

ECOWEEK

No. 19-46, 13 December

Eurozone: very low interest rates for how long?

■ Danish monetary policy is closely linked to ECB policy so the recent statement of Denmark's central bank governor that he expects interest rates to remain around current negative levels in the next five to ten years is not without importance for the eurozone ■ Forward guidance by ECB implies that policy will only be adjusted when justified by economic conditions. The inability to be clearer in terms of time frame illustrates the complexities of inflation dynamics ■ Past wage increases will gradually filter through in a pick-up in inflation although low inflation, well-anchored inflation expectations and intense competition in certain sectors may very well moderate this transmission ■ It thus seems clear that the current policy will remain in place for a considerable time. How long 'considerable' turns out to be will depend on the data. The eurozone clearly needs more growth.

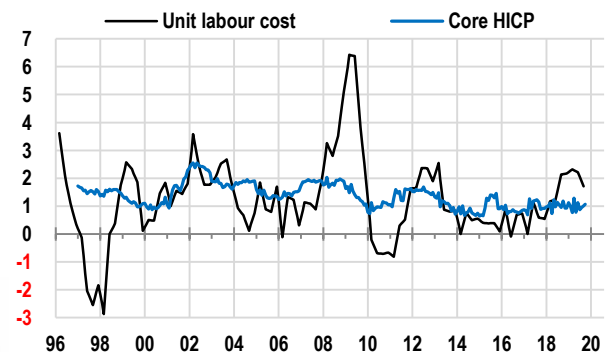
For how long will ECB policy rates stay at their current level? Recent statements by Scandinavian central banks have, indirectly, shed some light on this. According to Reuters, "Denmark's central bank governor Lars Rohde expects interest rates to remain around current negative levels in the next five to 10 years."ⁱ Considering that Danish monetary policy is closely linked to ECB policy, it is tempting to consider this statement as an implicit projection for eurozone policy rates. His Swedish counterpart at the Riksbank, on the other hand, has flagged that, despite a slowing economy, the executive board will most probably raise the repo rate from -0.25% to 0% at its meeting on 19 December.

According to governor Stefan Ingves, negative rates have worked well "but it is a completely different conversation what happens in an economy if you stick to negative rates for a long, long time period."ⁱⁱ This suggests that the planned repo rate hike is inspired by concerns about possible unintended consequences of a prolonged negative rate, an issue which is most relevant for the eurozone as well. However, such a move should not be considered as the start of a tightening cycle.

According to the governor, considering the very uncertain outlook for economic activity and inflation, it is "difficult to say, at present, when it will be appropriate to raise the repo rate next time."ⁱⁱⁱ This difficulty also underpins the data-dependent forward guidance by the Federal Reserve (which implies that rates are on hold as long as there is no material reassessment of the growth and inflation outlook) as well as the ECB's state-dependent forward guidance (which requires a robust convergence of inflation to a level close to but below 2%).

This guidance implies that policy will be adjusted when justified by economic conditions but the reluctance, or should one say inability, of major central banks to be clearer in terms of time frame illustrates the complexities of inflation dynamics. These can be represented as a trickle-down process whereby 1) strong demand on a sustained basis 2) creates bottlenecks in the labour market, which 3) causes an increase in wages and, 4) despite increases in productivity, a pick-up in unit labour costs. Strong demand for goods and services may very well reduce the price elasticity of demand, thereby 5) enabling companies to raise their prices so as to shield their profit margins from higher wage costs. This sequential process takes time as the economy moves through the different phases. In the current cycle, eurozone wage growth eventually accelerated, even significantly in some countries, in conjunction with a decline in the unemployment rate and the emergence of labour market bottlenecks. The real issue is the transmission of higher wages into higher inflation, which has been until now very limited.

