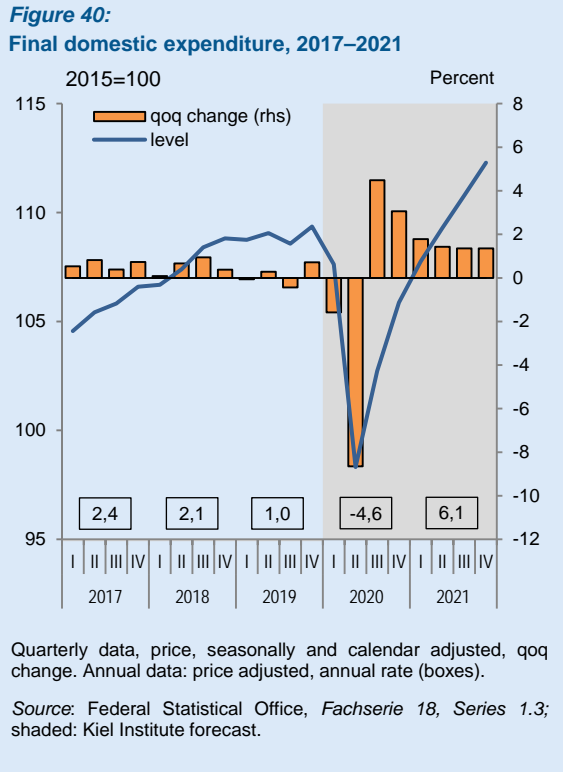
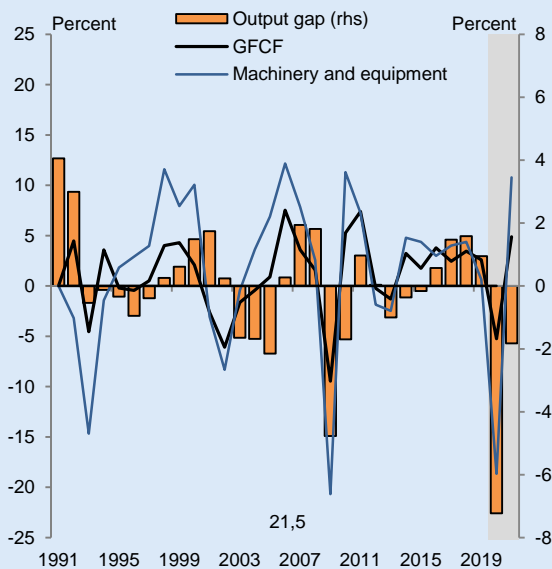


Figure 44:
Investment cycles, 1991–2021



Annual data; GFCF, machinery and equipment: volumes, change on previous year; output gap: in percent of potential output, estimation taken from medium-run projection.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; own calculations; shaded: Kiel Institute forecast.

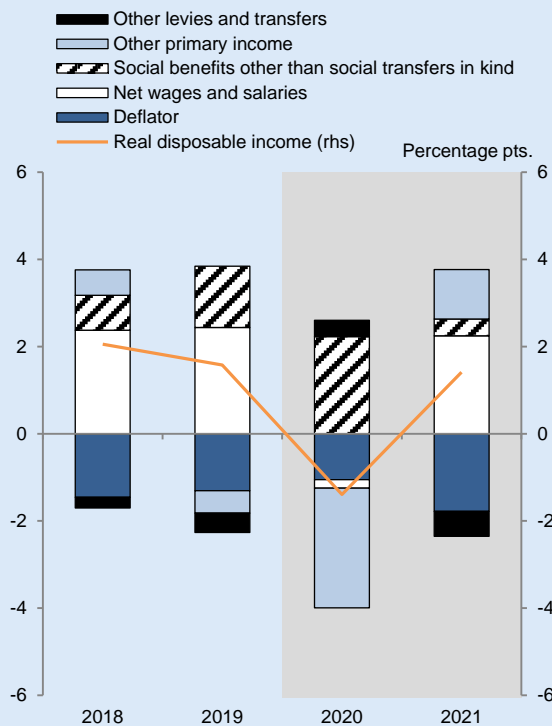
Table 13:
Gross fixed capital formation, 2018–2021

