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MONTHLY REPORT • ECONOMIC AND FINANCIAL MARKET OUTLOOK

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ECONOMIC & FINANCIAL ENVIRONMENT

FINANCIAL MARKETS

Can emerging economies withstand the US interest rate hikes?

INTERNATIONAL ECONOMY

Towards an external debt crisis in Latin America?

EUROPEAN UNION

Will the euro area catch a cold from the Asian giant sneezing?

SPANISH ECONOMY

Capital inflows in the Spanish economy: more and better

DOSSIER: NEW TECHNOLOGIES AND THE LABOUR MARKET

Automation: the dread of workers

How to take advantage of the positive impact of technological change on employment?

Will the Fourth Industrial Revolution come to Spain?

The unavoidable metamorphosis of the labour market: how can education help?

MONTHLY REPORT - ECONOMIC AND FINANCIAL MARKET OUTLOOK

February 2016

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The New Luddites

We are currently witnessing an extraordinary contradiction. For influential economists such as Larry Summers and Robert Gordon, the ailing growth in developed economies after the great financial crisis of 2008 and the rock bottom interest rates dominating economies for several years now are the consequence of secular stagnation; i.e. a tendency for economic growth to gradually shrink as there are no longer any significant opportunities for technological improvement.

However, at the same time an idea is also spreading that new information and communication technologies will push artificial intelligence to hitherto unseen heights. To such an extent, it is argued, that this technical progress will make many jobs redundant, affecting intermediate skills since robots will be able to carry out increasingly complex tasks and not merely mechanical and repetitive ones. For many the social consequences of such advances would be disastrous as it would polarise society even further since such improvements would be focused on the jobs and wages of the middle classes.

However, this narrative is relatively unsound and even misleading. If technological *advances* and technical *progress* result in employment problems they cannot, at the same time, also result in stagnation and economic paralysis. As the term itself suggests, technological «improvements» enhance our capacities. They amplify production potential. They allow us to do more with less. Or, in the jargon of economists, they expand the production-possibility frontier so that the same productive factors can generate more product; i.e. more income and ultimately more wellbeing.

The Dossier in this *Monthly Report* attempts to cast some light on this debate. Its main thesis is worthy of note given the growing presence of neo-luddite ideas in the media and some currents of thought. Technological progress is good for our societies and is also, ultimately, the only factor related to economic growth and to the generation of social wellbeing that is inexhaustible. Natural resources are finite, physical capital has diminishing returns but this is not the case of the capacity of humans to generate and spread new ideas.

The recent upsurge in this neo-luddite view can essentially be put down to political reasons. Firstly, technological advances are not neutral in terms of how their benefits are shared among society and even less so in terms of their adverse effects, as happened in 18th-century England with the introduction of mechanical looms that led to the Luddite movement which devoted itself to destroying the new machinery.

Secondly, the distribution throughout the economy of opportunities produced by technical progress depends largely on how society is organised. In other words it depends on society's economic and social institutions and whether these are flexible and dynamic enough to adapt to the new circumstances and help new jobs, companies and sectors to emerge that end up replacing the jobs and sources of wellbeing and wealth eroded by technological change. The rigidity or adaptability of these institutions is an eminently political question and often reflects the tension and opposing interests between different social groups, such as already established groups which tend to be well-organised and oppose change and emerging groups that could take advantage of it, which can benefit from the impulse provided by new ideas and technologies but which often barely make up a homogeneous group with enough political clout to alter the status quo.

The huge challenge facing advanced democratic societies is to manage this great social debate and political combat in such a way that promotes technological change but at the same time ensures its benefits reach society as a whole.

Jordi Gual
Chief Economist
31 January 2016

CHRONOLOGY

JANUARY 2016

- 29** The **Bank of Japan** announces it will apply a **negative interest rate** (of 0.1%) to excess reserves held by banks with the institution to stimulate growth in credit and ultimately inflation.

DECEMBER 2015

- 3** The **ECB makes its monetary policy more accommodative** by extending the asset purchase programme to March 2017, including regional and local debt securities within the programme's eligible assets and cutting the deposit facility rate by 10 bps to -0.30%.
- 16** The **US Federal Reserve** begins to **normalise its official interest rate**, raising it by 25 bps up to 0.25-0.50% while maintaining its policy of reinvesting principal payments from its debt holdings.
- 20** The outcome of **Spain's general election** is a more fragmented parliament.

NOVEMBER 2015

- 23** The European Commission urges the Spanish government to present an **update of its 2016 Budget**, incorporating measures to reduce the public deficit in line with the agreed path.
- 30** The **IMF announces the inclusion of the Chinese yuan** in the basket of currencies with special drawing rights (SDR), together with the US dollar, the euro, the Japanese yen and the pound sterling. The approval of the yuan as a reserve currency will come into effect as from October 2016 and marks an important milestone in the internationalisation of the Chinese currency.

OCTOBER 2015

- 2** The ratings agency **S&P raises Spain's credit rating** to BBB+ from BBB and keeps its outlook stable.
- 5** The **free trade agreement is signed between the US and several Pacific countries** including Japan, Mexico, Australia and Canada.
- 29** The Chinese Communist Party announces the **end of its single child policy** and allows two children per couple to combat the country's ageing population.

SEPTEMBER 2015

- 20** **Syriza wins the elections in Greece** and secures the necessary support to implement the programme agreed with the institutions.

AGENDA

FEBRUARY 2016

- 2** Registration with Social Security and registered unemployment (January).
- 8** Industrial production index (December).
- 12** GDP of the euro area (Q4).
- 15** Japan's GDP (Q4).
- 18** Loans, deposits and NPL ratio (December).
International trade (December).
European Council.
- 25** Quarterly national accounts (Q4).
- 26** GDP flash estimate (February).
Index of economic sentiment euro area (February).
- 29** Balance of payments (December).

MARCH 2016

- 2** Registration with Social Security and registered unemployment (February).
- 8** Industrial production index (January).
- 10** Governing Council of the European Central Bank.
- 15** Fed Open Market Committee.
- 17** European Council.
- 18** Quarterly labour cost survey (Q4).
Loans, deposits and NPL ratio (January).
- 21** International trade (January).
- 29** State budget execution (December, January and February).
- 30** Index of economic sentiment euro area (March).
- 31** Flash CPI (March).
Balance of payments (January).
Net international investment position (Q4).
Household savings rate (Q4).
Fiscal balance (2015).

A turbulent start to the year in the financial markets

Share prices and oil begin the year with sharp drops.

Risky assets have started 2016 the same way as they ended 2015: highly volatile and with considerable losses in share prices, especially in advanced and emerging stock markets and in the oil market. The seriousness of this episode, which represents one of the worst starts to the year in several years, surprised investors and analysts. Although the trigger for this adjustment in prices was the bad performance by China's stock market, the real underlying concern is the genuine state of the largest emerging economy and, in general, uncertainty regarding the outlook for world growth. Are such fears well-grounded? Or is it one of those situations to which we can apply Paul Samuelson's statement that the stock market predicts nine out of every five recessions? With the macroeconomic figures in our hands, the hypothesis of financial overreaction seems plausible. Regarding the main suspect, China, GDP figures for Q4 (6.8% year-on-year, similar to the 6.9% achieved in Q3) point to the process of rebalancing growth (moving from a focus on investment to an increasingly larger role played by consumption) is progressing steadily and in line with intentions (the government set an annual target of 7% for 2015, just 0.1 pps more than the actual figure recorded). If, moreover, we also add the fact that China still has ample leeway to act via economic policy, then this should moderate any doubts, something that cannot be said of other emerging economies (in particular Turkey, Russia, Brazil and South Africa) whose macroeconomic imbalances do warrant the concern they cause among investors.

Growth in the US and the euro area is maintaining a reasonable cruising speed, suggesting that the sharp drop in their respective stock markets may be due to a rather negative interpretation of the current macroeconomic situation. Although growth slowed down at the end of year, in 2015 the US economy grew by 2.4%, a figure somewhat higher than its potential growth and which will be repeated in 2016 (the growth forecast is 2.3%). Given this situation, the Federal Reserve (Fed), as would be expected, kept its benchmark rate intact and confirmed its strategy of a monetary policy with gradual hikes. Nonetheless we should note that the Fed used a cautious tone in its communication, underlining the need to continue monitoring developments in the financial situation. In the euro area the most recent data confirm that the expansion, although not extraordinary, has consolidated over the last few months and maintained

its rate at the end of 2015. Although some economic sentiment indicators have pointed to increased uncertainty in the economic environment and have fallen to some extent at the beginning of 2016, their current levels suggest the euro area's economy has started the year in an expansionary phase. The ECB did not alter its monetary policy in January but, unlike its US peer, appeared to be more sensitive to the current economic and financial uncertainty and opened the door to relaxing its monetary policy even further in March.

Favourable outlook for the Spanish economy. Growth figures for Q4 confirmed that Spain recorded its highest growth in GDP since 2007, namely 3.2%. According to available indicators, in the final part of the year the driving force for this expansion was still domestic demand and particularly consumption. This is benefitting from the absence of inflation, which is surprisingly still falling, and the notable expansion in employment (525,000 jobs were created in 2015, a number not seen since 2006). It is also worth noting that the different processes undertaken to sort out and adjust balance sheets have ended or at least are now coming to an end. The latest figures show that the real estate sector is picking up. Moreover, the process of private sector deleveraging is almost complete: in 2015 Q3, household and corporate debt reached a figure close to the euro area average, something that has not been seen since early in the first decade of 2000. In this brief review of 2015 one relatively discordant element is the trend in the public accounts. Although the public deficit fell last year, particularly thanks to a better performance by revenue than initially expected, this improvement may not be enough to meet the public deficit targets set. Nevertheless the overall result of 2015 in economic terms is clearly positive while the prospects for 2016 are also encouraging. In spite of the greater uncertainty at the beginning of the year, the factors supporting the economy's good performance in 2015 (low oil prices, the euro's depreciation, tax cuts and expansionary monetary policy, fundamentally) look like continuing this year, albeit to a lesser extent than in the last. As a result, growth will reach 2.8% annually, a little lower than the expansionary 2015 but clearly above that of our neighbours in the euro area.

FORECASTS

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

International economy

	2014	2015	2016	2017	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3
GDP GROWTH										
Global¹	3.4	3.1	3.5	3.7	3.2	3.1	3.0	3.4	3.4	3.5
Developed countries	1.8	1.9	2.0	2.1	2.0	1.9	1.7	1.9	1.9	2.0
United States	2.4	2.4	2.3	2.4	2.7	2.1	1.8	2.4	2.0	2.2
Euro area	0.9	1.5	1.8	1.7	1.6	1.6	1.6	1.5	1.6	1.9
Germany	1.6	1.5	1.8	1.8	1.6	1.7	1.5	1.7	1.7	1.8
France	0.2	1.1	1.4	1.4	1.1	1.1	1.3	1.0	1.4	1.6
Italy	-0.4	0.7	1.2	1.2	0.6	0.8	1.2	1.0	1.1	1.2
Spain	1.4	3.2	2.8	2.1	3.2	3.4	3.5	3.3	2.8	2.7
Japan	-0.1	0.7	1.0	0.8	0.7	1.7	1.5	0.8	1.1	1.1
United Kingdom	2.9	2.2	2.2	2.2	2.3	2.1	1.9	2.2	2.2	2.3
Emerging countries	4.6	4.0	4.5	4.9	4.0	4.0	3.9	4.4	4.5	4.5
China	7.3	6.9	6.5	6.3	7.0	6.9	6.8	7.0	6.6	6.3
India ²	7.3	7.2	7.2	7.3	7.0	7.4	7.2	7.2	7.2	7.2
Indonesia	5.0	4.8	5.5	6.0	4.7	4.7	5.0	5.2	5.4	5.7
Brazil	0.1	-3.5	-2.5	1.3	-3.0	-4.5	-4.4	-3.8	-2.6	-2.0
Mexico	2.2	2.5	3.3	3.4	2.3	2.6	2.5	2.9	3.2	3.4
Chile	1.9	2.2	3.2	3.5	1.9	2.2	2.2	2.0	3.5	3.5
Russia	0.6	-3.7	-0.8	1.5	-4.6	-4.1	-3.8	-2.2	-0.7	-0.4
Turkey	3.0	3.2	2.9	3.4	3.8	4.0	2.7	1.7	2.6	3.5
Poland	3.4	3.6	3.7	3.6	3.5	3.7	3.4	3.7	3.6	3.6
South Africa	1.6	1.7	2.4	2.7	1.5	1.1	2.1	2.2	2.3	2.4
INFLATION										
Global¹	3.5	3.2	3.5	3.7	3.2	3.2	3.3	3.4	3.4	3.4
Developed countries	1.4	0.3	1.2	2.0	0.2	0.2	0.4	0.9	0.9	1.2
United States	1.6	0.1	1.4	2.1	0.0	0.1	0.5	1.3	1.1	1.3
Euro area	0.4	0.0	0.9	1.8	0.2	0.1	0.2	0.3	0.5	1.1
Germany	0.8	0.1	1.0	2.0	0.4	0.0	0.2	0.4	0.6	1.2
France	0.6	0.1	0.9	1.9	0.3	0.1	0.2	0.3	0.5	1.1
Italy	0.2	0.1	0.8	1.7	0.1	0.3	0.2	0.2	0.4	1.0
Spain	-0.2	-0.5	0.5	2.2	-0.3	-0.4	-0.3	-0.3	-0.2	0.7
Japan ³	2.7	0.8	0.9	2.0	0.5	0.2	0.3	0.6	0.2	1.0
United Kingdom	1.5	0.0	1.3	2.0	0.0	0.0	0.1	0.5	0.9	1.5
Emerging countries	5.1	5.4	5.6	6.0	5.4	5.4	5.4	5.6	5.7	5.5
China	2.0	1.4	2.1	2.6	1.4	1.7	1.5	1.5	2.3	2.2
India	6.6	4.9	5.7	5.5	5.1	3.9	5.3	6.3	6.2	5.1
Indonesia	6.4	6.4	5.0	5.3	7.1	7.1	4.8	4.7	5.1	4.7
Brazil	6.3	9.0	6.6	5.6	8.5	9.5	10.4	7.8	6.5	6.3
Mexico	4.0	2.7	3.2	3.2	2.9	2.6	2.3	3.1	3.5	3.3
Chile	4.4	4.3	3.7	3.2	4.2	4.8	4.1	4.5	4.0	3.5
Russia	7.8	15.5	6.6	5.7	15.8	15.7	14.5	8.0	7.0	6.0
Turkey	8.9	7.7	7.3	6.3	7.7	7.3	8.2	8.1	7.1	7.0
Poland	0.2	-0.9	1.7	2.5	-0.8	-0.8	-0.8	1.4	1.5	1.7
South Africa	6.1	4.6	4.7	5.0	4.6	4.7	4.9	5.5	4.3	4.1

Notes: 1. As from December 2015, the aggregate figures for «Developed countries» and «Emerging countries» include all the countries in each group. Only the main countries were included previously.
2. Annual figures represent the fiscal year. 3. Takes into account the consumption tax hike introduced in April 2014.

Forecasts

Spanish economy

	2014	2015	2016	2017	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3
Macroeconomic aggregates										
Household consumption	1.2	3.0	2.8	1.7	2.9	3.5	3.3	3.5	3.0	2.5
General government consumption	0.0	2.7	1.0	-0.6	2.1	3.0	4.3	2.1	1.8	0.3
Gross fixed capital formation	3.5	6.2	4.4	3.7	6.3	6.5	6.0	5.6	4.1	4.0
Capital goods	10.7	9.6	5.8	3.6	9.9	10.7	9.7	8.7	5.9	4.6
Construction	-0.1	5.5	3.8	3.8	5.5	5.5	4.9	4.6	3.2	3.6
Domestic demand (contr. Δ GDP)	1.6	3.5	2.7	1.6	3.3	3.9	4.0	3.5	2.9	2.3
Exports of goods and services	5.1	6.1	6.5	4.9	6.2	5.6	6.8	7.2	7.1	5.9
Imports of goods and services	6.4	7.8	6.6	3.9	7.0	7.7	9.3	8.4	8.1	5.1
Gross domestic product	1.4	3.2	2.8	2.1	3.2	3.4	3.5	3.3	2.8	2.7
Other variables										
Employment	1.1	3.0	2.5	2.0	3.0	3.1	3.1	2.9	2.5	2.4
Unemployment rate (% labour force)	24.4	22.1	19.9	18.5	22.4	21.2	20.9	21.2	20.0	19.2
Consumer price index	-0.2	-0.5	0.5	2.2	-0.3	-0.4	-0.3	-0.3	-0.2	0.7
Unit labour costs	-0.8	0.6	1.0	1.0	0.2	0.1	1.2	0.1	1.6	1.1
Current account balance (cum., % GDP) ¹	1.0	1.8	1.9	1.7	1.4	1.5	1.8	1.8	1.8	1.9
Net lending or borrowing rest of the world (cum., % GDP) ¹	1.4	2.4	2.5	2.3	1.8	2.0	2.4	2.4	2.4	2.5
Fiscal balance (cum., % GDP) ¹	-5.8	-5.1	-3.9	-2.1						

Financial markets

INTEREST RATES										
Dollar										
Fed Funds	0.25	0.26	0.69	1.56	0.25	0.25	0.29	0.50	0.50	0.75
3-month Libor	0.23	0.32	0.92	1.79	0.28	0.31	0.41	0.66	0.84	1.01
12-month Libor	0.56	0.79	1.37	2.14	0.73	0.83	0.95	1.17	1.30	1.43
2-year government bonds	0.44	0.67	1.49	2.40	0.59	0.67	0.83	1.14	1.37	1.60
10-year government bonds	2.53	2.13	2.62	3.32	2.16	2.21	2.19	2.35	2.53	2.71
Euro										
ECB Refi	0.16	0.05	0.05	0.07	0.05	0.05	0.05	0.05	0.05	0.05
3-month Euribor	0.21	-0.02	-0.07	0.13	-0.01	-0.03	-0.09	-0.13	-0.09	-0.05
12-month Euribor	0.48	0.17	0.14	0.46	0.17	0.16	0.09	0.06	0.10	0.16
2-year government bonds (Germany)	0.05	-0.24	-0.23	0.33	-0.22	-0.24	-0.32	-0.35	-0.31	-0.21
10-year government bonds (Germany)	1.23	0.53	0.88	1.83	0.53	0.69	0.57	0.57	0.67	0.99
EXCHANGE RATES										
\$/€	1.33	1.11	1.04	1.08	1.11	1.11	1.09	1.07	1.04	1.02
¥/€	140.42	134.35	129.37	129.69	134.25	135.89	132.94	132.58	129.96	127.33
£/€	0.81	0.73	0.72	0.71	0.72	0.72	0.72	0.73	0.72	0.72
OIL										
Brent (\$/barrel)	99.45	53.61	42.64	65.62	63.43	51.10	44.70	33.36	39.50	45.50
Brent (€/barrel)	74.54	48.30	41.08	60.50	57.32	46.00	40.82	31.22	38.00	44.60

Note: 1. Four quarter cumulative.

Forecasts

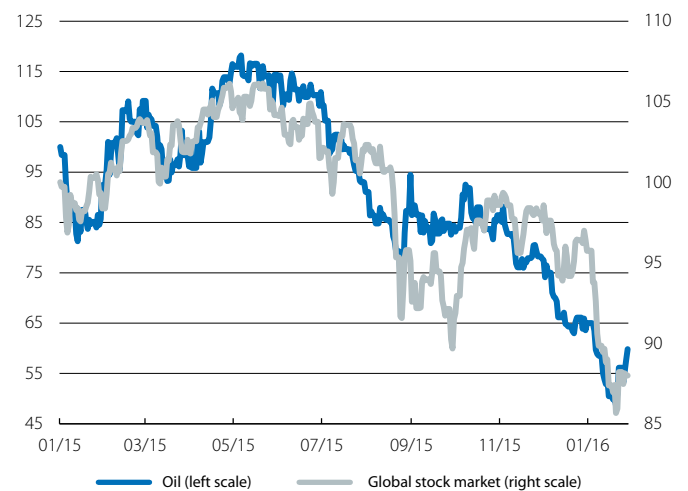
FINANCIAL OUTLOOK · The twofold effect of China and cheap oil is shaking up the international finance scene

A turbulent start to the year in international financial markets. Global risky assets started 2016 in the same state as they ended 2015: highly volatile with huge drops in price. The severity of the correction surprised investors and analysts, reawakening unpleasant memories of what happened after the global financial bubble burst in 2008. As was the case during the second half of 2015, there are two factors underlying this situation. Firstly, the doubts regarding the Chinese economy, reinforced by the devaluations carried out by the People's Bank of China (PBoC hereafter) on the yuan. Secondly the slump in oil prices which intensified in January, bringing a barrel of Brent down to 27 dollars, its lowest level in 12 years. The notable increase in the correlation of crude oil with the price of risky assets over the last few months highlights the risk-off mode of global financial assets at present. Although it is not clear how long this phase will last, it will more than likely lose steam over the coming months as the underlying fundamentals of the different asset markets gradually take control.

The size and duration of this sell-off points to international investors increasingly lining up for a slowdown in global growth. However we believe they have overreacted and fears of a sharp slowdown in world growth are excessive. In this respect, the contribution of underlying levers should continue to be positive on the whole: satisfactory growth in the US, sustained recovery in the euro area and Japan, accommodative global monetary conditions and a controlled economic slowdown in China. Nevertheless the current conditions are not very conducive to a more constructive climate in the markets in the short term. Firstly due to factors of global scope such as the weakness in commodities in general and oil in particular and the «noise» coming from China, and secondly due to a worsening outlook for corporate earnings in the US.