EUROZONE: UNIT LABOUR COST VS CORE INFLATION, Y/Y%



Source: Eurostat, BNP Paribas

p. 3

Markets Overview

p. 4

Pulse & Calendar

p. 5

Economic scenario

ECONOMIC RESEARCH DEPARTMENT



BNP PARIBAS

The bank
for a changing
world



What does this mean for the outlook for monetary policy? In recent months, bottlenecks have eased considerably in manufacturing, although they still remain above previous cyclical peaks. In services and construction they have stabilised at a very high level. Profit margins (gross operating surplus as a percentage of value added) have been on a declining trend, which may increase the reluctance of companies to yield to demands for higher wages if they consider that the slowdown in sales weakens their pricing power. Should there be re-acceleration in growth, bottlenecks would resurface quite soon leading to faster wage growth, which should lead to a pick-up in inflation. The question is how much and how fast? In this respect, Bundesbank research shows that, in Germany, a 1% increase in wages results in a 0.3% increase in consumer price inflation. *“However, it takes considerably longer than one year for the cyclical adjustment of prices to a wage shock to be largely complete.”*^{iv} This could imply that part of the recent pick-up in wages still needs to show up in German inflation. A factor which may complicate matters is that, according to research by the ECB, a low inflation environment is associated with a more moderate pass-through.^v Finally, empirical research by the IMF shows that the impact of faster wage growth on inflation builds up gradually, peaking after about 6 quarters. *“Overall, the passthrough ratio—defined as the ratio between the cumulative change in prices and the cumulative change in wages—is about a third.”* Moreover, this transmission is more moderate when inflation is low, when inflation expectations are well-anchored and when competition (foreign as well as domestic) is intense. On the other hand, declining profit margins tend to cause a bigger transmission, but in a competitive environment, this puts companies between a rock and a hard place: increasing prices to protect profit margins may come to the detriment of sales volumes.

To conclude, the bottlenecks which remain high (though less than before in manufacturing, because of the crisis in this sector) has already led to somewhat higher wage increases. These will gradually filter through in a pick-up in inflation, but such a process takes several quarters and, as shown by empirical research, a number of conditioning factors (low inflation, well-anchored inflation expectations, intense competition in certain sectors) may very well moderate this transmission. Given the firm conditions set by the ECB Governing Council before envisaging a change in policy, it thus seems clear that the current policy will remain in place for a considerable time. How long 'considerable' turns out to be will depend on the data. The eurozone clearly needs more growth.

William De Vijlder

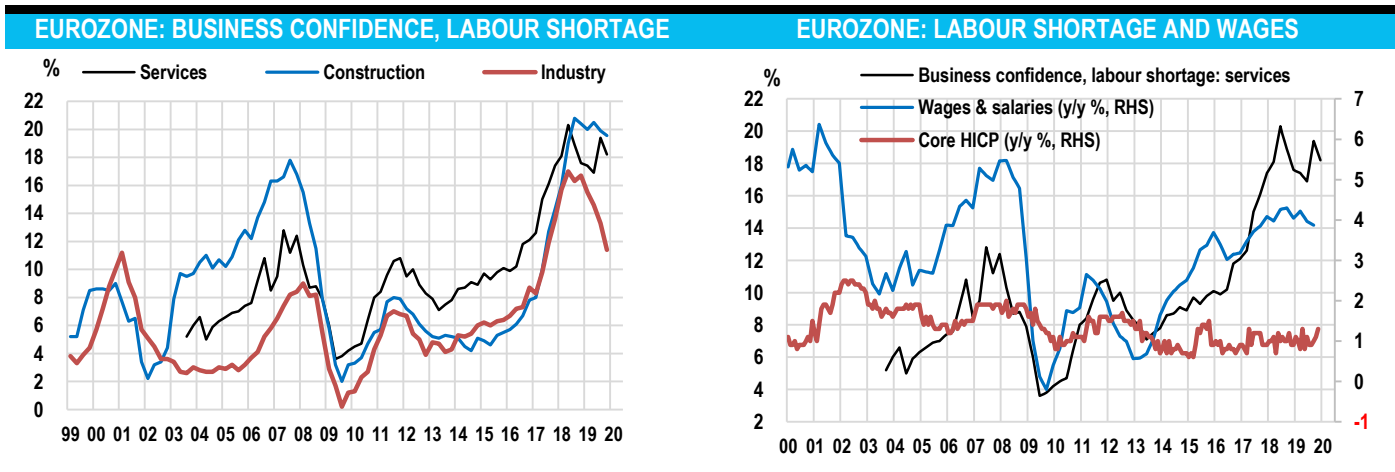
ⁱ Danish central bank governor sees negative rates in next 5-10 years – Borsen, Reuters, 25 November 2019

ⁱⁱ Swedish central bank to hike in Dec, end 5 years of negative rates, Reuters, 24 October 2019

ⁱⁱⁱ Repo rate unchanged at -0.25 per cent, Press release, 24 October 2019, Sveriges Riksbank

^{iv} The impact of wages on prices in Germany: evidence from selected empirical analyses, Deutsche Bundesbank, Monthly Report, September 2019

^v The link between labor cost and price inflation in the euro area, ECB working paper 2235, February 2019



