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A Deep Dive Into The Global Recession Risk

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Important certifications and disclosures are contained from page 46 of this report

Key points #1

- **In this presentation we take a deep dive into the risk of a global recession** in light of growing fears about the imminence of such an outcome. The study particularly focuses on the G4 economies: the US, the euro area, Japan and China.
- Based on our findings, we see about a 30% chance of a global recession over the next two years.
- **It is important to note that expansions do not die of old age but of disease**.
- Among the typical 'diseases' hitting economic expansions, **the biggest risk in our view stems from exogenous policy shocks** such as an escalation of the trade war between the US and China and/or a full-blown military conflict between Iran and the US/Saudi Arabia.
- There is **not yet much evidence of macroeconomic imbalances** such as excessive wage growth, overinvestment/consumption, or excessive credit growth. In fact private savings rates are rising rather than falling, the latter typically being seen on the brink of a recession.
- **We do not see a major bubble in equity, credit or fixed income markets** provided monetary policy remains accommodative (which we expect will be the case given the muted inflation pressures).

Key points #2

- **The policy space to counter an economic downturn in the global economy is more limited than in 2008-09.**
- However, we still think that **major central banks have some ammunition left**, although especially in Europe and Japan it will require substantial political will to adopt new measures. The Fed has more room to manoeuvre.
- On the fiscal side, the structural decline in global yields means that **the fiscal space is bigger than it appears at first, allowing room to act if recession risks increase.**

	US	Euro area	Japan	China
Recession indicators	0.3	0.3	0.1	0.2
Yield curve	0.5	0.0	0	0.0
Length	0	0.0	0	0.0
Growth trackers	0.25	0.5	0.25	0.75
Market sentiment	0.5	0.75	0.25	0.0
Recession drivers	0.6	0.6	0.6	0.7
Financial bubbles	0.5	0.5	0.5	0.5
Real bubbles	0.25	0.25	0.25	0.5
Shocks	1.0	1.0	1.0	1.0
Policy space to counter a recession	0.5	0.75	0.75	0.375
Monetary policy	0.5	1	1	0.5
Fiscal policy	0.5	0.5	0.5	0.25

Score: 1 = high risk; 0.5=medium risk; 0= low risk
Subcategory score is calculated as simple average
Source: Danske Bank

Outline

Recession indicators: what do they tell us and should we believe them?

- Global recessions are rare
- Yield curves are signalling that a recession will probably hit within 1-2 years but the signal is distorted by QE
- Our global recession tracker based on the IMF's definition is flashing warning signs
- However, our own recession trackers for the US, China and the euro area do not signal an immiment recession

How to define a global recession?

- **There is no universally accepted and mechanical approach to define recessions.** Usually, recessions are dated using a broad set of variables. The length and depth vary from recession to recession.
- **A global recession is difficult to call, given that recessions can also be national/regional in nature** (like the early 2000s in the US or the European debt crisis in 2011). It is also possible that manufacturing is in a global recession but the service sector is not.
- **The IMF defines a global recession as contraction in real world output per capita**, accompanied by a broad, synchronised decline in various other measures of global economic activity, including industrial production, trade, capital flows, employment, and energy consumption.
- According to this definition, **global recessions are relatively rare** with only four such events since 1960: in 1975, 1982, 1991, and 2009.
- **The global economy has become more integrated, meaning that economic developments are more synchronised across countries** (as discussed in Dynamics of Global Business Cycles Interdependence, May 2016). This also means that economic shocks can more easily transmit from one country/region to another.

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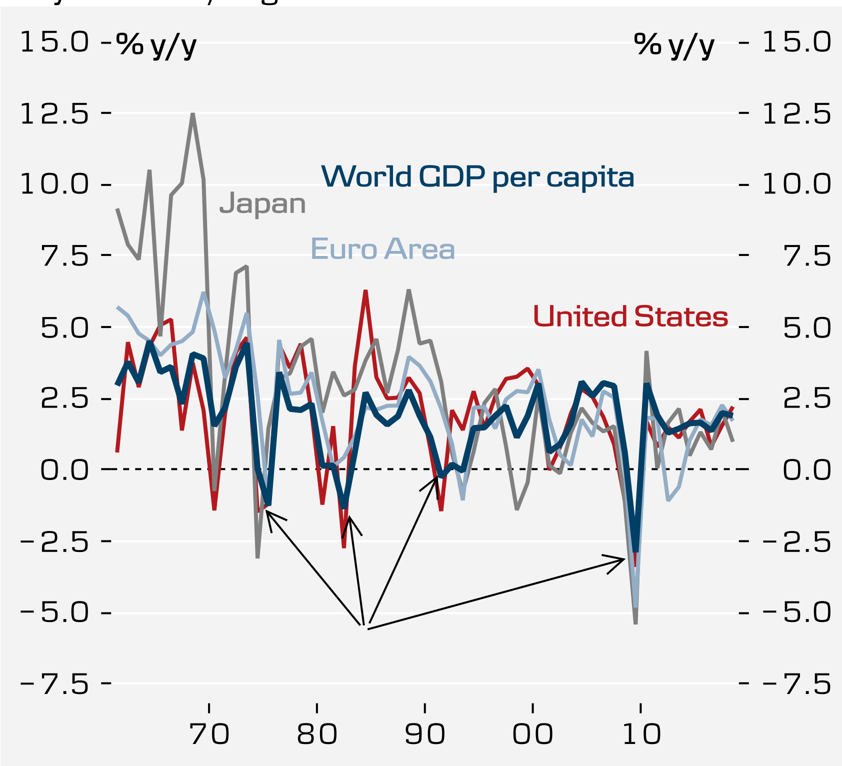
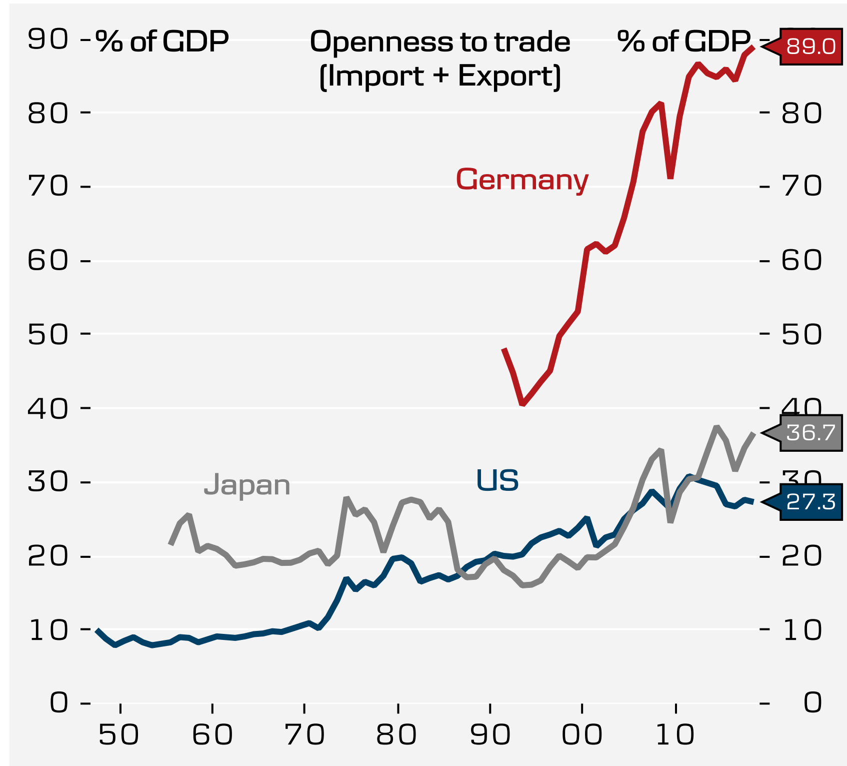
Four global recessions since 1960

Four global recessions but some recessions are only national/regional



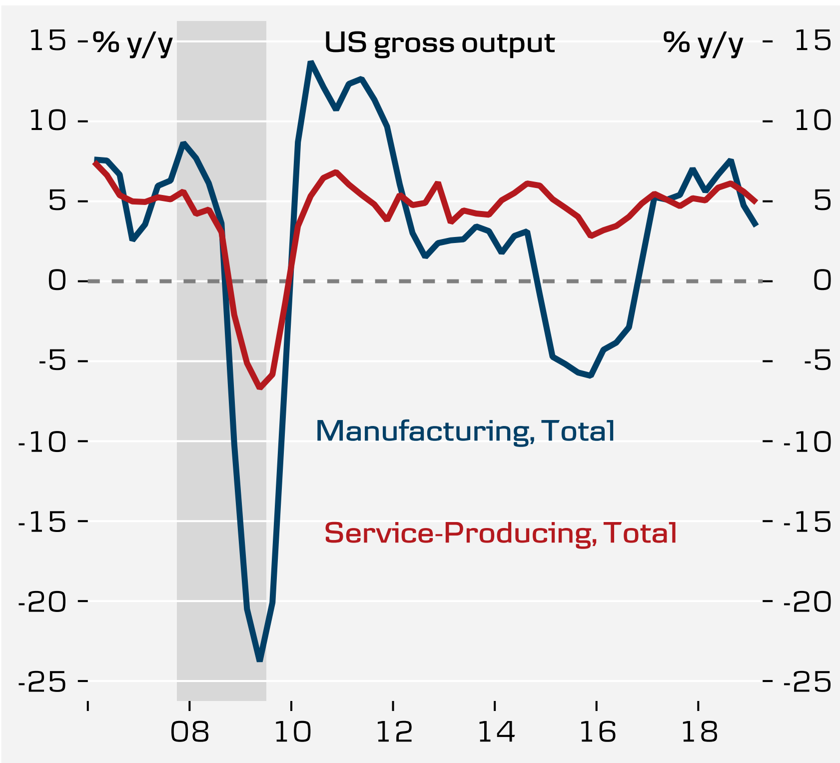
Economies have opened up and become more interconnected



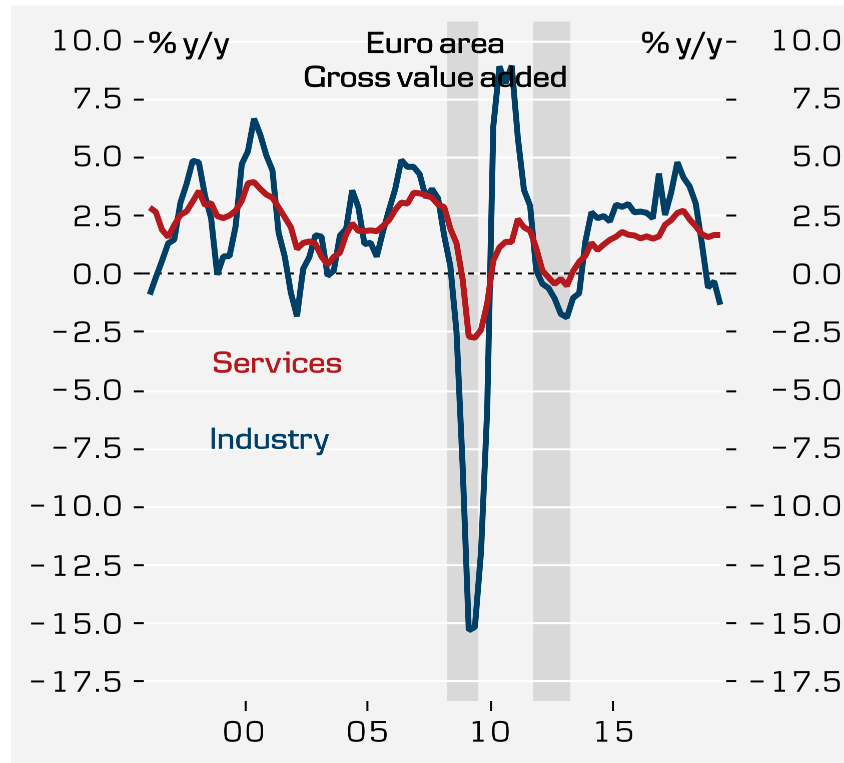
Source (both charts): Macrobond Financial and Danske Bank

Manufacturing recession is not sufficient to cause an economy-wide recession

US manufacturing recession in 2014-16 did not cause an economy-wide recession



Euro area has had similar experiences



Source (both charts): BEA, ECB, Macrobond Financial, Danske Bank

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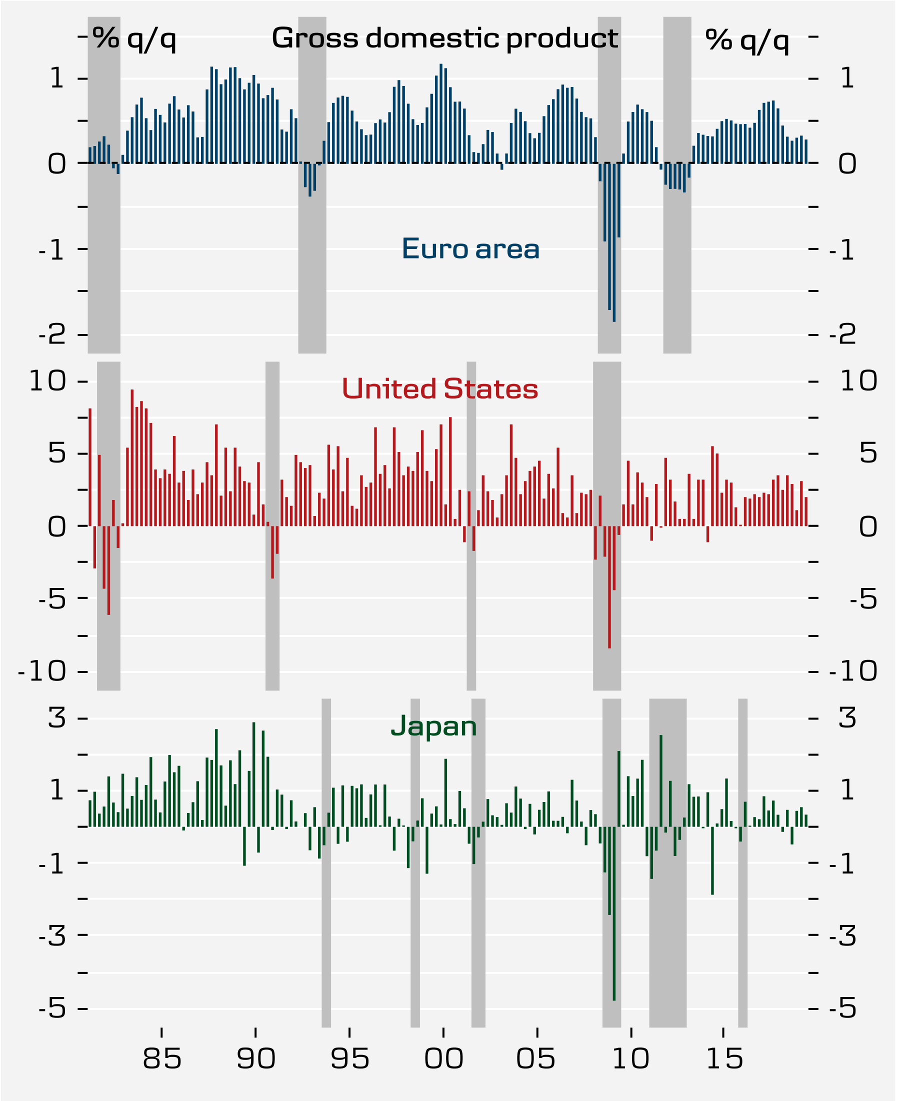
A look at 40 years of recessions in G3 countries

- Over the past forty years, there have been four recessions in the US and Europe and six in Japan.
- Based on the history since 1980, the probability that there will be at least one recession over any given two year period varies from 21.5% in the US to 41.6% in Japan.
- That seems high, but usually a catalyst in the form of a negative confidence shock or bursting of bubbles is needed to trigger a recession. Such triggers can be global factors (as happened in the GFC in 2008/09) or domestically driven ones (eurozone crisis of 2011-13 or Japanese asset price bubble bursting in the 90s).
- Furthermore, the severity and length of a recession can vary considerably across regions, depending on the source of the contraction.

