ECO FLASH

THE COVID-19 EPIDEMIC: ECONOMIC CONSEQUENCES
PERVASIVE UNCERTAINTY, DELAYED RECOVERY

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BNP PARIBAS

The bank for a changing world

2020 Outlook

Data to be weak/disappointing in first half. Subsequent pick-up in growth in an environment of 'back to economic fundamentals' but conditional upon absence of further significant propagation of the epidemic

Coronavirus represents combination of demand, supply and uncertainty shock. This has knock-on effects on oil price and financial conditions which in turn could end up weighing on growth

Timid improvement of business survey data at the end of 2019 has been stopped. Big drop in China, Hong Kong. Elsewhere, limited reaction on the whole but this is not expected to last. Big drop in oil price complicates matters further

When situation normalises, rebuilding of inventories should support growth. There could also be some pent-up demand. Very accommodative monetary policy should help. Timing of recovery entirely depends on how epidemic evolves

Federal Reserve back in (aggressive) easing mode. BoE has followed. ECB to ease as well. Various very targeted policy measures by governments

Overview

1

MARKET REACTION

What can be expected in theory?

Covid-19 = demand + supply + uncertainty shock

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1. Growth expectations decline
2. Expectation that growth will be more biased to the downside
3. Concern that likelihood of very negative outcomes (tail risk) increases
4. Concern about indirect effect via financial channels
5. Expectation of monetary easing

Dominating influences

Cash-flow effect, weighs on asset prices

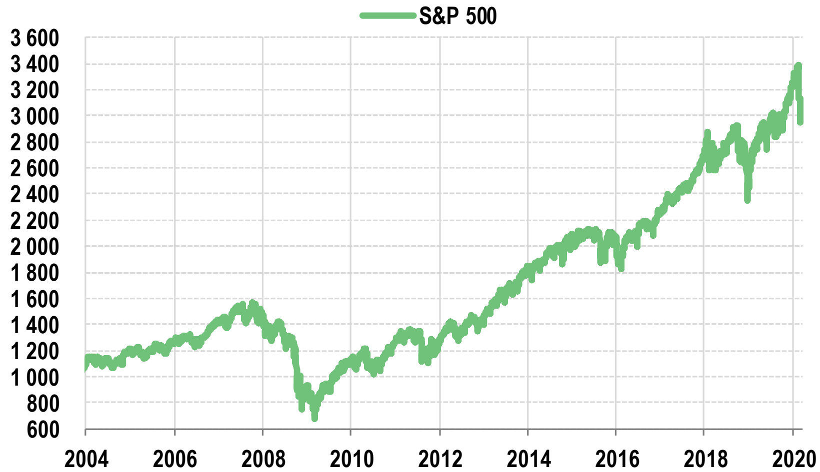
Increase in required risk premium, weighs on asset prices

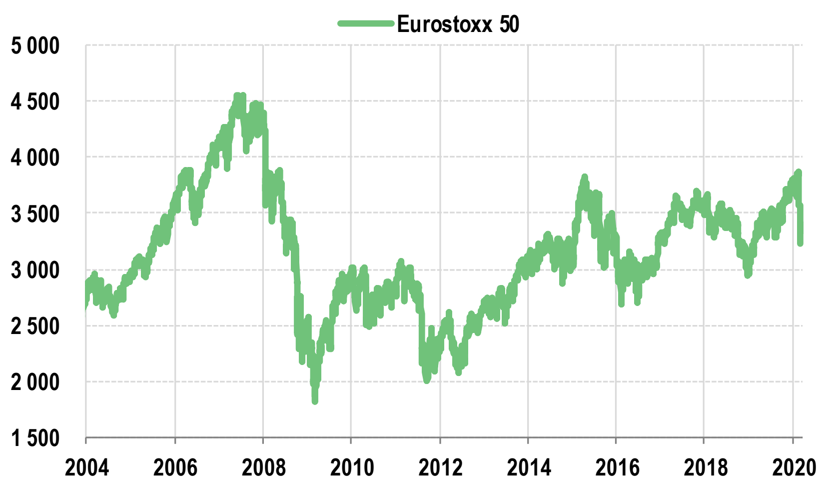
Discount rate effect which, in isolation, supports all asset prices

⇒

1. Equity prices decline
2. Corporate bond spreads widen
3. Volatility jumps
4. High quality government bonds benefit from safe haven buying
5. Cyclically sensitive commodity prices decline
6. Gold benefits because in times of stress it is concerned as a safe asset

Equity prices globally have declined following international propagation of epidemic

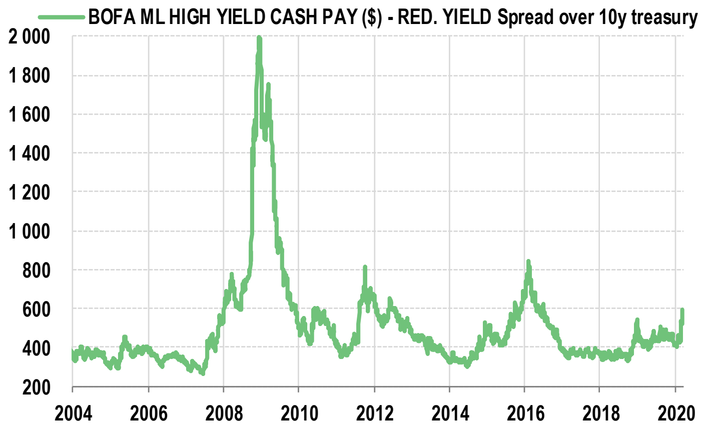




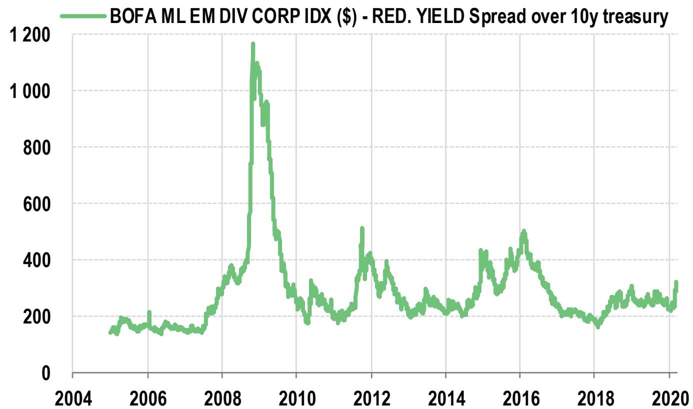
Source: Thomson Reuters

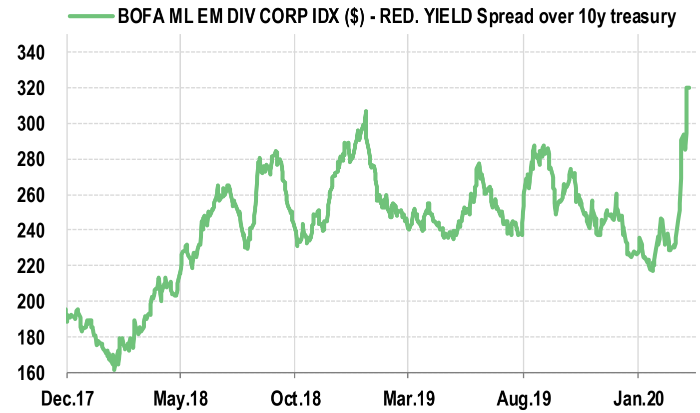
Corporate bond spreads have widened, but to a limited degree

BOFA Merrill Lynch US high yield spread over treasuries



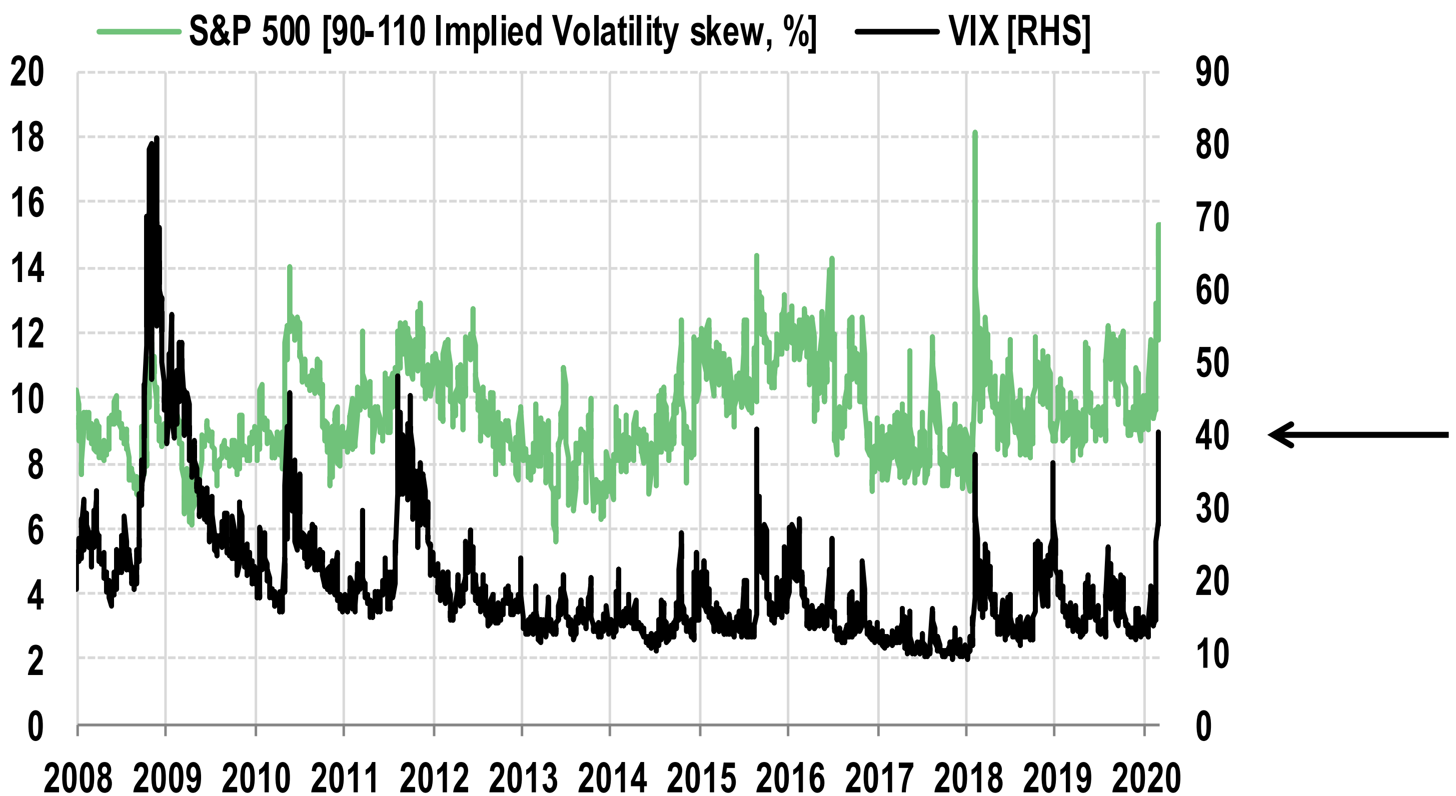
BOFA Merrill Lynch Emerging Markets Diversified Corporate