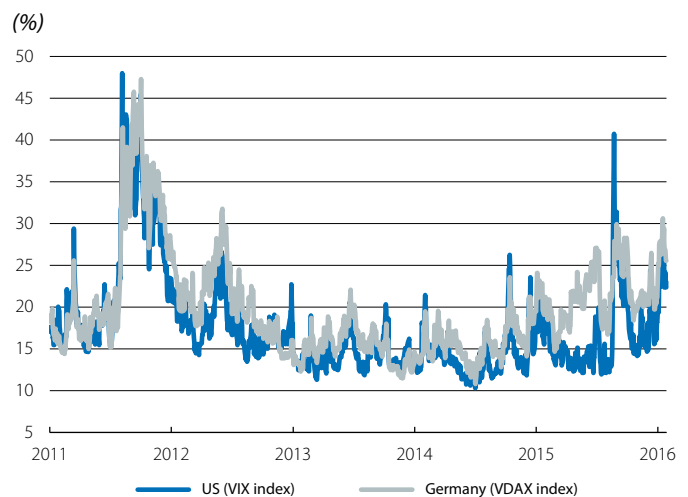
The uncertainty from China will continue to be an important but intermittent risk factor. Of particular relevance will be possible intervention by the PBoC in the foreign exchange market, particularly after the episodes of global aversion due to the yuan's devaluations. The likelihood of there being further devaluations against the dollar is high but we do not expect these to be significant. Aggressive devaluation of the yuan would have negative repercussions for China on two fronts. On the one hand it would jeopardise the yuan's internationalisation as a reserve currency and, on the other, would help to intensify capital outflows. Regarding the economic situation of the Asian giant, the underlying dynamic is still one of weakness due to its transition towards

Global stock market and Brent oil price
Index (100 = January 2015)



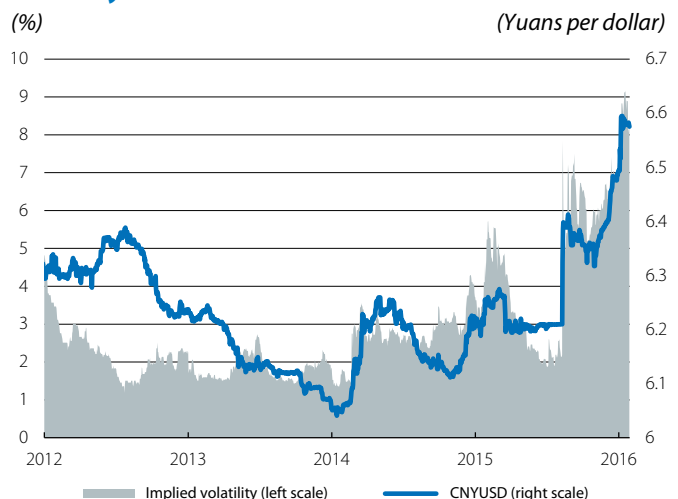
Source: CaixaBank Research, based on Bloomberg data.

Implied volatility of the US and German stock markets



Source: CaixaBank Research, based on Bloomberg data.

Value of the yuan against the dollar and implied volatility



Source: CaixaBank Research, based on Bloomberg data.

a more balanced model of growth. Although it is true that the balance of risks is still downwards, we still believe that the Chinese government has enough capacity to accommodate monetary and fiscal policy. Investors must therefore live with this situation for a large part of 2016, which will lead to episodes of moderate volatility.

Meanwhile the Federal Reserve (Fed) keeps to its monetary strategy. At its first meeting after raising the fed funds rate last December, the Fed maintained its benchmark rate unchanged. The Chairman of the monetary authority, Janet Yellen, stressed the appropriateness of continuing to carry out this process gradually, although the official communication had a more cautious tone than expected. The Fed pointed out that it is «closely monitoring global economic and financial developments» and indicated that both factors might affect the balance of risks for the country's macroeconomic situation. With regard to economic activity, it recognised that this slowed down in the last part of 2015 but noted the strength of the labour market. Regarding prices, it referred to the decline in inflation expectations in the bond market but underlined that survey-based inflation expectations remain stable.

Given the current circumstances of aversion and doubts of markets internationally, the Fed's firm commitment to tighten up interest rates is crucial. Should it wait too long to carry out further hikes in the federal funds rate, this might be counterproductive if the community of investors perceives the Fed does not have the necessary control to implement its strategy. Market expectations suggest that the second interest rate hike will take place mid-2016 although the last quarter of 2016 is increasingly more likely.

For its part the ECB is opening the door to adopting more stimuli in March. The consensus expected the meeting of the Governing Council of the ECB to be a formality but the accommodative tone of Mario Draghi's messages took them by surprise. The European President stated that he was ready to «review» the ECB's monetary policy stance at its next meeting in March. Regarding the central bank's policy to comply with its inflation target of «below but close to 2%», Draghi also maintained that «there are no limits» provided these instruments remain within the institution's mandate. The weaker situation of the emerging economies, falling oil prices and financial instability were the main reasons for the dovish tone used by the ECB's President. However, it is important to stress that further monetary stimuli may not be adopted in March, which would lead to disappointment in the market. What happened after December's meeting is a lesson in point. We believe the ECB will only decide to act (further cuts in the depo rate, extending QE) if there is significant deterioration in the macroeconomic situation or an increase in financial instability.

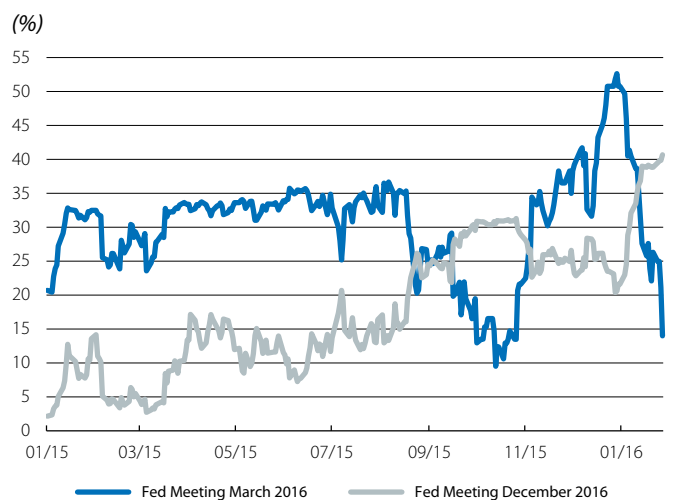
The climate of risk aversion boosts safer public debt. Yields on US and German government bonds fell due to larger flows searching for a safe haven. In the first case, the 10-year

US: inflation expectations at 10 years *



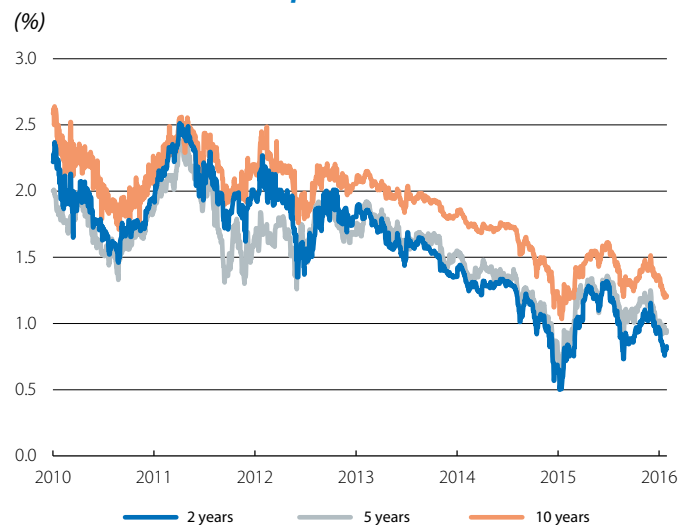
Note: * Implied in the price of 10-year inflation-linked Treasury bonds.
Source: CaixaBank Research, based on Bloomberg data.

US: probability associated with the second hike in the federal funds rate



Source: CaixaBank Research, based on Bloomberg data.

Euro area: inflation expectations



Source: CaixaBank Research, based on Bloomberg data.

Treasury yield has fallen by 30 bps since the end of December to below 2%, while yields on the German bund have fallen to the zone of 0.4%. In Spain the 10-year risk premium has shown a more volatile trend (between 120-130 bps) due to the country's political uncertainty while, in Portugal, the new government's fiscal commitments and difficulties in managing the sale of Novo Banco have pushed its risk premium up to 250 bps.

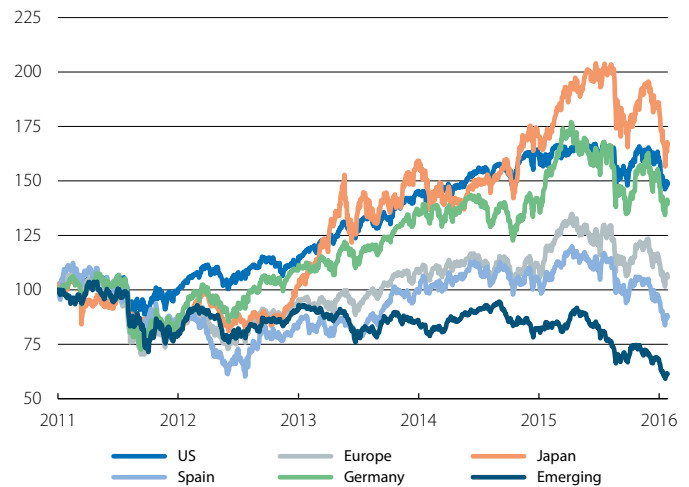
International stock markets are shaken by a disastrous start to the year. There have been significant losses (in the order of 7%-12%) in almost all stock markets, both in the advanced bloc and the emerging. In the US, the S&P 500 has fallen by 6%, its worst start to the year since 2009. The collapse in the price of crude oil continues to be a huge burden for energy and mining industries. In addition to this last factor, losses on European stock markets have been accentuated by the bad performance in the automobile and banking sectors. In this last case the epicentre was in Italy, due to doubts regarding the restructuring of bank balance sheets. Nonetheless, we interpret this episode as a temporary source of uncertainty that could diminish once the Italian government presents the details of its plan for this restructuring.

In the US, the corporate earnings season for 2015 Q4 is providing some positive surprises, mainly in technology and finance. Unfortunately, this circumstance is unlikely to reverse the downward revisions of corporate earnings expectations, nor the current conditions of over-selling, although they may give rise to short-lived temporary upswings. However, the upward trend will resume as greater certainty is perceived regarding the two main sources of market volatility (oil and China). Price-earning ratios, which in some cases are below the long-term average, will represent a source of support, particularly in emerging stock markets.

The euro-dollar exchange rate remains stable but emerging currencies still fail to stabilise. The trend in the euro against the dollar has seen only small fluctuations and weak activity figures in the US maintained the euro within the range of 1.08-1.10 dollars. We have not altered our medium-term view for the euro-dollar exchange rate, which we expect to be around 1.05 dollars. Regarding the emerging currencies, the main ones continued to weaken due to the factors of China and oil. This is the case of the Russian rouble which has reached another all-time low against the dollar, now at 78 roubles. The Argentine peso has also come under a lot of pressure although, in this case, it is due to the new government's decision to make the exchange rate mechanism more flexible and put an end to capital controls.

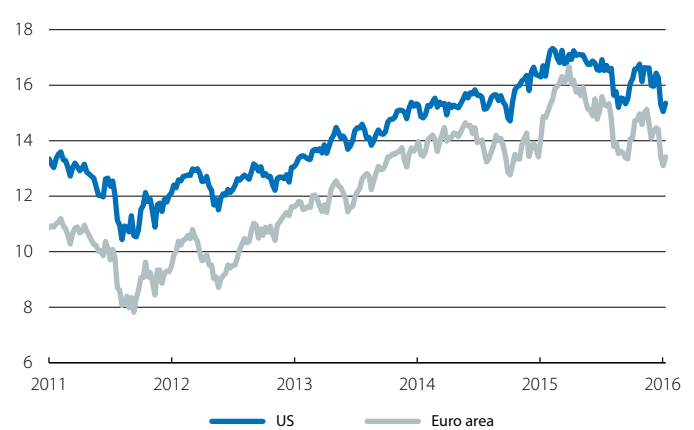
International stock markets

Index (100 = January 2011)



Source: CaixaBank Research, based on Bloomberg data.

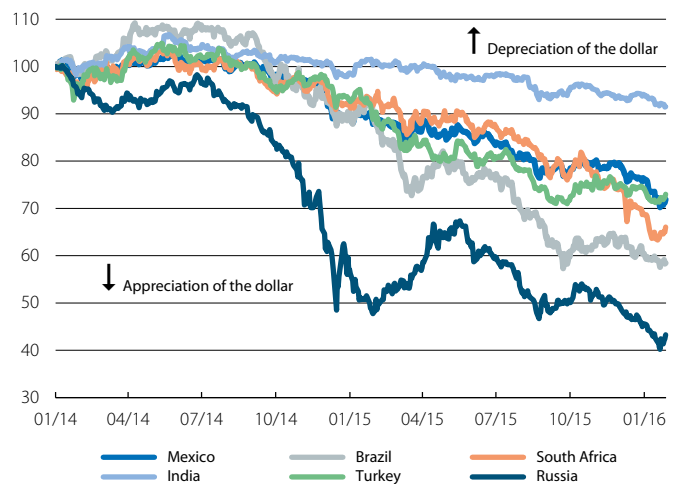
International stock markets: price/earnings ratio *



Note: * P/E ratios calculated based on expected earnings at 12 months by the consensus of analysts.
Source: CaixaBank Research, based on Bloomberg data.

Emerging currencies against the dollar

Index (100 = January 2014)



Source: CaixaBank Research, based on Bloomberg data.

FOCUS · The natural rate of interest: clues, questions and some answers

The period following the bursting of the global financial bubble has been characterised by a marked drop in interest rates in the advanced economies. The fact that these have remained at such a low level for so long suggests that we might be witnessing not only a cyclical but also a relatively permanent reduction in equilibrium interest rates. This situation has potential implications for the design of monetary policy, financial stability and investment decisions in the private sector. An analysis of the so-called natural rate of interest might shed some light on the issue.

Conceptually the natural or equilibrium rate of interest (hereinafter the NRI) refers to the real short-term interest rate (in practice a short rate such as the central bank's inflation-adjusted benchmark interest rate) which would be compatible with an economy operating at its full potential and with inflation stable around a specific target. For those familiar with Taylor's rule,¹ NRI is merely the constant of this formula: the real interest rate that should be set by the central bank when the output gap is zero (real GDP is equal to potential GDP) and inflation is at its target level. Economic theory states that the larger the growth in productivity of an economy or the larger the growth in its population (in other words, the greater the potential growth in GDP), then the higher the NRI. Other factors such as an ageing population and regulatory changes which raise the cost of financial intermediation will tend to push the NRI down.

As it is not directly observable the NRI needs to be estimated using econometric techniques. One of the most widely accepted methods is the one developed by Laubach and Williams (2003),² two economists from the Federal Reserve (Fed) who use a statistical tool called the «Kalman filter» to simultaneously estimate the NRI and the potential output of the US. Their estimates, presented in the graph, reveal that the NRI in the US has varied significantly over the years, that these variations tend to be quite persistent and that, at present, the NRI is around 0%, more than 2 pps below its level prior to the global financial crisis. The authors attribute part of this drop, around 1 pp, to a fall of similar size in the potential growth of the US economy while the rest would be a consequence of the combination of other factors which they do not explicitly identify, such as an ageing population. This apparently new NRI level suggests that the final point of the cycle of benchmark interest rate

hikes started by the Fed may be slightly lower than in previous cycles. So the «new normal» of interest rates could mean that the benchmark rate is around or below 3% in the long term, a level that is higher than the one taken into account today by agents operating in the US bond market, namely close to 1.5%. In the past a long-term benchmark interest rate of around 4%-4.5% was considered to be normal.

Confirmation of this scenario would introduce, first of all, a limiting factor on the leeway of conventional monetary policy to act when the economy is in difficulty (it is easier to reach the bottom level of 0% when a cycle of reductions starts with benchmark interest rates at 3.0% than at 4%-4.5%). In such a world, having to resort to a non-standard monetary policy would be more customary. On the other hand, the expected intensification of financial flows in search for yield could also have adverse consequences on financial stability. Although NRI estimates are accompanied by a high degree of uncertainty, it is worth considering the implications for monetary policy of a permanently low interest rate scenario.

US: estimated natural rate of interest



Source: Laubach, T. and Williams, J. C. (2015).

1. See, for example, the Focus «Discovering monetary policy in the shadow» in this *Monthly Report*.

2. Laubach, T. and Williams, J. C. (2003), «Measuring the Natural Rate of Interest», *Review of Economics and Statistics*, 85.

FOCUS · Can emerging economies withstand the US interest rate hikes?

Last December international investors reacted relatively calmly to the decision of the Federal Reserve (Fed) to start raising the federal funds rate. Even in emerging markets this news (which was actually expected) was generally received positively in spite of fears of the possible impact caused by this move towards more restrictive international monetary and financial conditions.

Nevertheless, this initial reaction should not distract us from the challenges posed to emerging economies by an interest rate hike in the US, in particular the potential source of risk represented by their high level of debt.

In the last few years the highly expansionary monetary policies of the main central banks in the advanced economies, led by the Fed, have been accompanied, in a context of a search for yield, by a significant increase in debt in the emerging economies (see the first graph). The emerging bloc's total debt, which used to represent close to 150% of emerging GDP at the end of 2008, had reached 200% of GDP by mid-2015. A significant proportion of this increase has occurred in the balance sheets of the non-financial corporate sector, going from 60% of GDP in 2008 to close to 90%. Moreover the relative weight of corporate bonds in dollars is currently around 10% of GDP on average, a figure that might not seem very high but which is located within a concentrated universe of companies.

Under such conditions the hike in the US benchmark interest rate clearly has potential risks for the emerging economies. On the one hand it will tend to push up the value of the dollar, leading to an increase in the real value of emerging debt in local currencies. It will also push up interest rates in developing countries, increasing the costs of servicing debt in local currency and limiting the possibilities to refinance debt under sustainable conditions as it matures.

However, several elements suggest that these risks might be limited and not affect all countries equally. Firstly the increase in the benchmark interest rate started by the Fed had already been taken into account for some time and markets have gradually been adjusting since the «taper tantrum» of 2013 (interest rates on new issuances have been sliding upwards since then). Secondly the expected gradual nature of this cycle of hikes will provide economic agents with more time and flexibility to adjust to the new conditions. Moreover the tightening up of monetary conditions in the US is linked to an improvement in the US economy, which should benefit the emerging countries in general and particularly those emerging companies that are more dependent on exports to the US (probably those with the most debt in dollars).

Lastly we should not put all emerging countries into the same basket. For example, the significant increase in China's debt (see the second graph) and the high dollar exposure of Turkey's corporate debt are more cause for concern. Commodities companies, whose income in dollars has slumped due to the drop in prices of their sales, could also be a major source of vulnerability.

In summary the transition towards an environment of higher interest rates could certainly be accompanied by episodes of tension although this does not necessarily mean it will bring about a huge crisis. As shown in the recent upswing in aversion in the markets, elements related to the macroeconomic imbalances of the emerging economies, most particularly those related to the Chinese economy and the trend in commodity prices, will play a key role in the financial stability of these economies in the medium and long term. Even more so than what happens with US interest rates.

Trend in total debt of emerging economies and the Fed's balance sheet

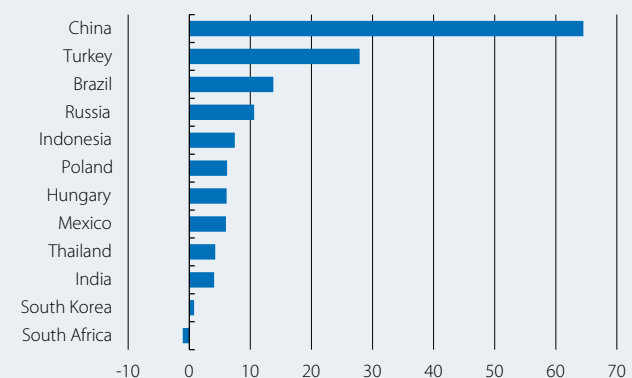
(% of GDP)



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

Growth in non-financial corporate debt

(pps of GDP)



Note: * Between 2008 Q4 and 2015 Q2.

