

# COVID-19

## Current status and economic impact

Munich, March 12, 2020

# COVID-19 has spread to >110 countries so far – Global GDP in 2020 might take a 3.2 ppts. hit based on the current assessment

## 1 Current status

- > So far >110 countries have confirmed coronavirus cases – Italy, South Korea and Iran experiencing the biggest outbreaks outside of China
- > Newly confirmed cases in China apparently slowing down – Many other countries seeing a steep rise in new infections
- > Researchers worldwide are working on vaccinations against COVID-19. However, approval processes might take 12-18 months

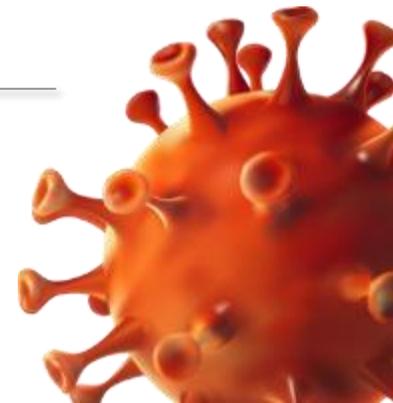
## 2 Economic impact

- > The corona crisis implies both a demand and a supply shock, the latter being the first big one since the 1973-74 oil crisis
- > Supply chain interruptions and production bottlenecks hurt already weak global growth
- > Global GDP could take an aggregated hit of up to 3.2 ppts. in 2020 based on this week's estimate
- > Chinese economy currently the most heavily impacted

## 3 Reactions

- > Corporations have reacted with temporary factory closures in China and by setting strict rules for employees (travel bans, telecommuting, conference cancellations)
- > Several countries have closed their borders with China, cut direct transportation and isolated affected areas
- > The U.S. Federal Reserve delivered an emergency half-percentage-point interest rate cut, other countries are bringing in first fiscal stimulus measures

**This document provides an overview of the status quo of the COVID-19 (coronavirus) outbreak and analyzes the economic impact on selected regions and industries. It is based on research and RB expert opinions and will be regularly updated.**



# The coronavirus is spreading across the globe – Outside of Asia, Europe has the highest number of infections with >10,000 in Italy

 **Confirmed:**  
**119,133**

 **Deaths:**  
**4,285**

 **Recovered:**  
**65,779**

As of March 11, 2020<sup>1)</sup>



- > So far >110 countries have confirmed coronavirus cases
- > More than 70% of confirmed cases have been reported in China (80,957), however rate of new infections is now declining rapidly
- > Currently, three other countries have more than 5,000 cases – Italy (10,149), South Korea (7,755), Iran (8,042)
- > Other European nations are increasingly affected – Most cases in France (1,784), Germany (1,565) and Spain (1,695)
- > More than 800 cases have been confirmed in North America (USA: 1,037, Canada: 93)

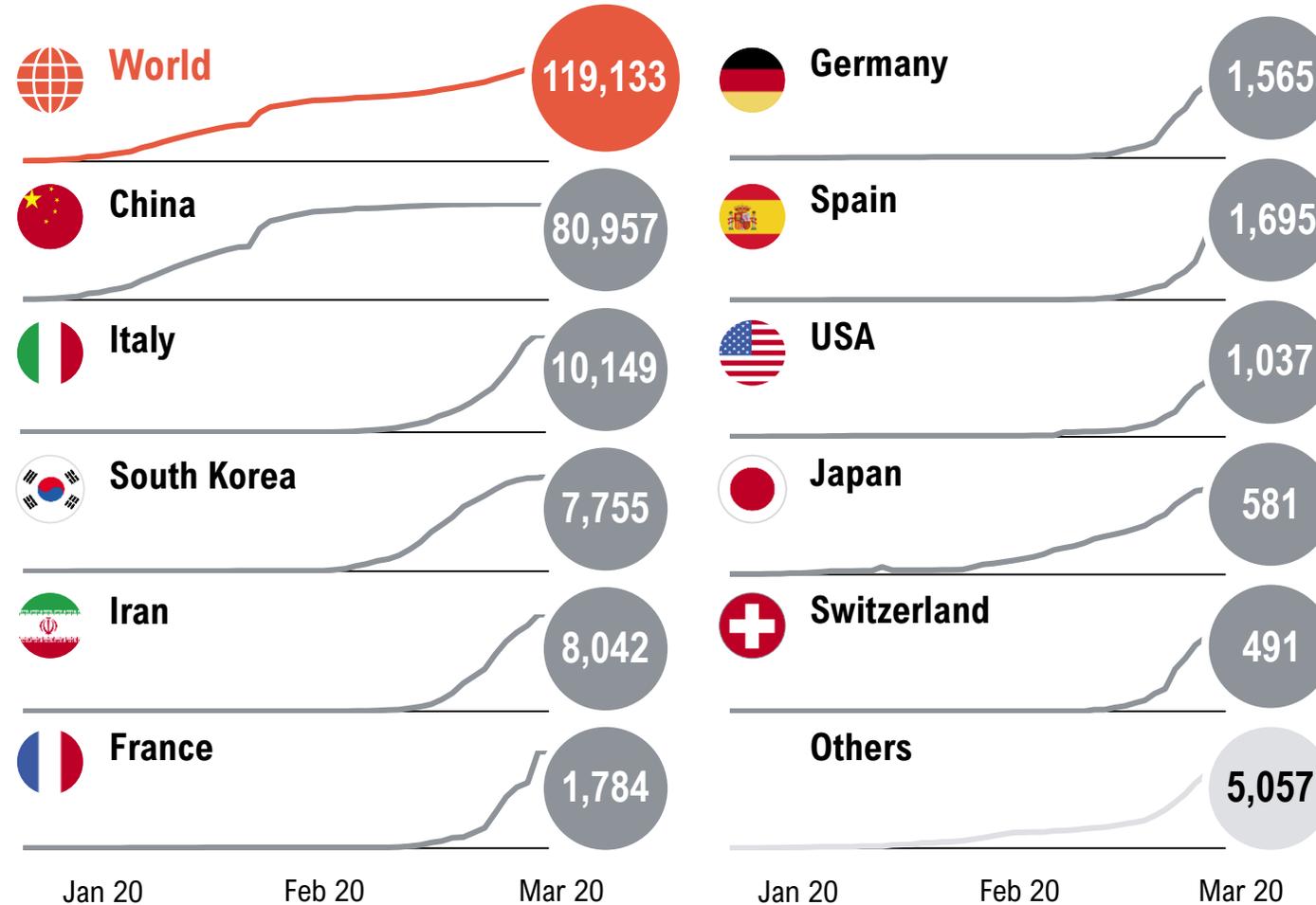


Number of confirmed cases: ■ >1 ■ >10 ■ >100 ■ >1,000 ■ >5,000 ■ >50,000

1) For most recent data, please see [here](#)