	2018	2019	2020	2021
Total	3,5	2,6	-5,2	4,9
Corporate investment	3,6	1,6	-10,5	5,7
Machinery and equipment	4,4	0,6	-18,7	10,8
Construction (ex dwellings)	0,6	2,5	-3,8	0,4
Other	4,3	2,7	-0,8	1,9
Dwellings	3,0	4,1	2,9	3,1
Public (ex dwellings)	4,3	6,2	8,2	6,8
Memorandum item:				
Construction	2,5	3,9	1,8	2,9

Volumes; change over previous year in percent.

Source: Federal Statistical Office, *Fachserie 18, Series 1.2*; shaded: Kiel Institute forecast.

Figure 45:
Contributions to changes in real disposable income of private households, 2018–2021



Annual data. Other levies and transfers: Levies on social benefits, taxes on consumption and other transfers received (net); Deflator: Deflator of private consumption.

Quelle: Federal Statistical Office, *Fachserie 18, Series 1.2*; Kiel Institute calculations; shaded: Kiel Institute forecast.

3.2.6 Industries

Table 14:
Gross value added by industry, 2019–2020

	2019		2020			
	III	IV	I	II	III	IV
	<i>Seasonally and working day-adjusted, q-o-q change in percent</i>					
Gross domestic product	0.3	-0.1	-2.2	-11.3	5.0	4.0
Gross value added	0.0	0.1	-2.2	-11.3	5.0	4.0
Industry excl. construction	-1.1	-0.3	-2.8	-15.8	6.1	4.9
Manufacturing	-0.9	-0.9	-2.8	-15.8	6.1	4.9
Construction	1.3	0.5	2.1	-1.3	0.7	0.5
Trade, transport, accomodation, food services	0.1	0.2	-3.8	-18.1	6.6	6.1
Information and communication	1.8	-0.1	-1.4	-9.7	4.1	3.9
Financial and insurance services	0.5	0.0	-0.4	-2.8	1.8	1.5
Real estate activities	0.3	0.3	-0.1	-1.5	1.6	1.2
Business services	0.0	0.0	-2.6	-12.2	4.5	4.3
Public services, education, health	0.6	0.6	-1.9	-6.6	5.2	2.7
Other services	0.0	-0.3	-5.5	-27.0	10.2	9.6
Quarterly data. Volumes.						
Source: Federal Statistical Office. Fachserie 18. Series 1.3; shaded: Kiel Institute forecast.						

3.2.7 Labor market

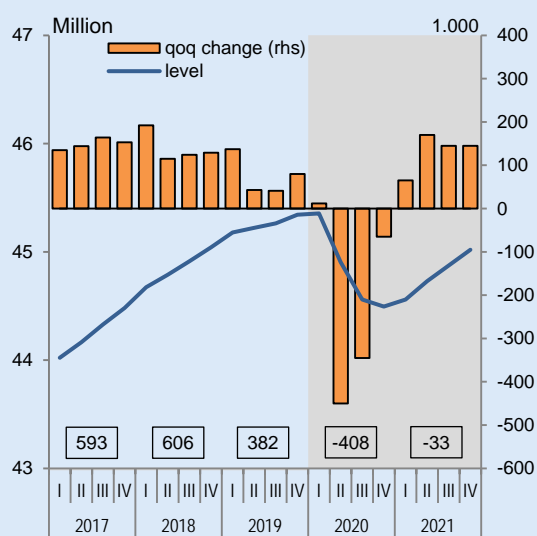
Table 15:
Employment, 2017–2021 (1,000 persons)