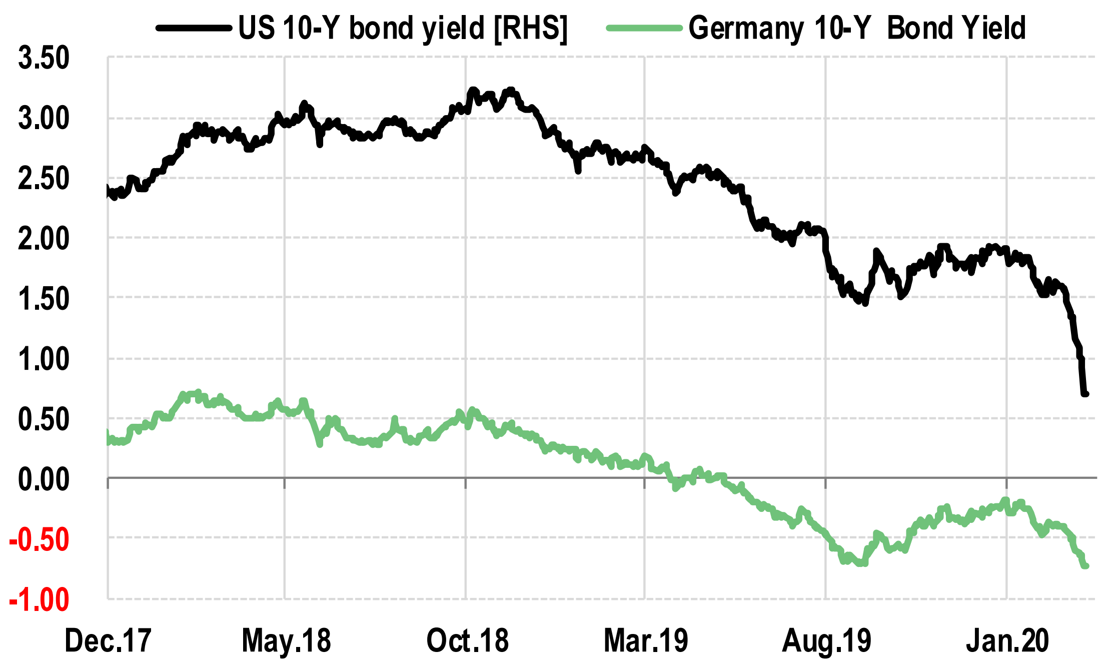
Source: FED

Volatility has jumped



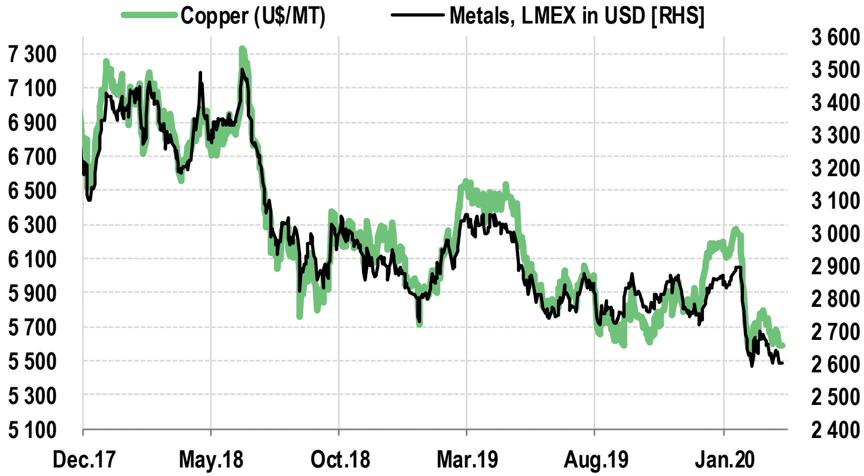
Source: Bloomberg, BNP Paribas

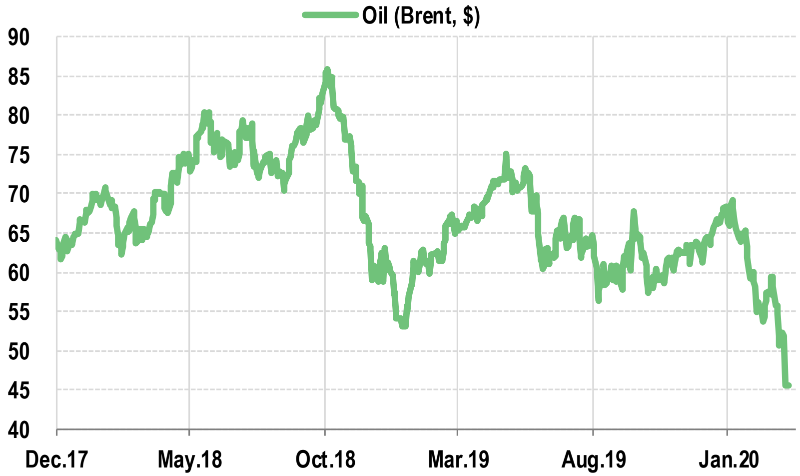
High quality government bonds benefit from safe haven buying



Source : Thomson Reuters

Cyclically sensitive commodity prices decline



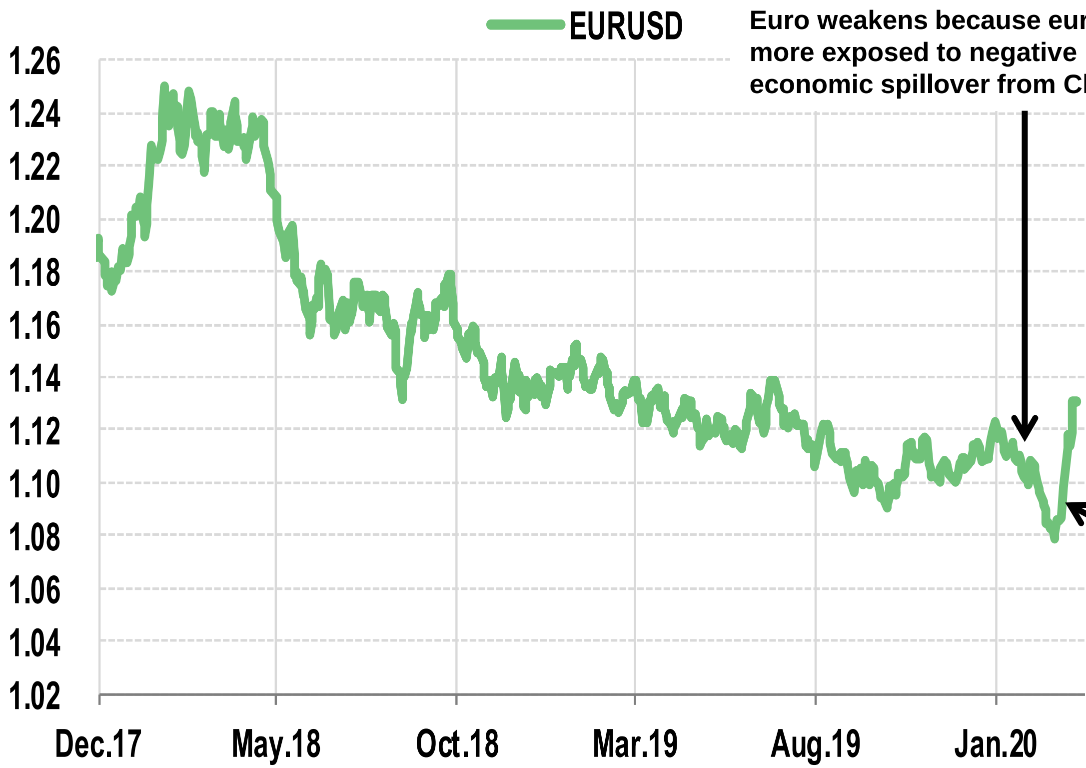


Source : Thomson Reuters

Gold benefits because in times of stress it is considered as a safe haven

Source : Thomson Reuters

Euro initially weakened but, in second phase, strengthened versus dollar



Phase 1: Virus is to very large limited to China

Euro weakens because eurozone more exposed to negative economic spillover from China

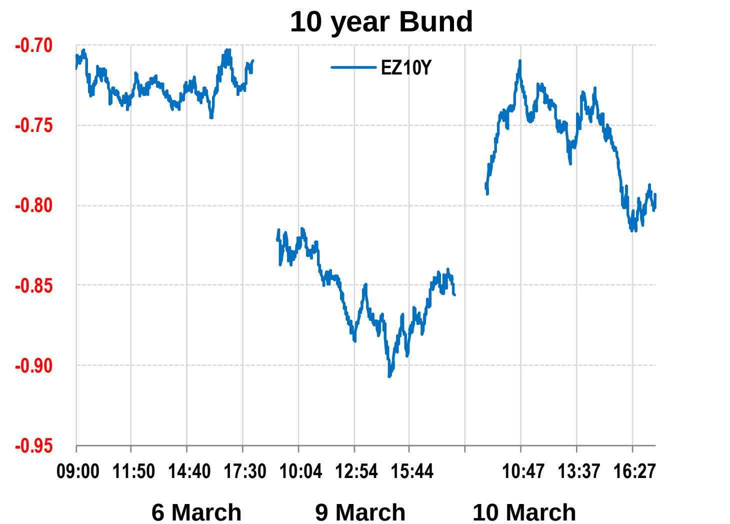
Phase 2: International propagation of epidemic

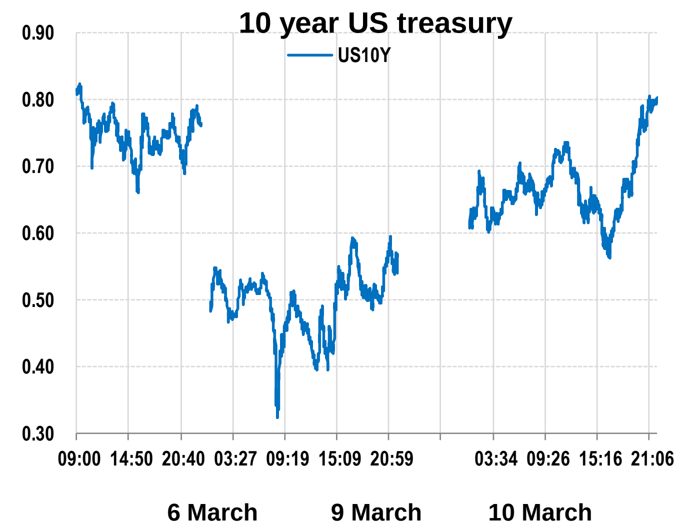
Euro strengthens:
Risk-off environment causes deleveraging so reducing positions in risky assets funded in euro
Expectation of Fed easing

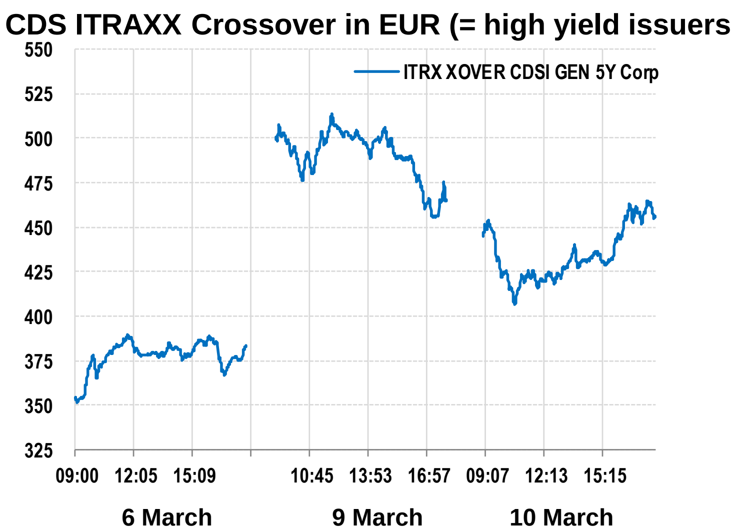
Source: Thomson Reuters

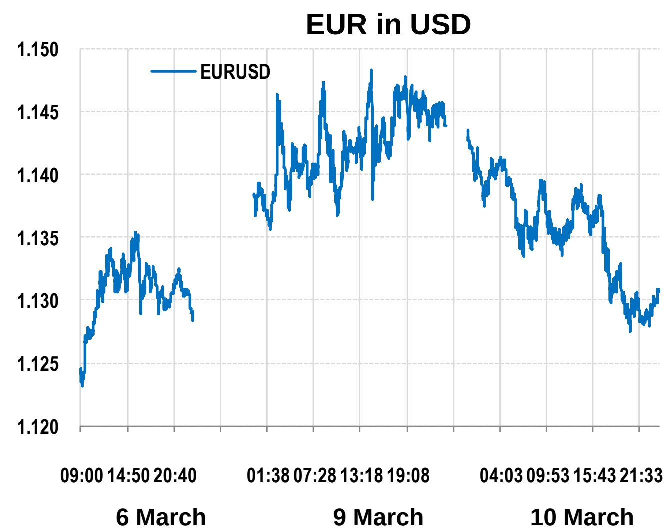
Volatility is huge (1)

Intraday volatility (6 March - 10 March)





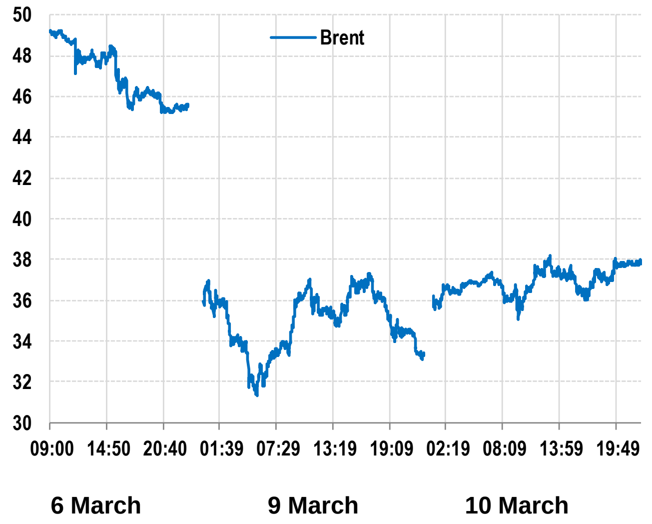


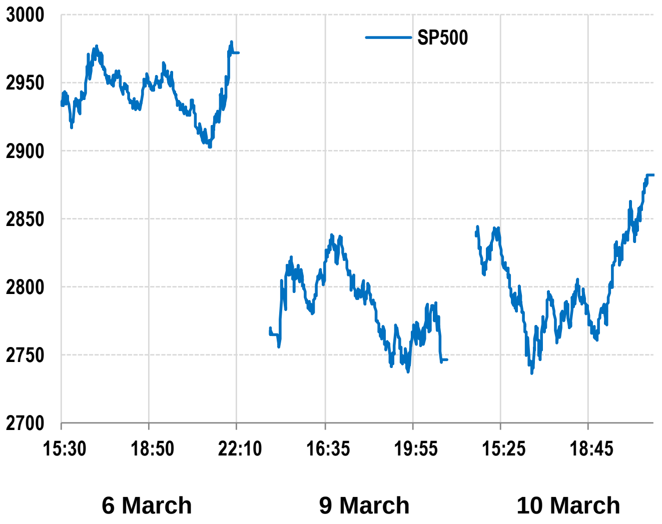


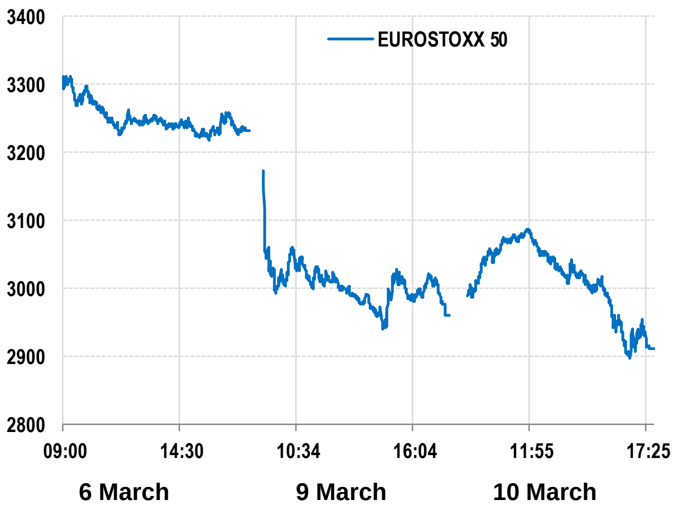
Source : Bloomberg

Volatility is huge (2)