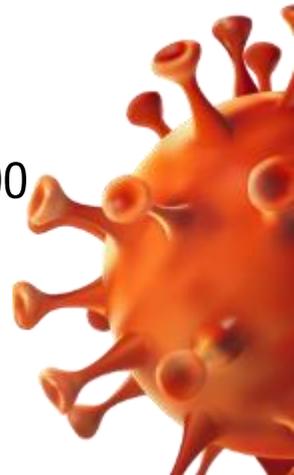
# New infections in China seem to be slowing down – Most other countries are experiencing a steep rise in confirmed cases

As of March 11, 2020<sup>1)</sup>



Development of confirmed cases in the ten most affected countries

- > China's aggressive measures seem to be effective, as the rate of new infections is rapidly slowing down
- > South Korea is experiencing a steep rise in infections, with ~75% of cases reported in the southeastern city of Daegu
- > Epicenter of the European outbreak is in Italy with >10,000 cases, mainly in the northern regions



1) For most recent data, please see [here](#)

# Researchers worldwide are working to develop potential treatments and vaccinations against COVID-19



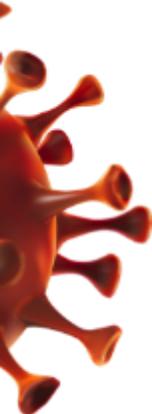
## Major developments in COVID-19 vaccine have been announced

- > According to the WHO, more than 20 potential vaccines are in development around the world
- > GlaxoSmithKline and Clover Biopharmaceuticals (China) will partner on Clover's protein-based coronavirus vaccine candidate, COVID-19 S-Trimer
- > University of Queensland (Australia) announced a vaccine candidate ready for proof-of-concept studies after three weeks in development
- > The National Institutes of Health and biotech company Moderna are on track for human clinical trials for a vaccine in April
- > However, clinical trials and approval processes take between 12 and 18 months overall

## Drug treatments are showing first successes in clinical trials

- > Several treatments aimed at healing patients or alleviating symptoms are already in clinical trials
  - > Gilead has started two Phase 3 trials for its experimental Ebola drug Remdesivir for treatment of coronavirus; first results have demonstrated efficacy in treating the infection
  - > China has approved the use of Favilavir, an antiviral drug that has reportedly shown efficacy in treating the disease with minimal side effects in a clinical trial involving 70 patients
- > Treatments were already in development when the outbreak started and might be available sooner than vaccines

# Press statements and expert opinions on the coronavirus outbreak



*"The effects on the global economy are likely to be substantial and will start to show up in the trade data in the weeks to come,"* **Roberto Azevedo, WTO on March 2, 2020**

*"Unfortunately over the last week we've seen a shift to a more adverse scenario for the global economy" due to the "sheer geographic spread of the epidemic around the world,"* **Kristalina Georgieva, IMF on March 4, 2020**

*"This epidemic can be pushed back, but only with a collective, coordinated and comprehensive approach that engages the entire machinery of government,"* **Tedros Ghebreyesus, WHO on March 5, 2020**

*"G7 Finance Ministers and Central Bank Governors stand ready to cooperate further on timely and effective measures,"* **G7 Finance Ministers' Statement on March 3, 2020**

*"The ECDC [European Centre for Disease Prevention and Control] has announced today that the risk level has risen from moderate to high for people in the European Union. In other words, the virus continues to spread,"* **Ursula von der Leyen, President of the European Commission on March 2, 2020**

*"On the assumption that the epidemic peaks in China in the first quarter of 2020 and outbreaks in other countries prove mild and contained, (...) annual global GDP growth is projected to drop to 2.4% in 2020 as a whole, from an already weak 2.9% in 2019, with growth possibly even being negative in the first quarter of 2020,"* **OECD Interim Report on March 2, 2020**

*"(...), unlike the two previous global recessions this century, the new coronavirus, COVID-19, implies a supply shock as well as a demand shock. Indeed, one has to go back to the oil-supply shocks of the mid-1970s to find one as large,"* **Kenneth Rogoff, Harvard University on March 2, 2020**

*"(...) the coronavirus added a new layer of uncertainty to global and euro area growth prospects. The outbreak has the potential to affect the euro area economy through both demand- and supply-side channels,"* **Luis de Guindos, European Central Bank on March 2, 2020**

# COVID-19 has the potential to trigger an economic crisis – Negative impact on all parts of the economy expected

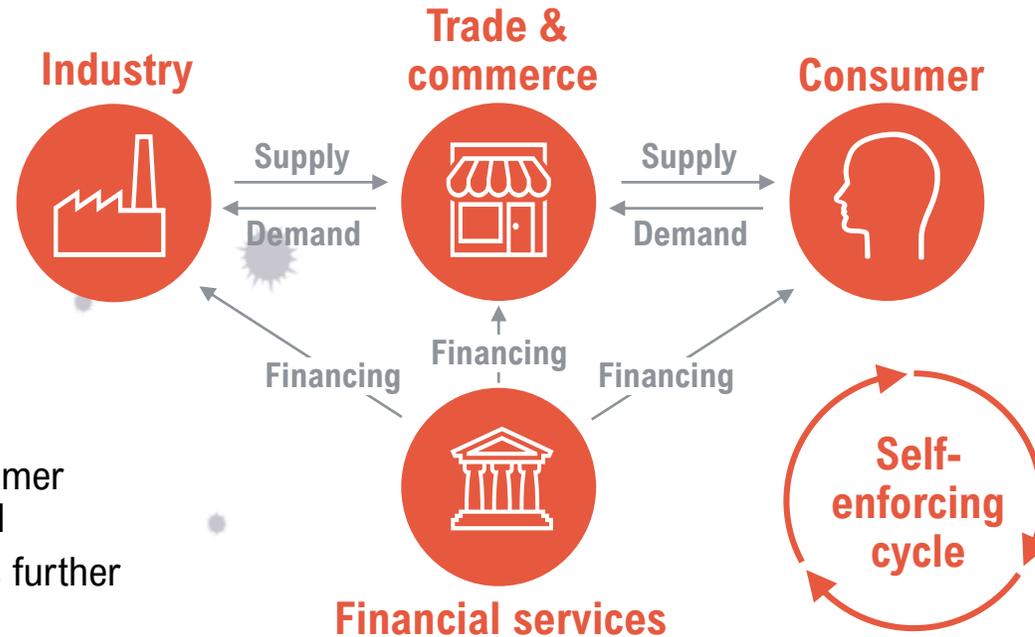
## Supply shock

- > Plant shutdowns and logistics bottlenecks reduce supply of consumer and industrial goods
- > Businesses reduce investment activities

## Credit crunch

- > Business and consumer lending is hampered
- > Liquidity constraints further reduce investments and consumption