Source: European Commission surveys, BNP Paribas

Source: European Commission surveys, BNP Paribas



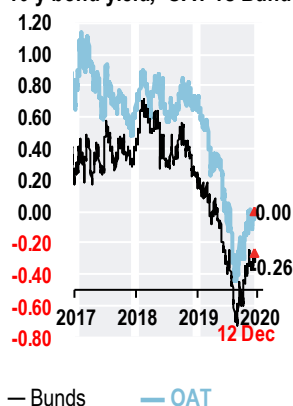
Markets overview

The essentials

Week 6-12 19 > 12-12-19

↗ CAC 40	5 872	▶ 5 884	+0.2 %
↗ S&P 500	3 146	▶ 3 169	+0.7 %
↗ Volatility (VIX)	13.6	▶ 13.9	+0.3 pb
↘ Euribor 3M (%)	-0.39	▶ -0.40	-0.2 bp
↘ Libor \$ 3M (%)	1.89	▶ 1.89	-0.3 bp
↗ OAT 10y (%)	-0.02	▶ 0.00	+2.1 bp
↗ Bund 10y (%)	-0.29	▶ -0.26	+2.8 bp
↗ US Tr. 10y (%)	1.84	▶ 1.90	+5.5 bp
↗ Euro vs dollar	1.10	▶ 1.11	+0.6 %
↗ Gold (ounce, \$)	1 460	▶ 1 466	+0.5 %
↗ Oil (Brent, \$)	64.3	▶ 64.5	+0.3 %

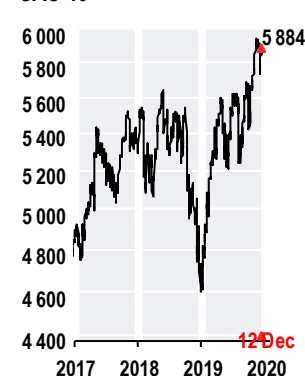
10 y bond yield, OAT vs Bund



Euro-dollar



CAC 40



Money & Bond Markets

Interest Rates	highest' 19	lowest' 19
€ ECB	0.00 at 01/01	0.00 at 01/01
Eonia	-0.46 at 07/06	-0.47 at 03/10
Euribor 3M	-0.40 at 24/01	-0.45 at 03/09
Euribor 12M	-0.27 at 06/02	-0.40 at 21/08
\$ FED	2.50 at 01/01	1.75 at 31/10
Libor 3M	2.81 at 01/01	1.89 at 05/12
Libor 12M	3.04 at 21/01	1.85 at 04/10
£ BoE	0.75 at 01/01	0.75 at 01/01
Libor 3M	0.93 at 29/01	0.75 at 29/08
Libor 12M	1.19 at 11/01	0.81 at 03/09

At 12-12-19

Yield (%)	highest' 19	lowest' 19
€ AVG 5-7y	-0.02 at 09/01	-0.36 at 03/09
Bund 2y	-0.63 at 05/03	-0.92 at 02/09
Bund 10y	-0.26 at 01/01	-0.72 at 28/08
OAT 10y	0.00 at 08/01	-0.44 at 28/08
Corp. BBB	0.91 at 08/01	0.64 at 30/08
\$ Treas. 2y	2.62 at 18/01	1.39 at 03/10
Treas. 10y	2.78 at 18/01	1.46 at 04/09
Corp. BBB	4.65 at 01/01	3.15 at 04/09
£ Treas. 2y	0.83 at 27/02	0.31 at 08/10
Treas. 10y	1.35 at 18/01	0.33 at 03/09

At 12-12-19

10y bond yield & spreads

1.89%	Greece	215 pb
1.24%	Italy	150 pb
0.46%	Spain	72 pb
0.41%	Portugal	67 pb
0.02%	Belgium	28 pb
0.00%	France	26 pb
-0.02%	Finland	23 pb
-0.03%	Austria	23 pb
-0.13%	Netherland	13 pb
-0.16%	Ireland	10 pb
-0.26%	Germany	

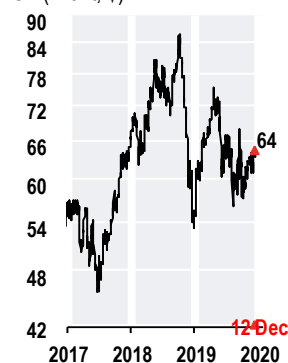
Commodities

Spot price in dollars	lowest' 19	2019(€)
Oil, Brent	53.1 at 01/01	+24.8%
Gold (ounce)	1 268 at 02/05	+17.7%
Metals, LME	2 718 at 07/08	+3.9%
Copper (ton)	5 585 at 03/09	+6.0%
CRB Foods	312 at 11/09	+4.0%
w heat (ton)	166 at 30/08	+13.6%
Corn (ton)	128 at 24/04	+9.1%