Intraday volatility (6 March - 10 March)







Source : Bloomberg

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CORONAVIRUS: ECONOMIC CONSEQUENCES (IN THEORY)

Coronavirus: economic impact (theory)

1. Impact on demand
   1. Household spending, restaurants, tourism, durable goods buying, real estate transactions
   2. Corporate investment
      1. Short term: down (decline in demand, increased uncertainty)
      2. Longer term: reorganising value chains
2. Impact on supply
   1. Direct supply disruption (prolonged official holiday period)
   2. Supply chain disruption
   3. As a consequence: impact on exports
3. Impact on confidence
   1. Because of what is visible in terms of impact
   2. Not knowing how far consequences may reach (time, geographically, extent)
   3. Difficulty of separating impact coronavirus on economic data from underlying cyclical momentum
4. Increased demand for liquidity
   1. Working capital requirements following drop in demand or inability to produce (supply disruption)
   2. Investor preference for safety and liquidity
5. Tightening of financial conditions
   1. Risky asset prices decline
   2. Disruption in capital markets (investors and issuers reluctant to commit)
   3. Decline in collateral value for loans

3

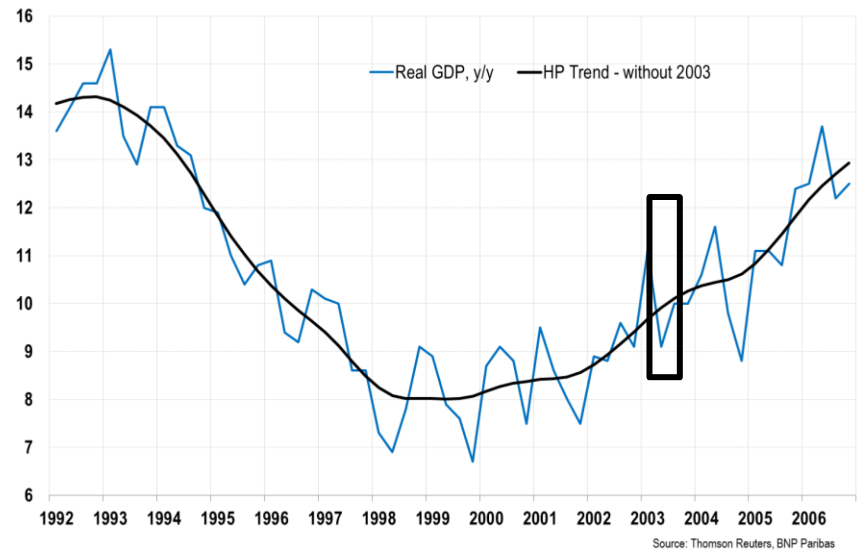
CORONAVIRUS PHASE 1: CHINA

Coronavirus: comparing with SARS

SARS had an impact of 2% in Q2 2003 (annualised basis)

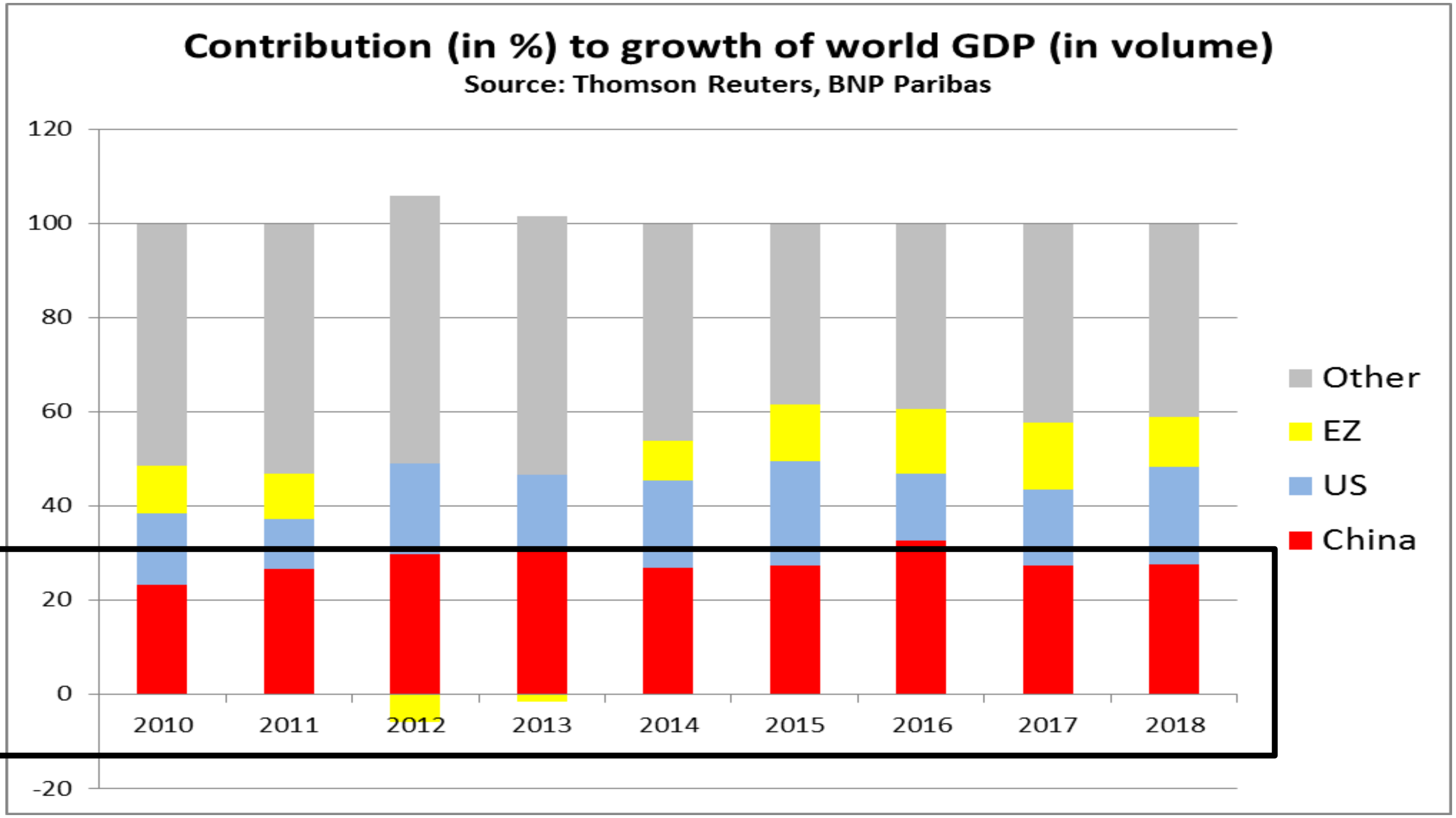
Source: Thomson Reuters

SARS: short-lived impact on GDP



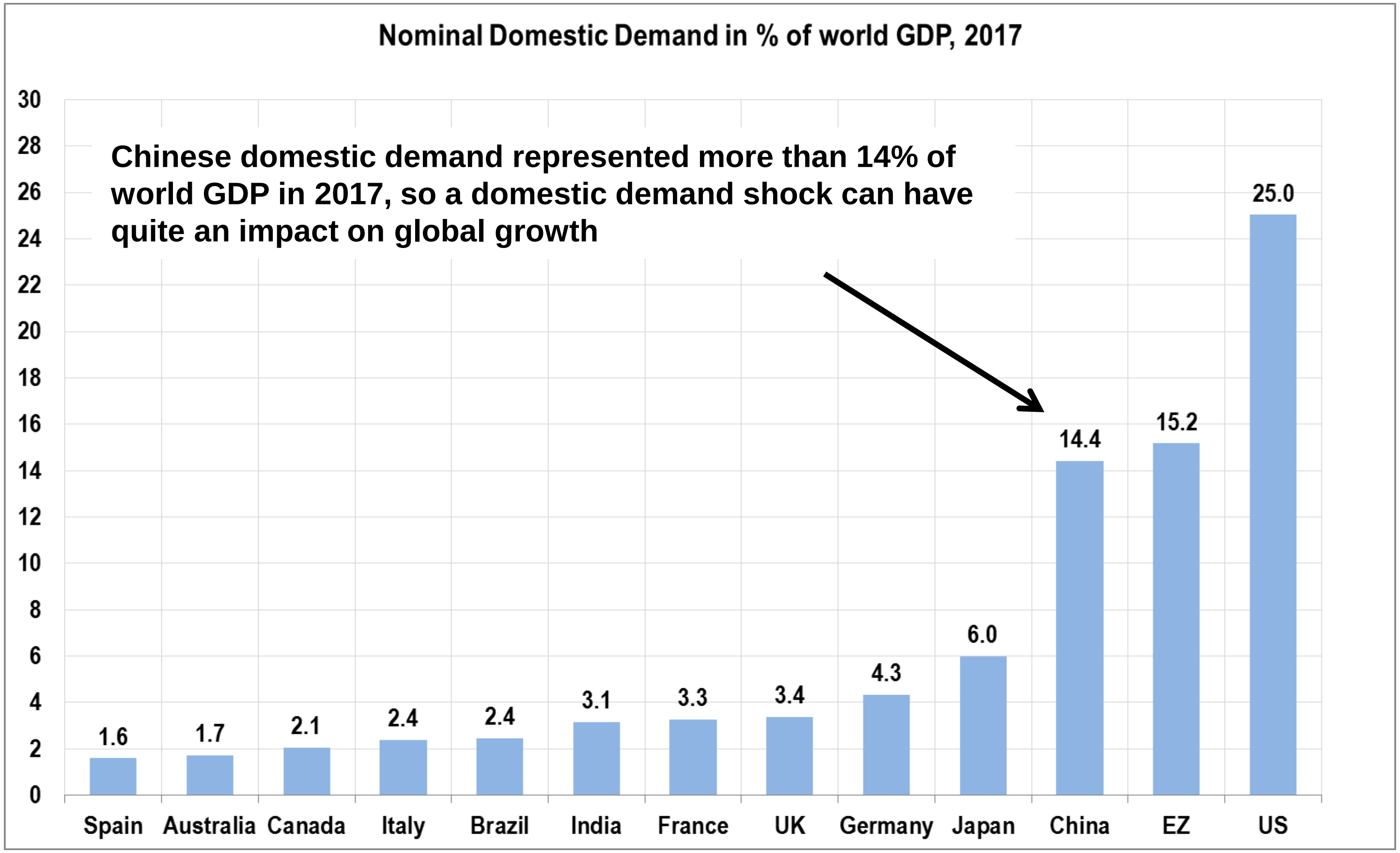
China is now far more important for global growth than in 2003 (1)

Every year, China represents about 25% of growth of world GDP



Source: Thomson Reuters

China is now far more important for global growth than in 2003 (2)