## Capital markets



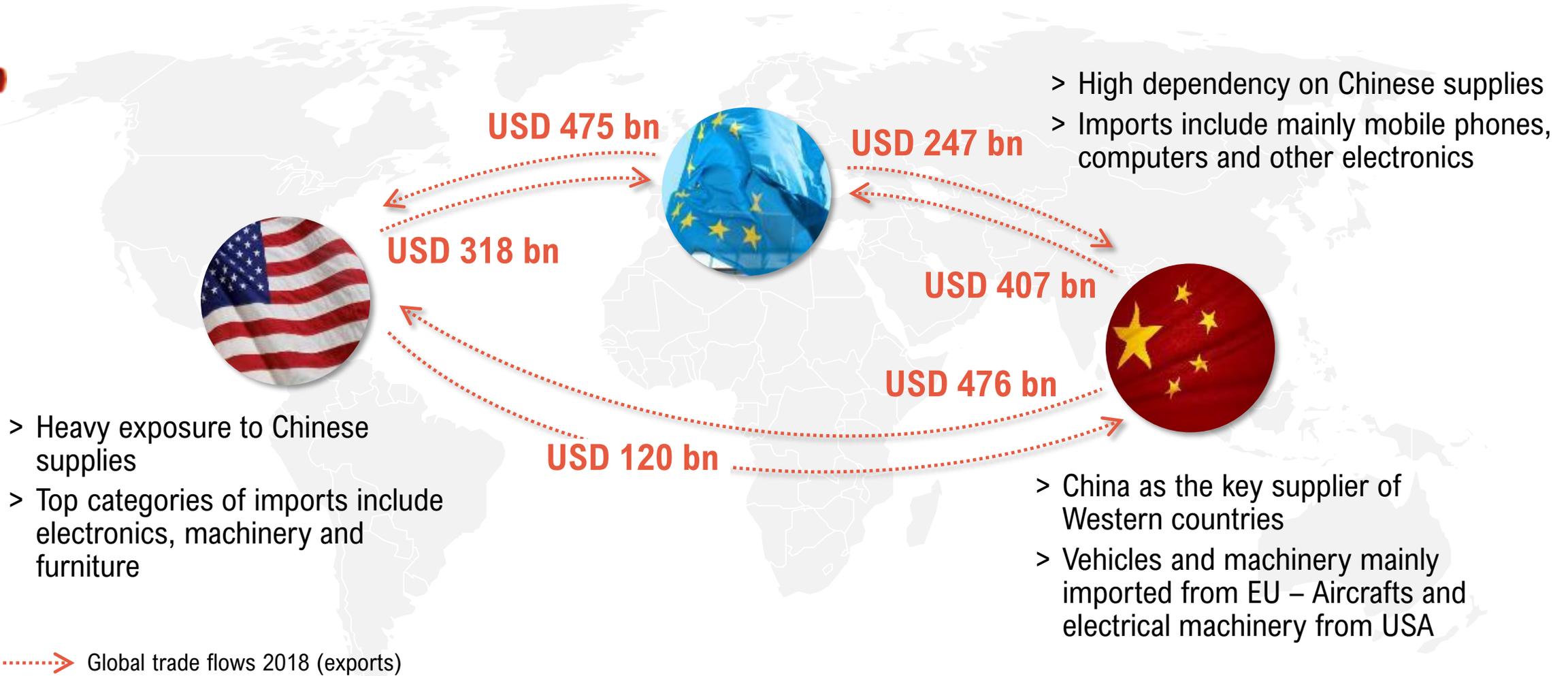
## Demand shock

- > Partly self-imposed quarantine measures curtail consumer spending
- > Decline in consumer confidence and consumption

Anticipation of negative impact from COVID-19 on global economy:

- > Reduction of investment capital and consumable wealth
- > Widening of credit spreads negatively impacts lending

# China is the key supplier of Western economies – Exports to China mainly include vehicles, aircrafts and machinery



- > High dependency on Chinese supplies
- > Imports include mainly mobile phones, computers and other electronics

- > Heavy exposure to Chinese supplies
- > Top categories of imports include electronics, machinery and furniture

- > China as the key supplier of Western countries
- > Vehicles and machinery mainly imported from EU – Aircrafts and electrical machinery from USA

# We assess the risk for key regions and industries and define three scenarios to evaluate the potential impact on growth

## Overview

- > We assess the impact of the COVID-19 outbreak on economic growth in key regions and industries
- > The overall risk is derived by analyzing potential disruptions in supply and demand
- > 3 scenarios are defined ranging from a fast recovery to a profound recession triggered by the coronavirus

## 1 Risk assessment

- > Analysis of potential supply and demand disruptions within key regions and industries
- > Assessment of overall risk based on exposure to global pandemic

### Dimensions for analysis:

#### Impact on supply and demand



## 2 Scenario analysis

Definition of three scenarios:

### 1. Fast recovery

- > Containment of further spread of COVID-19

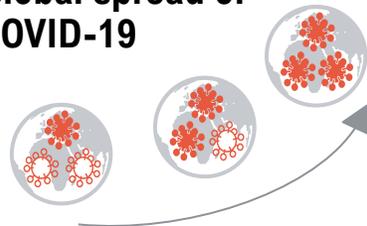
### 2. Delayed cure

- > Continued global spread – Containment by end of 2020

### 3. Profound recession

- > Global recession triggered by second wave outbreak in 2021

#### Global spread of COVID-19



## A Regions

- > Analysis of key regions

### China

- > Epicenter of global outbreak and key supplier

### EU

- > Currently most affected besides Asia; epicenter in Italy

### USA

- > Key player with high dependency on Chinese supplies

#### Key regions



## B Industries

- > Analysis of key industries:

### Automotive

- > Dependent on Chinese supply and demand

### Mechanical engineering

- > Dependent on global investment, esp. automotive

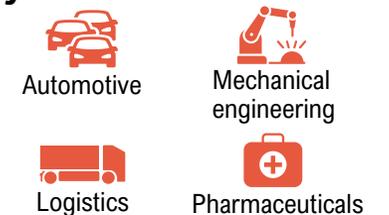
### Logistics

- > Dependent on global trade

### Pharmaceuticals

- > Key player in a pandemic
- > Dependent on Chinese raw materials

#### Key industries



Region and industry coverage to be widened based on further development of COVID-19

# In a highly connected and integrated world, external shocks spread rapidly and could impact both demand and supply

## Exposure to supply effects



## Exposure to demand effects



## Overall risk

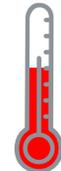


### China

- > As the world's largest trading nation, China is highly integrated into global supply chains, both as an exporter and an importer
- > However, with increasing local value added, China's exposure to the global market has fallen in relative terms



