MR05

MONTHLY REPORT • ECONOMIC AND FINANCIAL MARKET OUTLOOK

NUMBER 401 | MAY 2016

Trend in global inflation (%). Source: IMF

ECONOMIC & FINANCIAL ENVIRONMENT

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DOSSIER: DECIPHERING THE ENIGMA OF LOW INFLATION

How is inflation measured?

On the use and abuse of inflation expectations embedded in asset prices

The quest for missing inflation

A brief history of inflation as a monetary phenomenon

CaixaBank Research

MONTHLY REPORT - ECONOMIC AND FINANCIAL MARKET OUTLOOK

May 2016

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Why isn't inflation higher?

One of the biggest enigmas of the current economic situation is the evolution of inflation in developed countries. In spite of implementing extraordinarily accommodative monetary policies, in a large part of the developed world prices have only grown very slightly and in some cases there have even been brief episodes of deflation. This seems to cast doubt on the validity of one of economics' most outstanding laws: namely, and to paraphrase Milton Friedman, that inflation is always and everywhere, at least in the long term, a monetary phenomenon.

The Dossier in this *Monthly Report* provides information and analyses this question, examining the key points in the debate. Firstly, measuring inflation and to what extent statistics are able to accurately capture improvements in the goods and services provided to citizens. In the digital era, more effort must be made to ensure official data reliably reflect a quickly changing reality. Without a good indicator for inflation we are unlikely to reach a correct diagnosis of the problems economic policy needs to tackle.

Secondly, evaluating inflation expectations, given that these help to determine the actual level of inflation observed. Here the Dossier urges a measure of caution when using expectations indicators based on the price of some financial products. As in other areas of the economy, the fact that a financial product is traded on an organised market does not necessarily mean it provides an accurate picture of the underlying value of certain economic variables.

Equipped with these basic tools, readers of the Dossier can then explore this issue further via a systematic examination of the different factors that may result in long-term low inflation. By way of a summary, here is a list of the main ones:

The first is the drop in commodity prices. The third article in the Dossier looks at the mechanisms through which this drop affects the rest of the price index components, pointing out that it is having a widespread and persistent impact on core inflation, in spite of being a temporary shock.

Second is the excess supply which, after the Great Recession, reached very high levels that are turning out to be difficult to eliminate. In some countries, such as the United States, the level of GDP is already close to its potential, but some analysts believe that the inflation of a specific country also depends on global excess capacity.

Third, the credibility of central banks, which has reduced price sensitivity to the cyclical situation of the economy. Throughout the crisis this factor has helped to avoid deflation but it also makes it difficult for the inflation rate to go up again once the economy starts to recover.

Four, the failed transmission mechanism of monetary policy due to the nature of the crisis we have just been through. After a debt crisis involving the bursting of asset bubbles and the deleveraging of many participants (financial and non-financial), expansionary monetary policies are passed on very slowly to final demand for goods and services, and only as economic agents manage to balance their books again.

In conclusion, the mystery of absent inflation can only be solved if we take into account the fact that many different factors determine inflation and that, consequently, there are many reasons why it remains so low. Given the unusual extent of the monetary policies developed by central banks to achieve their growth and inflation targets, the list of factors we have mentioned provide a useful guide to those issues that need to be examined to ensure future economic policy is flexible enough and therefore capable, when the time comes, of welcoming inflation, at the same time ensuring the problem of insufficient growth in prices does not become a different problem of excessive growth.

Jordi Gual
Chief Economist
30 April 2016

CHRONOLOGY

APRIL 2016

29 The government presents the **2016-2019 Stability Programme**, with a more relaxed fiscal consolidation target. Specifically, the deficit for 2016 has been raised by 0.8 pps to 3.6% while the target of bringing the deficit below the figure of 3% set by the Stability and Growth Pact has been postponed to 2017.

MARCH 2016

10 The ECB cuts its benchmark interest rates (the Refi rate to 0%, the marginal lending facility to 0.25% and the deposit facility yield to -0.40%), makes changes to its asset purchase programme (extending the monthly rate of purchases by 20 billion up to 80 billion and including corporate bonds in the basket of eligible assets) and announces four new 4-year refinancing operations (TLTRO II) at an interest rate that could be –0.40% if lending benchmarks are reached.

FEBRUARY 2016

1 Start of the primaries to elect the candidates for the US presidential elections to be held on 8 November 2016.
24 The European Banking Authority publishes the methodology and macroeconomic scenarios to carry out stress tests on Europe's banking system.

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.

AGENDA

MAY 2016

4 Registration with Social Security and registered unemployment (April).
6 Industrial production index (March).
18 Loans, deposits and NPL ratio (March).
Japan's GDP (Q1).
20 International trade (March).
26 Quarterly national accounts (Q1).
30 CPI flash estimate (May).
Index of economic sentiment euro area (May).
31 State budget execution (April).
Balance of payments (March).

JUNE 2016

2 Governing Council of the European Central Bank.
Registration with Social Security and registered unemployment (May).
7 Industrial production index (April).
14 Fed Open Market Committee.
16 Quarterly labour cost survey (Q1).
17 Loans, deposits and NPL ratio (April).
20 International trade (April).
28 European Council.
State budget execution (May).
29 CPI flash estimate (June).
Household savings rate (Q1).
Index of economic sentiment euro area (June).
30 Balance of payments (April).
Net international investment position (Q1).

World growth is speeding up

The economic toll of the financial turbulence seen at the beginning of the year has been limited and, since March, the investment climate has gradually changed for the better. Without a doubt, essential to this change have been the more accommodative messages of the Federal Reserve (Fed), the considerable expansionary measures of the European Central Bank (ECB) and the negative interest rates set by the Bank of Japan (although, subsequently, the latter surprised investors by keeping its bond purchase programme unchanged). But what has really been crucial, in our opinion, is the confirmation that the world economy, although still facing growing risks, is continuing to speed up its growth. Against the gloomiest predictions, the US has not entered a recession (although it has certainly slowed down), China is on the way to confirming its soft landing, Europe is growing more than expected (yes, your eyes do not deceive you: there has been the pleasant surprise of growth in the euro area) and capital has once again started to flow towards the emerging economies. Nevertheless, none of these justifies a complacent interpretation of the situation in which the global economy currently finds itself. The emerging economies are far from consolidated and a close eye will have to be kept on the specific situation of countries that are still too exposed to risk (Brazil and Russia in particular) and on confirmation that capital is truly flowing back to the emerging zone. The moment of truth will obviously come when the Fed once again starts to toughen up its monetary policy after what we believe has been a temporary pause. Then, with the dollar and interest rates on the up, we will see just how resilient the emerging economies are. Developments in China will also have to be monitored closely as the country is facing the challenge of managing to alter its production model without knocking the bottom out of growth. And, at a more global level, another vital factor is how debt is managed, as it just keeps on growing. In some countries the problem is the absence of private deleveraging while in others it is public deleveraging but eight years after the Great Recession, excess debt is still with us.

The US temporarily slows down while the euro area speeds up. The US economy grew less than expected in Q1. We believe, however, that this will be a temporary slowdown since part of the downward shift has been the result of the negative contribution made by inventories, which should reverse over the coming months. Moreover the support factors (accommodative monetary conditions and a dynamic labour market) have continued. Given this situation, inflation is still contained but the forecasts suggest that it should pick up appreciably once the base effect caused by 2015's slump in oil prices disappears. Growth in the euro area was also surprising in Q1 although, in this case, because it was larger than expected. While this figure is preliminary and should be taken with caution, it does confirm that the scenario of recovery is becoming more solid. If growth represents the light, then the dark is still inflation which is looking unexpectedly reluctant to recover. Nevertheless we still believe this dissonance between an economy that is growing and the absence of inflation is temporary in nature and that, already in 2016, there will be more evident growth in prices.

Spain confirms a positive Q1. In spite of the uncertainty experienced in Q1, the Spanish economy has been able to maintain a high rate of growth (0.8% quarter-on-quarter in the first three months of the year, identical to the preceding quarter). According to available indicators the driving force behind this expansion was, as in the previous quarter, domestic demand which has remained notably strong although the foreign sector might be gradually catching up. This is the tone we predict for the remainder of the year: domestic demand, expansionary although somewhat less than in 2015, will join forces with a growing contribution from the foreign sector. This dynamic will result in notable growth of 2.8%, which will continue to be greater than that of its euro area partners and will help to create more than 400,000 jobs. As is widely known, this is the result of temporary support factors such as a lower average oil price than in 2015, the existence of favourable financial conditions (reflected in the positive number of new loans being granted), the euro's depreciation and a relatively expansionary fiscal policy. It is also the result of the structural reforms implemented which translate into a current surplus, an adjustment in the real estate sector and a very advanced process of private deleveraging. However, it should be noted that the Spanish economy is still facing significant challenges such as reducing unemployment and continuing its fiscal consolidation efforts that will help to lower the country's public debt.

FORECASTS

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

International economy

	2014	2015	2016	2017	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4
GDP GROWTH										
Global	3.4	3.1	3.3	3.6	3.1	3.0	3.2	3.2	3.3	3.5
Developed countries	*1.8*	*1.9*	*1.8*	*2.0*	*1.9*	*1.8*	*1.7*	*1.7*	*1.8*	*2.0*
United States	2.4	2.4	2.0	2.2	2.1	2.0	1.9	1.7	2.0	2.2
Euro area	0.9	1.5	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.8
Germany	1.6	1.4	1.6	1.7	1.7	1.3	1.4	1.4	1.6	1.9
France	0.2	1.2	1.4	1.4	1.2	1.4	1.3	1.5	1.5	1.5
Italy	–0.4	0.6	1.1	1.2	0.8	1.0	0.9	0.9	1.1	1.3
Spain	1.4	3.2	2.8	2.4	3.4	3.5	3.4	3.0	2.7	2.4
Japan	–0.1	0.5	0.6	0.7	1.7	0.8	–0.1	0.7	0.7	1.3
United Kingdom	2.9	2.3	2.1	2.2	2.2	2.1	2.1	2.0	2.1	2.1
Emerging countries	*4.6*	*4.0*	*4.3*	*4.9*	*4.0*	*3.9*	*4.2*	*4.2*	*4.4*	*4.6*
China	7.3	6.9	6.5	6.3	6.9	6.8	6.7	6.3	6.4	6.5
India[1]	7.2	7.4	7.4	7.6	7.7	7.3	7.2	7.3	7.4	7.4
Indonesia	5.0	4.8	5.1	5.4	4.7	5.0	4.9	5.0	5.2	5.3
Brazil	0.1	–3.8	–3.4	1.1	–4.5	–5.9	–5.7	–4.0	–2.7	–1.3
Mexico	2.2	2.5	2.7	3.2	2.8	2.5	2.7	2.5	2.7	2.9
Chile	1.9	2.1	2.2	3.2	2.2	1.3	1.5	1.7	2.5	2.9
Russia	0.7	–3.7	–1.1	1.3	–3.7	–3.8	–2.5	–1.8	–0.7	0.5
Turkey	3.1	4.0	2.9	3.4	3.9	5.7	3.8	3.0	2.2	2.5
Poland	3.3	3.6	3.5	3.5	3.5	4.1	3.5	3.5	3.6	3.5
South Africa	1.6	1.2	0.7	1.3	1.1	0.3	0.2	0.8	0.9	1.0
INFLATION										
Global	3.5	3.3	3.4	3.7	3.2	3.3	3.4	3.3	3.3	3.6
Developed countries	*1.4*	*0.3*	*1.0*	*2.1*	*0.2*	*0.4*	*0.7*	*0.7*	*1.0*	*1.4*
United States	1.6	0.1	1.3	2.5	0.1	0.5	1.1	1.0	1.3	1.8
Euro area	0.4	0.0	0.5	1.7	0.1	0.2	0.0	0.0	0.6	1.1
Germany	0.8	0.1	0.5	1.8	0.0	0.2	0.1	0.1	0.7	1.2
France	0.6	0.1	0.5	1.7	0.1	0.2	0.0	0.1	0.6	1.1
Italy	0.2	0.1	0.4	1.6	0.3	0.2	0.0	–0.1	0.5	1.0
Spain	–0.2	–0.5	0.0	2.2	–0.4	–0.3	–0.7	–1.0	0.1	1.3
Japan	2.7	0.8	0.5	1.6	0.2	0.3	0.1	–0.1	0.6	1.3
United Kingdom	1.5	0.0	0.8	1.8	0.0	0.1	0.3	0.7	1.0	1.3
Emerging countries	*5.1*	*5.5*	*5.6*	*5.8*	*5.4*	*5.4*	*5.8*	*5.7*	*5.5*	*5.6*
China	2.0	1.4	2.2	2.2	1.7	1.5	2.1	2.3	2.0	2.4
India	6.6	4.9	4.9	5.2	3.9	5.3	5.3	4.9	4.6	4.6
Indonesia	6.4	6.4	4.4	4.6	7.1	4.8	4.3	4.5	4.0	4.7
Brazil	6.3	9.0	8.7	6.5	9.5	10.4	10.2	8.8	8.4	7.3
Mexico	4.0	2.7	3.1	3.2	2.6	2.3	2.7	3.0	3.3	3.5
Chile	4.4	4.3	3.9	3.2	4.8	4.1	4.6	4.0	3.5	3.3
Russia	7.8	15.5	7.5	5.7	15.7	14.5	8.4	8.0	7.0	6.5
Turkey	8.9	7.7	7.5	6.3	7.3	8.2	8.6	8.0	7.0	6.5
Poland	0.2	–0.9	0.1	1.9	–0.8	–0.8	–1.1	–0.4	0.3	1.4
South Africa	6.1	4.6	6.4	6.2	4.7	4.9	6.4	5.9	6.0	7.2

Note: *1. Annual figures represent the fiscal year.*

Forecasts

Spanish economy

	2014	2015	2016	2017	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4
Macroeconomic aggregates										
Household consumption	1.2	3.1	2.8	2.0	3.6	3.5	3.6	3.2	2.5	2.1
General government consumption	0.0	2.7	1.1	0.7	3.0	3.7	1.8	1.4	0.7	0.5
Gross fixed capital formation	3.5	6.4	4.3	3.6	6.7	6.4	5.7	4.2	3.7	3.5
Capital goods	10.7	10.1	6.4	3.7	11.2	10.9	9.6	6.7	5.1	4.1
Construction	–0.1	5.3	3.1	3.5	5.2	4.6	4.0	2.8	2.8	3.0
Domestic demand (contr. Δ GDP)	1.6	3.7	2.6	2.0	4.1	4.1	3.4	2.9	2.1	2.0
Exports of goods and services	5.1	5.4	5.6	4.9	4.5	5.3	5.7	5.7	5.4	5.7
Imports of goods and services	6.4	7.5	5.4	4.4	7.2	7.7	6.4	6.1	4.1	5.0
Gross domestic product	**1.4**	**3.2**	**2.8**	**2.4**	**3.4**	**3.5**	**3.4**	**3.0**	**2.7**	**2.4**
Other variables										
Employment	1.1	3.0	2.5	2.1	3.1	3.0	3.3	2.6	2.2	2.1
Unemployment rate (% labour force)	24.4	22.1	19.9	18.5	21.2	20.9	21.0	20.0	19.3	19.5
Consumer price index	–0.2	–0.5	0.0	2.2	–0.4	–0.3	–0.7	–1.0	0.1	1.3
Unit labour costs	–0.8	0.3	0.5	0.8	–0.2	0.4	0.1	0.9	0.5	0.6
Current account balance (cum., % GDP)[1]	1.0	1.4	1.6	1.4	1.4	1.4	1.4	1.5	1.5	1.6
Net lending or borrowing rest of the world (cum., % GDP)[1]	1.4	2.0	2.2	2.0	1.9	2.0	2.0	2.1	2.1	2.2
Fiscal balance (cum., % GDP)[2]	–5.8	–5.0	–3.9	–3.1						

Financial markets

INTEREST RATES										
Dollar										
Fed Funds	0.25	0.26	0.58	1.25	0.25	0.29	0.50	0.50	0.58	0.75
3-month Libor	0.23	0.32	0.78	1.54	0.31	0.41	0.62	0.70	0.83	0.96
12-month Libor	0.56	0.79	1.26	1.89	0.83	0.95	1.17	1.25	1.29	1.34
2-year government bonds	0.44	0.67	1.00	1.89	0.67	0.83	0.85	0.86	1.03	1.24
10-year government bonds	2.53	2.13	2.01	2.73	2.21	2.19	1.92	1.86	2.03	2.22
Euro										
ECB Refi	0.16	0.05	0.01	0.00	0.05	0.05	0.03	0.00	0.00	0.00
3-month Euribor	0.21	–0.02	–0.26	–0.06	–0.03	–0.09	–0.19	–0.28	–0.30	–0.29
12-month Euribor	0.48	0.17	–0.03	0.23	0.16	0.09	0.01	–0.04	–0.05	–0.04
2-year government bonds (Germany)	0.05	–0.24	–0.42	0.01	–0.24	–0.32	–0.46	–0.44	–0.41	–0.37
10-year government bonds (Germany)	1.23	0.53	0.32	1.34	0.69	0.57	0.30	0.22	0.31	0.44
EXCHANGE RATES										
$/€	1.33	1.11	1.10	1.07	1.11	1.09	1.10	1.12	1.10	1.07
¥/€	140.42	134.35	128.27	127.52	135.89	132.94	127.28	126.90	130.66	128.25
£/€	0.81	0.73	0.77	0.74	0.72	0.72	0.77	0.79	0.77	0.75
OIL										
Brent ($/barrel)	99.45	53.61	45.08	65.58	51.10	44.70	35.72	44.31	47.74	52.53
Brent (€/barrel)	74.54	48.30	41.18	61.23	46.00	40.82	32.41	39.53	43.61	49.16

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

Forecasts

FINANCIAL OUTLOOK · **The markets confirm their recovery**

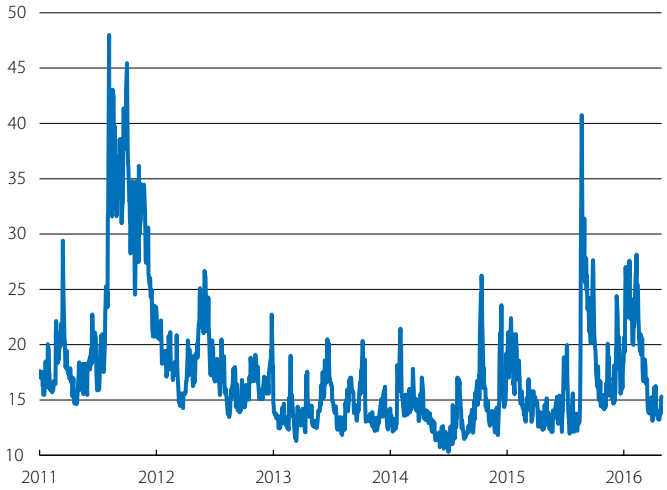
The constructive climate in the international markets continued in April. Signs of stabilisation, which had already appeared in March, consolidated and resulted in a greater willingness to take risk on the part of investors. Both equity and bond markets have benefitted from this overall favourable environment although risk asset prices in the advanced bloc have looked more hesitant. In general the volatility of financial assets has stabilised at levels similar to those observed before the summer, leaving behind the sharp upswings in nervousness occurring over the last few months. This consolidation of a more stable international financial environment is due to three key factors. Firstly the reduction in global macroeconomic uncertainty thanks to activity data from the US, Europe and China that, although not buoyant, have not come as a shock to the markets. Also the recovery in oil prices which has built up steam over the last few weeks, pushing a barrel of Brent oil comfortably above the 40 dollar mark. Lastly the accommodative messages given out by the Federal Reserve (Fed) continue to act as an important pillar of support that has sustained the recovery in risk assets.