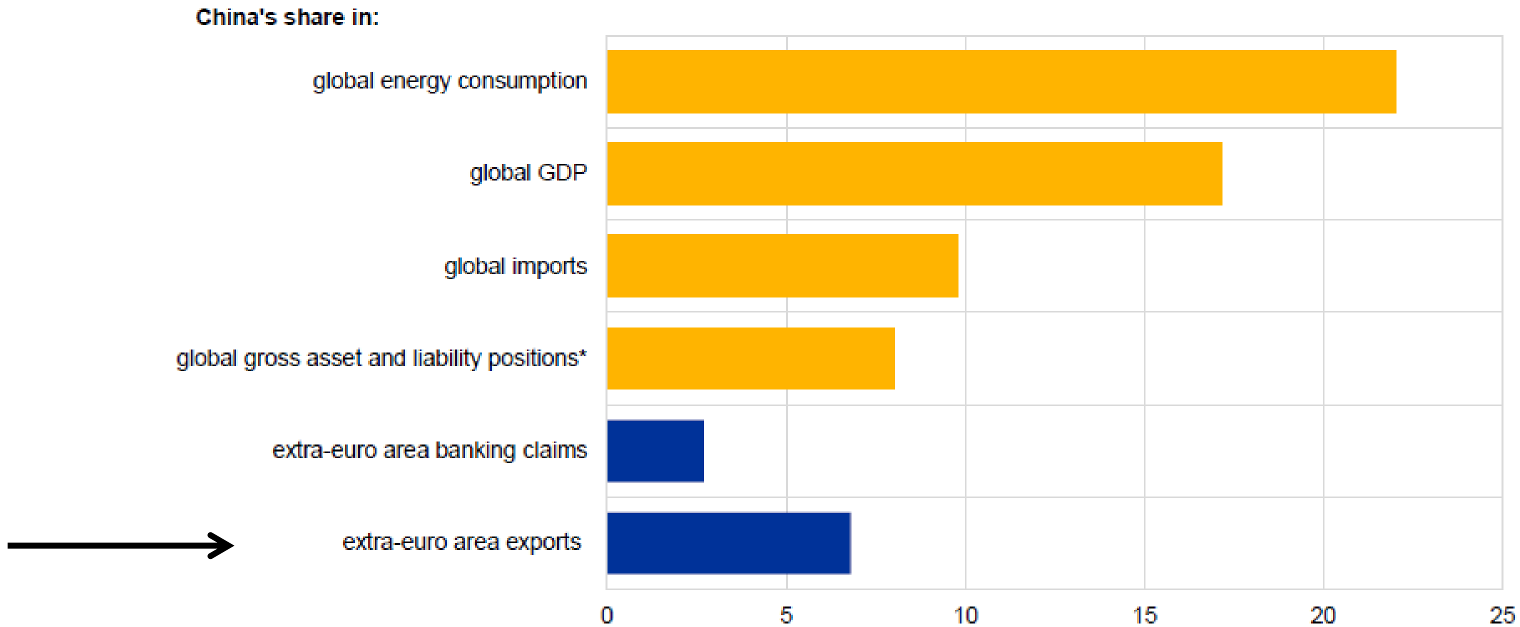
Source: Thomson Reuters

China has a share in extra-eurozone exports of approximately 6%

Chart 12

China's global role and euro area links

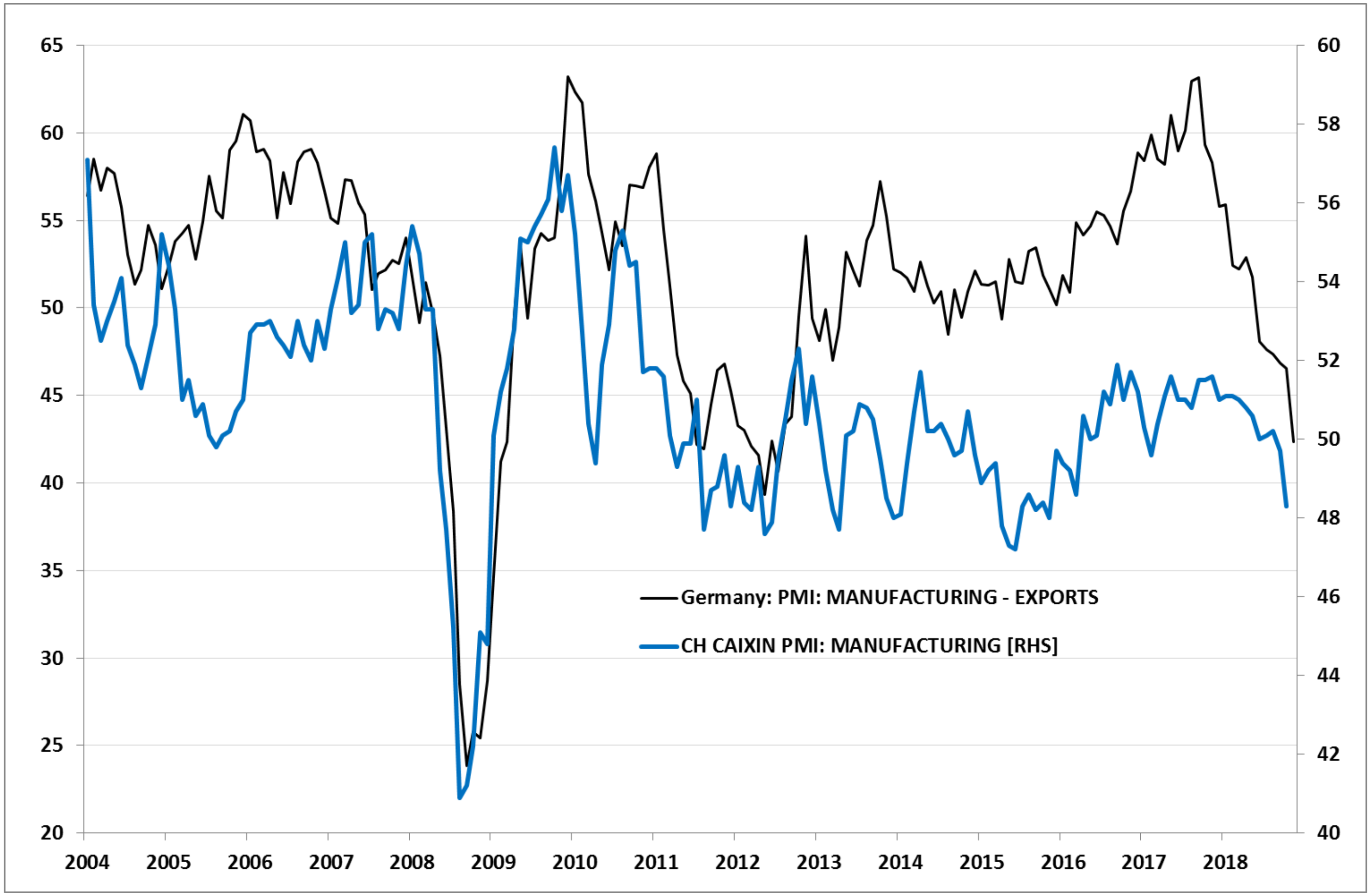
(yellow bars: percentage of global totals; blue bars: percentage of euro area totals)



Sources: International Monetary Fund and International Energy Agency.
Notes: Figures for 2015. GDP based on PPP; imports based on market exchange rates. Energy consumption as a share of world total primary energy supply. Euro area banking claims as a percentage of extra-euro area claims. *Includes Hong Kong.

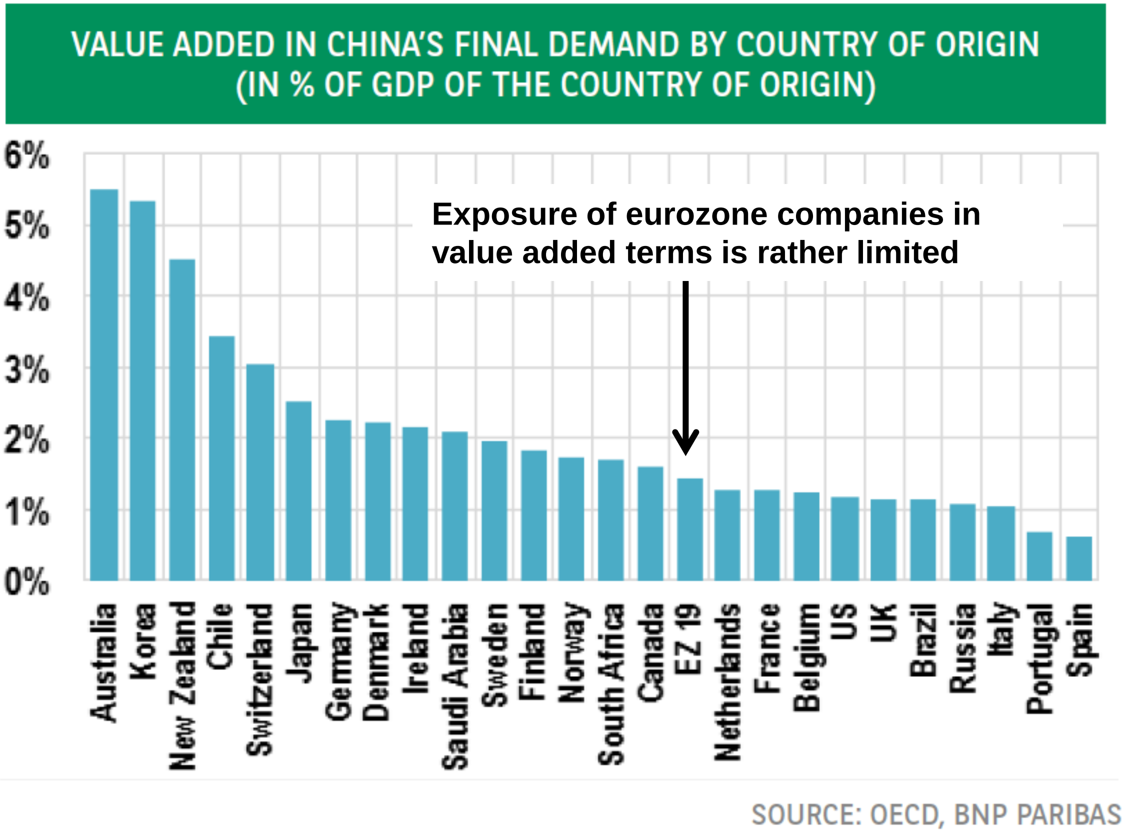
Source: ECB

Why China is so important. German companies' export orders assessment is closely correlated with Chinese PMI



International spillovers of growth shock in China: need to look at value added
(= weight of foreign countries in value added embedded in Chinese final demand)

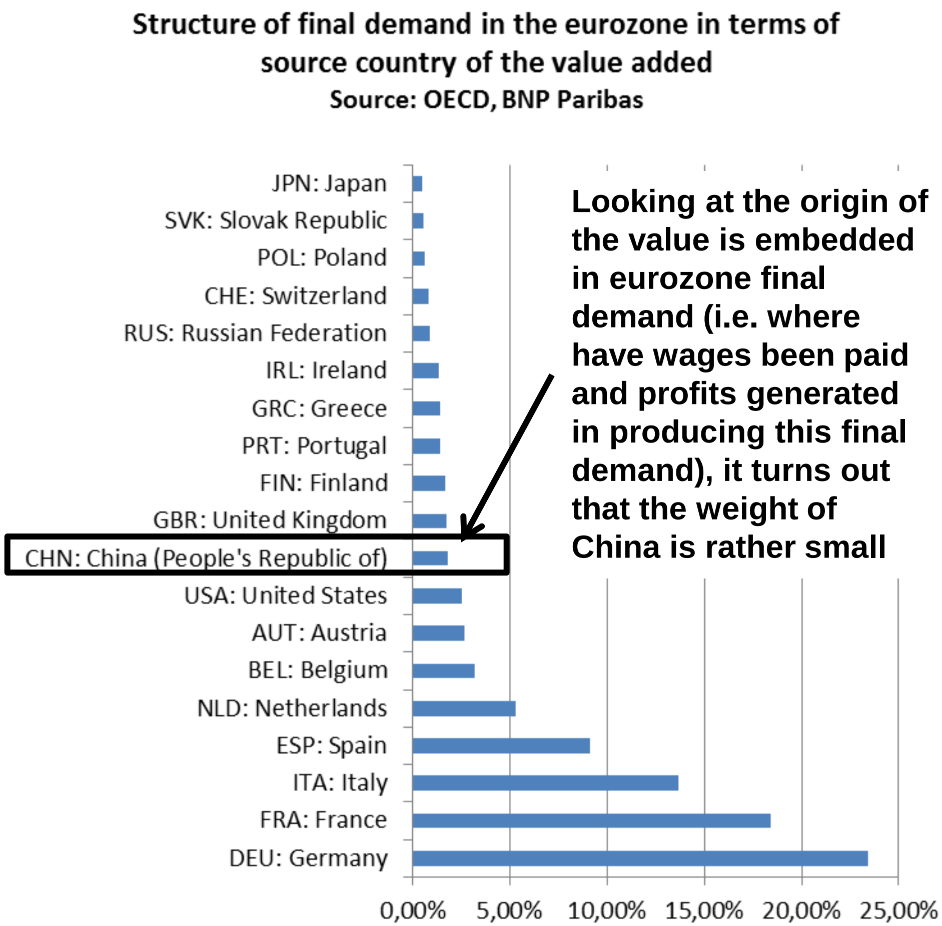
Value added approach means that in eurozone exports to China, we only look at the value which has been added by the eurozone companies and disregard the imported inputs in what eurozone exports to China. Rationale is that when exports to China drop, eurozone imports will also decline so the economic loss to the eurozone is represented by the loss in value added, not the decline in exports



Source: OECD, BNP Paribas

Gauging the supply side disruption effect: value added approach
(based on weight of Chinese value in final demand of trade partners)

China represents about 2% of the value added which is embedded in eurozone final demand. For manufacturing, the weight is 6%.