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

KEY INDICATORS

Interest rates (%)

	29-Jan	31-Dec	Monthly change (bps)	Year-to-date (bps)	Year-on-year change (bps)
Euro area					
ECB Refi	0.05	0.05	0	0.0	0.0
3-month Euribor	-0.16	-0.13	-3	-3.1	-21.4
1-year Euribor	0.02	0.06	-4	-4.0	-25.1
1-year government bonds (Germany)	-0.45	-0.38	-7	-7.2	-30.6
2-year government bonds (Germany)	-0.49	-0.35	-14	-14.5	-31.4
10-year government bonds (Germany)	0.33	0.63	-30	-29.9	-2.9
10-year government bonds (Spain)	1.51	1.77	-26	-26.1	5.4
10-year spread (bps) ¹	119	114	4	4.4	9.0
US					
Fed funds (upper limit)	0.50	0.50	0	0.0	25.0
3-month Libor	0.61	0.61	0	-0.3	35.5
12-month Libor	1.14	1.18	-4	-3.8	52.0
1-year government bonds	0.45	0.60	-15	-14.7	30.3
2-year government bonds	0.77	1.05	-28	-27.8	25.4
10-year government bonds	1.92	2.27	-35	-34.9	16.9

Spreads corporate bonds (bps)

	29-Jan	31-Dec	Monthly change (bps)	Year-to-date (bps)	Year-on-year change (bps)
Itraxx Corporate	93	77	15	15.3	35.2
Itraxx Financials Senior	92	77	15	14.8	27.2
Itraxx Subordinated Financials	208	156	52	52.4	69.3

Exchange rates

	29-Jan	31-Dec	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
\$/€	1.083	1.086	-0.3	-0.3	-4.3
¥/€	131.210	130.640	0.4	0.4	-2.0
£/€	0.761	0.737	3.2	3.2	1.3
¥/\$	121.140	120.220	0.8	0.8	2.4

Commodities

	29-Jan	31-Dec	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
CRB Commodity Index	383.3	374.7	2.3	2.3	-9.2
Brent (\$/barrel)	33.2	35.8	-7.1	-7.1	-29.1
Gold (\$/ounce)	1,118.2	1,061.4	5.3	5.3	-11.1

Equity

	29-Jan	31-Dec	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
S&P 500 (US)	1,940.2	2,043.9	-5.1	-5.1	-4.0
Eurostoxx 50 (euro area)	3,045.1	3,267.5	-6.8	-6.8	-9.7
Ibex 35 (Spain)	8,815.8	9,544.2	-7.6	-7.6	-16.1
Nikkei 225 (Japan)	17,518.3	19,033.7	-8.0	-8.0	-0.5
MSCI Emerging	742.4	794.1	-6.5	-6.5	-23.7
Nasdaq (US)	4,614.0	5,007.4	-7.9	-7.9	-1.5

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

ECONOMIC OUTLOOK · 2016 will be a year of world growth

Without changes in our main scenario of global acceleration: we forecast world growth of 3.5% in 2016 compared with 3.1% in 2015. These favourable forecasts are based on smaller macroeconomic imbalances than in previous years, a still highly accommodative monetary environment and cheaper oil on average. It should be noted that, from a global perspective, the weakness in oil prices is positive for growth as it results in considerable energy savings for importing regions (particularly the euro area, Japan and China).

However, the likelihood of a downward risk scenario has increased due to renewed doubts regarding a hard landing for China and the further drop in oil prices in January (a key sector in numerous exporting emerging countries). These two elements of risk, together with the potential greater impact of the Fed's monetary normalisation and the worsening of the domestic situation in some emerging economies such as Brazil, could mar our main scenario. Given this situation it comes as no surprise that the IMF has revised slightly downwards its growth forecasts for 2016 and 2017. Specifically it predicts a somewhat more gradual acceleration in its January-revised figure than in its October report (3.4% in 2016 and 3.6% in 2017). Our stance has been to maintain the main scenario of acceleration but increase the likelihood of the risk scenario, in which world growth would not accelerate but remain at levels similar to 2015. Nevertheless an advance that, although more contained, would be substantially higher than the rates for 2009, the worst year in the last decade in terms of growth.

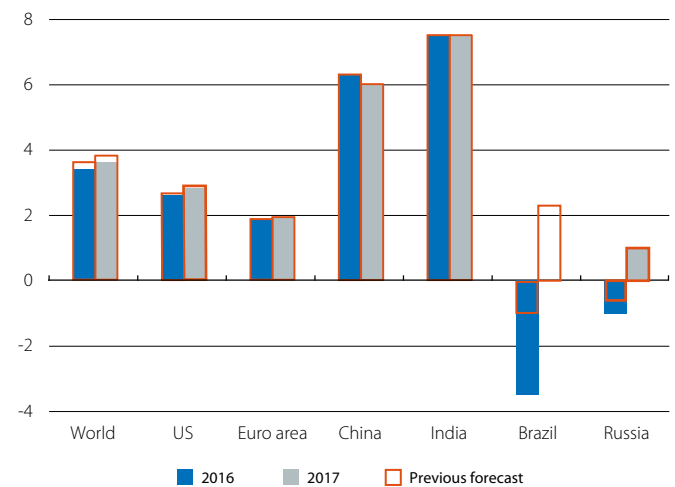
EMERGING ECONOMIES AND COMMODITIES

In China, the start of 2016 has been affected by turbulent financial markets, repeating the episode of August 2015. The trigger was once again fear of the Asian giant not being able to avoid a hard landing. December's poor figure from the PMI manufacturing index produced by Caixin/Markit and the end of limitations on certain entities regarding their sales on the stock market helped to push down share prices. This was worsened by the start-up of a firewall that automatically closes the stock markets when losses exceed 7%. Given this situation, the central bank reacted by allowing the yuan to depreciate (close to 3% against the US dollar) and injecting liquidity, although the Shanghai stock market still lost more than 15% during the first few weeks of January. Nonetheless we believe that, as the macroeconomic figures confirmed a controlled slowdown of the Chinese economy, such turbulences should diminish.

China's GDP remains firm but downside risks continue. The GDP growth figures came as a pleasant surprise. The Chinese economy grew by 6.8% in 2015 Q4, placing growth for the whole of 2015 at 6.9%, only 0.1 pps below the government's

IMF: GDP forecasts for 2016 and 2017

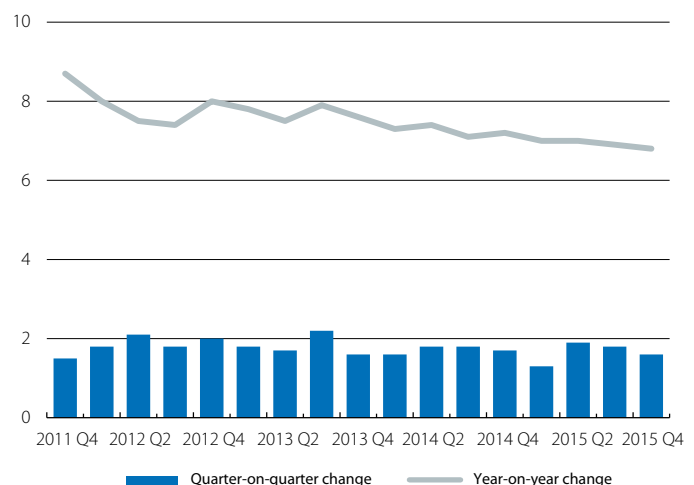
Annual change (%)



Source: CaixaBank Research, based on IMF data.

China: GDP

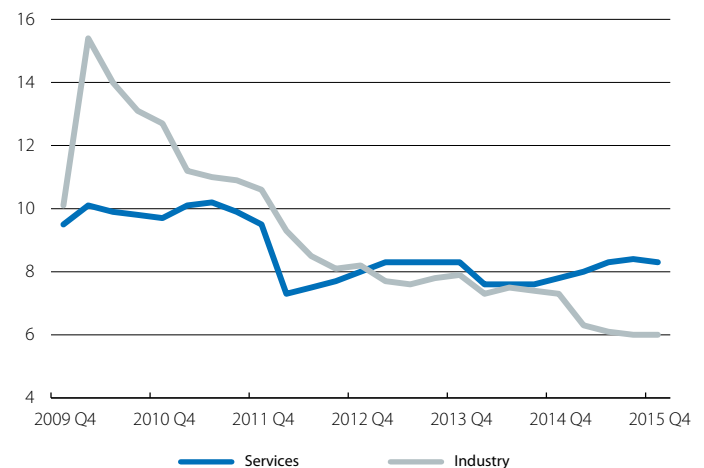
(%)



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

China: GDP of industry and services *

Year-on-year change (%)



Note: * Value-added in real terms.

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

forecast and slightly above ours. However, the initial welcome given to this macroeconomic figure did not prevent further losses in the country's stock markets. China is immersed in a twofold rebalancing of its economy. Firstly, investment must give up its central role to consumption, something the Q4 figures are indicating. The second rebalancing is the gradual replacement of industry by services, as also shown in the Q4 figures with value-added for industry growing by 6.0% year-on-year, its slowest rate since 1992, compared with the value-added for services which grew by 8.2%. For its part, inflation stood at 1.6% in December, giving the country leeway to implement further accommodative monetary policies.

Inflation surprises by rising in a recessionary Brazil. In addition to the deterioration in Brazil's economic situation (the fall of GDP in 2015 is estimated at 3.5%) and its political uncertainty, there is also the worsening of macroeconomic imbalances, in particular inflation which has once again surprised economists by rising (in December it reached 10.7%). This situation is not expected to improve much in 2016 as the end of the base effect of liberalising administrative prices in 2015 (which would push down inflation) has been offset by high inflation due to the weakness of the real. In this respect we have revised our inflation forecast for 2016 from 6.4% to 6.6%. We have kept our GDP forecast the same (-3.5% in 2015 and -2.5% in 2016), albeit with a downward bias.

Russia's GDP falls by 4.1% year-on-year in Q4. The figures suggest that the most serious point in the recession may be over. Nonetheless, the recent trend of the price of crude, more negative than expected a few months ago, will result in a slower recovery than expected. This factor, together with the announcement of a considerable adjustment in public expenditure, justifies a downward revision in our main scenario for the country in 2016: from -0.2% to -0.8% (2015: -3.7%).

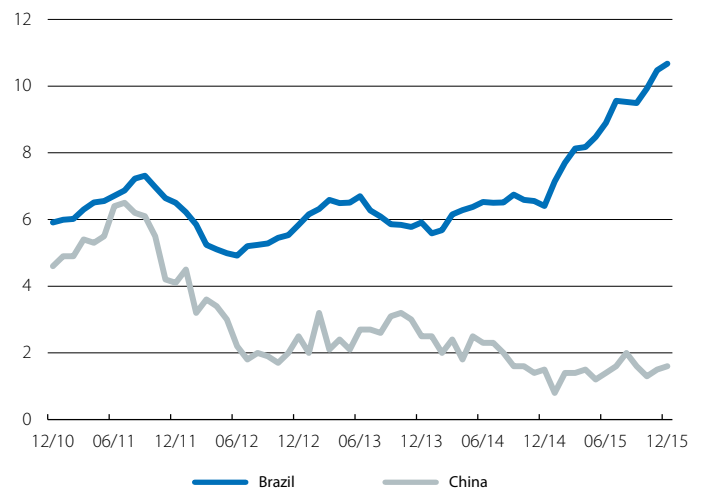
Oil prices surprise again by falling further. The price of crude oil fell to below 30 dollars per Brent barrel in January. The reasons for this recent drop lie in the milder winter which helped to boost global stocks and, in turn, swelled the excess supply of crude. In the medium term, if Iran manages to comply with the terms of the nuclear agreement more quickly than expected, the supply of Iranian crude oil will be more likely to increase on the international market in 2016 and 2017. For all these reasons we have revised downwards our forecast for the Brent price from 58.2 to 42.6 dollars/barrel on average in 2016 and from 68.8 to 65.6 dollars/barrel in 2017.

UNITED STATES

US GDP grew by 2.4% in 2015, equalling the growth rate of 2014. GDP growth once again slowed down in 2015 Q4, up by 0.2% quarter-on-quarter (1.8% year-on-year), lower than the 0.5% for Q3 (2.1% year-on-year) and also slightly below the forecast in our main scenario. By demand component, the slowdown was due to slower growth in private consumption,

Brazil and China: CPI

Year-on-year change (%)



Source: CaixaBank Research, based on data from the national statistics offices.

Commodities: oil prices *

\$/barrel

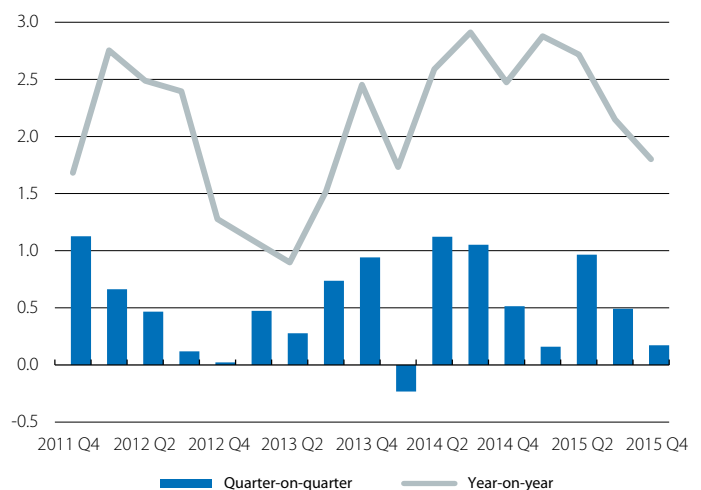


Note: * Brent, one-month forward contracts.

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

US: GDP

Year-on-year and quarter-on-quarter change (%)



Source: CaixaBank Research, based on data from the Bureau of Economic Analysis.

in line with expectations, and a drop in non-residential investment which, in this case, came as an unpleasant surprise. Also of note was the decline in exports which were probably affected by the strong dollar. After this figure was published, we revised slightly downwards our forecasts for 2016, with growth of 2.3% (compared with 2.5% previously) and maintained the forecast of 2.4% for 2017.

2016 looks like being a year of significant growth. The latest activity indicators, such as the Beige Book, also showed the evident weakness of the GDP figure for Q4. However, this should not continue into 2016 thanks to the effect of the sustained recovery in the labour market (in December, 292,000 new net jobs were recorded, and a wage rise of 2.5% year-on-year), which will boost private consumption and the housing market. Similarly public expenditure, as 2016 is an electoral year, will partly offset the lower investment in energy firms (related to the extraction of shale oil).

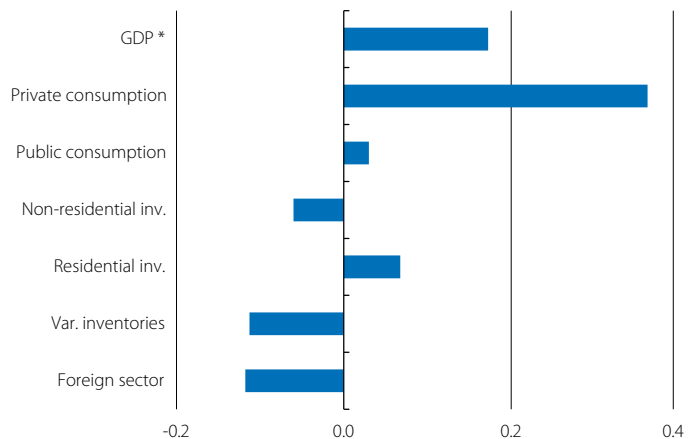
The Fed maintains interest rates in January after the increase in December. In its statement on 27 January, the Fed suggested, without being explicit, that the risks for growth were downwards and confirmed the slowdown at the end of 2015, affected by a decline in investment in capital goods and construction. These risks for growth, to which we should add the turbulence in international financial markets and the recent reduction in inflationary tensions, lead us to believe that the monetary institution will wait until its June meeting to announce its second interest rate hike (previously we thought it would happen in March). The general CPI grew by 0.7% in December 2015, 0.2 pps above the previous month's figure but slightly below our forecasts. The core CPI grew by 2.1% year-on-year, 0.1 pp above November's figure. In month-on-month terms (with the series seasonally adjusted), of note was the further fall in the energy component (-2.4% month-on-month) which supported the decline in the general CPI (-0.1% month-on-month). Also notable was the slowdown in month-on-month terms of the core CPI. December's figures and the downward revision in the price of oil also led to a downward revision in our inflation forecasts for (1.4% on average, previously 1.7%).

JAPAN

Japan enjoys modest growth. Private consumption is suffering from households' loss of purchasing power and the cheap yen is reducing the purchasing power of SMEs and consumers, and is not benefitting exports as before. In spite of depreciating by 31% since the end of 2012 (when Shinzo Abe came to power), Japanese exports to China and the US have fallen by volume. The Bank of Japan (BoJ) might intensify its monetary expansion in 2016 due to the meagre nominal growth, essential to reduce the high debt/GDP ratio and permanently low inflation (the CPI without food but with energy, the BoJ benchmark, rose by just 0.1% in December). Nonetheless we have maintained our GDP forecasts for 2016 (1.0% compared with 0.7% forecast in 2015).

US: GDP

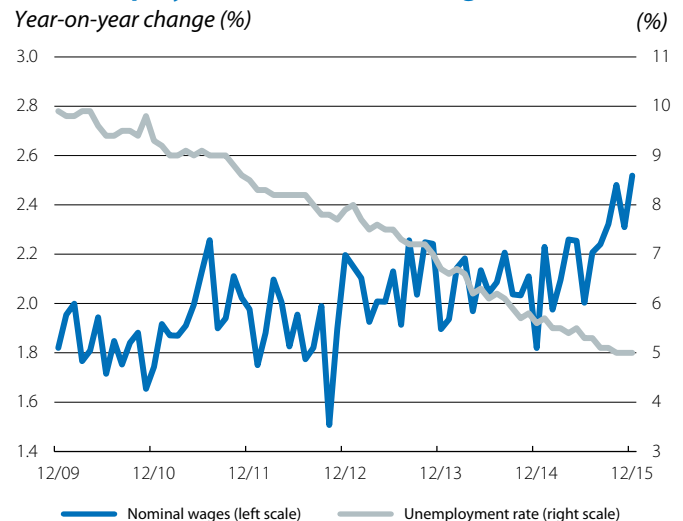
Contribution to quarter-on-quarter growth in GDP in 2015 Q4 (pps)



Note: * Quarter-on-quarter change.

Source: CaixaBank Research, based on data from the Bureau of Economic Analysis.

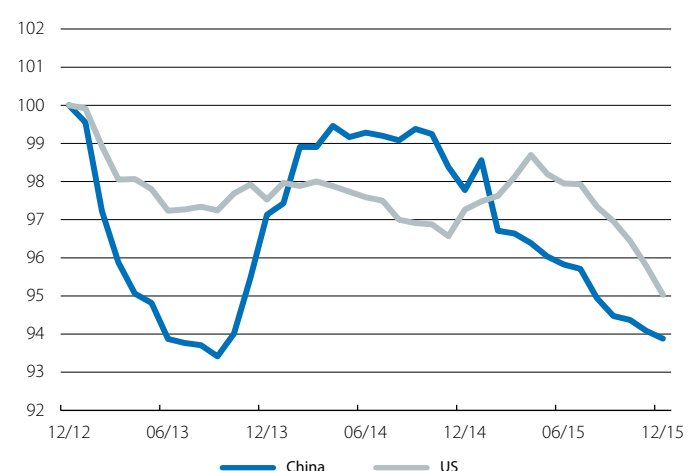
US: unemployment and nominal wages



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

Japan: exports to the US and China by volume *

Index (100 = December 2012)



Note: * Average for the last 12 months.

Source: CaixaBank Research, based on data from the Japanese Finance Ministry.

FOCUS · Change of pattern in energy consumption: the China effect

Between 2005 and 2015 we witnessed China's rise as a major player in the global energy order. In 2015 China was the world's largest consumer of energy with 23.1% of the total, ahead of the US (17.0%), Europe (14.4%), Russia (5.8%) and India (4.8%).¹ China's importance becomes even more evident, if possible, in dynamic terms as it contributed 59.3% to the growth in global energy consumption between 2005 and 2015.

Before starting to analyse this situation in a little more detail, we should note that there are five primary energy sources: liquid fuels (the vast majority from oil), accounting for 32.4% of total energy consumption; coal at 28.7%; gas, 21.7%; renewable-hydraulic, 11.8%; and nuclear, 5.3%. China's sharp increase in energy demand has had a huge effect on the relative share of the different sources of energy as the Asian giant's energy consumption differs substantially from the rest of the world. In particular, coal consumption in China represents two thirds of its total energy consumption, a figure much higher than the 17.5% it represents in the rest of the world. So coal, a highly polluting source of energy, has been a major protagonist in the last decade: it has been responsible for close to 40% of the increase in the world's energy consumption, substantially ahead of renewables (28.9%), gas (15.3%) and oil (14.7%).

However, the trend in energy consumption in the next 10 years could be very different to the one observed in recent years with coal losing relative importance. This could be helped by China's desire to change its pattern of growth with a greater focus on consumption and services, which will lead to a reduction in capital expenditure (capex) in favour of operating expenditure (opex). Energy consumption associated with the latter type of spending is less coal-intensive. China is also prioritising a reduction in its use of coal now that it is more aware of the associated environmental problems and, in fact, protecting the environment is one of the strategic lines of the new five-year Plan presented at the end of 2015. The relative weight of coal in energy consumption is therefore expected to fall from the current level of 66% to 60% by 2025.

A third element is likely to be added to these two factors: oil prices. Between 2005 and 2015, China's economic surge coexisted with a time of expensive oil whose price went from 44.5 dollars per barrel in 2005 to 74.5 in 2014 (partly due to China's increased demand), undoubtedly limiting the relative weight of oil in the Asian giant's energy mix.

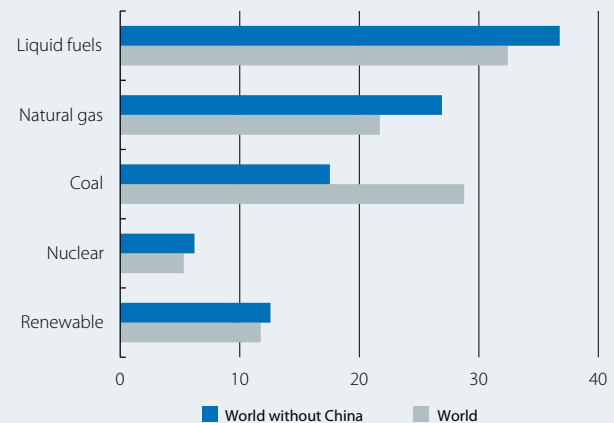
1. According to the IEA, «International Energy Outlook 2013», July 2013. This is the most recent report with a breakdown by region and energy source at the same time.