Nevertheless, in spite of the positive tone of the last few weeks, caution is still required given the fragile nature of investor sentiment. Concerns regarding China's growth and the United Kingdom possibly leaving the EU are hovering like the sword of Damocles over international markets. The consolidation of the upward trend in the oil market will be essential to reinforce the constructive tone of the markets and ensure this continues, particularly in the emerging area. The correlation of crude price with returns on the main financial assets over the last few months illustrates the importance of the trend in oil for the performance of risk assets in the short term.

In the monetary sphere, the Bank of Japan has taken over centre stage from the Fed. Unsurprisingly, the Federal Open Market Committee of the Fed decided to keep the official rate between 0.25% and 0.50% at its meeting on 27 April. The US monetary authority maintained a cautious tone in its communication, in particular regarding the apparent slowdown in the US economy in spite of the sustained improvement observed in the labour market. It should however be noted that, unlike in its previous communications, this time the Fed did not stress the risks resulting from the international economic and financial environment. In any case Fed members stated that they will be closely monitoring the trend in inflation and the global environment. Such caution continues to weaken the dollar which has fluctuated against the euro within the range of 1.13 to 1.14. With regard to future hikes in the benchmark interest rate, the official projection of two hikes a year still

Implied volatility of the US stock markets

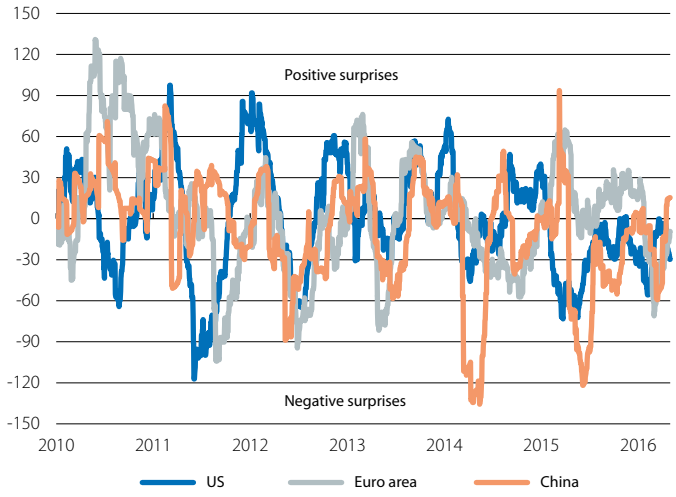
(%)



Source: *CaixaBank Research, based on Bloomberg data.*

Index of economic surprises

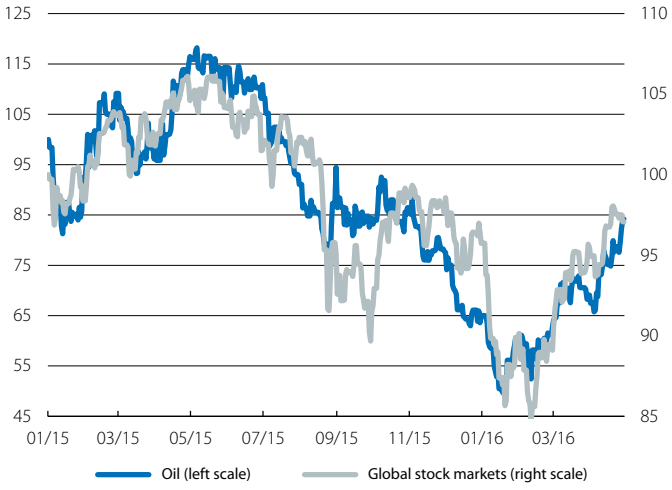
Level



Source: *CaixaBank Research, based on Bloomberg data.*

Global stock market and Brent oil price

Index (100 = January 2015) *Index (100 = January 2015)*



Source: *CaixaBank Research, based on Bloomberg data.*

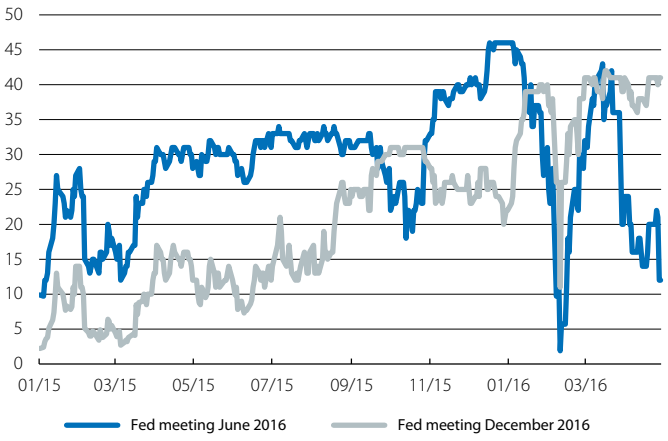
remains in place but the market only expects one, in December. The surprise in the area of monetary policy this month was provided by the Bank of Japan, which decided not to introduce any changes in its monetary policy, against the expectations of the markets. The central bank justified its decision, which resulted in losses on the Japanese stock market and strong appreciation in the country's currency against the dollar, with the need for more time to evaluate the impact of the stimuli recently introduced, in particular the negative interest rates that came into force at the beginning of year.

Meanwhile the ECB has followed its route map established in March and disclosed details of its Corporate Sector Purchase Programme (CSPP) to purchase corporate bonds. After announcing a battery of measures in March, and in line with expectations, at its April meeting the ECB's Governing Council decided to keep official interest rates unchanged. The monetary authority repeated its message of caution and underlined its readiness to make its policy even more accommodative, if necessary. Draghi confirmed that the ECB had already begun to increase the rate of QE purchases up to 80 billion euros a month, as had been announced in March, and looked confident that inflation in the euro area would pick up in the second half of the year. The news at this last meeting was provided by the disclosure of details regarding the CSPP which will begin in June. In March the ECB had already announced that purchases would include investment grade bonds denominated in euros from non-banking firms established in the euro area. This time the European institution specified that CSPP-eligible bonds would have maturities between six months and 30 years and that it would make purchases both in the primary and secondary market up to a limit of 70% of each issuance. Nevertheless the ECB still has to confirm the rate of monthly purchases, which could be between 8 and 10 billion according to the consensus of analysts.

Europe's private bond market continues to anticipate the ECB purchases. The sharp drops in yields on European corporate bonds, which started to be seen after the announcement of the inclusion of corporate bonds in QE, continued in April, benefitting both investment grade debt and also the high yield segment. With regard to sovereign bonds the yield on the German bund saw a slight upswing throughout this month, reaching almost 0.3% before falling slightly after the markets noted the Fed's cautious tone. The combination of two factors seems to have supported this upward trend. On the one hand, higher inflation expectations due to the upswing in oil over the last few months are gradually being reflected in bond prices. On the other hand, the fact that this upswing is in line with those observed in other risk-free interest rates (such as those of the United States and United Kingdom) suggests that it is also due to a decline in «flight to quality». Lastly, periphery sovereign debt is still subject to several sources of instability, especially in

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

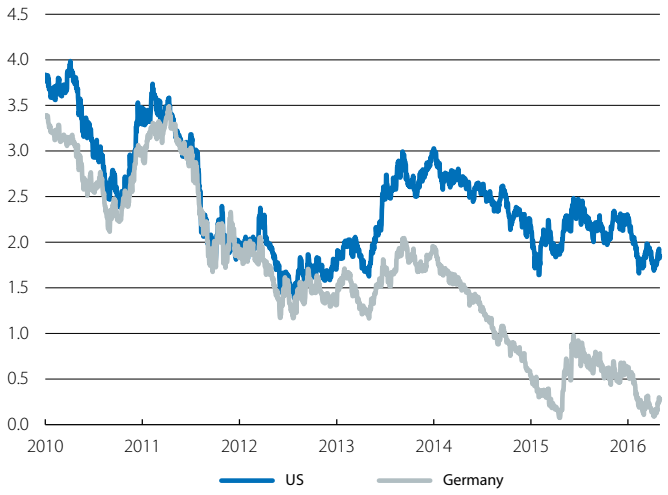
(%)



Note: ** Obtained from Fed fund futures.*
Source: *CaixaBank Research, based on Bloomberg data.*

Yields on 10-year public debt

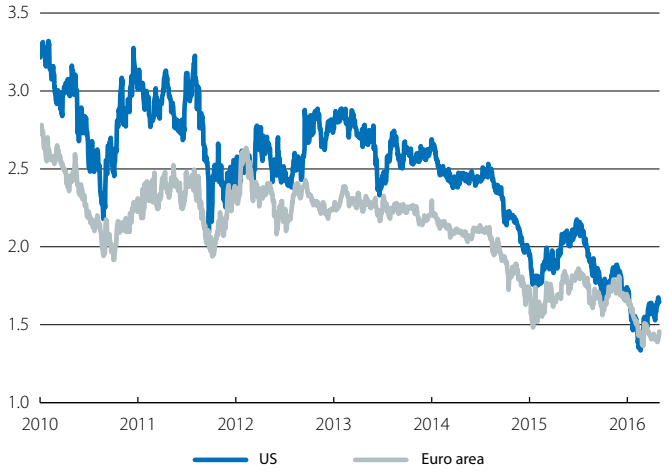
(%)



Source: *CaixaBank Research, based on Bloomberg data.*

*Inflation expectations **

(%)



Note: ** Inflation swaps expectations at 5 years forward.*
Source: *CaixaBank Research, based on Bloomberg data.*

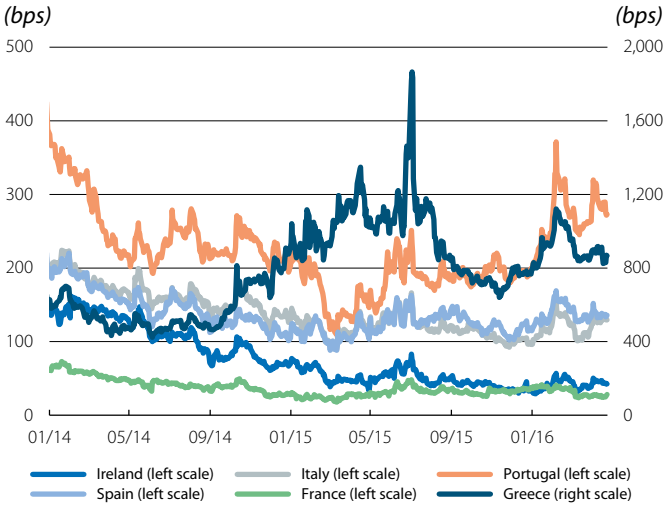
Portugal and Greece, albeit of a limited scope and duration. However, Spain's risk premium ended the month on a positive note, falling below 135 bps in spite of confirmation that another general election will be held on 26 June.

The corporate earnings campaign for 2016 Q1 in the US has gone according to expectations. With 58% of the S&P 500 enterprises having reported their earnings for 2016 Q1 by the end of April, profits recorded a decline of 5.3%, a slightly better figure than initially expected. The dollar's appreciation and the slump in the price of crude oil over the last few quarters continue to affect the bottom line of US firms. However, the influence of both factors on corporate earnings will tend to recede over the coming quarters and, in any case, such drops cannot be interpreted as a precursor to recession in the US (see the Focus «Is the drop in earnings in the US heralding another economic recession?»). Nonetheless, in April the S&P 500 was one of the few indices among developed stock markets that managed to improve on their level at the beginning of the year.

Emerging stock markets move away from the rest while international stock markets consolidate their upward trend starting in mid-February. The MSCI for the global stock market has consequently exceeded its level at the beginning of the year although the stock markets of the advanced countries adopted a more doubtful tone. On the Old Continent in particular, doubts regarding the banking sector resulted in a complicated start to the month. Nevertheless the upswing in this sector during the second half of April has once again placed European stock market indices on the right path, with particularly large gains in the case of Spain and Italy. However, throughout this month the equity markets of the emerging bloc recorded the sharpest rises. The solid advance in commodity prices, and especially oil, has been a powerful factor behind this situation.

The upward trend in oil prices is gaining traction and pushing crude towards its highest level since the end of 2015. After taking a break throughout most of March, the price of oil recovered its upward trend which had started from its minimum level in January. The lack of success at the Doha meeting on 17 April, during which OPEC members and other important crude oil producers failed to reach an agreement to freeze production, only temporarily halted this upward trend in prices which ended the month above 48 dollars per barrel in the case of Brent. Regarding the future, the factors determining supply will continue to be key to any price fluctuations in the market for black gold. In addition to a hypothetical limit on production by OPEC members, the sharp drop in production of US shale oil will continue to push up prices in the short term although we obviously cannot rule out any episodes of volatility for this trend.

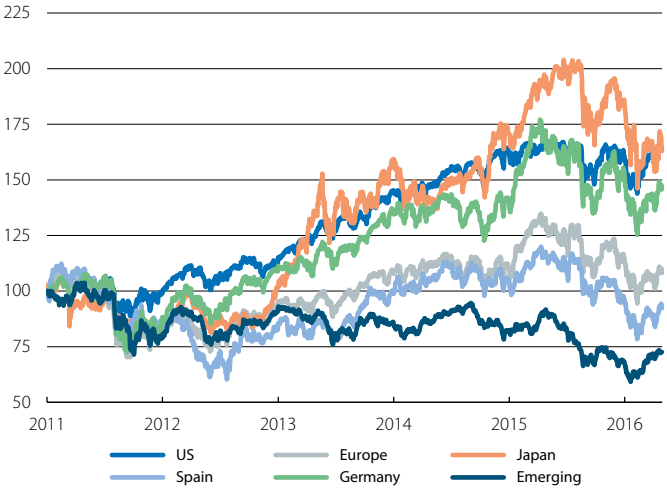
Euro area: risk premia of 10-year public debt



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

Main international stock markets

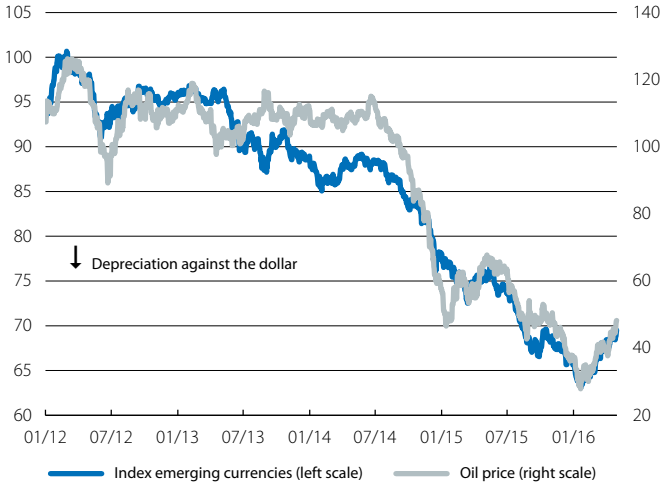
Index (100 = January 2011)



Source: *CaixaBank Research, based on Bloomberg data.*

Emerging currencies and Brent oil price

Index (100 = January 2012) *(Dollars/barrel)*



Source: *CaixaBank Research, based on Bloomberg data.*

FOCUS · Short selling as a market predictor

Market predictability is a key issue in finance. Investors devote a considerable amount of time and effort to identifying factors that can help them predict how assets will perform and make investment decisions with such information. Short selling is one of these indicators.

The most typical case of short selling is the sale, at their current market price (e.g. 100 euros), of securities that are not owned by the seller but borrowed from another investor to whom they must be returned after a period of time.[1] Short sellers are motivated by the belief that these securities' price will decline, enabling them to be bought back at a lower price (e.g. 90 euros). Assuming the cost of borrowing the securities is 6 euros, short sellers will make a total profit of 4 euros (or a 67% return on the cost of 6 euros incurred for borrowing the securities). An increase in this kind of short selling, which is speculative in nature, would reflect a downward sentiment which, if accurate, would anticipate a drop in asset prices.

However, short selling can also be due to other reasons. For example, to hedge positions already held in order to limit losses. Normally, if shares you own are likely to drop in price, you can reduce this position by selling part of your shares. But often investors prefer to maintain the number of shares, albeit temporarily, so as not to lose out on any political rights or dividends paid.

Short selling has often been blamed for contributing to market instability. Most studies,[2] however, conclude that short selling might not only reduce market volatility but also contribute to its liquidity and also its efficiency by identifying overvalued assets.