Looking at the origin of the value is embedded in eurozone final demand (i.e. where have wages been paid and profits generated in producing this final demand), it turns out that the weight of China is rather small

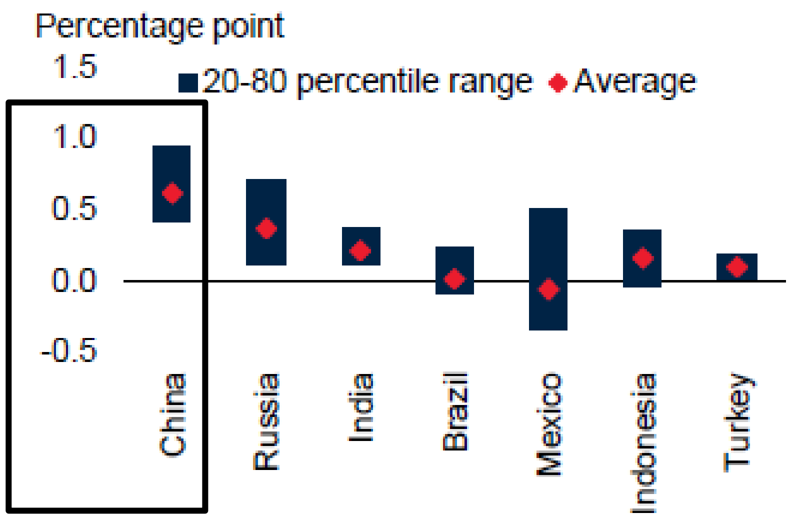
However, to gauge the supply side *disruption* effect it is better to look at imports. Chinese has important share in imports for many product groups)

Share (in %) of China in imports by product group: 2018 (source: UNCTAD)					
PRODUCT	Germany	France	Euro zone	Japan	US
Total all products	9,8	9,0	8,3	23,2	21,6
All food items (SITC 0 + 1 + 22 + 4)	1,7	1,1	1,4	12,5	4,6
Non-ferrous metals (SITC 68)	2,7	2,6	2,7	11,5	4,3
Manufactured goods (SITC 5 to 8 less 667 and 68)	12,9	11,6	11,3	36,7	27,3
Chemical products (SITC 5)	3,4	3,1	3,2	15,1	8,5
Machinery and transport equipment (SITC 7)	15,0	11,9	12,8	40,4	26,8
Electronic excluding parts and components (SITC 751 + 752 + 761 + 762 + 763 + 775)	42,1	40,2	35,5	68,7	53,4
Parts and components for electrical and electronic goods (SITC 759 + 764 + 772 +776)	28,2	31,8	26,1	48,8	46,0
Other machinery and transport equipment (SITC 7 - (751 + 752 + 761 + 762 + 763 + 775 + 759 + 764 + 772 + 776))	6,9	5,1	6,0	26,7	13,6
Iron and steel (SITC 67)	2,5	1,4	3,5	19,1	5,3
Textile fibres, yarn, fabrics and clothing (SITC 26 + 65 + 84)	22,5	25,2	21,1	57,3	36,2
Crude fertilizers other than division 56, and crude minerals	11,8	2,9	7,2	41,4	15,0
Chemicals and related products, n.e.s.	3,4	3,1	3,2	15,1	8,5
Rubber manufactures, n.e.s.	5,7	5,7	7,4	30,6	16,9
Cork and wood manufactures (excluding furniture)	10,2	8,9	9,2	25,0	29,4
Paper and paper manufactures	2,9	3,5	3,2	41,6	21,1
Textile yarn and related products	17,9	17,3	18,0	54,2	42,3
Non metallic mineral manufactures, n.e.s.	12,0	6,9	7,7	36,0	16,7
Iron and steel	2,5	1,4	3,5	19,1	5,3
Manufactures of metal, n.e.s.	15,0	13,8	14,3	51,0	40,9
Machinery and transport equipment	15,0	11,9	12,8	40,4	26,8
Office machines and automatic data processing machines	45,2	43,0	36,1	68,6	53,8
Telecommunication and sound recording apparatus	41,7	46,3	36,7	70,4	60,5
Electrical machinery, apparatus and appliances, n.e.s.	18,0	17,3	17,1	34,1	28,1
Road vehicles	2,1	1,7	1,8	18,5	6,2
Prefabricated buildings, sanitary, heating and lighting fixtures, n.e.s.	34,8	31,5	31,5	63,7	60,6
Furniture and parts thereof	15,7	19,8	17,6	59,1	50,6
Travel goods, handbags, etc.	41,8	29,7	35,0	42,7	56,0
Articles of apparel & clothing accessories	24,5	27,8	22,6	59,0	34,4
Footwear	23,9	23,5	22,5	50,5	53,2
Professional and scientific instruments, n.e.s.	8,3	6,8	6,5	18,1	13,3
Photo apparatus, optical goods, watches and clocks	20,6	12,5	16,5	26,8	23,6
Miscellaneous manufactured articles, n.e.s.	21,3	19,1	18,9	44,7	47,3

International spillovers of growth shock in China: model-based insights

Impulse responses due to a 1 percentage point increase in growth in individual emerging countries

Chinese growth shock of 1% of GDP has an impact of about 0,6% on GDP of emerging and frontier markets

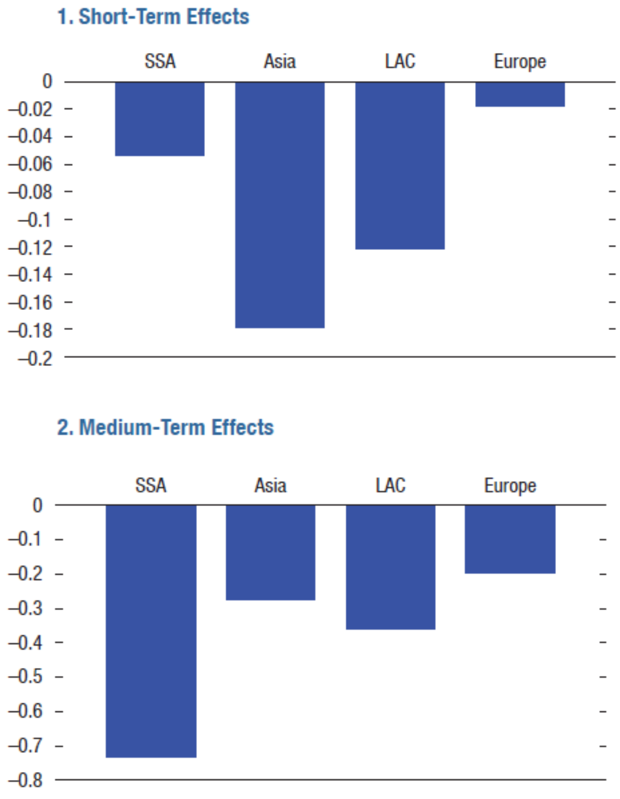


The graph shows the cumulated impulse responses at the end of three years due to a 1 percentage point increase on impact in each of the emerging economies. These results are from the country models. For each spillover source country, the bar denotes the 20-80 percentile range of the responses of other emerging and frontier economies and the red diamond denotes the cross-sectional average response.

Source: Raju Huidrom, M. Ayhan Kose and Franziska L. Ohnsorge, How Important are Spillovers from Major Emerging Markets?, World Bank Policy Research Working Paper 8093, 2017

Spillovers on European Union of growth shock in China: model-based insights

Figure 7. Effect of a 1 Percent Negative Shock in China to Output across Regions



Note: Estimates based on equation (4). Short-term (medium-term) denotes the effect one (three) year(s) after shock. LAC = Latin America and the Caribbean; SSA = sub-Saharan Africa.

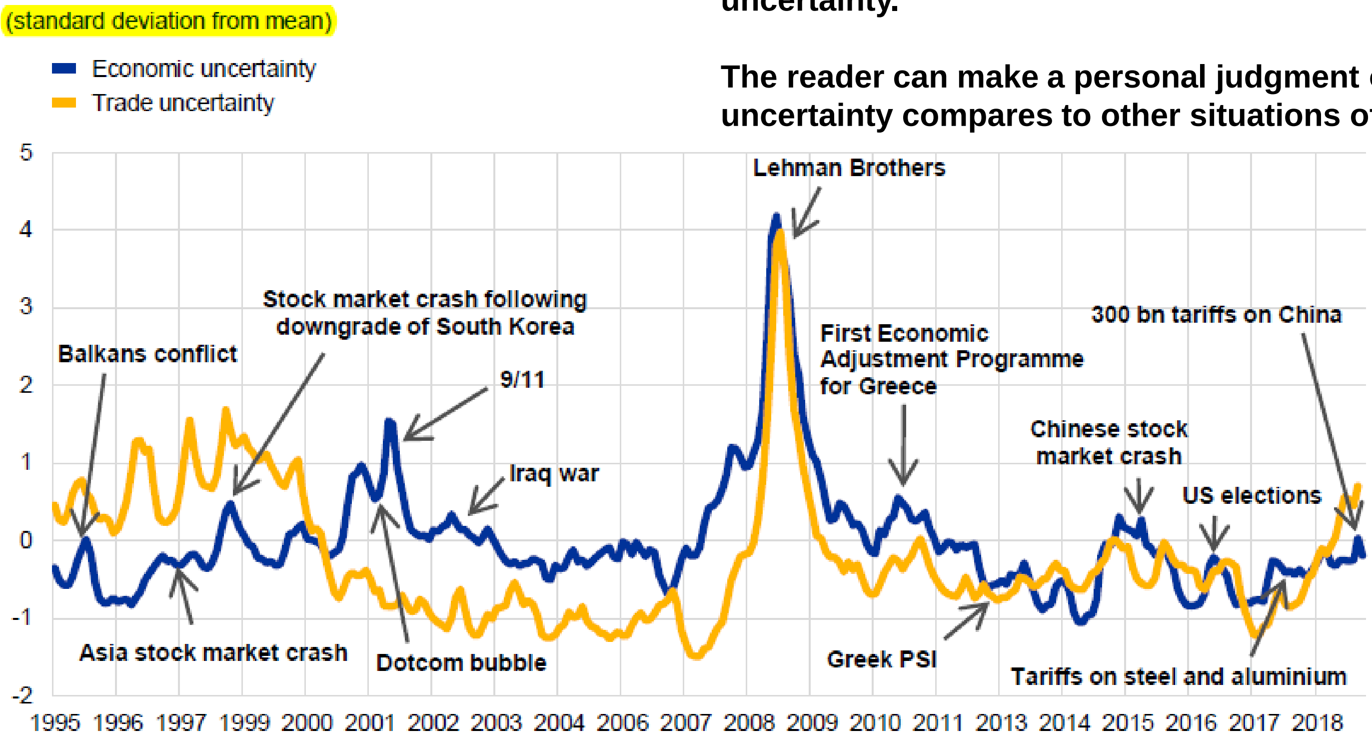
Decline of 1% of Chinese growth, lowers eurozone growth with 0.2%

Source: China spillovers. New Evidence from Time-Varying Estimates, Davide Furceri, João Tovar Jalles, and Aleksandra Zdzienicka, IMF Spillover Note 7, 2016

Coronavirus: trying to calibrate the uncertainty shock

Chart B

Global economic and trade uncertainty



Source: ECB calculations.
Note: Standard deviations from means are computed over the period Jan 1998-August 2019.

This is a purely judgmental approach. The ECB has estimated past uncertainty shocks (in standard deviations) based on forecast errors of model-based forecasts. These errors are a measure of uncertainty, so when they are high it is interpreted as signaling a high level of uncertainty.

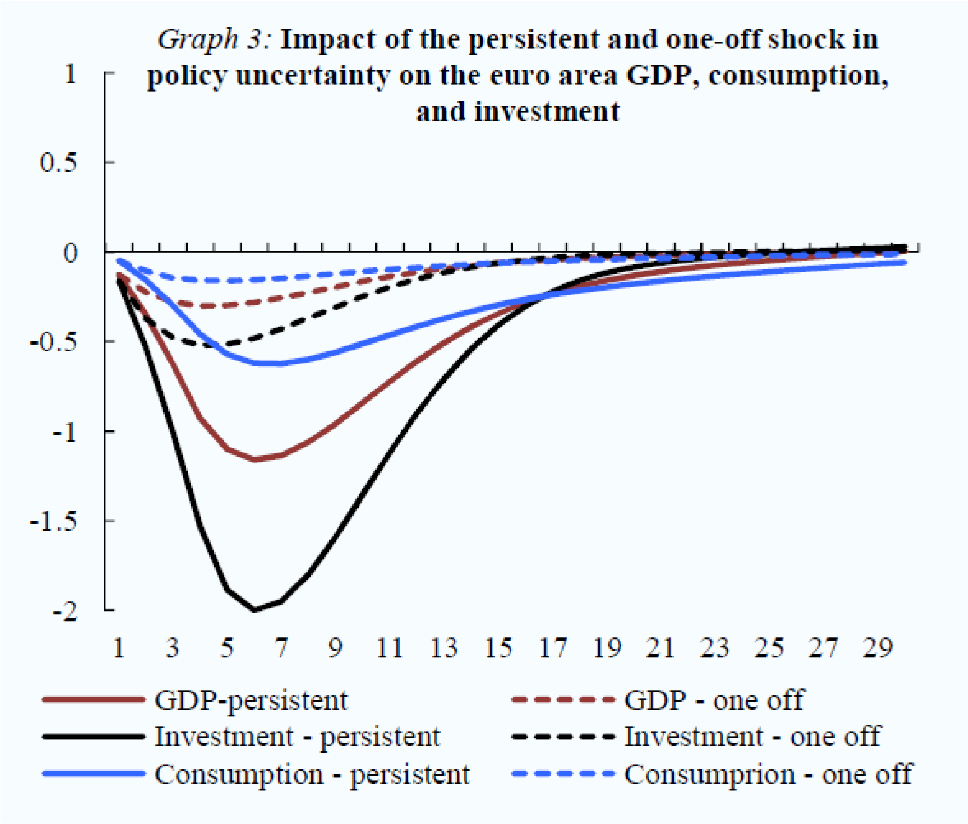
The reader can make a personal judgment on how the coronavirus uncertainty compares to other situations of high uncertainty

Source: ECB, Economic bulletin, 2020/1

Coronavirus: consequences of uncertainty shocks.