Within the current context, where the growth in supply will help keep oil prices lower than in recent years, the relative weight of this source of energy is likely to increase.

In fact, if we assume that China's energy use will gradually converge towards sources similar to those in developed countries, the global energy mix may be quite different to the one observed recently. According to the forecasts of the International Energy Agency (IEA) for the world excluding China, the growing importance of energy consumption in the domestic area and trade compared with industrial use, as well as environmental concerns, will help a relatively clean source such as gas to become the maximum contributor to growth in energy consumption (at 32.4%). Renewable sources will be second (24.1%), followed by oil (at 15.1%, although in this case its contribution could be higher if prices remain low), nuclear (14.9%) and coal, which would come last with a contribution of 13.5%.

Primary energy sources

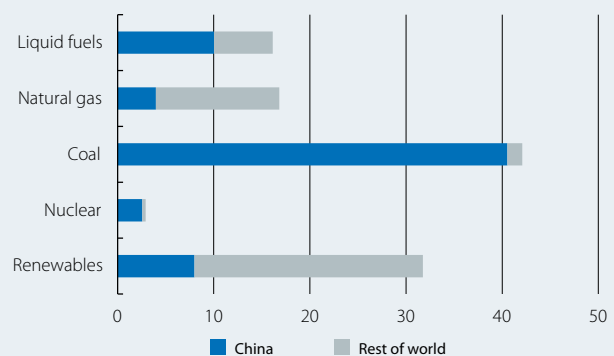
(% energy consumption out of the region's total consumption)



Source: CaixaBank Research, based on data from the Energy Information Administration.

Growth in energy consumption 2005-2015 *

(Quadrillions of BTU)



Note: * Increase in absolute terms of consumption between 2005 and 2015 expressed in quadrillions of British thermal units (BTU).

Source: CaixaBank Research, based on data from the Energy Information Administration.

FOCUS · Towards an external debt crisis in Latin America?

Historically Latin America has always been highly sensitive to increases in the benchmark interest rate in the US. In the 1980s the Federal Reserve's interest rate hike pushed the previous decade's growth trend in public debt to unsustainable levels and 27 countries had to restructure their public debt. Could a similar crisis be repeated in the current context of tighter monetary policy in the US?

After falling to minimum levels in the last few decades, Latin America's total external debt picked up appreciably, going from representing 20% of GDP to 30%, almost the same as the average for the period 1980-2015. Although this level is lower than what is conventionally considered to be high risk (from 60%-70% of GDP in the case of emerging countries), the recent trend and speed of debt growth are certainly cause for concern.

Such concern increases when this external debt is compared with international reserves (a measure of a country's capacity to respond in a crisis).¹ As happened with the region's external debt, the trend in reserves was positive until 2011 but since then any gains made have been reversed and, in 2014, it stood at the equivalent of 50% of external debt. This is precisely the threshold that is normally used as a reference for the minimum level of reserves, so in just a short period of time the region has gone from being in a comfortable, safe zone to the limit of what is prudent.

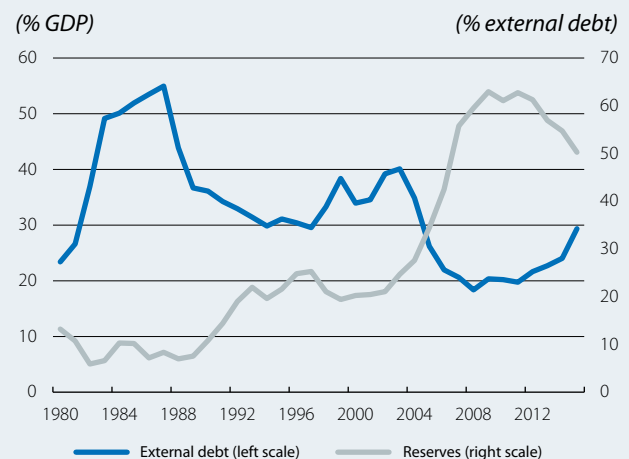
An analysis by country backs up these conclusions. In 2015 four of the region's countries exceeded the threshold of 40% of GDP in external debt (Chile, Mexico, Uruguay and Colombia). However, of these only Uruguay has a safe level of reserves (76% of its external debt). Fortunately Mexico and Colombia have a flexible line of credit from the IMF, granted precisely to help countries with solid macroeconomic fundamentals, which increases their capacity to react if necessary. And Chile benefits from an element that cannot be quantified but is nonetheless relevant, namely its improved international credibility and a reasonably healthy macroeconomic situation.

Nonetheless this does not rule out all the sources of risk. What would happen, for example, if a subsidiary located in Spain of a Brazilian firm issued bonds in dollars in London and these were bought by a Brazilian resident? This liability is not included in Brazil's external debt as it is issued by a non-resident entity and bought by a resident. But there is foreign exchange risk and, depending on how the parent-subsidiary relationship of the Brazilian firm is structured, it could end up affecting the parent company's solvency. This kind of risk is precisely what the

BIS has warned about on repeated occasions, and to quantify such risks it has compiled information on the bonds issued by national entities outside their country of origin and bought both by resident and non-resident entities.² Although these cases might appear anecdotal, the figures prove otherwise as they were in excess of 12% of Latin America's GDP in 2014. Moreover their trend is growing (in 2008 this was only 8% of GDP) and this instrument is being increasingly used by banks and companies. Such use by the private sector is particularly prevalent in Chile (the international debt of banks and enterprises in 2014 totalled 15.6% of GDP), Mexico (10.6%) and Brazil (10.5%).

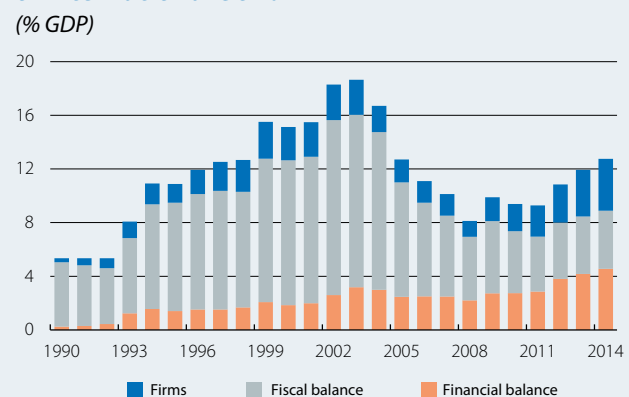
Although an episode of defaults similar to the 1980s is unlikely, it is true that the region's debt has grown, much of it is sensitive to changes in international financing and there is less room to manoeuvre than just a few years ago.

Latin America: external debt and reserves



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

Latin America: outstanding balance of international bond



Note: Bonds issued outside the issuer's local market (according to the issuer's nationality).
Source: CaixaBank Research, based on data from the Bank for International Settlements.

1. In a more detailed analysis, international reserves are evaluated in relation only to short-term debt.

2. According to the BIS, issuances by a Brazilian parent company and its foreign subsidiaries are considered in this statistic as «Brazilian domestic».

KEY INDICATORS

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

UNITED STATES

	2013	2014	2014 Q4	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15
Activity									
Real GDP	1.5	2.4	2.5	2.9	2.7	2.1	–	1.8	–
Retail sales (excluding cars and petrol)	3.4	3.9	4.8	4.8	3.7	4.0	3.3	3.5	3.2
Consumer confidence (value)	73.2	86.9	92.7	101.3	96.2	98.3	99.1	92.6	96.3
Industrial production	1.9	3.7	4.5	3.5	1.5	1.2	0.5	–1.3	–1.8
Manufacturing activity index (ISM) (value)	53.8	55.7	56.9	52.6	52.6	51.3	50.1	48.6	48.2
Housing starts (thousands)	928	1,001	1,055	978	1,158	1,158	1,071	1,179	1,149
Case-Shiller home price index (value)	158	171	173	177	179	179	181.1	182.8	...
Unemployment rate (% lab. force)	7.4	6.2	5.7	5.6	5.4	5.2	5.0	5.0	5.0
Employment-population ratio (% pop. > 16 years)	58.6	59.0	59.2	59.3	59.3	59.3	59.3	59.4	59.5
Trade balance ¹ (% GDP)	–2.9	–2.9	–2.9	–3.0	–3.0	–3.0	–3.0	–3.0	...
Prices									
Consumer prices	1.5	1.6	1.2	–0.1	0.0	0.1	0.2	0.5	0.7
Core consumer prices	1.8	1.7	1.7	1.7	1.8	1.8	1.9	2.0	2.1

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

	2013	2014	2014 Q4	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15
Activity									
Real GDP	1.4	–0.1	–0.9	–1.0	0.7	1.7	–	...	–
Consumer confidence (value)	43.6	39.3	38.9	40.7	41.5	40.9	41.5	42.6	42.7
Industrial production	–0.6	2.1	–1.4	–2.2	–0.5	–0.4	0.3	0.0	–1.6
Business activity index (Tankan) (value)	6.0	13.5	12.0	12.0	15.0	12.0	–	12.0	–
Unemployment rate (% lab. force)	4.0	3.6	3.5	3.5	3.3	3.4	3.1	3.3	3.3
Trade balance ¹ (% GDP)	–2.4	–2.6	–2.6	–1.8	–1.4	–1.0	–0.9	–0.7	–0.6
Prices									
Consumer prices	0.4	2.7	2.5	2.3	0.5	0.2	0.3	0.3	0.2
Core consumer prices	–0.2	1.8	2.1	2.1	0.4	0.8	0.8	0.9	0.8

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

	2013	2014	2014 Q4	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15
Activity									
Real GDP	7.7	7.3	7.2	7.0	7.0	6.9	–	6.8	–
Retail sales	15.5	12.0	16.5	10.5	10.2	10.7	11.0	11.2	11.1
Industrial production	9.7	8.3	7.6	6.4	6.3	5.9	5.6	6.2	5.9
PMI manufacturing (value)	50.8	50.7	50.4	49.9	50.2	49.8	49.8	49.6	49.7
Foreign sector									
Trade balance ¹ (value)	258	383	383	489	542	577	593	592	602
Exports	7.8	6.0	8.5	4.6	–2.2	–5.8	–6.9	–7.2	–1.4
Imports	7.3	0.4	–1.9	–17.6	–13.5	–14.3	–18.8	–9.0	–7.6
Prices									
Consumer prices	2.6	2.0	1.5	1.2	1.4	1.7	1.3	1.5	1.6
Official interest rate ² (value)	6.00	5.60	5.60	5.35	4.85	4.60	4.35	4.35	4.35
Renminbi per dollar (value)	6.1	6.2	6.1	6.2	6.2	6.3	6.3	6.4	6.5

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 · Domestic demand drives growth in spite of global instability

The economic recovery is continuing in a more uncertain environment. The euro area's economy continues to grow, supported particularly by domestic demand. For the time being the slowdown in the emerging economies and financial turbulences have had a minimal impact on growth in the euro area which is also sustained by an accommodative monetary policy, a neutral fiscal policy and very low oil prices. In this respect the IMF has revised upwards by 0.1 pp its growth forecast for the euro area in 2016, to 1.7%, in spite of reducing world growth forecasts due to growing global instability. For its part the ECB has also underlined these opposing forces in the euro area's recovery, with headwinds internationally but a rise in domestic demand. The ECB therefore announced that, in March, it would revise its monetary policy and that it might adjust it as it did in December to make sure its objective of price stability remains on track.

Activity continues to grow but at a slower rate. Business indicators available for January indicate that the economy continued growing in 2016. However, both the economic sentiment index and the PMI indices were down on December, although still above the average for 2015 and clearly in the expansionary zone (above 50 points). By country, in Germany the composite PMI fell by 1 pp to 54.5 and the IFO index of economic sentiment fell slightly in January compared with the previous month. For its part France improved its composite PMI slightly although it is still close to stagnation at 50.5. This drop in most activity indicators is understandable given the strong financial instability of the last few weeks but we believe this is a temporary episode, albeit virulent, and therefore expect it to diminish as the solid foundations on which the economic recovery is based are confirmed. Consequently, for the time being we will not make any significant changes to our growth forecasts for 2016.

Demand and investment indicators advance. Retail sales continued to grow at a rate faster than 2% year-on-year in the month of November, following the good tone observed in 2015, although the latest figure is slightly lower than the average for the year. Automobile registrations also grew by 13.9% in December, 5 pps above the average for 2015. These demand indicators underline the strong recovery in domestic demand being enjoyed by the euro area. Investment also shows signs of improvement: industrial production increased by 1.5% year-on-year in the month of November, 0.2 pps above the average for the year although slightly below the previous month. The industrial confidence indicator also posted its best figure for the year in December.

Euro area: IMF forecasts

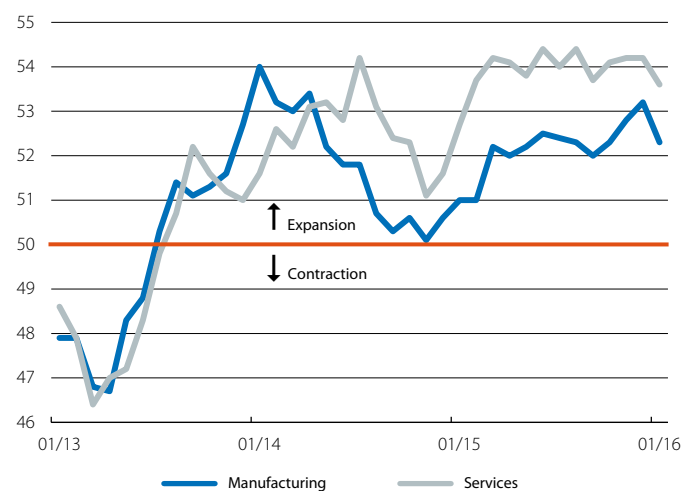
Annual change (%)

	GDP forecast			Change compared with the October 2015 forecast	
	2015	2016	2017	2016	2017
Euro area	1.5	1.7	1.7	▲ 0.1	=
Germany	1.5	1.7	1.7	▲ 0.1	▲ 0.2
France	1.1	1.3	1.5	▼ 0.2	▼ 0.1
Italy	0.8	1.3	1.2	=	=
Spain	3.2	2.7	2.3	▲ 0.2	▲ 0.1

Source: CaixaBank Research, based on IMF data (WEO).

Euro area: PMI activity indicators

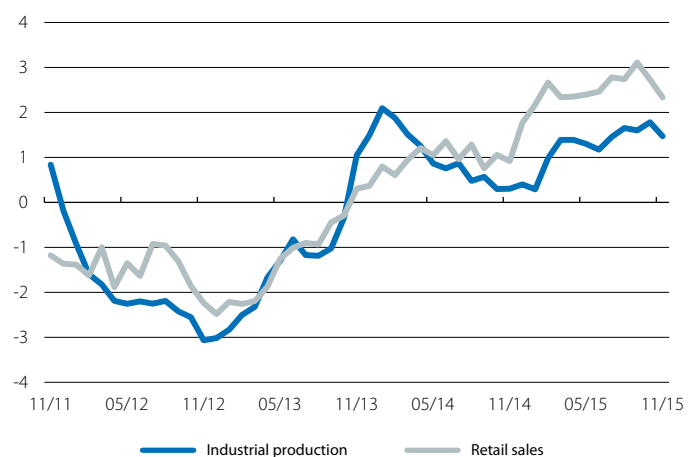
Level



Source: CaixaBank Research, based on data from Markit.

Euro area: retail sales and industrial production

Year-on-year change in the 3-month average (%)



Source: CaixaBank Research, based on Eurostat data.

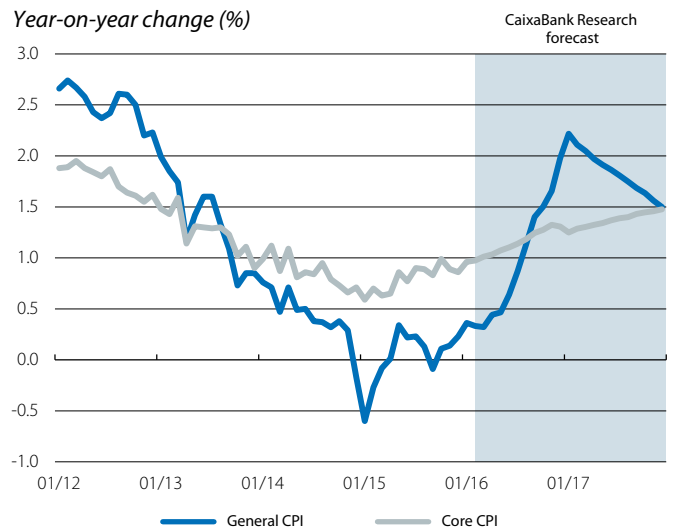
Inflation is rising but is still far from the ECB's target. The year-on-year change in the harmonised index of consumer prices (HICP) for the euro area stood at 0.4% in January, 0.2 pps above the previous month's figure due to the smaller drop in energy prices and larger increase in core inflation. This rose to 1.0%, 0.1 pps above the figure observed in the last two months, as a consequence of higher prices in the services sector and for non-energy industrial goods. The drop in oil prices is also having an indirect effect on core inflation as it reduces the production and transport costs of companies providing non-energy products and services, as well as household costs. However, we expect core inflation to gradually rise over the next two years as it will reflect the economic recovery. The increase in oil prices forecast throughout 2016 and the first half of 2017 will also have a rebound effect on general inflation, which will end up exceeding core inflation. As from the second half of 2017, when the effects of oil prices diminish, general inflation will once again approach the core figure and the ECB's target.

Exports grow more slowly within an adverse global environment. Exports recorded 1.4% growth year-on-year in November within an uncertain global environment due to the slowdown in the emerging economies. The foreign sector continues to benefit from the euro's depreciation, close to 5% in the nominal effective exchange rate since December 2014, as a consequence of the ECB's expansionary monetary policy. Nonetheless, the euro area must continue to improve its competitiveness to accentuate this good performance by the foreign sector. Meanwhile, the value of imports fell by 0.6% year-on-year as a reflection of the slump in oil prices, as the euro area is a net importer of this commodity. The result of the reduction in imports and increase, albeit smaller, in exports is an improvement in the trade balance of the euro area as a whole to 3.2% of GDP.

The ECB announces that it will revise and possibly reconsider its monetary policy in March. The Governing Council of the ECB did not alter its monetary policy at its January meeting although the institution is still monitoring the risks represented by the slowdown in the emerging economies and financial instability at the start of the year. The euro area's recovery is still on track, boosted by domestic demand, but Draghi stated that global uncertainty and the fall in oil prices are affecting inflation expectations, opening the door to further relaxation in the institution's monetary policy at its March meeting. We therefore expect monetary conditions to remain highly accommodative (see the Focus in this Monthly Report «Discovering monetary policy in the shadow»). To consolidate the recovery, the ECB recommended continuing with a more expansionary fiscal policy and furthering structural reforms. In addition to taking advantage of the current expansionary cycle, the euro area also needs to increase its long-term growth potential by intensifying structural reforms in its economies.

Euro area: harmonised CPI

Year-on-year change (%)



Source: CaixaBank Research, based on Eurostat data.

Euro area: international trade of goods *

Year-on-year change, cumulative over 3 months (%)

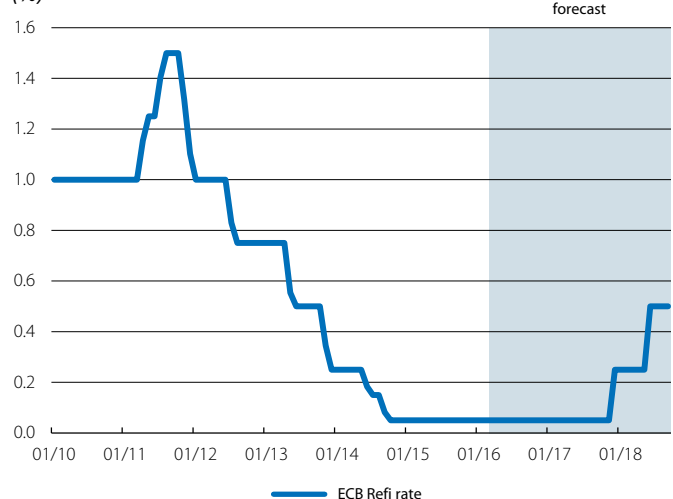


Note: * Nominal data.

Source: CaixaBank Research, based on Eurostat data.