	Euro area (CEPR)	US (NBER)	Japan (ESRI)
No. of GDP recessions since 1980	4	4	6
Average length of recession	18M	11M	9M
Probability of recession over 2 years	32.9%	21.5%	41.6

Source: NBER, CEPR, ESRI, Macrobond Financial, Danske Bank



Note: Shaded areas indicate actual recessions

Indicators of recessions

- Recessions may be predicted using a combination of financial, economic and survey variables.
- Over the next few slides we present the commonly used indicators.
- Remember recessions may be triggered by an unexpected source, which makes it more difficult to gauge recession risk.

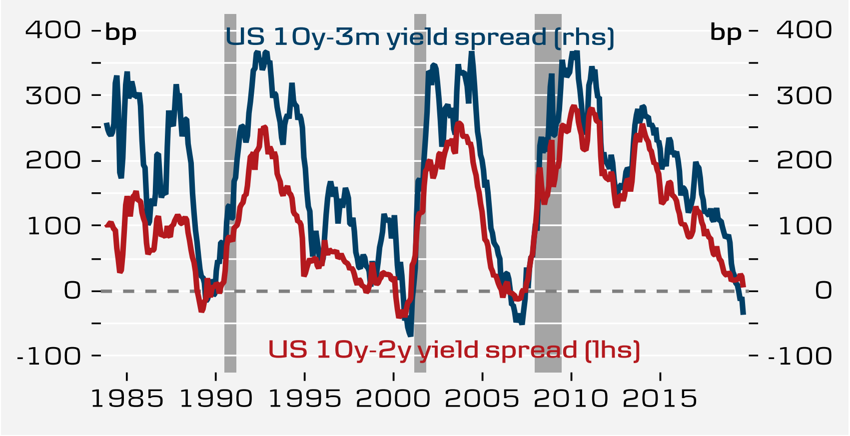
Global and national recession indicators

Financial markets	Global macro-indicators	Country specific indicators
• Yield curve inversion	• The IMF's recession tracker based on real world output per capita, global industrial production, trade, unemployment, and energy consumption	• Euro area, US and China recession trackers

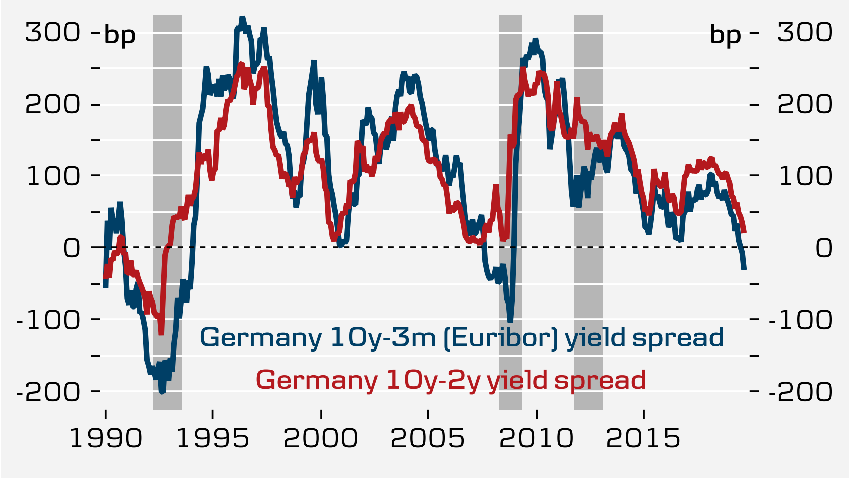
Inversions of US and German yield curve are concerning

Yield curve inversion does not say much about timing, length or depth

- A yield curve inversion is considered a credible recession signal, but it is not a given to which spread attention should be paid.
- Unfortunately, the yield curve is not good at predicting the exact timing, length or depth of the recession.



		Start	End	# of years after
US	10y-3m yield spread inversion	Nov.97	Mar.01	3.3
		Dec.05	Dec.07	2.0
			avg.	**2.3**
	10y-2y yield spread inversion	Dec.88	Jul.90	1.5
		May.98	Mar.01	2.8
		Dec.05	Dec.07	1.9
			avg.	**2.1**
Germany	10y-3m Euribor yield spread inversion	Jun.89	Apr.92	2.8
		Aug.07	Apr.08	0.7
		No inv.	Oct.11	**No inv.**
			avg.	**1.8**
	10y-2y yield spread inversion	Feb.89	Apr.92	3.2
		No inv.	Apr.08	No. inv
		No inv.	Oct.11	No. inv



Source (table and charts): Bloomberg, Macrobond Financial, Danske Bank

Euro area QE has depressed term premiums in Europe

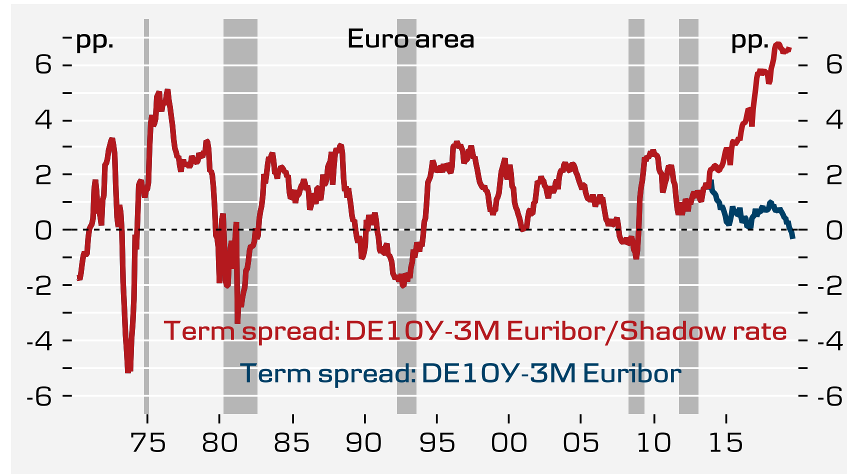
No elevated recession risk taking QE and depressed term premiums into account

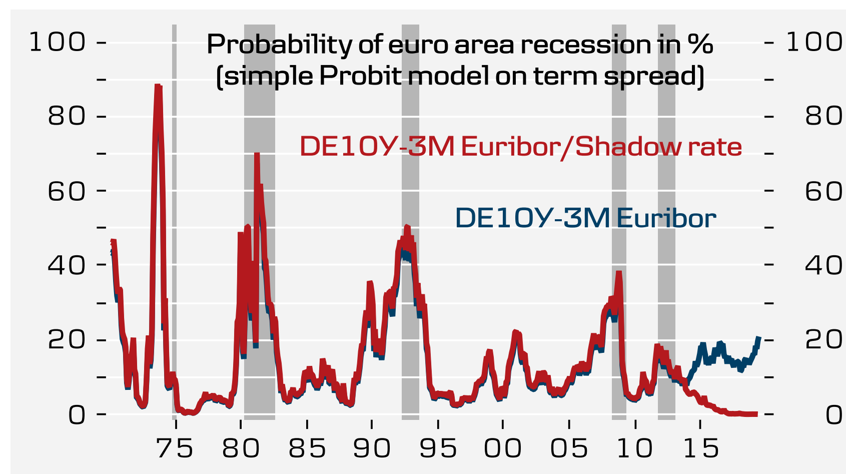
- The purpose of doing QE is manyfold, including lowering the term-premium and a rebalancing of the portfolio holdings by investors, pushing yields lower.

- In the euro area, the ECB has estimated the term premium to be arund 100bp, pressed down by the ECB hitting the effective lower bound and QE.

- Further, the academic ‘shadow rate’ approach (as calculated in Wu and Xia taking unconventional monetary policy into account) shows that the yield curve has actually steepened, not inverted.

- Using a probit model on the spread, the alternative specification with the shadow rate currently does not signal an elevated recession risk.





Note: Shaded areas indicate euro area recessions

Source: Macrobond Financial, Danske Bank

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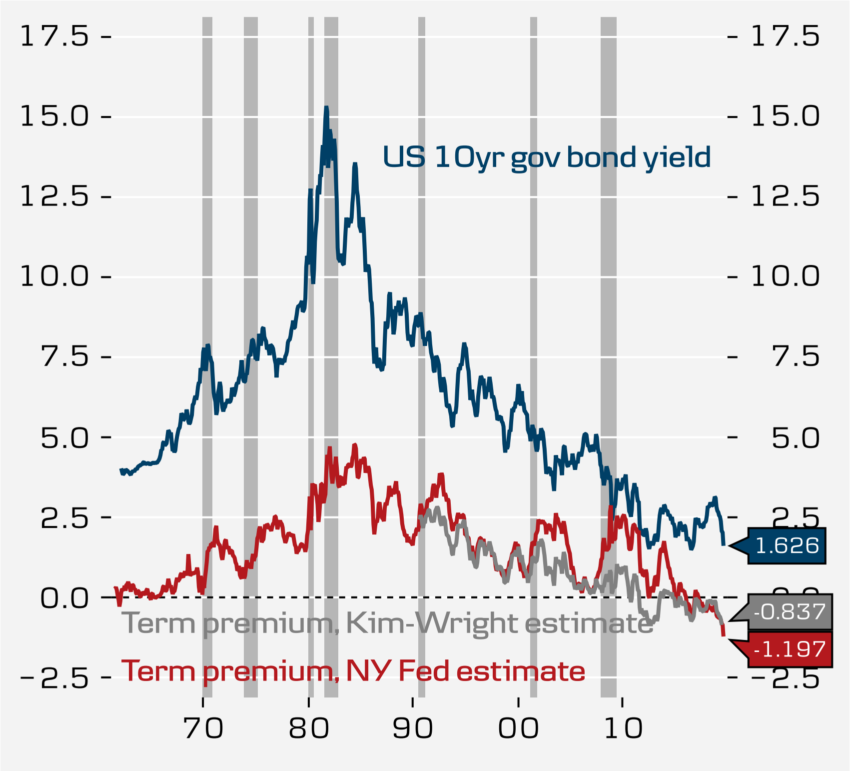
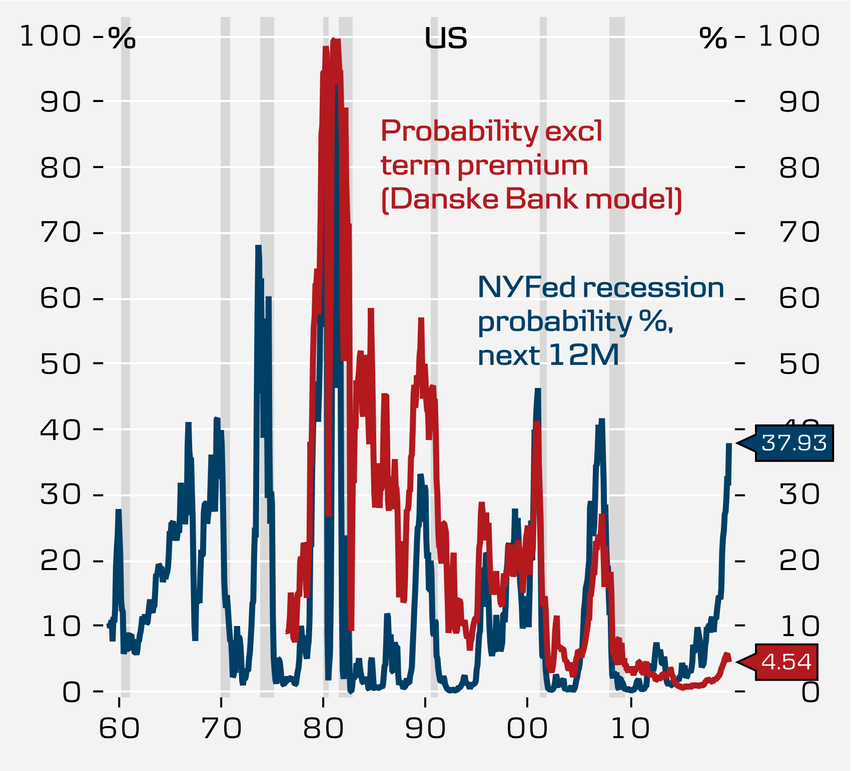
US: highest recession probability since the crisis, but the collapse in term premium may distort the signal

Term premium has declined substantially



Recession risk either very high ... or very low



Source: NY Fed, Federal Reserve, Macrobond Financial, Danske Bank calculations

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The global recession tracker is starting to flash a warning sign

- We have developed a 'traffic light' recession tracker based on the IMFs definition of a global recession.
- The tracker indicates that the global economy has edged closer to a recession over the past 18 months.
- Global trade is already contracting, and the rest of the indicators have turned yellow.