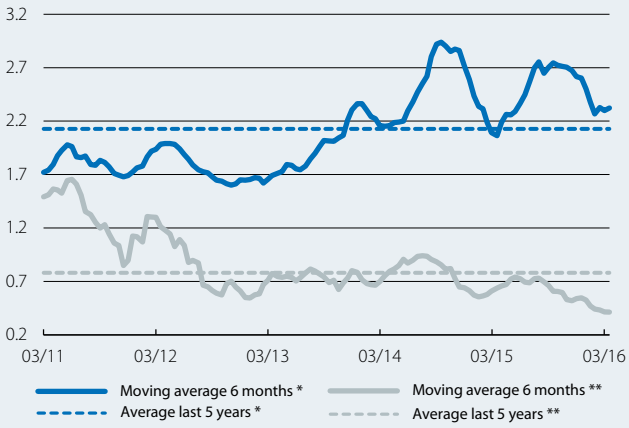
Over time, the practice of short selling has increased, supported, among other things, by lower transaction costs and greater access to the financial information of quoted companies. The short interest ratio (SIR), which results from dividing the number of tradeable shares being shorted by the market's average daily trading volume of available shares (free float), reflects this trend. Rapach et al.[3] estimate that, in the 1970s, the SIR for the S&P 500 was 0.31% while it has come close to 5% in the last 10 years. As can be seen in the graph, the current SIRs for two of the most representative funds for the S&P 500 (SPDR S&P500 ETF) and Eurostoxx 50 (SPDR Euro Stoxx 50 ETF) are 2.6% and 0.5% compared with an average in the last five years of 2.1% and 0.8%, respectively. It therefore seems that downward sentiment is more present in the US stock market than in the European market.

Academic literature has provided several studies on the relationship between short selling and variations in share prices. A large number of these point to the SIR being a very good predictor of negative returns, better than other indicators such as the dividend yield, the book to market value or the price to earnings ratio. Indeed, a strategy consisting on short selling shares with high SIRs and buying shares with low SIRs would achieve above average returns.

It comes as no surprise that there is now a consensus view of short sellers as relatively sophisticated investors capable of identifying overvalued assets. However, we must not forget that this is a risky strategy that can incur significant losses should the expected drop in share price not come about. In particular, when short sellers attempt to close positions at the same time, they themselves push up the price of the share which they were expecting to fall (a short squeeze) and may escalate losses.

Short interest ratio: S&P 500 and Eurostoxx 50

(%)



Notes: ** SPDR S&P 500 ETF. ** SPDR Eurostoxx 50 ETF.*
Source: *CaixaBank Research, based on Bloomberg data..*

1. One variant is the naked short sale in which an asset is sold before it is borrowed.
2. Lamont, O. and Stein, J. (2004) «Aggregate Short Interest and Market Valuations», American Economic Review, vol. 94, 2.
3. Rapach, D., Ringgenberg, M. and Zhou, G. (2016) «Short Interest and Aggregate Stock Return», Journal of Financial Economics.

FOCUS · Is the drop in earnings in the US heralding another economic recession?

The earnings season starting in mid-April for S&P 500 companies pointed to a decline in earnings per share of around 9% for the first quarter of 2016. Should this scenario be accurate, it would confirm that the United States, which had already seen three negative quarters in 2015, is currently in an earnings «recession». In the past, such a large decline in earnings has almost always occurred at the same time as an economic recession. However, several elements point to the current episode potentially being one of the few exceptions to this pattern.

Since the early 1970s six of the eight episodes of declining corporate earnings for S&P 500 firms have coincided with the start of a recession in the US economy. The most recent exception took place in 1998 when earnings fell by more than 7% without the US economy showing any signs of weakness (in fact it grew at a rate of about 5%). At that time a strong dollar, which in just over a year had appreciated by almost 17% compared with the euro and 15% on average compared with a basket of currencies, and the drop in the price of oil below 10 dollars per barrel had a considerable effect on the earnings of energy and exporting companies. The previous exception was in 1985. On that occasion the dollar's strong appreciation prior to the Plaza Accord and a slump in oil prices were also largely responsible for the drop in earnings. GDP growth remained firm, just the same.

It is tempting to compare the current situation with the episodes in the 1980s and 1990s. The strength of the dollar, which appreciated close to 27% compared with the euro between June 2014 and the end of 2015, is similar to the rise seen in the aforementioned episodes while the current drop in the price of crude oil is also clearly responsible for a considerable proportion of the poor earnings reported by S&P companies. In fact, if we exclude companies from the energy sector, earnings remained relatively stable in the last few quarters.

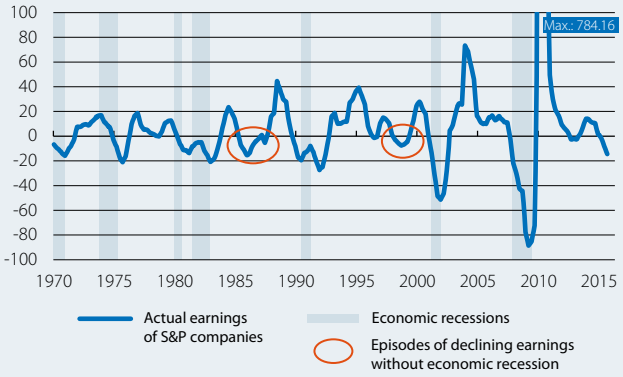
In any case the fact that an earnings recession is limited almost exclusively to one sector in particular does not seem to be a sufficiently solid argument to rule out a possible link between an earnings recession and an economic recession. We only need to remember that the decline in earnings in 2000 was «only hi tech» and in 2007 it was «only financial», although the presence of a bubble at the beginning of the millennium and the systemic nature of the financial sector were decisive factors in the occurrence of their subsequent recessions. On the other hand, the decline in earnings is also affecting many firms that do not belong to the energy sector. According to the earnings data from the National Accounts system, which provide a broader picture of US companies, nine of the 16 non-energy sectors saw a drop in earnings in 2015 Q4. Be it partly a result of the impact of lower demand in the energy sector compared with other sectors, be it partly due to the dollar's appreciation, what is certain is that a considerable segment of the US economy is suffering from a decline in earnings.

Apart from historical comparisons, other considerations also point to the disappointing corporate earnings reported recently not being an omen of economic recession. Firstly, although the relative weight of the energy sector has increased after the shale boom in recent years, the net impact of the slump in oil prices should be positive for the US economy. Moreover, the high level currently enjoyed by profit margins, still above the historical average in spite of the recent decline, ensures firms still have room to manoeuvre. On the other hand the main factors behind the decline in earnings are now showing signs of recovery, or at least of stabilisation, given the upswing in oil prices since the beginning of the year and the pause in the dollar's appreciation brought about by the Federal Reserve's accommodative tone in the last few weeks. Lastly, and perhaps most importantly, the solidity of the figures recently published for the labour market and private consumption are in line with continued expansion in economic activity.

In short, the current recession in earnings is a phenomenon that warrants close scrutiny. However, the evidence seems to suggest that we are witnessing an exception to the pattern and not a precursor of an economic recession in the US.

Actual earnings of S&P companies and economic recessions

Year-on-year change (%)



Source: *CaixaBank Research, based on data from Robert J. Shiller and the National Bureau of Economic Research.*

KEY INDICATORS

Interest rates (%)

	29-Apr	31-Mar	Monthly change (bps)	Year-to-date (bps)	Year-on-year change (bps)
Euro area					
ECB Refi	0.00	0.00	0	–5.0	–5.0
3-month Euribor	–0.25	–0.24	–1	–12.0	–24.6
1-year Euribor	–0.01	–0.01	0	–7.0	–17.7
1-year government bonds (Germany)	–0.49	–0.45	–4	–11.2	–22.9
2-year government bonds (Germany)	–0.48	–0.49	1	–13.5	–24.3
10-year government bonds (Germany)	0.27	0.15	12	–35.9	–1.5
10-year government bonds (Spain)	1.59	1.44	15	–18.1	12.2
10-year spread (bps) [1]	132	128	4	17.9	13.8
US					
Fed funds	0.50	0.50	0	0.0	25.0
3-month Libor	0.63	0.63	–1	1.2	34.7
12-month Libor	1.21	1.21	0	3.2	51.1
1-year government bonds	0.55	0.58	–3	–4.7	32.6
2-year government bonds	0.78	0.72	6	–26.8	22.3
10-year government bonds	1.83	1.77	6	–43.9	–20.9

Spreads corporate bonds (bps)

	29-Apr	31-Mar	Monthly change (bps)	Year-to-date (bps)	Year-on-year change (bps)
Itraxx Corporate	73	73	0	–4.5	11.5
Itraxx Financials Senior	90	89	0	12.8	17.5
Itraxx Subordinated Financials	202	201	1	45.9	55.7

Exchange rates

	29-Apr	31-Mar	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
$/euro	1.145	1.138	0.6	5.4	2.9
¥/euro	121.940	128.110	–4.8	–6.7	–7.9
£/euro	0.784	0.793	–1.1	6.3	8.7
¥/$	106.500	112.570	–5.4	–11.4	–10.5

Commodities

	29-Apr	31-Mar	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
CRB Commodity Index	417.7	401.3	4.1	11.5	–0.4
Brent ($/barrel)	46.4	38.7	19.7	29.7	–27.2
Gold ($/ounce)	1,293.0	1,232.7	4.9	21.8	7.3

Equity

	29-Apr	31-Mar	Monthly change (%)	Year-to-date (%)	Year-on-year change (%)
S&P 500 (USA)	2,065.3	2,059.7	0.3	1.0	–2.0
Eurostoxx 50 (euro area)	3,028.2	3,004.9	0.8	–7.3	–16.3
Ibex 35 (Spain)	9,025.7	8,723.1	3.5	–5.4	–20.7
Nikkei 225 (Japan)	16,666.1	16,758.7	–0.6	–12.4	–16.9
MSCI Emerging	840.2	836.8	0.4	5.8	–20.7
Nasdaq (USA)	4,775.4	4,869.8	–1.9	–4.6	–4.9

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

ECONOMIC OUTLOOK · Slight acceleration in world growth in 2016

The global economy's growth consolidates in 2016 but downside risks remain. CaixaBank Research's main scenario for 2016 is 3.3% growth for the world's economy, a little above the 3.1% of 2015, led by some emerging countries that will grow slightly above the figures posted in 2015 (4.3% compared with 4.0%) and by the consolidation in growth for the advanced countries, which will continue the trend that started last year (1.9%). The main sources of risk are, firstly, the high and growing level of global debt; secondly China's difficulty in ensuring a soft landing for its economy in a context of heavy borrowing and a change in its production model; and, lastly, political instability in key countries is also an outstanding element in the balance of downside risks, in particular the deterioration in Brazil's situation and uncertainty regarding the UK's Brexit.

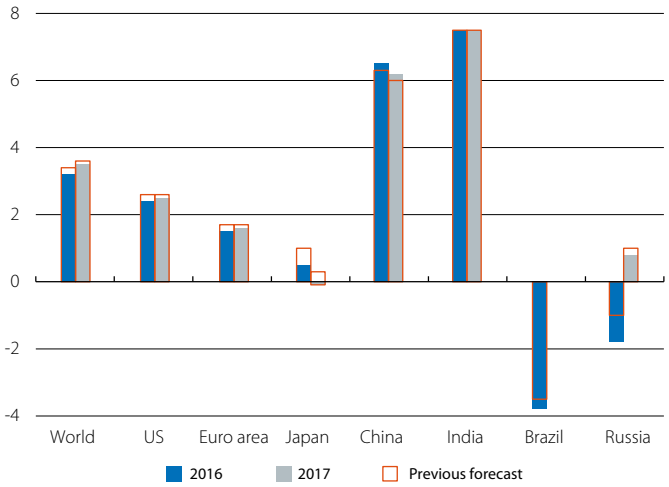
The International Monetary Fund (IMF) slightly reduces its global growth forecasts. The institution has placed world growth at 3.2% in 2016 and 3.5% in 2017 (previously 3.4% and 3.6%). Given this weaker situation, IMF has underlined, more clearly than on previous occasions, the need to carry out structural reforms both in the advanced and emerging countries. However, unlike its January Economic Prospects report, it does not see the Fed's interest rate hikes as critical, assuming this will be very gradual. By country, the US continues to lead the recovery of the advanced economies (2.4% in 2016), the forecast for the euro area stands at 1.5% and the estimate for Japan predicts a weak 0.5% (and –0.1% in 2017). Among the emerging economies, the institution improved its expectations for China a little (6.5% in 2016 and 6.2% in 2017) albeit with a downside risk, but worsened the declines predicted in 2016 for Russia (–1.8%) and Brazil (–3.8%).

UNITED STATES

The United States' GDP weakens in 2016 Q1, albeit temporarily. GDP grew by a moderate 0.1% quarter-on-quarter in Q1, below the 0.3% predicted and the figure for 2015 Q4 (1.95% year-on-year). By demand component, the slowdown in GDP growth was due to negative contributions by non-residential investment, to the component of inventories and a further decline in exports, probably affected by the strong dollar. Among the positive figures, residential investment grew by a solid 3.5% quarter-on-quarter and private consumption (which accounts for close to 70% of GDP) by 0.5% quarter-on-quarter. Moreover, in the coming quarters the negative effect of the inventories component should reverse and give way to a positive contribution.

IMF: GDP forecasts for 2016 and 2017

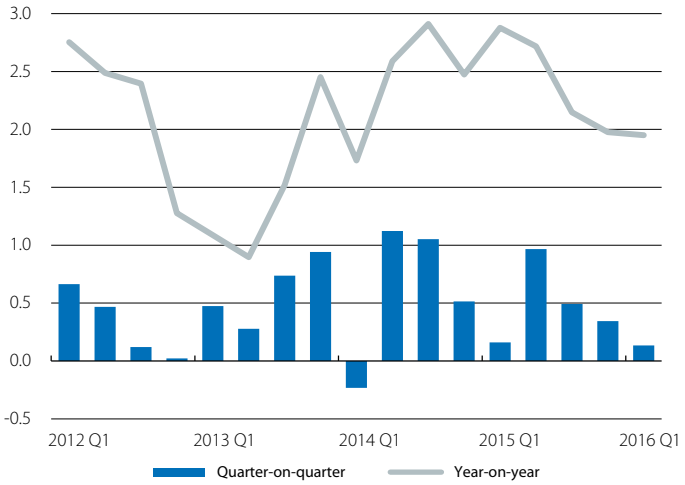
Annual change (%)



Source: *CaixaBank Research, based on IMF data.*

US: GDP

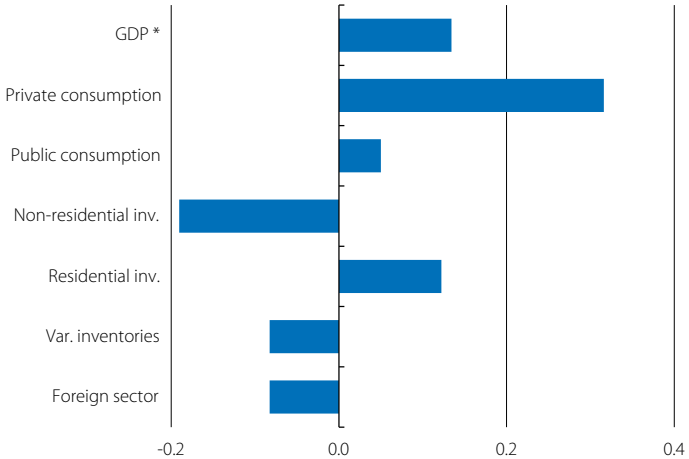
Year-on-year and quarter-on-quarter change (%)



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

US: GDP

Contribution to quarter-on-quarter growth in GDP in 2016 Q1 (pps)



Note: ** Quarter-on-quarter change.*
Source: *CaixaBank Research, based on data from the Bureau of Economic Analysis.*

Domestic demand will drive the US expansion for the remainder of 2016. Economic growth will be supported by an increase in private consumption, greater public expenditure and a considerable rise in residential investment. The consumer confidence index produced by the Conference Board stood at 94.2 points, above its historic average (93.5 points), while figures for the real estate market indicate a strong recovery in the sector. In March just over 1 million residences were started, a figure that comes close to the historic average (1.3). Different price indices (both the Case-Shiller and the index produced by the Federal Housing Finance Agency) show solid growth, helping residential investment to continue being an important factor for economic growth in 2016.

Improvements in the labour market will support domestic demand. 215,000 net jobs were created in March, in addition to the good figures posted for February (245,000 after the upward revision). Unemployment rose by 0.1 pp to 5.0% due to the higher participation rate, which has risen in cumulative terms by 0.5 pps since November. This, together with less under-employment (involuntary part-time work due to economic reasons), which has fallen by more than 3 million people since September 2011, and the increase in hours worked, suggests that the improvement is solid.

Inflation will pick up over the coming months in spite of March's more subdued figures. Specifically, core inflation stood at 2.2% in March, 0.1 pp below February's figure. In month-on-month terms (with the series seasonally adjusted), the core CPI increased by 0.1%, the smallest rise since August. For its part the general CPI grew by 0.9% year-on-year, also 0.1 pp below February's figure. However, inflation will have passed the 2% mark by the end of year thanks to the gradual disappearance of the base effect caused by the sharp drop in oil prices and to greater wage pressure due to the improved labour market. Given this situation, at its April meeting the Fed kept the Fed funds rate target within the range of 0.25%-0.50% and continued to use a markedly dovish tone in its communication, although the risks are now slightly less downside.

