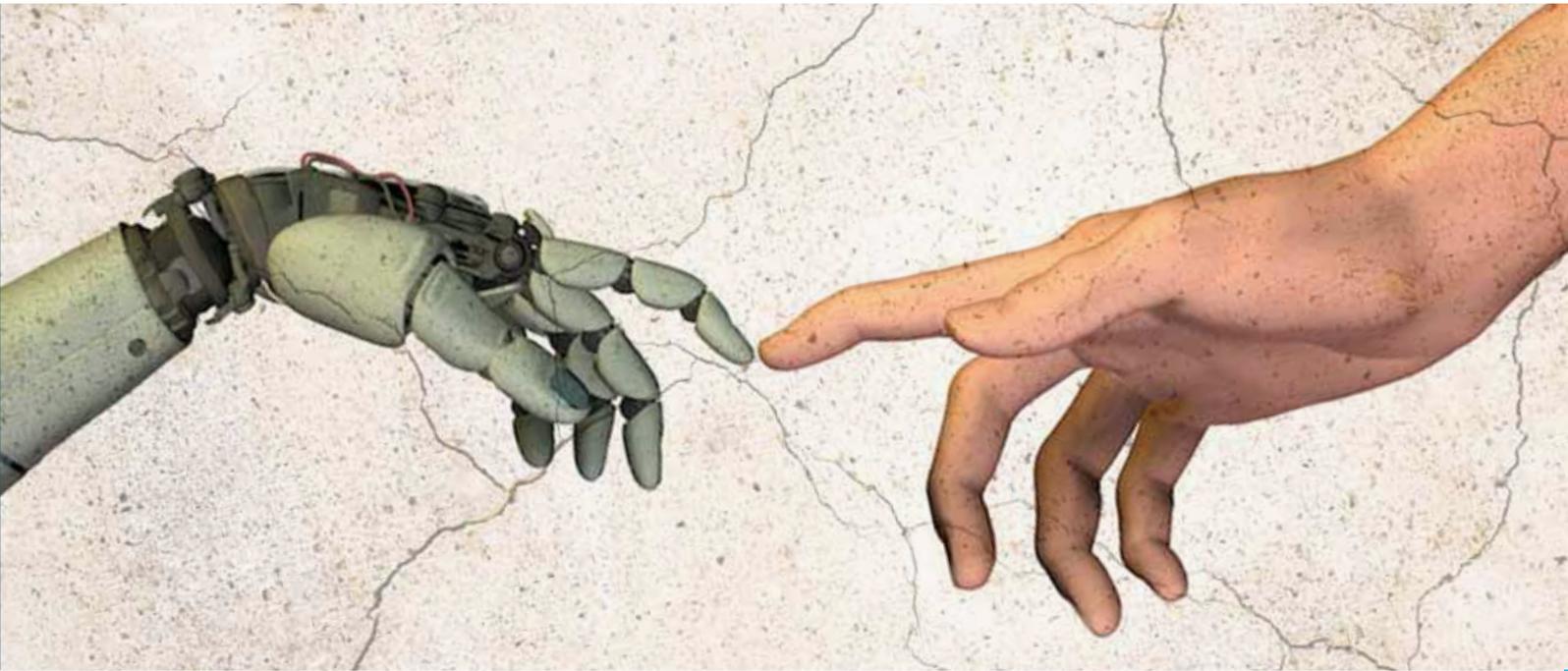


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MONTHLY REPORT • ECONOMIC AND FINANCIAL MARKET OUTLOOK
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ECONOMIC & FINANCIAL ENVIRONMENT

FINANCIAL MARKETS

Shale production: the end of the golden age?

INTERNATIONAL ECONOMY

China's economic growth under the microscope: past, present and future

EUROPEAN UNION

Italy: piano piano non si va lontano

SPANISH ECONOMY

Wage trends and labour underutilisation in the Spanish labour market

DOSSIER: TECHNOLOGICAL CHANGE AND PRODUCTIVITY

The technological revolution and slowdown in productivity

Why productivity growth is declining

Writing the future: the technological paradigm shift and the new economy

**MONTHLY REPORT -
ECONOMIC AND FINANCIAL
MARKET OUTLOOK**
February 2018

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Technological change and economic growth: new questions, new answers

Few issues enjoy widespread consensus among economists. One of these is that sustained growth in productivity is essential to improve standards of living. According to this principle, the incredible technological advances that are currently taking place should be creating the perfect setting for impressive gains in productivity. Such a scenario would undoubtedly provide us with a more promising future.

In actual fact, productivity growth has declined significantly. And this phenomenon is not transitory or limited to just a few countries but has been observed continuously in the main economies, both advanced and emerging. One example is worth a thousand words. In the US, if labour productivity over the past four years had grown at the same rate as it did in the period 1996-2007, the purchasing power of US citizens would currently be 8% higher.

This phenomenon concerns and occupies the minds of economists and policymakers. However, the solutions that tend to be offered can be summed up as «we need more education and more investment». This formula may have been valid a few decades ago, especially in the industrial era, but its success is far from guaranteed today.

As noted in the Dossier articles, jobs are changing quickly and so are the skills required to make the most of new technologies. It is vital for the educational system to adapt to these changes – merely more education is not enough. The nature of the investment currently carried out by most companies also has little to do with the investment made decades ago. In the US, there is much more investment in intangible assets such as product design and software than in tangible assets such as buildings and machinery. Nevertheless, most programmes designed to promote investment focus on its classic concept.

Adapting to such changes is vital and surely inevitable. But if we wait too long or merely react, it will be difficult to make the most of new technologies. It is not enough to revamp the classic formulas. Paraphrasing Mario Benedetti, «when we thought we had all the answers, suddenly, all the questions changed».

The Fourth Industrial Revolution is already extensively transforming both the economic production structure and how technology is spread. The economies of the future will be the ones that provide a more suitable framework to give answers to these new trends.

The benchmarks normally used to define economic policy actions, such as company or sector size, need to take on other parameters that better reflect the essence of what new companies are doing. It is significant that an increasing number of firms are difficult to classify within a specific sector. Amazon and Google epitomise this phenomenon but the list is long and growing. Naturally the regulations that define the competitive framework for companies, and particularly labour market regulations, should also form an essential part of the new economic policy agenda.

Regarding the diffusion of technology, a select group of highly productive firms now exists side by side with much more outmoded businesses that do not use the technological advances within their grasp. Acting on this second group offers huge potential, both due to its size and also its growth margin. Initiatives that help companies to learn, in real time, about the trends in their sector or about a benchmark group of firms, using all the information available, can act as an incentive for them to adopt best practices.

The future becomes more promising if we accept that the questions may have changed and we should be capable of providing new answers.

Oriol Aspachs

Director of the Macroeconomics and Financial Markets Units
31 January 2018

CHRONOLOGY

JANUARY 2018

- 19 The Fitch ratings agency raises Spain's credit rating from BBB+ to A-.
- 31 The European Banking Authority (EBA) begins stress tests for Europe's banks for the period 2018-2020.

DECEMBER 2017

- 13 The Fed raises the fed funds rate by 25 bp to a range of 1.25% to 1.50%.
- 15 Fitch ratings agency upgrades Portugal's credit rating to investment grade (BBB).
The European Council ratifies the agreement reached with the UK regarding the Brexit terms.
- 20 The US passes tax reforms.

NOVEMBER 2017

- 2 The Bank of England raises its benchmark interest rate by 25 bp to 0.50%.
Jerome Powell is appointed the new Chair of the US Federal Reserve, replacing Janet Yellen.
- 30 OPEC announces it will extend oil production cuts until the end of 2018, nine months later than initially agreed.

OCTOBER 2017

- 22 Shinzō Abe is confirmed as Japan's Prime Minister.
- 24 The 19th National Congress of the Communist Party of China re-elects Xi Jinping as General Secretary for a second five-year mandate.
- 26 The ECB announces its plan to reduce the volume of asset purchases (QE). Specifically, from January to September 2018, the ECB will reduce monthly purchases from EUR 60 to 30 billion.

SEPTEMBER 2017

- 15 Standard & Poor's raises Portugal's sovereign rating by one notch from BB+ to BBB-, up to investment grade.
- 20 The Fed announces it will start to reduce its balance sheet in October. It will start by allowing USD 6 billion in Treasury securities and USD 4 billion in debt and mortgage-backed securities to mature every month, a figure that will gradually increase over the next few quarters.
- 21 Standard & Poor's lowers China's sovereign rating from AA- to A+.
- 25 Angela Merkel wins the general election in Germany.

AGENDA

FEBRUARY 2018

- 2 Registration with Social Security and registered unemployment (January).
- 8 Industrial production index (December).
- 14 Japan GDP (Q4).
- 19 Loans, deposits and NPL ratio (December).
- 20 International trade (December).
- 27 Flash CPI (February).
Economic sentiment index of the euro area (February).
- 28 Balance of payments (December).

MARCH 2018

- 1 Quarterly national accounts (Q4).
- 2 Registration with Social Security and registered unemployment (February).
- 8 Governing Council of the European Central Bank.
- 9 Industrial production index (January).
- 16 Quarterly labour cost survey (Q4).
- 19 Loans, deposits and NPL ratio (Q4).
- 20-21 Fed Open Market Committee.
- 21 International trade (January).
- 22 European Council.
- 26 Balance of payments (Q4).
Net international investment position (Q4).
- 27 Flash CPI (March).
Economic sentiment index of the euro area (March).
- 28 Balance of payments (January).
Household savings rate (Q4).

Favourable outlook for the start of 2018

The global economy has started the year optimistically.

World economic activity improved towards the end of 2017 and beginning of 2018, as confirmed by the continual stream of favourable economic data. This endorses the CaixaBank Research scenario which predicts global GDP growth in 2017 will speed up by 0.2 pp to 3.9%. Various factors support this acceleration. First the emerging economies' good performance which, beyond each country's idiosyncratic factors, continue to benefit from favourable financial conditions. Second, the upward cycle in commodities and third, the favorable growth prospects of the developed economies. The latest figures for the US economy confirm its good performance. For instance, US quarter-on-quarter GDP growth stood at 0.6% in Q4 2017 and all the evidence suggests this trend will continue throughout 2018, supported by Trump's tax reforms among other factors.

Nevertheless, risks are still high. One substantial risk is the high growth in global debt, especially in some emerging economies, as well as the complacency induced by low interest rates, which may have led to some financial bubbles. As inflation consolidates its upward trend in the main developed economies, interest rates are also likely to rise. This is particularly relevant in the US, where financial markets will probably go through episodes of correction, as seen recently. The upswing in oil prices is also important since it might damage growth in global economic activity should it become more acute.

Upside surprises in Europe. The shift up in gear in the euro area's growth rate in 2017 augurs well for 2018. Moreover, the European economy's support factors, such as improved confidence in its growth capacity (until recently hampered by political uncertainty), faster global growth and the ECB's accommodative monetary policy, will remain in place throughout 2018. The current CaixaBank Research growth forecast for 2018, of 2.2%, therefore has a clear upside risk.

The ECB remains on script but stirs debate. The improved economic outlook and the euro's recent appreciation had created some expectations regarding the ECB's stance. But at its last meeting Mario Draghi repeated the message of the past few months, namely the current pace of net asset purchases would continue until at least September 2018. Only then, and after a substantial period, would it start to raise interest rates very gradually. The key to this scenario lies in the inflation

forecast. In spite of the economic recovery, the ECB continues to stress that inflation is recovering very gradually and monetary normalisation should therefore be just as gradual.

Political factors are still the main source of euro area uncertainty. The first key event is Italy's election on 4 March. A highly fragmented parliament is expected to emerge, giving the government very little room to manoeuvre. Second, while the agreement reached on the first phase of negotiations has made a soft Brexit more likely, the second phase will probably see more episodes of tension between the UK and EU. Nevertheless, we believe that a scenario where the UK leaves the EU in a disorderly manner is highly unlikely and expect that both parties will reach an agreement on a transition period. Finally, negotiations continue in Germany between the conservatives and social democrats to form a coalition government. Should an agreement be reached, this could boost the European project.

The markets reward improved macroeconomic scenarios in Spain and Portugal. The publication of Spain's Q4 2017 GDP growth figures (0.7%) has confirmed the country grew by 3.1% in 2017. The economy has therefore posted three consecutive years of growth above 3%, continuously outperforming most of the developed economies. We expect a slight slowdown in growth in 2018 due to diminishing support factors (higher oil prices and the end of interest rate compression process). Nevertheless, the more balanced nature of this new phase (growth combined with current account surpluses, adjustments in public deficit and private sector deleveraging) is reaping its rewards. For instance, Spain's risk premium has fallen substantially and is now between 70 and 80 bp. Portugal's good economic activity data at the end of 2017 point to continued economic growth above 2% in 2018. As a result of this positive outlook, as well as a more favourable public debt dynamic and the progress made in bank restructuring, Fitch upgraded the country's rating from BBB to BB+.

FORECASTS

Year-on-year (%) change, unless otherwise specified

International economy

	2016	2017	2018	2019	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018
GDP GROWTH										
Global	3.2	3.7	3.9	3.8	3.7	3.9	3.8	4.0	3.9	3.8
Developed countries	1.7	2.3	2.3	1.9	2.3	2.5	2.5	2.5	2.3	2.1
United States	1.5	2.3	2.5	2.0	2.2	2.3	2.5	2.8	2.6	2.4
Euro area	1.8	2.5	2.2	1.7	2.4	2.8	2.7	2.6	2.3	2.1
Germany	1.9	2.6	2.3	1.8	2.3	2.8	3.0	2.7	2.5	2.2
France	1.1	1.9	2.3	2.0	1.9	2.3	2.4	2.4	2.3	2.3
Italy	1.1	1.6	1.3	1.0	1.5	1.7	1.7	1.4	1.3	1.2
Portugal	1.5	2.7	2.3	2.2	3.0	2.5	2.4	2.3	2.3	2.3
Spain	3.3	3.1	2.4	2.3	3.1	3.1	3.1	2.8	2.5	2.3
Japan	0.9	1.7	1.3	1.0	1.7	2.1	1.7	1.7	1.2	0.9
United Kingdom	1.9	1.8	1.5	1.9	1.9	1.7	1.5	1.5	1.5	1.5
Emerging countries	4.4	4.7	4.9	5.0	4.6	4.8	4.8	5.0	4.9	4.9
China	6.7	6.9	6.5	6.3	6.9	6.8	6.8	6.6	6.5	6.4
India	7.9	6.3	7.3	7.5	5.7	6.3	7.0	7.0	7.2	7.4
Indonesia	5.0	5.1	5.5	5.6	5.0	5.1	5.3	5.5	5.5	5.5
Brazil	-3.5	0.9	2.3	2.7	0.4	1.4	1.8	1.6	2.3	2.5
Mexico	2.9	2.1	2.2	2.4	1.9	1.5	1.8	1.9	2.2	2.3
Chile	1.6	1.4	2.6	3.0	1.0	2.2	2.2	2.5	2.6	2.6
Russia	-0.3	1.7	1.8	2.1	2.5	1.8	2.0	1.9	1.8	1.6
Turkey	3.2	6.5	3.7	3.6	5.4	11.1	4.3	4.5	4.0	3.3
Poland	2.9	4.5	3.4	2.9	4.3	5.2	4.1	3.8	3.7	3.1
South Africa	0.4	0.9	1.2	1.3	0.5	1.0	1.3	1.7	1.3	1.0
INFLATION										
Global	2.8	3.1	3.2	3.2	3.0	3.0	3.2	3.2	3.3	3.3
Developed countries	0.8	1.7	1.9	1.9	1.6	1.6	1.7	1.8	2.0	2.1
United States	1.3	2.1	2.2	2.0	1.9	2.0	2.1	2.0	2.5	2.5
Euro area	0.2	1.5	1.4	1.8	1.5	1.5	1.4	1.2	1.3	1.5
Germany	0.4	1.7	1.5	1.9	1.6	1.7	1.6	1.4	1.4	1.6
France	0.3	1.2	1.3	1.7	1.0	0.9	1.2	1.1	1.2	1.3
Italy	0.0	1.3	1.2	1.6	1.6	1.3	1.1	1.1	1.1	1.2
Portugal	0.6	1.6	1.7	1.7	1.7	1.3	1.8	1.6	1.4	1.8
Spain	-0.2	2.0	1.6	1.8	2.0	1.7	1.4	1.1	1.6	1.9
Japan	-0.1	0.4	1.0	0.9	0.4	0.6	0.5	1.2	1.0	1.1
United Kingdom	0.7	2.7	2.4	2.3	2.7	2.8	3.0	2.4	2.5	2.3
Emerging countries	4.3	3.9	4.4	4.3	3.8	3.8	4.1	4.4	4.4	4.5
China	2.0	1.6	2.1	2.3	1.4	1.6	1.8	2.4	2.4	2.2
India	4.9	3.3	4.6	4.9	2.2	3.0	4.6	4.7	4.5	4.9
Indonesia	3.5	3.8	3.8	4.6	4.3	3.8	3.3	3.1	3.6	4.0
Brazil	8.8	3.5	3.8	4.3	3.6	2.6	2.8	3.3	3.9	4.0
Mexico	2.8	6.0	4.0	3.6	6.1	6.5	6.6	4.9	3.8	3.8
Chile	3.8	2.2	2.9	3.0	2.3	1.7	2.2	2.6	3.0	3.0
Russia	7.1	3.7	3.6	4.0	4.2	3.4	2.6	2.9	3.2	4.0
Turkey	7.8	11.1	8.8	8.5	11.5	10.6	12.3	10.0	9.0	8.5
Poland	-0.2	1.6	2.2	2.5	1.5	1.5	1.8	2.0	2.3	2.3
South Africa	6.3	5.3	5.1	5.4	5.3	4.8	4.7	4.2	4.6	5.4

Forecasts

Spanish economy

	2016	2017	2018	2019	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018
Macroeconomic aggregates										
Household consumption	2.9	2.4	2.0	1.9	2.4	2.4	2.6	2.4	2.1	1.9
General government consumption	0.8	1.2	1.0	0.8	1.1	1.0	1.9	1.2	1.1	0.9
Gross fixed capital formation	3.3	4.9	3.2	3.0	3.8	5.4	5.4	3.4	3.6	3.0
Capital goods	4.9	5.8	3.5	2.6	3.8	6.1	7.2	3.8	4.7	2.9
Construction	2.4	4.3	2.9	3.2	4.0	4.9	4.2	2.8	2.5	3.1
Domestic demand (contr. Δ GDP)	2.5	2.6	2.0	1.9	2.3	2.7	2.9	2.3	2.2	1.9
Exports of goods and services	4.8	5.2	4.1	4.2	4.4	4.9	5.1	2.9	3.9	5.1
Imports of goods and services	2.7	4.0	3.2	3.2	2.3	4.0	5.0	1.8	3.4	4.2
Gross domestic product	3.3	3.1	2.4	2.3	3.1	3.1	3.1	2.8	2.5	2.3
Other variables										
Employment	3.0	2.8	2.1	2.0	2.9	2.9	2.6	2.3	2.2	1.8
Unemployment rate (% labour force)	19.6	17.2	15.6	13.9	17.2	16.4	16.5	16.8	15.7	15.0
Consumer price index	-0.2	2.0	1.6	1.8	2.0	1.7	1.4	1.1	1.6	1.9
Unit labour costs	-0.6	-0.2	0.8	1.3	-0.4	-0.2	-0.3	0.1	0.7	0.9
Current account balance (cum., % GDP) ¹	1.9	1.8	1.7	1.7	1.9	1.8	1.8	1.8	1.8	1.8
Net lending or borrowing rest of the world (cum., % GDP) ¹	2.1	2.0	1.9	1.9	2.1	2.0	2.0	2.0	2.0	2.0
Fiscal balance (cum., % GDP) ²	-4.3	-3.1	-2.5	-2.1						

Financial markets

INTEREST RATES										
Dollar										
Fed Funds	0.51	1.10	1.75	2.52	1.05	1.25	1.30	1.50	1.58	1.83
3-month Libor	0.74	1.26	2.05	2.77	1.20	1.32	1.47	1.76	1.95	2.15
12-month Libor	1.37	1.79	2.30	2.86	1.75	1.73	1.92	2.10	2.23	2.37
2-year government bonds	0.84	1.39	2.44	3.16	1.28	1.36	1.69	2.06	2.31	2.57
10-year government bonds	1.84	2.33	2.88	3.52	2.26	2.24	2.38	2.57	2.77	2.98
Euro										
ECB Refi	0.01	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00
3-month Euribor	-0.26	-0.33	-0.33	-0.07	-0.33	-0.33	-0.33	-0.33	-0.33	-0.33
12-month Euribor	-0.03	-0.15	-0.17	0.22	-0.13	-0.16	-0.19	-0.18	-0.18	-0.18
2-year government bonds (Germany)	-0.58	-0.75	-0.50	0.06	-0.74	-0.72	-0.74	-0.62	-0.54	-0.46
10-year government bonds (Germany)	0.10	0.36	0.67	1.39	0.31	0.42	0.38	0.53	0.61	0.71
EXCHANGE RATES										
\$/€	1.11	1.13	1.20	1.22	1.10	1.17	1.18	1.20	1.19	1.20
¥/€	120.30	126.64	133.93	138.06	122.21	130.38	132.92	134.15	132.83	133.68
£/€	0.82	0.88	0.88	0.86	0.86	0.90	0.89	0.89	0.88	0.87
OIL										
Brent (\$/barrel)	45.04	54.83	62.71	63.75	50.92	52.18	61.54	64.83	62.00	62.00
Brent (€/barrel)	40.73	48.62	52.40	52.29	46.34	44.84	51.95	54.18	51.92	51.96

Note: 1. Four quarter cumulative. 2. Cumulative over four quarters. Does not include aid to financial institutions.