A one standard deviation increase in uncertainty lowers eurozone GDP with 0.25%

Impact of a one standard deviation uncertainty shock



"The decline of economic activity reaches around 0.25% in the case of GDP and 0.5% in the case of investment compared to the baseline following a standard uncertainty shock (one deviation). Based on variance decomposition analysis, the uncertainty shocks could explain 30% of the variability of GDP and investment, and around 15% of the variability of consumption (after 12 quarters). That means that almost one third of the dynamics of GDP and investment may be driven by uncertainty shocks."

Source: Box I.1: The economic impact of uncertainty assessed with a BVAR model, European Commission, European Economic Forecast, Spring 2017

Updated BNPP forecasts* to take into account the coronavirus shock
(*see table at the end of the document for more forecasts)

This forecast update was produced before the significant increase of the number of cases in Europe, so the numbers will need to be adjusted downwards

Fig. 7: BNP Paribas global growth forecasts and change since last forecast round

(% y/y)	2019	FORECASTS 2020	CHANGE SINCE LAST FORECAST (pp) 2020
Global(1)	**3.1**	**2.6**	-0.4
US	2.3	1.6	-0.2
Eurozone	1.2	0.7	-0.1
Germany	0.5	0.1	-0.3
China	6.1	4.5	-1.2
Japan	0.7	-0.4	-0.9
UK	1.4	1.0	-0.1

Limited effect in the eurozone because starting level was better than expected when the previous forecast was made (in November 2019)

Source: Global growth downgrade on Covid-19 shock, BNP Paribas Markets360, 18 February 2020

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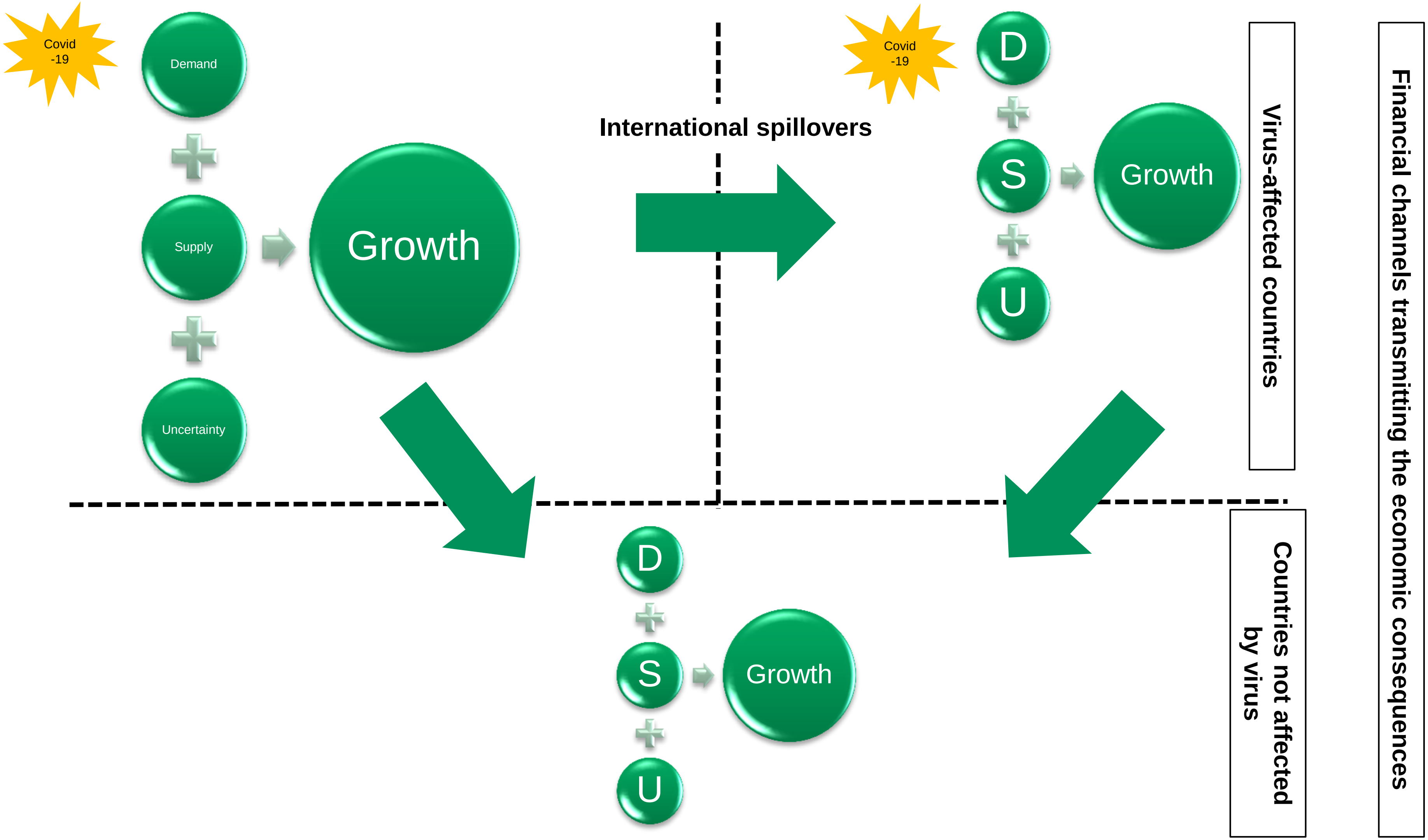
CORONAVIRUS PHASE 2: INTERNATIONAL PROPAGATION

Economic consequences of international propagation (1)

1. As the number of countries with an increasing number of confirmed cases rises
2. The direct effects on growth add up (weight of China, Japan, South-Korea, Italy, etc in global GDP)
3. Supply disruption effects broaden
4. Uncertainty increases further (how many more countries will be affected?)
5. Concerns that growth impact has been underestimated, hence even greater cautiousness by companies (investing, recruitment)
6. Financial market turmoil may act as an additional headwind if it lasts

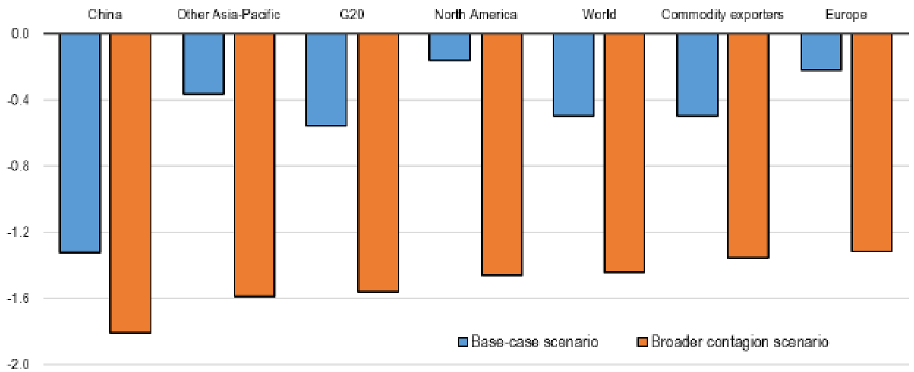
Economic consequences of international propagation (2)



According to the OECD, international propagation could end up having big impact on global growth

Figure 5. Illustrative coronavirus scenarios highlight the adverse impact on growth

Change in GDP growth in 2020 relative to baseline, percentage points



Note: Simulated impact of weaker domestic demand, lower commodity and equity prices and higher uncertainty. Base-case scenario with the virus outbreak centred in China; broader contagion scenario with the outbreak spreading significantly in other parts of the Asia-Pacific region, Europe and North America. See Box 1 for full details of the shocks applied. Commodity exporters include Argentina, Brazil, Chile, Russia, South Africa and other non-OECD oil-producing economies.
Source: OECD calculations using the NiGEM macroeconomic model.

Source: OECD Interim Economic Assessment Coronavirus: The world economy at risk, 2 March 2020

Broader contagion scenario

"The additional shocks considered in this scenario are:

- Domestic demand in most other Asia-Pacific economies, including Japan and Korea, and private consumption in the advanced northern hemisphere economies is reduced by 2% (relative to baseline) in the second and third quarters of 2020.
- Global equity prices and non-food commodity prices are lowered by 20% in the first nine months of 2020.
- Heighted uncertainty is modelled via an increase of 50 basis points in investment risk premia in all countries in 2020.
- These shocks are assumed to decline gradually through 2021.2

Key results of this scenario are:

- Overall, the level of world GDP is reduced by up to 1¾ per cent (relative to baseline) at the peak of the shock in the latter half of 2020, with the full year impact on global GDP growth in 2020 being close to 1½ per cent. Initially, the adverse impact is concentrated in China, but the effects in the rest of Asia, Europe and North America gradually build up through 2020. The major part of the decline in GDP again stems from the direct effects of the reduction in demand, but the impact of heightened uncertainty accumulates gradually.
- World trade is substantially weaker, declining by around 3¾ per cent in 2020, hitting exports in all economies."

Source: OECD Interim Economic Assessment Coronavirus: The world economy at risk, 2 March 2020

5

CORONAVIRUS: THE ROLE OF ECONOMIC POLICY

The role of economic policy

- Monetary policy
  - The very nature of the shock makes monetary policy at first glance ill-equipped. What difference will a rate cut make when households can't go to work or value chains of companies are disrupted?
  - However, central bank action can support confidence.
  - More importantly, it can address the indirect consequences on the functioning of financial markets, where liquidity could dry up, and the funding of companies, which could be confronted with a liquidity squeeze.
- Fiscal policy
  - Can directly support demand shortfall but can't address drop in activity due to supply disruption
  - We should expect more granular policy reaction
    - fiscal policy aiming at stepping up health-related measures
    - targeted action, e g towards SMEs or certain sectors which have suffered a lot from demand or supply shocks (e g loan guarantees, allowing for delaying VAT or social security payments)
- We should also expect more coordination between monetary and fiscal policy.
- The epidemic is expected to contribute to de-globalisation broadly defined
  - Governments will think of the identification of strategic sectors or products where production needs would need to be covered, at least in part, domestically.
  - Companies will reassess the organization of their value chains, striving to become less geographically concentrated. This in turn may have an impact on profitability

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CORONAVIRUS PHASE 3: ECONOMIC RECOVERY

Economic recovery: conditioning factors

1. High frequency data (coal consumption, property sales, Baidu migration index) show clear improvement in China and the pace of production resumption continues to accelerate
2. From a global perspective, the concern is that the effect of the improvement in China would be swamped by the worsening of the situation elsewhere
3. This would then circle back to China and weigh on Chinese exports
4. Financial conditions (equity markets, corporate bond markets) will play an important role, both in terms of a potential drag on growth as long as a peak in the epidemic hasn't been reached, but also as a conditioning factor for the recovery.
5. The drop in oil demand and the absence of an agreement at the end of the OPEC+ summit mean that lower oil prices may, via corporate leverage, act as an additional drag on growth in a number of countries
6. Clearly, whereas the timing of the recovery of growth depends on how the epidemic evolves, the strength and speed will depend on how long the period of subdued or even negative growth has lasted. Very low interest will help, all the more so considering that the origin of the growth shock was non-economic, but in such a scenario, fiscal policy will play a key role

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EVIDENCE FROM THE MACRO DATA THUS FAR*

*DATA UNTIL 6 MARCH 2020

Recent business surveys (1)
Manufacturing: very mixed picture

In February there was a considerable decline for the world index on the back of huge drops in China and Hong Kong. On the other hand, the index for the eurozone saw another increase, driven by Germany, the Netherlands, Spain and Greece with Italy remaining stable and France weakening. In the US, both the Markit PMI and the ISM index declined. Clearly, except for China and Hong Kong, the data do not yet show the impact of the coronavirus epidemic but it is only a matter of time for this to happen.