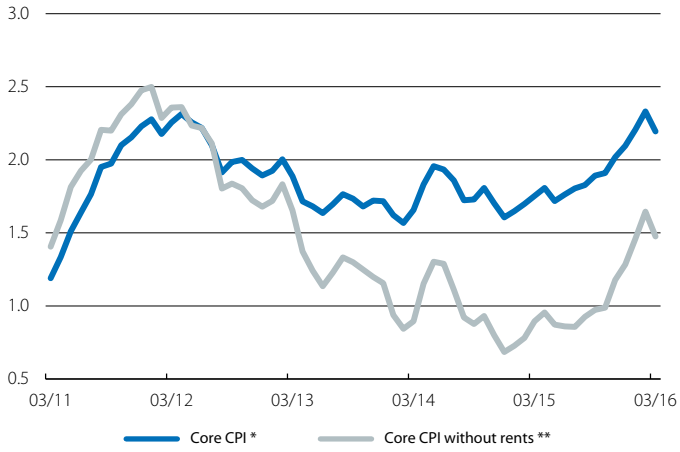
JAPAN

The Bank of Japan makes no move in spite of the moderation in economic activity. CaixaBank Research's forecast for Japan in 2016 has been revised downwards, going from GDP growth of 0.9% to 0.6% due to the poor performance shown by private consumption, weak exports (particularly to China and the US) and a greater appreciation of the yen than expected. In spite of this weak environment, at its April meeting the Bank of Japan surprised the market by refusing to change its rate of quantitative easing, currently at 80 trillion yen per year.

Structural reforms are increasingly necessary. Consumption, the largest component of GDP, is looking very weak.

US: CPI

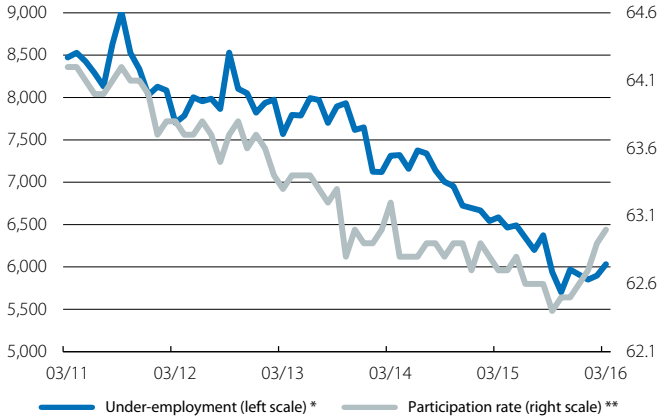
Year-on-year change (%)



Notes: ** Core: general index without energy or food. ** Core inflation without rents and owners' equivalent rent.*
Source: *CaixaBank Research, based on data from the Bureau of Labor Statistics.*

US: participation rate and under-employment

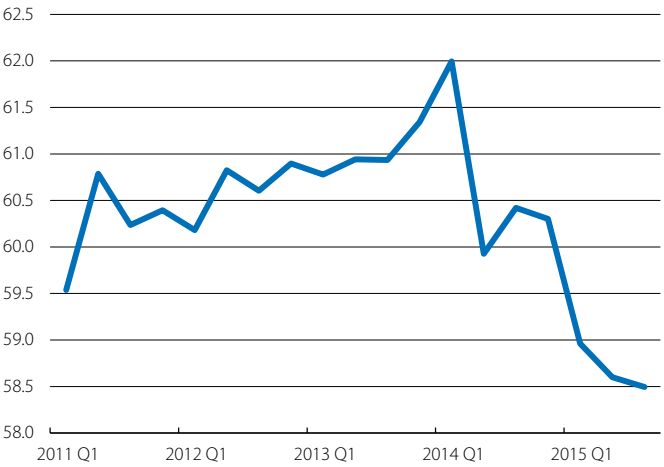
(Thousands) *(%)*



Notes: ** Workers involuntarily working part-time due to economic reasons. ** Employees or workers actively looking for work as a percentage of the total population aged over 16.*
Source: *CaixaBank Research, based on data from the Bureau of Labor Statistics.*

Japan: private consumption

*(% of GDP) **



Note: ** In nominal terms.*
Source: *CaixaBank Research, based on data from the Ministry of the Interior and Communication.*

Entrepreneurs do not expect solid growth in the medium term either and have not raised wages, resulting in low consumption. The expectations of consumers and entrepreneurs would improve with credible pre-growth reforms, such as putting an end to the dual nature of the labour market which particularly harms women's wages, and also by encouraging investment.

EMERGING ECONOMIES AND COMMODITIES

China continues with a soft landing for its economy in 2016 Q1. China's GDP grew by a significant 6.7% in 2016 Q1 (6.8% in 2015 Q4), slightly below our forecasts but in line with those of the market. March's activity figures, which were published together with the GDP data, also showed some improvement in the final part of Q1. The industrial production index rose by a considerable 6.8% year-on-year, more than the 5.4% for the aggregate figure of January and February. This monthly improvement partly offsets the weak quarter-on-quarter growth of 1.1%, below the 1.5% posted in 2015 Q4. All this should calm fears of a possible hard landing for the Asian giant.

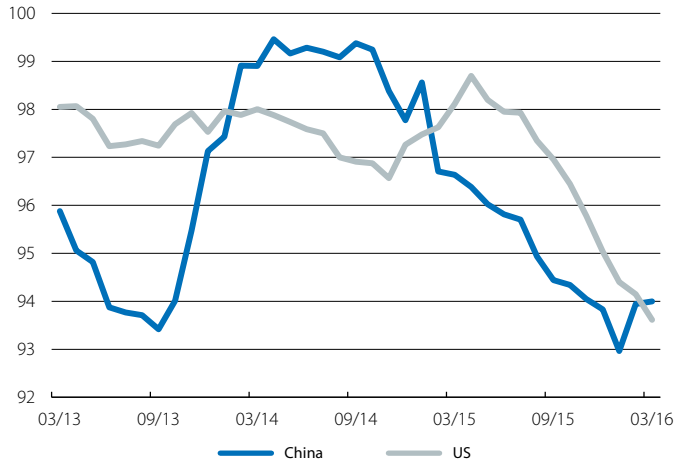
The change in China's model of growth can be seen in the country's Thirteenth Five-Year Plan (2016-2020), based on five pillars of development: innovation, coordination, protecting the environment, inclusion and openness. Of note for the pillar of innovation is the promotion of strategic industries and new manufacturing technologies, the modernisation of the agricultural sector, which employs almost half the labour force, and institutional reforms to improve the efficiency of state conglomerates. For the pillar of coordination, the aim is to promote joint actions between regions and achieve a balance between rural and urban zones. Lastly, with regard to openness, liberalising the financial account will be crucial.

Uncertainty worsens in Brazil. Latin America's largest economy has an unbalanced macroeconomic situation (high inflation with public account deficits) which leaves little room for expansionary measures. In addition to this situation is the political uncertainty resulting from the potential impeachment of President Rousseff, a process which has already gone through Congress and might continue for another six months. Without doubt the country's high political uncertainty is a determining factor in its expected drop in GDP for 2016 (–3.4%), which had already shrunk extensively in 2015 (–3.8%).

Oil moves away from its minimum levels at the start of the year. Brent oil rose to above the benchmark of 40 dollars/barrel throughout April. The failure of numerous OPEC producers (and some non-OPEC members) to reach an agreement in Doha does not seem to have affected the upward trend in the price of crude to any great extent. Regarding the rest of the commodities, most of the industrials have also posted notable gains, partly due to a temporary readjustment in supply (due to steel plants being closed in China).

*Japan: exports to the United States and China by volume **

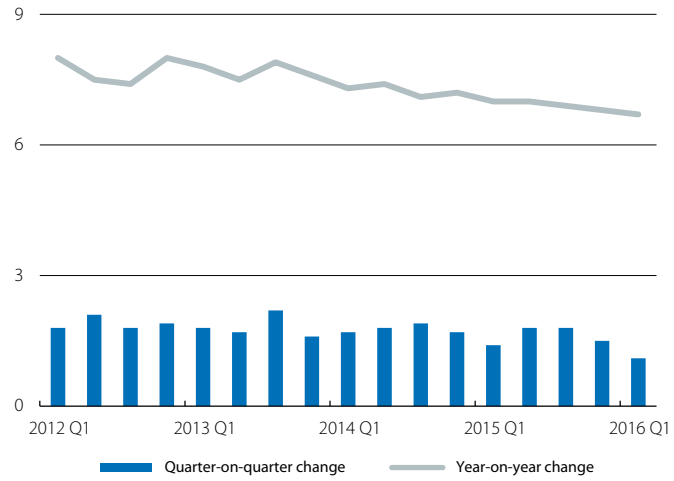
Index (100 = December 2012)



Note: ** Average for the last 12 months.*
Source: *CaixaBank Research, based on data from the Ministry of the Interior and Communication.*

China: GD

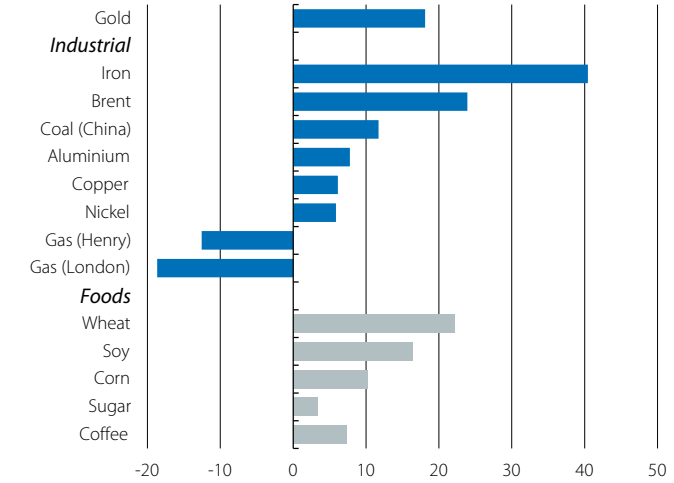
Year-on-year and quarter-on-quarter change (%)



Source: *CaixaBank Research, based on data from the National Bureau of Statistics of China.*

Commodities: prices

Change since 31 December 2015 (%)



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

FOCUS · Has Russia left the zone of emerging risk?

When, in May 2013, the Federal Reserve started to specify how it would normalise its monetary policy, investors began to be concerned about the worrying situation in some emerging economies which were soon labelled as «fragile». One of the members of this group was Russia. Russia had enjoyed a period of strong growth between 2005 and 2012 (4.1% annually on average), albeit at the price of increasing inflationary tensions (annual inflation was 9.7% in the same period). To complicate matters even further, activity ran out of steam as from 2013 but prices continued to rise at a fast rate.[1] As a result of this already weak situation, the country entered a serious recession in 2015 caused by two factors: falling oil and gas prices and the application of economic sanctions by the European Union and the United States due to its conflict with Ukraine. So what are the Russia's immediate prospects now? Can it leave the zone of emerging risk?

In order to answer these questions we need to look at three possible sources of vulnerability: the one attributable to the external environment, the one resulting from the domestic environment and the one caused by the geopolitical situation. Regarding the first of these three factors, of concern is the potential impact on Russia of the latest effects of US monetary normalisation in the form of tougher international financial conditions and the dollar possibly continuing to appreciate. This is an area in which several emerging countries are far from enjoying a solid position. Russia, however, does not conform to the typical pattern of the «fragile» emerging countries. Compared with their customary external imbalances Russia has a healthy current account surplus (5.0% in 2015) and, while other emerging economies are attempting to tackle this situation with meagre reserves, Russia has enough international reserves to comfortably cover its short-term external debt. Nonetheless it is worrying that, within a context of rising debt overall (99.4% of GDP at the end of 2015), and especially corporate debt, the proportion of the latter in foreign currencies has risen to above-average figures for the emerging economies.

But although the country's external vulnerabilities may not seem excessive, its domestic situation is quite a different matter. In 2015 inflation stood at a high 15.5%. This rise was due to the notable depreciation of the rouble, pushing up the price of imported goods, and also the effect of the EU food embargo which forced Russia to turn to other international food suppliers at higher prices. Although the effect of both these factors will diminish in 2016 and 2017, helping to redress inflation, the levels predicted are still high. The situation of the country's public accounts has also deteriorated rapidly, due largely to the decline in tax revenue caused by falling energy prices.

Russia's weak domestic situation has also been aggravated by the consequences of its involvement in different sources of territorial tension (firstly Ukraine-Crimea and then Syria). As a result, the EU and Russia have become entangled in a process of mutual sanctions, in addition to the sanctions applied by Russia on Turkey. From a Russian perspective this situation has made it difficult for its banks to operate internationally and has forced to country to accept more expensive external supplies. Unless there is a substantial turnaround in both conflicts, the most likely scenario is for sanctions to continue in 2016.

Does Russia's economic policy have any room to manoeuvre in order to tackle such vulnerabilities? Very little. Its monetary policy is «trapped» between opposing objectives: if the country opts to prioritise the recovery of its damaged anti-inflationary credibility by means of restrictive monetary policy, the country might take much longer to exit its recession. Fiscal policy also faces demands that are difficult to reconcile as there is a need to combine some support for the economy (concentrating on bank practice) with maintaining military spending and rebalancing the country's accounts.

In summary, how Russia's economy will fare depends largely on the two factors that are affecting it negatively (commodities and sanctions) diminishing. Given the scenarios predicted for commodity prices, which are expected to gradually recover the ground lost, the first looks like it may actually come about but the second will be more difficult as the country's international conflicts are far from being resolved. If we also factor in Russia's limited room to use economic policy, for the time being it seems premature to exclude the country from the list of emerging countries at risk.

Russia: main macroeconomic indicators

	2005-2012	2013	2014	2015	2016 (f)	2017 (f)
Real GDP growth (%)	4.1	1.3	0.7	–3.7	–1.1	1.3
Inflation CPI (%)	9.7	6.8	7.8	15.5	7.5	5.7
Current account balance (% of GDP)	5.8	1.5	2.9	5.0	4.2	5.1
Fiscal balance (% of GDP)	2.3	–1.2	–1.1	–3.5	–4.4	–3.0
Public debt (% of GDP)	10.4	13.1	16.3	17.7	18.4	19.4

Note: *(f) Forecast.*
Source: *CaixaBank Research, based on data from Thomson Reuters Datastream.*

1. In 2013 and 2014 growth was only 1.3% and 0.7% while inflation rose by 6.8% and 7.8%, respectively.

FOCUS · Reserves in the emerging countries: is the buffer big enough?

In 2015 strong capital outflows surprised most of the emerging countries. After years of massive inflows, the start of monetary normalisation in the US and fears of more moderate growth in the emerging block were the main triggers for this situation. Undoubtedly the large buffer of international reserves accumulated over many years helped to cushion the impact of these outflows. But, after this episode, is the buffer still solid?

To find out we have analysed the level of reserves held by a selection of emerging economies according to the measure used by the International Monetary Fund (IMF).[1] This measure takes the form of a ratio between the reserves and different potential sources of capital outflows. These sources, and the reason why they are taken into account, are as follows: (i) Exports, to reflect a possible adverse shock regarding foreign demand or the terms of trade; (ii) Money supply (M2), to capture capital outflows through more liquid assets; (iii) Short-term debt, to reflect the risk of not renewing this debt, and (iv) other liabilities in portfolio that may exit the country.[2] When this IMF ratio is above 100% it means that the country would be able to endure one year of capital outflows without running out of reserves.[3]

This index therefore serves to identify those countries whose reserves might not be large enough to withstand a possible adverse shock, as is the case of Egypt, South Africa and Malaysia (see the graph). However, such a ratio should not be considered an unequivocal sign that a country has problems or even that it is free from them. There are countries whose index is not informative and those for which we should take extra considerations into account that also affect the need for reserves. In particular we have to be extra cautious when looking at economies with certain peculiarities in the different sources of potential capital outflows that make up the denominator for the ratio. For example, a country with capital controls, such as China, will require a lower reserve ratio. Similarly countries that impose minimum periods to hold assets or taxes that discourage early redemption could require fewer reserves as a percentage of their liability portfolio.

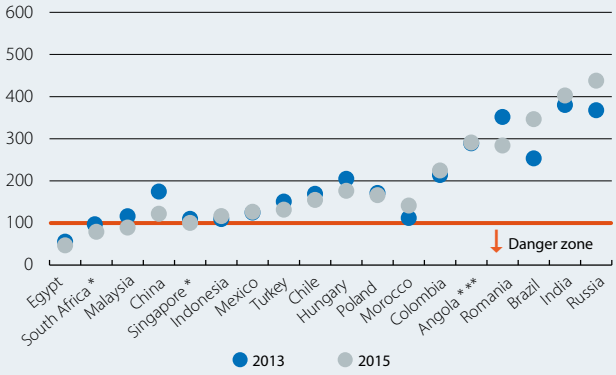
On the other hand, the IMF's measure in the case of Russia is a clear example of poorly founded optimism. The country's ratio is far above 100% and even improved between 2013 and 2015 in spite of a 27% fall in reserves. This improvement was mainly due to a sharp drop in exports as a result of the slump in oil prices (oil represents one third of all Russia's exports) and also limited access to international debt markets due to sanctions. It therefore comes as no surprise that, in a recent report, the IMF advises Russia to have double the reserves ratio suggested by its standard measure.

The case of Angola is similar to that of Russia. Its index is around 300% in spite of a 30% drop in its reserves between 2013 and 2015. In part this is due to the collapse of oil exports (which account for 98% of all the country's exports). Consequently, those countries that are highly dependent on commodities exports will generally require a reserve ratio in excess of 100 as they tend to encounter more difficulties when there is an adverse shock in foreign demand, given that commodities are relatively price-inelastic. We should also add the Angolan economy's high dependence on the dollar, which means that the minimum level of reserves required is even higher. All this has led to the country recently having to ask the IMF for aid.

In summary, the IMF's measurement is a good starting point to analyse the position of emerging countries in terms of their international reserves and there is evidence that, the lower the ratio, the higher the probability of a crisis in a country's balance of payments. However, it is advisable to remain critical and complement this analysis with alternative measures.

Availability of reserves

*Index (100 marks the danger zone) ****



Notes: ** Data for foreign investment position in portfolio from 2014. ** Projected export data by the IMF for 2015. *** Values above 100 indicate that a country can withstand a shock of capital outflows for one year without its reserves running out.*
Source: *CaixaBank Research, based on data from the IMF, Oxford Economics and national sources.*

1. We have used the latest data available for 2015 and 2016.
2. Unlike the IMF we have not included bank loans between these liabilities due to a lack of data.
3. For a detailed description of this methodology see IMF «Assessing Reserve Adequacy – Specific Proposals», April 2015.