Euro area: interest rate

(%)



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

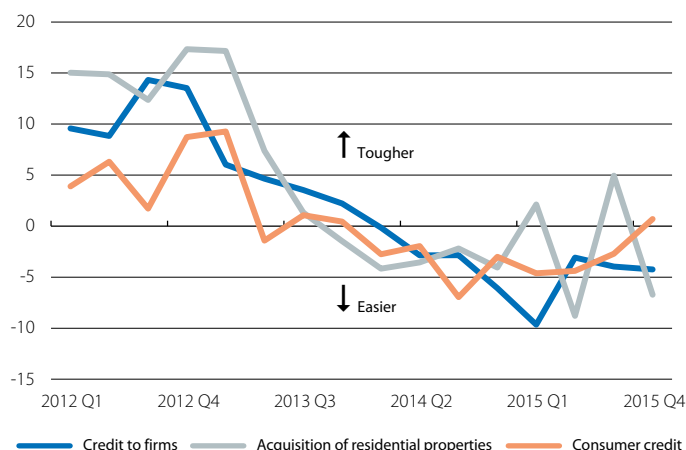
Bank credit will support the growth in domestic demand in 2016. The bank lending survey shows that the criteria to grant loans continued to relax in 2015 Q4, encouraged by the propitious environment offered by monetary policy and thereby boosting domestic demand. This improvement, caused by competitive pressure in the banking industry, can particularly be seen in mortgages and loans to companies (the latter have enjoyed eight consecutive quarters of relaxation). On the other hand, loans for consumption remained practically stable. We expect the conditions for granting credit to continue improving throughout 2016 and that, consequently, they will support growth in the euro area in terms of domestic demand.

The euro area manages to reduce its public deficit and debt within a neutral fiscal environment. The improved economic cycle and low interest rates enjoyed by countries with the single currency meant that the euro area as a whole reduced its deficit for 2015 Q3 to 1.8% of GDP, 0.4 pps lower than in 2015 Q2. This reduction was also the result of fiscal consolidation policies and adjustments being carried out by some countries. In any case, it should be noted that not all countries are in the same fiscal position and those with larger surpluses should take advantage of the margin they have to adopt more expansionary fiscal policies that will boost growth. Sovereign bonds also fell to 91.6% of GDP, 0.7 pps lower than in 2015 Q2. While Greece and Portugal have increased their public debt compared with the previous quarter, Ireland, Italy, France and Germany have reduced theirs considerably. This reduction in debt should continue quickly to reach more sustainable levels, in particular in countries with a high level of debt such as Greece, Italy, Portugal, Ireland and Spain.

Poland's changes in the rules of the game are a cause for concern. In the last few months Poland has made significant changes in the country's regulatory framework which has led the ratings agency S&P to lower its credit rating from A- to BBB+, the first reduction since 1996. Specifically S&P believes that some decisions might weaken its institutions (referring to the Constitutional Court and the independence of the media). In addition to these issues, it should also be noted that the country has adopted a bank rate of total assets of 0.44% which will pressurise a sector whose profitability is already low (in 2014 the return on assets was only 1.1%). Lastly, we should also mention that the government has modified its Budget act, making it less rigorous. Nonetheless, it is important to remember that Poland enjoys a notable growth rate (the preliminary GDP growth estimate for 2015 is 3.6%).

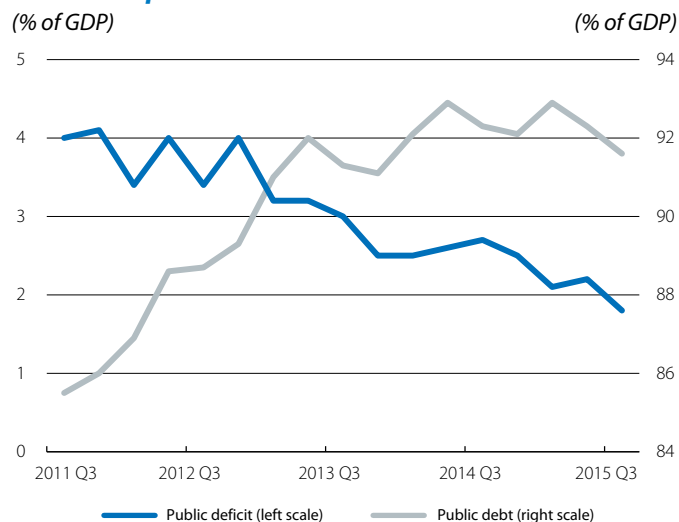
Euro area: bank lending survey

Banks tightening (+) or relaxing (-) conditions for granting loans (net %)



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

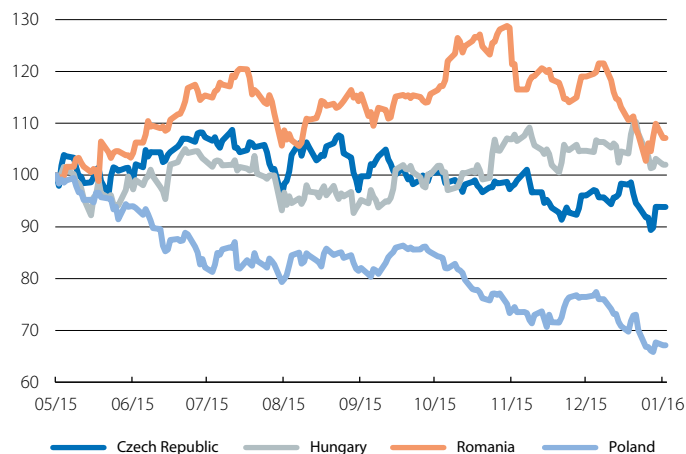
Euro area: public deficit and debt



Source: CaixaBank Research, based on Eurostat data.

Emerging Europe: national stock market index for the banking industry

Index (100 = 25 May 2015)



Source: CaixaBank Research, based on Datastream data.

FOCUS · Discovering monetary policy in the shadow

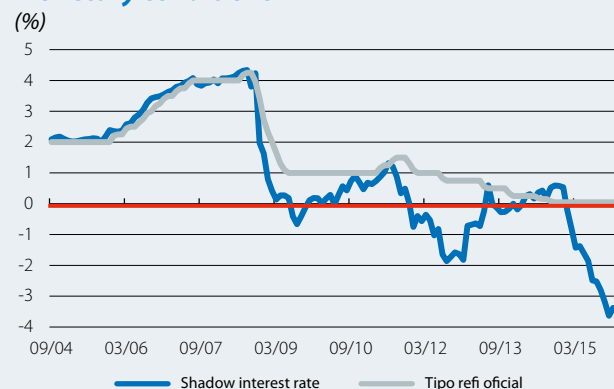
Does the monetary policy stance meet the needs of the economy? Although it might seem trivial, in order to answer this question we need to know how to measure monetary policy. Before the Great Recession the interest rate at which central banks lend money to private banks (the Refi rate in the case of the ECB) provided a good description of how accommodative monetary policy was.¹ However, in the last few years these interest rates have hit the zero lower bound and central banks in the advanced economies have started to use unconventional measures such as large-scale asset purchases. The central bank interest rate has therefore lost its informative power.

In the search for a new indicator of monetary policy, it has been suggested to use the historical relationship between the official Refi rate and a series of monetary variables to calculate the Refi rate we would observe in the present environment if this were not anchored at 0%: the so-called shadow interest rate. One of the most popular methodologies to calculate this is the one proposed by Wu and Xia (2015)² who use a model of the term structure to project the shadow Refi rate. As we can see in the first graph, at times of standard monetary policy (up to the end of 2008) the shadow rate and the real Refi rate are practically indistinguishable. However, since the start of the financial crisis the shadow interest rate reveals some very useful information. Clearly the ECB's unconventional measures have eased monetary conditions beyond what is reflected in the official rate in 2009, 2012 and 2015. Moreover the shadow rate also points to a certain tightening of monetary policy with the withdrawal of these measures and the reduction in the ECB's balance sheet (in spite of lowering the Refi rate between December 2012 and the summer of 2014). Lastly, the announcement and implementation of QE by the ECB led to a dramatic easing of monetary policy in 2015, equivalent to a fall in the shadow interest rate from 0.54% in December 2014 to -3.38% in December 2015.

In addition to providing us with information on effective monetary conditions, the shadow interest rate also helps us to evaluate whether these conditions meet the needs of the economy using traditional tools such as the Taylor rule, which tells us what the benchmark interest rate should be according to the natural rate of interest, (core) inflation and the unemployment or output gap.³ The second graph shows how, before the financial crisis, monetary policy was much more in line with the needs of core countries than of those in the periphery. However,

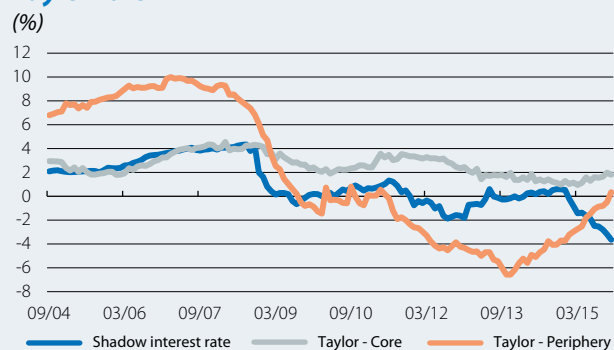
since 2009 the ECB's policy has found a middle point between both regions. During 2015, with the gradual recovery in core inflation and economic activity, the Taylor rule recommended less monetary relaxation, both in the core and in the periphery of the euro area. However, this rule is based on how the economy works under normal conditions and the current financial and economic situation is far from normal. Specifically there is uncertainty regarding the gap between the economy and its potential. This would suggest caution when interpreting the normalisation of monetary conditions recommended by this rule. On the other hand we must also take into account the fact that an environment with excessively low interest rates could lead to financial instability. All in all, it is reasonable to interpret the current discrepancy between the Taylor rule and monetary conditions as a sign that the latter should not be eased any further and the next step required by the economy is the gradual normalisation of the ECB's policy.

Monetary conditions



Source: CaixaBank Research, based on data from Wu and Xia (2015) and the ECB.

Taylor rule



Note: Core includes Germany, Austria, Belgium, Finland, France, Netherlands and Italy. Periphery includes Spain, Greece, Ireland and Portugal.

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

1. This has not always been the consensus opinion. For example in 1963 Friedman and Schwartz defended the use of monetary aggregates such as the M1.

2. *Measuring the Macroeconomic Impact of Monetary Policy at the Zero Lower Bound*, forthcoming in the Journal of Money, Credit and Banking.

3. Specifically, interest rate $i_t^{Taylor} = r^n + \pi_t + \alpha_n(\pi_t - \pi^*) + \alpha_u(u_t - u_t^n)$, where $r^n = 2\%$ is the natural rate of interest, π_t is current inflation and $\pi^* = 2\%$ the inflation target, u_t is the unemployment rate and u_t^n the natural unemployment rate and $\alpha_n = 0.5$ and $\alpha_u = -1$. See Nechio (2011), *Monetary Policy When One Size Does Not Fit All*, Federal Reserve Bank of San Francisco Economic Letter.

FOCUS · Will the euro area catch a cold from the Asian giant sneezing?

The close ties between China and the rest of the Asian countries, commodity exporters and Africa explain how the slowdown of this economy is having an effect on all of them. However, the ties linking China to Europe are a little more unknown. The aim of this Focus is to study the commercial, investment and financial relations between the euro area and China to analyse the possible repercussions of China's economic slowdown on the region.

The euro area's commercial relations with China increased considerably as China became much more of a global player in economic terms. In particular exports of goods from euro area countries to China went from representing 1% of all annual exports in 2000 to 3.3% in 2015. In spite of this increase, however, exports to China still only account for a small percentage of all exports for most countries. In this respect, and in commercial terms, the direct impact of China's slowdown will be moderate and provided this slowdown is gradual and does not substantially affect world growth, it will be offset by improvements in exports to other countries whose growth is increasing, such as the US, the UK and other euro area neighbours.

The case of Germany, however, warrants particular scrutiny as it is the country with the largest share of exports to China (5.7% of all its exports of goods). Nevertheless this relevance diminishes when we look more closely at the flows of exports. If we rank German exports by the value added content generated in the country,¹ exports to China fall to fifth position after the US, France, United Kingdom and Italy. Regarding the direct financial impact of China's slowdown, it is estimated that this will also be small given the limited direct financial links between Europe and the country. This is largely a reflection of the still small number of Chinese crossborder financial transactions. Around 1% of all financial liabilities in the euro area are located in China (including Hong Kong). A more significant channel for passing on the effect of the slowdown might be the foreign direct investment (FDI) carried out by China in the EU, estimated at about 10.4 billion euros in 2013² (around 4.2% of the FDI received by the euro area), which could decrease if the country's slowdown gets worse. However, flows of Chinese FDI are still underrepresented in relation to the size of its economy

1. This means that many German exports to China involve the transformation of products or raw materials that have been previously imported.

2. Bruegel (2015): «China's outward foreign direct investment» <http://bruegel.org/2015/06/chinas-outward-foreign-direct-investment/>

and should actually increase as its financial system is gradually liberalised.

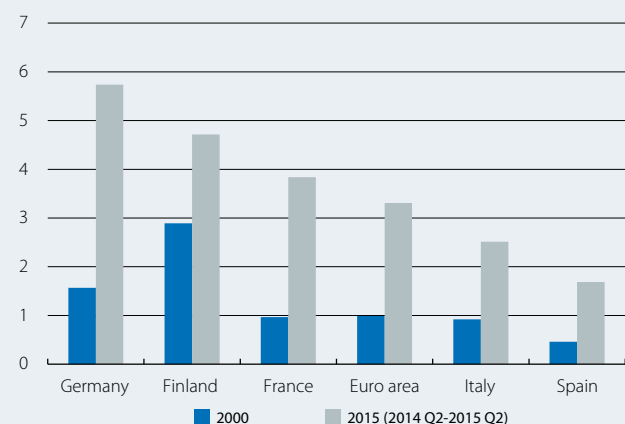
On the whole, considering the direct relations between the euro area and China the impact of the Asian giant's slowdown should be limited. According to simulations by the European Commission and the ECB, a decrease in Chinese growth of 1 pp would reduce the euro area's growth by between 0.1 and 0.2 pps. If the fears regarding China materialise and, for example, our growth forecast for the country in 2016 falls from 6.5% to 6.0%, a scenario still far from a sharp slowdown, growth in the euro area would be between 0.05 and 0.1 pps lower than the current forecast, namely 1.8%.

Lastly, there are other indirect ways that the Asian giant's economic slowdown might impact Europe's economy such as reducing commodity prices or potential contagion due to an upswing in uncertainty. The first has a fundamentally positive impact for European growth as it is a net importer of these commodities, in particular oil. Here we also expect that, provided China's slowdown in growth is gradual, the indirect effects will be limited too. The fear lies in the possibility of the slowdown speeding up and the Chinese authorities failing to make adequate use of the leeway they have with economic policy to quickly put a stop to the situation. This case, which does not seem very likely at present, could lead to an upswing in global financial volatility that might jeopardise the euro area's current recovery.

In summary, the ties between China and Europe are not strong enough for Europe to directly catch a cold from China sneezing; it would have to get the flu and the Chinese authorities have enough vaccines to stop this from happening.

Euro area: exports of goods to China

(% of total exports)



Source: CaixaBank Research, based on IMF data (Direction of Trade Statistics).

KEY INDICATORS

Activity and employment indicators

Values, unless otherwise specified

	2013	2014	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15	01/16
Retail sales (year-on-year change)	-0.8	1.2	2.3	2.5	3.1	2.4	1.4	...	...
Industrial production (year-on-year change)	-0.7	0.8	1.6	1.3	1.8	2.0	1.1	...	...
Consumer confidence	-18.8	-10.2	-6.2	-5.2	-7.0	-7.5	-5.9	-5.7	-6.3
Economic sentiment	93.5	101.5	102.6	103.7	104.5	106.1	106.0	106.7	105.0
Manufacturing PMI	49.6	51.8	51.4	52.2	52.2	52.3	52.8	53.2	52.3
Services PMI	49.3	52.5	53.5	54.1	54.0	54.1	54.2	54.2	53.6
Labour market									
Employment (people) (year-on-year change)	-0.7	0.6	0.9	1.0	1.1	-	...	-	-
Unemployment rate: euro area (% labour force)	12.0	11.6	11.2	11.0	10.8	10.6	10.5	...	...
Germany (% labour force)	5.2	5.0	4.8	4.7	4.6	4.5	4.5	...	...
France (% labour force)	10.3	10.3	10.4	10.4	10.5	10.3	10.1	...	...
Italy (% labour force)	12.2	12.7	12.3	12.3	11.7	11.5	11.3	...	...
Spain (% labour force)	26.1	24.5	23.1	22.5	21.8	21.5	21.4	...	...

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

	2013	2014	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15
Current balance: euro area	2.0	2.5	2.7	3.0	3.1	3.1	3.2	...
Germany	6.5	7.3	7.5	7.8	8.1	8.1	8.3	...
France ¹	-0.8	-0.9	-0.5	0.1	0.2	0.2	0.1	...
Italy	0.9	1.9	2.0	2.0	2.1	2.1	2.2	...
Spain	1.5	1.0	1.2	1.4	1.5	1.6	1.5	...
Nominal effective exchange rate¹ (value)	101.2	101.8	93.0	91.1	92.7	93.6	91.1	92.5

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

	2013	2014	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15
Private sector financing								
Credit to non-financial firms ¹	-2.6	-2.6	-1.0	-0.5	0.1	0.4	0.7	0.3
Credit to households ^{1,2}	-0.2	-0.1	0.2	0.5	1.0	1.2	1.4	1.4
Interest rate on loans to non-financial firms ³ (%)	2.2	2.0	1.7	1.6	1.5	1.5	1.5	...
Interest rate on loans to households for house purchases ⁴ (%)	2.8	2.6	2.2	2.0	2.1	2.1	2.1	...
Deposits								
On demand deposits	7.9	6.1	9.7	11.8	12.4	12.3	11.7	11.5
Other short-term deposits	-0.1	-2.0	-3.1	-4.0	-4.6	-4.3	-4.0	-3.5
Marketable instruments	-14.9	-7.2	3.9	5.7	2.0	3.1	2.6	-2.8
Interest rate on deposits up to 1 year from households (%)	2.0	1.3	1.0	0.9	0.7	0.7	0.7	...

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.

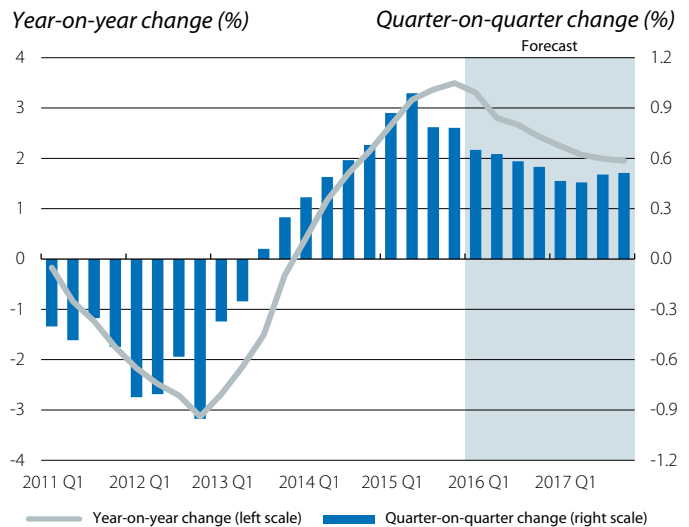
ECONOMIC OUTLOOK · Robust growth without inflationary pressures

In line with expectations, GDP grew by 0.8% quarter-on-quarter in Q4, bringing the annual figure to 3.2%. The dynamism of consumption indicators suggests that domestic demand is still the main engine of growth, supported by the improvement in the labour market. However, as has been happening since the recovery started in 2013, external demand very probably deducted from this growth: in spite of the good performance by exports, the rise in domestic demand is pushing up imports.

The outlook is positive with a view to 2016 although there are considerable downside risks. According to our estimates, the Spanish economy will grow by 2.8% year-on-year, 0.1 pps more than the forecast one month ago due to the reduction in our forecast for oil prices. The expected good performance by economic activity is based on the fact that the factors supporting growth in 2015 (low oil prices, tax cuts, expansionary monetary policy and the euro's depreciation) look like continuing this year albeit to a lesser extent, so they will continue to boost consumption and investment. Business and confidence indicators point to a good start to the year and therefore endorse this upward adjustment in our forecasts. However, political uncertainty and a less favourable external environment are increasing the downside risks for our main scenario. For example the European Commission's economic sentiment index suggests that the confidence of agents was still high in January albeit with a slight downward correction. Specifically this index stood at 107.6 points that month, a lower figure than 2015 Q4 but still far above the 100 points set by the historical average. This somewhat less optimistic impression by sentiment indicators might reflect greater concerns due to international financial unrest and the current political situation. If this uncertainty continued for some time it could end up having a negative effect on the progress of the economy. We must not forget that, in spite of the notable advances made in correcting its macroeconomic imbalances, the Spanish economy is still very vulnerable to changes in sentiment on the part of international investors due to its large international debt position and continuing imbalances in its public accounts (see the Focus «The public deficit: an insufficient adjustment» in this *Monthly Report*). The report on the sustainability of the public accounts by the European Commission has indicated that Spain's high level of public debt is one of the main sources of weakness in its economy, especially in the medium term.