Forecasts

FINANCIAL OUTLOOK · A volatile start to the year for financial markets

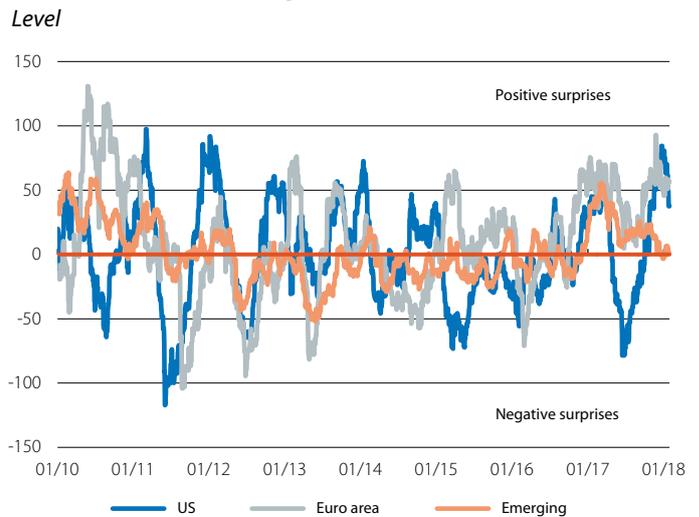
A January of contrasts in the markets. Supported by strong macroeconomic data at the end of 2017 and improved growth prospects at the beginning of 2018, in January sovereign interest rates rose sharply, particularly in the US and the core euro area countries. At the same time, stock markets were bullish in the first few weeks of the month with considerable gains for the main indices in the US, Europe and emerging economies. Sovereign interest rates consolidated their gains after the first meetings in 2018 indicated few policy changes on the part of the European Central Bank (ECB) and as the US Federal Reserve (Fed) reinforced the expectation of three rate hikes over the next 12 months. However, on greater expectations of a gradual tightening of US financial conditions and the ECB moving towards monetary normalisation in 2018, the main international stock markets moderated their gains and started to post losses in the last few sessions of January.

Risk factors remain latent. High equity prices have benefitted from a scenario that combines good growth prospects and inflation expectations in the advanced economies remaining subdued, supporting a gradual normalisation of interest rates. However, this environment could lead to excessive complacency, especially as there are overvaluation concerns in the US stock market. Also, the US is gradually entering a more mature phase of the cycle, and with its labour market at full employment there is a higher likelihood of upside risks for inflation and a heightened risk of a faster monetary policy tightening on behalf of the Fed. Finally, there are also latent geopolitical tensions (including conflicts between Iran and Saudi Arabia and between the US and North Korea) which, in 2017, had already led to temporary upswings in financial volatility.

From more to less in developed stock markets. Whereas stock markets started 2017 with losses, given the scenario of significant pockets of uncertainty, in 2018 most of the stock market indices of the developed economies began the year with a few weeks of high spirits and considerable gains. However, the mood started to change in the last sessions of the month and the main stock market indices posted losses in the last week of January. Nevertheless, US stocks continued to set records for January as a whole (the S&P 500 gained almost 6%), while, in the euro area, the Eurostoxx 50 rose by +3.0% and the Italian MIB by +7.6%, the Spanish Ibex 35 by +4.0%, the Portuguese PSI 20 by +3.4%, the French CAC 40 by +3.2% and the German DAX by +2.1%.

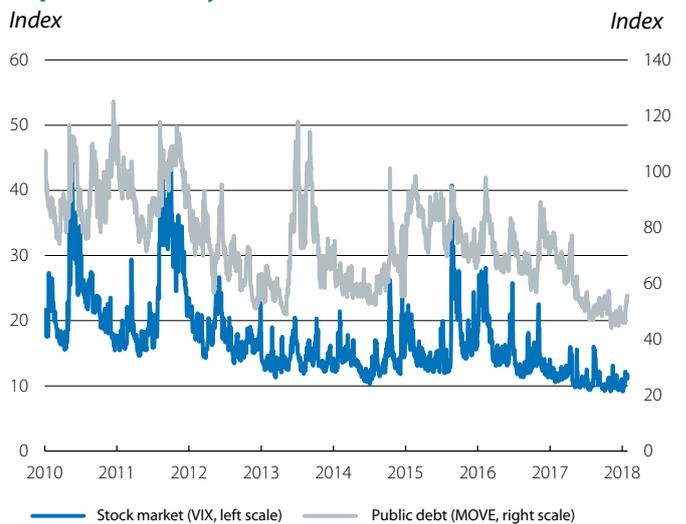
The Fed plans three interest rate hikes for 2018. As expected, at its first meeting of the year the Fed did not alter the parameters of its monetary policy and kept the fed funds

Index of economic surprises



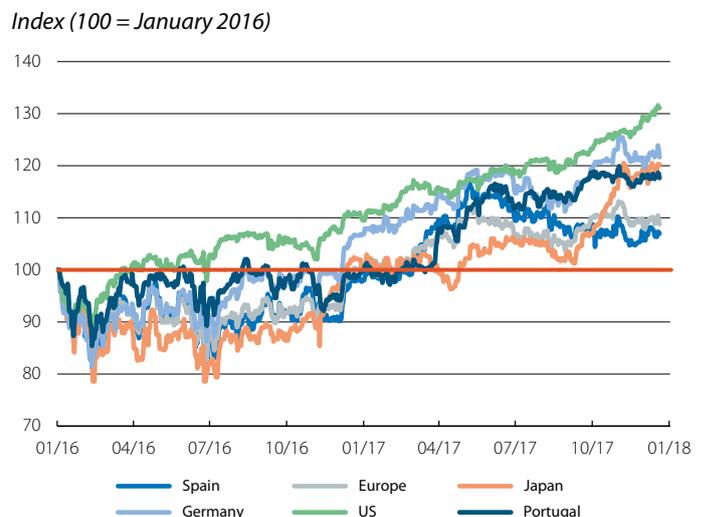
Source: CaixaBank Research, based on data from Citigroup and Bloomberg.

Implied volatility in financial markets



Source: CaixaBank Research, based on data from Bloomberg.

Main advanced stock markets



Source: CaixaBank Research, based on data from Bloomberg.

rate unchanged within the range of 1.25%-1.50%. However, after confirming, last December, the prospect of three further hikes in 2018, the Fed's January meeting sent a message of continuity, albeit providing a slightly more positive view of the macroeconomic scenario. The members of the Federal Open Market Committee (FOMC) indicated that they expect inflation to rise throughout 2018 and stabilise, in the medium-term, around the 2% target. They therefore also repeated the need to continue gradually raising interest rates. After these messages of continuation, Janet Yellen held her last meeting as a member of the FOMC, which she has chaired since February 2014. Under her mandate the Fed has carried out five interest rate hikes since the Great Recession of 2007-2009 and put an end to the cycle of unconventional monetary policy by implementing, last October, a relatively automatic strategy of reducing the Fed's balance sheet. Jerome Powell takes over as Fed Chair from 3 February.

The ECB repeats that it does not plan to raise interest rates until well past the end of QE. Although the December meeting of the ECB's Governing Council (GC) did not provide any huge surprises, the publication of the meeting's minutes at the beginning of January revealed the GC is planning to tighten its forward guidance. Investors interpreted this message as a hint that it was preparing the ground to end QE, kindling greater interest in the ECB's January meeting. However, at the meeting held on 25 January, the GC kept its forward guidance unchanged and repeated that QE will continue at a rate of EUR 30 billion per month until at least September 2018. The ECB also reinforced expectations of no interest rate hikes until well past the horizon of the net asset purchases. Lastly, Draghi once again stressed that the exchange rate volatility observed in the past few months is a source of uncertainty for the euro area's economy. He mentioned that, although a large part of this movement reflects Europe's improved economic outlook, some is also due to the Trump administration's use of language. On the whole, although the meeting did not provide any great changes, the ECB repeated that it believed the economic scenario was positive. Consequently, at its future meetings the GC is expected to adjust its forward guidance in preparation for ending net asset purchases by the end of the year.

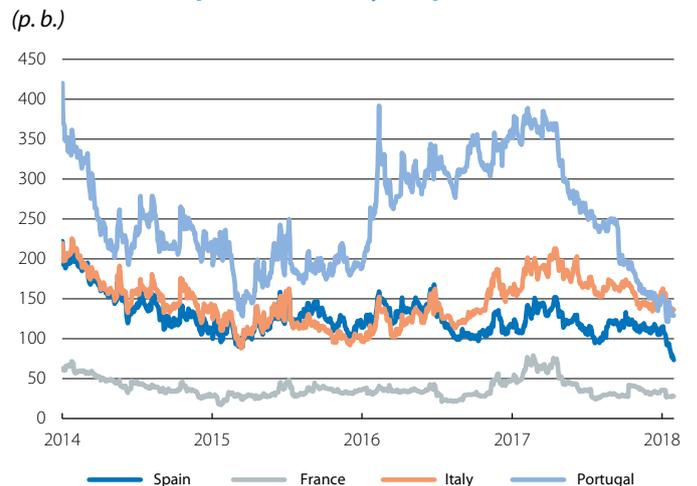
Sovereign interest rates pick up while risk premia fall. Sovereign interest rates rose strongly, especially in the US (interest rates on 10-year Treasury bills rose by more than 30 bp to their highest level since 2014) and Germany. At the same time, the risk premia for euro area peripheral economies fell sharply. Specifically, the Spanish premium benefitted from Fitch's upgrade of its sovereign rating on 19 January (from BBB+ to A), falling by more than 35 bp to its lowest level since 2009, fluctuating between 70 and 80 bp. Portugal's risk premium fell by more than 20 bp, reaching its lowest level since 2010, while Italy's risk premium also decreased by about 20 bp in spite of continuing uncertainty regarding the country's general elections in March.

Yield on 10-year public debt



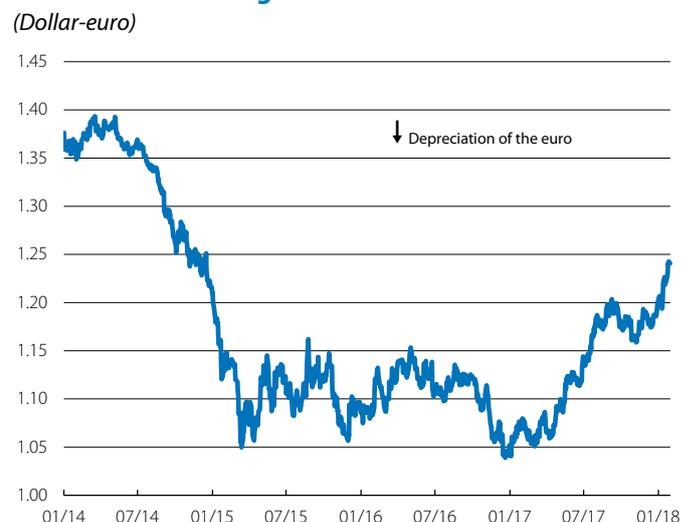
Source: CaixaBank Research, based on data from Bloomberg.

Euro area: risk premia on 10-year public debt



Source: CaixaBank Research, based on data from Bloomberg.

Dollar-euro exchange rate



Source: CaixaBank Research, based on data from Bloomberg.

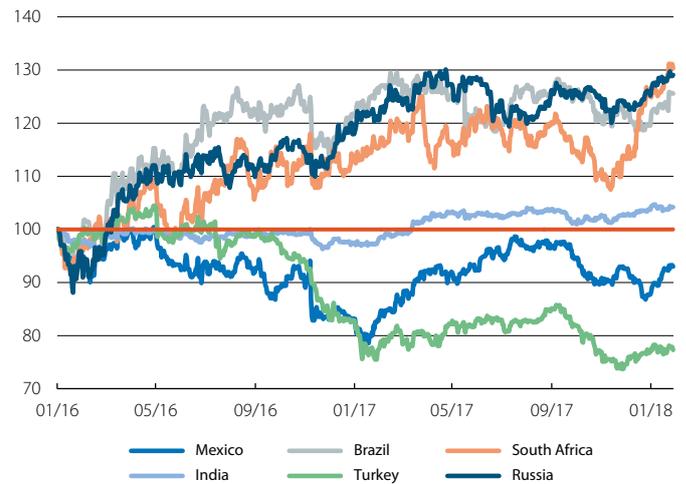
The dollar continues to depreciate. After the euro stabilised at around USD 1.18 in December, with the publication of the ECB's minutes early in January, it started to appreciate again and ended the month at around USD 1.24. The dollar's depreciation was not only against the euro but also against most emerging currencies. The Mexican peso appreciated considerably, up by around 6%, as well as the Brazilian real. In addition to each region's own idiosyncratic factors, the dollar's movements coincided with political statements made by the Trump administration. In particular, the euro went above USD 1.25 after Steven Mnuchin, United States Secretary of the Treasury, pointed out the advantages of a weaker dollar. However, a few days later, when Trump backed a strong dollar, the US currency reacted by appreciating against the main currencies.

Emerging stock markets follow the tune of global investor sentiment. Emerging equity markets also started January with considerable gains. In the first three weeks of the year, the MSCI Emerging Markets index rose by more than 9%. Among the main emerging economies, the Russian index, RTS, posted notable gains, benefitting from higher crude prices and appreciating by more than 13%. Latin America's gains were led by Brazil and Argentina while China's stock market appreciated by over 7%. However, as with the advanced economies, emerging stock markets started to reverse the gains made during the last sessions of the month, accumulating losses of -1.5% for the emerging region as a whole. As a result, the MSCI Emerging Markets index for January as a whole saw a gain of 8.3%.

Another upswing in oil prices. The price of a Brent quality barrel continued its upward trend observed in the last week of 2017, almost reaching USD 70. This was clearly supported by the extension of OPEC's production ceiling agreement, announced at the end of November 2017. Also, in the past few weeks various temporary factors, such as the weak dollar and geopolitical tensions between Saudi Arabia and Iran, have joined investor optimism in driving up the price of crude.

Emerging exchange rates against the dollar

Index (100 = January 2016)



Source: CaixaBank Research, based on data from Bloomberg.

Emerging stock markets by region

Index (100 = January 2016)



Source: CaixaBank Research, based on data from Bloomberg.

Brent oil price

(Dollars per barrel)



Source: CaixaBank Research, based on data from Bloomberg.

FOCUS · Shale production: the end of the golden age?

Brent crude recently topped USD 70 a barrel for the first time since June 2015 as OPEC announced it would restrain oil output until the end of 2018. Nevertheless, there is still some scepticism over just how high prices will go, in spite of the cartel’s apparently strong commitment to reduce excess supply. Such doubts are partly due to the uncertainty hovering over the shale oil industry. As happened in 2014, a possible spike in shale production could push crude prices down.

Although there is no precise estimate of the breakeven point for shale producers, the different estimates published by the sector suggest this is USD 50-60 per barrel. This means that any price above this range would cover the high production costs, encouraging shale producers to continue increasing their supply in the international market. Such expectations are already reflected in the latest oil supply projections by various analysts. The International Energy Agency (IEA) expects production to almost double, from 6.5 million barrels per day (bpd) in 2015 to almost 12 million bpd by 2025. At the end of 2017, even OPEC considerably raised its shale production forecasts, up by 56% compared with its previous projections. Nevertheless, the chances that the sector will continue to experiment significant productivity gains seem to have declined notably, after several years in which technological changes had led to significant increases.

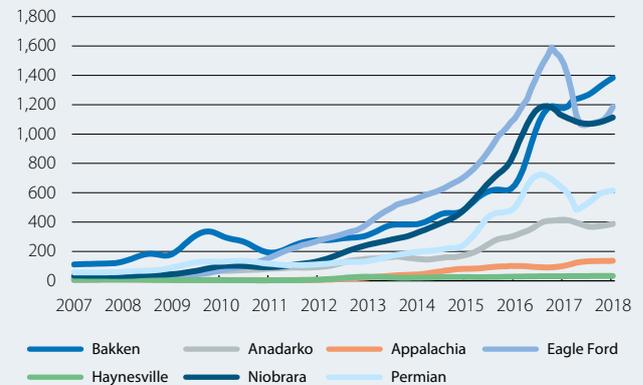
One of the factors limiting productivity gains is the time required to drill a well, a variable that appears to have levelled out recently after falling sharply between 2013 and 2016 (helping to boost production).

But the time required to drill wells is not the only variable that seems to be stabilising; this is also the case of the drilling method used. At the beginning of the shale production boom, a large proportion of productivity gains came from a change from vertical to horizontal wells, which are much more productive. Today most wells are drilled horizontally, so there is very little margin left for productivity gains via the drilling method.

Finally, there are also signs that fracking is reaching its limit, the technique that had helped to significantly increase well yields. According to Kayrros, an energy research firm, productivity adjusted for well length in the Permian basin, the most productive zone in the US, stopped growing in 2016 and even started to drop in 2017.

Shale production per rig*

(Million barrels per day)



Note: * New-well oil production per rig at the main shale production sites.
Source: CaixaBank Research, based on data from the Energy Information Administration.

In short, beyond OPEC’s actions, which will be crucial in realigning the market, shale producers’ reaction to higher oil prices will also have to be monitored closely. At present, doubts regarding how much shale producers can increase their output mean that the future trend in the price of crude oil is likely to remain uncertain.

KEY INDICATORS

Interest rates (%)

	31-Jan	29-Dec	Monthly change (bp)	Year-to-date (bp)	Year-on-year change (bp)
Euro area					
ECB Refi	0.00	0.00	0	0.0	0.0
3-month Euribor	-0.33	-0.33	0	0.1	-0.1
1-year Euribor	-0.19	-0.19	0	-0.4	-8.9
1-year government bonds (Germany)	-0.56	-0.64	8	7.8	10.0
2-year government bonds (Germany)	-0.53	-0.63	10	9.7	16.9
10-year government bonds (Germany)	0.70	0.43	27	27.3	26.4
10-year government bonds (Spain)	1.43	1.57	-14	-13.7	-16.8
10-year spread (bps) ¹	73	114	-41	-41.0	-43.2
US					
Fed funds	1.50	1.50	0	0.0	75.0
3-month Libor	1.78	1.69	9	8.6	74.5
12-month Libor	2.27	2.11	16	16.3	55.7
1-year government bonds	1.88	1.73	15	14.8	112.1
2-year government bonds	2.14	1.88	26	25.7	93.6
10-year government bonds	2.71	2.41	30	30.5	25.7

Spreads corporate bonds (bps)

	31-Jan	29-Dec	Monthly change (bp)	Year-to-date (bp)	Year-on-year change (bp)
Itraxx Corporate	44	45	-1	-0.6	-29.0
Itraxx Financials Senior	42	44	-2	-1.7	-48.4
Itraxx Subordinated Financials	97	105	-8	-8.0	-116.0

Exchange rates

	31-Jan	29-Dec	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
\$/€	1.241	1.201	3.4	3.4	15.0
¥/€	135.540	135.280	0.2	0.2	11.3
£/€	0.875	0.888	-1.5	-1.5	1.9
¥/\$	109.190	112.690	-3.1	-3.1	-3.2

Commodities

	31-Jan	29-Dec	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
CRB Commodity Index	443.4	432.3	2.6	2.6	2.5
Brent (\$/barrel)	69.1	66.9	3.3	3.3	24.0
Gold (\$/ounce)	1,345.2	1,303.1	3.2	3.2	11.1

Equity

	31-Jan	29-Dec	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
S&P 500 (USA)	2,823.8	2,673.6	5.6	5.6	23.9
Eurostoxx 50 (euro area)	3,609.3	3,504.0	3.0	3.0	11.7
Ibex 35 (Spain)	10,451.5	10,043.9	4.1	4.1	12.2
Nikkei 225 (Japan)	23,098.3	22,764.9	1.5	21.4	21.3
MSCI Emerging	1,254.6	1,158.5	8.3	8.3	38.0
Nasdaq (USA)	7,411.5	6,903.4	7.4	7.4	32.0

Note: 1. Spread between the yields on Spanish and German 10-year bonds.

ECONOMIC OUTLOOK · Strong global growth with balanced risks

World growth will remain at cruising speed in 2018 and 2019. Economic activity indicators tended to improve towards the end of 2017. This endorses the CaixaBank Research benchmark scenario for 2018, namely 3.9% world GDP growth (compared with 3.7% growth predicted for 2017). We expect world growth to remain a high 3.8% in 2019. Inflation will increase slightly in 2018, both in advanced and emerging economies. The factors supporting this expansion are evident. First, monetary policy will remain accommodative in the advanced bloc (even in the US, which will continue its monetary normalisation). This acceleration in global economic activity will also be supported by higher prices for oil and other commodities, boosting exporters but without harming import growth to any great extent. Thirdly, the emerging bloc is likely to speed up its recovery. Evidence of this was provided by Russia and Brazil towards the end of 2017, as well as the economic expansion of India and other emerging Asian countries, such as Indonesia. Obviously the notable exception to this pattern is China, which will probably continue its gradual slowdown in 2018 and 2019.