PMI - MANUFACTURING

		Developed Markets																		Emerging countries															
	WD	NA		Europe												Asia-Oceania				LATAM		Eurasia				Middle East & Africa					Asia				
	World	CANADA	USA	EURO ZONE	AUSTRIA	DENMARK	FRANCE	GERMANY	GREECE	IRELAND	ITALY	NETHERLANDS	SPAIN	SWITZERLAND	UK	AUSTRALIA	NEW ZEALAND	JAPAN	SINGAPORE	BRAZIL	MEXICO	CZECH REPUBLIC	POLAND	RUSSIA	TURKEY	EGYPT	LEBANON	SAUDI ARABIA	SOUTH AFRICA	UAE	CHINA	HONG KONG	INDIA	INDONESIA	VIETNAM
Apr-19	50.4	49.7	52.6	47.9	49.2	57.8	50.0	44.4	56.6	52.5	49.1	52.0	51.8	49.1	53.1	54.8	52.7	50.2	50.3	51.5	50.1	46.6	49.0	51.8	46.8	50.8	46.7	56.8	48.0	57.6	50.2	48.4	51.8	50.4	52.5
May-19	49.8	49.1	50.5	47.7	48.3	48.8	50.6	44.3	54.2	50.4	49.7	52.2	50.1	49.0	49.4	52.7	50.3	49.8	49.9	50.2	50.0	46.6	48.8	49.8	45.3	48.2	46.3	57.3	48.2	59.4	50.2	46.9	52.7	51.6	52.0
Jun-19	49.4	49.2	50.6	47.6	47.5	44.6	51.9	45.0	52.4	49.8	48.4	50.7	47.9	48.6	48.0	49.4	51.2	49.3	49.6	51.0	49.2	45.9	48.4	48.6	47.9	49.2	46.3	57.4	49.2	57.7	49.4	47.9	52.1	50.6	52.5
Jul-19	49.3	50.2	50.4	46.5	47.0	49.5	49.7	43.2	54.6	48.7	48.5	50.7	48.2	45.2	48.0	51.3	48.3	49.4	49.8	49.9	49.8	43.1	47.4	49.3	46.7	50.3	47.7	56.6	50.2	55.1	49.9	43.8	52.5	49.6	52.6
Aug-19	49.5	49.1	50.3	47.0	47.9	49.3	51.1	43.5	54.9	48.6	48.7	51.6	48.8	47.4	47.4	53.1	48.7	49.3	49.9	52.5	49.0	44.9	48.8	49.1	48.0	49.4	47.8	57.0	46.5	51.6	50.4	40.8	51.4	49.0	51.4
Sep-19	49.7	51.0	51.1	45.7	45.1	51.2	50.1	41.7	53.6	48.7	47.8	51.6	47.7	44.9	48.3	54.7	48.8	48.9	49.5	53.4	49.1	44.9	47.8	46.3	50.0	49.5	46.4	57.3	45.1	51.1	51.4	41.5	51.4	49.1	50.5
Oct-19	49.8	51.2	51.3	45.9	45.5	50.8	50.7	42.1	53.5	50.7	47.7	50.3	46.8	48.9	49.6	51.6	52.6	48.4	49.6	52.2	50.4	45.0	45.6	47.2	49.0	49.2	48.3	57.8	48.1	51.1	51.7	39.3	50.6	47.7	50.0
Nov-19	50.3	51.4	52.6	46.9	46.0	53.6	51.7	44.1	54.1	49.7	47.6	49.6	47.5	48.5	48.9	48.1	51.2	48.9	49.8	52.9	48.0	43.5	46.7	45.6	49.5	47.9	37.0	58.3	47.7	50.3	51.8	38.5	51.2	48.2	51.0
Dec-19	50.1	50.4	52.4	46.3	46.0	51.1	50.4	43.7	53.9	49.5	46.2	48.3	47.4	48.8	47.5	48.3	49.2	48.4	50.1	50.2	47.1	43.6	48.0	47.5	49.5	48.2	45.1	56.9	47.1	50.2	51.5	42.1	52.7	49.5	50.8
Jan-20	50.4	50.6	51.9	47.9	49.2	53.1	51.1	45.3	54.4	51.4	48.9	49.9	48.5	47.8	50.0	45.4	49.6	48.8	50.3	51.0	49.0	45.2	47.4	47.9	51.3	46.0	44.9	54.9	45.2	49.3	51.1	46.8	55.3	49.3	50.6
Feb-20	47.2	51.8	50.7	49.2	50.2	49.1	49.8	48.0	56.2	51.2	48.7	52.9	50.4	49.5	51.7	44.3		47.8	48.7	52.3	50.0	46.5	48.2	48.2	52.4	47.1	45.4	52.5	44.3	49.1	40.3	33.1	54.5	51.9	49.0

46 48 50 52 54

Source: Markit, BNP Paribas

Recent business surveys (2)
Services: huge decline in China, eurozone stable, mixed signals for US

For the services PMIs there were huge declines in China and Hong Kong. Japan weakened considerably, contributing to the decline of the world index.The eurozone was stable. The decline in the US is puzzling considering that the ISM non-manufacturing index improved.

PMI - Services

	World	USA	EURO ZONE	FRANCE	GERMANY	IRELAND	ITALY	SPAIN	UK	AUSTRALIA	JAPAN	BRAZIL	RUSSIA	LEBANON	CHINA	HONG KONG	INDIA
Apr-19	**52.7**	53.0	52.8	50.5	55.7	54.7	50.4	53.1	50.4	47.6	51.8	49.9	52.6	46.7	54.5	48.4	51.0
May-19	**51.6**	50.9	52.9	51.5	55.4	57.0	50.0	52.8	51.0	52.3	51.7	47.8	52.0	46.3	52.7	46.9	50.2
Jun-19	**51.9**	51.5	53.6	52.9	55.8	56.9	50.5	53.6	50.2	51.4	51.9	48.2	49.7	46.3	52.0	47.9	49.6
Jul-19	**52.5**	53.0	53.2	52.6	54.5	55.0	51.7	52.9	51.4	44.4	51.8	52.2	50.4	47.7	51.6	43.8	53.8
Aug-19	**51.7**	50.7	53.5	53.4	54.8	54.6	50.6	54.3	50.6	52.3	53.3	51.4	52.1	47.8	52.1	40.8	52.4
Sep-19	**51.4**	50.9	51.6	51.1	51.4	53.1	51.4	53.3	49.5	51.8	52.8	51.8	53.6	46.4	51.3	41.5	48.7
Oct-19	**51.0**	50.6	52.2	52.9	51.6	50.6	52.2	52.7	50.0	55.2	49.7	51.2	55.8	48.3	51.1	39.3	49.2
Nov-19	**51.6**	51.6	51.9	52.2	51.7	53.7	50.4	53.2	49.3	53.7	50.3	50.9	55.6	37.0	53.5	38.5	52.7
Dec-19	**52.0**	52.8	52.8	52.4	52.9	55.9	51.1	54.9	50.0	48.7	49.4	51.0	53.1	45.1	52.5	42.1	53.3
Jan-20	**52.7**	53.4	52.5	51.0	54.2	56.9	51.4	52.3	53.9	47.4	51.0	52.7	54.1	44.9	51.8	46.8	55.5
Feb-20	**47.1**	49.4	52.6	52.5	52.5	59.9	52.1	52.1	53.2	47.0	46.8	50.4	52.0	45.4	26.5	33.1	57.5

Source: Markit, BNP Paribas

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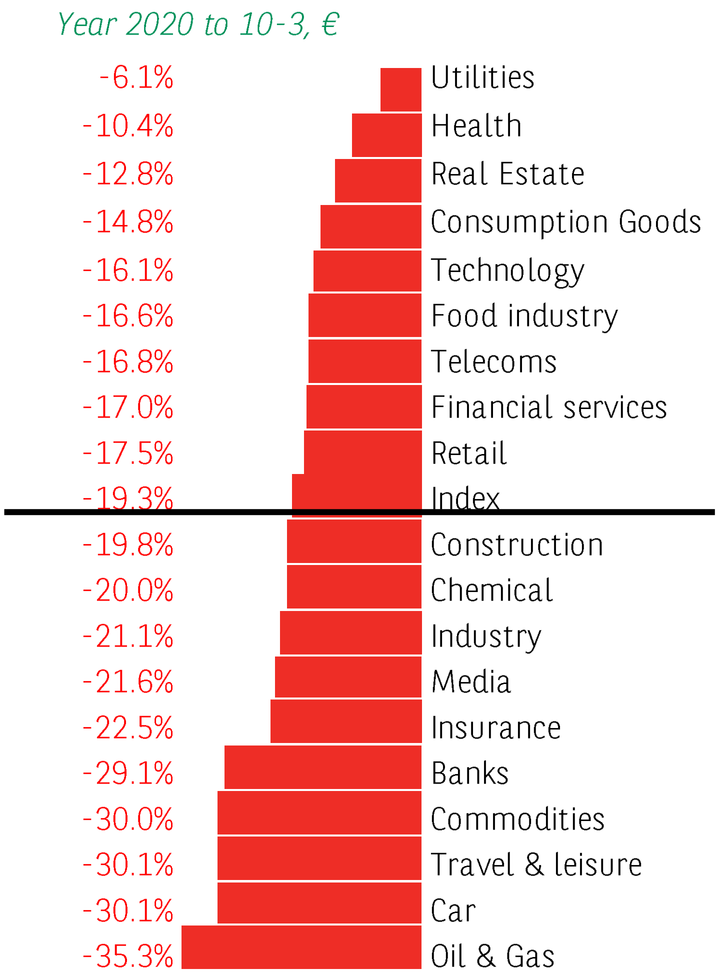
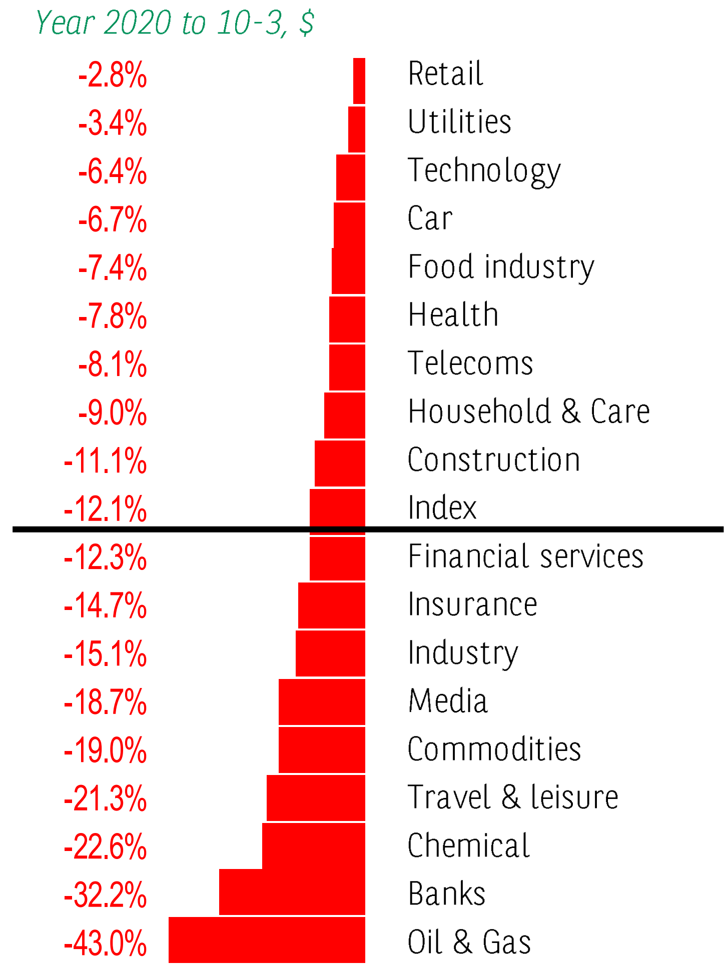
SECTOR EFFECTS

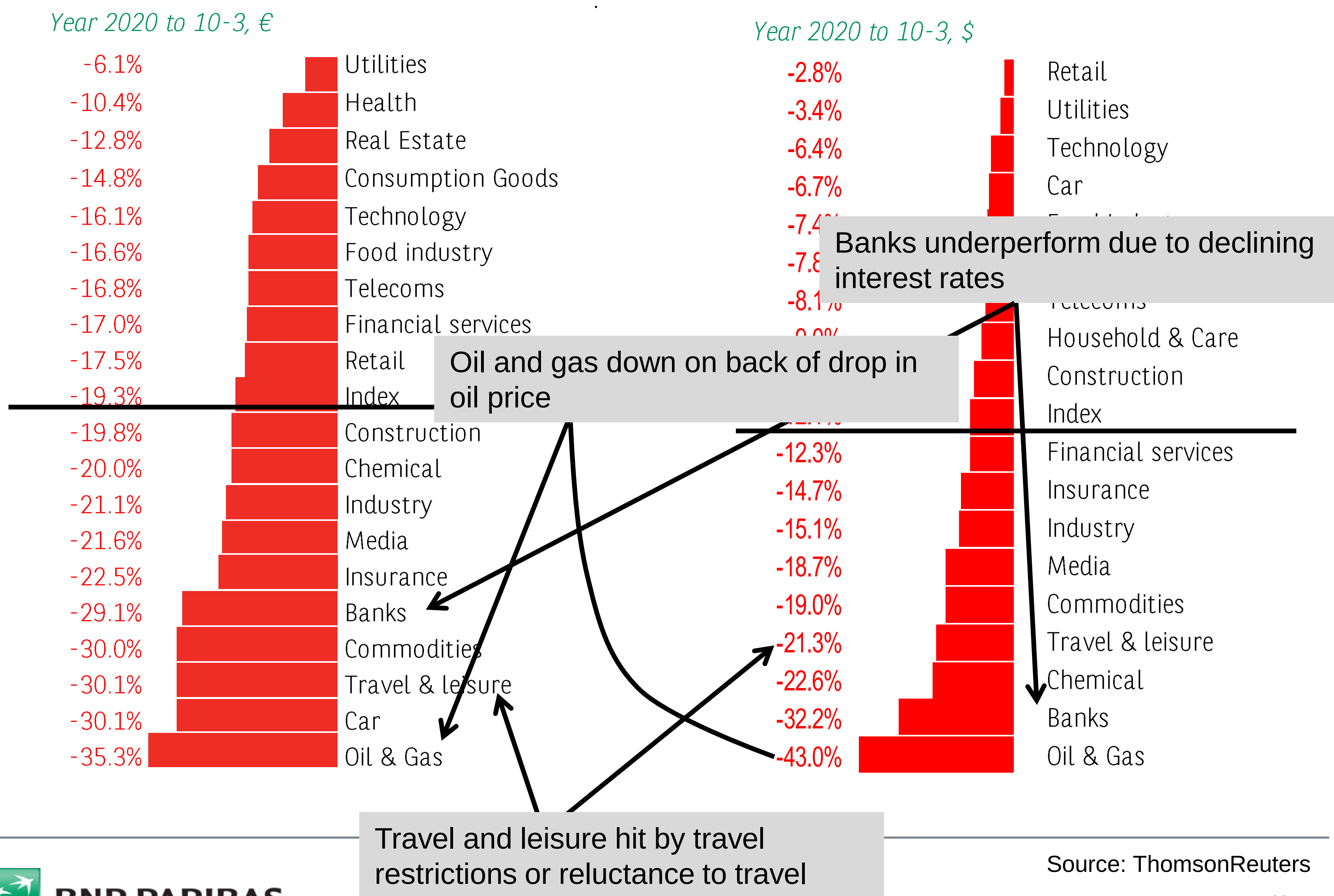
Performance by sector
Eurostoxx50 (L) and S&P500 (R). Year to date until 10 March.