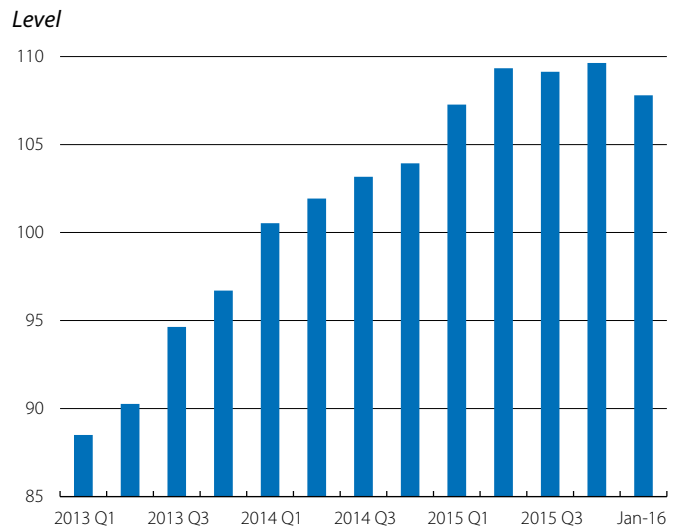
The recovery is maintaining its intensity for the time being. In spite of increased instability, supply and demand indicators continue to be surprisingly good. In terms of supply, the industrial production index grew by 4.2% year-on-year in

GDP



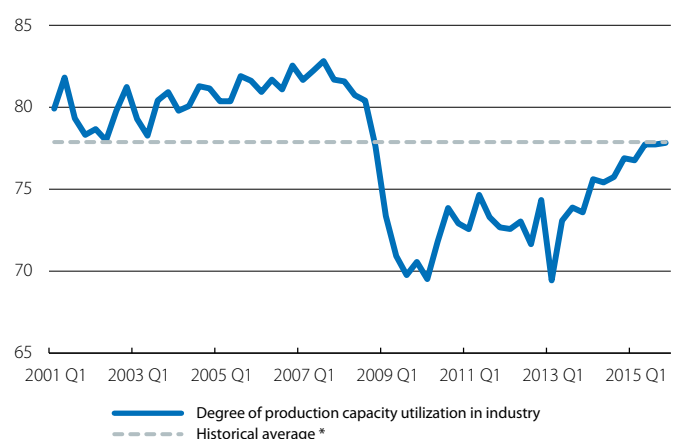
Source: CaixaBank Research, based on INE data.

Economic sentiment index



Source: CaixaBank Research, based on European Commission data.

Degree of production capacity utilization in industry (%)



Note: * Historical average since 1980.

Source: CaixaBank Research, based on data from the Ministry of Finance and Competitiveness.

November, a figure that is in line with strong growth in Q4. Business sentiment indices (PMI), both manufacturing and services, also ended 2015 significantly above the 50-point threshold that marks the zone of expansion. Solidness can also be interpreted from the trend in industry's growing production capacity utilization, which reached its historical average in Q4. Of note in demand is the strong rise in the different consumption variables as all have continued to grow and at values above their historical average. For example, in December automobile sales recorded a strong rate of increase year-on-year of 16.6% (cumulative over three months).

The job creation rate was strong in Q4 with a quarter-on-quarter change of 0.7% (compared with 0.6% in Q3) seasonally adjusted, so that 2015 ended with 525,100 more jobs (3.0% year-on-year), above the 433,900 created in 2014. The increase in employment in Q4 and the unexpected reduction in the labour force have led to a drop in the unemployment rate of 0.3 pps, down to 20.9%.

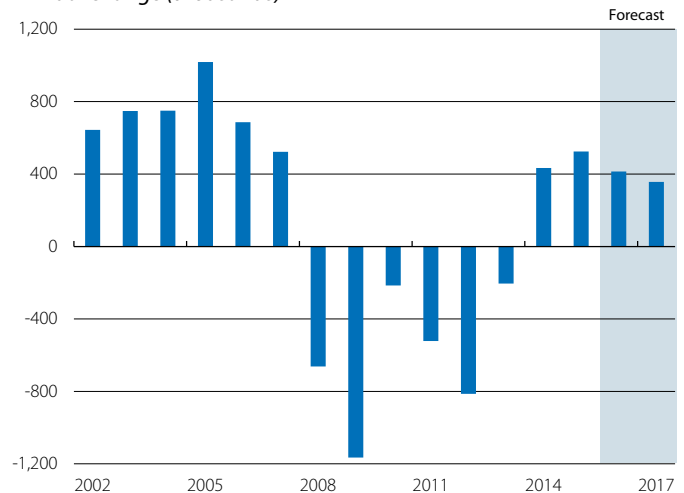
The private sector spearheaded job creation in 2015 and ensured that the rate did not fall below 3.0% during the second half of the year, a pace that was clearly higher than the one expected a few months ago. After the boom in job creation during the first few months of 2015, largely thanks to the temporary impact of the public sector, a slowdown was predicted that did not occur in the end as private sector employment took over the reins and grew strongly. By sector, most of the recovery for the year as a whole was concentrated in services with 421,500 extra jobs; industry and construction played an important role throughout the year but lost steam in Q4.

The increase in employment improves the gross disposable income of households. In 2015 Q3 the gross disposable income (GDI) of households increased by 2.1% year-on-year (cumulative over four quarters), boosted by wage-earners which can be explained by the rise in employment as wages remained subdued, and also by the increase in the gross operating surplus of the self-employed. Undoubtedly this larger GDI boosted consumption which, as it ended up growing at a faster rate, led to a reduction in the savings rate. Specifically this fell by 0.5 pps in Q3 to 9.2% of GDI. Over the coming months, and temporarily while the recovery consolidates, we expect the savings rate to be below its historical average of 9.8% due to a greater increase in consumption than the rise in GDI.

Given this favourable situation, demand for credit continues to grow. According to the bank lending survey in Spain for Q4, the criteria used to approve loans did not change while requests for financing increased in general across all kinds of loans. The expectations of the institutions surveyed also suggest that requests for loans will increase in 2016 Q1. On the other hand, judging by the continued reduction in the NPL ratio for the banking sector (in November it fell by 0.3 pps to 10.3%, 2.4 pps below last year's figure), bank balance sheets are increasingly healthy, which might boost the supply of

Employment

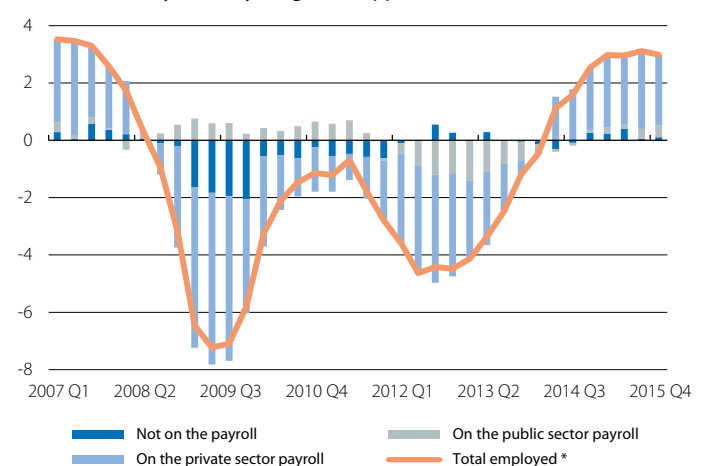
Annual change (thousands)



Source: CaixaBank Research, based on INE data (LFS).

Employment by employer

Contribution to year-on-year growth (pps)

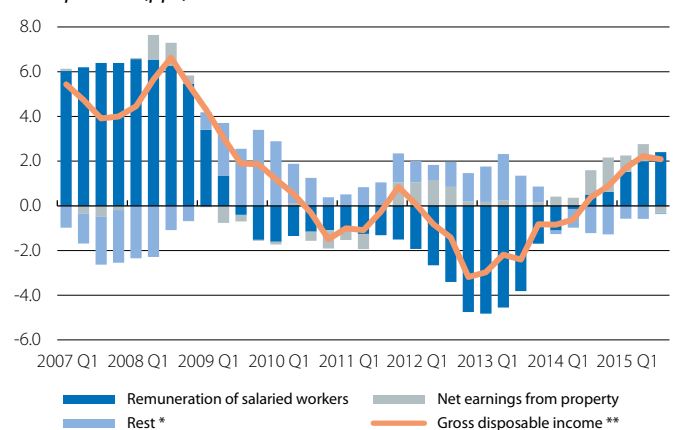


Note: * Year-on-year change.

Source: CaixaBank Research, based on INE data (LFS).

Gross disposable income

Contribution to year-on-year growth, cumulative over four quarters (pps)



Notes: * Rest of items used to calculate the gross disposable income, such as gross operating surplus, social security contributions, etc. ** Year-on-year change.

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

credit (see the Focus «Spain's banking sector, ready to support the recovery» in this *Monthly Report*). In this respect, in the follow-up report on the financial aid programme for Spain, the European Commission approves of the measures taken between 2012 and 2014 as it believes they helped to improve banks' resilience, a key factor to ensuring credit remains available.

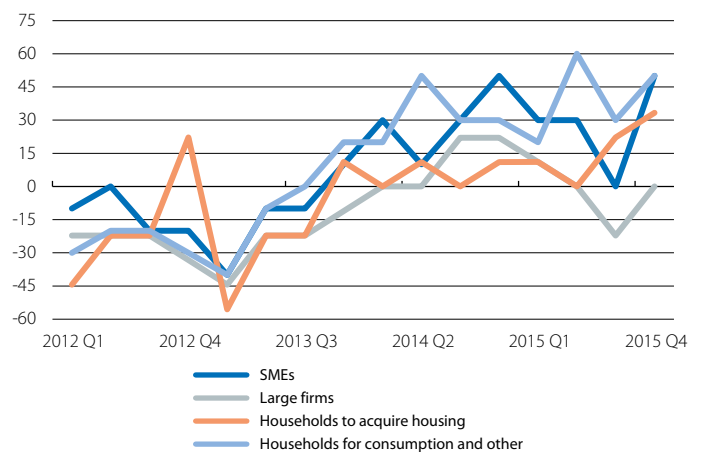
The real estate market continues to recover, supported by the strong increase in the demand for loans to buy housing. One sign of this is the trend in house purchases which rose in November to 11.7% year-on-year (cumulative over 12 months). Nonetheless, regional differences and excess supply suggest a disparate trend in prices.

Inflation surprises and falls by 0.3 pps in January down to -0.3% although we had predicted a slight rise. This unexpected drop is mainly due to the fall in prices for electricity and energy. With the aim of incorporating lower oil prices than considered a few weeks ago and this unexpected slump in January's figure, we have considerably reduced our inflation forecast for this year. In 2016 we expect inflation to reach 0.5% on average (compared with -0.5% in 2014). The trend in inflation in January was very uneven between Spain and the euro area; while it was negative in the former it picked up by 0.2 pps in the latter, rising to 0.4%. Should this continue, this inflation gap might help the Spanish economy to continue regaining competitiveness compared with the euro area and thereby boost sales towards this trading partner.

The drop in oil prices will boost the current account balance in 2016. In addition to cheaper energy, the trade balance, both for goods and services, will also support the trend in the current account balance. There was a notable upswing in November in international trade: domestic demand led to a sharp rise in goods imports, namely 2.7% cumulative over three months, although exports rose more, by 2.8% year-on-year, thanks to the exceptional performance by non-energy exports which contributed 5 pps to the overall increase. On the other hand the excellent performance by tourism made a very positive contribution to the good trend in the balance of services. The record figure of 68.1 million tourists visiting Spain in 2015, 4.9% more than in 2014, reinforces this view.

Demand for credit

(% net) *

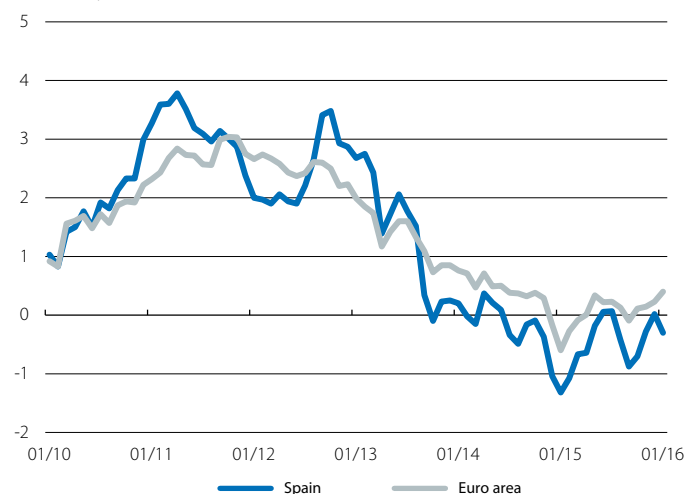


Note: * Percentage of banks stating an increase in demand less the percentage stating a decrease (over the last three months).

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

CPI

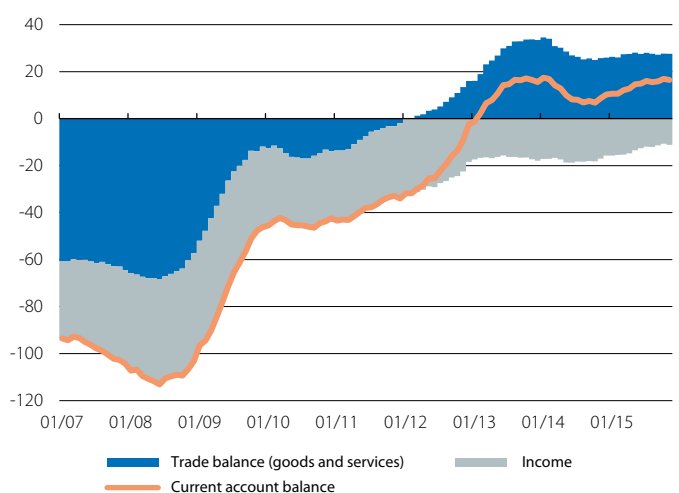
Year-on-year change (%)



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

Current balance

Cumulative figures over 12 months (billion euros)



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

FOCUS · The public deficit: an insufficient adjustment

Now that we are well into the new year, it is a good time to review the trend in the national accounts for 2015 and deduce what might be in store this year. The cumulative deficit of the public administrations up to September 2015 was 4.1% of GDP, only 0.1 pps below the target for the whole year, namely 4.2%. Therefore, although the deficit for Q3 was 0.8 pps below that of one year ago, the adjustment seems insufficient: following the same trend as in previous years, the deficit in 2015 will be in excess of 5%.

This trend in the national accounts is striking as it is occurring within a considerably better economic context than expected in the state Budget (PGE) of 2015.¹ GDP growth in 2015 was 3.2% while the forecast in the PGE, according to which the expected target was 4.2%, was 2.0%. Moreover the environment of low interest rates brought about by the ECB also helped to contain expenditure on interest payments (see the table). The improvement in the main macroeconomic variables should therefore have led to a larger reduction in the deficit than initially expected just as, a few years ago, when economic conditions worsened unexpectedly, the deficit target was revised upwards. The surprisingly good growth figures in 2015 might have had a significant effect on the deficit adjustment.

An analysis of the revenue and expenditure of the different public administrations shows that the improved trend in economic activity helped the central government in particular, which saw a notable advance in its tax revenue during the first half of the year (6.1% year-on-year up to June compared with the 5.4% forecast in the PGE of 2015). However, this boost to tax revenue in the first half of the year led the government to adopt additional expansionary measures not contained in the Budget; namely bringing forward the fiscal reform for income tax initially planned for 2016 and refunding 25% of the civil service bonus payment from 2012.

The impact of the economic upturn on Social Security accounts has also been limited. Revenue from Social Security contributions, for which an ambitious increase had already been budgeted according to the estimates by the Independent Authority for Fiscal Responsibility (AIReF), was affected by new measures offering rebates on employment contracts which limited the growth in revenue. Nonetheless it is important to note that unemployment benefit expenditure fell more than expected as a consequence of a larger drop in the

number of unemployed. However, this has not been able to offset the smaller revenue. The need to explore new formulas to ensure the system is sustainable² should be considered given the likely fiscal deviation in Social Security in a year in which unemployment fell by more than 2 pps, together with factors of a structural nature such as the demographic outlook.

In summary, the fiscal boost received by the Spanish economy in 2015 was notable and helped to improve confidence in the economy's growth capacity. However, the limited deficit adjustment has deferred, for yet another year, the stabilisation of the level of public debt. As this is around 100% of GDP, it is vital to take advantage of tail winds to strengthen the national accounts and thereby be able to adopt counter-cyclical fiscal policies when the economy once again faces a headwind.

Macroeconomic hypotheses and reality in the 2015 Budget

	2015 Budget	2015 Actual
GDP (%)	2.0	3.2
Employment LFS (%)	1.7	3.0
Employment LFS (change in thousands) *	348	525
Unemployed LFS (change in thousands) *	-474	-678
Unemployment rate (% labour force) *	22.2	20.9
Interest rate on 10-year government bonds (%)	2.6	1.7

Note: * Cumulative figures in Q4.

Source: CaixaBank Research, based on data from the INE, Ministry of Finance and Public Administrations and Ministry of Economy and Competitiveness.

Public deficit

(% of GDP)



Note: Cumulative figures over four quarters.

Source: CaixaBank Research, based on data from the INE and the Ministry of Finance and Public Administrations.

1. The deviation by the Autonomous Communities was already expected, as warned by the AIReF in its report of October 2014.

2. See «On the sustainability of the pension system», published in MR01/2015, and «Using the Social Security Reserve Fund», published in MR05/2015.

FOCUS · Capital inflows in the Spanish economy: more and better

Spain has recorded a notable increase in capital inflows since the start of the economic recovery in the second half of 2013. The rate of growth is such that, in the first 10 months of 2015, net inflows¹ of foreign direct investment (FDI) and portfolio investment² totalled almost 80 billion euros, 75% more than in the same period of 2014 and four times more than in the same period of 2013 (see the first graph).

During the first three quarters of 2015 public administrations attracted 72% of all capital inflows. The purchase of public debt by foreign investors is therefore the main reason for this increase in capital inflows. Monetary financial institutions³ also received a significant proportion, 24% of the total, mainly in the form of equity and, to a lesser extent, debt and FDI. Capital inflows to the business sector were lower and only accounted for the remaining 4% although, if we look at the breakdown by instrument, this figure needs qualifying as a change in pattern is occurring in the sources of corporate financing.

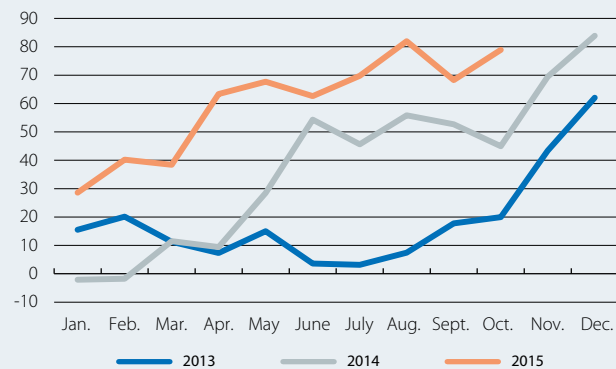
Firstly, there was a divestment of corporate bonds in this period totalling 20 billion euros (see the second graph), a trend that has been observed since 2009 and which forms part of the deleveraging being carried out by Spanish firms. Secondly, net inflows totalled 9 billion euros in equity. This intensification in share purchases by foreigners that started at the end of 2014 has been encouraged by increasing confidence in the Spanish economy's growth capacity and by the positive effect on the stock market of the ECB's programme of quantitative easing. Thirdly, inflows of FDI received by the business sector have also been considerable (14.4 billion euros in the first three quarters of 2015). According to data from the Foreign Investment Register,⁴ these FDI inflows are spread among different business sectors following a similar pattern to the one before the recession. However, it is necessary to note that, unlike the situation in 2013 and 2014, an upswing has been observed in inflows towards the real estate sector. The fact that this sector has regained its appeal for international investors is a positive sign of its recovery,

although part of this increase is due to a search for yield in alternatives to financial assets within a context of low interest rates.

In summary, although this change in the pattern of international financing is good news, we cannot become complacent. It is difficult to secure the confidence of international investors and this can evaporate quickly should doubts reappear regarding the economy's capacity to grow. That is why it is essential to keep to an agenda of structural reforms that help Spanish firms to continue improving their competitiveness.

Inflows of foreign direct investment and portfolio investment *

Cumulative in the year (billion euros)

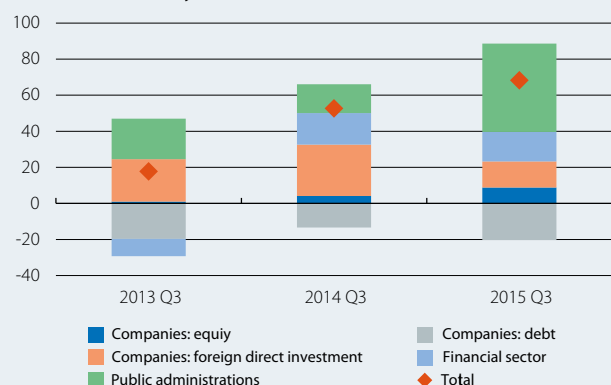


Note: * Excludes the Bank of Spain. Net of reverse investment.

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

Inflows of foreign direct investment and portfolio investment in Q3 *

Cumulative in the year (billion euros)



Note: * Excludes the Bank of Spain. Net of reverse investment.

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

1. Net of reverse investment. Negative inflows are investments by resident affiliates in their foreign parents.

2. Portfolio investment includes debt securities and equity (shares). Excludes the Bank of Spain.

3. Excludes the Bank of Spain.

4. These data cannot be compared directly with those from the balance of payments as they do not include the reinvestment of profits, investment by individuals in real estate and financing flows between associated companies.

FOCUS · Spain's banking sector, ready to support the recovery

One fundamental support helping the Spanish economy in the current expansionary phase is bank credit. After the far-reaching restructuring carried out in the last few years, banks are now more able to finance new business projects and households' credit needs.¹ As we will see below, the level of debt among banks has fallen considerably from the peak reached in 2012, particularly their dependence on external funding.²

During the first half of the 2000s, bank credit expanded substantially to satisfy the growing demand. Given that resident deposits rose at a slower rate, financial institutions resorted to alternative sources of funding and particularly by issuing debt. While, in the year 2000, the debt securities issued by banks represented just 6.7% of GDP, between 2000 Q4 and 2007 Q2 these rose to 66.7% of GDP. Most of this bank debt was acquired by non-residents (58.6 pp) and only a marginal part was bought by residents (1.4 pps). Moreover, non-resident deposits also increased in this period and bank funding therefore became more dependent on financial flows from abroad.