- > With the rebalancing of the Chinese economy, private consumption has become the biggest driver (~60%) of GDP growth
- > Chinese state has ample firepower to provide stimulus



### Europe

- > The EU Common Market is extremely integrated, both globally and inter-regionally
- > China is the biggest supplier, esp. of intermediate goods and electronics



- > Intra-EU supply chains highly geared towards exporting countries (e.g. Germany), resulting in exposure to global demand, esp. for cars, industrial products and luxury goods
- > Consumer demand is stabilized through social security system

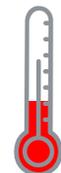


### USA

- > The US economy is both more geared towards services and more focused on domestic and NAFTA markets
- > Limited exposure to supply chain disruptions esp. in industrial goods originating from the EU and China



- > With fewer automatic economic stabilizers (e.g. unemployment insurance), an economic downturn will hit consumer demand and housing market
- > Loss of wealth due to sharp declines in asset values will also weaken demand



# The already distressed automotive sector and the highly cyclical logistics industry are facing the highest degree of risk

## Exposure to supply effects



## Exposure to demand effects



## Overall risk

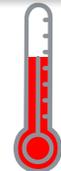


### Automotive

> Highly integrated global supply chains make the automotive industry vulnerable to supply shock



> Huge exposure to consumer demand, as car purchases tend to be postponed in times of economic downturn  
> Industry growth strongly depends on Chinese demand



### Mechanical engineering

> Today's supply chains are more complex than in the past, with higher dependency esp. on Chinese supplies



> Longer lead times reduce impact of short-term demand shocks and enable adjustment of cost structures

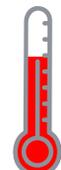


### Logistics

> In general (aviation being the exception), low exposure to non-oil supply shocks from outside the industry



> Full exposure to demand  
> Highly cyclical, logistics tends to overshoot the economic cycle



### Pharma

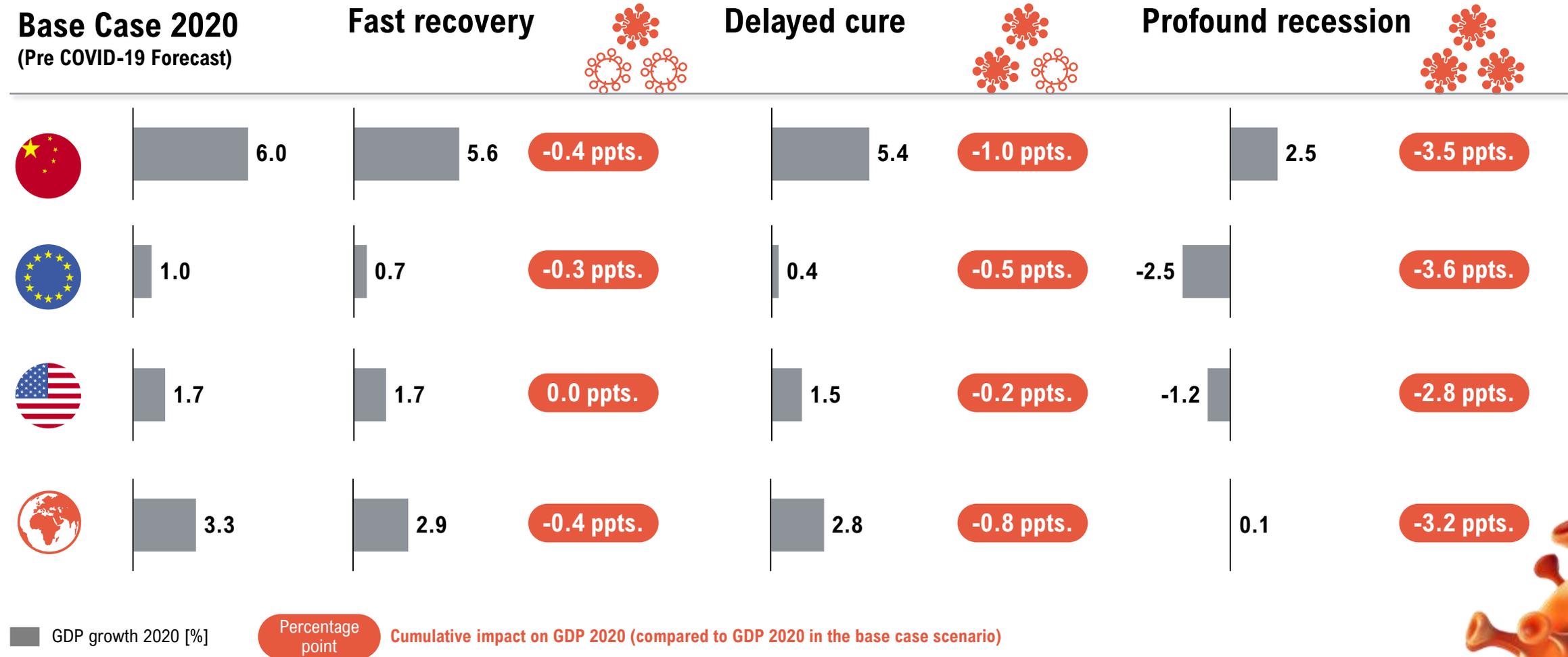
> Dependency on China and India as providers of pharmaceutical raw materials and low-cost drugs



> Overall demand rising as populations in many countries age  
> Regulatory environment beneficial in crisis



# COVID-19 is becoming a challenge to the global economy – We analyze three scenarios ranging from a fast recovery to a profound recession



# China as the focal point of the coronavirus outbreak – Downside risks for GDP 2020 of 3.5 ppts. based on current assessment