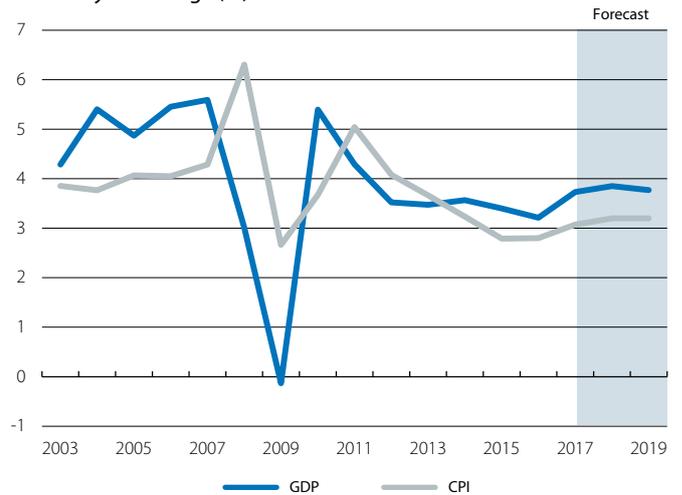
Risks are largely balanced. After several years of downside risks to growth prospects, the immediate outlook appears to be balanced. Most analysts tend to agree with this assessment, as can be seen in the IMF's recent revision of its economic outlook. Based on a similar benchmark scenario as the one mentioned above, the IMF believes that downside and upside risks offset each other, although potential adjustments in financial markets and political and geopolitical issues still warrant attention. However, from a medium-term perspective this assessment alters slightly, with the emergence of underlying aspects such as growing global debt, populist outbreaks, geopolitical uncertainty and doubts related to China's soft landing and its financial, real estate and forex risks, as well as the impact of tougher international financial conditions on emerging economies with greater external vulnerabilities. The list is quite long and the risk factors considerable.

UNITED STATES

For a good start to 2018, there is nothing like ending 2017 on the right footing. The US economy made considerable gains towards the end of 2017. For instance, business sentiment indicators (ISM) for manufacturing and services were well above 50 points in December, a clear indication of growth in secondary and tertiary economic activity. The consumer sentiment indicator provides a similar view, in December posting its best quarter since Q4 2000. Obviously this substantial growth in economic activity will support a strong start to 2018. Neither was the positive situation altered by the temporary shutdown of routine federal services in the

Global GDP and CPI

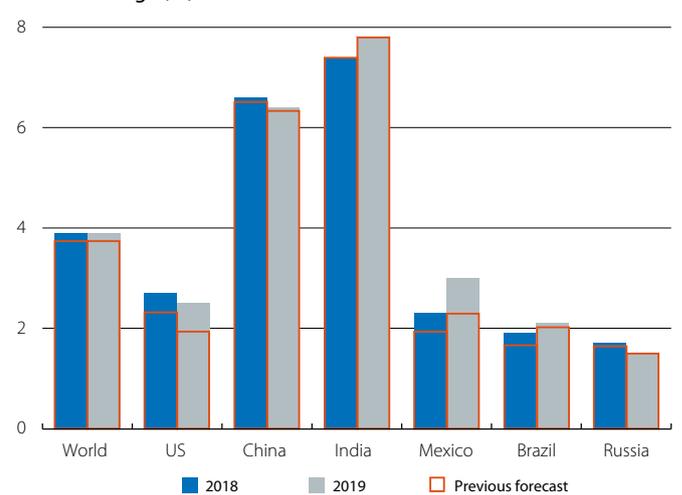
Year-on-year change (%)



Source: CaixaBank Research.

IMF: GDP forecasts for 2018 and 2019

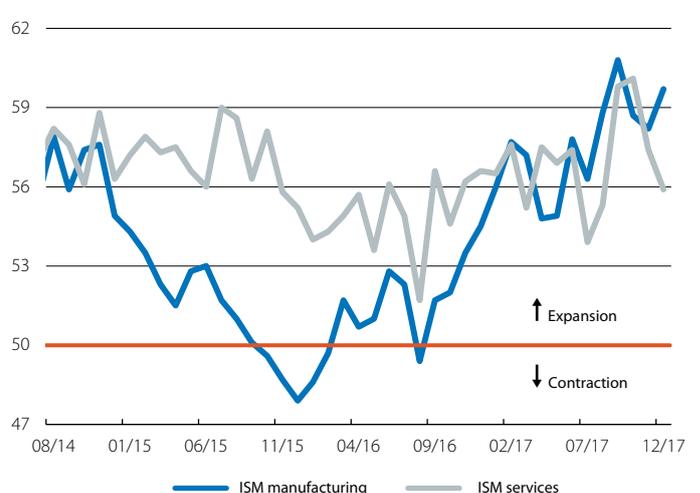
Annual change (%)



Source: CaixaBank Research, based on data from the IMF (WEO, January 2018).

US: economic activity indicators

Level



Source: CaixaBank Research, based on data from the ISM.

US due to the government’s failure to reach an agreement to extend the federal budget. This is partly because, as on the 12 occasions this has happened since 1981, the stoppage was resolved in a few days.

The country’s good economic performance at the end of 2017 is confirmed overall by Q4 GDP. Quarter-on-quarter growth reached 0.6% (2.5% year-on-year) in Q4, reflecting the expansionary tone of the US economy. By demand component, this continued strong growth rate was supported by a substantial increase in private consumption, large improvements in investment and an increase in public spending, offsetting a considerable negative contribution by stock. Such strong domestic demand points to growth continuing in the coming months.

Watch out for overheating. This acceleration in economic activity is occurring at a time when the US is close to full employment. 148,000 jobs were created in December, bringing the 2017 monthly average to a high 171,000. The unemployment rate also ended the year at a low 4.1% (very far from the 10% posted in 2009), while wages continued to rise substantially (up by 2.5% year-on-year). There are also indications the economy will continue in this mature phase of the cycle. US growth will remain high in 2018, supported by strong private consumption (given the healthy labour market), consolidated investment and a slightly expansionary fiscal policy (resulting from cuts in direct taxation on companies and, to a lesser extent, individuals). In 2019, growth is expected to remain in the area of 2%, thanks to continued support from domestic factors.

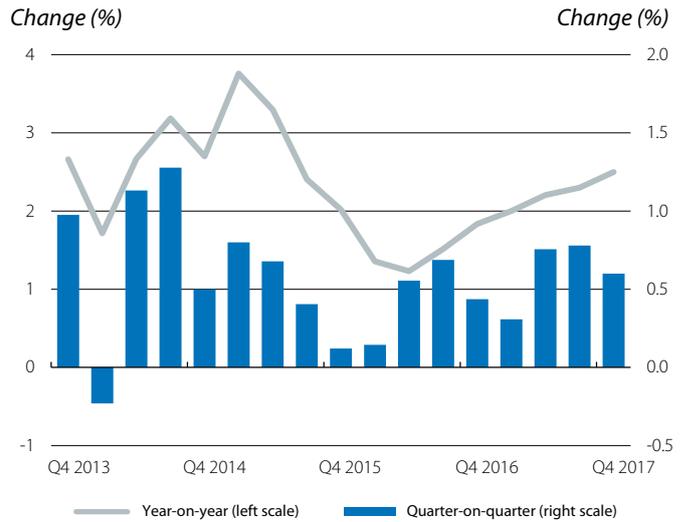
Inflation is about to get higher. This diagnosis is supported by the expected trend in inflation. In December, the CPI grew by 2.1% year-on-year, in line with the figures posted the past few months. But such contained increases will more than likely give way to greater inflationary tension in 2018, especially as from Q2. This reinforces the CaixaBank Research scenario regarding the Fed’s monetary normalisation, with three interest rate hikes in 2018, bringing the fed funds rate to 3.25% by the end of the year.

EMERGING ECONOMIES

Emerging momentum, faster economic growth and considerable capital inflows. After several months of a slight slowdown in GDP growth, almost all emerging economic activity indicators began to rise towards the end of 2017. This improvement has been accompanied by a recovery in net portfolio capital inflows (debt and shares), with current levels approaching the peak reached in the past few years whenever optimism was high regarding emerging prospects. This increase in capital inflows has also been accompanied by the continued appreciation of many emerging currencies.

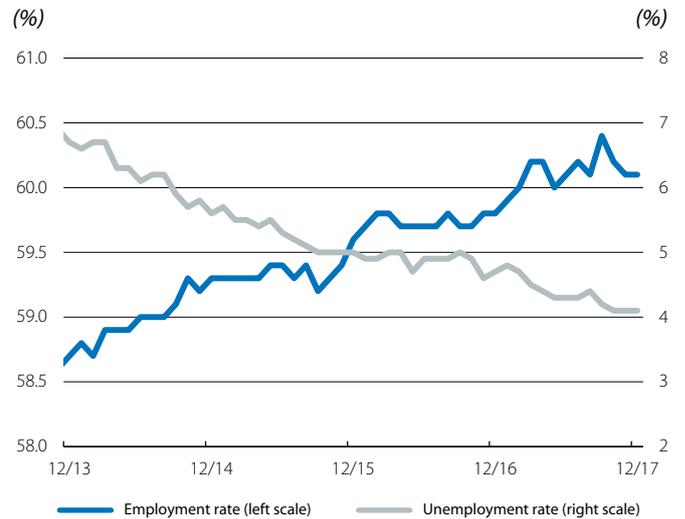
China, embarking on a 2018 with less growth. The trend in Chinese growth has been watched closely for several years now. One concern is just how far the official growth figures

US: GDP



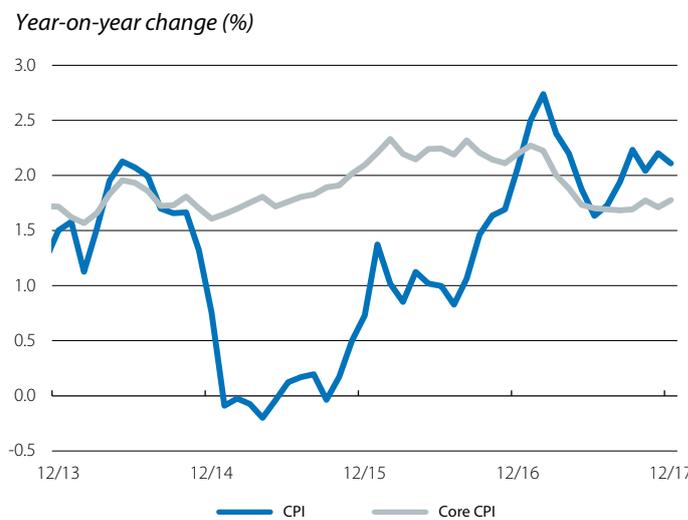
Source: CaixaBank Research, based on data from the BEA.

US: labour market



Source: CaixaBank Research, based on data from the Bureau of Labor Statistics.

US: CPI



Source: CaixaBank Research, based on data from the Bureau of Labor Statistics.

are in line with the information provided by other economic activity indicators (in this respect, see the Focus «China's economic growth under the microscope: past, present and future» in this *Monthly Report*). Such concern could grow should expectations increase of a sharper slowdown than predicted (known as a «hard landing»). For the time being, however, the trend is still positive. China's GDP grew at a good rate in 2017, 6.9% for the year as a whole (6.8% year-on-year in Q4). This annual growth figure exceeds the growth target set by the government for 2017, namely 6.5% GDP growth or higher. It is the first acceleration in Chinese economic growth since 2010 and results from good performances by consumption and exports. Nevertheless, we expect economic activity to slow down moderately over the coming months as the country continues with reforms in the area of state-owned companies and with its anti-pollution campaign and also increases supervision of the credit issued via shadow banking.

Good growth in many emerging economies. The rest of the main emerging countries are posting reasonably positive growth data. Each economy has its own particular support and negative factors. However, most are capitalising, to a greater or lesser degree, on the combination of cheap and widespread international financing, synchronised acceleration in world growth and upward commodities cycle. The large emerging Asian economies are perhaps benefiting the most from these positive factors, posting clearly dynamic figures (year-on-year growth in excess of 5%). The growth of other economies, however, is still hindered by continued pockets of uncertainty, mostly of a political and geopolitical nature, as is the case of South Africa, Mexico and Brazil.

Emerging capital inflows (portfolio) *

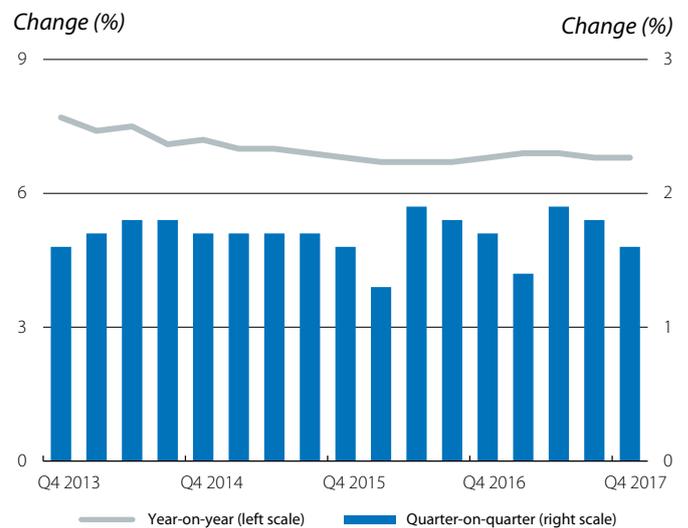
Moving three-month average (USD billion)



Note: * Countries included: Indonesia, India, Korea, Thailand, South Africa, Brazil, Turkey, Hungary and Mexico. Net inflows of debt and shares.

Source: CaixaBank Research, based on data from the IIF.

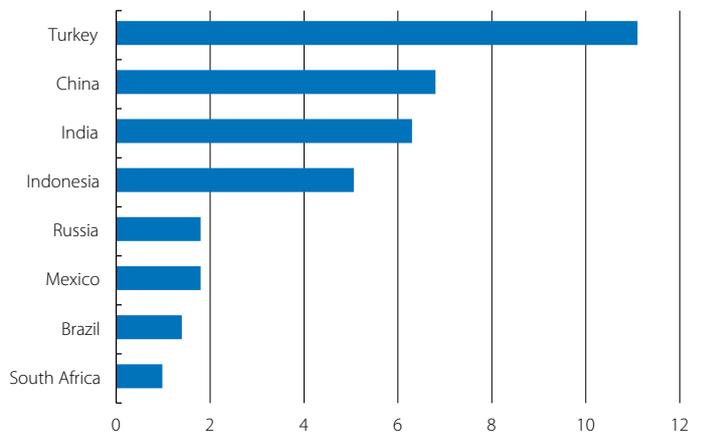
China: GDP



Source: CaixaBank Research, based on data from China's National Statistics Office.

Emerging economies: GDP *

Year-on-year change (%)



Note: * The latest figure available is shown, corresponding to Q3 2017 for all countries except China and Mexico, which is Q4 2017.

Source: CaixaBank Research, based on data from Thomson Reuters Datastream.

FOCUS · The expansionary cycle in the emerging economies: something old, something new and something borrowed

After several sluggish years by their own standards, the emerging economies' growth rates have once again started to speed up. The first hesitant signs of this turnaround could be seen in 2016, becoming much more evident in 2017. Emerging growth rates are now expected to consolidate at around 5% over the next few years. But apart from the actual growth figure, what kind of expansionary cycle is likely for these economies? In order to answer this question, we have compared the current upswing in growth, which is expected to last until 2020, with two precedents: the expansion from 1983 to 1988 and the one from 2001 to 2007. And we predict that, as the saying goes for brides, this cycle will be wearing something old, something new and something borrowed.

Let us begin with the different aspects of this cycle; the «new» part of the saying. First of all, in terms of intensity, which can be estimated using the average growth for the whole expansionary period in question, the current boom is clearly less dynamic than in the first decade of the millennium but slightly more dynamic than the boom in the 80s. This view alters, however, when the strength of the recovery is taken into account, measured by the acceleration in growth. Between 2015 and 2020 GDP growth is expected to speed up by 0.8 pp while this rate was 2.8 pp between 1983 and 1988 and almost 5 pp in the first decade of the 2000s. In other words, the current expansion is less «emerging», with high but not exceptional growth rates.

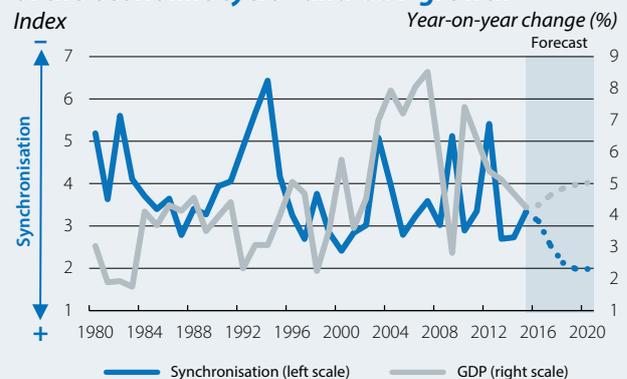
A second new aspect can be seen when we look at the relative contribution of the two broad types of emerging country: commodity exporters and the rest. Although the exporter group is recovering in growth intensity terms, they are still far behind the rest of the emerging economies. This was not the case in the previous expansionary periods. Another new aspect of the current expansion is the high degree of synchronisation of emerging growth with the global cycle. Estimating the deviation between emerging and global GDP growth (see the chart for details of this calculation), it can be seen that the current cycle's degree of synchronisation is the greatest since 1980.

These changes in the nature and synchronisation of growth are new. So what is the «something old» we mentioned? One aspect observed in all emerging expansions is that these are still, from the perspective of advanced economies, very dynamic, resulting in GDP growth differentials between emerging and developed economies that are extremely favourable for the former.

Another repeated aspect is that successive emerging cycles reflect a particular far-reaching structural change, namely Asia's full consolidation as the most dynamic region in the emerging bloc. In the 80s boom, Latin America and Asia made similar contributions to total emerging GDP growth. However, between 2001 and 2007 Asia contributed twice as much as Latin America (even though these were very good years for the American continent). Finally, in the current cycle, in which Latin America is only expected to achieve moderate growth, Asia's contribution will be four times that of Latin America. Regarding the rest of the emerging regions, Africa has remained almost stable in terms of its contribution to emerging GDP growth while the contributions made by emerging Europe and the Middle East are decreasing cycle by cycle.

Lastly, what is the «something borrowed» we mentioned at the beginning? Here we are naturally thinking of the extraordinarily accommodative global monetary conditions. To all intents and purposes, this has acted as a loan for the emerging economies. As can be seen by the considerable rise in external debt of many of these countries, they have taken full advantage of the accommodative financial conditions to secure a large amount of financing under highly favourable conditions. It is true that previous emerging expansions occurred after the global benchmark interest rate, i.e. the US rate, had been cut but this cannot be compared with the current situation. Such conditions will undoubtedly be a key factor in gauging whether the outlook for the emerging economies' cycle looks robust. This *Monthly Report* will therefore monitor such developments closely. We must also remain synchronised. Stay tuned to us for more information.

Emerging economies: synchronisation of the economic cycle* and GDP growth



Note: *The indicator is the standard deviation for the GDP growth of each country less world growth, where the weight of each country is its share of world GDP in terms of purchasing power parity for each year.

Source: CaixaBank Research, based on data from Thomson Reuters Datastream.

FOCUS · China's economic growth under the microscope: past, present and future

Analysing the shape of China's economy is no mean feat. But such an analysis is even more necessary than ever: The Chinese economy has become huge in global terms (representing 18.8% of the world's GDP in purchasing power parity compared with 15.1% for the US), it is also increasingly interconnected with the rest of the large economies and it is in the middle of a challenging rebalancing of its economy towards services and consumption. This article introduces an economic activity index to help us assess China's economic growth evolution and determine just how accurately the official data reflect its actual rate of economic activity. There is good reason for such an exercise. As we will see, the results will provide us with a more accurate diagnosis of the true capacity and limitations of China's economy to undergo an orderly and successful rebalancing.

First of all, it is rather difficult for the economists from China's National Bureau of Statistics (NBS) to accurately measure and aggregate economic data in order to produce the official GDP figures. One of their problems is the incentive for Chinese civil servants at a provincial level to falsify the data they report as they are assessed based on these growth figures. The bias is potentially sizable. At the beginning of this year the region of Inner Mongolia, and the province of Liaoning in 2017, have both admitted they have exaggerated their data over the past few years. China's NBS takes such technical difficulties into account when aggregating the data. Nevertheless, the official statistics have been highly controversial due to the series' great smoothness since 2012.

To better assess the trend in China's economic growth rate, we have constructed an aggregate index for economic activity that takes into account the main indicators from four key sectors in the economy (car sales, electricity production, new floor space available in real estate and rail freight transport turnover), as well as industrial production and retail sales. The result is quite surprising: until 2010, growth in the economic activity index followed a trend very similar to official GDP growth, with the two closely correlated. However, since 2011 these two variables have diverged significantly. While the official data report a slight but sustained slowdown in the economy, the economic activity index is more volatile with three sharp decreases in 2012, 2014 and 2015, the last coinciding with stock market turbulence in the same period. Moreover, except in two quarters, the index's growth has consistently been below the official figure since 2011. Its average year-on-year growth by quarter has been 4.9% since 2012 (7.4% in the case of the official figures).