Source: ThomsonReuters

Performance by sector
Eurostoxx50 (L) and S&P500 (R). Year to date until 10 March.



Source: ThomsonReuters

BNP PARIBAS

9
FORECASTS

Forecasts: growth and inflation

Growth & Inflation

%	GDP Growth 2019	GDP Growth 2020 e	GDP Growth 2021 e	Inflation 2019	Inflation 2020 e	Inflation 2021 e
Advanced	1,6	1,3	1,5	1,4	1,5	*
United-States	2,3	1,6	1,8	1,8	2,2	*
Japan	1,0	0,2	0,5	0,5	0,6	*
United-Kingdom	1,4	1,0	1,5	1,8	1,5	*
Euro Area	1,2	0,7	1,5	1,2	0,9	1,1
Germany	0,6	0,1	1,5	1,4	1,1	1,4
France	1,2	1,0	1,3	1,3	1,0	1,1
Italy	0,2	0,0	0,7	0,6	0,5	0,5
Emerging						
China	6,1	4,5	*	2,9	3,2	*
India**	5,8	5,5	*	4,3	4,5	*
Brazil	1,0	1,5	*	3,7	3,4	*
Russia	1,1	1,6	*	4,5	3,7	*

Source : BNP Paribas Group Economic Research (e: Estimates & forecasts)

** Fiscal year from April 1st of year n to March 31st of year n+1

* under review

UNITED STATES

• Although the impact from the coronavirus should be limited, given that exports represent a smaller share of GDP, there are indications of a negative impact due to demand (travel and tourism) and supply (supply chain delays in manufacturing) reasons. Beyond this temporary impact, growth should remain moderate, supported by household spending (consumption and housing). The picture is more mixed for corporate investment. Easy financial and monetary conditions should remain a factor supporting growth but the near term prospects depend on how the epidemic evolves.

CHINA

• The Covid-19 shock represents a severe shock on both demand and supply, which has led us to revise strongly downwards our real GDP growth forecast for 2020 (-1.2pp). The shock should be temporary, but economic prospects are still downbeat. In spite of the US-China trade truce, Chinese exports to the US remain heavily taxed. Meanwhile, the rebalancing of China's growth sources, which implies a stronger expansion of private consumption and deleveraging of corporates, should continue to be a long and hard process.

• Since the outbreak of the virus, the central bank and the government have considerably stepped up measures to support the economy.

EUROZONE

• After showing signs of stabilization in the manufacturing sector towards the end of 2019, the first half of 2020 will be affected by the Coronavirus outbreak in view of the repercussions of the growth slowdown and supply disruption in China, but also as a consequence of the propagation of the epidemic in the eurozone and other countries

• In this context and given the drop in oil prices, total inflation should remain well below the 2% target. In spite of the recent (slight) increase in core inflation and the resilience in the labour market, inflationary pressures would remain subdued.

• The very accommodative monetary policy should be maintained by the ECB and it is likely to see new easing measures.

FRANCE

• A marked technical rebound was likely after the unexpected GDP contraction in Q4 2019 (1st estimate) but this expectation is jeopardized by the coronavirus outbreak which darkens the H1 2020 growth outlook.

• The core story of our scenario is unchanged however. The French economy should decelerate a bit further while continuing to show resilience. Households' consumption should get a boost from the tax cuts and the jobs recovery. We forecast business investment to be less strong and exports to stay weak given the less supportive global backdrop. Core inflation remains very subdued.

Forecasts: interest and exchange rates

Interest & Exchange rates

Interest rates, %		2019		2020						
End of period		Q3	Q4	Spot	Q2e	Q3e	Q4e	2018	2019	2020e
US	Fed Funds "upper end"	2.00	1.75	1.25	0.25	0.25	0.25	2.50	1.75	0.25
	T-Notes 10y	1.67	1.92	0.82	*	*	*	2.69	1.92	*
Ezone	Deposit rate	-0.50	-0.50	-0.60	-0.60	-0.60	-0.60	-0.50	-0.50	-0.60
	Bund 10y	-0.57	-0.19	-0.75	*	*	*	0.25	-0.19	*
	OAT 10y	-0.28	0.08	-0.37	*	*	*	0.71	0.08	*
UK	Base rate	0.75	0.75	0,25	0.50	0.50	0.50	0.75	0.75	0.50
	Gilts 10y	0.40	0.83	0.26	*	*	*	1.27	0.83	*
Japan	BoJ Rate	-0.06	-0.05	-0.07	-0.10	-0.10	-0.10	-0.07	-0.05	-0.10
	JGB 10y	-0.22	-0.02	-0.07	*	*	*	0.00	-0.02	*

Exchange Rates		2019		2020						
End of period		Q3	Q4	Spot	Q2e	Q3e	Q4e	2018	2019	2020e
USD	EUR / USD	1,09	1,12	1.14	1.12	1.13	1.14	1.14	1.12	1.14
	USD / JPY	108	109	104	108	106	105	110	109	105
	GBP / USD	1,23	1,32	1.30	1.35	1.36	1.39	1.27	1.32	1.39
	USD / CHF	1,00	0,97	0.93	1.00	0.99	1.00	0.99	0.97	1.00
EUR	EUR / GBP	0,89	0,83	0.87	0.83	0.83	0.82	0.90	0.83	0.82
	EUR / CHF	1,09	1,09	1.06	1.12	1.12	1.14	1.13	1.09	1.14
	EUR / JPY	118	122	119	121	120	120	125	122	120

Source: BNP PARIBAS GLOBAL MARKETS (E: ESTIMATES), * under review, last update 11/03/2020

- In the US, the unusual inter-meeting rate cuts shows the concern of the Fed about the growth outlook in relation to the epidemic. We expect that it will keeping on reducing its policy rate this year bringing it to the zero lower bound.
- US Treasury yields have seen a big drop, reflecting expectations of monetary easing but also a flight to safety. Eventually, given the temporary nature of the coronavirus epidemic, this should be followed by a rebound in yields.
- Given the volatility of the market and the dependence on the newsflow concerning the epidemic –which is impossible to anticipate-, we have refrained from producing a bond yield forecasts
- In the eurozone, the ECB's state-dependent forward guidance and the sluggishness of the inflation process imply that the very accommodative environment will remain in place for a long time. Due to the epidemic, we expect more easing to come quite soon. The movement of bond yields will be very much influenced by what happens to US yields, and hence, in the near term, by news about the epidemic. Sovereign spreads in the eurozone should remain tight.
- We expect that the Bank of Japan will refrain from further monetary easing, despite the bleak economic environment.
- Growing concerns about the global economic impact of the coronavirus has caused a jump in risk aversion which has benefitted the euro. Expectations of more Fed rate cuts also play a role. In the longer run, we expect the euro to strengthen somewhat once activity starts to normalise.

OECD forecasts (2 March 2020)

OECD Interim Economic Outlook Forecasts, 2 March 2020

Real GDP growth

Year-on-year % change

	2019	2020		2021	
		Interim EO projections	Difference from November EO	Interim EO projections	Difference from November EO
World[1]	2.9	2.4	-0.5	3.3	0.3
G20[1,2]	3.1	2.7	-0.5	3.5	0.2
Australia	1.7	1.8	-0.5	2.6	0.3
Canada	1.6	1.3	-0.3	1.9	0.2
Euro area	1.2	0.8	-0.3	1.2	0.0
Germany	0.6	0.3	-0.1	0.9	0.0
France	1.3	0.9	-0.3	1.4	0.2
Italy	0.2	0.0	-0.4	0.5	0.0
Japan	0.7	0.2	-0.4	0.7	0.0
Korea	2.0	2.0	-0.3	2.3	0.0
Mexico	-0.1	0.7	-0.5	1.4	-0.2
Turkey	0.9	2.7	-0.3	3.3	0.1
United Kingdom	1.4	0.8	-0.2	0.8	-0.4
United States	2.3	1.9	-0.1	2.1	0.1
Argentina	-2.7	-2.0	-0.3	0.7	0.0
Brazil	1.1	1.7	0.0	1.8	0.0
China	6.1	4.9	-0.8	6.4	0.9
India[3]	4.9	5.1	-1.1	5.6	-0.8
Indonesia	5.0	4.8	-0.2	5.1	0.0
Russia	1.0	1.2	-0.4	1.3	-0.1
Saudi Arabia	0.0	1.4	0.0	1.9	0.5
South Africa	0.3	0.6	-0.6	1.0	-0.3

Note: Projection based on information available up to February 28. Difference from November 2019 Economic Outlook in percentage points, based on rounded figures.

1. Aggregate using moving nominal GDP weights at purchasing power parities.
2. The European Union is a full member of the G20, but the G20 aggregate only includes countries that are also members in their own right.
3. Fiscal years, starting in April.

Source: OECD Interim Economic Assessment, Coronavirus: The world economy at risk, 2 March 2020

OECD: broader contagion as an alternative scenario

A "domino" scenario: broader contagion

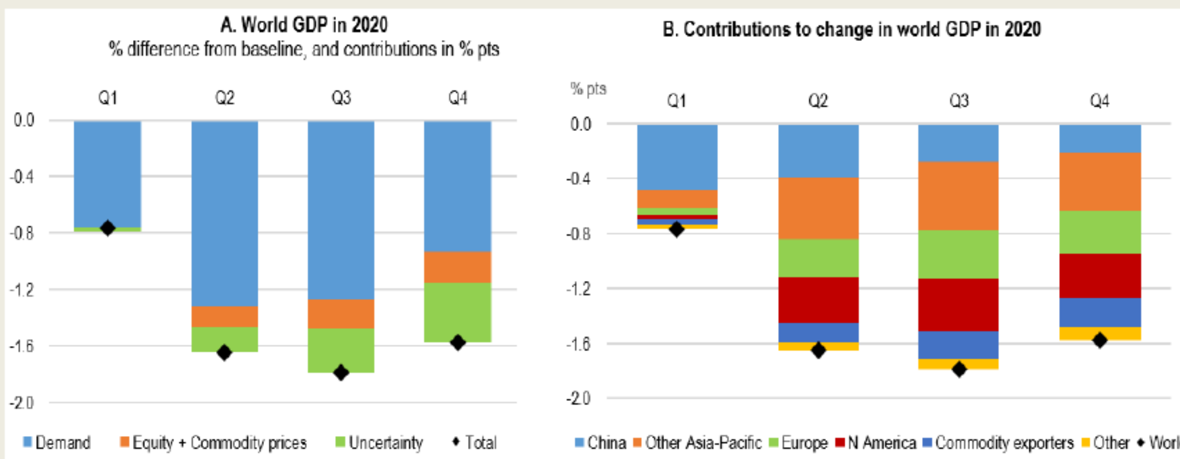
This illustrative downside risk scenario considers the potential effects if the outbreak of the virus in China were to spread much more intensively than at present through the wider Asia-Pacific region and the major advanced economies in the northern hemisphere in 2020. Together, the countries affected in this scenario represent over 70% of global GDP (in PPP terms).

The additional shocks considered in this scenario are:

- Domestic demand in most other Asia-Pacific economies, including Japan and Korea, and private consumption in the advanced northern hemisphere economies is reduced by 2% (relative to baseline) in the second and third quarters of 2020.
- Global equity prices and non-food commodity prices are lowered by 20% in the first nine months of 2020.
- Heighted uncertainty is modelled via an increase of 50 basis points in investment risk premia in all countries in 2020.

These shocks are assumed to decline gradually through 2021.2

Figure 8. Domino scenario: potential economic impact of the coronavirus outbreak



Note: The first panel shows the contributions to the decline in the level of GDP from the different element of the shock. The second panel shows the contributions of different regions and countries to the decline in global GDP. Commodity exporters are Argentina, Brazil, Chile, Russia, South Africa and other non-OECD oil-producing economies. See text for details of the shocks applied.

Source: OECD calculations using the NiGEM global macroeconomic model.

Source: OECD Interim Economic Assessment, Coronavirus: The world economy at risk, 2 March 2020

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