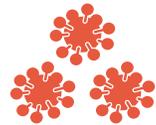
## Fast recovery



## Delayed cure



## Profound recession



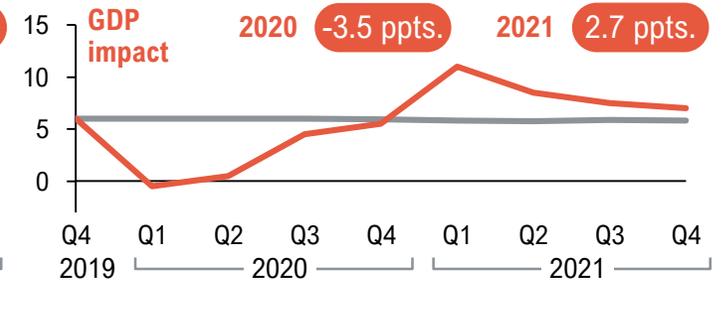
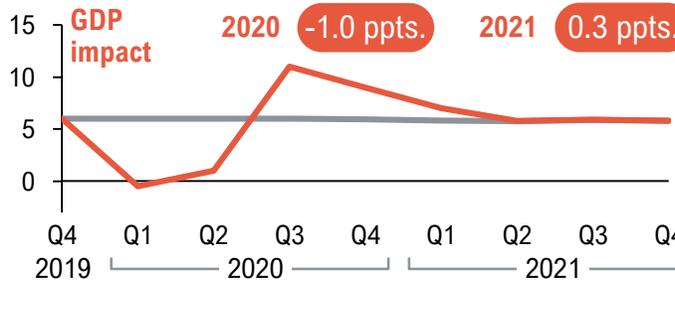
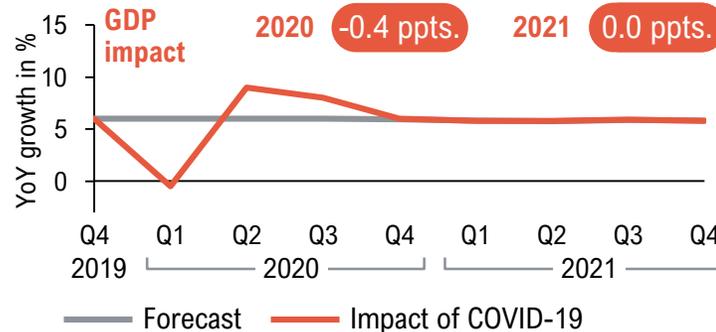
### COVID-19 spread

- > Chinese government's measures are effective
- > Higher number of recoveries than new infections
- > Quarantines are lifted

- > Number of new infections slows down but containment not successful
- > Quarantines remain in place

- > Second wave outbreak in early 2021
- > New flare-ups outside Hubei province
- > Quarantine must be extended to other regions

### Estimated effect on economic growth



### Assessment of economic impact

- > **Exports** only affected to a limited extent
- > **Production** quickly returns to normal
- > **Demand curtailed** only in the short term

- > **Supply chain bottlenecks** occur
- > **Factories remain closed** temporarily
- > **Demand dampened** for a lengthy period
- > **Foreign demand** partly shifted to other countries

- > **Supply** severely disrupted
- > **Factories** remain closed
- > **Bankruptcies** occur
- > Coordinated **fiscal and monetary policy** responses mitigate dampening effect and push growth beginning in Q3 2020

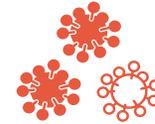
# Europe as the world's biggest trading block could be particularly hard hit by an extended corona outbreak



## Fast recovery



## Delayed cure



## Profound recession



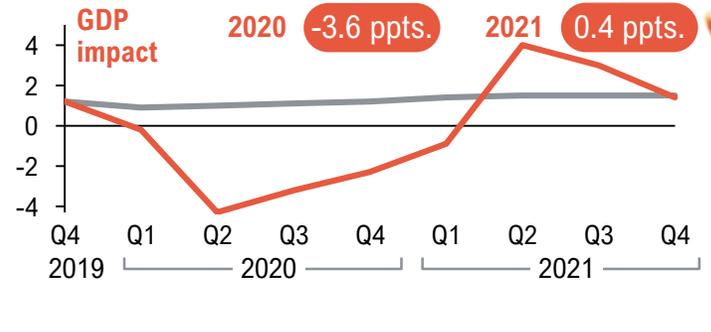
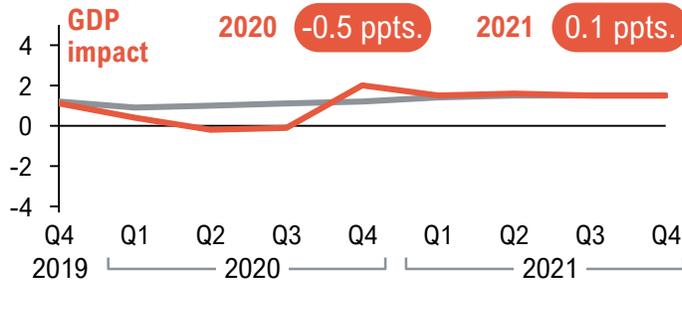
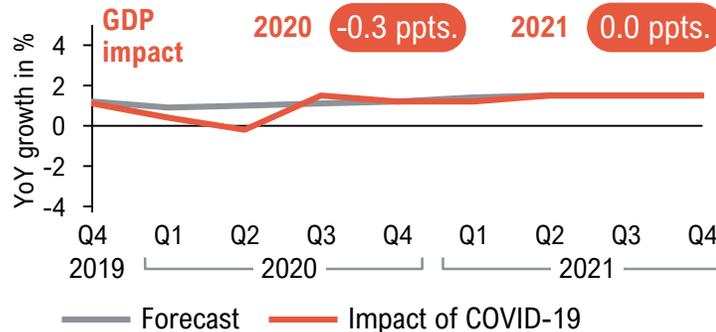
### COVID-19 spread

- > Outbreak in Italy can be contained
- > Effective and coordinated policy response
- > Advanced health system able to cope with outbreak

- > Outbreak spreads to other European countries
- > Slowdown comes only in Q3/2020
- > Healthcare systems are partially overwhelmed

- > Coronavirus becomes endemic
- > Full containment not until 2021
- > Healthcare systems lack capacity

### Estimated effect on economic growth



### Assessment of economic impact

- > **Disruptions** only **sector specific**
- > **Supply shock** not significant or can be offset
- > Domestic **production** only impacted in **Italy**
- > **Demand shock** limited to certain industries (e.g. travel & tourism)

- > **Asian supply chains** in jeopardy (e.g. pharmaceutical raw materials, electronics)
- > Crucial intra-**European supply chains** start to break down (e.g. automotive, machinery)
- > **Temporary decline in consumption** and **investments**

- > **Severe disruption of production**
- > **Supply chains disrupted**, both extra- and intra-EU
- > **Companies** going into **default**, putting further strain on the supply chain
- > **Demand** for European export goods **collapses**

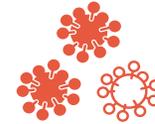
# Being focused on the domestic market and more geared towards services, the US economy is not as badly affected as other regions