	2017	2018	2019	2020	2021
Hours worked (domestic concept, mn. hours)	61,564	62,344	62,720	60,666	62,628
Persons in employment (domestic concept)	44,248	44,854	45,236	44,828	44,796
Self-employed	4,273	4,224	4,150	3,992	3,846
Employees (domestic concept)	39,976	40,631	41,102	40,836	40,949
Employees subject to social security contributions	32,266	32,992	33,535	33,497	33,801
Minijobs	4,739	4,668	4,574	4,375	4,183
Net commuting	121	144	151	153	153
Persons in employment (national concept)	44,127	44,710	45,100	44,675	44,642
Employees (national concept)	39,855	40,486	40,951	40,683	40,796
Unemployed persons (registered)	2,533	2,340	2,267	2,816	2,819
Unemployment rate (registered; percent)	5.7	5.2	5.0	6.1	6.1
Unemployment rate (ILO; percent)	3.5	3.2	3.0	4.1	4.3

Self-employed: including family workers; unemployed persons (registered): definition of the Federal Employment Agency (BA).

Source: Federal Statistical Office, Fachserie 18, Series 1.2; Federal Employment Agency, Monthly Bulletin; Federal Employment Agency, Employment Statistics; shaded: Kiel Institute forecast.

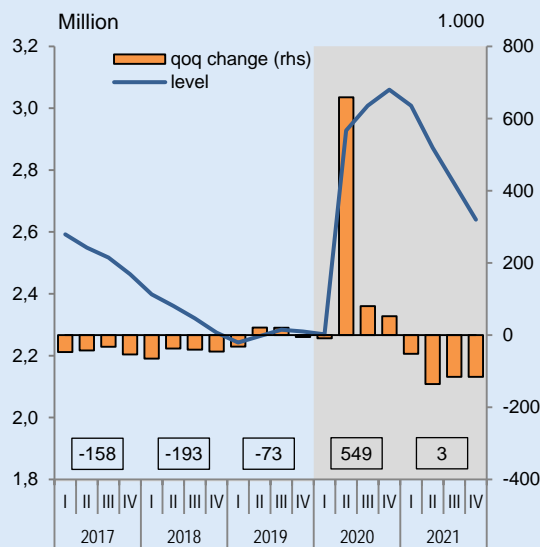
Figure 46:
Persons in employment 2017–2021



Quarterly data, seasonally adjusted, qoq change. Annual data: annual rate (boxes).

Source: Federal Statistical Office, *Fachserie 18, Series 1.3*; shaded: Kiel Institute forecast.

Figure 47:
Unemployed persons 2017–2021



Quarterly data, seasonally adjusted, qoq change. Annual data: annual rate (boxes).

Source: Federal Employment Agency, *Monthly Bulletin*; shaded: Kiel Institute forecast.

3.2.8 Public finances

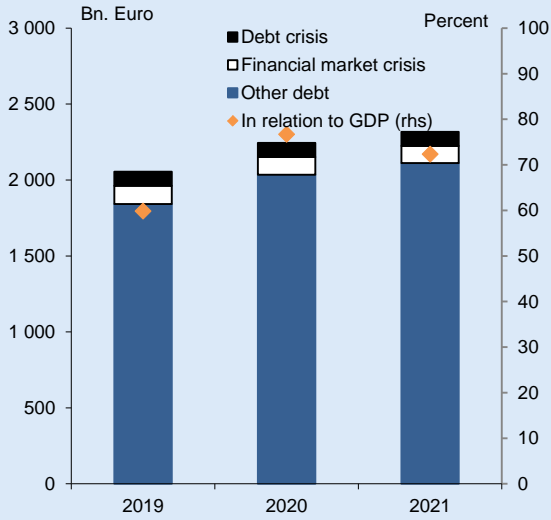
Table 16:
Public revenues and expenditures 2017–2021 (bn. euro)