Growth tracker

	H1 07	H2 07	H1 08	H2 08	H1 09	H2 09	H1 10	H2 10	H1 11	H2 11	H1 12	H2 12	H1 13
GDP per capita	3,7	3,9	3,0	-0,1	-5,6	2,6	3,4	3,0	3,7	2,0	1,9	1,3	2,2
Unemployment rate (%)	5,7	5,6	5,6	6,0	7,5	8,4	8,5	8,3	8,0	8,0	7,9	8,0	8,1
World trade (% y/y)	5,7	5,0	3,3	1,1	-17,2	-10,5	16,0	11,3	7,4	3,8	1,1	2,1	1,7
Industrial production (%	4,8	5,1	4,5	-0,5	-12,3	-5,2	10,3	7,5	4,4	4,2	4,0	1,6	1,5
Oil demand (% y/y)	1,2	1,8	0,9	-0,8	-2,7	-0,3	1,4	3,7	2,4	0,7	0,6	1,0	0,9

	H2 13	H1 14	H2 14	H1 15	H2 15	H1 16	H2 16	H1 17	H2 17	H1 18	H2 18	H1 19	Q2 19
GDP per capita	2,1	2,7	3,2	2,0	1,8	1,3	1,9	2,9	3,5	3,6	2,0	1,1	1,1
Unemployment rate (%)	7,9	7,6	7,3	7,0	6,7	6,4	6,3	6,0	5,7	5,4	5,3	5,3	5,3
World trade (% y/y)	1,2	2,2	4,5	2,5	0,7	0,4	1,5	6,7	5,4	2,0	2,5	1,4	-1,4
Industrial production (%	3,3	3,5	3,2	1,9	1,5	1,4	1,6	3,4	4,0	3,8	2,7	1,9	0,6
Oil demand (% y/y)	1,2	1,4	1,7	2,1	2,2	2,2	2,3	1,7	1,9	2,2	1,6	1,0	1,2

Note: The GDP per capita growth rate is red if the growth rate is smaller than 0%, Green if larger than 2% and yellow otherwise. The unemployment rate is red if there are two consecutive quarters with rising unemployment, green if quarter has unemployment lower than 0,1% of the average of last two quarters and yellow otherwise. The world trade is red if the y/y growth rate smaller than 0, green if larger than 2% and yellow otherwise. The growth rate in industrial production is red if growth rate is smaller than zero, green if larger than 2% and yellow otherwise. Oil demand is red if growth rate is smaller than zero, green if larger than 2% and yellow otherwise

Source: Bloomberg, Macrobond Financial, Danske Bank

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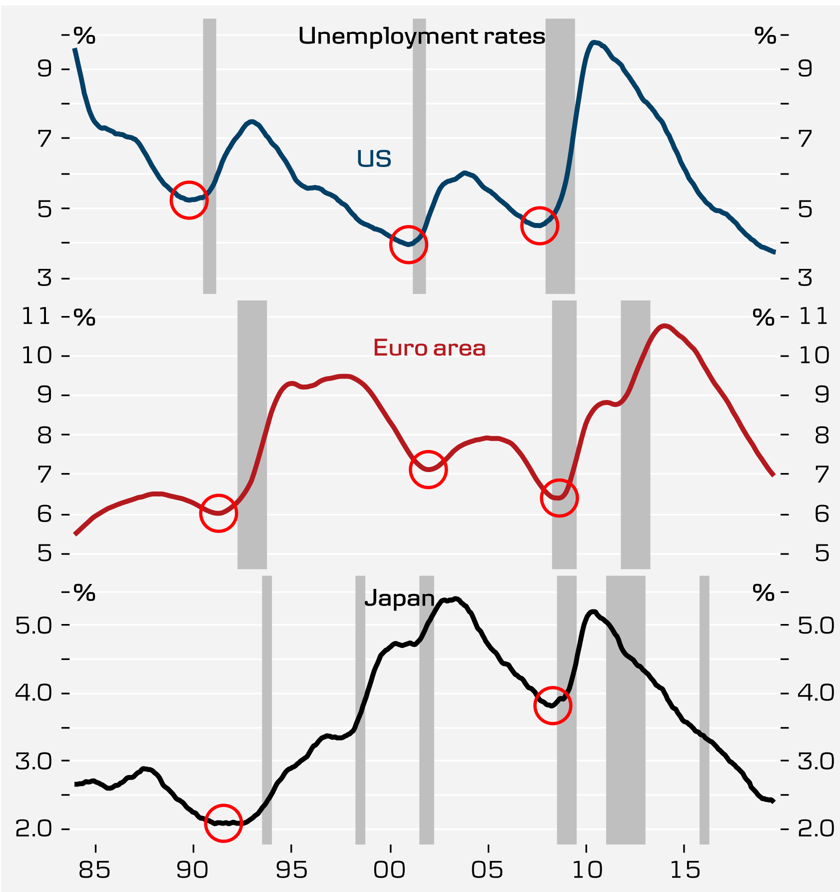
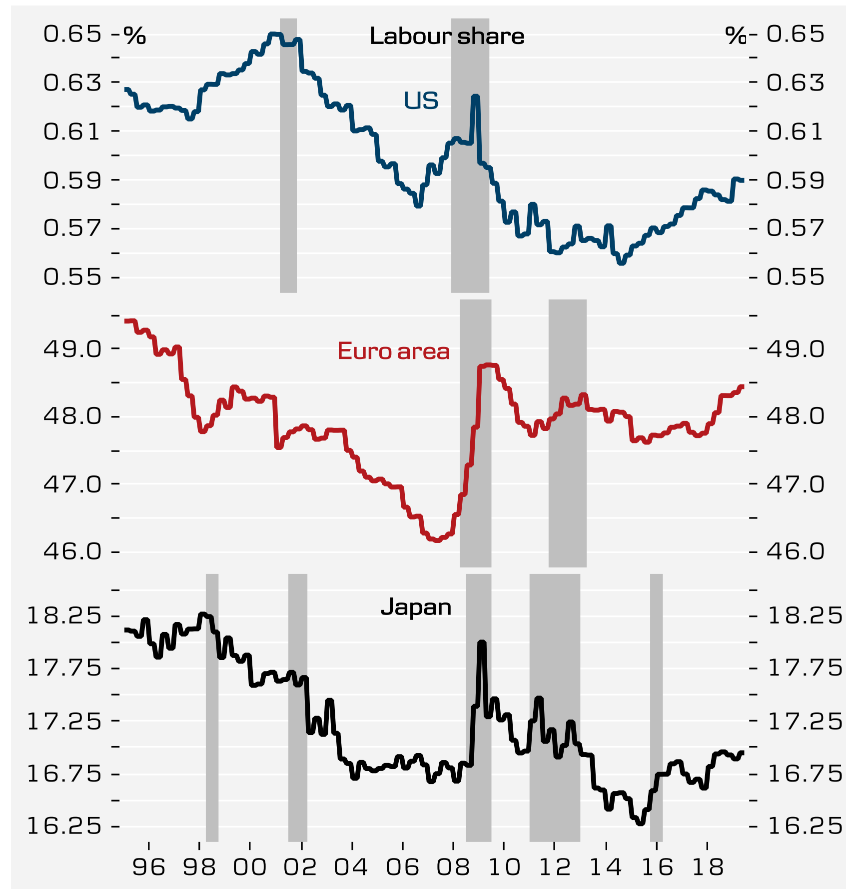
Labour market: unemployment not rising yet, but labour income share sending warning signals

We normally see a deceleration in employment growth ahead of a recession



Labour income share remains subdued, although rising which are seen prior to recessions

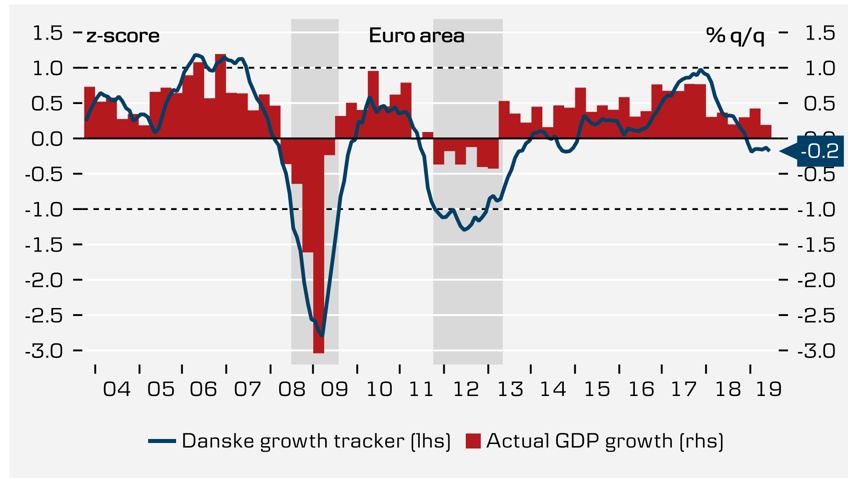


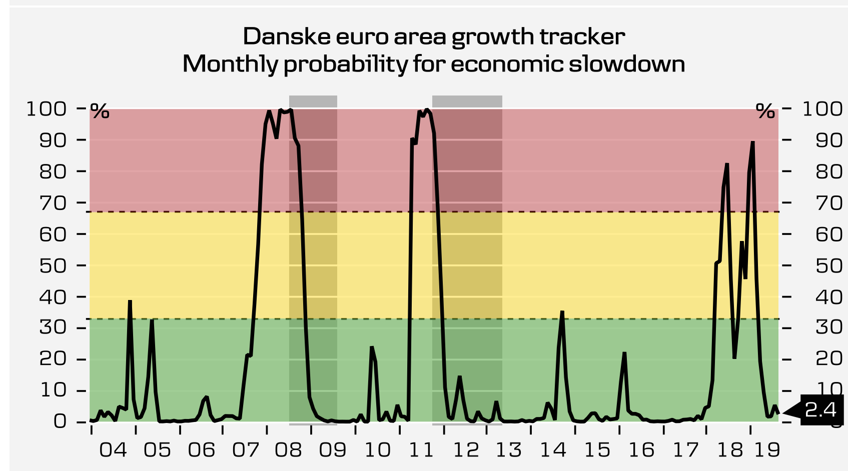
Source: Macrobond Financial, Danske Bank

Euro area growth tracker signals immediate recession risk still low

- **Our euro area growth tracker signals the immediate recession risk is still low** despite slower growth.
- The growth trackers aims to distil the various messages from financial and economic variables into an easy-to-understand signal regarding the state of the economy.
- After falling steadily throughout 2017/18, our growth tracker has stabilised as of late. **With a value of -0.2 the tracker clearly remains outside recessionary territory** (value of -1 or below).
- It is primarily financial variables that are showing recessionary tendencies, while economic variables on average remain close to their historical mean (indicated by a value of 0).
- For more on our growth tracker see also: [Euro Area Research - Is the euro area heading for recession?](), 4 March.

Near-term euro area recession risk remains low according to the Danske euro area growth tracker





Source: EViews, Macrobond Financial, Danske Bank

The Danske euro area growth tracker is calculated as a simple average of the standardised values of 12 economic and four financial variables which are commonly perceived as exhibiting close co-movement with the economic cycle. Historically, values below -1 of the tracker have coincided with recessionary periods in the euro area.

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US recession tracker: a few red flashes but consumption holds up

- We have compiled a combination of **financial, inflation, consumer, and business indicators** to gauge the current economic situation in the US.

- While some indicators have started flashing red (unlike a year ago), the immediate threat of a recession seems limited compared to December 2007.

- The indicators show that while consumers are still upbeat, businesses (in particular in manufacturing) are struggling., to some extent mirroring the situation in 2006.

More US indicators are flashing red than a year ago, but not like prior to the 2008 recession

		Dec-06	Dec-07	Sep-18	Sep-19
Financial	Yield Curve	Recession	Expansion	Caution	Caution
	Credit Spread	Expansion	Caution	Expansion	Caution
	SPX	Expansion	Caution	Expansion	Caution
Inflation	Wage Growth	Caution	Caution	Caution	Recession
	Nonfarm payrolls	Expansion	Recession	Expansion	Caution
	Oil Prices	Expansion	Recession	Expansion	Expansion
Consumers	New Home Sales	Recession	Recession	Expansion	Recession
	Unemployment Rate, 12m MA	Expansion	Recession	Expansion	Expansion
	Retail Sales	Expansion	Expansion	Expansion	Expansion
	Consumer Confidence (University of Michigan)	Expansion	Recession	Expansion	Expansion
Businesses	ISM Manufacturing PMI	Caution	Caution	Expansion	Recession
	ISM Non manufacturing PMI	Caution	Caution	Expansion	Expansion
	Core Durable Goods	Caution	Caution	Expansion	Caution
	Corporate Profits	Caution	Recession	Caution	Caution
	LEI	Caution	Recession	Caution	Caution
	Business Confidence	Recession	Recession	Expansion	Expansion

Expansion
Caution
Recession

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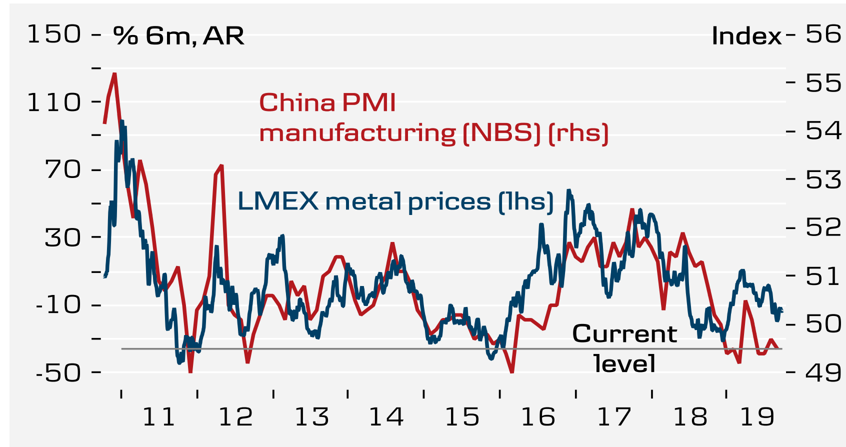
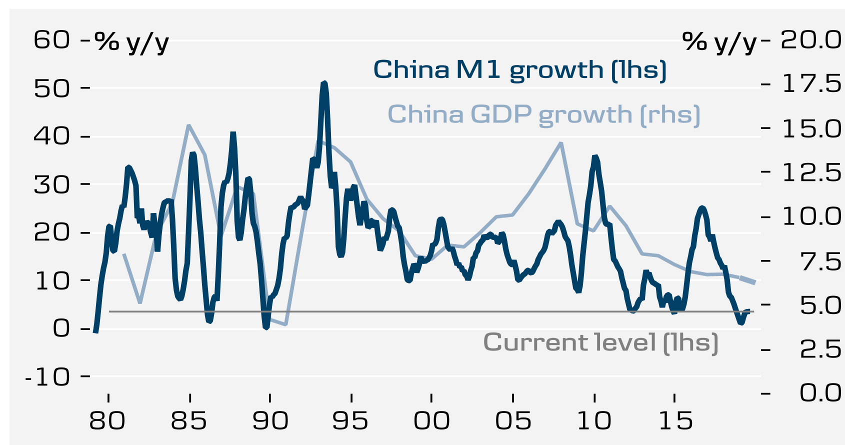
China growth tracker – economy vulnerable but not in a recession

- In China, the best real-time indicators of the business cycle are: PMI, M1 growth and metal prices (China consumes 50% of global metals).
- The indicators point to clear weakness in Chinese growth and M1 growth in particular suggests China is balanced near recession.
- No recession yet but it would not take much further headwind to push China into recession. This would in our view imply
  - PMI below 49 (currently 49.5)
  - Metal prices dropping more than 50% on a 6m annualised rate (currently -13%)
  - M1 growth around zero (currently 3.6%)

Indicators are sending warning signals



Source: Markit, LME, Macrobond Financial



Source: IMF, PBoC, Macrobond Financial

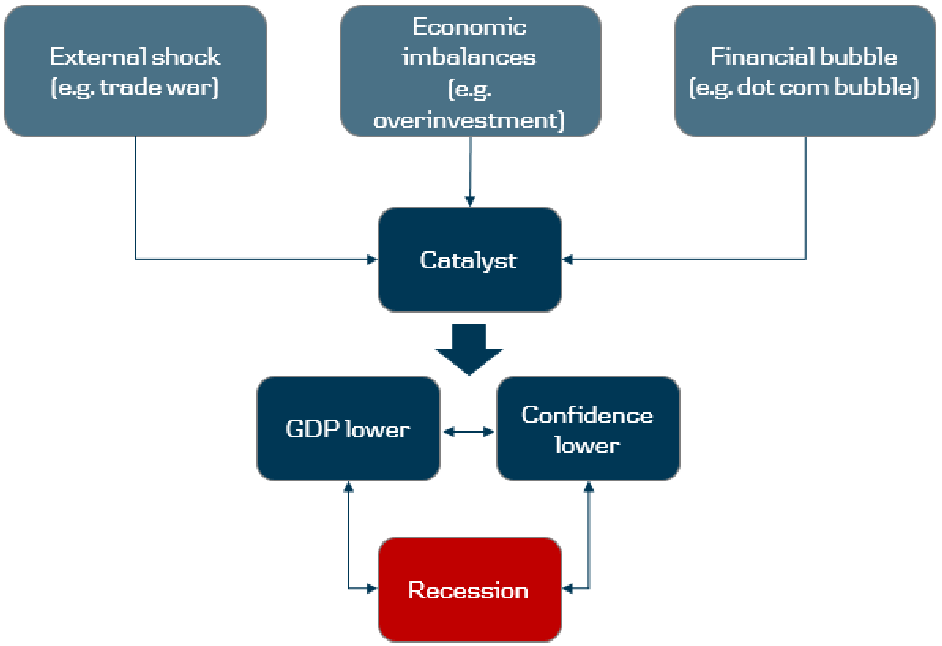
Drivers of recessions – how severe are these risks now?