So we have seen that, in the past few years, the economic activity index and GDP growth have followed different paths. But what can this pattern tell us? One possibility is that the technical adjustments made in the official data have concealed a sharper slowdown. But there is another possibility: as the economy is shifting towards services and consumption, there may have been a structural change in the economy which our economic activity index has not been able to capture. Whatever the case, it is reassuring to note that our index follows a similar trajectory to those produced by institutions such as Goldman Sachs and Capital Economics, which use other methodologies and variables to construct their economic activity indices.

The index's trajectory therefore suggests that China's economic situation may be less dynamic than indicated by the country's official data. In fact, in the first three

China: GDP vs. economic activity index



Source: CaixaBank Research, based on data from the Chinese National Statistics Office.

China: Economic activity indices



Source: CaixaBank Research, based on data from the Chinese National Statistics Office, Bloomberg and The Economist.

quarters of 2017, average year-on-year growth for the index was 5.3% compared with 6.9% for GDP. Moreover, in Q3 2017, year-on-year GDP growth was 6.8%,¹ while for the index it was 1 pp less.

As noted, the trend in the index is particularly significant considering one of the big questions regarding the next few years revolves around whether China will be able to achieve an orderly rebalancing of its economy without causing any abrupt slowdown. Our findings are not entirely encouraging. It is also worrying that the economic activity index and official GDP figure are diverging at a time when fiscal and monetary stimuli have been extensively used to boost the economy, also resulting in macroeconomic imbalances such as increasing corporate debt. Achieving an orderly, smooth transition might be more complicated than would be expected. Moreover, if GDP has actually grown less than the official figures indicate, China's corporate debt relative to GDP might be larger than initially thought.

Given this situation, the economic agenda Xi Jinping wishes to apply in his second mandate becomes even more crucial. Will he be able to continue pushing the economy towards consumption and services without accentuating the growth slowdown? As both fiscal and monetary policy are limited in scope, the onus lies on the planned structural reforms. In this respect, the new context could already be seen clearly in the second half of 2017 when economic stimuli started to diminish and, for instance, public investment declined. Of the past five years, 2017 has seen the lowest growth in central government investment while public corporation investment fell compared with 2016. Industries in northern China and Beijing have also come under an intense anti-pollution campaign that has restricted their production and is expected to continue.

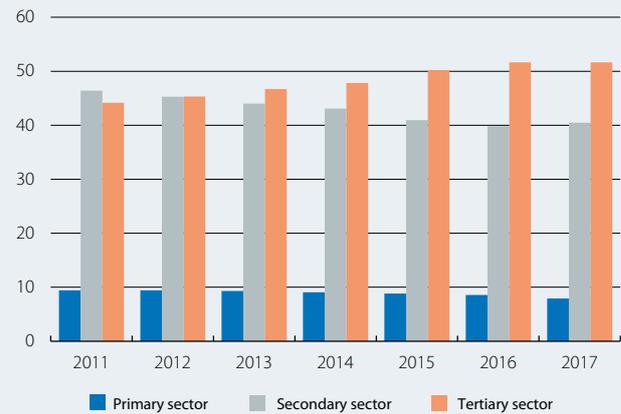
This greater emphasis by Chinese leaders on a more balanced and sustainable economy was confirmed at the Central Economic Work Conference in 2017. Every year, this conference brings together members of the Communist Party Central Committee and the Chinese government to draw up the main guidelines for the country's economic policy for the coming year. On this occasion, less emphasis was placed on growth and three key pillars were defined for 2018's reformist agenda. The first is to improve deleveraging, both in the financial and corporate sectors, through greater bank supervision to ensure credit activity is managed prudently. The Conference also noted the need to reform the corporate governance of state-owned companies (estimated to hold almost two thirds of all corporate debt). The other two pillars focus on reducing rural poverty and pollution.

There is also a fourth pillar, namely the aforementioned shift towards an economy based on consumption and

1. Some indicators required to calculate the index's growth in Q4 2017 have yet to be published.

Change in production model: supply

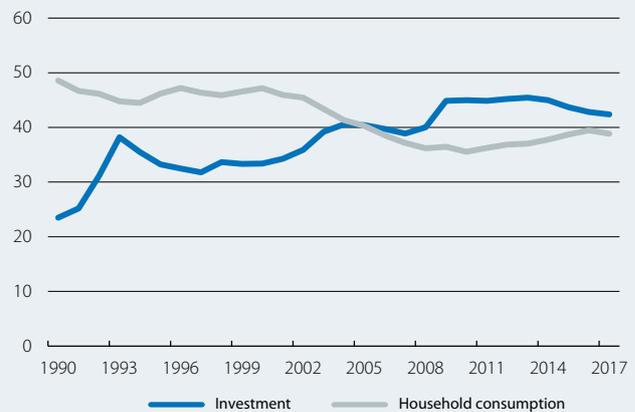
(% of GDP)



Source: CaixaBank Research, based on data from the Chinese National Statistics Office.

Change in production model: demand

(% of GDP)



Source: CaixaBank Research, based on data from Oxford Economics.

services. This transition is taking place gradually although there is still some way to go and progress has stalled over the past two years. In terms of supply, the relative weight of the tertiary sector is now 52% of GDP, still below the share of medium-high income countries (59%) and the OECD (74%). Regarding demand, investment is still of prime importance and seems excessive (42% of GDP compared with 31% in medium-high income countries and 21% in the OECD), while household consumption is just 39% of GDP (50% in medium-high income countries and 60% in the OECD).

In short, the big question for the next few years is whether the Asian giant can complete its economic transition and reduce its macroeconomic imbalances without harming its economy to any great extent. This is an important question. The decoupling between official data and less dynamic economic activity figures against the backdrop of abundant economic stimuli suggests the Chinese economy's ability to continue keeping economic troubles at bay over the coming years is perhaps more limited than we might have imagined.

KEY INDICATORS

Year-on-year change (%), unless otherwise specified

UNITED STATES

	2015	2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17
Activity									
Real GDP	2.9	1.5	1.8	2.0	2.2	2.3	–	2.5	–
Retail sales (excluding cars and petrol)	4.3	3.7	3.4	4.0	2.9	2.8	4.2	5.5	6.0
Consumer confidence (value)	98.0	99.8	107.8	117.5	118.1	120.3	126.2	128.6	122.1
Industrial production	–0.7	–1.2	–0.1	0.6	2.1	1.7	2.9	3.5	3.6
Manufacturing activity index (ISM) (value)	51.4	51.4	53.3	57.0	55.8	58.6	58.7	58.2	59.3
Housing starts (thousands)	1,107	1,177	1,248	1,238	1,167	1,172	1,256	1,299	1,192
Case-Shiller home price index (value)	179	189	192	197	199	200	203	...	...
Unemployment rate (% lab. force)	5.3	4.9	4.7	4.7	4.4	4.3	4.1	4.1	4.1
Employment-population ratio (% pop. > 16 years)	59.4	59.7	59.7	60.0	60.1	60.2	60.2	60.1	60.1
Trade balance ¹ (% GDP)	–2.8	–2.7	–2.7	–2.8	–2.8	–2.9	–2.9	–2.9	...
Prices									
Consumer prices	0.1	1.3	1.8	2.5	1.9	2.0	2.0	2.2	2.1
Core consumer prices	1.8	2.2	2.2	2.2	1.8	1.7	1.8	1.7	1.8

Note: 1. Cumulative figure over last 12 months.

Source: CaixaBank Research, based on data from the Department of Economic Analysis, Department of Labor, Federal Reserve, Standard & Poor's, ISM and Thomson Reuters Datastream.

JAPAN

	2015	2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17
Activity									
Real GDP	1.4	0.9	1.5	1.3	1.7	2.1	–	...	–
Consumer confidence (value)	41.3	41.7	42.2	43.4	43.4	43.7	44.5	44.9	44.7
Industrial production	–1.2	–0.2	2.8	3.9	5.8	4.6	4.1	3.7	...
Business activity index (Tankan) (value)	12.8	7.0	10.0	12.0	17.0	22.0	–	25.0	–
Unemployment rate (% lab. force)	3.4	3.1	3.1	2.9	2.9	2.8	2.8	2.7	...
Trade balance ¹ (% GDP)	–0.5	0.7	0.7	0.7	0.6	0.6	0.8	0.8	0.7
Prices									
Consumer prices	0.8	–0.1	0.3	0.3	0.4	0.6	0.2	0.5	1.1
Core consumer prices	1.4	0.6	0.2	0.1	0.0	0.2	0.2	0.3	0.4

Note: 1. Cumulative figure over last 12 months.

Source: CaixaBank Research, based on data from the Communications Department, Bank of Japan and Thomson Reuters Datastream.

CHINA

	2015	2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17
Activity									
Real GDP	6.9	6.7	6.8	6.9	6.9	6.8	–	6.8	–
Retail sales	10.7	10.4	10.6	10.0	10.8	10.3	10.0	10.2	9.4
Industrial production	6.1	6.0	6.1	6.8	6.9	6.3	6.2	6.1	6.2
PMI manufacturing (value)	49.9	50.3	51.4	51.6	51.4	51.8	51.6	51.8	51.6
Foreign sector									
Trade balance ¹ (value)	608	512	512	466	458	435	425	421	435
Exports	–2.3	–8.4	–5.3	7.8	9.0	6.9	6.9	12.3	10.9
Imports	–14.2	–5.7	2.1	23.9	14.3	14.7	17.4	18.7	5.0
Prices									
Consumer prices	1.4	2.0	2.2	1.4	1.4	1.6	1.9	1.7	1.8
Official interest rate ² (value)	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35	4.35
Renminbi per dollar (value)	6.3	6.6	6.8	6.9	6.9	6.7	6.6	6.6	6.6

Notes: 1. Cumulative figure over last 12 months. Billion dollars. 2. End of period.

Source: CaixaBank Research, based on data from the National Bureau of Statistics of China and Thomson Reuters Datastream.

ECONOMIC OUTLOOK · The euro area changes gear and speeds up

Good economic outlook for the new year. The growth rate for euro area countries as a whole is accelerating substantially. All factors are playing in its favour, both external and internal. One major external factor is the increased global growth momentum, which is also expected to continue for several quarters. On the domestic front, household consumption and investment are performing well, boosted by continuing accommodative financial conditions and the remarkable improvement in confidence regarding the euro area economy's growth capacity. The IMF was equally optimistic in its forecast update for the euro area, once again revised upwards. The institution noted that the euro area's recovery is very strong and conditions are right for growth to remain dynamic over the coming quarters.

Political events turn all eyes on Germany and Italy. The German economy continues to post strong GDP growth and all the evidence suggests this will continue throughout 2018 in spite of the country's political impasse. In fact, if the pre-agreement reached by the CDU and SPD is approved and these two large parties repeat their Grand Coalition, the economy may benefit from a fiscal boost. The pre-agreement also includes notable measures to promote the European project, such as setting up a European Monetary Fund. The situation is quite different in Italy, however. Polls suggest the Italian parliament will probably still be highly fragmented after the general elections on 4 March and it is unlikely that any one party will secure a large enough majority to govern alone. Support is also likely to increase for populist parties. This combination of factors is therefore not conducive to carrying out the reforms needed by the country (for more details, see the Focus «Italy: *piano piano non si va lontano*» in this *Monthly Report*).

The euro area continues to enjoy solid economic growth in Q4 2017. Euro area GDP grew by 0.6% quarter-on-quarter (2.7% year-on-year) in the last quarter of the year. This rate is slightly higher than the CaixaBank Research forecast, in addition to the good rates posted in previous quarters. In fact, the euro area economy grew by 2.5% in 2017 as a whole, its fastest rate since 2007 and clearly above the 1.8% achieved in 2016. Across countries, the figures for Spain (0.7% quarter-on-quarter) and France (0.6%) have been published, both higher than expected. One of the most surprising elements of the recent trend in euro area country growth rates is the high degree of economic synchronisation. This makes the current expansion more robust and less vulnerable to idiosyncratic shocks that may occur in any given country.

Optimistic start to the year for euro area sentiment indicators. The first indicators available for Q1 2018 point to business optimism continuing to rise. In January, the euro area

IMF GDP forecasts

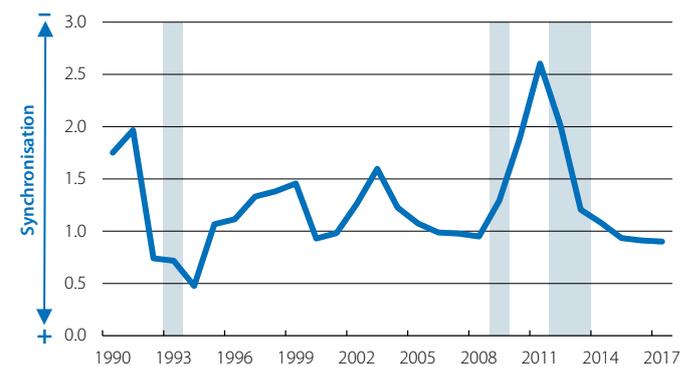
Annual change (%)

	GDP forecast			Change regarding October 2017 forecast	
	2017	2018	2019	2018	2019
Euro area	2.4	2.2	2.0	▲ 0.3	▲ 0.3
Germany	2.5	2.3	2.0	▲ 0.5	▲ 0.5
France	1.8	1.9	1.9	▲ 0.1	▲ 0.0
Italy	1.6	1.4	1.1	▲ 0.3	▲ 0.2
Spain	3.1	2.4	2.1	▼ 0.1	▲ 0.1
United Kingdom	1.7	1.5	1.5	= 0.0	▼ 0.1

Source: CaixaBank Research, based on data from the IMF (WEO, January 2018).

Euro area: indicator synchronisation and business cycle *

Index

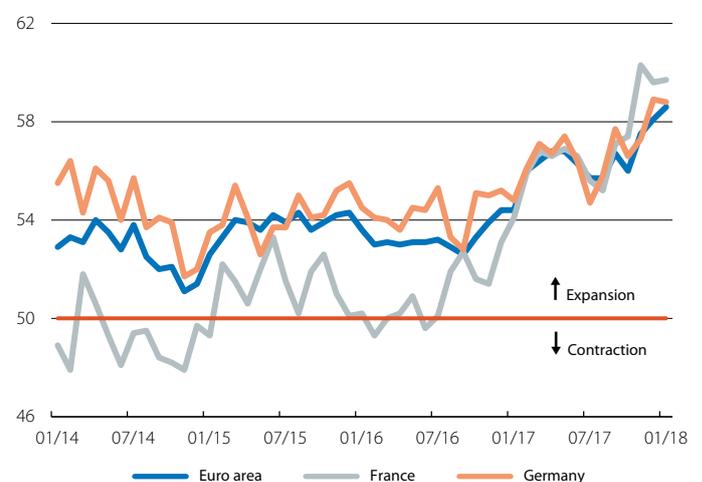


Note: * The indicator is the standard deviation for each country's GDP growth minus the average euro area growth, weighting each country by its population. The shaded areas show the years when the euro area was in recession. Some euro area countries are excluded due to a lack of data.

Source: CaixaBank Research, based on data from the OECD.

Euro area: composite PMI economic activity indicator

Level



Source: CaixaBank Research, based on data from Markit.

composite business sentiment index (PMI) rose to 58.6 points (58.1 points in December), the highest since 2006 and comfortably in the expansionary zone (above 50 points). The euro area economic sentiment index (ESI) stood at 114.7 points in January, very close to the previous month's figure which was the highest since 2001. Across countries, business sentiment continues to improve in Germany in spite of the political impasse: both the IFO business climate index and composite PMI improved on already very high levels. France's optimism regarding the good economic environment and impact of Macron's economic reforms are also reflected in the INSEE confidence index and composite PMI, both at very high levels. All this suggests the euro area's good growth rate should continue in 2018.

Private consumption is still strong. November's retail sales picked up again, growing by 2.8% year-on-year after October's temporary slowdown. The European Commission's confidence indicator also rose to 1.3 points in January, an all-time high. These data, together with the improved economic growth outlook and particularly the labour market, point to household consumption continuing to be one of the main supports for euro area economic growth.

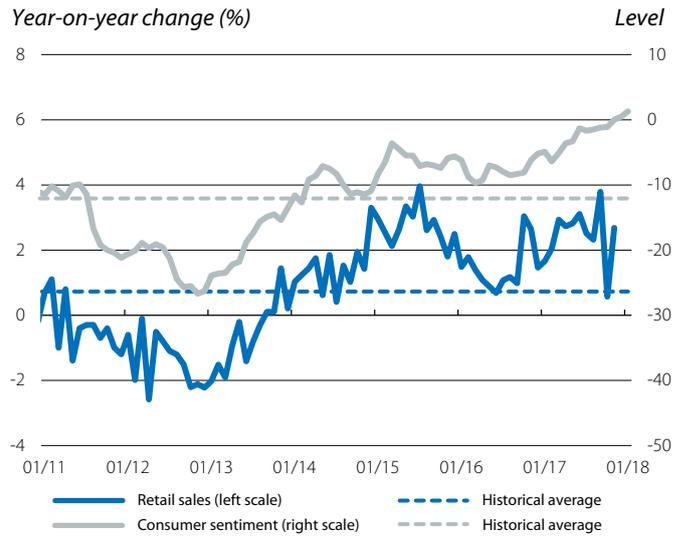
Inflation growth remains moderate in spite of the economic recovery. In January, inflation stood at 1.3%, 0.1 pp below December's figure, due mainly to the smaller increase in the energy and unprocessed food components. Core inflation reached 1.2%, 0.1 pp higher than December's figure. We expect inflation to rise gradually as economic growth consolidates. However, it will remain moderate in 2018 and below the ECB target (below but close to 2%). This is largely because several countries still have slack to increase their production capacity without pressurising wages (for more details, see the Focus «Inflation and its determinants: a measure of our ignorance» in this *Monthly Report*). The appreciation of the euro will also reduce inflationary pressure on imported products.

The increase in economic activity boosts credit. The ECB bank lending survey has noted that conditions are ripe for credit to continue growing. The survey shows that there was increasing demand across all loan categories in Q4 2017 and that, at the same time, conditions for new loans also improved. According to the survey, increased investment, the low general level of interest rates and greater confidence will drive demand. It also notes that households are taking advantage of easier credit standards for house purchase, driven by competitive pressure and a decline in risk perceptions.

PORTUGAL

More balanced and sustainable economic growth. The latest economic indicators suggest Portugal's economic growth rate may ease. Nevertheless, all the evidence points to growth remaining dynamic in 2018 and is very likely to be more balanced, supported both by domestic demand,

Euro area: consumption indicators



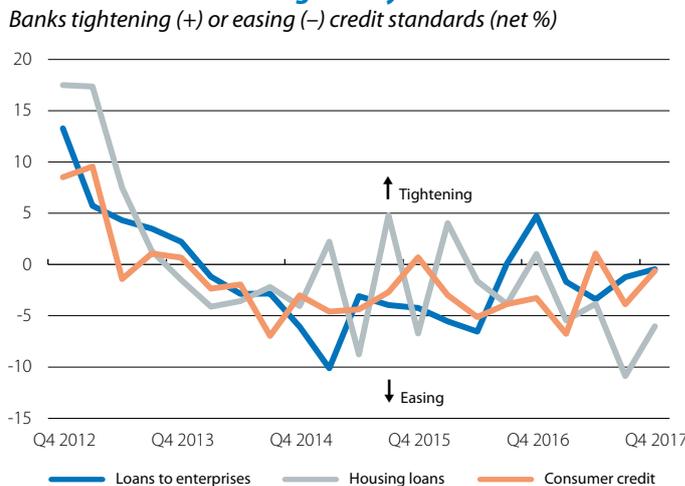
Source: CaixaBank Research, based on data from Eurostat and the European Commission.

Euro area: harmonised CPI



Source: CaixaBank Research, based on data from Eurostat.

Euro area: bank lending survey



Source: CaixaBank Research, based on data from the ECB.

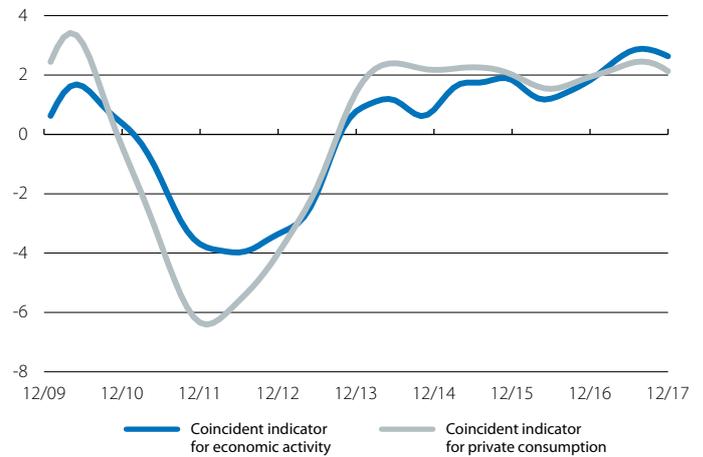
especially investment, and also exports. There are many signs that the Portuguese economy is buoyant. For instance, the Bank of Portugal's coincident indicator for economic activity and its private consumption indicator rose by 2.6% and 2.1% year-on-year in December respectively. These rates are slightly lower than in previous months but still high. December's consumer confidence index also performed remarkably well, standing at 2.3 points, very close to the all-time high reached last July (2.5 points). Given these favourable conditions, Portugal's sovereign risk premium fell in January to below 140 bp, also supported by Fitch's upgrade of the country's issuer default rating to investment grade (from BB+ to BBB). In addition to the favourable macroeconomic context, Fitch also justified its decision by the structural fiscal measures carried out over the past few years and improvements in the banking sector.