KEY INDICATORS

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

UNITED STATES

	2014	2015	2015 Q1	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16
Activity									
Real GDP	2.4	2.4	2.9	2.7	2.1	2.0	–	1.9	–
Retail sales (excluding cars and petrol)	3.9	4.0	4.8	3.7	4.0	3.5	3.7	4.8	3.9
Consumer confidence *(value)*	86.9	98.0	101.3	96.2	98.3	96.0	97.8	94.0	96.1
Industrial production	2.9	0.3	2.4	0.4	0.1	–1.6	–1.3	–1.8	–2.0
Manufacturing activity index (ISM) *(value)*	55.6	51.3	53.2	52.6	51.0	48.6	48.2	49.5	51.8
Housing starts *(thousands)*	1,001	1,107	978	1,158	1,158	1,135	1,117	1,194	1,089
Case-Shiller home price index *(value)*	171	179	177	179	179	182	185	187	...
Unemployment rate *(% lab. force)*	6.2	5.3	5.6	5.4	5.2	5.0	4.9	4.9	5.0
Employment-population ratio *(% pop. > 16 years)*	59.0	59.3	59.3	59.3	59.3	59.4	59.6	59.8	59.9
Trade balance [1] *(% GDP)*	–2.9	–3.0	–3.0	–3.0	–3.0	–3.0	–3.0	–3.0	...
Prices									
Consumer prices	1.6	0.1	–0.1	0.0	0.1	0.5	1.4	1.0	0.9
Core consumer prices	1.7	1.8	1.7	1.8	1.8	2.0	2.2	2.3	2.2

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

	2014	2015	2015 Q1	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16
Activity									
Real GDP	–0.1	0.5	–1.0	0.7	1.7	0.8	–	...	–
Consumer confidence *(value)*	39.3	41.3	40.6	41.5	41.0	42.2	42.3	40.1	41.7
Industrial production	2.1	–1.2	–2.6	–0.8	–0.4	–1.1	–2.6	–5.6	–1.6
Business activity index (Tankan) *(value)*	13.5	12.8	12.0	15.0	12.0	12.0	–	6.0	–
Unemployment rate *(% lab. force)*	3.6	3.4	3.5	3.4	3.4	3.3	3.2	3.3	3.2
Trade balance [1] *(% GDP)*	–2.6	–0.6	–1.8	–1.4	–1.0	–0.6	–0.5	–0.3	–0.2
Prices									
Consumer prices	2.7	0.8	2.3	0.5	0.2	0.3	–0.1	0.3	0.0
Core consumer prices	1.8	1.0	2.1	0.4	0.8	0.8	0.7	0.8	0.7

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

	2014	2015	2015 Q1	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16
Activity									
Real GDP	7.3	6.9	7.0	7.0	6.9	6.8	–	6.7	–
Retail sales	12.0	10.7	10.6	10.2	10.7	11.1	10.2	10.2	10.5
Industrial production	8.3	6.1	6.4	6.3	5.9	5.9	5.4	5.4	6.8
PMI manufacturing *(value)*	50.7	49.9	49.9	50.2	49.8	49.7	49.4	49.0	50.2
Foreign sector									
Trade balance [1] *(value)*	383	602	488	541	577	602	605	577	604
Exports	6.0	–2.5	4.6	–2.2	–5.8	–5.1	–11.4	–25.4	11.5
Imports	0.4	–14.2	–17.6	–13.5	–14.3	–11.6	–18.6	–13.8	–7.6
Prices									
Consumer prices	2.0	1.4	1.2	1.4	1.7	1.5	1.8	2.3	2.3
Official interest rate [2] *(value)*	5.60	4.35	5.35	4.85	4.60	4.35	4.35	4.35	4.35
Renminbi per dollar *(value)*	6.2	6.3	6.2	6.2	6.3	6.4	6.6	6.5	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 · The euro area's recovery continues its course

The European economy is still advancing after an episode of uncertainty. The International Monetary Fund (IMF) has revised its growth forecasts for the euro area slightly downwards after the turbulent episode registered by markets in 2016 Q1. However, this instability does not seem to have significantly affected the scenario for the euro area as a whole and the IMF's revisions are minimal. The institution expects the European economy to continue growing in 2016 almost at the same rate as in 2015 and also that this situation will continue in 2017. Nonetheless, although favourable forces (accommodative monetary policy, low commodity prices and a depreciated euro) and adverse forces (the slowdown in some emerging countries and financial and political uncertainty) balance out in the short term, the IMF has also noted that it is necessary to complement the expansionary measures of the European Central Bank (ECB) with structural reforms to boost long-term growth. The cases of Italy and France, the two main European economies for which the IMF expects lower growth and whose forecasts it has reduced the most, exemplify the possible consequences of a deadlock in structural reforms.

After eight years the euro area's GDP is back to its pre-crisis level. Both the US and the UK had already reached their pre-crisis levels six and three year ago, respectively. The preliminary GDP estimate also shows that the euro area speeded up its growth rate in 2016 Q1 with a quarter-on-quarter percentage change of 0.6%, higher than the figure for the previous quarter (0.3%) and the forecast (0.4%). In Q1 the European economy continued to benefit from the aforementioned temporary support factors. Of particular note is the case of France, which surprised analysts with 0.5% growth quarter-on-quarter, 0.3 pps more than the previous quarter. The French economy was supported by an increase in private consumption (+1.2%) and investment (+0.9%) although it is not certain whether this velocity will continue.

Activity is growing at a constant pace. Both the initial indicators published for 2016 Q2 and those that are still being announced for 2016 Q1 point to a moderate but stable expansion without any signs of negative impact from the recent episode of financial uncertainty. In this respect, February's industrial production, although falling by 0.8% in month-on-month terms due to January's exceptionally good figure, maintained a positive year-on-year growth rate (0.8%). The PMI indicators for April, stable and in the zone compatible with economic expansion (above 50), suggest that the recovery should continue to perform the same from now on, helped in the short term by the ECB's accommodative environment, low commodity prices and a depreciated euro. The negative note comes from France where the PMI indicators continue to flirt with stagnation.

Euro area: GDP forecasts of the IMF

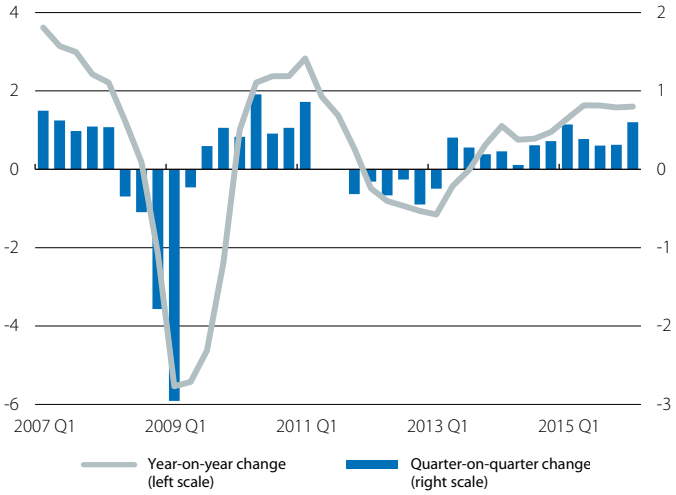
Annual change (%)

		Forecast		Change (%) compared with January 2016 forecast (pps)	
	2015	2016	2017	2016	2017
Euro area	1.6	1.5	1.6	▼ –0.2	▼ –0.1
Germany	1.5	1.5	1.6	▼ –0.2	▼ –0.1
France	1.1	1.1	1.3	▼ –0.2	▼ –0.2
Italy	0.8	1	1.1	▼ –0.3	▼ –0.1
Spain	3.2	2.6	2.3	▼ –0.1	=

Source: *CaixaBank Research, based on IMF data (WEO, April 2016).*

Euro area: GDP

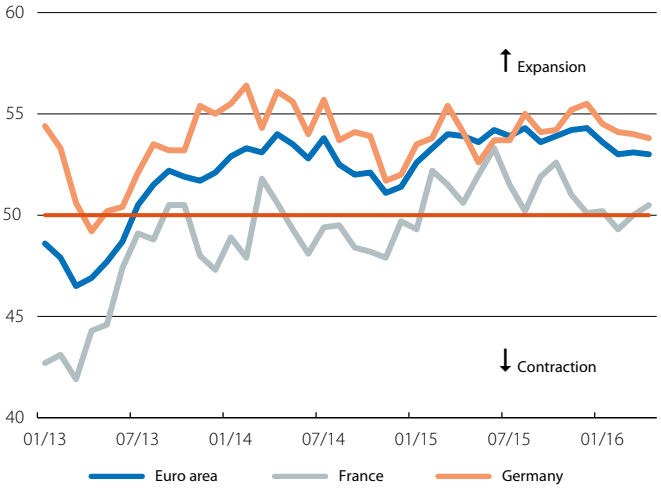
Year-on-year change (%) *Quarter-on-quarter change (%)*



Source: *CaixaBank Research, based on Eurostat data.*

Composite PMI activity indicator

Level



Source: *CaixaBank Research, based on data from Markit.*

Domestic demand is still driving the recovery. Indicators suggest that the financial uncertainty observed in the first quarter of the year has not damaged the euro area's domestic demand. Retail sales in February kept their year-on-year growth above 2% and were clearly higher than their average figure for the last six years. By country, the performance was particularly good by Spain (4.2%) and France (3.5%) while in Germany growth was somewhat more moderate (1.6%). Where financial instability does seem to have had an effect is on confidence indicators. In any case, although it has followed a downward trend in 2016 Q1, consumer confidence is still above its average level for the last few years and April's figure has improved on March. Along the same lines, and after three consecutive months of falls, the economic sentiment indicator also picked up in April. Moreover, with the support of the ECB's accommodative measures and a neutral or slightly expansionary fiscal policy, domestic demand is likely to continue driving the economy over the coming months.

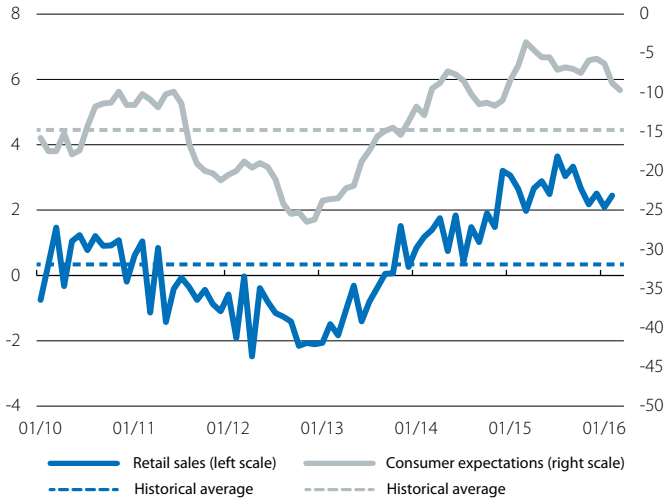
Credit recovers, boosted by the ECB and domestic demand. The bank lending survey for 2016 Q1 indicates further relaxation in the criteria for granting loans to companies and for household consumption, as well as in the financing conditions of the loans granted. Banks point to low financing costs and competition as the main reasons for these easier conditions. With regard to the loans requested, the survey shows a rise in net demand by firms and households. Consequently both supply and demand factors are favourable for credit to flow towards companies and consumers.

Inflation is still in negative terrain. Further drops in the price of oil at the end of 2015 are still keeping consumer prices down, with inflation ending April at –0.2% and have now seen three consecutive months in negative terrain. Core inflation also slowed down its progression in April (0.8%) compared with the figure observed in 2016 Q1 (0.9%). Although the current levels are far from the ECB's 2% target, throughout 2016 there will be a rebound effect in general inflation once the base effect disappears of the slump in oil prices in 2015. We also expect both general and core inflation to be pushed up by the economic recovery and by the ECB's measures to inject liquidity. For this reason we expect both to be considerably closer to the ECB's target in 2017.

The labour market continues its gradual recovery. The figures published at the end of 2016 Q1 show a slow but sustained reduction in the unemployment rate in the euro area as a whole, standing at 10.2% (compared with 11.2% in March 2015). This improvement has also been widespread across the main countries. Specifically, Spain has made a significant contribution to this drop, closing 2016 Q1 with an unemployment rate 2.6 pps below March's figure in 2015. Unemployment is still high in the euro area as a whole but, according to the forecasts of CaixaBank Research, it will gradually fall from now on. Once again this gradual nature

Euro area: consumption indicators

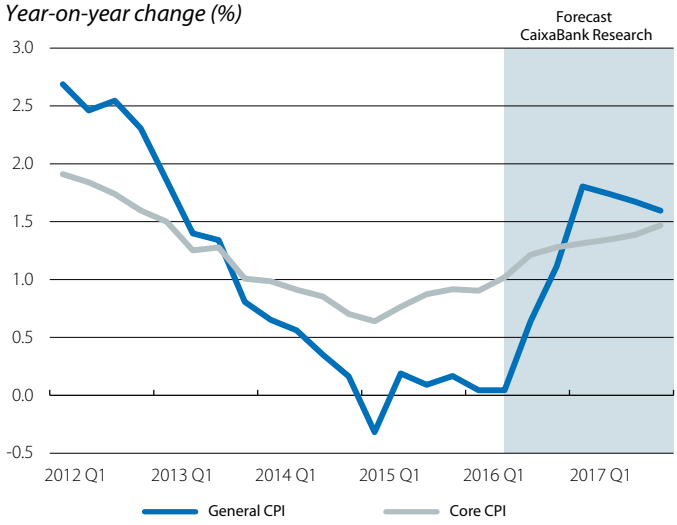
Year-on-year change (%) *Level*



Source: *CaixaBank Research, based on Eurostat data.*

Euro area: harmonised CPI

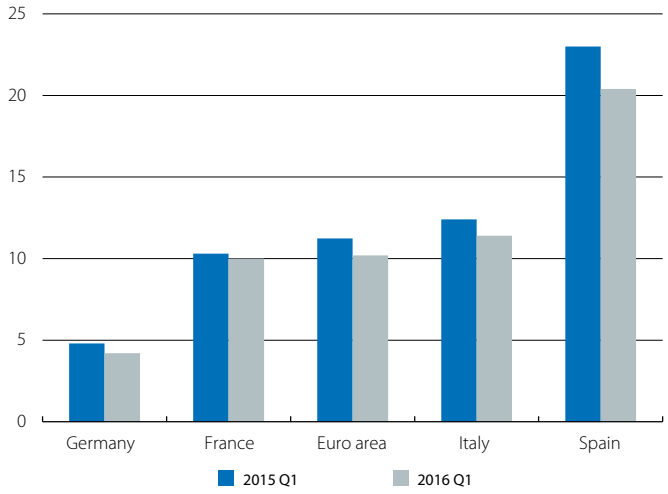
Year-on-year change (%)



Source: *CaixaBank Research, based on Eurostat data.*

Unemployment rate

(%)



Source: *CaixaBank Research, based on Eurostat data.*

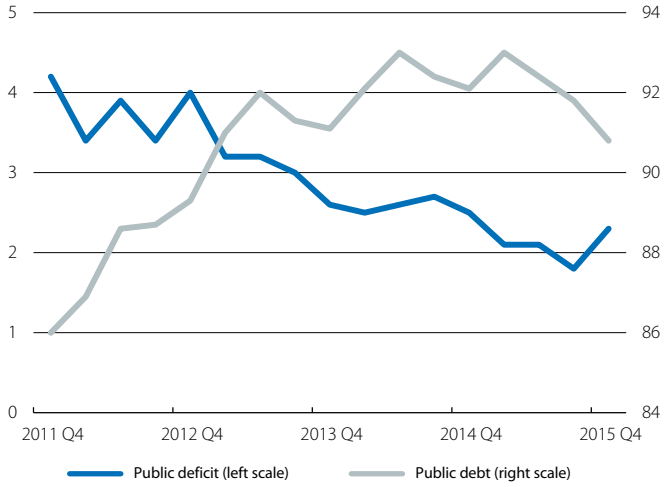
highlights the importance of carrying out structural reforms which, supported by the accommodative monetary environment, can stimulate the economy's growth potential and help to speed up job creation.

The fall in debt continues within a context of a neutral fiscal policy. Together with more accommodative monetary conditions, fiscal policy is expected to adopt a neutral or slightly expansionary position in 2016. In fact the data at the end of 2015 indicate a slight upswing in the public deficit in the euro area in 2015 Q4 which has nevertheless been compatible with a sustained reduction in public debt in the last year, up to 90.8% of GDP. By country, of note are the considerable reductions in debt in Germany, the Netherlands, Ireland and Italy, although the level of the last two is still high. On the other hand the debt to GDP ratio has not fallen significantly, not even in France (up by 0.4 pps) or in Spain (down by 0.1 pps), which also have high levels of debt. The fiscal positions of 2016 Q1 are therefore very different from country to country, so it is important for those with higher debt to take advantage of the favourable environment to continue the process of deleveraging and for those with a larger surplus to take advantage of the margin to adopt more expansionary fiscal policies to boost growth.

Italy is tackling the problem of bad debt with small steps. The Italian government announced the creation of a fund financed by the main banks, insurers and fund managers to tackle the problem of non-performing loans. These have rocketed in the last few years, exceeding 20% of Italy's GDP in 2014 and 2015, and are a huge burden on the economy's recovery, as reflected in the share prices of the country's major banks. At the same time as setting up the fund, the government has also announced reforms of the bankruptcy law to speed up the process of restructuring bad debt. The size of the fund, namely 5 billion euros, does not seem sufficient although its overall purchasing capacity will depend on the degree of leveraging and the discount factor applied to the assets.