- Expansions do not die of old age but of disease, such as an external shock, adjustment to economic imbalances or bursting of financial bubbles
- External shock (global trade war, war in the Middle East or to a lesser extent a no-deal Brexit) are currently the biggest risks to the global economy
- Economic downturns are made worse by a deterioration of 'animal spirits'/confidence

Recessions are caused by some kind of shock and worsened by deterioration in 'animal spirits'

- **Expansions do not die of old age but of disease**, such as an external shock (e.g. trade war), adjustment to economic imbalances (e.g. overinestment or too high inflation) or bursting of financial bubbles (e.g. US dot-com and sub-prime).
- **Unfortunately, recessions may originate from an unexpected source**, making them difficult to predict.
- **The economic downturn is worsened by a deterioration of 'animal spirits'** (confidence), as consumers and companies cut back their spending.

Recession process



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Expansions do not die of old age but of disease

- **The US and German expansions are the longest on record** (both measured by GDP and employment growth) but have also been rather gradual. Expansions have different lengths and strengths.

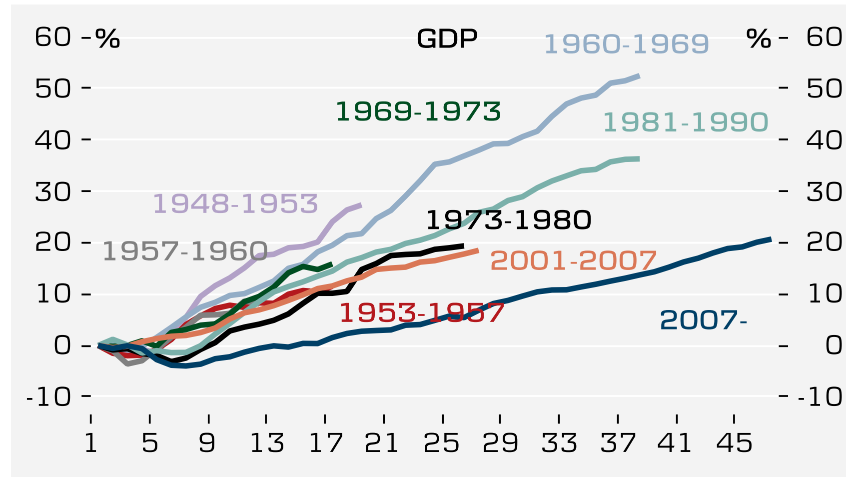
- Based on survival analysis, the SF Fed finds that the **mortaility rates for post-war expansions do not depend on the length of the expansion**, see SF Fed Economic Letter February 2016.

- **In other words, expansions do not die of old age but of disease.**

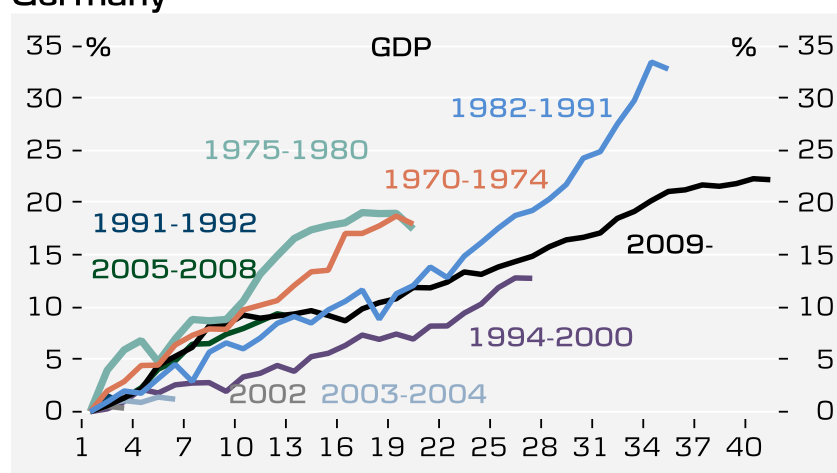
- **The flat mortality rate curve for post war** expansions can be attributed to the influence of government and central banks focusing more on stabilising output and inflation.

- Furthermore, **an increased share of services compared to goods also contributes to stronger expansions** as inventory fluctuations play a smaller role in business cycle movements.

US



Germany



Source: BEA, Destatis, Macrobond Financial, Danske Bank
Note: The 2013Q1 recession is omitted.

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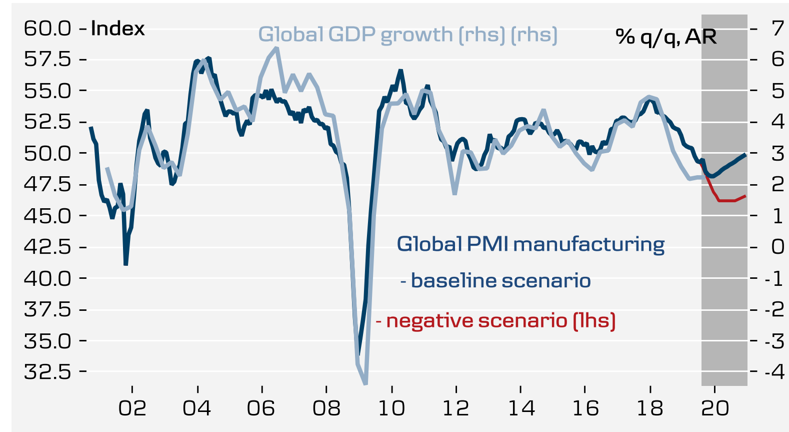
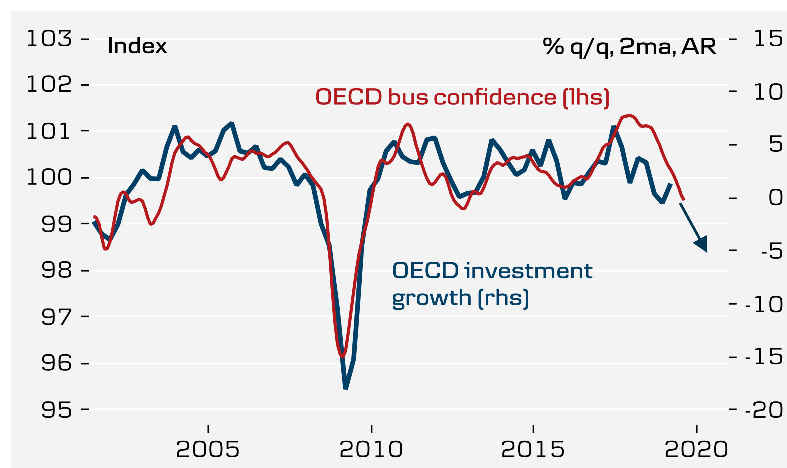
*We think a 'full blown trade war' could be **the** recession trigger…*

- **The main risk facing the world economy is a full blown economic war between the US and China. We put a 25% probability on this scenario.**
- **What do we mean by 'full blown trade war'?**
  - US tariffs lifted to 25% on all imports from China (USD550bn)
  - Extension of US export ban on Chinese tech companies
  - Possible US sanctions on Chinese financial institutions
  - Chinese ban on export of 'rare earth' minerals to the US
  - Chinese boycott of US consumer goods
  - China bans tourist travel to the US
- **What could trigger such a scenario?**
  - Trump has so far used a 'maximum pressure' strategy on China. If he believes China will eventually give in if he keeps adding pressure, this could lead to further escalation. Maximum pressure will likely make it harder for China to make a deal for domestic reasons.
- **What speaks against it?**
  - The scenario will likely inflict a lot of pain on US companies. Consumers will also face higher prices. Farmers and the auto industry take a hit. Four key swing states in 2020 election are exposed to these sectors.



Source: Markit, Danske Bank, Macrobond Financial



Source: OECD, Macrobond Financial

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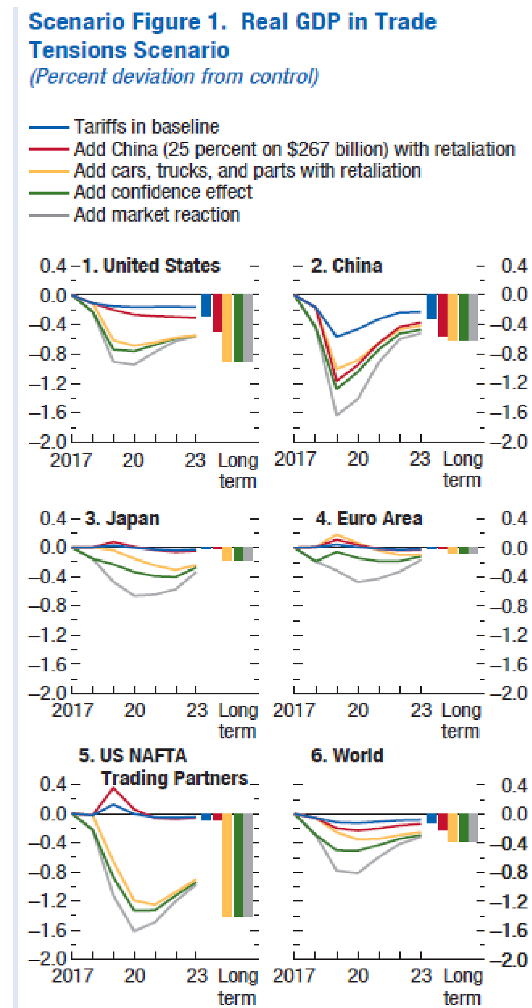
...as global investment, supply chains and consumption will be hit

- **Estimates of trade wars are <u>highly</u> uncertain** as we have witnessed very few trade wars of this scale historically, leaving little to compare with.
- In the full blown trade war scenario, we estimate **global GDP growth to be around 1½% instead of 3.2% in 2020**. The decline comes from:
  a) A big hit to global investments due to uncertainty
  b) Weaker private consumption due to higher prices, job cuts and weaker confidence
  c) Supply chain disruptions that cause difficulties in producing certain products (if you cannot get the right components such as microchips and rare earth minerals you cannot produce the whole product).
- In the IMF's worst case scenario, the trade war subtracts 1 percentage point from global growth, but it does not include possible supply chain disruptions from export bans.
- A key for how big the impact will be is of course also the policy response and how effective it is.

IMF estimates of different trade war scenarios and effects

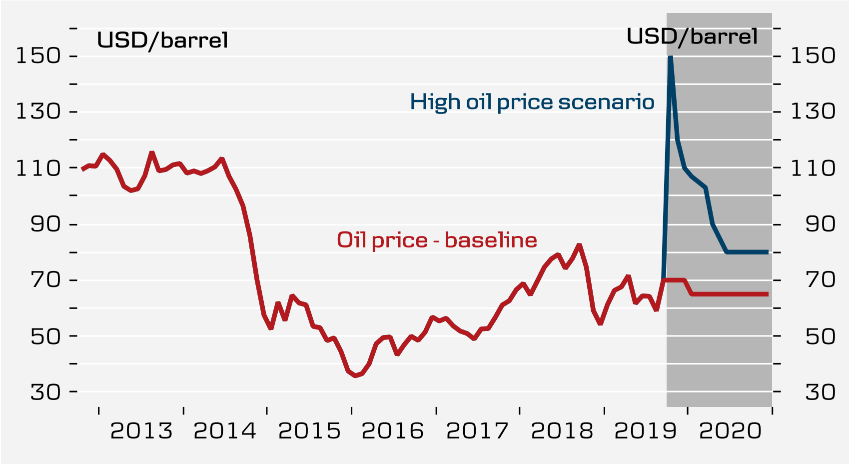


Source: IMF World Economic Outlook, October 2018, p. 35

A region-wide war in the Middle East will trigger a global recession

- Tensions have flared up between Saudi Arabia/the US and Iran following drone attacks on Saudi Arabian oil fields.
- We think the risk of an outright military conflict is relatively low.
- Oil prices could rise by 200% based on evidence from earlier conflicts in the Middle East, such as the Iranian Islamic revolution in the early 1980s and the first Gulf War in the 1990s, implying an oil price of up to USD150/bbl.
- Based on academic papers, this may subtract approximately 1.2pp from global growth after a year, knocking us into recession territory.
- If the conflict is resolved quickly, oil prices should come back down again quite fast, making the recession fairly shortlived

Oil prices could spike amid a region-wide war in the Middle East



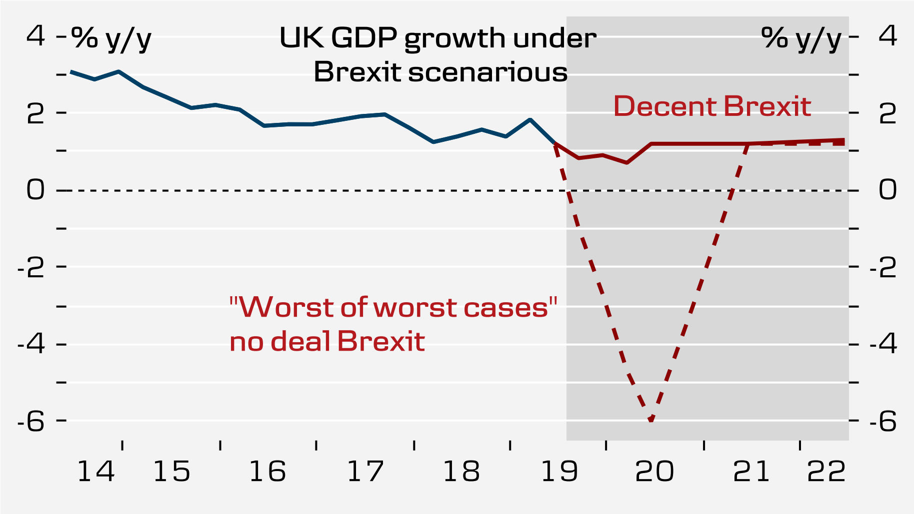
Source: Danske Bank, Macrobond Financial