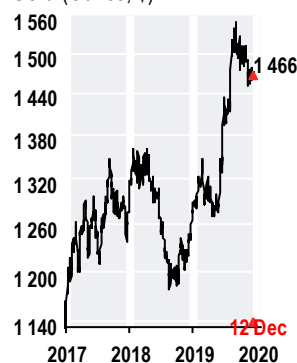
At 12-12-19

Variations

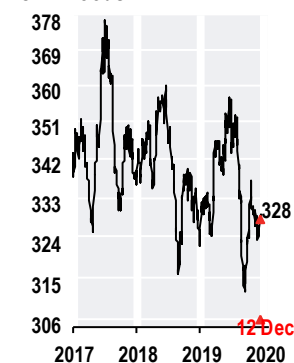
Oil (Brent, \$)



Gold (Ounce, \$)



CRB Foods



Exchange Rates

€ =	highest' 19	lowest' 19	2019
USD	1.15 at 10/01	1.09 at 30/09	-2.7%
GBP	0.93 at 12/08	0.84 at 11/12	-5.6%
CHF	1.14 at 23/04	1.08 at 04/09	-2.6%
JPY	127.43 at 01/03	116.08 at 03/09	-3.1%
AUD	1.66 at 07/08	1.57 at 18/04	-0.8%
CNY	7.96 at 27/08	7.51 at 25/04	-0.4%
BRL	4.70 at 26/11	4.18 at 31/01	+3.0%
RUB	79.30 at 01/01	69.75 at 12/12	-12.0%
INR	82.00 at 04/02	76.37 at 01/08	-1.3%

At 12-12-19

Variations

Equity indices

Index	highest' 19	lowest' 19	2019	2019(€)
CAC 40	5 939 at 15/11	4 611 at 03/01	+24.4%	+24.4%
S&P500	3 169 at 12/12	2 448 at 03/01	+26.4%	+30.0%
DAX	13 222 at 07/11	10 417 at 03/01	+25.2%	+25.2%
Nikkei	23 530 at 02/12	19 562 at 04/01	+17.0%	+20.8%
China*	86 at 09/04	68 at 03/01	+15.0%	+18.4%
India*	612 at 03/06	526 at 22/08	+6.4%	+7.8%
Brazil*	2 354 at 10/07	1 862 at 17/05	+23.7%	+20.1%
Russia*	793 at 07/11	572 at 01/01	+25.5%	+40.8%

At 12-12-19

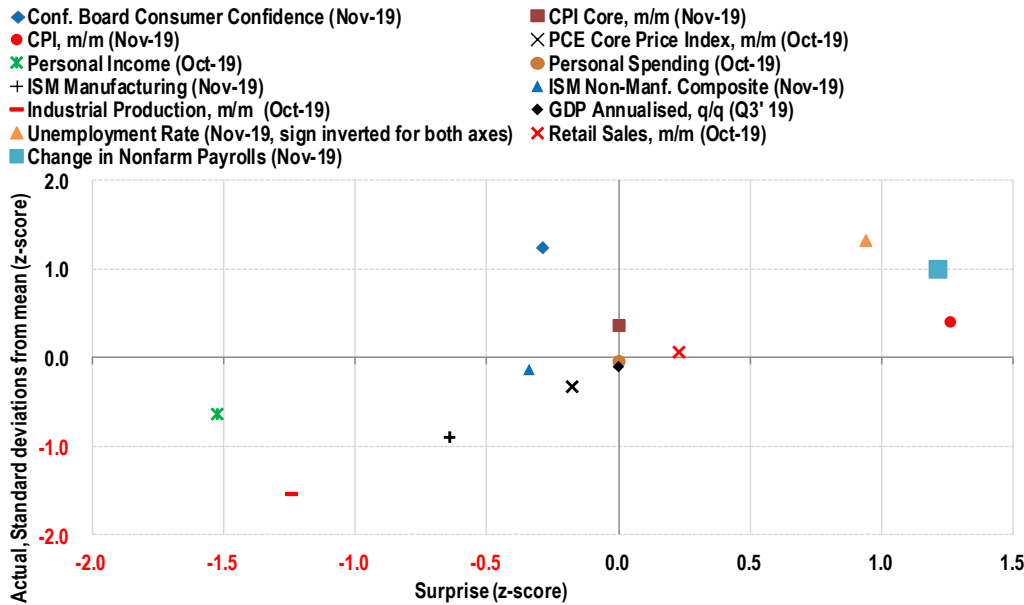
Variations

* MSCI index

Pulse

United States: labour market still strong but growth to slow

The latest data on unemployment and job creation have surprised on the upside. They continue to be better than the long-term average. This strong labour market supports household confidence, which remains well above the long-term average, and retail sales, which did slightly better than expected. However, several numbers have come in below expectations and are below historical averages. This points towards a slowing economy, despite the satisfactory GDP data for the third quarter. Noteworthy in this respect are the two ISM indices. In addition, like in numerous other countries, industrial production is under pressure.