Euro area: public deficit and debt

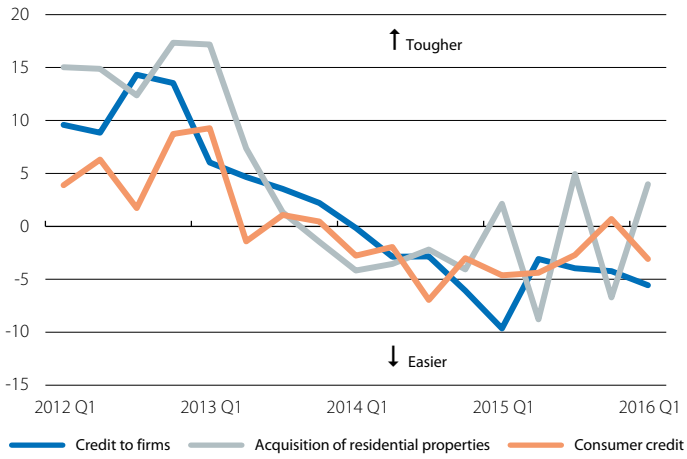
(% of GDP) *(% of GDP)*



Source: *CaixaBank Research, based on Eurostat data.*

Euro area: bank lending survey

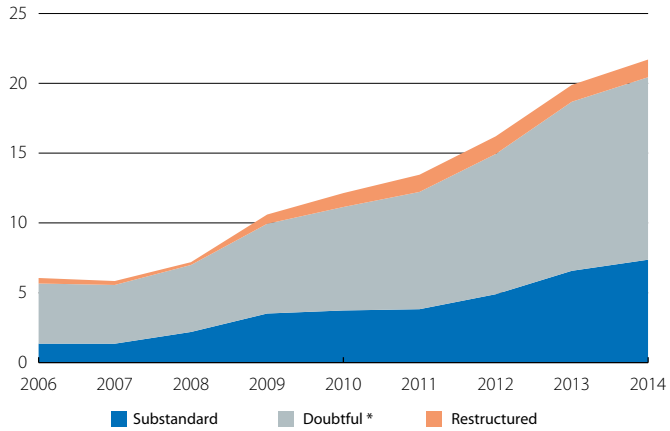
Banks with tougher (+) or easier (-) conditions for granting loans (net %)



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

Problematic loans with Italian banks

(% GDP)



Note: ** Includes exposure to any borrower in a situation of insolvency and whose loans are not included in another category and with an overdraft position in excess of 90 days.*
Source: *CaixaBank Research, based on data from the Bank of Italy.*

FOCUS · Brexit: a gamble with more costs than benefits

On 23 June the United Kingdom will hold a referendum to decide whether it remains in the EU. British opinion polls and betting firms give only a very slight advantage to the country remaining, so the probability of a Brexit is by no means low.[1] This article analyses the economic consequences of leaving the EU for the United Kingdom and through which channels such consequences may occur.

The first obstacle to assessing the potential economic cost of a Brexit is the lack of precision regarding the potential new relationship between the United Kingdom and the EU. The most favourable option in the range of possible scenarios would be to establish a similar relationship to the current one, close to the Norwegian or Swiss model, by means of a free trade agreement with the EU for goods and some services, the free movement of people and a contribution to the European budget. The least favourable would involve no trade agreement being reached with the EU, relations being governed by the WTO which would not permit the free movement of people and the United Kingdom not contributing to the European budget. The agreement that may be reached in a hypothetical exit would surely be somewhere in the middle. The rest of the EU has no reason to be generous to the UK and would try to use its exit as a disciplinary example for other countries. But there is a mutual interest in the UK economy doing well so any «punishment» is unlikely to be too severe. In any case such reflection highlights the main effect of a Brexit on the British economy in the short term: the uncertainty that would be caused by the negotiation process and the tone and duration of such negotiations would determine the confidence of investors and households.

In this respect the impact on the financial sector would be particularly significant as this is more vulnerable to scenarios with upswings in uncertainty. There are many channels through which such an impact would occur (a higher risk premium and financing costs, liquidity problems and the depreciation of the pound) and the action taken by the Bank of England could turn out to be decisive in containing contagion to the rest of the economy. In fact the institution has already announced preventative measures to provide British financial institutions with extra liquidity.

Once an agreement is reached, the United Kingdom's new status would affect its economy through the channels of trade, finance, foreign direct investment (FDI), regulations and public budgets, among others. The commercial channel has been the most analysed: the higher customs tariffs and non-tariff barriers that might result from a Brexit could substantially reduce trade flows. Moreover the United Kingdom would have to establish trade agreements with third countries and would not longer form part of any agreements secured by the EU in the future.

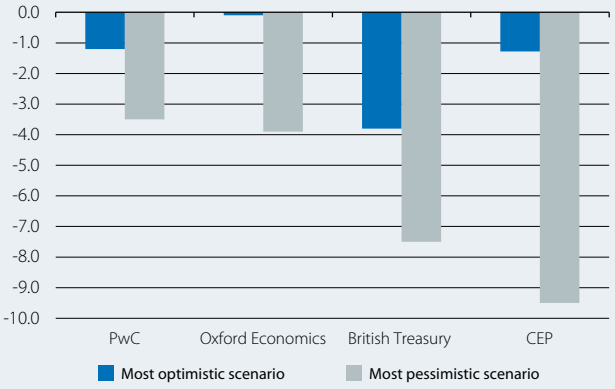
Britain's financial sector could also be hard hit on losing the financial services «passport» that allows it to operate with a single licence throughout the EU. The ECB could also restrict certain financial activities to within the euro area so that other European financial centres might gain market share and erode the City's leading position. Flows of FDI could also fall in the medium term because a less open economy would reduce Britain's productivity and the economy would also lose its appeal as a gateway to the single market.

Two channels with a positive economic impact for the United Kingdom would be better adaptation of regulations to the preferences and needs of the British people (it is assumed that the country's exit from the EU would make it more flexible in both economic and legislative terms) and a reduction in the UK's contribution to the EU budget (equivalent in the last few years to 0.5% of GDP). Nonetheless these positive effects are small in size.

In conclusion, most studies analysing the impact of the UK's exit from the EU, although they use different models, hypotheses and channels, agree that the economic cost of a Brexit could be considerable. For example, the Centre for Economic Performance (CEP) estimates a negative impact in the long term, taking into account the channel of trade and public finances, of between 1.3% and 9.5% of GDP. However, although a Brexit is unlikely to be beneficial for the United Kingdom from an economic point of view, other more emotional factors such as anti-European feeling might end up deciding the result of the referendum.

Economic impact of Brexit on the United Kingdom *

Change in GDP (%)



Note: ** The reports use different hypotheses and transmission channels. Here the most optimistic and pessimistic scenarios are reproduced for the long term (2030).*
Source: *CaixaBank Research, based on data from PwC, CEP, Oxford Economics and HM Treasury.*

1. The implied probability of Brexit calculated based on William Hill's betting odds would be around 32% (7 April).

FOCUS · Will the euro area's current account surplus last?

After the start-up of the euro, the current account balance of the euro area remained at equilibrium. However, in 2011 it began an upward trend which brought it to 3% of GDP in 2015. In this Focus we analyse the key factors behind this change in trend in order to determine to what extent they are temporary.

The trend of the current account balance by country provides the first clue as to the factors pushing up the current balance of the euro area as a whole. It can be seen that the peripheral countries experienced large deficits before the crisis which they sharply corrected between 2008 and 2015 until achieving a surplus of 1.8%. This contrasts with the situation in the core countries which, after the euro came into circulation, have maintained a considerable current account surplus that has remained relatively stable and has only increased slightly in the last year. The change in the euro area's current account balance is therefore due particularly to the correction taking place in the periphery.

There are many factors lying behind this correction in the peripheral countries. Firstly, the moderation in domestic demand between 2008 and 2012 helped to improve the current account balance by reducing imports. Part of this moderation was temporary and has been reversing since 2013. However, another significant part was structural as growth in domestic demand is expected to be lower than that observed before the crisis.[1] This fact has reduced the current account imbalances.

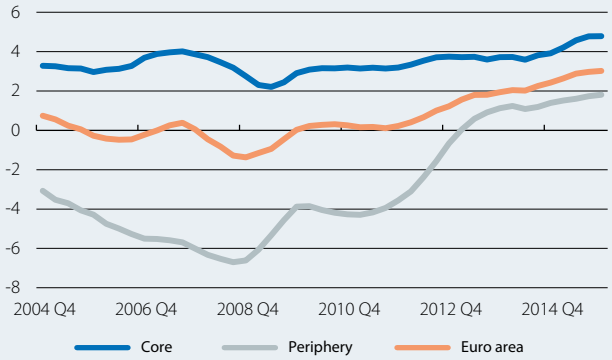
The improved price competitiveness of exports has also helped to boost the current account surplus. This increase in peripheral competitiveness is largely due to a reduction in the countries' unit labour costs compared with their rivals,[2] a correction which is above all structural as it is partly due to the labour reforms that have been carried out, making the peripheral economies more flexible. On the other hand the euro's depreciation was a cyclical factor that also helped to improve the price competitiveness of exports to countries outside the euro area. Although this factor is the same for all countries in the euro area it particularly benefits the periphery as their exports are more sensitive to exchange rate variations since they compete more in terms of price and less in quality.[3]

Lastly, the drop in oil prices has also helped to improve the current account balance for energy of the euro area (in 2015 this represented an improvement in the trade balance of 0.7% of GDP).[4] Insofar as part of the reduction in the price of crude is permanent in nature, being linked to a larger supply resulting from the exploitation of unconventional reserves such as shale oil, the improvement in the energy balance can also be seen as permanent. Another part is, however, temporary and the recovery in oil prices will reverse some of the improvement seen in the current account balance.

The factors analysed therefore point to a significant proportion of the improvement in the current account balance being due to structural factors. This has also been confirmed by a study carried out by the European Commission, which precisely suggests that the improvement in the current account surplus occurring in the euro area as a whole between 2007 and 2015 (3.1 pps of GDP) is totally due to structural factors.[5] It also concludes that structural improvements have been particularly marked in the peripheral countries, a phenomenon worthy of applause and whose consolidation must be safeguarded, given that these economies have a high net external debt. On the other hand the core countries, which are generally posting limited growth rates, could promote reforms to improve growth in their domestic demand, although this might reduce their current account surplus.

Current account balance

Cumulative over four quarters (% of GDP)



Note: ***Core:*** *Austria, Finland, France, Germany, Luxembourg, Netherlands and Belgium.* ***Periphery:*** *Estonia, Greece, Ireland, Italy, Latvia, Lithuania, Malta, Portugal, Slovakia, Slovenia and Spain.* ***Euro area:*** *current balance outside the euro area.*
Source: *CaixaBank Research, based on Eurostat data.*

1. European Commission «European Economic Forecast, Spring 2015».
2. For example, in Spain ULC were in 2015, 3.8% lower than the figure for 2008, while in Germany they were 19.3% higher.
3. Between March 2014 and April 2015, the nominal effective exchange rate depreciated by 13%. The 5% appreciation posted between April 2015 and March 2016 has partially reversed this trend, showing the importance of structural gains in competitiveness.
4. IMF «2015 External Sector Report - Individual Economy Assessments».
5. European Commission «European Economic Forecast, Spring 2015».

KEY INDICATORS

Activity and employment indicators

Values, unless otherwise specified

	2014	2015	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16	04/16
Retail sales *(year-on-year change)*	1.4	2.8	2.6	3.4	2.4	2.0	2.4	...	...
Industrial production *(year-on-year change)*	0.9	1.6	1.5	2.0	1.3	2.9	0.8	...	...
Consumer confidence	–10.2	–6.2	–5.2	–7.0	–6.4	–6.3	–8.8	–9.7	–9.3
Economic sentiment	101.5	104.2	103.6	104.4	106.2	105.0	103.9	103.0	103.9
Manufacturing PMI	51.8	52.2	52.2	52.2	52.8	52.3	51.2	51.6	51.5
Services PMI	52.5	54.0	54.1	54.0	54.2	53.6	53.3	53.1	53.2
Labour market									
Employment (people) *(year-on-year change)*	0.6	1.0	0.9	1.0	1.2	–	...	–	–
Unemployment rate: euro area *(% labour force)*	11.6	10.9	11.0	10.7	10.5	10.4	10.4	10.2	...
Germany *(% labour force)*	5.0	4.6	4.7	4.6	4.4	4.3	4.3	4.2	...
France *(% labour force)*	10.3	10.4	10.4	10.5	10.2	10.1	10.2	10.0	...
Italy *(% labour force)*	12.7	11.9	12.2	11.6	11.6	11.6	11.6	11.4	...
Spain *(% labour force)*	24.5	22.1	22.6	21.6	20.9	20.5	20.5	20.4	...

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

	2014	2015	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16
Current balance: euro area	**2.6**	**3.4**	**3.1**	**3.3**	**3.4**	**3.3**	**3.3**	**...**
Germany	7.3	8.5	8.0	8.3	8.5	8.5	8.6	...
France	–0.9	–0.1	0.1	0.2	–0.1	–0.2	–0.5	...
Italy	1.8	2.2	1.9	2.2	2.2	2.2	2.2	...
Spain	1.0	1.4	1.3	1.4	1.4	1.4	1.4	...
Nominal effective exchange rate [1] *(value)*	**101.8**	**92.3**	**91.1**	**92.7**	**92.4**	**93.5**	**94.7**	**94.0**

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

	2014	2015	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16
Private sector financing								
Credit to non-financial firms [1]	–2.6	–0.1	–0.4	0.2	0.5	0.7	1.0	1.1
Credit to households [1, 2]	–0.1	0.8	0.5	1.0	1.3	1.4	1.5	1.6
Interest rate on loans to non-financial firms [3] *(%)*	2.0	1.6	1.6	1.5	1.5	1.4	1.3	...
Interest rate on loans to households for house purchases [4] *(%)*	2.6	2.1	2.0	2.1	2.0	2.0	2.0	...
Deposits								
On demand deposits	6.0	11.5	11.8	12.4	11.9	11.3	11.1	11.0
Other short-term deposits	–2.0	–3.9	–4.0	–4.7	–3.9	–2.7	–2.6	–2.5
Marketable instruments	–7.2	3.0	5.7	2.0	0.6	–1.6	–1.9	–1.0
Interest rate on deposits up to 1 year from households *(%)*	1.3	0.8	0.9	0.7	0.7	0.7	0.6	...

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.*

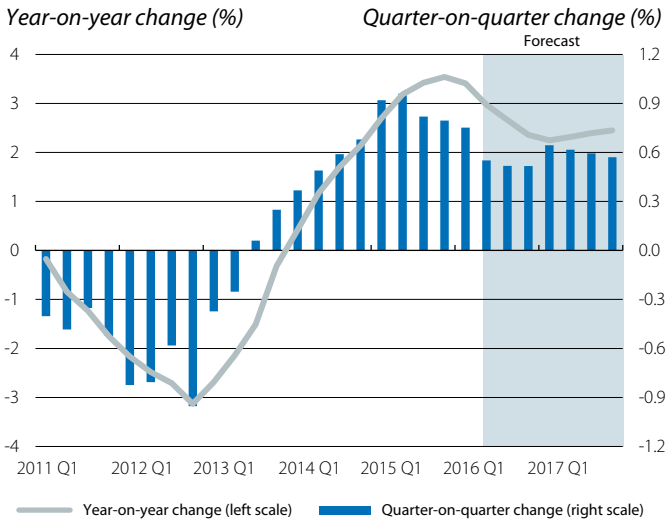
ECONOMIC OUTLOOK · **A good start to the year**

GDP grew in Q1 and maintained its rate of growth at 0.8% quarter-on-quarter, 0.1 pp more than predicted (3.4% year-on-year). Judging by the robust nature of consumption indicators, domestic demand, boosted by continued job creation, continued to be the driving force behind this growth. On the other hand, foreign demand more than likely deducted a little from the growth in GDP: the good performance by exports has occurred together with a sharp increase in imports, pushed up by dynamic domestic demand. Nevertheless, this year the foreign sector is expected to make a positive contribution to growth again, albeit gradually and at a moderate rate, thanks to the strong increase in exports and, to a lesser extent, the slight slowdown in imports.

Solid growth prospects for 2016. According to CaixaBank Research's estimates, the Spanish economy will grow by 2.8% year-on-year in 2016 (compared with 3.2% in 2015). In accordance with this scenario, indicators are still at high levels although some seem to be slowing down a little, such as the PMI for services which fell slightly in Q1 (to 54.7 points, compared with 55.9 in Q4), although it is still clearly in the expansionary zone. Another activity indicator, industrial production, also posted notable but lower growth (2.6% year-on-year in January and February, on average, compared with 4.2% in Q4). The same message of solidity can be deduced from the upward trend in production capacity utilisation for industry, which is now around its historical level in spite of having recorded a certain slowdown in Q1. With regard to demand indicators, while the growth rate for retail and consumer goods in Q1 was still solid and had even speeded up compared with Q4, consumer confidence dipped a little early in the year, partly due to the recent episode of financial turbulence. Although the information available for Q2 is still very incomplete, the business confidence index shows that this positive trend has continued in the current quarter. On the whole, the trend in all indicators therefore reinforces the view of solid but more moderate growth for this year.