	2017	2018	2019	2020	2021
Revenues	1,481.7	1,552.9	1,608.6	1,560.6	1,635.0
➤ relative to GDP	45.7	46.4	46.8	47.6	45.9
Taxes	766.6	800.9	825.8	768.9	822.1
➤ relative to GDP	23.6	23.9	24.0	23.5	23.1
Social contributions	549.5	572.5	597.8	603.4	622.7
➤ relative to GDP	16.9	17.1	17.4	18.4	17.5
Other revenues	165.7	179.5	184.9	188.2	190.2
➤ relative to GDP	5.1	5.4	5.4	5.7	5.3
Expenditures	1,441.4	1,490.5	1,558.8	1,733.4	1,712.1
➤ relative to GDP	44.4	44.6	45.4	52.9	48.1
Compensation of employees	250.0	259.3	271.7	283.4	291.4
Intermediate consumption	162.9	169.4	179.8	193.5	196.1
Social transfers in kind	278.3	285.9	299.7	306.4	326.5
Gross capital formation	71.9	78.4	85.3	92.2	98.7
Property income	34.3	31.7	27.5	24.7	21.9
Social benefits	506.6	520.2	546.2	589.2	596.3
Subsidies	27.9	29.6	31.7	100.8	41.4
Other current transfers	67.0	74.9	78.3	91.5	95.4
Capital transfers	44.0	42.2	39.6	52.7	45.3
Other expenditures	-1.6	-1.3	-1.3	-1.3	-1.3
Net lending/net borrowing	40.3	62.4	49.8	-172.8	-77.1
➤ relative to GDP	1.2	1.9	1.4	-5.3	-2.2
Revenues of central, state, and local governments	961.2	1010.5	1042.3	989.8	1045.7
Net of transfers from social security funds	960.1	1009.3	1041.2	988.6	1044.5
Transfers from social security funds	1.1	1.1	1.1	1.1	1.2
Expenditure of central, state, and local governments	931.9	963.9	1002.4	1134.0	1102.9
Net of transfers from social security funds	816.7	845.6	879.7	1007.2	970.4
Transfers from social security funds	115.2	118.3	122.8	126.8	132.6
Net lending/net borrowing of central, state, and local governments	29.3	46.6	39.9	-144.2	-57.2
Revenues of social security funds	636.9	661.9	690.2	698.7	723.0
Net of transfers from central, state, and local governments	521.6	543.6	567.4	572.0	590.5
Expenditures of social security funds	625.9	646.1	680.3	727.3	742.9
Net of transfers to central, state, and local governments	624.8	644.9	679.2	726.2	741.7
Net lending/net borrowing of social security funds	11.0	15.9	9.9	-28.6	-19.9

Sums may deviate due to rounding. Relative to GDP in percent.

Source: Federal Statistical Office, Internal worksheet; own calculations; shaded: Kiel Institute forecast.

Figure 48:
Gross public debt, 2019–2021

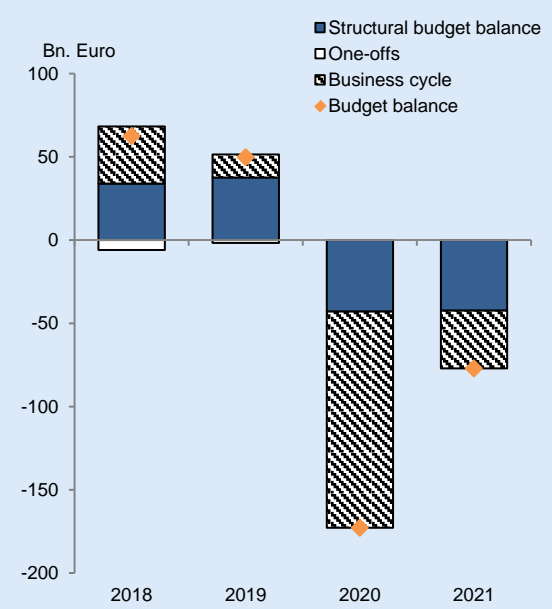


Debt crisis: Liabilities due to first Greece adjustment programme, deposits at the ESM, guarantees for EFSF credits.

Financial market crisis: Liabilities due to bank rescue packages.