Note: z-score is a score which indicates how many standard deviations an observation is from the mean: $z = (x - \mu) / \sigma$ where x : observation, μ : mean, σ : standard deviation. On the X-axis, x corresponds to the last known surprise for each indicator represented on the graph, μ and σ corresponds respectively to the mean and the standard deviation of the last 24 value for monthly data and the last 8 quarters for quarterly data. On the Y-axis, x corresponds to the last known value of indicator, μ and σ corresponds respectively to the mean and the standard deviation for this indicator since 2000 (for China since 2011).

Indicators preview

Next week sees the publication of several data for the month of December: purchasing managers' indices in several countries, regional business surveys in the US, the ifo business climate in Germany, business confidence in France, consumer confidence in the UK, Germany and the eurozone, University of Michigan household confidence in the US. In addition, we also have policy meetings of the Bank of Japan and the Bank of England.

Date	Country	Event	Period	Survey	Prior
12/16/2019	Japan	Jibun Bank Japan PMI Composite	Dec	--	49.8
12/16/2019	China	New Home Prices MoM	Nov	--	0.50%
12/16/2019	China	Fixed Assets Ex Rural YTD YoY	Nov	5.2%	5.2%
12/16/2019	China	Industrial Production YTD YoY	Nov	5.5%	5.6%
12/16/2019	China	Retail Sales YTD YoY	Nov	8.0%	8.1%
12/16/2019	France	Markit France Composite PMI	Dec	--	52.1
12/16/2019	Germany	Markit/BME Germany Composite PMI	Dec	--	49.4
12/16/2019	Eurozone	Markit Eurozone Composite PMI	Dec	--	50.6
12/16/2019	Eurozone	Labour Costs YoY	3Q	--	2.7%
12/16/2019	United States	Empire Manufacturing	Dec	4.5	2.9
12/16/2019	United States	Markit US Composite PMI	Dec	--	52.0
12/16/2019	United States	NAHB Housing Market Index	Dec	71	70
12/17/2019	United States	Housing Starts MoM	Nov	2.0%	3.8%
12/17/2019	United States	Building Permits MoM	Nov	-3.8%	5.0%
12/17/2019	United States	Industrial Production MoM	Nov	0.9%	-0.8%
12/18/2019	Germany	IFO Business Climate	Dec	--	95.0
12/18/2019	Eurozone	CPI YoY	Nov	--	0.7%
12/19/2019	France	Business Confidence	Dec	--	105
12/19/2019	United Kingdom	Bank of England Bank Rate	Dec 19	--	0.750%
12/19/2019	United States	Philadelphia Fed Business Outlook	Dec	8.0	10.4
12/19/2019	United States	Leading Index	Nov	0.1%	-0.1%
12/19/2019	Japan	BOJ Policy Balance Rate	Dec 19	--	-0.100%
12/20/2019	United Kingdom	GfK Consumer Confidence	Dec	--	-14
12/20/2019	Germany	GfK Consumer Confidence	Jan	--	9.7
12/20/2019	United States	GDP Annualized QoQ	3Q	2.1%	2.1%
12/20/2019	Eurozone	Consumer Confidence	Dec	--	-7.2
12/20/2019	United States	U. of Mich. Sentiment	Dec	--	99.2
12/20/2019	United States	Kansas City Fed Manf. Activity	Dec	--	-3

Source: Bloomberg, BNP Paribas



Economic scenario

UNITED STATES

- Despite the support coming from the Fed rate cuts in 2019, we expect growth to slow in the near term under the influence of corporate investment (slower profits growth, trade uncertainty) and housing (declining trend of affordability, despite a recent rebound). Consumer spending should be more resilient but could slow on the back of a less dynamic labour market.
- As a consequence, we expect two Fed funds target rate cuts in the first half of 2020.

CHINA

- Economic growth continues to slow. Industrial activity and exports have been hard hit by US tariff hikes. Domestic demand has also decelerated.
- The central bank is easing liquidity and credit conditions, but the reduction in financial-instability risks should remain a priority and banks are prudent. Fiscal policy is expansionary through increased investment in infrastructure projects and household/corporate tax cuts. Tax measures are expected to have some success in supporting consumer spending.
- Consumer price inflation has accelerated due to rising food prices (soaring pork prices), but core inflation remains subdued.

EUROZONE

- The economic slowdown is continuing in the eurozone, especially in Germany, due to the international environment and difficulties in the manufacturing sector. The recent stabilization of business surveys, albeit at a low level, provides some hope but needs to be confirmed.
- Inflation is now expected to decrease while core CPI is hardly moving. The activity slowdown also implies that the pick-up in core inflation could be slower than expected until recently.
- The very accommodative monetary policy should be maintained as long as inflation hasn't converged sufficiently, in a convincing and lasting way, towards the ECB's objective.