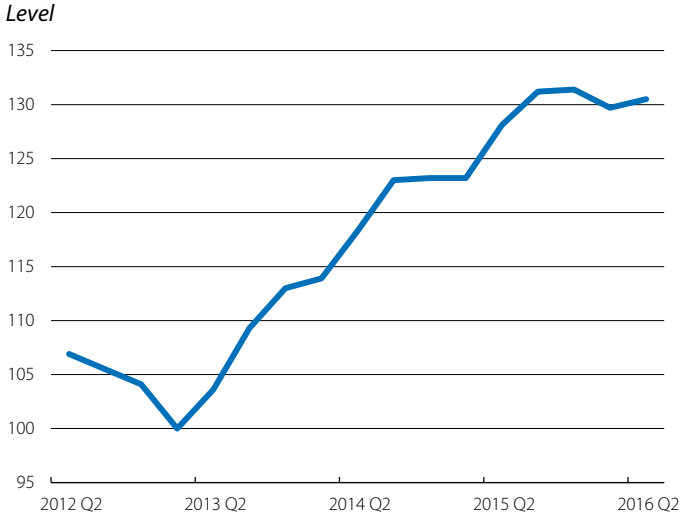
Changes in the measures to correct the budget deficit. The 2016-2019 Stability Programme presented by the government and still pending Brussels' approval contains a more relaxed plan for fiscal consolidation. Specifically, the deficit predicted for 2016 has been raised by 0.8 pps to 3.6% (from 2.8%) and the task of reducing the deficit to below 3%, set by the Stability and Growth Pact, has been postponed until 2017. The new deficit target for 2016 is slightly below the 3.9% predicted by CaixaBank Research. However, lacking details on the specific measures contained in the new Stability Plan, we have revised upwards our deficit forecast for 2017 to 3.1% instead of the previous figure of 2.1% (see the Focus «Spain's

GDP



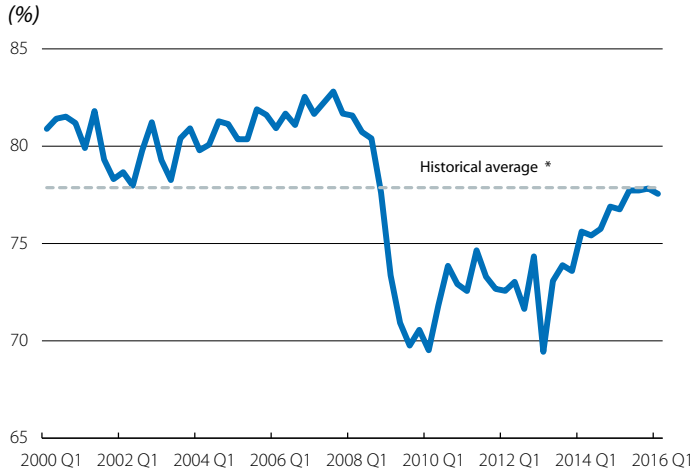
Source: *CaixaBank Research, based on INE data.*

Business confidence



Source: *CaixaBank Research, based on INE data.*

Degree of production capacity utilisation in industry



Note: ** Historical average since 1980.*
Source: *CaixaBank Research, based on data from the Ministry of Finance and Competitiveness.*

budget deficit: *eppur if muove* (and yet it moves)?» in this *Monthly Report*). The upward revision of the budget deficit will entail higher growth for the economy, so we have placed our 2017 growth forecast at 2.4%, a figure in line with the new macroeconomic situation presented by the government.

The recovery in employment is still on track. According to LFS data there was notable growth in employment in Q1, recording a quarter-on-quarter change of 0.9%, seasonally adjusted (compared with 0.8% in Q4). This good performance by employment was expected given the monthly increases in the number of registered workers affiliated to Social Security from January to March, totalling 116,260 people (seasonally adjusted). By sector, services saw strong growth, in spite of being affected by Easter falling entirely in March this year, unlike last year. The increase for employment in industry and construction was slightly more contained than in previous quarters but was still high. The fact that the private sector has remained dynamic over the last few months, with a high rate of year-on-year growth, namely 3.5% in Q1 (compared with 2.1% in the public sector), is helping to reinforce the recovery. The data, therefore, are gradually confirming the scenario of strong improvement in employment which, however, should slow down gradually over the coming months.

Unemployment picks up slightly in Q1 but for seasonal reasons. The usual dip in employment at the beginning of year, on this occasion totalling 64,600 people (not seasonally adjusted), caused a slight increase in the unemployment rate 0.1 pp up to 21.0%. This rise would have been even bigger if the labour force had not decreased (by 52,700 people). It should be noted, however, that this temporary upward movement does not imply that the downward trend in the unemployment rate has ended and we expect it to continue and finish the year below 20%.

The improved labour market is helping private sector deleveraging to progress. The downward trend in the debt of households and non-financial firms continued in 2015 Q4, standing at 67.5% and 104.6% of GDP, respectively. The ratio between the stock of private debt and GDP will continue to fall over the coming quarters, a process that will still be compatible with an increase in flows of credit towards households and companies thanks to the rise in household gross disposable income and in corporate earnings.

The ECB's expansion of monetary stimuli is boosting credit. According to the bank lending survey in Spain, in Q1 the criteria to grant loans to households for consumption and to purchase housing were relaxed, while the criteria for SMEs and large firms remained unchanged. Similarly, in February the NPL ratio fell to 10.1% of credit as bad debt continued to shrink at a faster rate than total credit. This is making bank balance sheets increasingly healthy, a necessary ingredient for the supply of credit to increase. All this therefore suggests that the flow of credit towards households and firms will grow over the coming months.

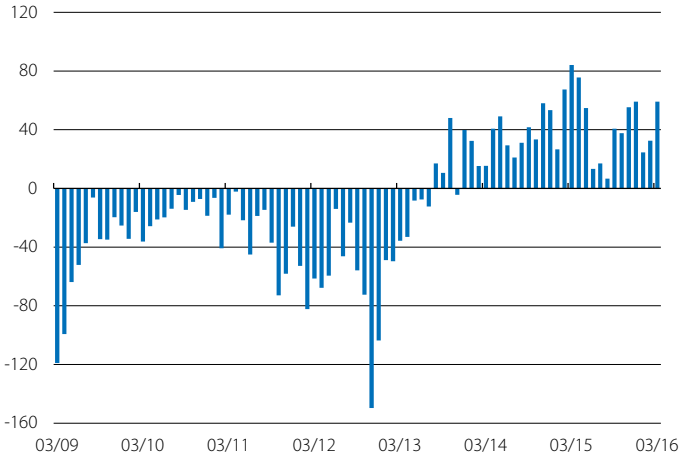
Macroeconomic situation predicted in the 2016-2019 Stability Programme

	2015	New scenario		Previous scenario *	
		2016	2017	2016	2017
GDP (year-on-year change, %)	3.2	2.7	2.4	3.0	2.9
Employment (year-on-year change, %)	3.0	2.5	2.2	3.0	2.9
Unemployment rate (%)	22.1	19.9	17.9	19.7	17.6
Public deficit (% of GDP)	5.0	3.6	2.9	2.8	1.4
Public debt (% of GDP)	99.2	99.1	99.0	98.2	96.1

Note: ** The previous scenario corresponds to the updated macroeconomic situation presented in July 2015.*
Source: *CaixaBank Research, based on data from the 2016-2019 Stability Programme.*

*Registered workers affiliated to Social Security **

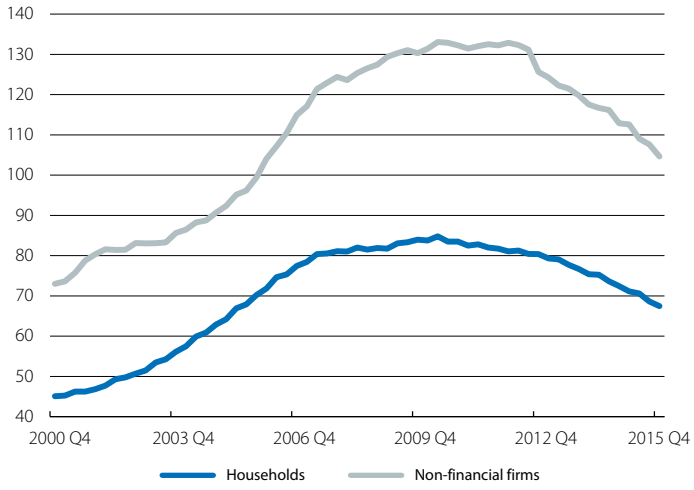
Month-on-month change (thousands)



Note: ** Series seasonally adjusted.*
Source: *CaixaBank Research, based on data from the Ministry of Employment and Social Security.*

Private sector debt

(% of GDP)



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

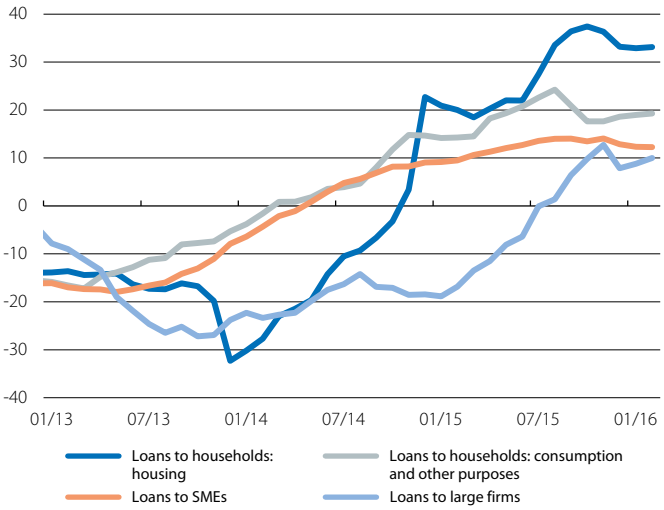
The improvement in the quality of bank balance sheets can also be seen in the good trend of the real estate market. Both the notable rate of job creation, which has been key to increasing the purchasing power of households, and also easier conditions to grant loans by banks, have boosted house sales. Specifically, these grew by 9.9% year-on-year in February (cumulative over 12 months), reaching levels similar to those at the start of 2012. It should be noted that the pressure on prices varies greatly from region to region as there are also great regional differences between the stock of new housing available for sale and the growth in sales.

Inflation fell by 0.3 pps in April, down to –1.1%, while the CaixaBank Research forecast predicted a slight recovery (0.1 pp). Lacking the breakdown by component, the drop seems mostly due to the fall in the price of electricity and package holidays, this last case due to the fact that Easter fell entirely in the month of March this year. This decline in inflation is the result of temporary factors and consequently does not alter the expected scenario of a gradual recovery in prices.

Low oil prices boost the balance of trade through savings in the energy bill. Nominal goods exports rose by 3.0% year-on-year in February (cumulative over three months), more than imports which grew by 1.9%. However, if we exclude energy goods, the growth in imports is still high and larger than that of exports, reducing the non-energy balance. Given that the outlook over the next few months is for the consumption of durables to continue increasing at a good rate (and given that Spain imports around two thirds of its consumer durables), this strong trend in non-energy imports is likely to continue (see the Focus «Spanish imports during the recovery» in this *Monthly Report*). Nonetheless, in 2016 the energy balance and income balance will continue to improve thanks both to lower oil prices and interest rates. The services balance should also improve, judging by the increase in exports of non-tourism services and the good figures posted for the tourism industry. In this respect, of note is the sharp increase in total expenditure of the international tourists visiting Spain, namely 8.0% year-on-year in February. Regarding the balance of goods, new orders for Spanish industry received a boost in February from the foreign market, both from the euro area and from the rest of the world, which suggests that goods exports might perform better over the coming months, supported by less uncertainty regarding developments in the global economy.

New loans granted

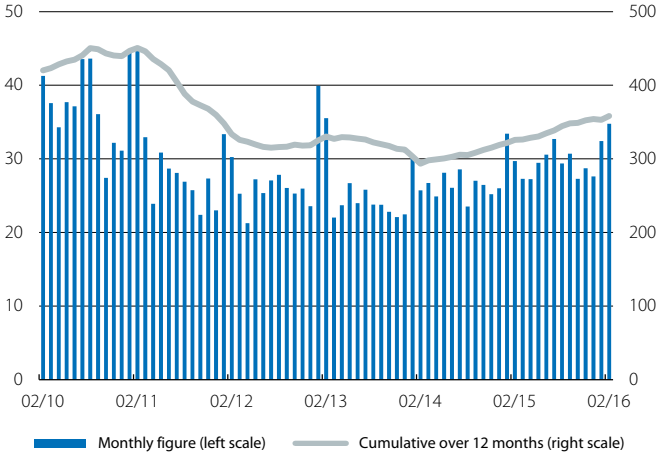
Year-on-year change, cumulative over 12 months (%)



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

House purchases

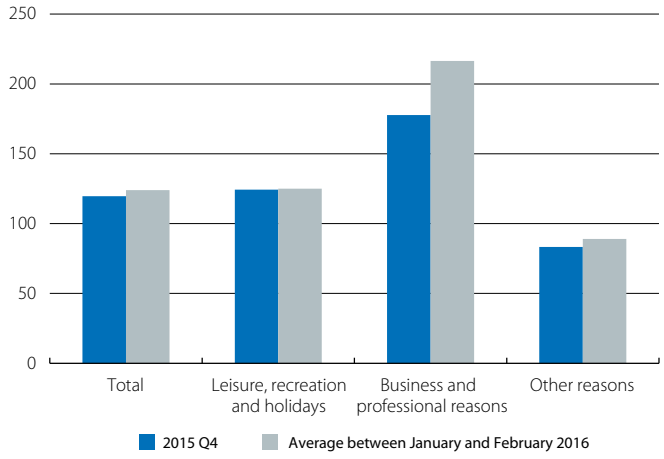
(Housands of residential properties) *Cumulative figures over 12 months (Thousands of residential properties)*



Source: *CaixaBank Research, based on INE data.*

Expenditure of international tourists by main reason for travel

(Euros per person and day)



Source: *CaixaBank Research, based on INE data.*

FOCUS · Spanish exports are consolidating

During the recession, weak domestic demand led many firms to look abroad, augmenting the number of exporters from 100,000 to 150,000 between 2010 and 2013. This increase is highly significant because, over the years, some of these firms become regular exporters[1] which are, as we will see below, the companies that truly boost growth in exports.

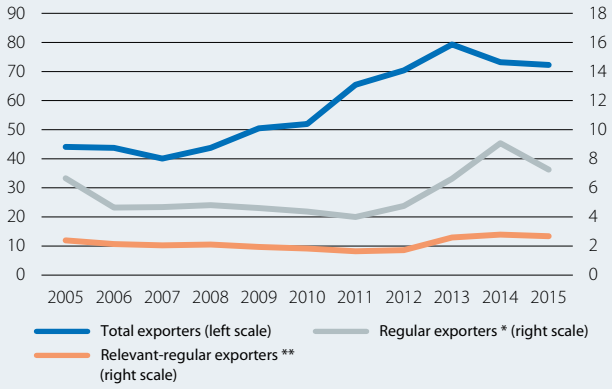
Starting to export is a very risky decision for companies as surviving in the foreign market is highly unlikely in the first few years: more than half the firms that start to export stop doing business abroad during the first two years and most of the failures occur in the first four or five years.[2] In Spain, according to our estimates, the survival rate in foreign markets has remained relatively stable over the last ten years at around 12%[3] which, together with the strong increase in the number of firms starting to export after the crisis, has resulted in considerable growth both in the flow of new regular exporters and also in new relevant-regular exporters[4] over the last three years (see the first graph).

The increase in the number of regular exporters, going from 38,000 in 2012 to 48,000 in 2015, is particularly important because, once companies have passed the four-year threshold and become firmly established in the foreign market, they are more likely to take advantage of economies of scale to increase the number of destinations they export to and boost their sales in those markets where they are already present. In other words they increase both their extensive and intensive margin. Regarding the extensive margin, it comes as no surprise that larger firms export to a larger number of countries but it should be noted that, between 2010 and 2015, these broadened their destinations by five countries on average while small firms remained stable with 1.5 destinations per company. Regarding the intensive margin, since a considerable proportion of the companies starting to export were small in size, the average value exported by all companies has not grown since 2006. But the average value has grown for relevant exporters, by 35%, and especially for relevant-regular exports, by 44% (see the second graph). Among the latter, although it is true that part of this increase is due to large Spanish multinationals boosting their sales, it is also the result of new companies becoming relevant-regular exporters.[5]

Lastly, this flow of new exporters in 2013-2015, 20% more than in 2010-2015, suggests that, assuming a constant survival rate, the number of regular exporters will increase in the coming years. Since regular exporters tend to enjoy higher growth in their intensive and extensive margins than the rest, they will be able to boost Spain's exports in the future at a high rate such as the present, above the average for the decade prior to the crisis.

Flows of new exporters

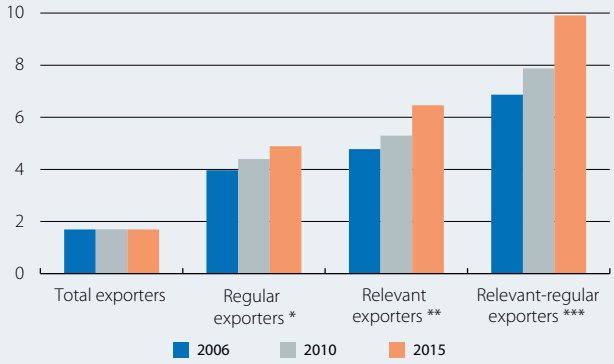
(Thousands of companies) *(Thousands of companies)*



Notes: ** Regular exporters: companies that have exported in the last four years.*
*** Relevant-regular exporters: companies that have exported > €50,000 in the last four years.*
Source: *CaixaBank Research, based on ICEX data.*

Average value exported by firm

(Million euros)



Notes: ** Regular exporters: companies that have exported in the last four years.*
*** Relevant exporters: companies that export more than €50,000.*
**** Relevant-regular exporters: companies that have exported > €50,000 in the last four years.*
Source: *CaixaBank Research, based on ICEX data.*

1. Companies exporting in the base year and in the three previous years.
2. See Besedes, T. and T. Prusa (2011) «The role of extensive and intensive margins and export growth», Journal of Development Economics.
3. We define the survival rate as the number of companies becoming regular exporters in the period t divided by the number of companies starting to export in *t-3*. Our estimate is in line with that of other developed economies such as the US and the euro area, according to Besedes and Prusa.
4. Relevant-regular exporters are those exporting more than 50,000 euros in the last four years.
5. Proof of this is the fact that the average value exported by new relevant-regular exports triples that of relevant-regular exporters stopping their export business.