Investment comes to the fore in Portugal. Specifically, gross fixed capital formation grew year-on-year by 10.4% in 2017 (Q1-Q3 average), driven by higher growth in both capital goods investment (16.3% year-on-year) and also residential investment (9.6%). We expect this investment momentum to continue over the coming months, albeit at a more moderate rate. According to the National Statistics Office's Investment Survey, Portuguese enterprises plan to grow their investment by 1.8 pp less in 2018 than in 2017. Public investment is also expected to pick up, boosted by larger European funds.

The economic recovery impacts credit, especially for households. The dynamic real estate sector is driving new credit for housing. In November, new housing loans rose by 42.2% year-on-year, cumulative for the year, totalling almost EUR 6.66 billion. This figure is higher than the total for 2016 but lower than the pre-crisis period. Consumer credit also increased (10.0% in the first 11 months of 2017). Loans for enterprises, however, fell by 3.7% for SMEs and 8.5% for large firms. Nevertheless, this decline is a smaller than the one observed during the same period the previous year and it is necessary step to complete corporate deleveraging.

Portugal: coincident indicators for economic activity and private consumption

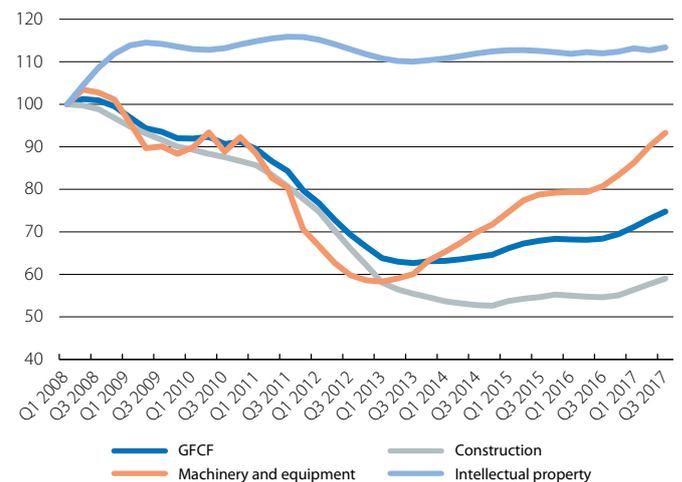
Year-on-year change (%)



Source: CaixaBank Research, based on data from the Bank of Portugal.

Portugal: investment (GFCF) and components *

Index (100 = Q1 2008)

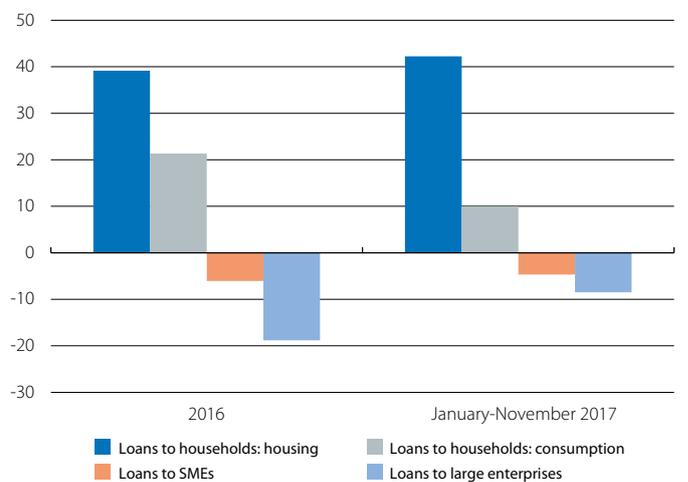


Note: * Cumulative over four quarters.

Source: CaixaBank Research, based on data from the National Statistics Institute.

Portugal: new loans granted

Year-on-year change (%)



Source: CaixaBank Research, based on data from the Bank of Portugal.

FOCUS · Inflation and its determinants: a measure of our ignorance

Four years after the start of the economic recovery, euro area inflation has yet to return to pre-crisis levels. While core inflation averaged¹ 1,8% between 2000-07, it has oscilated around 0,9% since 2014. This Focus examines the slowdown in inflation. While the reasons behind the slowdown remain, to some extent, elusive, we will see that three factors alone can go a long way explaining the observed trend: the rise in unemployment, higher underemployment and, perhaps surprisingly, the slowdown in productivity growth.

The unemployment rate has often been used as a measure to gauge price pressures. When this is higher, workers have less bargaining power to negotiate wage rises and there is less pressure on prices. Although unemployment has fallen since the start of the recovery, it is still higher than its pre-crisis average (see the first chart). Another variable, the underemployment rate or the proportion of employees who would like to work more hours, has risen sharply since the start of the crisis. A higher rate of underemployment should push down wages since such workers provide companies with more room to increase production capacity without having to take on more staff. Finally, another key factor is the slowdown in labour productivity growth² since the start of the crisis (see the first chart), although in this case its impact on inflation is, in principle, ambiguous. On the one hand, the larger number of goods and services resulting from higher productivity should push down prices, given a certain rise in wages. But higher productivity growth could also result in larger wage demands by workers and this could also affect prices, especially if such demands are greater than what would be justified by the productivity gains.

The challenge lies in going beyond a qualitative assessment and quantitatively measuring each factor's impact on inflation. One useful benchmark is the IMF wage growth analysis for all developed economies.³ A similar methodology is used in this article but focusing on inflation rather than wages and restricting our

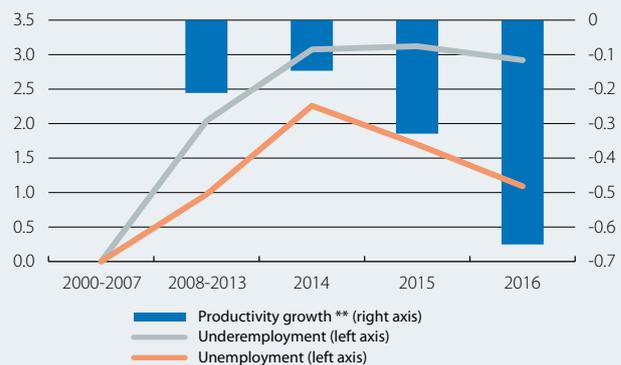
1. Core inflation is headline inflation minus oil and unprocessed commodities.
2. The ratio of GDP to total hours worked is used.
3. IMF (2017), «World Economic Outlook», Chapter 2.
4. Following the IMF's methodology, the following equation is estimated: $\pi_{i,t} = \alpha + \rho\pi_{i,t-1} + \beta u_{i,t} + \gamma prod_{i,t} + \delta sube_{i,t} + \varphi_i d_i + \varepsilon_t$, in which π denotes core inflation, u the unemployment rate, $prod$ the three-year moving average of labour productivity growth, $sube$ the underemployment rate, d a country indicator and ε the residual of the regression. i denotes the country and t the period of time. The sample consists of annual data between 2000 and 2016.

analysis to the main euro area economies (Germany, France, Italy, Spain and Portugal).⁴

The results show that, together, these three factors account for two thirds of the inflation dynamics between 2014 and 2016 (see the second chart). We find, somewhat surprisingly, that the unemployment rate has limited predictive capacity (accounting for just over 30% of the trend observed), an issue we will deal with in future articles. On the contrary, the remaining variables, are good predictors of the inflation trend, particularly the underemployment rate (23% of the trend observed). Perhaps the most interesting finding is that one third of the observed variation in inflation remains unexplained. This is the extent of our ignorance.

Unemployment, productivity and labour underutilisation *

Difference relative to the 2000-2007 average (pp)

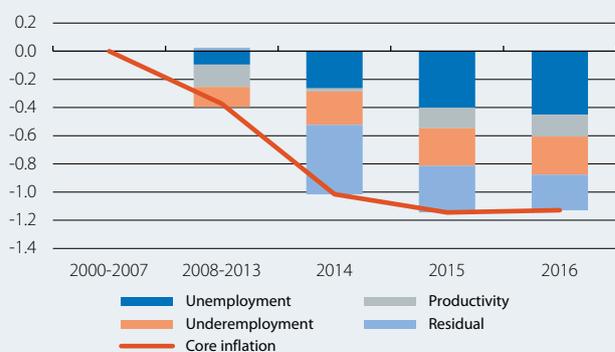


Notes: * The sample includes Germany, France, Italy, Spain and Portugal. ** We have used the three-year moving average to capture the gradual impact of productivity changes on wages.

Source: CaixaBank Research, based on data from Eurostat.

Contribution to the core inflation trend *

Difference relative to the 2000-2007 average (pp)



Note: * The sample includes Germany, France, Italy, Spain and Portugal and the contributions are GDP-weighted.

Source: CaixaBank Research, based on data from Eurostat and OECD.

FOCUS · Italy: *piano piano non si va lontano*

After the elections in France and Germany, attention in the euro area has now turned to Italy’s upcoming General Elections on 4th March. If opinion polls are confirmed, no party win a clear victory and none of the three large political blocs, the Centre-Right, Five Star Movement (M5S) and the Centre-Left, will secure an absolute majority in both houses.¹ Therefore, the most likely outcome will be either a minority government or the beginning of a period of negotiations to form a coalition, bringing together parties with very different political leanings. Although it is true that Italy is used to relatively inconclusive electoral outcomes and unstable governments – it has had 64 governments since WWII – the rise of populist parties to power is a source of concern.

In particular, M5S and the bloc of Centre-right, both euro-sceptic and with populist tendencies, would be strongly supported by voters and could possibly form a government. One of their most notable proposals is the intention, expressed on several occasions by the party leaders, to take Italy out of the euro. Both groups have recently moderated their stances, however. In fact, their respective manifestoes do not include any proposal to withdrawal from the single currency.

Their proposed tax reforms are also a cause for concern. Specifically, the centre-right bloc wants to implement a flat tax on both income and corporate income, accompanying lower taxes with (unspecified) cuts in spending. For its part, M5S proposes to reduce income tax although it has not specified by how much or how this would be carried out. However, whatever the new government’s leanings, it will find it difficult to implement a very expansionary fiscal policy. Given the country’s high level of public debt, such a move would result in an immediate sharp increase in Italy’s risk premium. In any case, both blocs will want to push as far as they can and this could cause tension with European partners.

Finally, it is also worrying that no election manifesto, of any of the three large blocs, includes a detailed strategy to boost economic growth and tackle Italy’s persistent economic vulnerabilities. Let us examine three of these.

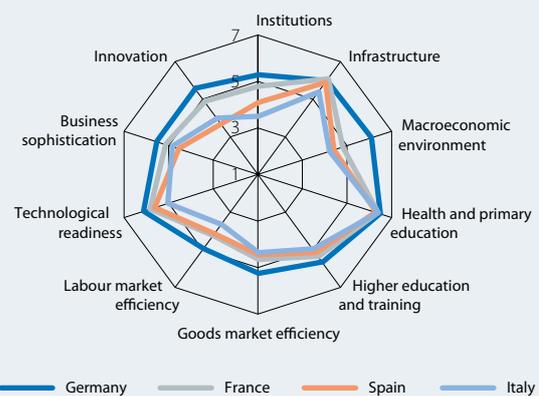
First, the banking sector remains weak. Although considerable progress has been made over the past few months, not all banks are in a strong position to support economic growth. Asset quality has improved

considerably, in part thanks to insolvency procedure reforms and the sale of NPLs. However, the sector’s average NPL ratio remains high, at 11.8% of total loans,² and well above the EU average (4.2%). This continues to damage lending, especially to SMEs, and is one of the reasons for the slow recovery in corporate investment.

Another significant source of vulnerability is the high level of public debt, which represents 134.7% of GDP and remains well above the euro area’s average³ and the threshold set on the EU’s fiscal rules.⁴ This curtails the ability of fiscal policy to respond to adverse shocks and makes Italy particularly vulnerable to any changes in financial conditions.

Lastly, the Italian economy’s low growth capacity is also a cause for concern. A simple example illustrates this perfectly: in the past 15 years, Italy’s GDP per capita has fallen by 5.0% while it has grown by around 11.0% in the euro area and by 17.0% in the US. The World Economic Forum’s competitiveness index provides us with some clues as to which are Italy’s weak spots (see the chart). Although these weaknesses are well-known, all the evidence suggests the new government will not tackle them with enough determination or ambition. Italy still believes that *piano piano si va lontano*.

World Economic Forum competitiveness index



Note: Index between 1 and 7. A higher figure indicates greater competitiveness.
Source: CaixaBank Research, based on data from the World Economic Forum Global Competitiveness Index (2017-2018).

1. The electorate will vote in 630 Congress members and 315 Senate members.

2. Consolidated data, according to the EBA Quarterly Risk Dashboard Q3 2017.

3. 89.1% of GDP, according to Eurostat for Q2 2017.

4. 60% of GDP.

KEY INDICATORS

Activity and employment indicators

Values, unless otherwise specified

	2015	2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17	01/18
Retail sales (year-on-year change)	2.7	1.4	2.2	3.0	2.9	0.2	2.8	...	...
Industrial production (year-on-year change)	2.1	1.5	1.3	2.7	3.7	3.9	3.2	...	...
Consumer confidence	-6.2	-7.8	-5.5	-2.7	-1.5	-1.1	0.0	0.5	1.3
Economic sentiment	103.6	104.3	107.5	109.5	111.5	113.5	114.0	115.3	114.7
Manufacturing PMI	52.2	52.5	55.6	57.0	57.4	58.5	60.1	60.6	59.6
Services PMI	54.0	53.1	55.1	56.0	55.3	55.0	56.2	56.5	57.6
Labour market									
Employment (people) (year-on-year change)	1.0	1.3	1.6	1.6	1.7	-	...	-	-
Unemployment rate: euro area (% labour force)	10.9	10.0	9.5	9.2	9.0	8.8	8.7	8.7	...
Germany (% labour force)	4.6	4.2	3.9	3.8	3.7	3.7	3.6	...	...
France (% labour force)	10.4	10.0	9.7	9.5	9.5	9.3	9.2	...	...
Italy (% labour force)	11.9	11.7	11.6	11.2	11.2	11.1	11.0	...	...
Spain (% labour force)	22.1	19.6	18.2	17.3	16.8	16.7	16.7	...	...

Source: CaixaBank Research, based on data from the Eurostat, European Central Bank, European Commission and Markit.

Foreign sector

Cumulative balance over the last 12 months as % of GDP of the last 4 quarters, unless otherwise specified

	2015	2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17
Current balance: euro area	3.4	3.7	3.7	3.5	3.8	3.8	3.8	...
Germany	8.5	8.3	8.3	7.7	7.8	7.8	7.8	...
France	-0.4	-0.9	-1.1	-1.2	-0.9	-0.9	-1.1	...
Italy	1.5	2.7	2.9	2.8	2.8	2.8	2.9	...
Spain	1.1	1.9	1.9	1.9	1.8	1.8	1.7	...
Nominal effective exchange rate¹ (value)	91.7	94.3	93.7	95.2	98.5	98.6	98.5	98.8

Note: 1. Weighted by flow of foreign trade. Higher figures indicate the currency has appreciated.

Source: CaixaBank Research, based on data from the Eurostat, European Commission and national statistics institutes.

Financing and deposits of non-financial sectors

Year-on-year change (%), unless otherwise specified

	2015	2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17	
Private sector financing									
Credit to non-financial firms ¹	-0.3	1.8	2.2	2.3	2.4	2.9	3.1	2.9	
Credit to households ^{1,2}	0.7	1.7	2.3	2.6	2.7	2.7	2.8	2.8	
Interest rate on loans to non-financial firms ³ (%)	1.6	1.4	1.3	1.3	1.3	1.3	1.2	...	
Interest rate on loans to households for house purchases ⁴ (%)	2.1	1.8	1.8	1.7	1.7	1.7	1.7	...	
Deposits									
On demand deposits	11.1	10.0	9.4	10.2	10.5	10.4	10.1	9.5	
Other short-term deposits	-3.8	-1.9	-2.3	-2.9	-3.0	-2.7	-2.5	-2.1	
Marketable instruments	2.6	2.7	5.7	0.6	-0.6	-0.8	-0.5	-3.0	
Interest rate on deposits up to 1 year from households (%)	0.8	0.5	0.4	0.4	0.4	0.4	0.3	...	

Notes: 1. Data adjusted for sales and securitization. 2. Including NPISH. 3. Loans of more than one million euros with a floating rate and an initial rate fixation period of up to one year. 4. Loans with a floating rate and an initial rate fixation period of up to one year.

Source: CaixaBank Research, based on data from the European Central Bank.

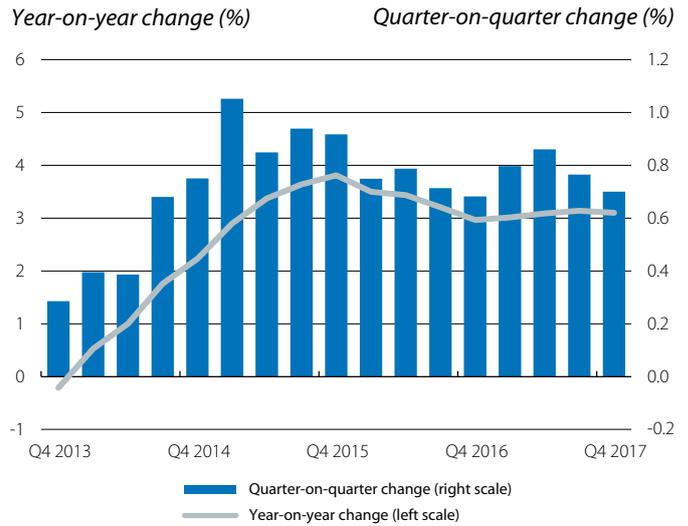
ECONOMIC OUTLOOK · On balance, a positive 2017 and good prospects for 2018

Growth remains high, boosted by an accelerating global economy. GDP grew strongly in Q4 2017, by 0.7% quarter-on-quarter (3.1% year-on-year), bringing growth for 2017 as a whole to 3.1%. Although some support factors are diminishing, such as low oil prices and the appreciation of the euro, the growth rate remained relatively strong thanks to a buoyant global economy and, in particular, the euro area's solid recovery, boosting Spanish exports. The Spanish economy is also benefitting from continuing accommodative financial conditions. In fact, Spanish sovereign debt has been upgraded by the Fitch ratings agency (from BBB+ to A-), based on the economy's improved growth prospects and the fiscal adjustment carried out over the past few years. Together with the ECB's reticence to withdraw monetary stimuli in spite of the euro area's economic recovery and the euro's appreciation, this has pushed down Spain's risk premium, falling below 80 bp in the last few days of January, the lowest since 2009.

Private consumption remains firm and investment picks up. Spending indicators for the last quarter of 2017 point to a slight slowdown in growth of private consumption, which represents 57% of GDP. Q4 retail sales rose by 0.9% year-on-year on average, against 1.7% in Q3, while indicators for capital goods investment point to renewed dynamism supported by a confident business climate. The growth rate of residential investment should also have improved, given the rise in housing demand (sales grew by 15% year-on-year in November) and prices (up 6.7% year-on-year in Q3 according to the National Statistics Institute). Economic activity in the construction industry is therefore gradually recovering, as shown by the significant increase in new building permits (28% year-on-year in October, cumulative YTD). The total is now approaching 70,000 so 2017 is expected to far exceed the 64,000 permits issued in 2016. The upturn in the real estate market is therefore consolidating.

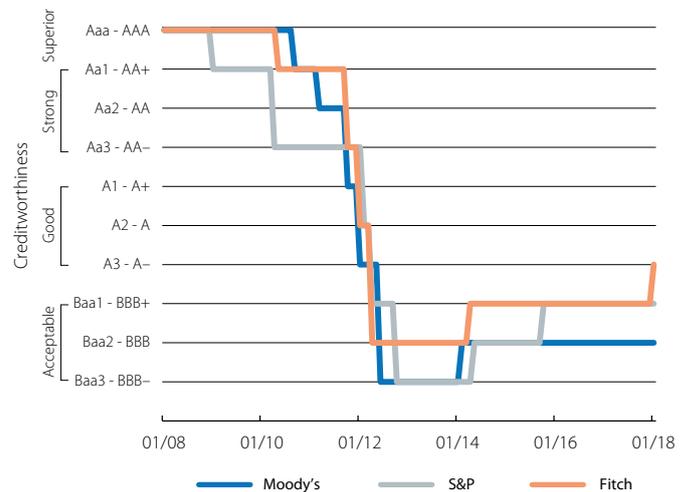
The labour market trend is positive but faltered slightly towards the end of the year. In seasonally adjusted terms, jobs were still created (0.4% quarter-on-quarter in Q4) albeit at a slower rate than in previous quarters (averaging 0.75% quarter-on-quarter in the past three quarters). 2017 has therefore been a very positive year for the labour market. The annual average number of employed rose by 483,000 people, the number of unemployed fell by over half a million (-564,000 people) and the unemployment rate fell by 2.4 pp. But in spite of this improvement, Spain's labour market is still suffering from serious problems. This can be seen in the large proportion of temporary employment (26.7% of wage-earners

GDP



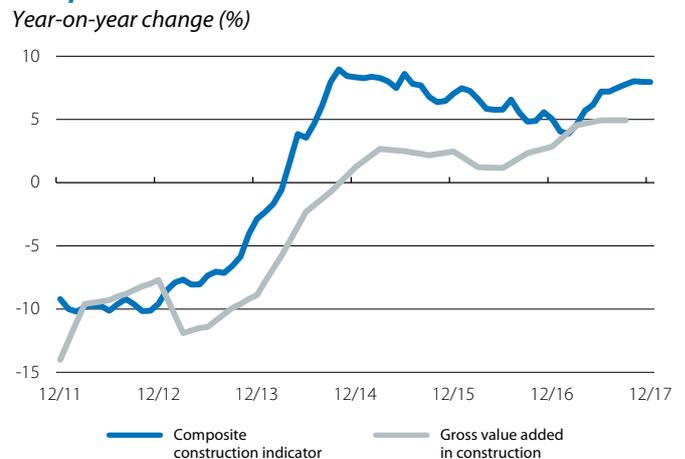
Source: CaixaBank Research, based on data from the National Statistics Institute.