Effect on GDP (%) from USD10 increase in oil price, after one year	OECD	ECB
USA	-0.3	-0.4
Euro area	-0.3	-0.2
Japan	-0.4	-

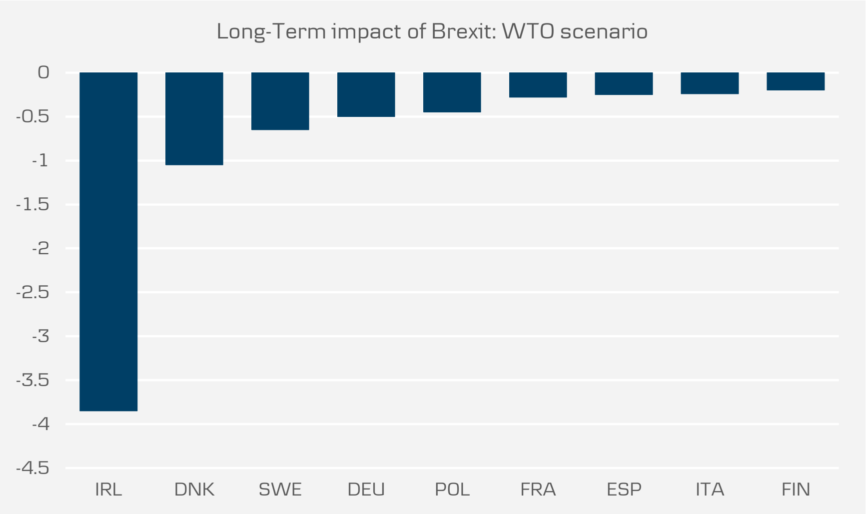
Source: OECD Economic Outlook no. 76, ECB Working Paper 362

No-deal Brexit may hit the UK hard but limited impact on the rest of the world

- A no-deal Brexit will disrupt trade flows and create uncertainty and may in a worst case hit the UK hard.
- Most analysis finds that there are spill-over effects to some EU countries but not all, depending on the trading relationship.
- According to the IMF, the GDP loss for the rest of EU varies between 3.75% for Ireland to 0.2% for Finland.
- Global risk sentiment may take a hit but it will be relatively short-lived (as following the EU referendum).



Source: Bank of England, Danske Bank



Source: Source: IMF June 2018, Danske Bank
https://www.imf.org/~/media/Files/Publications/CR/2018/cr18224.ashx

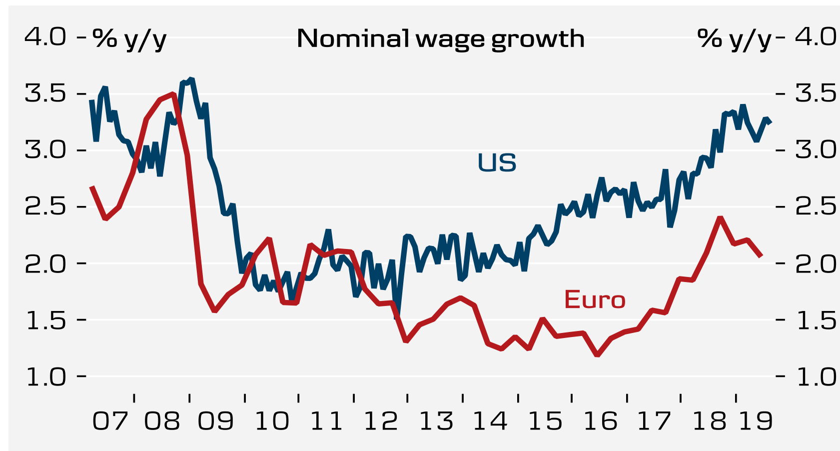
Danske Bank

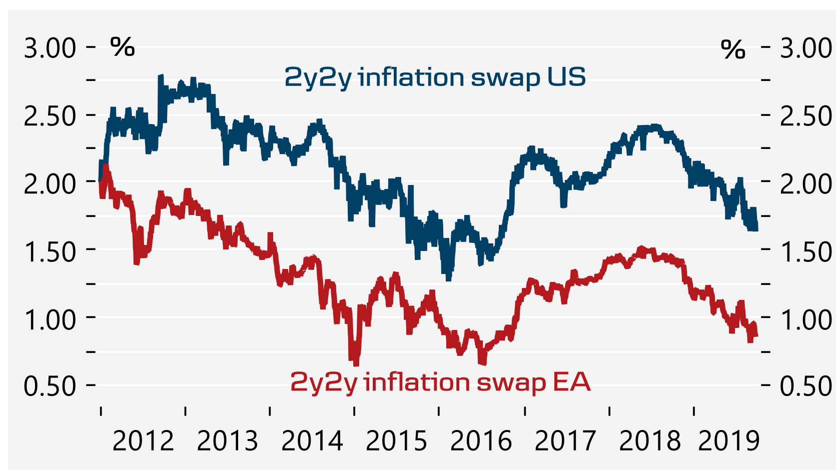
Inflation is too low, not too high, from a central bank perspective

Major central banks unlikely to tighten aggressively if inflation starts rising

- While wage growth has been increasing in recent years, supported by tighter labour markets, it remains subdued in particular in the euro area and Japan.
- Actual inflation remains below 2% and inflation expectations are low from a historical perspective. **Nothing suggests inflation is about to spin out of control.**
- Assuming wage growth accelerates further and inflation starts surprising to the upside, **we doubt major central banks will start tightening monetary policy aggressively**, as they have adopted a more symmetric view on inflation after several years struggling with too low inflation.

Limited wage growth in the euro area and Japan while the US is close to pre-2008 crisis levels





Source: Bloomberg, Macrobond Financial,

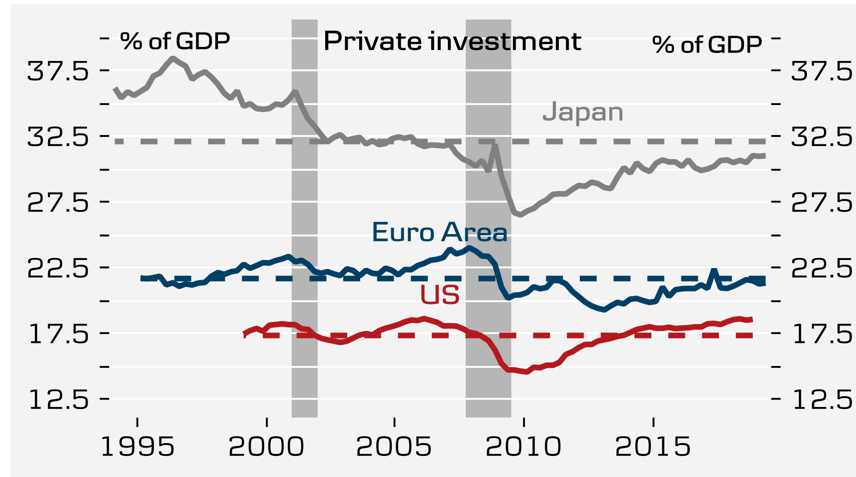
Danske Bank

Investment/consumption: no 'overspending' yet

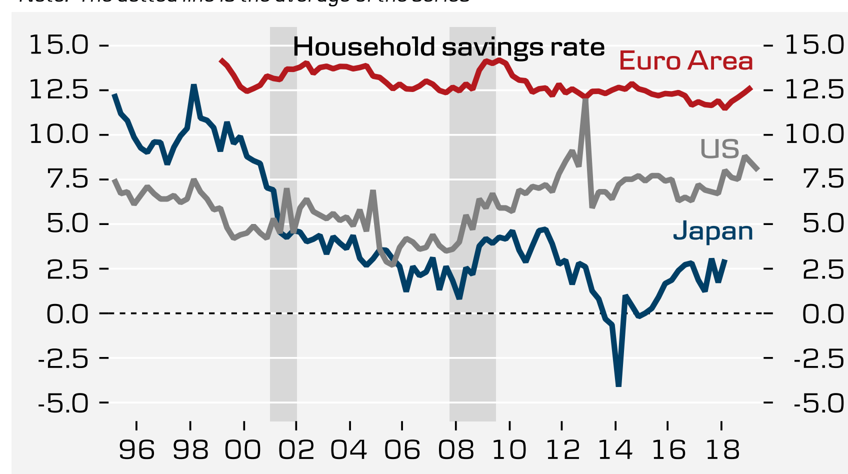
- Rapid growth in investment and consumption can lead to overheating of the economy, as the demand pressures drive up employment growth and wages. This in turn typically forces central banks to step on the brakes.

- While investments are looking a bit high in the US, the levels to GDP are more modest in the euro area and Japan. Furthermore, rather than a sudden surge, the increase has been rather gradual during this expansion.

- On the consumption side, a striking feature in this expansion has been a general rise in the savings rate of households. In most past recessions, the savings rate was dropping in the run-up to the recession, but currently the savings rate is increasing in the US, Japan and the euro area.



Note: The dotted line is the average of the series

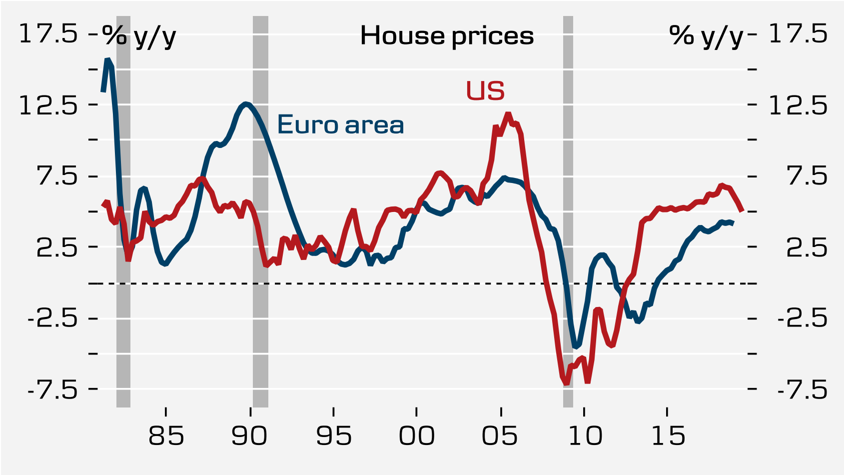


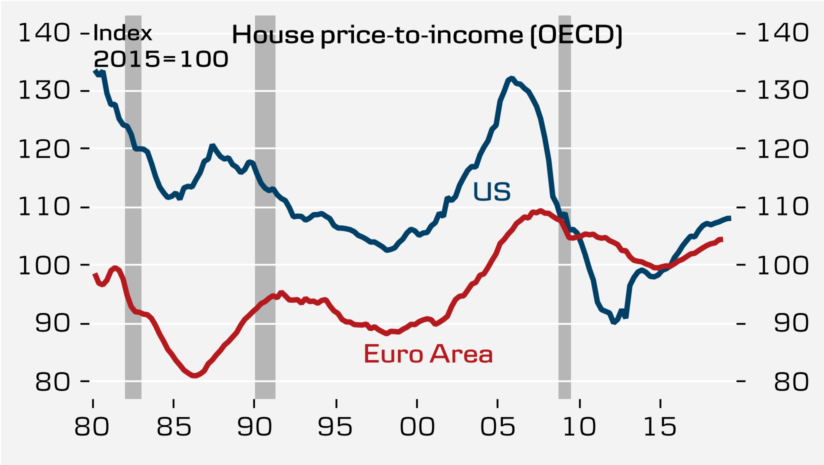
Source: Macrobond Financial, Danske Bank

Danske Bank

No clear signs of a housing bubble although euro area house prices are starting to look a bit expensive again

- The housing bubble was one of the major reasons for the global financial crisis in 2008. In the run-up to the crisis, house prices surged fueled by a credit boom and lowering of credit standards.
- House prices have been increasing in both the US and euro area driven by higher employment and very low mortgage rates. House price growth in both the US and euro area remains below pre-recession levels
- Based on the OECD's house price-to-income ratio, there are some signs that euro area homes are starting to become expensive, while the houses are still relatively cheap in the US compared with other pre-crisis periods.



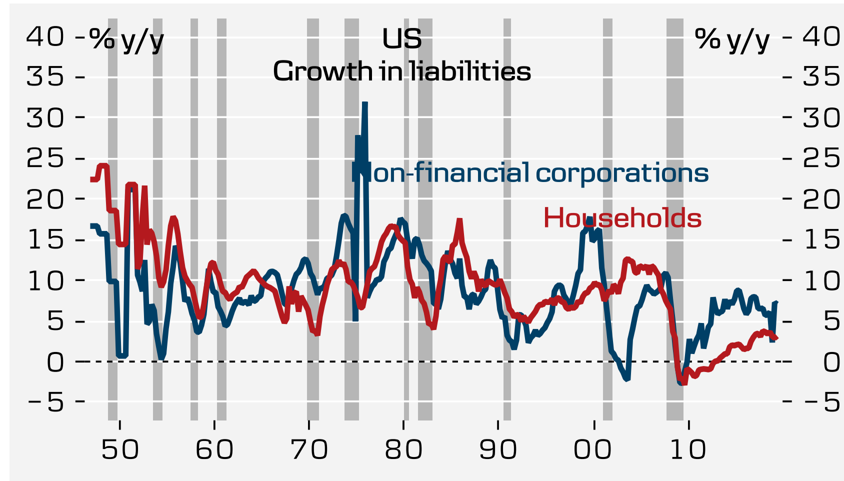


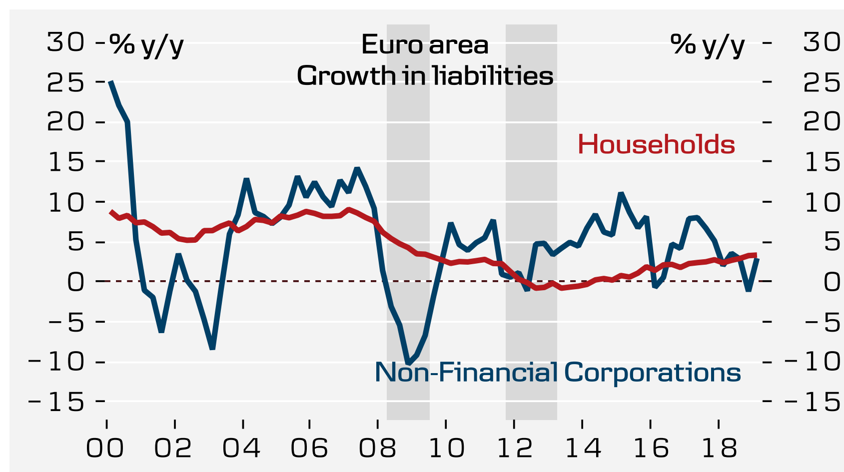
Source: ECB, Federal Housing Finance Agency, Eurostat, BEA, Macrobond Financial

Credit: alarm bells are not ringing yet

- While credit growth is positive both in the US and euro area, **credit growth remains subdued from a historical perspective and alarm bells about another boom-bust cycle in credit are not ringing yet.**
- Credit indicators are not always the best predictors for the timing of a recession and a credit element is not always a necessary feature of a recession either.
- Still, high debt levels make an economy more fragile, increasing its interest rate sensitivity and exposure to macroeconomic shocks.
- All this makes it seem unlikely that central banks see a strong need to suddenly step on the brakes and curb credit growth. If anything, policymakers currently seem more preoccupied with facilitating a continued smooth credit flow to the private sector to upkeep the economic momentum.