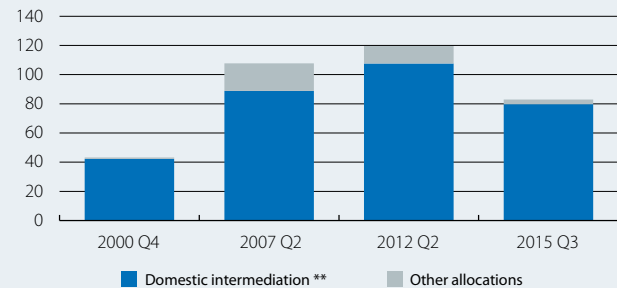
A large part of the bank debt taken out in this period was aimed at financing this gap in domestic financial intermediation (see the first graph). Specifically, 72% of the total (47 pps of GDP) funded loans granted to the resident sector that was not covered by resident deposits. The rest of the debt taken out, equivalent to 13 pps of GDP, was used to buy other financial assets. Particularly of note was the increase in purchases of assets issued by non-residents, both in the form of shares and also debt securities.

Capital inflows are a relatively volatile source of funding sensitive to changes in investors' perceived risk. As from 2010, because of the tensions in wholesale banking markets caused by the European sovereign debt crisis, a significant share of external bank funding disappeared. Specifically the external debt of Spanish financial institutions fell by 72.5 pps of GDP in 2009 Q4 to 47.4 pps in 2012 Q4. However, this drop was more than compensated by funding from the ECB, channelled via the Bank of Spain (see the second graph).

After this rapid deleveraging with regard to the rest of world, bank debt not aimed at financial intermediation is now almost zero. In other words, bank debt is dedicated

totally to supporting the recovery in credit. In 2016 we might therefore expect the stock of credit to abandon its negative growth figures after six years of reductions.

Financial institution debt by allocation * (% of GDP)



Notes: * Consolidated debt of financial institutions (loans and debt securities held by residents and the rest of world) plus the deposits of the rest of world in the liabilities of financial institutions.

** Domestic intermediation equals resident loans and debt securities in the assets of financial institutions less resident deposits in the liabilities.

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

External debt of financial institutions (% of GDP)



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

1. See the Focus «The deleveraging of the Spanish economy: a long way to go» in MR01/2016 for an analysis of private sector deleveraging.

2. In this Focus we analyse the financial balance sheets of financial institutions based on the Financial Accounts published by the Bank of Spain.

KEY INDICATORS

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

Activity indicators

	2013	2014	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15	01/16
Industry									
Electricity consumption	-2.1	-0.1	1.2	-0.1	2.5	3.7	1.4	2.4	...
Industrial production index	-1.5	1.3	1.5	3.5	4.0	4.2	4.0	...	...
Indicator of confidence in industry (value)	-13.9	-7.1	-3.2	0.9	0.7	-0.7	-1.5	3.0	-1.3
Manufacturing PMI (value)	48.5	53.2	54.4	54.8	52.8	51.3	53.1	53.0	...
Construction									
Building permits (cumulative over 12 months)	-36.3	-7.7	12.1	17.0	19.7	21.1	29.4	...	...
House sales (cumulative over 12 months)	0.4	-5.6	8.9	10.2	12.2	11.7	11.7	...	...
Services									
Foreign tourists (cumulative over 12 months)	3.2	7.2	6.6	5.9	5.0	4.4	4.8	4.9	...
Services PMI (value)	48.3	55.2	56.7	58.3	58.1	55.9	56.7	55.1	...
Consumption									
Retail sales	-3.7	1.0	2.5	2.9	3.3	5.6	2.7	1.8	...
Car registrations	5.6	18.4	31.4	13.6	23.1	5.2	25.4	20.7	...
Consumer confidence index (value)	-25.3	-8.9	-0.6	1.6	-1.3	-1.2	0.6	5.4	-0.9

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

Employment indicators

	2013	2014	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15
Registered as employed with Social Security¹								
Employment by industry sector								
Manufacturing	-4.3	0.1	1.5	2.2	2.4	2.6	2.7	2.8
Construction	-12.1	-1.6	4.6	5.6	4.6	4.3	4.2	3.7
Services	-2.0	2.2	3.5	3.7	3.5	3.4	3.3	3.3
Employment by professional status								
Employees	-3.8	1.4	3.0	3.8	3.6	3.6	3.6	3.6
Self-employed and others	-0.6	2.2	2.4	2.2	1.7	1.5	1.5	1.3
TOTAL	-3.2	1.6	2.9	3.5	3.3	3.2	3.2	3.2
Employment²	-2.8	1.2	3.0	3.0	3.1	-	3.0	-
Hiring contracts registered³								
Permanent	-14.2	18.8	24.1	7.7	9.7	1.9	13.0	8.0
Temporary	6.4	13.1	12.2	11.2	9.7	3.6	16.1	15.8
TOTAL	4.0	13.4	13.2	10.9	9.7	3.4	15.8	15.2
Unemployment claimant count³								
Under 25	-6.2	-8.2	-9.8	-9.3	-13.4	-11.3	-11.9	-11.8
All aged 25 and over	3.7	-5.3	-6.1	-7.4	-7.7	-7.4	-7.6	-7.6
TOTAL	2.7	-5.6	-6.5	-7.6	-8.2	-7.7	-8.0	-8.0

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

	2013	2014	2015 Q1	2015 Q2	2015 Q3	10/15	11/15	12/15	01/16
General	1.4	-0.1	-1.0	-0.3	-0.4	-0.7	-0.3	0.0	-0.3
Core	1.5	0.0	0.2	0.5	0.8	0.9	1.0	0.9	...
Unprocessed foods	3.6	-1.2	0.3	1.9	2.3	2.7	2.4	2.5	...
Energy products	0.1	-0.8	-9.7	-6.4	-9.7	-13.1	-9.9	-7.5	...

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

	2013	2014	2015 Q1	2015 Q2	2015 Q3	09/15	10/15	11/15
Trade of goods								
Exports (year-on-year change)	5.2	2.5	4.4	5.4	3.4	1.1	-0.8	8.6
Imports (year-on-year change)	-1.3	5.7	2.5	5.8	3.3	1.8	-2.2	9.3
Current balance	15.6	10.2	12.1	14.9	15.8	15.8	17.0	16.4
Goods and services	33.5	26.0	27.4	27.5	27.2	27.2	27.6	27.6
Primary and secondary income	-17.9	-15.7	-15.3	-12.6	-11.4	-11.4	-10.7	-11.2
Net lending (+) / borrowing (-) capacity	22.3	14.7	15.6	19.0	21.5	21.5	22.5	21.9

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

	2013	2014	2015 Q1	2015 Q2	2015 Q3	09/15	10/15	11/15
Net lending (+) / borrowing (-) capacity	-6.9	-5.9	-0.7	-3.0	-3.1	-3.1	-	...
Central government ¹	-4.9	-3.9	-1.0	-2.1	-2.4	-2.4	-2.2	-2.6
Autonomous regions	-1.6	-1.7	-0.2	-0.9	-1.0	-1.0	-1.2	-1.3
Local government	0.6	0.6	0.1	0.2	0.3	0.3	-	...
Social Security	-1.1	-1.0	0.3	-0.4	-0.3	-0.3	-0.3	-0.3
Public debt (% GDP)	93.7	99.3	99.7	99.3	99.3	99.3	-	...

Note: 1. Includes measures related to bank restructuring but does not include other central government bodies.

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

Financing and deposits of non-financial sectors

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

	2013	2014	2015 Q1	2015 Q2	2015 Q3	09/15	10/15	11/15	Balance 11/15 ¹
Financing of non-financial sectors²									
Private sector	-7.5	-6.2	-4.8	-4.2	-4.3	-4.4	-3.4	-3.4	1,659.1
Non-financial firms	-9.3	-7.0	-5.4	-4.6	-4.7	-4.9	-3.4	-3.6	925.9
Households ³	-5.0	-5.1	-4.2	-3.7	-3.6	-3.7	-3.4	-3.2	733.2
General government ⁴	16.8	6.9	5.0	4.0	3.8	4.1	3.9	4.4	1,067.9
TOTAL	-0.5	-1.8	-1.3	-1.2	-1.3	-1.2	-0.7	-0.5	2,727.0
Liabilities of financial institutions due to firms and households									
Total deposits	2.1	-0.9	-1.3	-1.2	-1.1	-1.1	-0.4	-1.0	1,152.5
On demand deposits	4.2	10.8	17.9	19.5	18.8	19.2	19.4	16.9	379.5
Savings deposits	-0.1	5.8	10.5	12.3	13.7	14.4	16.1	15.0	248.9
Term deposits	1.7	-7.6	-13.5	-15.5	-16.3	-16.8	-16.0	-16.3	503.1
Deposits in foreign currency	16.8	1.1	8.9	10.5	5.1	4.4	-4.1	-1.9	21.0
Rest of liabilities ⁵	-16.8	-8.2	-11.4	-11.5	-14.0	-9.6	-12.8	-11.6	103.9
TOTAL	-0.2	-1.7	-2.3	-2.2	-2.3	-1.8	-1.5	-1.9	1,256.4
NPL ratio (%)⁶	13.6	12.5	12.1	11.0	10.7	10.7	10.6	10.3	-
Coverage ratio (%)⁶	58.0	58.1	58.5	60.0	60.6	60.6	60.2	60.3	-

Notes: 1. Billion euros. 2. Resident in Spain. 3. Including NPISH. 4. Total liabilities (consolidated). Liabilities between different levels of government are deduced. 5. Aggregate balance according to supervision statements. Includes asset transfers, securitized financial liabilities, repos and subordinated deposits. 6. Data end of period.

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

NEW TECHNOLOGIES AND THE LABOUR MARKET

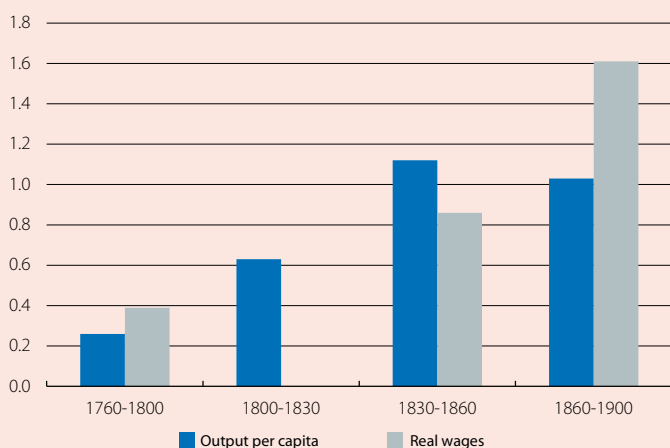
Automation: the dread of workers

In a world where machines not only carry out orders and think but are also starting to learn, the chances to automate jobs could increase beyond belief. But if machines do our work, what will we do? This is what many workers and also quite a few economists dread. However, what some see as a threat, others perceive as an opportunity: contrasting views that are repeated every time a technological change shakes up our society's *status quo*.

Automation can affect employment in different ways. In general, those who fear being replaced by machines at work base such misgivings on the «substitution effect» because automation was, is and will be a clear substitute for numerous jobs, leading to the destruction of employment in certain sectors and occupations. At the beginning of the 20th century just over 40% of the US workforce was employed in the agricultural industry, far from today's figure of 2%. Nevertheless the US is still one of the world's main producers and exporters of agricultural products and its unemployment rate is at a very low 5%.

United Kingdom: output per capita and real wages

Annual change, average (%)



Source: Allen, R. C. (2009). «Engels' pause: Technical change, capital accumulation, and inequality in the british industrial revolution», *Explorations in Economic History*.

In spite of the similarities we may find between the current situation and what has happened in the past, there are several factors that suggest the cycle we are currently experiencing is different. The exploitation of big data and advances in visual technology and language recognition could result in a genuine revolution in the development of artificial intelligence. A Fourth Industrial Revolution as it is already being called. In the not so distant future a machine could operate as a taxi driver or radiologist. According to a recent report by the consulting firm McKinsey, the current revolution would be able to substitute 45% of the tasks carried out by workers at present, a figure that comes close to the reduction from 40% to 2% in the US agricultural industry mentioned above (see «Will the Fourth Industrial Revolution come to Spain?» in this Dossier for more details on the different studies dealing with this area and for an analysis of Spain's situation).

In addition to the substitution effect there is also the complementarity effect. There are jobs where automation complements the worker and, in such cases, machines actually increase worker productivity, also leading to a rise in their income. Beyond these two effects (substitution and complementarity), what critics of automation often ignore is the fact that technological innovation expands the boundaries of production: more can be produced with the same resources (GDP, or the size of the economic pie or income to be distributed, grows). Consequently, the level of economic activity clearly increases if the resources released by new technologies are used to carry out other tasks and produce other goods and services (which may or may not be related to the technology developed). This is the analysis carried out by economists such as David Autor from the Massachusetts Institute of Technology which alleviate the fears of the new era of intelligent machines. When it comes down to it, and as he says in one of his articles «Clearly, the past two centuries of automation and technological progress have not made human labor obsolete».¹ Moreover, the Industrial Revolution (1760-1840) brought with it economic growth on a huge scale.²

Although the long-term virtues of the Industrial Revolution are evident, not everyone gained from the change in the short term. Obviously the first people to suffer were the workers who lost their jobs when they were replaced by the new machines. Moreover, those workers who did not lose their jobs did not see their real wages rise for decades although their productivity improved substantially (see the graph showing the slow rise in wages between 1800 and 1860).³ On the other hand the wages of workers with greater technological skills did not rise either, in spite of the advantage represented by such skills during the era of industrialisation (known as the wage skill premium effect).⁴

1. See Autor, D. H. (2015). «Why are there still so many jobs? The history and future of workplace automation». *The Journal of Economic Perspectives* 29, no. 3 (2015): 3-30.

2. As from the Industrial Revolution there were significant advances in GDP per capita, according to estimates by Angus Maddison.

3. See Allen, R. C. (2009). «Engels' pause: Technical change, capital accumulation, and inequality in the British industrial revolution». *Explorations in Economic History*, 46 (4), 418-435.

4. See Mokyr, J. (2005). «Long-term economic growth and the history of technology». *Handbook of economic growth*, 1, 1113-1180.

Joel Mokyr, an expert in economic history from the US University of Northwestern, suggests that the role of institutions may be the reason for this failure to pass on improvements in productivity to wages.⁵ He mentions, for example, traditions such as farm workers having to use their master's mill or the mercantilism system itself as practices that allowed just a few people to benefit from the income generated via technological progress. In this respect it is notable how institutional reforms, which helped to eliminate the monopolies and privileges hindering competition, provided the right environment for a better distribution of income and ensured sustained technological progress.

The reduction of the labour share of income (compared with the capital share) in most advanced countries over the last few decades is presented as proof of the impact on the labour market of today's technological advances, as well as the need for institutional change to check this trend (see the article «How to take advantage of the positive impact of technological change on employment?» in this Dossier to find out more about the institutional actions proposed as a result of the current revolution). However, it is important to note that technology alone may not have caused this labour share reduction. Among other elements of note is globalisation (with the entrance of workers from poor countries into the labour market of rich countries via trade and offshoring) or the trade unions' loss of power.⁶

The effect of automation on the polarisation of workers' wages, however, does seem to be a phenomenon where there is greater consensus among experts. The fact that today's robots are capable of substituting professionals with intermediate skills and medium level wages might be an important factor that explains the increase in such polarisation. Nonetheless, in this aspect elements such as globalisation once again come to the fore, causing the same kind of dichotomy in wages.

In summary, it is complicated to predict the effects the machines of the future may have on the world of work as we understand it today. But it does seem likely that, if we create them, the C-3POs and R2-D2s of tomorrow will aim to make our lives more comfortable. Nonetheless, adjustments made during this process of global improvement could be important for those workers more directly affected by the competition represented by machines that can do their work. We therefore need institutions that promote technological development without ignoring the people that might be negatively affected in the short term.

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5. *Ibid.*

6. See CaixaBank Research (2014). «Wages in perspective», Dossier in the *Monthly Report* of February 2014.

How to take advantage of the positive impact of technological change on employment?

At the beginning of the 19th century a group of English tradesmen known as the «Luddites» reacted to the introduction of industrial looms, destroying the machines that threatened to supplant their profession and put lower skilled workers in their place. This instinctive resistance to a rival taking away their work did not succeed: the introduction of looms was delayed for a while but, in the end, technological improvements were implemented.¹ Today new technologies are also altering the labour market and a Luddite reaction is not going to stop them. In fact the environment in which this change occurs and how those affected react will influence the scope of this potential growth and how it comes about, especially in the short term. This article analyses how the regulatory framework should be modified to be able to make the most of this potential at the same time as minimising the possible negative effects on the labour market.

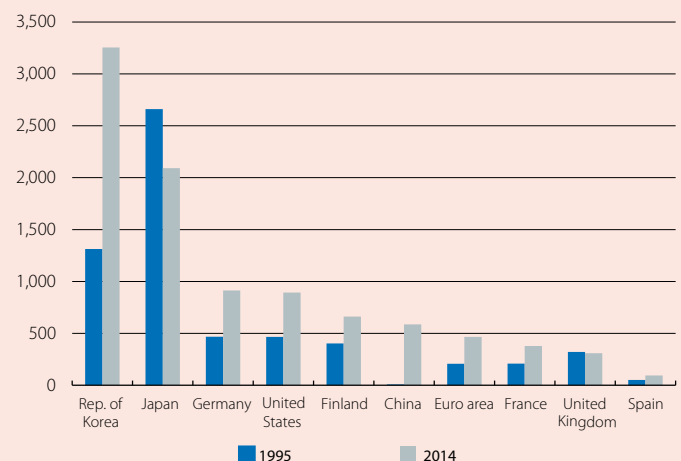
Although the implementation of new technologies is beneficial in the long run as they shift the boundaries of production, it also involves a process of adaptation (for more detail see the article «Automation: the dread of workers» in this Dossier). Different elements can help to reduce the time required for society to start using new technologies, in particular the role played by institutions. To maximise the positive impact of new technologies on the labour market, the environment must be such that they can be passed on quickly to the economy and new companies and new jobs be created as a result. This seems to be happening in some countries but not in others: technological advances are being incorporated at differing speeds. Patents provide an example of this: while in Korea there were more than 3,000 patent applications per million inhabitants in 2014, in the euro area these totalled 460 and, in countries such as Spain, fewer than 100. Moreover an innovative firm (for example a new Google) must be able to expand and increase in size: numerous start-ups are created in Europe but few actually grow, either due to a lack of access to capital markets or for other reasons.

To be able to speed up the implementation of new technologies, on the one hand governments could promote essential infrastructures and eliminate institutional barriers to such technologies. In the European case, for example, progress could be made in creating a single digital market that increases the potential benefits of both firms and individuals. The state could also adapt legislation to make it easier to create companies and start-ups, as well as putting more measures in place to ensure that the first companies to arrive do not abuse their excessive market power and block their rivals' entry. It could also help the workforce to have the right skills in order to take advantage of new technologies in the labour market, in particular in tasks that are complementary to those that can be automated, by means of education and training policies (see the article «The unavoidable metamorphosis of the labour market: how can education help?» in this Dossier).

On the other hand, new technologies could potentially have a negative impact in the short term as they directly harm some workers who lose their jobs or see their wages cut due to automation (see the article «Will the Fourth Industrial Revolution come to Spain?» in this Dossier). For these workers it is important to have the right passive and active employment policies in place to mitigate the negative impact and help them find new employment.² Nevertheless the digital economy has also helped to increase some kinds of work such as part-time workers, freelancers and workers in the gig economy³ (for example Uber). In this respect labour laws must be adapted to cover new employment relations because these are no longer in line with the classic

Patent applications by country

Number of applications per million inhabitants



Source: CaixaBank Research, based on data from the World Intellectual Property Organization.

1. Their only contribution would be what Hobsbawm called «collective bargaining by riot», a fruitless attempt to secure better wage conditions via multitudinous protests (because the industries are spread throughout the territory).

2. For more details see the Dossier: «Policies to activate the labour market» in MR09/2015.

3. A gig economy refers to those workers applying internet applications created by intermediary firms to look for clients for whom they carry out short-term engagements.

patterns. Harris and Krueger,⁴ for example, propose a specific status for independent workers in the gig economy who cannot be considered as employees (as they only work when they want) or entirely self-employed (as the company sets the prices and conditions for the service). According to the authors this status would include rights such as belonging to a trade union but not others (minimum wage, unemployment benefit or overtime, which is difficult to calculate) as the workers themselves decide when to work.

Lastly technological advances have also contributed to a significant proportion of the growing polarisation of the labour market by increasing wage dispersion,⁵ benefitting workers who carry out tasks that are harder to replace or more complementary to these technological advances (and in detriment to those carrying out more repetitive tasks that are therefore easier to automate, normally in intermediate occupations). These technological changes have also increased job opportunities at the two extremes of the distribution of occupations while reducing those in the middle.