Spain's sovereign rating



Source: CaixaBank Research, based on data from Bloomberg.

Composite construction indicator



Note: The composite construction indicator is made up of the following indicators: Social Security covered workers, apparent consumption of cement, deflated credit to households for housing, new building permits, construction confidence indicator and capital borrowed (urban mortgages).
Source: CaixaBank Research, based on data from the Ministry of Economy, Industry and Competitiveness.

were on a temporary contract in Q4 2017), the high youth unemployment rate (37.5% of people aged 16-25 who would like to work are unemployed) and long-term unemployment (50.4% of the unemployed have been so for more than one year).

Price rises are still very moderate although the economy is improving. Headline inflation fell to 0.5% in January despite the month's sharp rise in oil prices to over USD 70 per barrel. Although the breakdown by component has yet to be published, this price slowdown is probably due to the base effect of electricity prices (one year ago a spike in electricity prices pushed inflation up to 3% during the winter months). In fact, this component was also the main reason for inflation's significant drop in December, down to 1.1%, 0.6 pp below November's figure. Apart from electricity, the rest of the non-core components also helped inflation to moderate in December (fuel and unprocessed food). Core inflation remained stable at 0.8% in December, a sign of little inflationary pressure. Given the moderate prices and labour market slack, wage rises are also subdued (for more details on the outlook for wages, see the Focus «Wage trends and labour underutilisation in the Spanish labour market» in this *Monthly Report*).

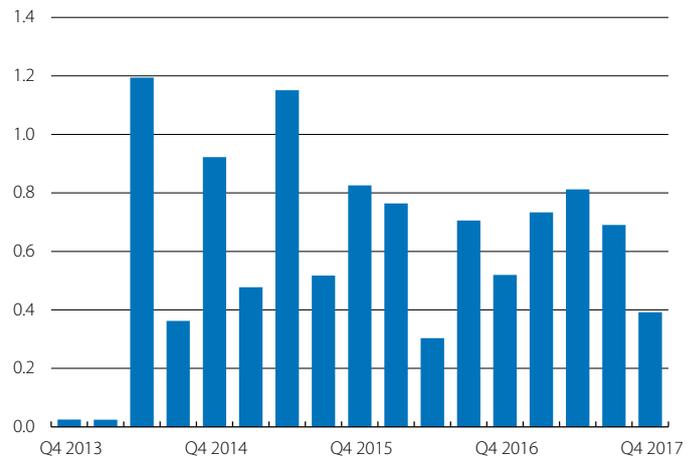
Higher oil prices continue to weaken the trade balance in spite of dynamic exports. In November, the trade deficit increased to EUR 25.14 billion (cumulative over 12 months), equivalent to 2.2% of GDP and a considerable regression compared with the 1.6% deficit in November 2016. The trade balance has deteriorated mainly because of higher oil prices, making energy imports more expensive. Dynamic corporate capital expenditure has also led to an increase in capital goods imports. This rise in imports overshadows the excellent performance of Spain's export sector: goods exports posted very strong growth in November (8.6% year-on-year overall and 7.0% for non-energy exports, cumulative over 12 months). Service exports also performed well thanks to tourism, which continues to beat all records: Spain received 81.8 million international tourists in 2017, 8.6% up on 2016.

The expanding economy is allowing macroeconomic imbalances to be corrected. One highly positive aspect of this new phase is that economic growth is much more balanced than in the previous expansionary period. In fact, the Spanish economy has grown by more than 3% for the past three years in a row while maintaining a current account surplus and reducing public and private debt. According to Q3 2017 data, the households and non-financial firms debt continued to decrease, falling to 61.8% and 98.0% of GDP, respectively. These levels are similar to the euro area's and indicate the private sector has deleveraged extensively.

Bank credit is benefitting from this positive situation. The fact that the private sector no longer needs to deleverage so much, together with the improved economy, favourable

Employment

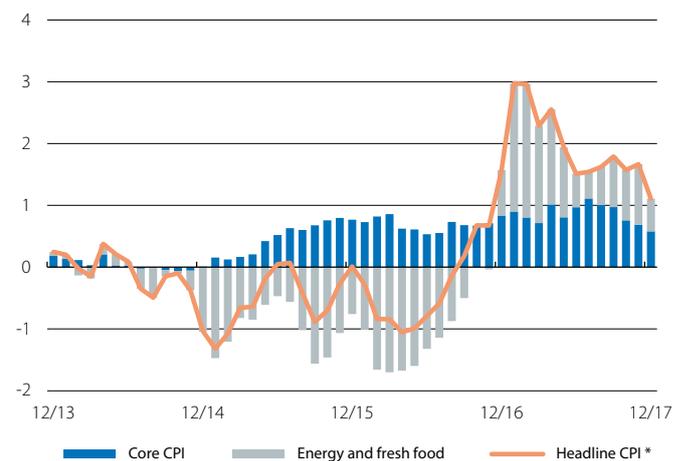
Quarter-on-quarter change (%)



Note: Seasonally adjusted data.
Source: CaixaBank Research, based on data from the National Statistics Institute (LFS).

CPI

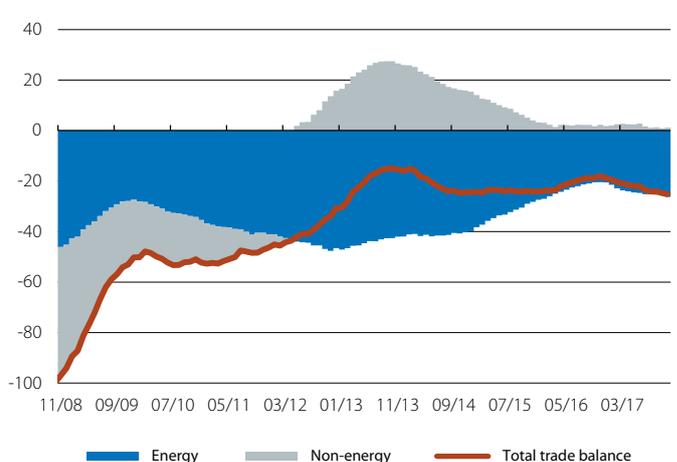
Contribution to year-on-year growth (pp)



Note: * Year-on-year change.
Source: CaixaBank Research, based on data from the National Statistics Institute.

Balance of trade

Cumulative over 12 months (EUR billion)

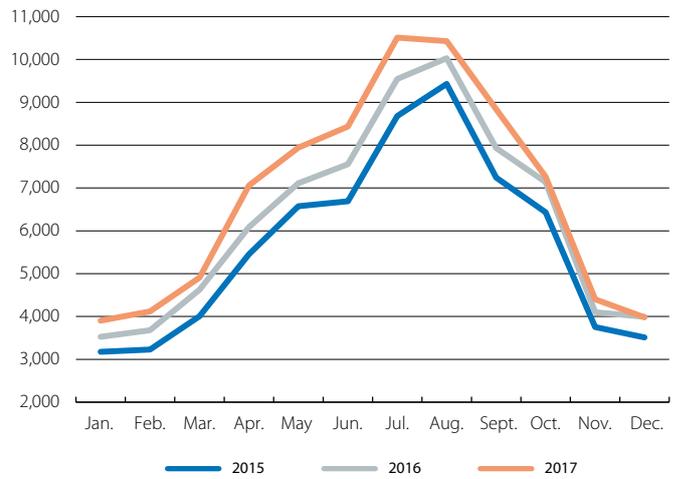


Source: CaixaBank Research, based on data from the Customs Department.

financial conditions and a healthy banking sector, are supporting a recovery in bank credit. According to the latest bank lending survey, for Q4 2017, banks have eased their credit standards for households and kept them unchanged for companies. The continual descent of banks' NPL ratio, down by 0.1 pp in November to 8.1%, reflects the considerable effort being made by Spain's banks to remove non-performing loans from their balance sheets and support the granting of new, healthy loans. In this respect, credit activity was very strong in 2017: new loans granted to households to buy housing and for consumption saw considerable growth (17.4% and 17.9%, respectively). Regarding enterprises, new loans granted to SMEs continued to increase (8.1%) while those to large firms rose again (0.9%) after a sharp decline in 2016. With a view to 2018, this strong growth in new loans should continue, especially consumer credit and loans to enterprises, thanks to an accommodative monetary environment and improvements in the labour market and real estate sector.

Foreign tourist arrival

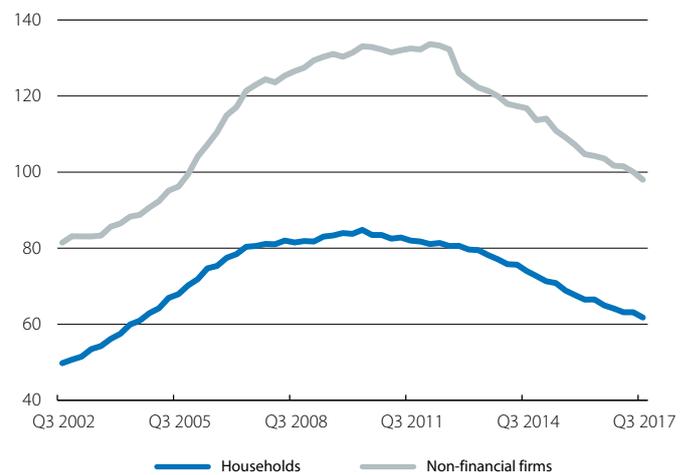
Number of tourists (thousands)



Source: CaixaBank Research, based on data from the National Statistics Institute.

Private sector debt

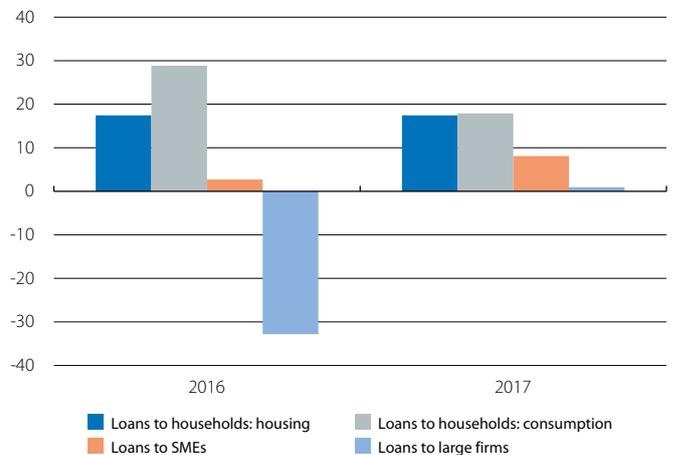
(% of GDP)



Source: CaixaBank Research, based on data from the Bank of Spain.

New loans granted

Annual rate of change (%)



Note: Loans to households exclude refinancing.

Source: CaixaBank Research, based on data from the Bank of Spain.

FOCUS · Tensions in Social Security

For the past eight years, Spain's Social Security has been in the red. From 2010 to 2016 its budget deficit was financed via the Social Security Reserve Fund, created from budget surpluses in previous years. However, in 2017, with the Social Security Reserve Fund running out, the State Treasury granted a loan to Social Security to finance its budget deficit, something which is also expected to happen this year and which highlights the existence of a structural problem in Social Security funding.

The following data illustrate the problem: while revenue from Social Security contributions, highly sensitive to the economic cycle (and especially employment trends), has risen by just 1.8% compared with 2009, retirement pension expenditure is now 54% higher than in 2009. What is this marked rise in spending on retirement pensions due to?

First, it is due to the rise in the average pension, much more than the rise in the average wage and, to a lesser extent, to the increase in the number of pensioners, boosted by the constant lengthening of life expectancy and increase in early retirement, mainly during the crisis. Regarding the first factor, the average pension received by recent retirees has gradually risen, reaching 70% of the average wage¹ compared with the 60% recorded in 2008. This is currently one of the highest percentages in Europe. However, the reforms carried out in 2011 and 2013, and in particular the Pension Revaluation Index,² are likely to contain increases in the average pension during the next few years. On the other hand, the increase in the number of pensioners and consequent rise in the dependency ratio,³ which has grown by more than 5 pp in the past 10 years to 29%, will continue to push up pension expenditure over the coming years.⁴

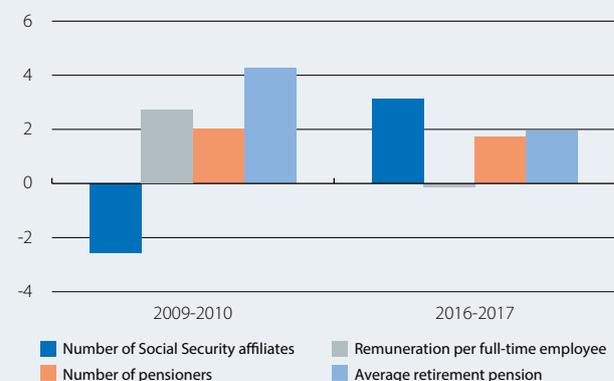
Given this situation, it is vitally important to combine forces and define a new intergenerational social pact. Given the notable increase in life expectancy, as well as in the quality of life for older people, a large part of the debate is focusing on the search for measures aimed at making the pension system more compatible with work

beyond the current retirement age, at least for those people who wish to do so. The impact of such measures on the Social Security accounts would be twofold, as it would boost revenue but also reduce pressure on expenditure.

In this respect, one notable proposal is by Domínguez-Fabián, del Olmo and Herce (2017),⁵ of a «two-stage» mixed pension system. The first stage would cover the period from the statutory retirement age up to an age set by Social Security in line with life expectancy and quality of life (called the «grand age» by the authors). During this stage, the income received would come from a pension insurance policy. In the second stage, after this «grand age», there would be a state pension system. However, this proposal aimed at ensuring the system is sustainable fails to clarify, among other questions, how this «grand age» should be defined, an issue which is not inconsequential. Neither does it explain how the current system can be transformed into the new one. Nevertheless, given such a huge problem, any debate and search for solutions are more than welcome.

Key determining factors of the Social Security budget balance

Year-on-year growth (%)



Source: CaixaBank Research, based on data from the Ministry of Employment and Social Security.

1. Data refer to 2016. The average pension is currently EUR 1,070 per month (November 2017). Under some special regimes, such as that for the coal industry, the average pension rises to EUR 2,075 per month, 80% of the average wage of the mining industry employment group, namely EUR 2,612 per month. Data based on the Salary Structure Survey.

2. The revaluation factor pegs the annual increase in pensions to the expected medium-term trend for the Social Security deficit.

3. The dependency ratio is defined as the ratio between the population aged over 64 and the working age population (from 16 to 64).

4. In this respect, the sustainability factor, which modifies the initial pension according to life expectancy, will help to offset the increase in the number of pensions.

5. Domínguez-Fabián, I., del Olmo, F. and Herce, J. A. (2017). «Reinventando la Seguridad Social. Hacia un sistema mixto de pensiones "por etapas"», IAES, Documento de Trabajo 06/17.

FOCUS · Wage trends and labour underutilisation in the Spanish labour market

One of the key determinants of wage dynamics throughout the economic cycle is how close the labour market is to saturation. This tends to be gauged using the unemployment rate. A large number of unemployed indicates there is slack for companies to increase production and hire more workers without pressuring wages. As an economy enters the mature phase of the economic cycle and unemployment falls, pressure tends to increase on wages because companies find it more difficult to attract new workers.¹

As can be seen in the first chart, Spain's unemployment rate has fallen significantly since the peak reached in 2013 (a cumulative drop of 9.5 pp), now standing 6.8 pp above its pre-crisis level. Although it is still relatively high, should this rate of descent continue, it might soon reach levels at which, historically, wage growth has increased.

However, in the current stage of the recovery, the unemployment rate is not the best indication of labour market saturation. This is because there has been a considerable increase in the number of part-time workers who would like to work more hours and the degree of saturation is therefore smaller than suggested by the unemployment rate. A more accurate picture of labour market saturation is provided by the labour underutilisation rate, which includes both the number of unemployed and also involuntary part-time workers.

Although the labour underutilisation rate has also fallen considerably in the past few years, it is still 10.3 pp higher than its pre-crisis level. In fact, the percentage of the labour force that is currently involuntarily part-time (7% in Q3 2017, representing 58% of part-time workers) has hardly fallen since the recovery began in 2013. An analysis of the relationship between labour underutilisation and wage growth (the modified Phillips curve) suggests that, given the high underutilisation rate, wage growth for the economy as a whole is still relatively subdued.

But are there significant differences between sectors? The third chart shows that this situation differs radically depending on the sector. In hotels and restaurants, recreational and administrative activities, and also in construction, both the unemployment and the underutilisation rate are still relatively high.² On the other hand, some sectors have a relatively low unemployment rate but high involuntary part-time employment (education, healthcare and other services). At the other end of the scale we find sectors with low rates of both unemployment and labour underutilisation. Consequently, although wage growth is expected to remain relatively subdued in general, we are likely to see notable differences between sectors.

1. The negative correlation between the unemployment rate and wage growth is known as the Phillips curve.

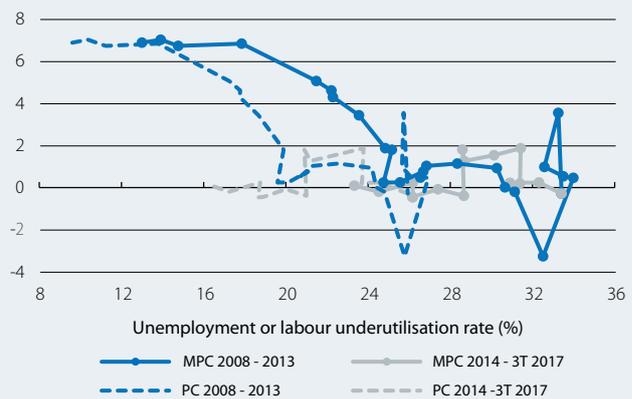
Unemployment and labour underutilisation rates *
(% of the labour force)



Note: * The labour underutilisation rate includes the unemployed and part-time workers who would like to work more hours (involuntary part-time employment).
Source: CaixaBank Research, based on data from the INE (LFS).

Modified Phillips curve *

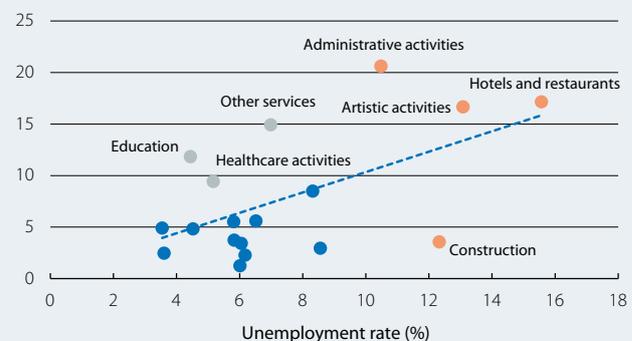
Compensation per worker (year-on-year change, %)



Note: * MPC denotes the modified Phillips curve, which uses the labour underutilisation rate to measure labour market saturation. PC denotes the Phillips curve, which uses the unemployment rate to measure labour market saturation.
Source: CaixaBank Research, based on data from the INE.

Unemployment rate and involuntary part-time employment by economic sector

Involuntary part-time employment * (% of the labour force)



Note: * Involuntary part-time employment refers to part-time workers who would like to work more hours. Each dot on the chart represents an economic sector. Data from Q3 2017.
Source: CaixaBank Research, based on data from the INE (LFS).

2. Sector-level unemployment takes into account the economic sector in which the worker was last employed, if they have worked during the past year. The long-term unemployed are therefore excluded, accounting for almost 50% of the total.

FOCUS · Exports' positive effect on job creation

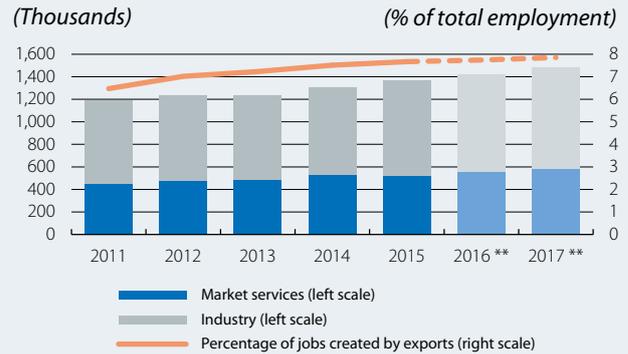
The rise in Spanish exports has significantly boosted the labour market. Nevertheless, it is quite complicated to quantify just how many jobs have been created by the export boom. To calculate the number of jobs that can be attributed to all exports during the most recent period we have used data from the Industrial Companies Survey and the Annual Services Survey for the years 2011 to 2015 (the latest survey available). Each sector's employment has been distributed according to its share of domestic and foreign demand based on its percentage of sales abroad.¹ For the years 2016 and 2017, we have used each sector's employment trend according to the LFS.² Note that this calculation assumes labour productivity is the same across all companies in the same sector. The results obtained must therefore be seen as an approximation, although the detail provided by the 2-digit National Classification of Economic Activities (CNAE) means our analysis is relatively reliable. It should also be noted that this calculation does not take into account the effects on other sectors produced by a certain sector's increase in exports.