Credit growth subdued in both the US and euro area





Source: BEA, Fed, Eurostat, Macrobond Financial, Danske Bank

No equity bubble currently

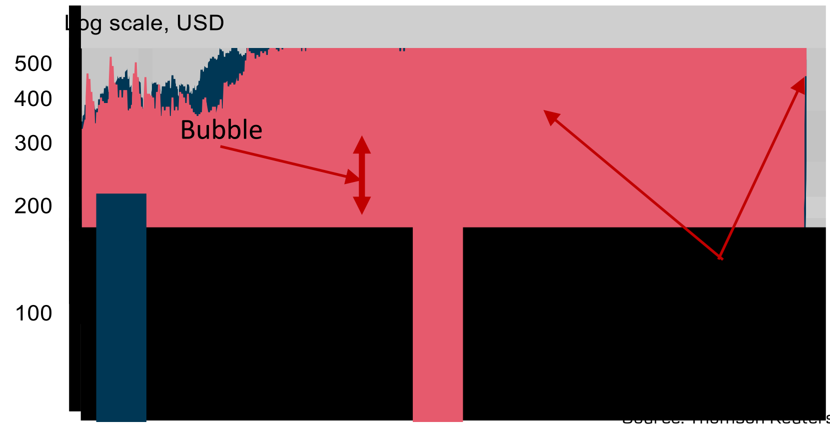
- **We argue that we do not have an equity bubble currently.** Judging whether we have a bubble or not, we prefer to use the relationship between the price of equities vs. the earnings.

- Global stocks were trading roughly 70% more expensively at the peak of the of the bubble in 2000. Back in 2008 stock traded at almost same price as today and hence the negative returns were not because of a bubble but instead the great recession and earnings falling 40%.

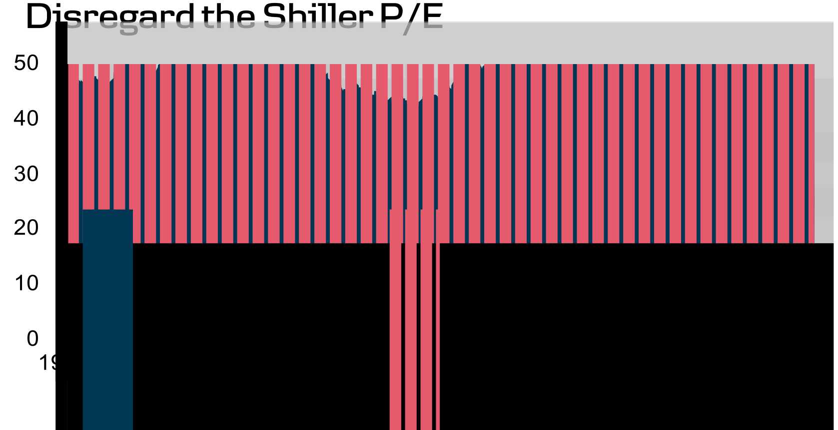
- Shiller P/E is often used as an argument for a bubble but we disagree with this as it does not make sense in our view to judge whether or not we have a bubble now based on earnings numbers going 10 years back.

- We argue that the equity risk premium is very attractive in a historical context, however, as the empirical evidence suggests one should require a higher risk premium as yields are negative or close to zero.

Relationship between price and earnings



Disregard the Shiller P/E



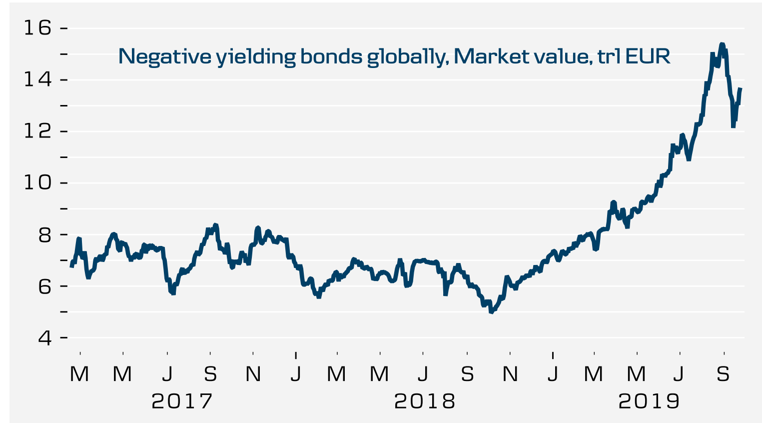
Source: Thomson Reuters

Danske Bank
Markets

A fixed income bubble? On balance no

- **Is this a bond market bubble waiting to burst? On balance we do not think there is a bubble in government bond markets**
- A growing proportion of global bonds are now trading with a negative yield. European nominal yields touched record lows earlier this summer and almost all Germany government bonds are now below zero.
- EUR real rates are deeply negative both if we use the ECB 2% target or market inflation expectations.
- **Rapidly rising yields could potentially inflict heavy losses on investors and trigger a re-pricing of real assets like real estate, alternatives, infrastructure, dividend yielding stocks etc.**

Growing number of bonds with negative yield



Source: Bloomberg

Factor	Yes, it is a bond bubble	No, it is not a bond bubble
Liqudity	Abundant liquidity (cheap money) created by central banks. Cheap money will eventually dissapear.	The system needs abundant liquidity due to new regulation like LCR requirements. This will not dissapear in the forseable future.
QE	One major investor (central banks). An extraodinary measure that eventually will reverse.	Central banks cannot unwind balance sheets and QE is an integrated part of normal monetary policy as neutral real rates
Negative real rates	Real market rates are negative and monetary policy cannot stay accomodative forever given the inflation mandate	Neutral real rates (r*) has fallen inro negative. Hence, the current nominal/real yield level is not particurarly low.
Valuation	Expensive valuation given the current business cycle. Historical low yields. Investors will eventually move away from assets that yields negative. Real money investors that are not funded	If r* is negative due to a new savings-glut/demogrphics yields are not particurarly low. Funding rates will stay negative and funded investors can still make a return. As long a steepness in the
Narrative	We use non-observerable factors like r* to explain the yield-level that furthermore are difficult to estimate with any	Yes, a bubble cannot be seen before it burst. But it does not mean we are in a bubble.
Savings	Will dry out if expected return is negative.	Demographics will spur savings for many years. Negative yields can in fact support savings as investor try so secure purchasing
Supply	Government will utilize negative yields to run unsustainabale deficits	Government cannot do to constraints like Mastricht criteria and market pressure utilize negative yields to any significant degree

Source: Danske Bank

A credit bubble? Yields at all time lows, but no overheating

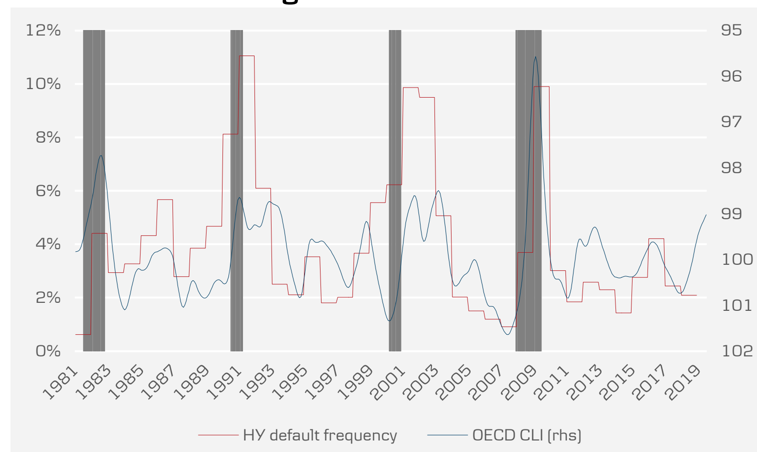
Corporate bond yields are at all time lows, but for a number of reasons we do not perceive the market to be overheated...

- Yields have followed government bond yields down, driven by abundant liquidity caused by central bank support.
- Credit spreads are above the historical lows.
- Historically, there has been some correlation between OECD CLI and HY default rates. CLI currently points towards increasing default rates, but from a very low level.
- Default compensation (OAS corporate bond spread vs predicted default rates) indicates credit risk premium is a tad low in a historical context, but not significantly.

... however, we also note that...

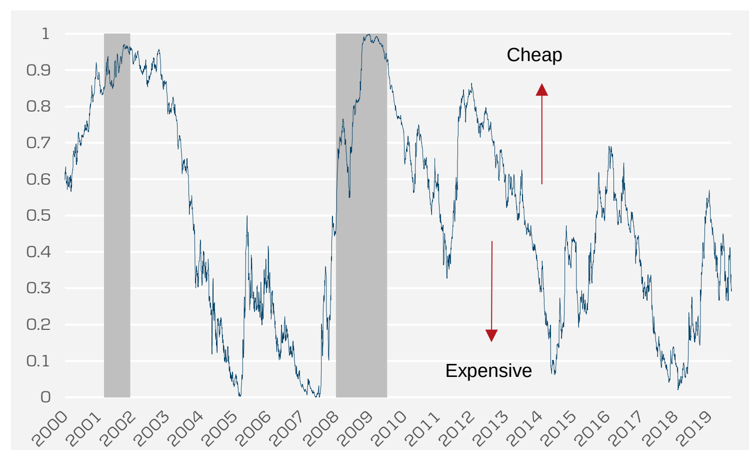
- The gap between corporate bond yields and equities earnings yields is at a two-decade high, indicating a low corporate bond risk premium.
- Corporate debt has outgrown GDP in recent years indicating increasing leverage among companies, although we note that interest coverage may be sustainable given lower rates.

OECD CLI indicating default rates could rise



Source: OECD, S&P, NBER

Default compensation only slightly below median

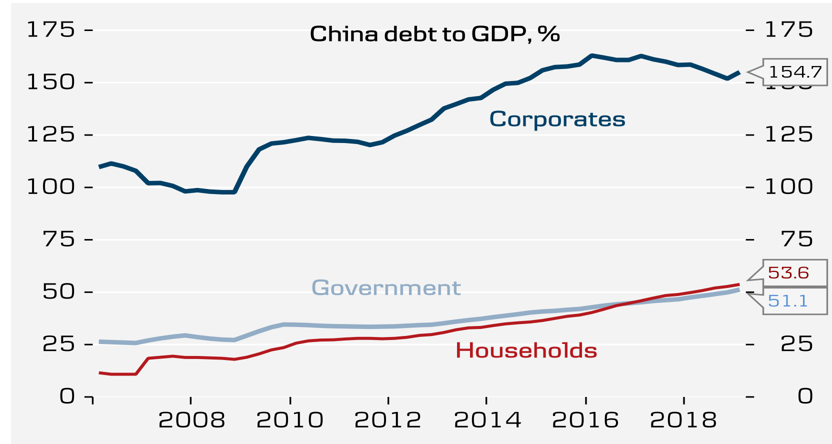


Source: OECD, S&P, NBER, BofAML, Danske DCM Research estimates

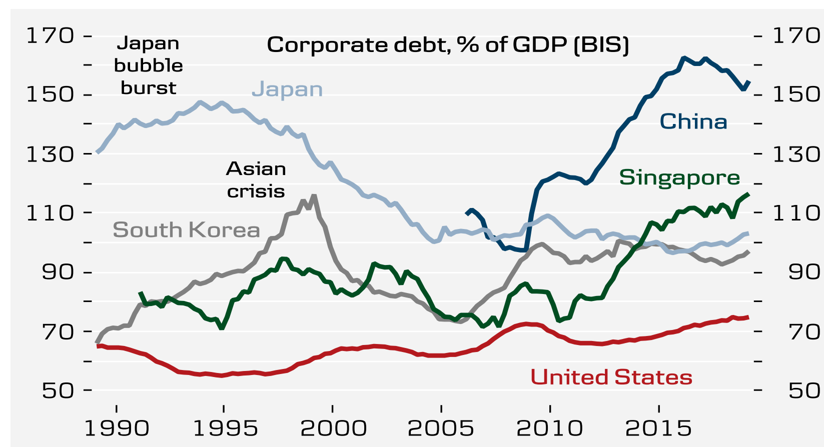
Will China face a financial crisis?

- **Our short answer is: No, but deleveraging will continue to be a drag on Chinese growth in coming years.**
- Since 2016 China has taken many steps to defuse the debt bomb, most notably bringing down corporate debt and cracking down on shadow finance, the two biggest threats to financial stability.
- We do expect a **further rise in defaults** as the slowdown and squeeze on shadow finance is a headwind for companies. We also **expect to see more small banks face difficulties** as was the case with the Baoshang Bank, which was taken over by the Chinese regulator in May this year, see the CNBC report on Baoshang Bank of 6 June.
- China's debt **challenge is mainly the high corporate debt**, which is predominantly debt in state owned enterprises (SOEs), that took on a lot of debt from 2011 to 2015. The level has fallen slightly since 2016 as China put fighting financial risks at the top of the policy agenda.
- **Local government debt has also increased a lot** but the level is still moderate in the big picture.
- **Household debt has increased in recent years but the levels are also moderate** as the starting point was low.
- **Shadow finance grew sharply** from 2011-2016. Shadow finance is all lending that takes place outside the formal banking system, such as wealth management products. However, **since the crackdown starting in 2016 shadow finance has declined significantly.**

China's debt issue is in the corporate sector



High corporate debt and sharp rise from 2011-2016



Source (both charts): Macrobond Financial, BIS, Danske Bank

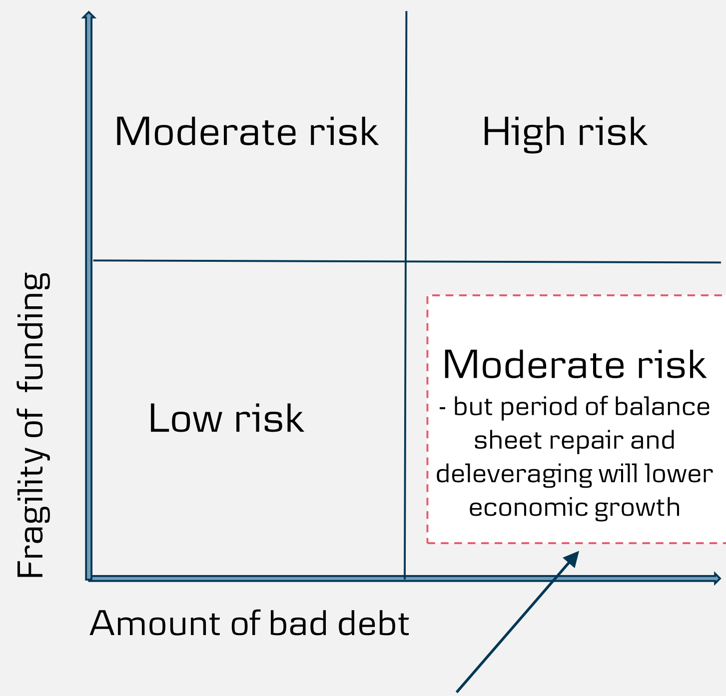
Danske Bank

Why we do not expect a financial crisis in China

- Below we look at the typical ingredients triggering a crisis and how China fits.