FRANCE

- Growth is slowing although the economy shows resilience. Households' consumption should get a boost from the tax cuts and the jobs recovery. Business investment dynamics remain favourable. The global backdrop is less supportive.
- A slight rise in core inflation is appearing but remains to be confirmed.

INTEREST RATES AND FX RATES

- In the US, we expect the Fed to cut its official rate twice in the first half of 2020 in reaction to a slowing economy, moderate inflation and high uncertainty. This should support the medium term growth outlook, which is why, after an initial decline, we expect Treasury yields to increase gradually.
- 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. The movement of bond yields will be very much influenced by what happens to US yields, although we expect the increase in Bund yields to be smaller. Sovereign spreads in the eurozone should decline.
- We expect that the Bank of Japan will refrain from further monetary easing.
- We expect little change in EUR/USD even though euro's fair value is quite higher than current pricing.

%	GDP Growth				Inflation			
	2018	2019 e	2020 e	2021 e	2018	2019 e	2020 e	2021 e
Advanced	2.2	1.7	1.1	1.6	2.0	1.5	1.6	1.4
United-States	2.9	2.3	1.5	2.0	2.4	1.8	2.4	1.9
Japan	0.8	1.0	0.2	0.7	1.0	0.5	0.6	0.3
United-Kingdom	1.4	1.3	1.1	1.7	2.5	1.8	1.5	1.8
Euro Area	1.9	1.1	0.8	1.3	1.8	1.2	1.0	1.0
Germany	1.5	0.5	0.4	1.2	1.9	1.4	1.2	1.2
France	1.7	1.3	1.1	1.3	2.1	1.3	1.0	1.1
Italy	0.7	0.2	0.2	0.6	1.2	0.7	0.6	0.5
Spain	2.4	2.0	1.7	1.6	1.7	0.8	0.8	0.9
Emerging	4.4	3.8	4.0	4.2	4.6	4.6	4.6	3.6
China	6.6	6.1	5.7	5.8	2.1	2.8	3.5	1.5
India*	6.8	5.8	5.5	6.0	2.9	3.0	3.3	3.5
Brazil	1.1	1.0	2.0	3.0	3.7	3.7	3.4	3.7
Russia	2.3	0.9	1.5	1.5	2.9	4.7	3.8	4.0

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

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

Interest rates, %	2019		2020				2018	2019e	2020e
	Q3	Q4e	Q1e	Q2e	Q3e	Q4e			
US									
Fed Funds	2.00	1.75	1.50	1.25	1.25	1.25	2.50	1.75	1.25
T-Notes 10y	1.67	1.75	1.60	1.80	2.10	2.00	2.69	1.75	2.00
Ezone									
Deposit rate	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50
Bund 10y	-0.57	-0.35	-0.50	-0.40	-0.30	-0.30	0.25	-0.35	-0.30
OAT 10y	-0.28	-0.05	-0.20	-0.15	-0.10	-0.10	0.71	-0.05	-0.10
UK									
Base rate	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Gilts 10y	0.40	0.71	1.00	1.10	1.20	1.20	1.27	0.71	1.20
Japan									
BoJ Rate	-0.06	-0.10	-0.10	-0.10	-0.10	-0.10	-0.07	-0.10	-0.10
JGB 10y	-0.22	-0.05	-0.10	0.00	0.05	0.10	0.00	-0.05	0.10

Source : BNP Paribas GlobalMarkets (e: Forecasts)

Exchange Rates	2019		2020				2018	2019e	2020e
	Q3	Q4e	Q1e	Q2e	Q3e	Q4e			
USD									
EUR / USD	1.09	1.11	1.12	1.13	1.13	1.14	1.14	1.11	1.14
USD / JPY	108	107	104	103	103	103	110	107	103
GBP / USD	1.23	1.32	1.35	1.36	1.36	1.39	1.27	1.32	1.39
USD / CHF	1.00	0.99	0.99	0.99	0.99	1.00	0.99	0.99	1.00
EUR									
EUR / GBP	0.89	0.84	0.83	0.83	0.83	0.82	0.90	0.84	0.82
EUR / CHF	1.09	1.10	1.11	1.12	1.12	1.14	1.13	1.10	1.14
EUR / JPY	118	119	116	116	116	117	125	119	117

Source : BNP Paribas GlobalMarkets (e: Forecasts)