Source: Deutsche Bundesbank, *Monatsbericht*; BMF, *Monatsbericht*; Kiel Institute calculations and forecasts.

Figure 49:
Structural fiscal balance, 2018–2021



Source: Europäische Kommission, *AMECO*; Kiel Institute calculations.

3.2.9 GDP and its components

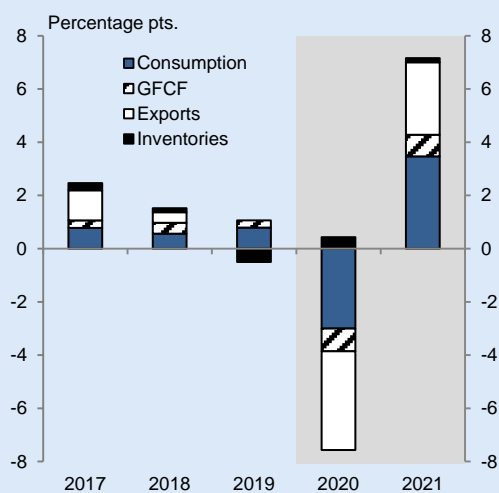
Table 17:
Quarterly data, 2019–2021

	2019				2020				2021			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Gross domestic product	0.5	-0.2	0.3	-0.1	-2.2	-11.3	5.0	4.0	2.5	1.5	1.5	1.5
Private consumption	0.8	0.1	0.5	0.0	-3.0	-13.0	6.0	4.0	2.5	2.0	2.0	2.0
Government consumption	1.0	0.5	1.3	0.3	0.1	0.0	2.1	0.5	0.2	0.2	0.1	-0.2
Machinery and equipment	1.2	0.0	-1.4	-2.0	-5.0	-25.0	10.0	7.5	4.0	2.5	2.5	2.5
Constructions	2.6	-0.9	0.4	0.6	3.5	-4.7	0.6	1.5	1.0	1.0	1.0	1.0
Other investment	-0.5	1.0	1.0	1.1	0.0	-5.0	2.5	1.0	0.5	0.5	0.5	0.5
Change in inventories	-1.0	0.2	-0.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Domestic expenditure	-0.1	0.3	-0.4	0.7	-1.6	-8.7	4.5	3.1	1.8	1.4	1.4	1.4
Exports	1.6	-1.3	1.0	-0.2	-3.5	-20.0	8.0	6.5	4.5	2.0	1.5	1.5
Imports	0.5	-0.3	-0.4	1.3	-2.0	-15.0	7.0	4.5	3.0	2.0	1.0	1.0
Net exports	0.5	-0.5	0.7	-0.8	-0.7	-2.9	0.6	1.0	0.8	0.1	0.3	0.3
Employment (domestic)	45,169	45,230	45,250	45,298	45,355	44,905	44,560	44,495	44,560	44,730	44,875	45,020
Unemployment (registered)	2,243	2,263	2,284	2,278	2,269	2,928	3,008	3,060	3,008	2,872	2,756	2,640

Volumes, seasonally and working-day adjusted. Change on previous quarter in percent; change in inventories, net exports: Lundberg-component (contribution to GDP growth); employment, unemployment: seasonally adjusted, 1,000 persons; unemployment: as defined by the Federal Employment Agency (BA).

Source: Federal Statistical Office, Fachserie 18, Series 1.3; Federal Employment Agency, Monthly Bulletin; shaded: Kiel Institute forecast.

Figure 50:
Import adjusted expenditure-side contributions to GDP growth, 2017–2021



Annual data; price-adjusted, growth contribution of each expenditure component adjusted by import content; import content is estimated based on input/output tables; see Kooths and Stolzenburg (2018).

Source: OECD, Input Output Database; Federal Statistical Office, Fachserie 18, Series 1.2; shaded: Kiel Institute forecast.