1. **Bad debt**. While official NPL is low, the real number is likely higher. Potentially there is a lot of bad debt among SOE's and private real estate developers.
2. **Fragile funding.** With state banks dominating China's lending, the funding of debt is quite stable. The government can roll over bad debt and/or dispose of it in 'bad banks' as it did in the 1990s when China faced massive non-performing loans. China has also worked to reduce the rising fragility from the rise in shadow finance. Finally, most debt is domestic so there is no risk of a sudden stop from foreign investors. Capital controls also limit this.
3. **Trigger.** A sharp economic downturn and/or collapse of the housing market would trigger significant losses, but while regional bubbles probably exist it is not clear that there is a national housing bubble (IMF paper, 16 November 2017).
4. **Inadequate tools to contain crisis.** In our view China has a big tool kit to fight a crisis. First, state banks can buy up credit bonds and roll loans at risk of default. Second, it can free up liquidity for asset purchases by reducing reserve requirement ratios. Third, it can create bad banks where bad assets are disposed of. Fourth, it can use direct purchases by PBoC (QE) to buy credit bonds. Fifth, it can issue a guarantee on 'shadow bank deposits' to forestall a run on these. Sixth, it can ease fiscal and monetary policy.

Risk of financial crisis



*We put the **risk of Chinese debt crisis at 'Moderate'** given China's stable funding and many tools to contain a crisis*

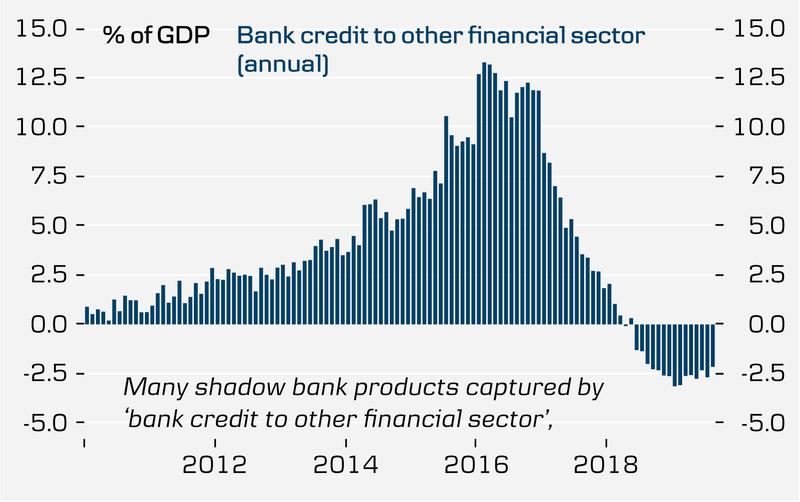
Source: Danske Bank

Danske Bank

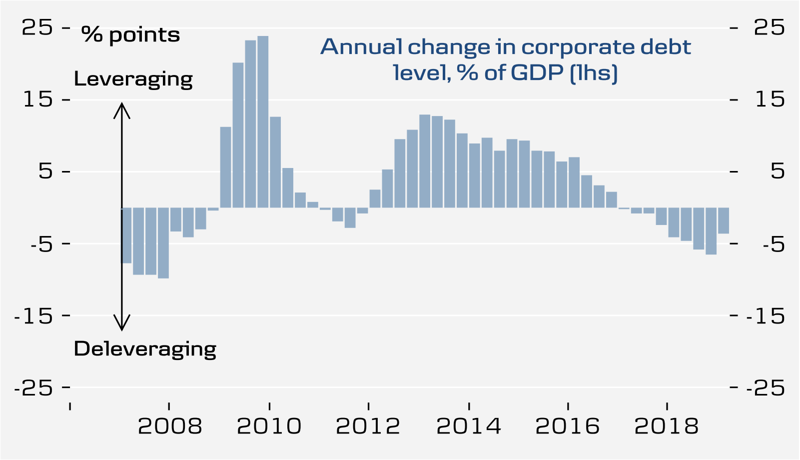
China's strategy: let air out of debt bubble and stabilise funding

- In 2015 China put **fighting financial risks** at the top of the agenda naming it as one of the so-called 'three tough battles' (the other two being poverty and pollution).
- The **key elements in China's strategy** to fight the financial risks have been:
  - Reduce leverage in SOEs and close zombie companies
  - Crack down on shadow finance
  - Strengthen regulatory set-up through reform that strengthens coordination
  - Improve profitability through supply side reform. A reduction in overcapacity in some sectors has lifted output prices from depressed levels (steel and coal).
- The strategy has been worked out in cooperation with the IMF, which has acknowledged China's efforts, while highlighting that more work needs to be done (see IMF PRC Financial System Stability Assessment, December 2017).
- Over the past year **China has added more measures** to the strategy: the PBoC has directed credit to the private sector through various tools after it became clear that the crackdown on shadow finance cut off a significant source of credit to the private sector, not least many small and medium-sized enterprises.
- In summary China's strategy to defuse the debt bomb has been to let the air out of the debt bubble through gradual deleveraging and at the same time make the funding of debt less fragile by cracking down on the shadow banking system.

Crackdown on shadow banking has made funding more stable



Deleveraging of SOEs is progressing

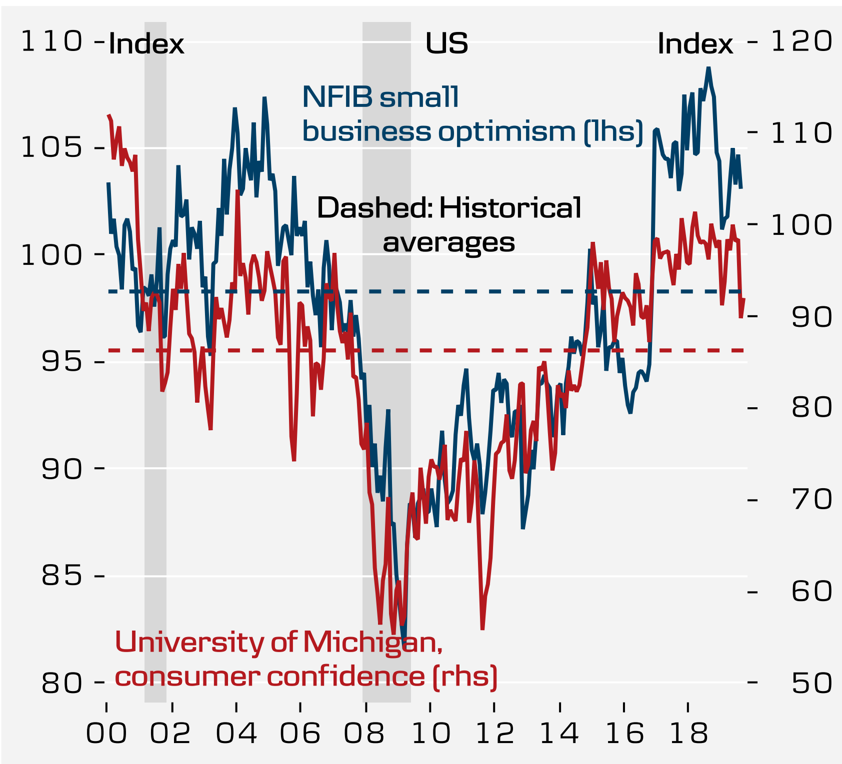


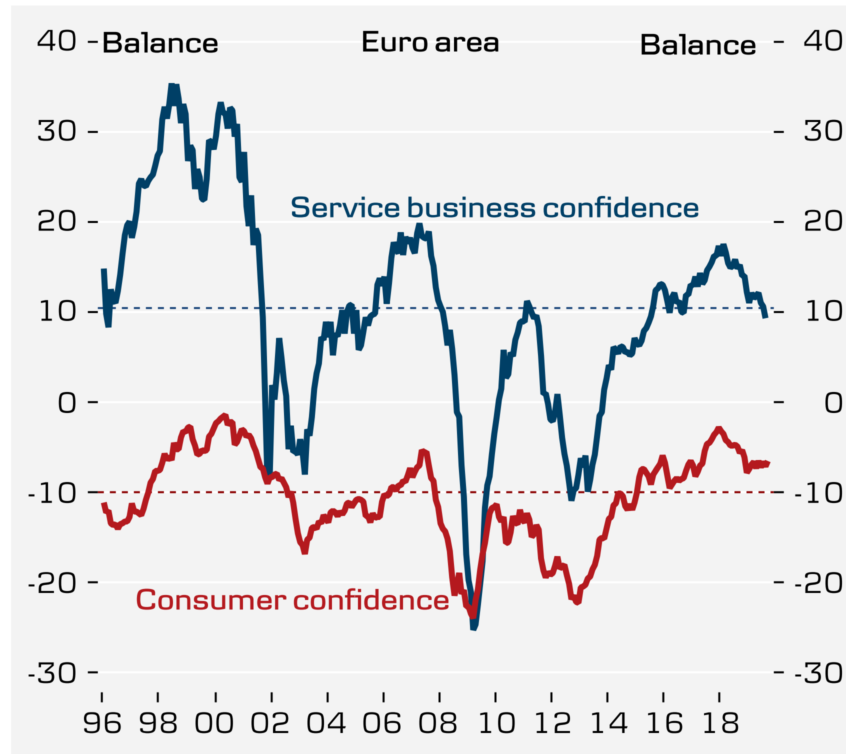
Source: Bank of International Settlements and Macrobond Financials

Danske Bank

Animal spirits remain strong in the US and euro area

- Consumer/business confidence not a leading indicator but a drop in confidence worsens the downturn (animal spirit)
- Consumer confidence in both the US and euro area remains high in a historical perspective
- Business confidence is still high among domestic companies in US, but has dropped below average in the euro area





Source: University of Michigan, European Commission, Macrobond Financial, Danske Bank

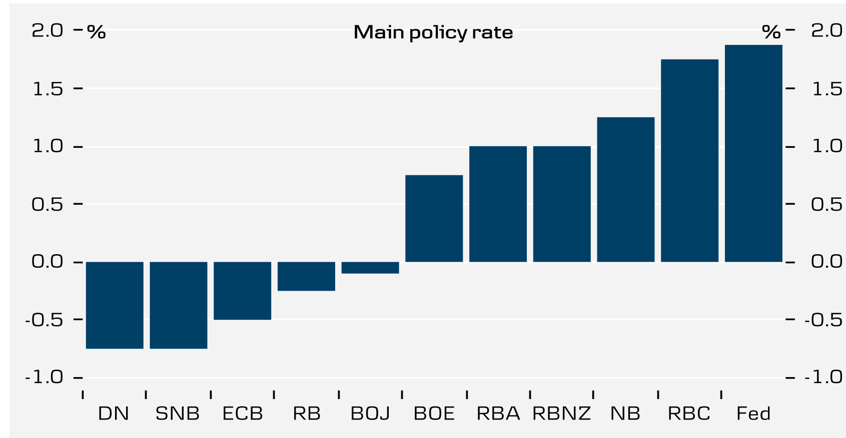
An empty bazooka?
Policy space to counter a recession

- Conventional monetary policy instruments are limited. Central banks may have to resort to new bond purchases including new asset classes
- Fiscal policy is constrained by high debt levels, but the fall in yields opens more policy space
- Political will – and temporary suspension of deficit rules – may be the main tool in town.

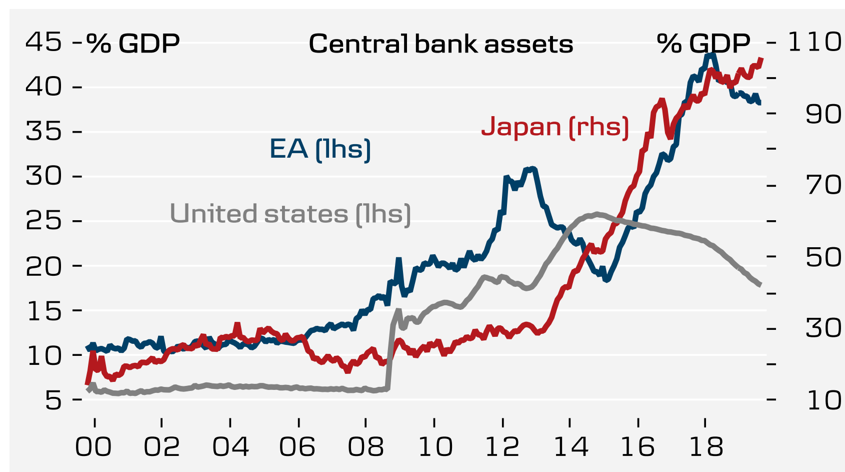
Danske Bank

Monetary policy – how much more firepower do central banks have left?

- Since the financial crisis, unconventional monetary policy measures have become part of the standard policy toolbox.
- Apart from the Fed, the central banks have not been able to roll back their quantitative measures and raise policy rates.
- With policy rates already close to the 'effective lower bound', the real question remains how much ammunition central banks have left without implementing further unconventional monetary policy measures.