GROUP ECONOMIC RESEARCH

William De Vijlder
Chief Economist

+33 1 55 77 47 31 william.devijlder@bnpparibas.com

ADVANCED ECONOMIES AND STATISTICS

Jean-Luc Proutat

Head – United States, United Kingdom

+33 1 58 16 73 32 jeanluc.proutat@bnpparibas.com

Hélène Baudchon

France – Labour markets

+33 1 58 16 03 63 helene.baudchon@bnpparibas.com

Louis Boisset

European Central Bank watch, Euro area global view, Japan

+33 1 57 43 02 91 louis.boisset@bnpparibas.com

Frédérique Cerisier

Euro area (European governance and public finances), Spain, Portugal

+33 1 43 16 95 52 frederique.cerisier@bnpparibas.com

Raymond Van Der Putten

Germany, Netherlands, Austria, Switzerland – Energy, climate – Long-term projections

+33 1 42 98 53 99 raymond.vanderputten@bnpparibas.com

Tarik Rharrab

Statistics

+33 1 43 16 95 56 tarik.rharrab@bnpparibas.com

BANKING ECONOMICS

Laurent Quignon

Head

+33 1 42 98 56 54 laurent.quignon@bnpparibas.com

Laure Baquero

+ 33 1 43 16 95 50 laure.baquero@bnpparibas.com

Céline Choulet

+33 1 43 16 95 54 celine.choulet@bnpparibas.com

Thomas Humblot

+ 33 1 40 14 30 77 thomas.humblot@bnpparibas.com

EMERGING ECONOMIES AND COUNTRY RISK

François Faure

Head, Argentina, Turkey, Ukraine, Central European countries

+33 1 42 98 79 82 francois.faure@bnpparibas.com

Christine Peltier

Deputy Head – Greater China, Vietnam, South Africa

+33 1 42 98 56 27 christine.peltier@bnpparibas.com

Stéphane Alby

Africa (French-speaking countries)

+33 1 42 98 02 04 stephane.alby@bnpparibas.com

Sara Confalonieri

Africa (Portuguese & English-speaking countries)

+33 1 42 98 43 86 sara.confalonieri@bnpparibas.com

Pascal Devaux

Middle East, Balkan countries

+33 1 43 16 95 51 pascal.devaux@bnpparibas.com

Hélène Drouot

Korea, Thailand, Philippines, Mexico, Andean countries

+33 1 42 98 33 00 helene.drouot@bnpparibas.com

Salim Hammad

Latin America

+33 1 42 98 74 26 salim.hammad@bnpparibas.com

Johanna Melka

India, South Asia, Russia, Kazakhstan, CIS

+33 1 58 16 05 84 johanna.melka@bnpparibas.com

CONTACT MEDIA

Michel Bernardini

+33 1 42 98 05 71 michel.bernardini@bnpparibas.com



BNP PARIBAS

The bank
for a changing
world

OUR PUBLICATIONS



CONJONCTURE

Structural or in news flow, two issues analysed in depth



EMERGING

Analyses and forecasts for a selection of emerging economies



PERSPECTIVES

Analyses and forecasts for the main countries, emerging or developed



ECOFASH

Data releases, major economic events. Our detailed views...



ECOWEEK

Weekly economic news and much more...



ECOTV

In this monthly web TV, our economists make sense of economic news



ECOTV WEEK

What is the main event this week? The answer is in your two minutes of economy

The information and opinions contained in this report have been obtained from, or are based on, public sources believed to be reliable, but no representation or warranty, express or implied, is made that such information is accurate, complete or up to date and it should not be relied upon as such. This report does not constitute an offer or solicitation to buy or sell any securities or other investment. It does not constitute investment advice, nor financial research or analysis. Information and opinions contained in the report are not to be relied upon as authoritative or taken in substitution for the exercise of judgement by any recipient; they are subject to change without notice and not intended to provide the sole basis of any evaluation of the instruments discussed herein. Any reference to past performance should not be taken as an indication of future performance. To the fullest extent permitted by law, no BNP Paribas group company accepts any liability whatsoever (including in negligence) for any direct or consequential loss arising from any use of or reliance on material contained in this report. All estimates and opinions included in this report are made as of the date of this report. Unless otherwise indicated in this report there is no intention to update this report. BNP Paribas SA and its affiliates (collectively "BNP Paribas") may make a market in, or may, as principal or agent, buy or sell securities of any issuer or person mentioned in this report or derivatives thereon. BNP Paribas may have a financial interest in any issuer or person mentioned in this report, including a long or short position in their securities and/or options, futures or other derivative instruments based thereon. Prices, yields and other similar information included in this report are included for information purposes. Numerous factors will affect market pricing and there is no certainty that transactions could be executed at these prices. BNP Paribas, including its officers and employees may serve or have served as an officer, director or in an advisory capacity for any person mentioned in this report. BNP Paribas may, from time to time, solicit, perform or have performed investment banking, underwriting or other services (including acting as adviser, manager, underwriter or lender) within the last 12 months for any person referred to in this report. BNP Paribas may be a party to an agreement with any person relating to the production of this report. BNP Paribas, may, to the extent permitted by law, have acted upon or used the information contained herein, or the research or analysis on which it was based, before its publication. BNP Paribas may receive or intend to seek compensation for investment banking services in the next three months from or in relation to any person mentioned in this report. Any person mentioned in this report may have been provided with sections of this report prior to its publication in order to verify its factual accuracy.