3.2.10 Annual data, 2018–2021

	2018	2018	2019	2020	2021
	Bn. Euro	Change over previous year in percent			
Use of gross domestic product, price-adjusted					
GDP		1.5	0.6	-7.1	7.2
Private consumption expenditure		1.3	1.6	-8.6	8.0
Public consumption expenditure		1.4	2.6	2.3	1.8
Total fixed investment		3.5	2.6	-5.2	4.9
Machinery and equipment		4.4	0.6	-18.7	10.8
Construction		2.5	3.9	1.8	2.9
Other equipment		4.3	2.7	-0.8	1.9
Changes in stocks		0.3	-0.9	0.9	0.3
Domestic Demand		2.1	1.0	-4.6	6.1
Exports		2.1	0.9	-12.8	10.2
Imports		3.6	1.9	-7.8	7.9
Net exports		-0.4	-0.4	-2.8	1.3
Use of gross domestic product at current prices					
GDP	3,344.4	3.1	2.7	-4.9	8.6
Private consumption expenditure	1,743.7	2.8	2.9	-7.6	9.9
Public consumption expenditure	665.6	3.3	5.1	5.0	3.9
Total fixed investment	707.7	6.3	5.5	-3.7	6.1
Machinery and equipment	235.3	4.9	1.9	-18.2	10.8
Construction	344.3	7.3	8.4	4.3	4.9
Other equipment	128.1	5.9	4.4	-0.3	2.4
Changes in stocks (€ bn.)		21.3	-12.2	17.8	28.3
Domestic Demand	3,138.3	4.1	2.9	-3.1	7.9
Exports	1585.8	3.1	1.7	-13.7	10.3
Imports	1379.7	5.5	1.8	-10.9	8.7
Net exports (€ bn.)		206.1	207.7	140.0	174.7
Gross national income	3,437.9	3.3	2.8	-5.4	8.5
Deflators					
GDP		1.5	2.1	2.4	1.4
Private consumption expenditure		1.5	1.3	1.1	1.8
Public consumption expenditure		1.8	2.5	2.7	2.1
Investment in machinery and equipment		0.5	1.3	0.5	0.0
Investment in construction		4.7	4.4	2.5	1.9
Investment in other equipment		1.6	1.6	0.5	0.4
Exports		0.9	0.8	-1.0	0.1
Imports		1.8	-0.1	-3.3	0.7
Addendum: Consumer prices		1.7	1.4	1.4	2.0
Income distribution					
Net national income (factor costs)	2,503.1	3.0	2.3	-4.8	6.8
Compensation of employees	1,771.3	4.5	4.4	-0.5	3.4
in percent of national income		70.8	72.2	75.4	73.0
Property and entrepreneurial income	731.8	-0.5	-2.6	-15.8	17.5
Disposable income	1,898.5	3.5	2.9	-0.3	3.2
Savings rate		11.0	10.9	17.5	12.0
Wages and salaries	1,460.9	4.8	4.2	-1.0	3.7
Wage per hour		3.0	3.2	2.0	-0.2
Unit labor costs		2.4	3.4	6.6	-4.0
Productivity per hour		0.3	0.0	-4.0	3.8
Unemployment (1,000)		2,340	2,267	2,816	2,819
Rate of unemployment (percent)		5.2	5.0	6.1	6.1
Total employment (1,000)		44,854	45,236	44,828	44,796
Public sector budget balance					
Public sector budget balance (€ bn.)		62.4	49.8	-172.8	-77.1
Public sector budget balance (in percent of GDP)		1.9	1.4	-5.3	-2.2
Public debts (in percent)		61.7	60.0	76.9	72.6

Change in stocks, net exports: Lundberg-component (contribution to GDP growth); employment, unemployment: as defined by the Federal Employment Agency (BA); public debts: in relation to GDP.

Source: Federal Statistical Office, Fachserie 18, Series 1.2; shaded: Kiel Institute forecast.

IMPRESSUM

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The Kiel Institute for the World Economy is a foundation under public law of the State Schleswig-Holstein, having legal capacity.

Value Added Tax Id.-Number

DE 251899169

Authorized Representative

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