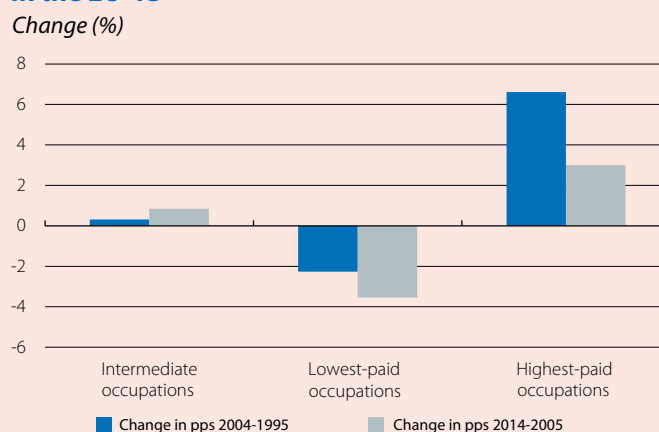
As a result, technological change has intensified wage inequality among workers, which could affect the economic growth of developed countries. As countries develop, investment in human capital becomes a more decisive factor in growth (in a similar way investment in physical capital was in the first phases of the development).⁶ An increase in inequality could therefore lead to under-investment in education by part of the population, which would result in lower aggregate growth⁷ unless public policies guarantee access to good quality education for the most disadvantaged groups. Given this situation, it is essential that the redistribution of part of the profits generated by technology lead, via public policies, to effective equal opportunities and ensure that no-one is excluded. On the one hand it is necessary to ensure that the tax system continues to produce enough resources to implement such policies. For example, the effects must be examined of a sharp rise in labour market polarisation on tax revenue and the necessary adjustments made to ensure a suitable level of revenue. On the other hand, education and social policies also need to be designed and implemented properly to ensure an adequate investment in the human capital of workers. In any case such systems need to have a thorough assessment system to ensure that they are effective.

Another type of measure to reduce inequality could be aimed at workers becoming shareholders, also owning the profits generated by the technological advances enjoyed by the owners of innovative companies. Kaplan has proposed that the US Government economically incentivise those companies where a large proportion of the shares are listed to bring potential profits within reach of a larger number of individuals,⁸ although greater stock market capitalisation might not be without its problems as this tends to favour a more short-term view when taking business decisions.

In conclusion, destroying the robot that can automate a job would not be the best solution to a potential loss of employment as, in the long run, technological innovations improve the well-being of the whole of society. However, it is important to decide which public policies are most suitable to ensure that everyone can enjoy such gains.

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Change in employment by occupational level in the EU-15



Note: Lowest-paid occupations: ISCO 1, ISCO 3 and ISCO 5; intermediate occupations: ISCO 2, ISCO 4 and ISCO 6, and highest-paid occupations: ISCO 7, ISCO 8 and ISCO 9.

Source: CaixaBank Research, based on Eurostat data (EU Labour Force Survey).

4. Harris, S. and Krueger, A. (2016), «A proposal for modernizing labor laws for the twenty-first-century work: the 'independent worker'», Policy Brief 2015-10, The Hamilton Project.

5. OECD (2011), «Divided We Stand: Why Inequality Keeps Rising», OECD Publishing, Paris.

6. Galor, O. (2011), «Inequality, Human Capital Formation and the Process of Development», Handbook of the Economics of Education, North Holland.

7. IMF (2014), «Origins and Consequences of Income Inequality: A Global Perspective», IMF Discussion Note 15/13. OECD (2015), «In It Together: Why Less Inequality Benefits All», OECD Publishing, Paris.

8. Kaplan, J. (2015), «Humans Need Not Apply: A Guide to Wealth and Work in the Age of Artificial Intelligence», Yale University Press.

Will the Fourth Industrial Revolution come to Spain?

If you think that a robot is unlikely to replace you in your job, perhaps this article will prove you wrong. Your opinion might be based on the fact that, in the past, automation of the economy was limited to repetitive tasks such as mental calculation (calculators), copying texts and images (computers and printers) and cleaning (dishwashers).¹ However, forthcoming technological improvements will permit the automation of non-repetitive tasks that, to date, are the exclusive domain of humans. This article analyses the impact of such changes on the labour market, considered by some experts to be the Fourth Industrial Revolution.

Profession and risk of automation

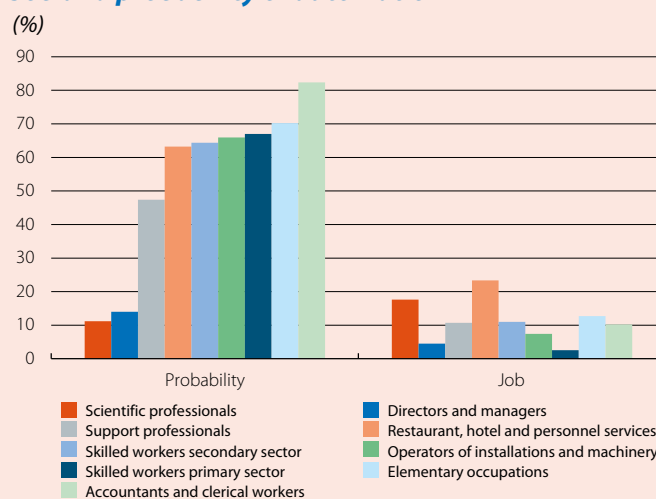
Profession	Risk group	Probability
Family physicians	Low	0.42%
Composers, musicians and singers	Low	4.45%
Economists	Medium	43.00%
Financial analysts	Medium	46.00%
Transporters (cars, taxis, vans)	Medium	56.78%
Accounting staff	High	97.00%
Telemarketing operators	High	99.00%

Source: CaixaBank Research, based on data from Frey and Osborne (2013) and the Spanish Statistics Institute (INE).

Sloan-Kettering Cancer Center of New York, IBM's Watson robot provides diagnoses and treatments from an extensive database of medical reports and scientific articles. Consider also Google's car, which shares the information from its sensors with a highly detailed road map, specifying the exact position of streets, signs and obstacles, to decide in real time whether to turn, brake or accelerate according to what other cars and pedestrians are doing.

Technology has advanced so much that a study by McKinsey estimates that, today, 45% of the tasks existing in the US could be automated.² But we must not confuse tasks with jobs: a job or a profession is made up of many different tasks such as social interaction or physical exercise. To evaluate the impact on employment we must analyse how many tasks from each profession are at risk of being automated, which is precisely what two professors from Oxford University have done, namely Carl B. Frey and Michael A. Osborne.³ Their analysis identifies three groups of tasks which technology will still not be able to carry out in the next two decades: perception and manipulation in unstructured environments,⁴ creative intelligence (making a joke) and social intelligence (persuading someone). According to the relative importance of these three types of task, Frey and Osborne calculated the probability of each profession being computerised.⁵ For the US they produced a list with 702 professions and the probability of computerisation associated with each of them. If we convert their US classification to the Spanish case we can estimate the effect on a list of 485 professions in Spain. The first table shows examples of professions according to the risk of automation.

Job and probability of automation



Source: CaixaBank Research, based on data from Frey and Osborne (2013) and the Spanish Statistics Institute (INE).

1. See also the article «Automation: the dread of workers», in this Dossier.

2. McKinsey & Company (2015), «Four fundamentals of workplace automation», McKinsey Quarterly, November 2015. Breaking down each task into multiple capabilities (e.g. for the task «receiving clients» one needs capabilities such as the perception and transmission of emotions), they evaluate the percentage of capabilities involved in each task that current technology is able to reproduce.

3. Frey, C. and Osborne, M. (2013), «The Future of Employment: How Susceptible Are Jobs to Computerisation?», Working Paper.

4. For example, it is much more difficult to program a robot to find a book in a back room (unstructured environment) than on the organised shelves of an Amazon warehouse.

As we have already mentioned, it is estimated that technology is already capable of automating skilled professions (see the risk faced by accountants, financial analysts and economists), while those in which human interaction and creativity are more important (family physicians, musicians) are the most protected. This is also illustrated by the first graph, where we have classified professions into nine large groups. Scientists (creativity) and managers (social interaction) face little risk while office workers are concentrated in the high risk group.

Share of employment by risk

Risk of automation	Spain	US	UK
Low (< 33%)	29%	33%	37%
Medium (33-66%)	28%	10%	28%
High (> 66%)	43%	47%	35%

Source: CaixaBank Research, based on data from Frey and Osborne (2013), Bank of England and the Spanish Statistics Institute (INE).

On the whole, according to our estimates 43% of the jobs that currently exist in Spain have a high risk (with a probability higher than 66%) of being automated in the medium term while the rest of the jobs are shared equally among the medium risk (between 33% and 66%) and the low risk group (below 33%).

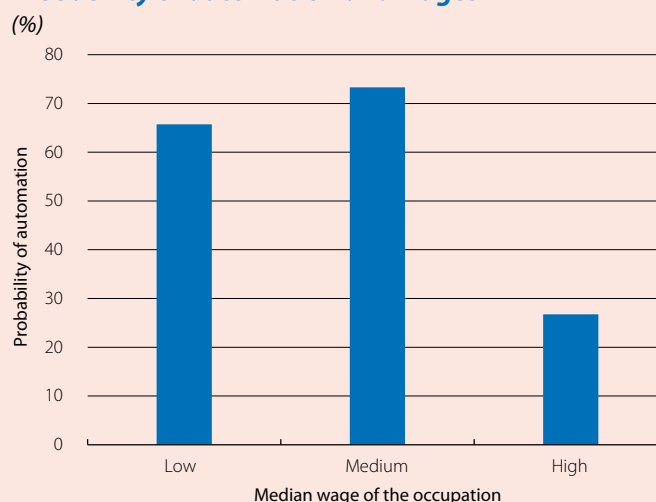
However, we must not confuse the potential to automate the economy with the disappearance of jobs. Technology destroys professions but not the opportunity to work. Automation of the

professions we know today offers the chance to redirect the nature of work, releasing workers so they can dedicate themselves to new activities in which they can develop all their potential, as exemplified by the vacuum cleaner and washing machine relieving people from housework. Most workers spend a large part of their time doing tasks in which they do not take advantage of their comparative advantage over robots,⁶ so there is great potential to create new professions if institutions and individuals take advantage of this opportunity.⁷ Robots have a great capacity for logic and handling big data but inspiration, intuition and creativity are far beyond their scope.⁸

Technological improvements provide the chance to enrich society as a whole but, apart from technological potential, there are important economic factors determining their adoption and impact on society. On the one hand companies will adopt technology only if it is cheap enough. For example, in the last few decades the reduction in the cost of computers has led to workers with intermediate skills being replaced when they carried out repetitive tasks that are easy to specify in an algorithm, contributing to the polarisation of the labour market and increased inequality.⁹ This leads us to another relevant economic aspect: the distribution of new wealth. Our data indicate a negative correlation between the likelihood of a profession being automated and its annual median wage, suggesting a possible increase in inequality in the short term.

In the long term, in a world where robots were capable of carrying out absolutely all tasks, the distribution of income and wealth—rather than resource scarcity—would be the main *raison d'être* for economists.¹⁰ If such a profession exists in the future.

Probability of automation and wages



Source: CaixaBank Research, based on data from Frey and Osborne (2013) and the Spanish Statistics Institute (INE).

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5. A group of robotics researchers, brought together by Oxford University, analysed 70 professions and assigned to each case a probability of 1 if they thought that all the tasks of the profession in question could be carried out with the most advanced technology we have today, and 0 in any other case. They then extrapolated this classification to a universe of 702 occupations with a probability-based model of allocation based on nine variables describing the degree of perception, manipulation, creativity and social intelligence required to carry out each task within an occupation.

6. McKinsey's report estimates that, at present, only 4% of jobs in the US are demanding in terms of creativity.

7. See also the article «How to take advantage of the positive impact of technological change on employment?» and «The unavoidable metamorphosis of labour market: how can education help?» in this Dossier.

8. See Autor, D. H. (2015), «Why Are There Still So Many Jobs?», Journal of Economic Perspectives, page 3-30.

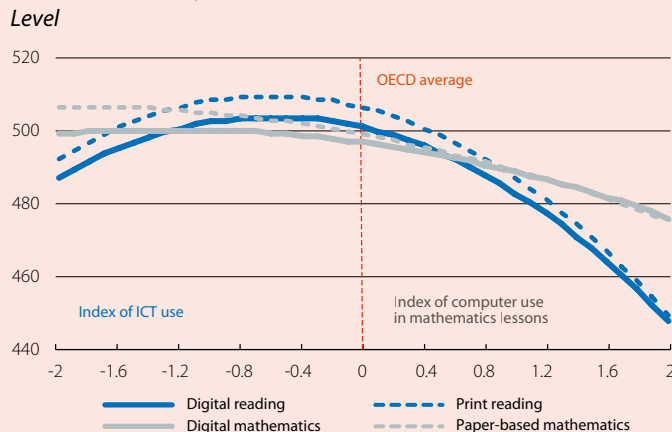
9. See also the article «How to take advantage of the positive impact of technological change on employment?» in this Dossier.

10. See also Keynes, J. M. (1930), «The Economic Possibilities for our Grandchildren». In such a world moral principles would be redefined and deciding what to do with our lives, free from material restrictions, would be the biggest challenge we would face.

The unavoidable metamorphosis of the labour market: how can education help?

After a technological shock, part of the existing labour supply becomes obsolete and must transform to become useful once again. But this metamorphosis is not immediate: there is a tough period of adaptation while workers acquire the knowledge and skills required. When technology advances so quickly the education system cannot adapt at the same pace,¹ unemployment and the wage gap increase and, consequently, inequality. Minimising such a period of adjustment is therefore incredibly important and it is vital to anticipate this and design measures in the area of education that help to reduce the costs of this transition.²

Performance by the use of technologies *



Note: * This shows the association between knowledge and use of technologies, taking the socio-economic variables of pupils and schools into account.

Source: CaixaBank Research, based on OECD data.

No-one doubts that technological innovation offers huge opportunities, also in the field of education as, among other things, it exponentially increases access to knowledge and collaboration between educators in creating material. Learning via online courses, for example, means you have the best teachers, content and methods at a very low cost, in turn encouraging more traditional centres and trainers to modernise in order to compete. However, the impact of technology as a support for education is still small. In spite of the notable increase in technological resources (in 2003 13.4% of teachers in the OECD believed a lack of computers to be a limiting factor on their capacity to teach compared with 8.7% in 2012), there is no evidence that, at present, this greater availability of IT is adding value to teaching. According to the OECD report «Students, Computers and Learning. Making the Connection», students who use computers very frequently at school tend to perform significantly worse in most of the areas of learning,

even when social differences are taken into account (see the first graph). Similarly, no appreciable improvement has been observed in reading, mathematics or knowledge of science in those countries investing heavily in information and communication technologies (ICTs) in their education systems.

One interpretation of this inappreciable contribution by ICTs to academic results is that intense interaction is required between pupils and teachers in order to understand many concepts and technology might distract from this valuable human contact. Another highly plausible explanation is that we have yet to develop the kind of pedagogical material that takes advantage of technology. In other words, education professionals are still not capable of making the most of technological resources for teaching. In fact, 18% of secondary school teachers in the OECD state that they have a great need for professional development in the use of these tools to produce their classes (see the second graph).³ So we might expect that, as teachers are better trained in using ICTs, the results will be increasingly satisfactory.

The metamorphosis of the education system does not only consist of progressing in the use of ICTs but must go beyond this and identify those attributes that will be most valued in the labour market in the future. Common sense tells us that these will be the attributes that are harder to replace with technology; i.e. exclusive to humans, such as creativity, motivation, innovation, cooperation, intuition, the capacity to communicate and be enterprising, persuasion and originality. In fact, empirical evidence confirms that jobs requiring such non-cognitive qualities have a lower risk of disappearing because they have a comparative advantage over machines (see the article «Will the Fourth Industrial Revolution come to Spain?» in this Dossier). Some of the sectors that require, for the time being, this kind of attribute would be, for example, health, education, social services and art.⁴

Unfortunately, these characteristics are not given all the importance they deserve in today's educational system. Rote learning still figures too prominently and teaching tends to focus on subjects that were indispensable in the decades when the schools

1. Goldin, C. and Katz, L. F. (2008), «The Race between Education and Technology».

2. Apart from the educational system, the regulatory framework must also be adapted in other aspects to help the labour supply (see the article «How to take advantage of the positive impact of technological change on employment?» in this Dossier).

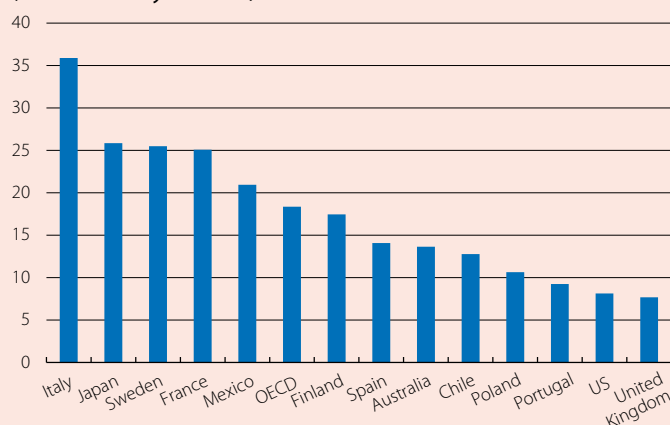
3. See OECD (2014), «TALIS 2013 Results: An International Perspective on Teaching and Learning», TALIS, OECD Publishing.

4. See Frey, C. B. and Osborne, M. A. (2013), «The Future of Employment: How Susceptible are Jobs to Computerization?», Oxford University Programme on the Impacts of Future Technology.

were designed but which are now insufficient in the new environment.⁵ Given that the teaching practices of the 20th century do not prepare pupils adequately for the star attributes of the 21st century, it is vital to innovate. In other words, educational plans cannot operate by inertia alone but must be continuously updated. Some methodologies that stimulate cooperation, initiative, responsibility and learning through curiosity from the pre-school stage such as the Montessori or Waldorf system tend to achieve excellent results⁶ and it is no coincidence that the founders of Google, Wikipedia and Amazon went to this kind of school. Another recent trend is the structuring of education via multidisciplinary projects instead of the traditional subjects, with the aim of encouraging pupils to manage their own work, promoting teamwork and the ability to adapt to change.

Perceived need for ICT skills for teaching

(% of secondary teachers)



Source: CaixaBank Research, based on data from the OECD, «TALIS 2013 Results: An International Perspective on Teaching and Learning».

However, not all educational inventions end up producing the desired outcome. For this reason it is essential to carry out a thorough evaluation and take advantage of the experiences of state of the art centres. Here technology can once again be of great help as it can hugely facilitate and accelerate an analysis of trends in the different training methods. One highly illustrative example is the OECD Education Policy Outlook 2015 which reviews an incredibly varied assortment of educational reforms implemented in different countries between 2008 and 2014 and highlights some interesting cases. For example, the Innolukio programme in Finland connects higher secondary school with companies and supports creative training via different tools such as holding a competition for innovative projects. The excellence of teaching staff is also fundamental to achieving good results in learning and, for this reason, many countries have implemented reforms with this aim in mind, such as the O SAAVA programme in Finland that provides

ongoing guidance for teachers, and the GNIST programme in Norway that aims to convert the most qualified students into teachers. Nevertheless, in spite of the large number of new measures the OECD report also points out that in just 10% of the cases was there any formal follow-up after the reform was implemented, so that it is not clear how effectively the goals were reached. More rigorous measurement of the impact of policies therefore seems to be essential in order to develop best practices in education.

In this vital process of reforming the educational system, collaboration between educational centres and companies is fundamental. Knowing the opinion of business people regarding how they see the future of employment could be very useful to redirect education towards those professions less likely to disappear. The results of a survey carried out by the World Economic Forum with multinational executives are compelling: according to the respondents, computing and mathematics will see big growth in a wide range of industries⁷ but there is a small percentage of men and women in OECD countries (10% and 7% respectively) with this kind of training. This suggests that, today, few workers are qualified to carry out the professions of the future, which confirms the pressing need to redirect education towards this new demand for labour. Greater cooperation between companies and schools is also more viable if there is a well-established dual training system, such as in Germany, Austria and Denmark. In these countries, companies are involved with training to make sure this meets their needs. Moreover, as programmes tend to last more than two years, companies end up recovering the cost of their investment as the student gradually carries out more productive tasks. The fact that several countries are implementing changes in this direction is certainly positive.⁸

In summary, the technological revolution we are witnessing brings great possibilities but also huge challenges for society. Among other demands it requires an inevitable transformation in education that takes the utmost advantage of ICTs and teaches the new skills of the future. We cannot take our foot off the accelerator or the adverse impact of technical progress in terms of winners and losers will diminish the beneficial effects of new technologies.

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

6. See OECD (2013), «Innovative Learning Environments, Educational Research and Innovation», OECD Publishing.

7. See the World Economic Forum (2015), «The Future of Jobs: Employment, Skills and Workforce Strategy for the Fourth Industrial Revolution».

8. See OECD (2015), «Education at a Glance: OECD Indicators», OECD Publishing.

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As of June 30, 2015

	MILLION €
Customer funds	296,412
Receivable from customers	211,559
Profit attributable to Group (January-June 2015)	708
Market capitalisation	23,961
Customers (million)	13.8
Staff	33,157
Branches in Spain	5,345
Self-service terminals	9,724

"la Caixa" BANKING FOUNDATION COMMUNITY PROJECTS: BUDGET 2015

	MILLION €
Social	336
Science and environmental	56
Cultural	67
Educational and research	41
TOTAL BUDGET	500

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