## Fast recovery



## Delayed cure



## Profound recession



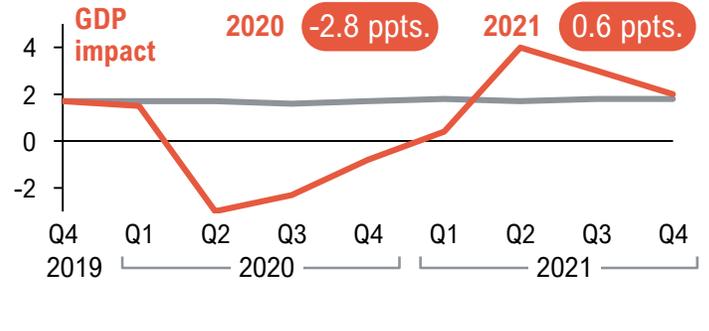
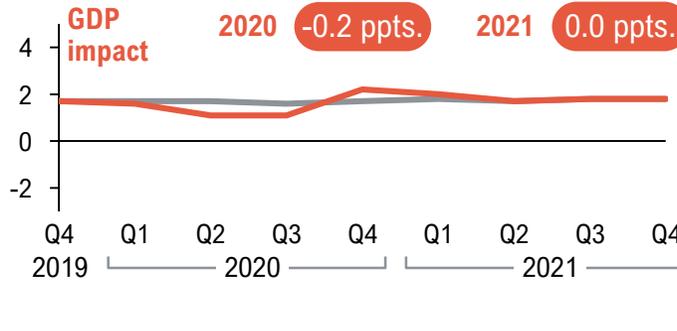
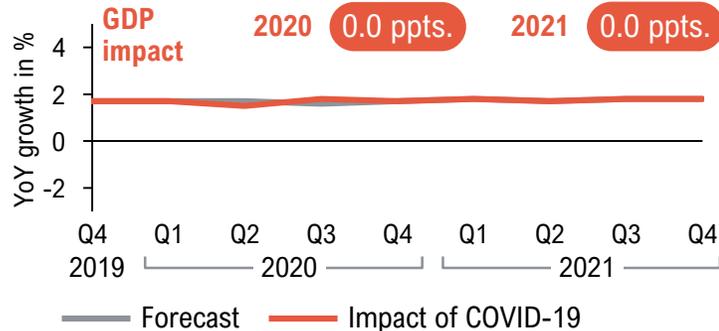
### COVID-19 spread

- > Preventive measures take effect, a broad spread can be prevented
- > The government successfully supports the fight against COVID-19

- > Preventive measures are not sufficient to successfully contain the virus
- > The number of new infections increases exponentially

- > The health system is unable to cope with the coronavirus
- > Virus is widespread throughout the country
- > Regions must be quarantined

### Estimated effect on economic growth



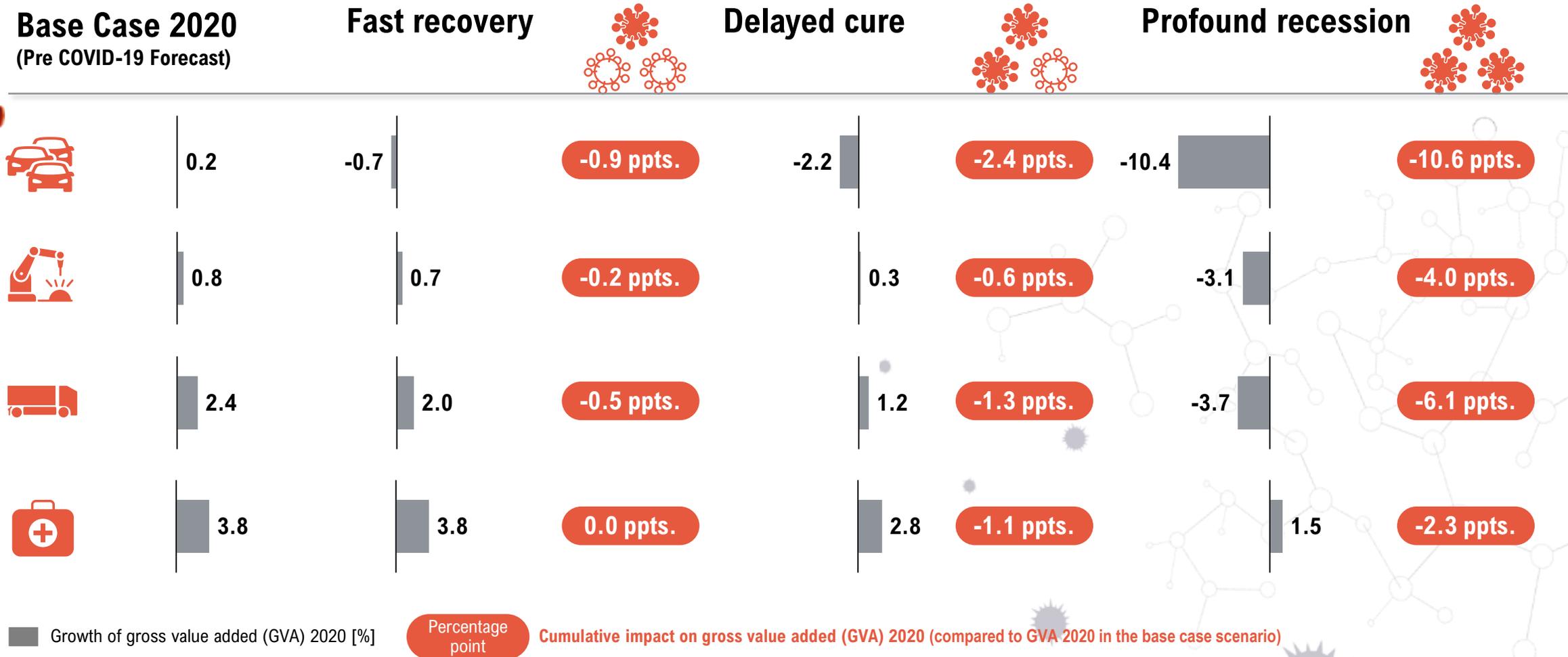
### Assessment of economic impact

- > **Service-oriented** US economy is **less dependent** on global supply chains
- > **High economic growth** rates buffer the dip
- > **Stable domestic demand** – Business as usual

- > **Selected industries** (e.g. electronics, automotive) impacted by **supply chain interruptions**
- > Domestic **demand dampened**
- > **Fiscal and monetary stimulus** likely in election year

- > **NAFTA supply chains** are also heavily impacted
- > **Drop in non-farm payrolls** heavily affects **consumption**
- > Melt-down in **oil market** hits US economy

# Business sectors are estimated to be differently affected by COVID-19 due to their diverse supply and demand patterns



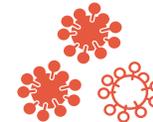
# Challenged by already weak growth rates in 2019, the automotive sector is estimated to be heavily impacted by COVID-19