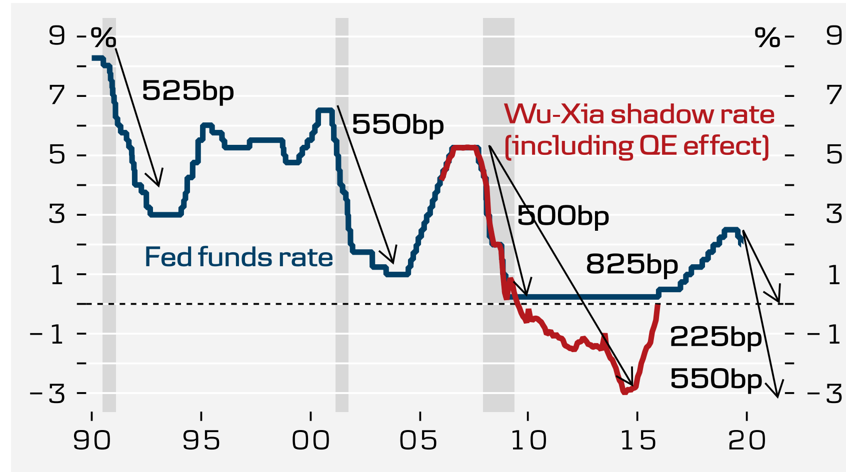
Source: Macrobond Financial



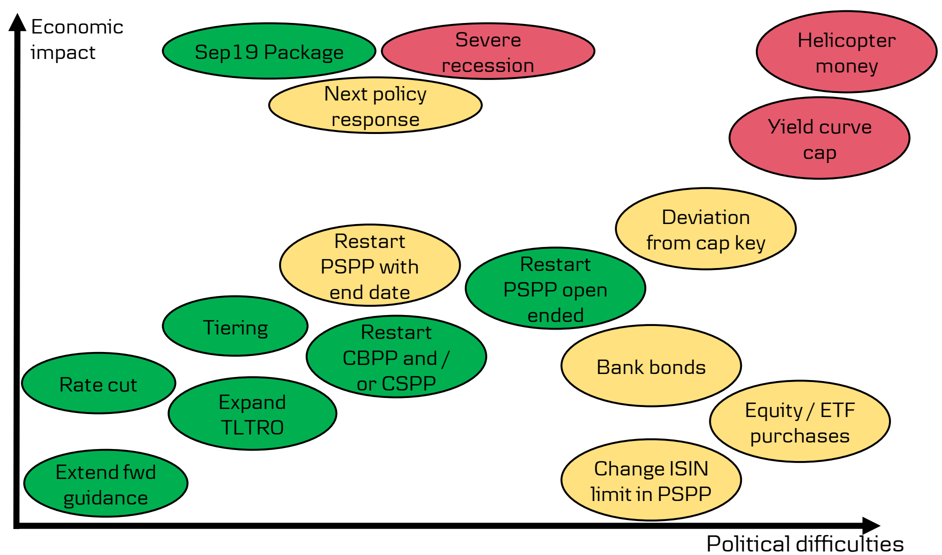
Source: ECB, Fed, BoJ, Macrobond Financial

Conventional monetary policy measures

- The Fed has cut the Fed funds rate by at least 500bp in all three recessions since the early 1990s.
- With the current yield level, the Fed has limited room to cut rates before it would be forced to restart QE or cut interest rates below zero (the bar for negative rates seems really high though).



- The ECB has much less room to manoeuvre on the conventional interest rate channel.
- In a near term recession we see the ECB as likely to cut rates slightly, although the big bazooka lies in a committed open-ended purchase programme – or moving into new asset classes, such as ETF or senior financials.
- Outright transfers / helicopter money is at very low probability and we need to see quite a severe recession before we see outright transfers.

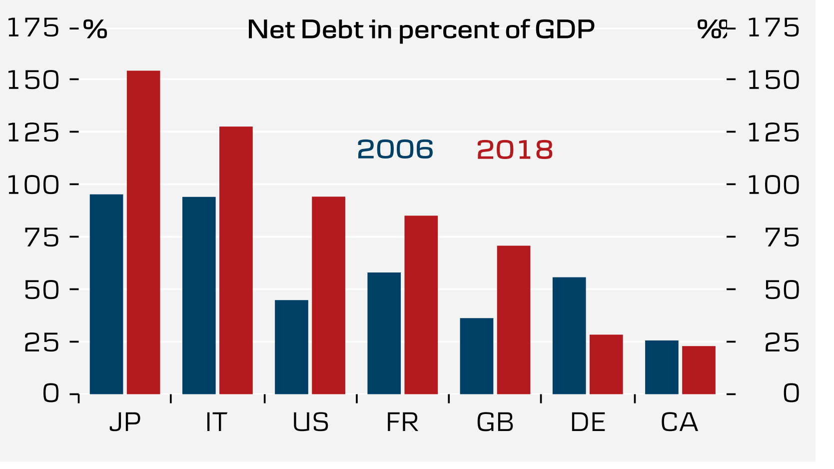


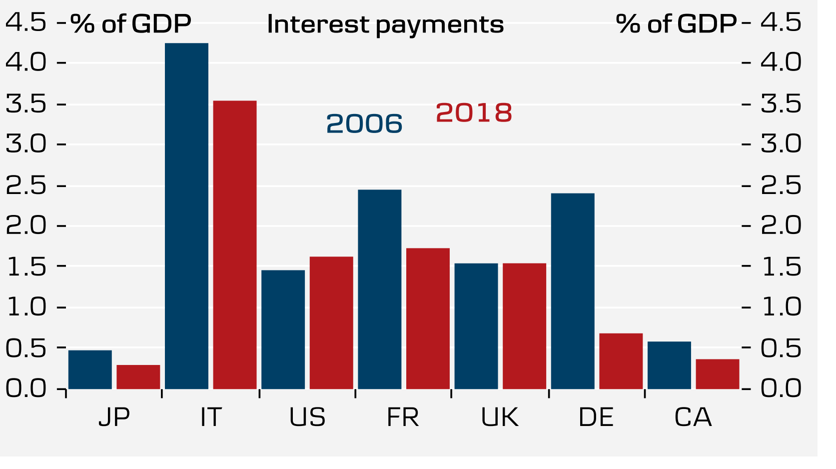
Source: Macrobond Financials and Danske Bank

Danske Bank

Public debt has risen in most countries, but the interest burden has declined

- In the aftermath of the GFC, the debt to GDP ratio rose sharply, as countries stepped in to counter the deep recession and to support the banking system (bail outs).
- In most countries, the debt burden remains considerably higher than before the global financial crisis.
- Only a few countries, such as Germany, have managed to bring down their public debt burden.
- **Despite the increase in debt levels, the interest burden has actually fallen or stayed the same in most countries, as interest rates have fallen.**





Source: IMF WEO database April 2019, Macrobond Financial, Danske Bank

Danske Bank Markets

The sharp decline in yields increases the room for fiscal expansion

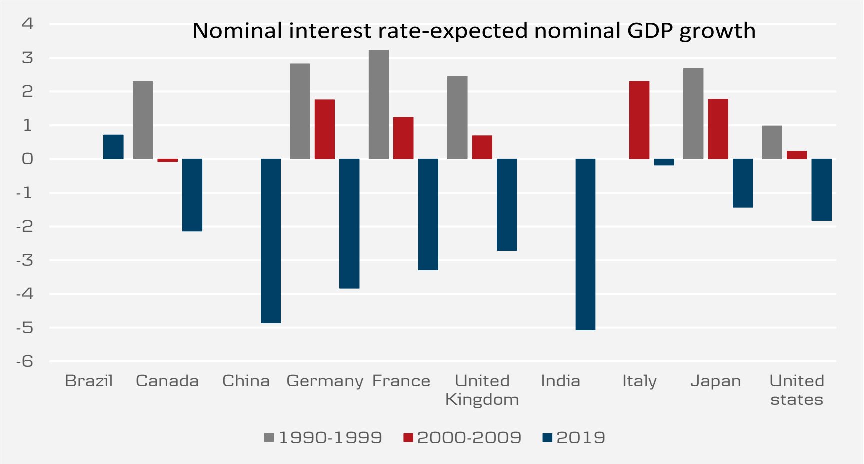
- Interest rates are low not only for cyclical but also structural reasons and we expect interest rates to stay low for the foreseeable future (see also Research Global: Euro area rates to stay very low for very long, 13 June).

- Low interest rates increase the boundaries of debt sustainability unless nominal growth outlook also weakens concurrently. What matters for debt dynamics is the difference between interest rates and growth, (r-g), see box below.

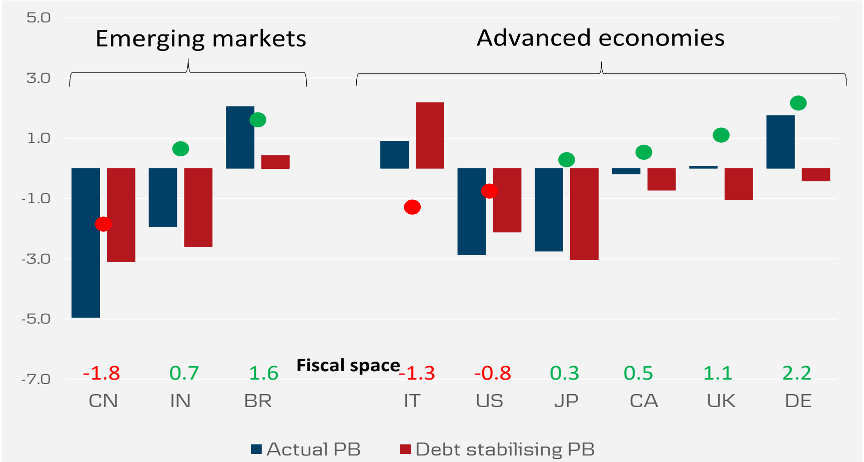
- **There are a number of emerging market and advanced economies that have fiscal space to counter downward pressure on the their economies given the low yields.**

Debt projections are made with a simple debt-accounting model, which uses data on real GDP growth (g), the real interest rate (r) and the primary balance (pb).

$$D_{t+1} = \frac{(1+r_t)}{(1+g_t)} D_t - pb_t$$



Source: IMF World Economic Outlook April 2019, Danske Bank calculations, Macrobond Financials



Source: Bloomberg, IMF World Economic Outlook, Danske Bank

Note: The primary balance (PB) with stable debt is calculated as the primary balance that stabilises the debt to GDP ratio using the current 10-year real government yield and expected real GDP growth over the next five years (based on IMF WEO projections). When actual PB is higher than the debt stabilising primary balance, then the government has room to loosen fiscal balance without seeing a rise in the debt to GDP ratio

Danske Bank

Risk of recession – scenario and scorecard

- Scorecard--The risk of recession is greatest in the euro area given limited monetary policy space and political will
- An escalation of the global trade war is the most immediate risk factor that could trigger a global recession in our view
- The downturn in the global economy will cause a forceful reaction from central banks and governments in the G4

Recession score card: euro area bears highest recession risks

- We have summarized our findings across regions in the table below.
- Markets have been captured by recession fears, most prominently in the euro area and the US, but various recession indicators do not yet point to an imminent global recession.
- Across regions, an external shock (i.e. through trade war) remains the most prominent recession trigger, while there is scarce evidence for bubbles in financial, housing and credit markets. The euro area currently looks most vulnerable to being hit by a recession, not least because the policy space – especially on the monetary policy side – to counter a downturn is limited.

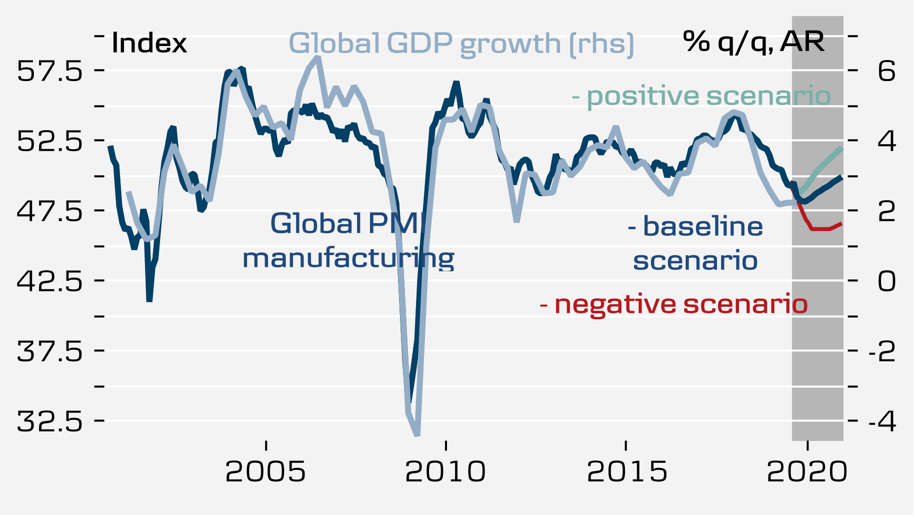
	US	Euro area	Japan	China
Recession indicators	0.3	0.3	0.1	0.2
Yield curve	0.5	0.0	0	0.0
Length	0	0.0	0	0.0
Growth trackers	0.25	0.5	0.25	0.75
Market sentiment	0.5	0.75	0.25	0.0
Recession drivers	0.6	0.6	0.6	0.7
Financial bubbles	0.5	0.5	0.5	0.5
Real bubbles	0.25	0.25	0.25	0.5
Shocks	1.0	1.0	1.0	1.0
Policy space to counter a recession	0.5	0.75	0.75	0.375
Monetary policy	0.5	1	1	0.5
Fiscal policy	0.5	0.5	0.5	0.25

Score: 1 = high risk; 0.5=medium risk; 0= low risk
Subcategory score is calculated as simple average
Source: Danske Bank

Our recession scenario and policy responses

- Based on our analysis above, we see the escalation of the trade war between China and the US as one of the key triggers that can throw the world economy into a recession.
- Such a scenario would entail 1) the US escalating the trade war, hiking tariffs rate on the remaining $300bn imports from China and imposing export bans on technology exports to China and 2) China retaliating by banning rare earth material exports to the US and 3) Chinese consumers starting to boycott US products.
- A shock of this nature would lead to further contraction in the global manufacturing sector activity as the global supply chains would be further hit and trade would decline between the two big economies. Furthermore, escalation would weigh further on confidence and investment appetite.
- We see a 30% chance of the global economy entering a recession over the next 1-2 years.

A further escation of the trade war would hit the global manufacturing sector hard…



…and the Japanese and euro area economies would witness negative growth while the US economy would come almost to a stand still

	Baseline		recession scenario	
GDP growth	2020	2021	2020	2021
US	1,7	1,8	0,9	1,1
Euro	0,9	1,3	-0,3	0,3
China	6,0	6,0	5,6	5,7
Japan	0,5	0,3	-0,3	-0,2

Source: Markit economics, Danske Bank

A recession would cause a forceful reaction from central banks and governments in the G4

	Monetary policy		Fiscal
	Policy rate*	QE/other?	Likely size and type (tax, spending)
US	0-0.25%	QE restart	Neutral 2020, may ease in 2021 after Presidential election depending on outcome
Euro	-80 bp (lower tier)	QE at 60bn/ m, senior financials. Outright transfers?	Fiscal easing in Germany of about 0.5% of GDP, more lenience towards Italian tax cuts and infrastruture spending
China	-150bp	Lower RRR, more targeted liquidity	Fiscal easing of around ½% of GDP
Japan	-20bp (to -0.3%)	Promise low rates for longer More ETF purchases, stop tapering	Postpone fiscal balance target further (spending)

Source: Danske Bank

Disclosures

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None.

Date of first publication

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