BNP Paribas is incorporated in France with limited liability. Registered Office 16 Boulevard des Italiens, 75009 Paris. This report was produced by a BNP Paribas group company. This report is for the use of intended recipients and may not be reproduced (in whole or in part) or delivered or transmitted to any other person without the prior written consent of BNP Paribas. By accepting this document you agree to be bound by the foregoing limitations.

Certain countries within the European Economic Area:

This report has been approved for publication in the United Kingdom by BNP Paribas London Branch. BNP Paribas London Branch is authorised and supervised by the Autorité de Contrôle Prudentiel and authorised and subject to limited regulation by the Financial Services Authority. Details of the extent of our authorisation and regulation by the Financial Services Authority are available from us on request.

This report has been approved for publication in France by BNP Paribas SA. BNP Paribas SA is incorporated in France with limited liability and is authorised by the Autorité de Contrôle Prudentiel (ACP) and regulated by the Autorité des Marchés Financiers (AMF). Its head office is 16, boulevard des Italiens 75009 Paris, France.

This report is being distributed in Germany either by BNP Paribas London Branch or by BNP Paribas Niederlassung Frankfurt am Main, a branch of BNP Paribas S.A. whose head office is in Paris, France. BNP Paribas S.A. – Niederlassung Frankfurt am Main, Europa Allee 12, 60327 Frankfurt is authorised and supervised by the Autorité de Contrôle Prudentiel and it is authorised and subject to limited regulation by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin).

United States: This report is being distributed to US persons by BNP Paribas Securities Corp., or by a subsidiary or affiliate of BNP Paribas that is not registered as a US broker-dealer. BNP Paribas Securities Corp., a subsidiary of BNP Paribas, is a broker-dealer registered with the U.S. Securities and Exchange Commission and a member of the Financial Industry Regulatory Authority and other principal exchanges. BNP Paribas Securities Corp. accepts responsibility for the content of a report prepared by another non-U.S. affiliate only when distributed to U.S. persons by BNP Paribas Securities Corp.

Japan: This report is being distributed in Japan by BNP Paribas Securities (Japan) Limited or by a subsidiary or affiliate of BNP Paribas not registered as a financial instruments firm in Japan, to certain financial institutions defined by article 17-3, item 1 of the Financial Instruments and Exchange Law Enforcement Order. BNP Paribas Securities (Japan) Limited is a financial instruments firm registered according to the Financial Instruments and Exchange Law of Japan and a member of the Japan Securities Dealers Association and the Financial Futures Association of Japan. BNP Paribas Securities (Japan) Limited accepts responsibility for the content of a report prepared by another non-Japan affiliate only when distributed to Japanese based firms by BNP Paribas Securities (Japan) Limited. Some of the foreign securities stated on this report are not disclosed according to the Financial Instruments and Exchange Law of Japan.

Hong Kong: This report is being distributed in Hong Kong by BNP Paribas Hong Kong Branch, a branch of BNP Paribas whose head office is in Paris, France. BNP Paribas Hong Kong Branch is registered as a Licensed Bank under the Banking Ordinance and regulated by the Hong Kong Monetary Authority. BNP Paribas Hong Kong Branch is also a Registered Institution regulated by the Securities and Futures Commission for the conduct of Regulated Activity Types 1, 4 and 6 under the Securities and Futures Ordinance.

Some or all the information reported in this document may already have been published on <https://globalmarkets.bnpparibas.com>

© BNP Paribas (2015). All rights reserved.

© BNP Paribas (2015). All rights reserved.

Prepared by Economic Research – BNP PARIBAS

Registered Office: 16 boulevard des Italiens – 75009 PARIS

Tel: +33 (0) 1.42.98.12.34 – Internet :

www.group.bnpparibas.com

Publisher: Jean Lemierre. Editor: William De Vijlder

POUR RECEVOIR NOS PUBLICATIONS

VOUS POUVEZ VOUS ABONNER SUR NOTRE SITE ONGLET ABONNEMENT
<http://economic-research.bnpparibas.com>

ET

NOUS SUIVRE SUR LINKEDIN
<https://www.linkedin.com/showcase/bnp-paribas-economic-research/>
OU TWITTER
https://twitter.com/EtudesEco_BNPP



BNP PARIBAS

The bank
for a changing
world