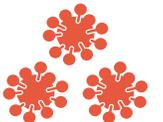
## Fast recovery



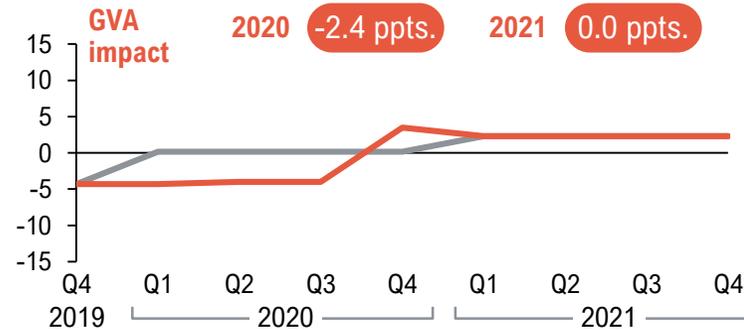
## Delayed cure



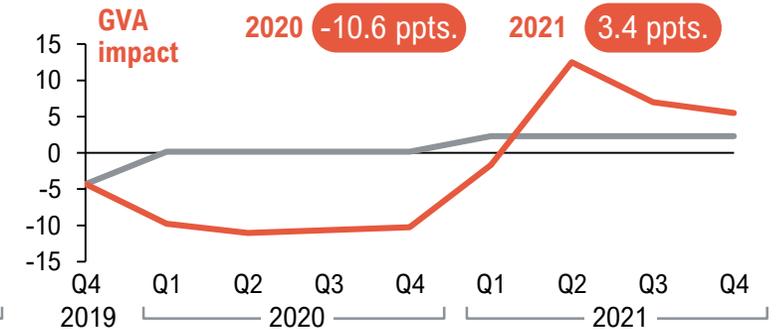
## Profound recession



- > In H1/2020 sales volume is below initial forecast due to reduced customer confidence
- > Ramp-up in H2/2020 to compensate for deficit

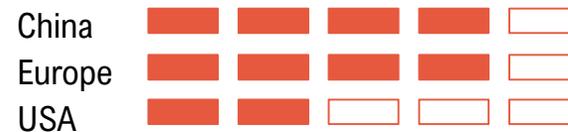
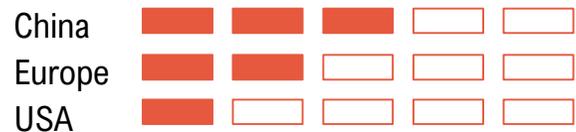


- > Significant decline in sales in H1/2020 due to component shortages and supply chain implications
- > Ramp-up in Q4/2020 to minimize FY effect



- > Vehicle sales >10% down on forecast
- > No ramp-up possible due to continuous impact of COVID-19 on supply chain

### Assessment of regional impact



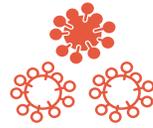
— Forecast — Impact of COVID-19 — Low impact — High impact

1) Gross value added (GVA)

# Mechanical engineering is estimated to be affected by both supply and demand shocks, depending on the specific scenario



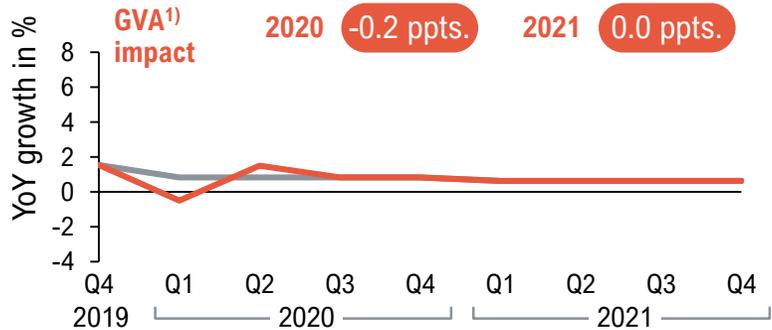
## Fast recovery



## Delayed cure



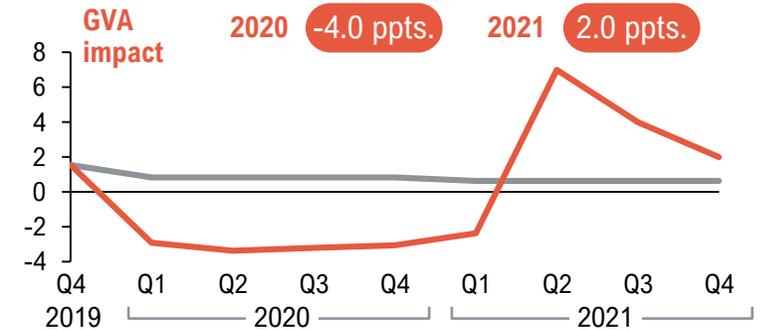
## Profound recession



- > Minor supply shock due to Chinese factory closures in Q1/2020, lack of supply partly buffered by inventories
- > Catch-up effect in Q2/2020 upon relaxation of supply situation

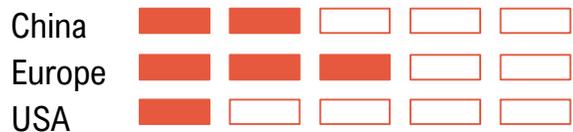


- > Supply shock is exacerbated by falling demand, especially due to repercussions from the automotive industry
- > Recovery in Q4/2020



- > Supply and demand shocks last until Q1/2021
- > Catch-up effects not before Q2/2021

### Assessment of regional impact



— Forecast — Impact of COVID-19 — Low impact — High impact

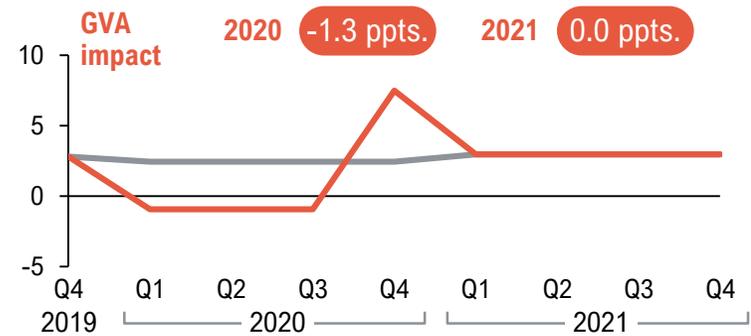
1) Gross value added (GVA)



# The logistics industry reacts sharply to weakening trade flows, making the industry particularly vulnerable to COVID-19



- > Purely demand-driven cyclical drop in activity
- > Profound effect in China due to quarantine measures/isolation of whole provinces



- > Prolonged production downtime leads to a long-lasting decline in demand for logistics services
- > Increased risk from further lockdowns in major regions



- > Severe decline in demand due to global recession
- > Recovery only in line with overall economic growth in H1/2021

**Assessment of regional impact**

Region	China	Europe	USA
China	High impact	High impact	High impact
Europe	High impact	High impact	Low impact
USA	High impact	Low impact	Low impact

— Forecast — Impact of COVID-19 — Low impact — High impact 1) Gross value added (GVA)

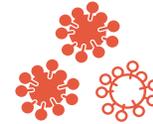
# COVID-19 could stress pharmaceutical supply chains, but steady demand should secure further growth