Although this calculation is relatively simplistic, it does help to illustrate that the export boom is having a very positive effect on employment. Specifically, during the recessionary period of 2011-2013, exports created around 46,000 jobs. This was more than offset by the slump in domestic demand, destroying 502,000 jobs, so the net loss was 456,000 jobs. This period is notable for the stronger trend in service exports than for industrial sectors, with the technical service sectors of architecture and engineering performing particularly well (+14,000 jobs, contributing 30% to all the jobs created by exports) as well as programming, consultancy and computing (+8,000 jobs, a 16% share). Among the industrial sectors, the manufacture of other transport equipment (+11,000, 23% share) and the food industry (+7,000, 15% share) performed particularly well.

During the current recovery phase, from 2013 to 2017, it is estimated that exports created around 239,000 jobs, a 14% share of all the employment created in this period. This figure proves that the opening up of international trade is an opportunity for job creation. Services have

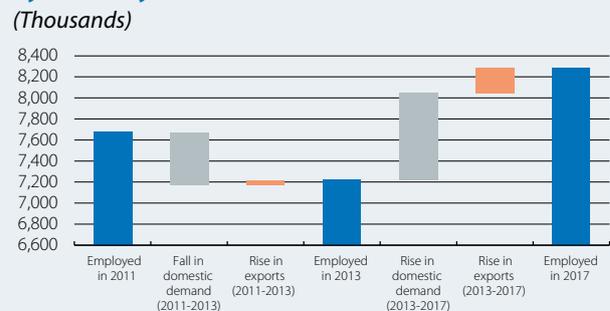
continued to perform well, with 94,000 jobs, but industry has contributed most of the export-related jobs (146,000). In fact, industry's contribution during this period is doubly important because, at the same time, considerable increases in apparent labour productivity have been posted by most sectors.

Estimated jobs created by exports *



Notes: *The number of jobs created by exports is calculated by multiplying each economic sector's employment by the export sales of this sector. **Export sales figures by economic sector are only available up to 2015. For the years 2016 and 2017, the 2015 has been kept the same and the employment trend in each economic sector has been used, according to the LFS. **Source:** CaixaBank Research, based on data from the Industrial Companies Survey, Annual Services Survey and the LFS.

Trend in the number of people employed by industry and market services



Notes: Each sector's employment is divided into domestic and foreign demand according to the export sales of each sector. Each sector's employment data, at 2 CNAE digits, come from the LFS. Export sales figures by economic sector are only available up to 2015. For the years 2016 and 2017, the 2015 has been kept the same and the employment trend in each economic sector has been used, according to the LFS. Market services and industry accounted for 44% of all jobs in 2017. **Source:** CaixaBank Research, based on data from the Industrial Companies Survey, Annual Services Survey and the LFS.

1. Specifically, we have data from 32 service and 22 industrial sectors, at 2 digits, corresponding to the following CNAE codes: B, C, D, E, H, I, J, L, M, N, R and S, accounting for 44% of all employees in 2017. Export sales figures by economic activity are only available up to 2015. Note that this calculation does not use input-output tables. Consequently, it does not take into account employment resulting from other economic sectors supplying the intermediate products used in producing the exported goods and services.

2. It is assumed that the share of export sales remains at the level of 2015.

KEY INDICATORS

Year-on-year (%) change, unless otherwise specified

Activity indicators

	2015	2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17	01/18
Industry									
Electricity consumption	1.7	0.1	1.7	1.4	0.4	0.6	2.9	5.3	...
Industrial production index	3.3	1.9	1.9	2.1	2.6	4.3	4.7	...	...
Indicator of confidence in industry (value)	-0.3	-2.3	0.3	-0.5	-0.1	2.5	5.5	4.8	4.2
Manufacturing PMI (value)	53.6	53.2	54.8	54.9	53.6	55.8	56.1	55.8	...
Construction									
Building permits (cumulative over 12 months)	20.0	43.7	24.5	18.4	23.5	25.3	23.9	...	...
House sales (cumulative over 12 months)	10.9	13.1	15.2	12.2	13.3	14.4	14.4	...	...
House prices	1.1	1.9	2.2	1.6	2.7	-	...	-	-
Services									
Foreign tourists (cumulative over 12 months)	5.6	8.2	10.0	10.2	10.3	9.4	9.3	8.6	...
Services PMI (value)	57.3	55.0	56.4	57.8	56.8	54.6	54.4	54.6	...
Consumption									
Retail sales	3.0	3.6	0.6	2.5	1.8	-1.5	3.6	0.6	...
Car registrations	21.3	11.4	7.8	6.3	6.7	13.7	12.4	6.2	...
Consumer confidence index (value)	0.3	-3.8	-2.8	1.5	0.2	-1.4	-1.7	-1.5	1.3

Source: CaixaBank Research, based on data from the Ministry of Finance, Ministry of Public Works, INE, Markit and European Commission.

Employment indicators

	2015	2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17
Registered as employed with Social Security¹								
Employment by industry sector								
Manufacturing	2.2	2.8	3.0	3.1	3.1	3.1	3.2	3.3
Construction	4.7	2.6	5.3	6.1	6.1	6.8	7.1	7.4
Services	3.5	3.2	3.4	3.8	3.6	3.7	3.6	3.5
Employment by professional status								
Employees	3.5	3.5	4.0	4.4	4.1	4.1	4.3	4.1
Self-employed and others	1.9	1.0	0.9	0.9	0.7	0.7	0.5	0.3
TOTAL	3.2	3.0	3.4	3.8	3.5	3.5	3.6	3.4
Employment²	3.0	2.7	2.3	2.8	2.8	-	2.6	-
Hiring contracts registered³								
Permanent	12.3	14.2	15.4	10.2	11.0	21.4	10.3	7.2
Temporary	11.2	7.2	12.1	9.6	5.0	7.6	3.7	-3.5
TOTAL	11.3	7.8	12.4	9.6	5.5	8.8	4.3	-2.8
Unemployment claimant count³								
Under 25	-11.0	-12.6	-13.3	-17.3	-9.4	-6.9	-10.5	-8.9
All aged 25 and over	-7.2	-8.2	-9.2	-10.3	-8.7	-8.0	-8.1	-7.7
TOTAL	-7.5	-8.6	-9.6	-10.9	-8.8	-7.9	-8.3	-7.8

Notes: 1. Mean monthly figures. 2. LFS estimate. 3. Public Employment Offices.

Source: CaixaBank Research, based on data from the Ministry of Employment and Social Security, INE and Public Employment Offices.

Prices

	2015	2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17	12/17	01/18
General	-0.5	-0.2	2.7	2.0	1.7	1.6	1.7	1.1	0.5
Core	0.6	0.8	1.0	1.1	1.3	0.9	0.8	0.8	...
Unprocessed foods	1.8	2.3	4.1	2.5	-0.2	4.9	4.3	2.8	...
Energy products	-9.0	-8.4	15.3	8.0	5.4	3.9	5.9	2.6	...

Source: CaixaBank Research, based on data from the INE.

Foreign sector

Cumulative balance over the last 12 months in billions of euros, unless otherwise specified

	2015	2016	Q1 2017	Q2 2017	Q3 2017	09/17	10/17	11/17
Trade of goods								
Exports (year-on-year change, cumulative over 12 months)	4.3	1.7	5.1	5.6	7.6	7.6	8.7	8.6
Imports (year-on-year change, cumulative over 12 months)	3.7	-0.4	3.7	5.7	9.0	9.0	10.3	10.6
Current balance	12.2	21.5	21.6	21.2	20.6	20.6	20.4	20.1
Goods and services	25.3	33.7	32.0	32.6	31.9	31.9	31.4	30.9
Primary and secondary income	-13.1	-12.2	-10.4	-11.4	-11.3	-11.3	-11.0	-10.8
Net lending (+) / borrowing (-) capacity	19.2	24.2	24.1	23.4	22.6	22.6	22.5	22.1

Source: CaixaBank Research, based on data from the Department of Customs and Special Taxes and Bank of Spain.

Public sector

Percentage GDP, cumulative in the year, unless otherwise specified

	2015	2016	Q1 2017	Q2 2017	Q3 2017	10/17	11/17
Net lending (+) / borrowing (-) capacity¹	-5.3	-4.5	-0.4	-2.2	-1.5	-	-
Central government	-2.6	-2.7	-0.4	-1.1	-1.5	-1.1	-1.6
Autonomous regions	-1.7	-0.8	-0.2	-0.7	0.1	0.1	0.1
Local government	0.4	0.6	0.1	0.1	0.5	-	-
Social Security	-1.2	-1.6	0.1	-0.5	-0.6	-0.6	-0.7
Public debt (% GDP)	99.4	99.0	100.0	99.8	98.7	-	-

Note: 1. Includes aid to financial institutions.

Source: CaixaBank Research, based on data from the IGAE, Ministry of Taxation and Bank of Spain.

Credit and deposits in non-financial sectors¹

Year-on-year change (%), unless otherwise specified

	2015	2016	Q1 2017	Q2 2017	Q3 2017	09/17	10/17	11/17
Deposits²								
Household and company deposits	-0.6	2.5	3.2	2.5	2.3	2.9	2.7	3.6
Sight and savings	14.7	16.0	18.6	18.8	17.2	17.3	16.7	15.9
Term and notice	-16.3	-16.0	-22.0	-24.9	-25.1	-25.1	-25.5	-24.3
General government deposits	6.7	-14.2	-28.0	-26.7	6.8	9.5	7.0	18.9
TOTAL	-0.2	1.2	1.0	0.5	2.6	3.2	2.9	4.5
Outstanding balance of credit²								
Private sector	-5.5	-3.6	-2.7	-2.1	-2.3	-2.1	-2.0	-2.0
Non-financial firms	-7.3	-5.3	-4.3	-3.0	-3.9	-3.7	-3.3	-3.3
Households - housing	-4.6	-3.7	-3.0	-2.8	-2.7	-2.7	-2.7	-2.8
Households - other purposes	-2.6	2.0	3.6	3.2	3.6	4.4	4.0	4.4
General government	0.2	-2.9	-3.2	-12.6	-11.6	-12.2	-11.6	-10.9
TOTAL	-5.2	-3.6	-2.7	-2.9	-3.0	-2.8	-2.7	-2.6
NPL ratio (%)³	10.1	9.1	8.8	8.4	8.3	8.3	8.2	8.1

Notes: 1. Aggregate data from Spain's banks. 2. Residents in Spain. 3. Data up to end of period.

Source: CaixaBank Research, based on data from the Bank of Spain.

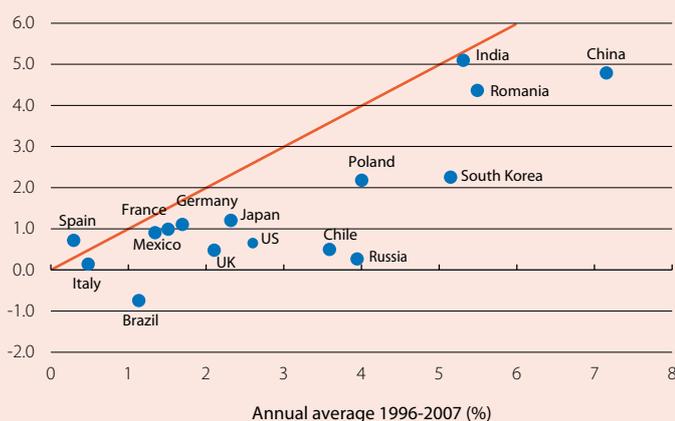
TECHNOLOGICAL CHANGE AND PRODUCTIVITY

The technological revolution and slowdown in productivity

One of the distinctive features of the current economic context is the speed of technological progress. At least this seems to be the case, given the incredible advances being made in areas such as machine learning, self-driving vehicles and 4D printers, to name just a few. It would be reasonable to expect such progress to boost productivity. But this is far from being the case. In fact, productivity growth has actually slowed down significantly across most economies over the past few years. And this is crucial because an increase in productivity is precisely the key to people's standard of living continuing to rise.

Labour productivity growth *

Annual average 2013-2017 (%)



Note: * Labour productivity is defined as the gross value added per hour worked for all countries except China, Poland and Romania, where it is the gross value added per employee.

Source: CaixaBank Research, based on data from The Conference Board Total Economy Database.

But before looking at this issue in more detail we should first determine exactly what we mean by productivity and especially how it can be measured. The widely used conceptual framework is the growth accounting model, initially developed by Robert Solow and Trevor Swan in the 1950s. Based on this theory, a country's growth in economic activity results from its utilisation of the labour factor (the number of hours worked) or improvements in labour productivity (LP) or, in other words, increases in what each worker can produce in one hour.¹

This theoretical framework also helps us to understand the determinants of LP. The capacity to produce more, without working more hours, depends on three key factors: the physical capital accumulated by an economy, its human capital and, finally, what economists call the total factor productivity (TFP). The first two factors are relatively minor. For instance, more machines or more education in general

can increase an economy's production capacity. In such cases, economists say that labour productivity rises due to a more intensive use of the physical or human capital, respectively (capital deepening). The third factor refers to technological or organisational improvements that result in a more efficient combination of capital and labour. One example is the institutional and legal environment, which is crucial for businesses to be competitive.

Equipped with a good definition and good methodology, we can now analyse the data. As already noted, what most measures of productivity reveal is a clear slowdown in the growth rate over the past few years, both in the case of LP and also TFP. There has been a notable change in trend. According to Conference Board data, global labour productivity has gone from 2.6% annual growth in the period 1996-2007 to 1.8% in the period 2013-2016, 0.8 pp less per year.² The rate of growth for TFP has not only slowed down but, on average, has been negative for the past few years. It has gone from annual average growth of 0.7% to a decline of 0.2%.

A simple but illustrative exercise can give readers an idea of what this change in trend could mean, for example in the UK and US, economies where such a change has been particularly acute. If we assume that, over the next decade, each country's LP grows at the same rate as the previous five years, at the end of this period their GDP per capita would be 21% and 18% lower, respectively, than it would have been if productivity growth had remained the same as the one in the period 1996-2007 (i.e. around USD 13,000 per year less in the US and around GBP 5,600 in the UK).³

This leads us to the second important feature of productivity growth's change in trend: the fact that it seems to be synchronised, both in terms of geography and time. The past few years have seen a generalised slowdown in LP growth, both in advanced and emerging countries (see the first chart). There may be notable differences across countries but the change in trend is generalised.

1. We refer to apparent labour productivity.

2. To calculate global aggregate figures, the Conference Board (Total Economy Database) counts labour productivity as output per employee instead of per hour worked, since many countries (especially emerging) do not provide hourly data.

3. It is assumed that the labour force and population remain constant.

For instance, the aforementioned slowdown in the US and the UK is particularly acute among the emerging economies, clearly higher than in Germany or France. China stands out among the emerging economies, compared with India or Mexico.

However, the factors resulting in lower LP growth tend to differ across countries. In the US, for example, this is due to less support from both TFP and physical capital while a large part of China's decline in LP growth is due to the change in trend in TFP. In particular, this has posted negative growth in the past few years after a period of considerable gains supported by the country becoming more open to trade and its integration within global value chains. In Germany, meanwhile, TFP growth rates have remained stable, albeit very moderate.

Having clearly shown that LP growth has not only not accelerated over the past few years but actually slowed down, the logical question is now why. This is tackled in more detail in the other articles in this Dossier but, as a taster, we can briefly review what has happened in the past few decades in the US. After moderate growth from the 1970s up to the mid-90s, US labour productivity gains rocketed and this situation continued for the next ten years. This period is known as the «productivity miracle» and it was supported by a sharp increase in TFP and also by increases in physical capital, albeit to a lesser extent (see the second chart).

The boom in ICTs (information and communication technologies) was key to this miracle. US firms were in a position to take greater advantage of these new technologies than the other developed countries (such as Europe's economies), largely thanks to the country's flexible labour market, its human and physical capital and the organisational environment of these firms. So it was not just the emergence of ICTs but the combination of these technologies with a favourable environment that produced the miracle.⁴

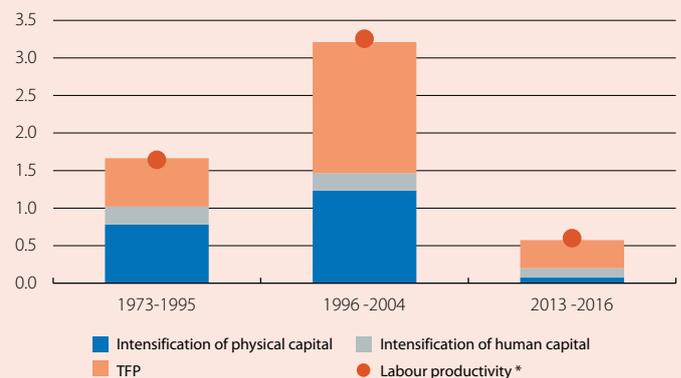
However, as already mentioned, LP gains started to drop off after the boom decade due to less support from TFP and capital investment. This slowdown started in 2005, before the outbreak of the huge economic and financial crisis of 2008, and continues in the US economy's current expansionary phase.

As noted in the US case, the answer to the apparent paradox between technological change and LP lies in long-run structural factors but also, undoubtedly, in the effects of the great crisis. The following articles examine this in more detail, so please read on!

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US: breakdown of labour productivity growth

Contribution to annual average growth (pp)



Note: * Average annual growth in the gross value added per hour worked. The years of the economic crisis have been excluded from the sample.

Source: CaixaBank Research, based on data from BLS.

4. See Bloom, N., Sadun, R. and Van Reenen, J. «Americans Do IT Better: US Multinationals and the Productivity Miracle». American Economic Review 102, no. 1 (2012): 167-201.

Why productivity growth is declining

The consequences of lower productivity growth over the past few years are palpable. For instance, it is estimated that, in 2015, the average US citizen would have earned an extra USD 8,400 if productivity had grown at the same rate between 2005 and 2015 as between 1995 and 2004.¹ Moreover, as shown by the article «The technological revolution and slowdown in productivity» in this Dossier, should the current trend continue, by 2027 the average American will have earned USD 13,400 less. So what are the factors behind this slowdown? That is what we will look at here.

Slowdown? What slowdown?

The drop-off in productivity growth is particularly surprising given the huge technological advances of the past few decades.² Since most of these advances have been related to information and communication technologies (ICTs), whose productivity is particularly difficult to measure, one of the possible explanations is that the official statistics do not reflect the real state of productivity.

Firstly, it is more complicated to measure improvements in quality and the price trend for a specific product over time than might be supposed. This is partly because products evolve continuously. For example, if we construct a price index for TV sets as from the 1950s, we must compare a black and white set (which cost 30,000 pesetas in 1956 or, adjusted for inflation, around EUR 7,000 today) with the first colour sets and today's smart HD TVs (which can be bought for under EUR 300). This evolution from a EUR 7,000 to a EUR 300 TV set is a clear reflection of productivity gains but the extent of this improvement is not only measured in price; we must also take the improved quality into account, something that is difficult to quantify in economic terms. Given the current context of fast technological improvements related to ICTs, there are indications that official statistics underestimate price index reductions³ and quality improvements caused by digital technology and therefore underestimate productivity growth. There is also evidence that official statistics underestimate gains in productivity resulting from an increase in international trade.⁴

In a study for the US, Byrne and Fernald, from the US Federal Reserve, and Reinsdorf, from the International Monetary Fund (IMF), constructed price indexes that provide a more accurate picture of the trend in quality and price of IT-related products and estimate the impact on aggregate productivity. The conclusion drawn by Byrne and colleagues is that there is a mismeasurement problem and, once corrected, the estimated «level» of productivity increases significantly. However, this increase occurs more or less evenly over time, so it does not substantially affect the slowdown in productivity «growth». If adjusted for IT-related mismeasurement, they estimate that annual US labour productivity growth would increase by +0.21 pp between 1978 and 1995, by +0.38 pp between 1995 and 2004 and by +0.19 pp between 2004 and 2014.

Secondly, another factor that makes it more complicated to measure productivity is the reallocation, by multinationals, of the property of intangible capital and earnings between parent and subsidiary companies located in different jurisdictions. This effect can be significant in quantitative terms because, as shown by Guvenen *et al.*,⁵ multinationals account for over 25% of the aggregate value added of the US economy, are significant holders of intangible capital and have considerably increased their global business. To illustrate this, let us assume that an imaginary company, Big Eyeglasses Ltd., designs glasses in the US and sells them at USD 100 per pair. The company outsources production to an Asian manufacturer, at a cost of USD 80 per pair, earning a profit of USD 20 per unit. The contribution to US GDP, in terms of the value added of the design, is USD 20. But if Big Eyeglasses Ltd. assigns ownership of the design to a subsidiary located in a more tax-friendly jurisdiction, paying this subsidiary USD 15 per unit for copyright, the official statistics register the contribution to US GDP as just USD 5. Guvenen and co. reassign the earnings of multinationals to achieve a more accurate reflection of the true value added in each jurisdiction. After this adjustment, they estimate that US productivity growth increases by «just» 0.25 pp annually between 2002 and 2008. Once again, there is a problem of measurement but this does not have a quantitatively significant effect.