## Fast recovery



## Delayed cure



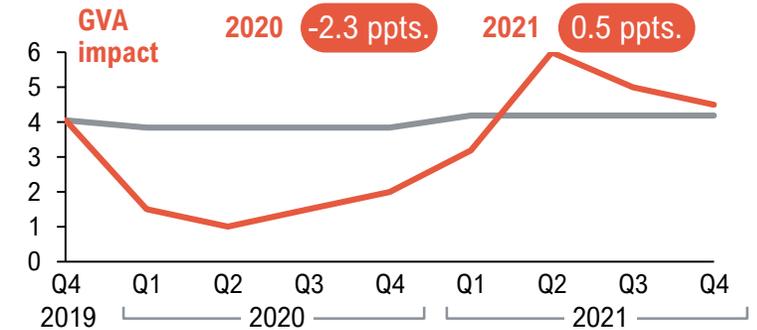
## Profound recession



- > Brief delay in production of intermediaries bridged by inventories
- > Quick ramp-up of production in Q2/2020



- > Declining growth due to supply shocks, but steady demand secures further growth at low levels
- > OTC sales declining in some regions



- > Low growth rates along with weak global economy as non-essential purchases are delayed

### Assessment of regional impact

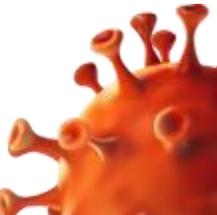
China	High	High	Low	Low	Low
Europe	High	Low	Low	Low	Low
USA	High	Low	Low	Low	Low

China	High	High	Low	Low	Low
Europe	High	High	Low	Low	Low
USA	High	Low	Low	Low	Low

China	High	High	High	Low	Low
Europe	High	High	High	Low	Low
USA	High	High	High	Low	Low

— Forecast — Impact of COVID-19 — Low impact — High impact

1) Gross value added (GVA)



# Focus of measures is currently on ad hoc actions like travel restrictions – Factory closures in China, monetary and fiscal responses ramping up

## Corporate

## Public

**Newsflash:**  
Selected examples



**Temporary factory closure:** Tesla, Volkswagen and General Motors announced that their factories near Hubei will be closed for the next few weeks

**Production ramp-down:** Facebook is setting reduced production goals for its Oculus Quest virtual reality headsets due to a slowdown in Chinese manufacturing because of the coronavirus

**Telecommuting:** Twitter is now recommending that all employees around the world, nearly 5,000 in total, work from home

**Travel ban:** Ford Motor Co. has banned all business travel – both international and domestic – after two of its employees in China were infected by the virus

**Supply chain:** Various companies are currently critically reviewing their supply chain

**Border controls and quarantine:** Several neighboring states have closed their borders with China. Direct flight connections to and from China have been cancelled. Quarantine zones have been established in Italy and Germany in addition to Hubei Province

**Fiscal measures:** G7 finance ministers "are ready to take actions, including fiscal measures where appropriate" in response to coronavirus threat, according to a joint statement released by the U.S. Treasury

**Interest rate cut:** The U.S. Federal Reserve, the BoE, the Reserve Bank of Australia and the Bank of Canada cut interest rates because of the virus

**Isolation:** Health officials in Beijing have announced a 14-day quarantine for persons entering from coronavirus affected countries

**Liquidity infusion:** The Chinese Central Bank already infused ¥ 1.7 trillion into the banking system via repos and repo rate cuts

Level of measures taken



Moderate  Aggressive



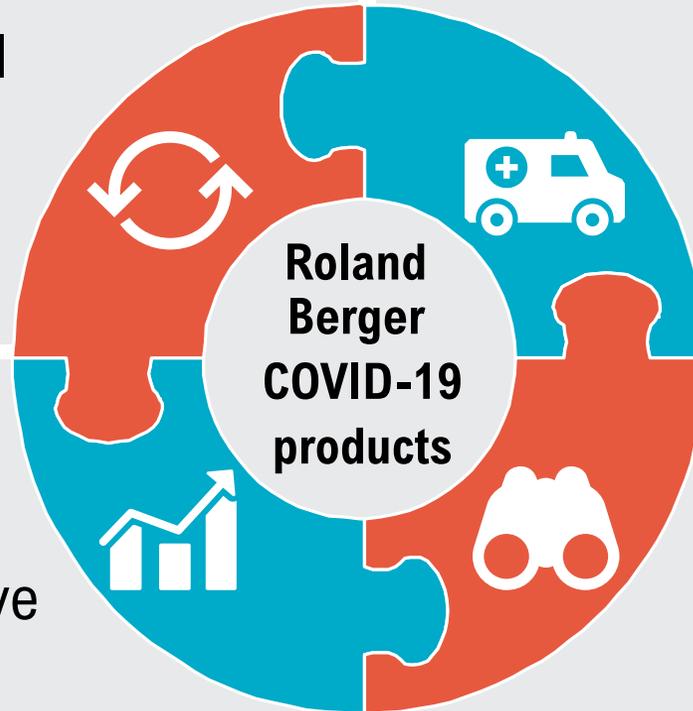
# We have the right products in place to protect your company

## 360° check

Detect COVID-19 operational and strategic weak spots

## Performance program

Protect earnings and financial results from negative impact of COVID-19

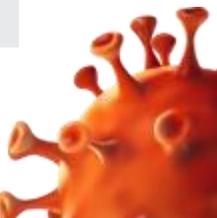


## Emergency room

Set up SWAT team to monitor further development and take effective action

## Scenario planning

Identify future risks and ensure adequate preparation



Our senior task force and performance team is ready to help

**RB COVID-19 task force**



Dr. Gerd  
**Sievers**

Munich,  
Germany



Dr. Peter  
**Magunia**

Stuttgart,  
Germany

**International performance support**

**– China**



Denis  
**Depoux**

Shanghai,  
China

**– Europe**



Dr. Sascha  
**Haghani**

Frankfurt,  
Germany



Tijo  
**Collot  
d'Escury**

Amsterdam,  
Netherlands

**– Middle East**



Rene  
**Seyger**

Dubai,  
UAE



Dr. Fabian  
**Engels**

Doha,  
Qatar

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Marc  
**Winterhoff**

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USA



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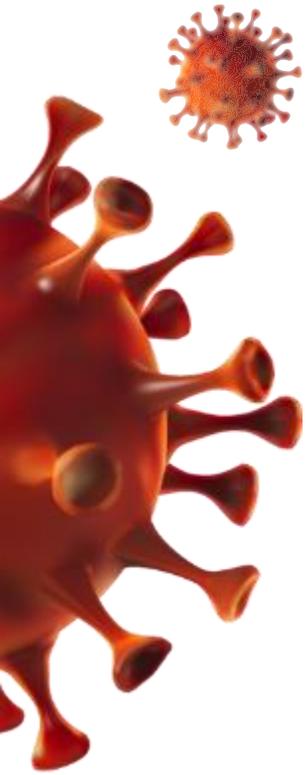


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