Finally, a third aspect of the mismeasurement theory is based on the increasing importance of free goods and services. Most of the new technologies appearing on the market since 2004 (e.g. smartphones and social media) involve the consumption of time-intensive products (implying they add value for their users) but do not impose a high monetary cost on their consumers. In fact,

1. See Syverson, C. (2016), «Challenges to Mismeasurement Explanations for the U.S. Productivity Slowdown», NBER Working Paper.

2. For more details on these advances, see the article «Writing the future: the technological paradigm shift and the new economy» in this Dossier.

3. See Byrne, M., Fernald, J. G. and Reinsdorf, M. B. (2016), «Does the United States have a productivity slowdown or a measurement problem?», Brookings Papers on Economic Activity.

4. Specifically, they do not accurately reflect the reduction in costs occurring when a producer that buys its intermediate inputs from a domestic producer starts to buy these from a cheaper foreign producer.

5. See Guvenen, R. J. *et al.* (2017), «Offshore Profit Shifting and Domestic Productivity Measurement», NBER Working Paper.

most of these products only generate income indirectly through advertising. National account data treat these as intermediate input in the production process (not as a final product). Consequently they are not directly included in the calculation of GDP. For instance, on a national accounts basis, a film shown openly on a TV channel one Saturday evening is treated as a production cost for those companies advertising on the same channel. Similarly, the income earned by Facebook, Google and other companies offering free goods and services financed via advertising is treated as an intermediate cost and excluded from the direct GDP calculation (since this only includes final products).⁶

US: total factor productivity growth

5-year moving average (%)



Source: CaixaBank Research, based on data from Fernald, J. (2012), «A Quarterly, Utilization-Adjusted Series on Total Factor Productivity», FRBSF Working Paper.

So could the slowdown observed in productivity be merely a reflection of the difficulties in measuring economic activity brought about by new technologies? Let us go back to our example of the TV film and imagine it as a transaction: a family pays for the right to enjoy the film by accepting to see adverts. To put a value on this transaction in monetary terms, we could use the advertising income received by the TV channel, which would then be considered as final consumption by households (instead of intermediate consumption by advertisers) and would be included directly in the GDP calculation. This is the approach proposed by Nakamura and Soloveichik (2015)⁷ who estimate that, in this case and in aggregate terms, the «level» of US GDP would increase by 0.5%. However, this figure is fairly constant over time and therefore does not affect productivity «growth» significantly. Another option is to estimate the monetary value of leisure, since free goods are consumed during people's leisure time. Syverson (2016) has done this and found that, under the

most favourable assumptions for the mismeasurement theory,⁸ free online goods could explain slightly less than one third of the slowdown in productivity, a very significant figure but still not enough.⁹

In short, although new technologies have made it more difficult to measure economic activity, mismeasurement does not seem to lie behind the slowdown in productivity.¹⁰

Underlying factors

Some economists have argued that the slowdown in productivity is actually a return to normal.¹¹ As shown in the first chart, between 1995 and 2004 US productivity growth speeded up temporarily, attributed to the spread of computers and the internet. If we ignore this episode, we are left with a slowdown that dates back to the 1970s, reflecting the end of the spread of ideas from the first and second industrial revolution. In fact, some of the innovations that triggered these revolutions, such as the railways, internal combustion engine and electricity, have formed the basis of new technological developments such as the growth and sophistication of the transport network, central heating and air conditioning and domestic appliances, which continued to boost economic growth until the second half of the 20th century. However, according to these economists, the slowdown observed since 1970 suggests that information technology will have more transitory impact and will not alter either productivity or our standard of living so fundamentally.

How can we reconcile this relatively pessimistic view with the many technological advances occurring in the areas of artificial intelligence and big data? One possibility is that we are going through a transition in which companies and consumers are still learning to use new technologies effectively. Ultimately, the long time taken for the effects of the first two industrial revolutions to be truly felt suggests that innovations take time to permeate the whole economy.

6. See the article «Even free things have a price» in the Dossier «National accounts in the digital era» in MR11/2014.

7. See Nakamura, L. and Soloveichik, R. (2015), «Valuing "Free" Media Across Countries in GDP», Federal Reserve Bank of Philadelphia Working Paper.

8. Assumptions in terms of leisure time devoted to consuming digital products and the monetary value assigned to this.

9. See Byrne *et al.* (2016), who combine different approaches and also reveal that free digital services are not significant enough, in quantitative terms, to explain the productivity slowdown.

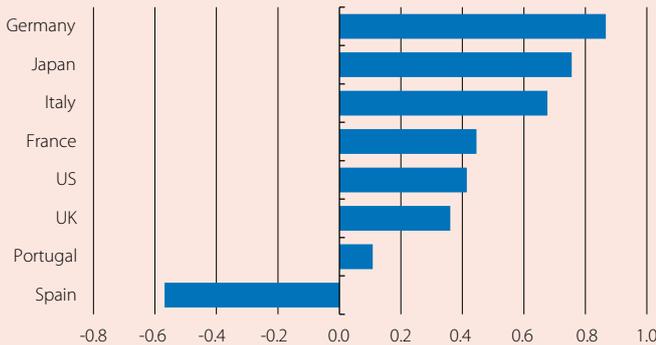
10. There are another two reasons against the mismeasurement hypothesis. First, the slowdown has also occurred in sectors where productivity is measured reasonably accurately, such as retail and manufacturing. Second, in a cross-country analysis, no connection has been observed between the size of the slowdown and the relative importance of ICTs in each economy.

11. See Gordon, R. (2012), «Is US economic growth over? Faltering innovation confronts six headwinds», NBER Working Paper.

In fact, if we look beyond the aggregate figures, there are signs that firm-level productivity is still growing at a good pace. In an OECD study, Andrews, Criscuolo and Gal analysed the productivity trend in a large number of firms across 24 countries between 1997 and 2014.¹² The authors constructed a «productivity frontier», in which only the top 5% of firms in terms of labour productivity were included, for each year and each branch of economic activity. The study analysed the trend in this frontier over time. Their findings show that weak aggregate productivity data obscure a duality between more productive companies, or «frontier firms», and the rest, or «laggards». In manufacturing, frontier firm productivity increased by 2.8% per year between 2001 and 2013 whereas growth for the laggards was 0.6%. The gap is even wider in the services sector: the productivity of frontier firms grew at an annual rate of 3.6% while for laggards it grew by just 0.4%.

Cyclical behaviour of labour productivity

Correlation between the cyclical component* of GDP and productivity



Note: * The cyclical component is calculated using the Hodrick-Prescott filter. Annual data: France 1975-2016; Germany 1992-2016; Italy 1995-2016; Japan, Spain and Portugal 1980-2016; UK 1970-2016 and US 1950-2016.

Source: CaixaBank Research, based on data from Eurostat and OECD.

What is the reason for this gap? The analysis carried out by Andrews et al. indicates that these differences do not come from capital deepening. But they do find evidence of «winner takes all» enterprises, as well as stalling technological diffusion. In other words, on the one hand frontier companies win market share, especially in ICT-related sectors while, over time, the number of firms crossing the frontier in either direction decreases. For example, in the services sector, 50% of the frontier firms between 2001 and 2003 had also formed part of 10% of the most productive firms two years previously, while between 2011 and 2013 the proportion had grown to 63%.

In short, the findings of Andrews *et al.* help us to reconcile the slowdown in aggregate productivity with the emergence of new technological innovations. The key is that digital innovations are intensive in intangible capital and allow products and information to be reproduced at a marginal

cost which is close to zero. They therefore make it easier for such a producer to take over most of the market. This results in a two-speed economy, with a widening gap between firms with high productivity and investment in intangible capital and firms with low productivity and little investment in intangible capital.

Productivity and the macroeconomic cycle

In addition to the aforementioned underlying factors, the severe recession that most developed countries have gone through in the past few years may have also helped to slow down productivity gains.¹³ In general, productivity growth tends to be procyclical: it increases in expansionary periods and decreases in recessions. *A priori*, this behaviour may seem counterintuitive. In fact, early in the 20th century, when data was limited, productivity was thought to be countercyclical. Wesley Mitchell, for instance, assumed that, during a recession, productivity increased because less productive workers were the first to be fired.¹⁴ On the other hand, during an economic boom he supposed that productivity fell due to the scarcity of labour, forcing firms to hire less productive workers to meet demand. Although this argument appears reasonable, as can be seen in the second chart it is not supported by the data, except in the case of Spain (a discussion we will postpone for the time being).¹⁵

The reluctance of firms to fire workers in a recession is the main reason for productivity's procyclical behaviour.¹⁶ The empirical evidence available shows that the costs of recruiting and training workers (and also of firing them) are enough to persuade many firms to retain part of their workforce during a recession even though they may not be fully utilised. As far as possible, companies try to avoid incurring the aforementioned costs and ensure they have the best human capital available for when the tide turns again.¹⁷

12. See Andrews *et al.* (2016), «The global productivity slowdown, technology divergence and public policy: a firm level perspective», Hutchins Center Working Paper.

13. Unless noted otherwise, whenever we mention productivity, this will be defined as labour productivity: GDP per hour worked.

14. Mitchell collaborated in founding the National Bureau of Economic Research (NBER) and was its Director.

15. In 1913, there was very little empirical evidence available on productivity. It was not until around 1950 that reliable data were available on productivity to evaluate its cyclical behaviour.

16. See Biddle, J. E. (2014), «Retrospectives: The Cyclical Behavior of Labor Productivity and the Emergence of the Labor Hoarding Concept», *Journal of Economic Perspectives*, vol. 28, no. 2, p. 212.

17. The extent to which workers are retained also depends on the company's view of how long the recession will last.

If, as we have noted, the reasons why productivity is procyclical in most developed countries are positive, this is not good news for Spain, where productivity is countercyclical. In fact, the relatively large share of temporary employment in Spain's labour market lies behind this phenomenon, since it means that adjustments made by companies during recessions focus mostly on the labour factor.

The impact of the financial crisis

Apart from productivity's procyclical nature, there are also concerns that, due to its nature and severity, the effects of the crisis affecting most developed countries can still be felt today. The third chart illustrates such concerns: the average productivity growth of the largest developed economies in the current expansionary phase is lower than that observed in the last expansionary phase.

As we have already noted, some long-run factors lie behind this slowdown. However, productivity growth has also been affected by dynamics originating in the financial crisis. One key factor is the decline in investment. Public investment has been hampered by the high debt incurred by many countries. Private investment also slumped during the crisis, mostly due to the drop in demand but also because of the high uncertainty which continued throughout the crisis and into the first few years of the economic recovery. For example, compared with the period 1970-2000, between 2012 and 2016 the percentage of GDP allocated to gross fixed capital formation fell on average by 2.6 pp in the US, by 5.6 pp in the UK, 4.5 pp in Germany, 5.2 pp in Italy and 4.2 pp in Spain. The IMF estimates that this lower investment lies behind 0.2 pp of the decrease in growth in total factor productivity (TFP) during the period 2008-2014.

As already mentioned, to some extent the drop-off in investment was particularly severe because of the high uncertainty surrounding the recessionary episode and the initial phase of the recovery. There was also the financial crisis and the consequent slump in credit, which also limited the capacity of many firms to invest. A recent study by Duval, Hong and Timmer shows that those companies which found it more difficult to get credit during the crisis in the US posted larger declines in TFP.^{18,19} The authors also observed that, within this same group of firms, intangible capital investment was particularly hard hit. Both facts could be related, considering that intangible assets, unlike a machine or property, are unlikely to be accepted as collateral.

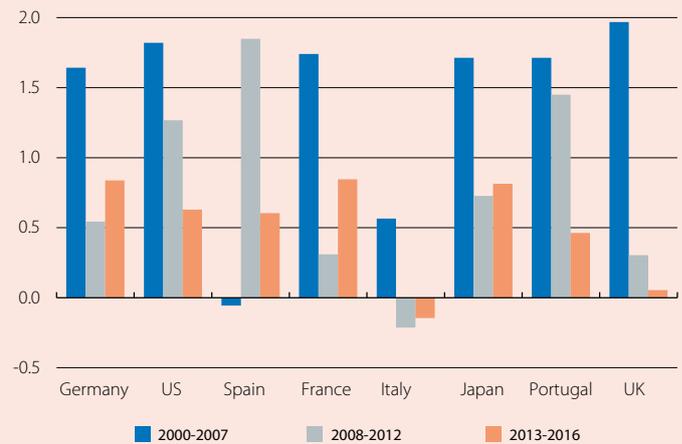
The future of productivity

Although it would be natural to end this article with a prediction for the future, the accuracy of previous predictions regarding technology and productivity does not encourage optimism. For example, in 1927 one of the top men at Warner Brothers wondered, rhetorically, whether anyone would ever actually want to hear the actors' voices. Along the same lines, in 1987, the Nobel Prize-winner for Economics, Robert Solow, stated that «you can see the computer age everywhere but in the productivity statistics» (nevertheless, note the upswing between 1995 and 2004 in the first chart). Instead of making predictions, our conclusions point to the need for a clear agenda of public policies to stimulate productivity gains, an issue addressed by the Editorial in this *Monthly Report*.

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Labour productivity

Year-on-year change (%)



Source: CaixaBank Research, based on data from Eurostat and OECD.

18. See Duval, R., Hong, G. H. and Timmer, Y. (2017), «Financial Frictions and the Great Productivity Slowdown», IMF Working Paper.

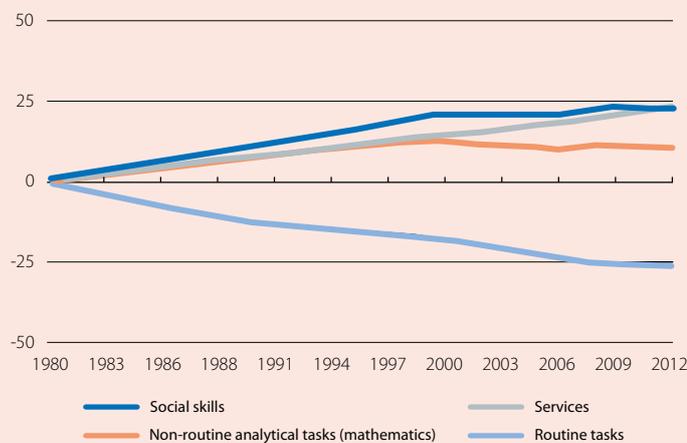
19. The authors classify companies by their leverage ratio and share of debt maturing within a year at the end of 2007. Those with a high leverage ratio or high financial vulnerability are classified as companies with difficulties in accessing credit. To counter concerns that the decline observed in the productivity of companies with difficulties in accessing credit could be due to them being relatively unproductive firms, the authors show that TFP growth among both types of company was similar before the financial crisis.

Writing the future: the technological paradigm shift and the new economy

Self-driving cars, robots that cook (almost) as skilfully as some chefs, software that can diagnose diseases, machines that beat humans at chess and game shows... All these inventions already exist... as well as those we have yet to see. In the words of the economists Brynjolfsson and McAfee, these technologies show we are starting phase two of the second machine age.^{1,2} Phase one of this second age started in the mid-90s when information and communications technologies took over many routine tasks and changed how companies operated. But this second phase or new paradigm is very different because, for the first time, technologies are demonstrating they can also do non-routine work and learn how to solve problems on their own. This is a rapid, global, irreversible change which will have an effect on all sectors of economic activity. In this article we examine the potential impact of this technological change on the labour market, on the sectoral structure of the economy and on the organisation of firms.

Trend in the tasks demanded for US jobs

Change compared with 1980 (%)



Source: CaixaBank Research, based on data from Innosight and David Deming.

Let us begin with the labour market. One of the key features of the new paradigm is that machines (mainly robots, new operating systems and algorithms) are expected to become more involved in the production process. This will have several likely consequences. Firstly, we expect jobs to considerably evolve over the next few years. As new technologies become integrated within the production process, certain tasks will probably be carried out by fewer workers and some jobs might even disappear (what could be called the «substitution effect»). This is happening already. For instance, in January Amazon opened a store in Seattle with no shop assistants or automatic tellers. However, at the same time other jobs are becoming more important, those in which the work carried out by machines and the contribution made by a worker complement each other. One clear example are those professions (managers, data scientists, statisticians...) that can make use of new digital tools (machine learning techniques, big data and software that makes accurate

predictions) to improve their company's service quality or its production efficiency. As happened in previous episodes of technological change, we expect this complementary effect to be greater than the substitution effect. For instance, 19th-century industrialisation destroyed some jobs in agriculture and crafts but this was more than offset by the boom in manufacturing jobs.

The impact of new types of jobs in the labour market does not end there. The change that is likely to occur in job types is, in turn, likely to significantly modify the skills required by the labour market. Occupations requiring social skills might become more important, such as knowing how to communicate, empathise and leadership, as well as teamwork skills. As new technologies take over an increasingly wide range of tasks, such as automatic learning and more abstract work, many jobs will have to specialise in those complementary skills which these technologies cannot develop, such as the ability to understand human feelings or what we tend to call common sense. Such changes can already be glimpsed in an interesting study which shows that, since 1980, jobs requiring social skills have increased substantially in the US.³

Finally, such changes in jobs are not only likely to increase labour productivity but also its dispersion. Productivity gains will probably vary a great deal depending on each job. It is reasonable to assume that productivity growth will be significant in those jobs that benefit more from the complementary nature of new technologies, while those not benefitting so much will lag behind. This phenomenon can already be seen and it is one of the factors that lie behind the greater wage inequality in many developed countries.⁴

1. The first age occurred with the invention of the steam engine in 1765.

2. See Brynjolfsson, E. and McAfee, A. (2017), «Machine, Platform, Crowd», Norton.

3. See Deming, D. (2015), «The Growing Importance of Social Skills in the Labor Market», Journal of Economics.

4. For more details, see the Dossier «New technologies and the labour market» in MR02/2016.

Important changes are also expected at the sector level. In this case one of the potentially most disruptive phenomena is that platforms, in addition to providing online products such as music and software, will probably offer an increasing range of physical goods and services, the so-called online-to-offline or O2O platforms. Today digital platforms are already involved in distributing a large number of goods and services. This practice will spread over the next few years but platforms are also expected to play a key role in producing goods and services, and to participate actively both in pre-production stages (R&D, design, engineering) and in post-production (sales strategy, marketing, logistics). In fact, it will be increasingly difficult to classify companies by sectors based on the definitions used today. Once again, Amazon is a prime example. The company that was set up in 1994 as a simple online bookshop currently offers a wide range of its own and third-party products, as well as data storage and processing services for firms.

As we move further down this path, in those sectors where platforms are in charge of the distribution chain, they are likely to forge synergies with other platforms and companies offering complementary goods or services. One such example is Spotify. Users can listen to music on this platform but Spotify also informs them personally, taking into account their musical tastes, about nearby concerts that may be of interest to them, as well as offering them the chance to buy the tickets via its app.

On the other hand, in sectors where platforms are also involved in production, they will become a serious rival for more traditional companies because they will be able to capitalise on a powerful digital structure with a large amount of data, allowing them to offer their clients more personalised services as well as more effective loyalty strategies. These new dynamics may result in a power shift in many sectors from companies to platforms, something which is actually happening already in the mobile phone sector. In 2015, Apple had 91% of the global earnings from the smartphone market. We should therefore expect traditional firms to differentiate their products as much as possible to set them aside from the platforms.

Finally, it is important to remember that this paradigm shift in technology is not only affecting the economy at a sector level but also altering the size of firms and how they operate. New technologies mean the productive structure of firms can be increasingly spread around the world, with more decentralised production and decision-making centres. This trend, which is expected to consolidate over the next few years, means that the relative number of freelance workers,⁵ company relocations and offshoring will continue to rise, and that firms will operate less hierarchically and become more dynamic and flexible.

As for company size, some authors⁶ suggest this paradigm shift will result in a new dual structure. Digital advances will help firms offering a higher quality product to expand their production and cater to more markets, encouraging winner-takes-all dynamics to continue. However, there will also be more opportunities for small firms specialising in very specific and sophisticated varieties of a certain product since, thanks to technological advances, companies can produce goods at an increasingly lower costs while consumers can quickly find product varieties that perfectly match their tastes and interests.

In summary, society is going through a paradigm shift in technology which is very likely to have a huge effect on the labour market, the sectoral structure of the economy and how companies operate. Taking the right decisions and being ready for such changes will be vital to make the most of all the opportunities such technologies offer. It is important to remember that technology may be a tool but we are still the ones who make the decisions. The key lies not in wondering what technology will do to us in the future but what we can do with technology.

Javier Garcia-Arenas
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5. 36% of US workers are currently freelance.

6. See Brynjolfsson, E. and McAfee, A. (2014), «The Second Machine Age», Norton.

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As of 31 December 2017

	MILLION €
Customer funds	349,458
Loans and advances to customers, gross	223,951
Profit attributable to Group, YTD	1,684
Market capitalisation	23,248
Customers in Spain (millions)	13.8
Employees	36,972
Branches	5,379
Retail branches in Spain	4,681
Number of ATMs in Spain	9,427

"la Caixa" BANKING FOUNDATION COMMUNITY PROJECTS: BUDGET 2018

	MILLION €
Social	307.5
Excellence in research and training	91.1
Raising awareness of culture and knowledge	121.4
TOTAL BUDGET	520

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