FOCUS · Spanish imports during the recovery

A typical phenomenon in recovery phases, and this one is no exception, is for households and companies to take consumption and investment decisions that had been postponed during the crisis. The main areas affected by such decisions tend to be consumer durables and investment in capital goods, especially transport. Given that such goods have a larger import content, it comes as no surprise that they lie behind part of the current increase observed in imports in the Spanish economy.[1] As we will see, the growth prospects of both variables point to imports continuing to increase more than is usual.[2]

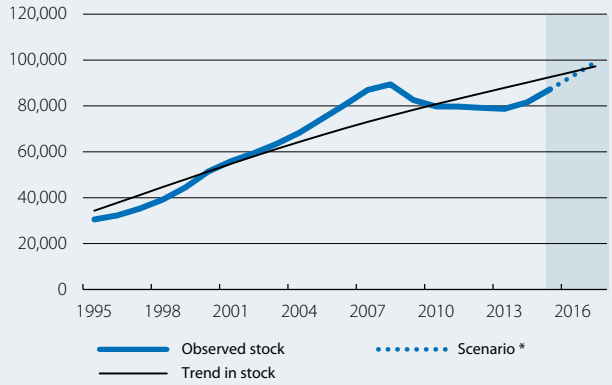
Investment in capital goods grew by 23.2% between 2013 and 2015 after falling by 38.2% between 2007 and 2012 and, in spite of the strong growth seen recently, it is still below its pre-crisis level so it still seems to have a long way to rise. A slightly more accurate estimate of the margin for growth can be obtained based on the difference between the underlying trend in capital stock for the main components of capital goods and the estimated capital stock for 2015. To this end, we have broken down the stock of capital goods into transport and other goods (machinery and other capital goods). Regarding transport goods,[3] the estimated level of capital stock for 2015 was 5.8% lower than the underlying trend in stock. Therefore, if investment in transport goods grows by 7% annually over the next two years, a figure that seems reasonable, capital stock will reach the level of its underlying trend in 2017. For the rest of capital goods, the gap between the underlying trend and the estimated stock in 2015 is similar, namely 5.5%.[4] However, its rate of recovery is slower and it will therefore take more than two years to close the gap.

Growth in consumer durables also seems to have plenty of room to continue. Specifically, after falling by 38.2% between 2007 and 2012, consumption of durables grew considerably between 2014 and 2015 (by 27.7%). By way of a benchmark, if the rate of growth in the last two years continued (12.6%), 2007's level would be reached by 2017.[5] The monthly survey by the European Commission used to produce the consumer confidence index also points to the consumption of durables continuing to grow at a good pace over the coming quarters. The percentage of households with a higher expectation of buying consumer durables in the next 12 months has increased considerably and now exceeds the historical average, as shown in the second graph.

The implication of this analysis for the trend in non-energy imports is clear: we should not be surprised if they grow at a faster rate than usual over the next few years. Specifically, they could increase by around 10% compared with a historical average of 7%.

Capital stock in transport goods

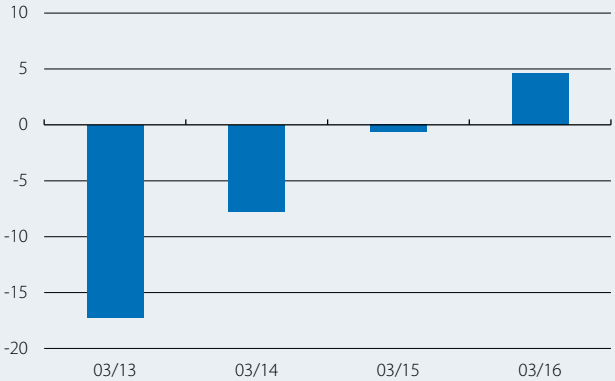
(Million euros)



Note: ** The scenario assumes 7% growth in investment in transport goods in 2016 and 2017.*
Source: *CaixaBank Research, based on data from the INE and the capital stock database of the Fundación BBVA and IVIE.*

Intention to buy consumer durables

Difference compared with historical average (%)



Note: *Answer to the question whether they expect to make any significant purchases (e.g. furniture, domestic appliances or electronic equipment) in the next 12 months.*
Source: *CaixaBank Research, based on European Commission data.*

1. Spain imports around two thirds of the durables consumed and one third of the capital goods acquired. Imports of durables and of capital goods accounted for 12.1% and 9.5% of all non-energy imports, respectively.
2. In 2015, imports of goods grew by 7.5% in real terms.
3. The latest figure available is from 2013. We have estimated the stock in 2014 and 2015 based on the depreciation rate for each kind of good and the investment flows.
4. These account for 78% of the total capital stock in capital goods.
5. The room to grow is even greater if we take into account the fact that part of the stock of consumer durables has depreciated over the last few years.

FOCUS · Spain's budget deficit: *eppur si muove* (and yet it moves)?

Spain's budget deficit stood at 5.0% of GDP at the end of 2015 (at 5.16% including financial assistance), representing a reduction of 0.8 pps compared with the figure of 5.8% recorded in 2014. However, it was also 0.8 pps above the target agreed with Brussels, a significant deviation that is difficult to justify with a healthy economic trend and low interest rates supporting fiscal consolidation. In fact, fiscal policy was clearly expansionary in 2015.

This year the economic improvement and trend in interest rates are once again expected to help reduce the budget deficit. In the case of revenue, the increase in employment, economic activity and household consumption will boost tax collection. In particular, the growth seen in the disposable income of households, which will reach 3.0% in 2016, and improved corporate earnings will continue to swell revenue via income tax, corporation tax and VAT. On the other hand revenue from Social Security contributions will also rise thanks to growth in employment, which will be 2.5% according to our forecasts.

Regarding expenditure, the marked decline in the number of unemployed, which will come close to 10%, will reduce spending on unemployment subsidies. Interest payments on public debt will also continue to fall thanks to the ECB maintaining an environment of very low interest rates.

And if, in addition to the cyclical factors affecting the main lines of revenue and expenditure, we also consider the effect of nominal GDP growth on the ratio of the budget deficit to GDP, we can conclude that the improvement in the economic cycle will also help to reduce the budget deficit by 1.4 pps, approximately. Nevertheless, it will not be easy to achieve the new target proposed by the government of 3.6% of GDP.[1] The agreement regarding the non-availability of credit recently approved by the government, which cuts spending by 0.2 pps of GDP, will be added to the positive effect exercised by the economic cycle on the reduction in the budget deficit.[2] However, the lower tax burden caused by tax reforms and increased spending on pensions will have the opposite effect so the deficit is likely to end up being close to 4% of GDP.

1. The government has relaxed the fiscal consolidation schedule in the Stability Programme 2016-2019, setting the target deficit for 2016 at 3.6% compared with the 2.8% target set in the central government budget of 2016.
2. The updated 2016-2019 Stability Programme contains measures of additional expenditure pending specification by the autonomous regions, by means of agreements regarding the non-availability of credit that would represent a cut in spending of 2 billion euros.

In summary, the bulk of the evidence available suggests that, this year, fiscal consolidation will continue at a similar rate to 2015. But we need to remember that the Spanish economy now has little leeway. Public debt ended 2015 at 99.2% of GDP and the risk premium is relatively contained thanks partly to the decisive actions taken by the ECB. Now that the economic context is favourable, it is the best time to dispel any lingering doubts regarding the government's commitment to place Spain's public finances in a healthy position capable of acting as an economic policy instrument should the country once again have to tackle headwinds.

Budget deficit by administration

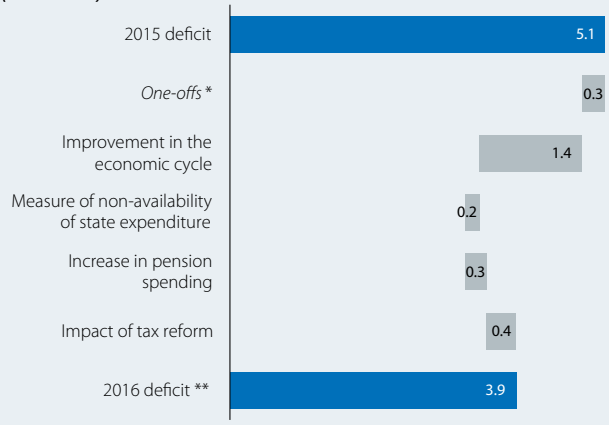
(% of GDP)

	2015			2016
	Target [1]	Closure [2]	Deviation [3] = [2]-[1]	New target proposed by the government *
Central government	–2.9	–2.5	0.4	–1.8
Autonomous regions	–0.7	–1.7	–1.0	–0.7
Local corporations	0.0	0.4	0.4	0.0
Social Security	–0.6	–1.3	–0.7	–1.1
Total public administration	**–4.2**	**–5.0**	**–0.8**	**–3.6**
Financial assistance		0.1		
Total public administration (including financial assitance)		**–5.1**		

Note: ** Target pending approval by the European Commission.*
Source: *CaixaBank Research, based on data from the General State Budget 2015 and 2016 and the General State Controller.*

Budget deficit

(% of GDP)



Notes: ** Includes losses by financial institutions and non-recurring expenditure such as financing the treatment of Hepatitis C and the rise in public investment caused by reclassifying certain public-private collaboration contracts.*
*** The graph shows the impact of the main lines of revenue and expenditure on the 2016 deficit.*
Source: *CaixaBank Research, based on data from the General State Budget 2016, AiREF, Tax Agency, Ministry of Employment and Social Security and the General State Controller.*

KEY INDICATORS

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

Activity indicators

	2014	2015	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16	04/16
Industry									
Electricity consumption	–0.1	1.6	–0.1	2.5	2.5	–3.1	–0.9	2.1	...
Industrial production index	1.3	3.3	3.5	4.0	4.2	3.2	1.9	...	...
Indicator of confidence in industry *(value)*	–7.1	–0.3	0.9	0.7	0.3	–1.3	–2.7	–1.6	–2.2
Manufacturing PMI *(value)*	53.2	53.6	54.8	52.8	52.5	55.4	54.1	53.4	...
Construction									
Building permits *(cumulative over 12 months)*	–7.7	20.0	17.0	19.7	31.1	43.1	41.1	...	...
House sales *(cumulative over 12 months)*	–5.6	10.8	10.2	12.3	11.6	9.9	9.9	...	...
Services									
Foreign tourists *(cumulative over 12 months)*	7.2	5.6	5.9	5.0	4.8	5.4	5.8	6.4	...
Services PMI *(value)*	55.2	57.3	58.3	58.1	55.9	54.6	54.1	55.3	...
Consumption									
Retail sales	1.0	3.0	2.8	3.3	3.4	3.7	3.9	3.9	...
Car registrations	18.4	21.3	13.6	23.1	17.1	12.2	12.6	–0.7	...
Consumer confidence index *(value)*	–8.9	0.3	1.6	–1.3	1.6	–0.9	–1.4	–5.1	–4.3

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

Employment indicators

	2014	2015	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16
Registered as employed with Social Security [1]								
Employment by industry sector								
Manufacturing	0.1	2.2	2.2	2.4	2.7	3.0	2.9	2.6
Construction	–1.6	4.7	5.6	4.6	4.1	3.3	2.7	1.8
Services	2.2	3.5	3.7	3.5	3.4	3.2	3.1	3.1
Employment by professional status								
Employees	1.4	3.5	3.8	3.6	3.6	3.7	3.4	3.2
Self-employed and others	2.2	1.9	2.2	1.7	1.4	1.1	1.3	1.3
TOTAL	**1.6**	**3.2**	**3.5**	**3.3**	**3.2**	**3.2**	**3.0**	**2.8**
Employment [2]	**1.2**	**3.0**	**3.0**	**3.1**	**3.0**	**–**	**3.3**	**–**
Hiring contracts registered [3]								
Permanent	18.8	12.3	7.7	9.7	7.6	4.5	15.9	4.5
Temporary	13.1	11.2	11.2	9.7	11.8	1.9	11.9	4.7
TOTAL	**13.4**	**11.3**	**10.9**	**9.7**	**11.5**	**2.1**	**12.3**	**4.7**
Unemployment claimant count [3]								
Under 25	–8.2	–11.0	–9.3	–13.4	–11.7	–12.1	–9.5	–11.1
All aged 25 and over	–5.3	–7.2	–7.4	–7.7	–7.5	–7.9	–7.8	–7.7
TOTAL	**–5.6**	**–7.5**	**–7.6**	**–8.2**	**–7.9**	**–8.3**	**–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

	2014	2015	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	03/16	04/16
General	**–0.1**	**–0.5**	**–0.3**	**–0.4**	**–0.3**	**–0.3**	**–0.8**	**–0.8**	**–1.1**
Core	0.0	0.6	0.5	0.8	0.9	0.9	1.0	1.1	...
Unprocessed foods	–1.2	1.8	1.9	2.3	2.5	3.3	0.8	2.2	...
Energy products	–0.8	–9.0	–6.4	–9.7	–10.2	–10.3	–14.1	–14.8	...

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

	2014	2015	2015 Q1	2015 Q2	2015 Q3	2015 Q4	01/16	02/16
Trade of goods								
Exports *(year-on-year change)*	2.5	4.3	4.4	5.4	3.4	3.8	2.1	2.7
Imports *(year-on-year change)*	5.7	3.7	2.5	5.8	3.3	3.3	0.8	1.2
Current balance	**10.2**	**15.1**	**11.9**	**14.3**	**15.1**	**15.1**	**14.9**	**15.5**
Goods and services	26.0	25.7	27.3	27.1	26.5	25.7	25.4	25.4
Primary and secondary income	–15.7	–10.5	–15.4	–12.8	–11.4	–10.5	–10.4	–9.9
Net lending (+) / borrowing (–) capacity	**14.7**	**21.1**	**15.6**	**18.4**	**20.8**	**21.1**	**20.2**	**21.5**

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

	2014	2015	2015 Q1	2015 Q2	2015 Q3	2015 Q4	01/16	02/16
Net lending (+) / borrowing (–) capacity	**–5.8**	**–5.0**	**–0.7**	**–2.9**	**–3.1**	**–5.1**	**–**	**...**
Central government [1]	–3.6	–2.5	–0.9	–1.8	–2.1	–2.5	–0.6	–1.1
Autonomous regions	–1.7	–1.7	–0.2	–0.8	–1.1	–1.7	–0.1	–0.1
Local government	0.6	0.4	0.1	0.2	0.3	0.4	–	...
Social Security	–1.0	–1.3	0.3	–0.4	–0.3	–1.3	0.1	0.1
Public debt *(% GDP)*	**99.3**	**99.2**	**100.2**	**99.8**	**99.7**	**99.2**	**...**	**...**

Note: *1. Does not include aid to financial institutions.*
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

	2014	2015	2015 Q1	2015 Q2	2015 Q3	2015 Q4	01/16	02/16	Balance 02/16 [1]
Financing of non-financial sectors [2]									
Private sector	–6.2	–3.9	–4.5	–3.9	–4.0	–3.1	–3.3	–3.6	1,629.4
Non-financial firms	–7.1	–4.0	–4.7	–4.0	–4.3	–2.9	–3.4	–3.9	910.8
Households [3]	–5.1	–3.7	–4.2	–3.7	–3.6	–3.3	–3.2	–3.2	718.6
General government [4]	6.9	4.2	4.9	4.0	3.8	4.0	2.9	3.4	1,081.3
TOTAL	**–1.8**	**–0.9**	**–1.1**	**–1.0**	**–1.1**	**–0.4**	**–0.9**	**–0.9**	**2,710.7**
Liabilities of financial institutions due to firms and households									
Total deposits	–0.9	–1.0	–1.3	–1.2	–1.1	–0.5	0.1	–0.4	1,161.0
On demand deposits	10.8	18.5	17.9	19.5	18.8	17.7	17.9	15.1	388.6
Savings deposits	5.8	12.9	10.5	12.3	13.7	15.2	14.1	13.0	254.5
Term deposits	–7.6	–15.3	–13.5	–15.5	–16.3	–15.8	–15.1	–14.6	496.3
Deposits in foreign currency	1.1	5.6	8.9	10.5	5.1	–2.3	–4.2	0.1	21.7
Rest of liabilities [5]	–8.2	–13.0	–11.4	–11.5	–14.0	–15.1	–11.8	–19.0	91.3
TOTAL	**–1.7**	**–2.2**	**–2.3**	**–2.2**	**–2.3**	**–1.9**	**–0.9**	**–2.0**	**1,252.3**
NPL ratio *(%)* [6]	**12.5**	**10.1**	**12.1**	**11.0**	**10.7**	**10.1**	**10.1**	**10.1**	–
Coverage ratio *(%)* [6]	**58.1**	**59.2**	**58.5**	**60.0**	**60.6**	**59.2**	**59.6**	**59.7**	–

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.*

DECIPHERING THE ENIGMA OF LOW INFLATION

How is inflation measured?

Of all the different official statistics, few have such a direct impact on the life of citizens than the consumer price index (CPI). Wages, state pensions, specific duties and taxes and rental contracts, just to give a few of the more significant examples, can all be modified to some extent according to variations in the CPI. And it is also relatively important in the area of economic policy. For example, the goal pursued by central banks is to maintain price stability and, consequently, accurately and explicitly measuring the evolution of inflation is fundamental to formulating monetary policy. However, on numerous occasions economists have warned of measurement poblems associated with price indices. In this Dossier we describe how inflation is calculated and highlight the main problems in its measurement. As we will see, issues that, a priori, seem to be mere methodological curiosities may actually have a significant impact on economic policy decisions.

Microeconomic theory related to consumer decisions provides the features a price index should contain to accurately reflect trends in the cost of living. Specifically it should measure the minimum expenditure required by a household to obtain the same level of well-being (or utility, in economics jargon) over time.[1] It should therefore take into account the fact that consumers may substitute the goods they consume in response to a relative change in the prices of goods. It should also consider new goods at the time they begin to be consumed and reflect any changes in purchasing habits, such as an increase in online shopping, for instance.

However, there are considerable limitations to calculating a price index of this nature, both due to the availability of data and also the methodological challenges posed by measuring consumer utility. By way of example, a cost of living index (CLI) should reflect any improvements in quality of life due to the appearance of new medical treatments or changes in the quality of public goods, such as the air we breathe. Such goods are totally excluded from the CPI calculation as it only includes goods that incur expenditure by households. So although the CPI is frequently referred to as a CLI, it is important to note that this is far from the case.[2]

In practice the CPI, the most widely used price index to measure inflation,[3] is calculated using two basic inputs: a shopping basket of the goods and services a representative household consumes, and their prices. With these data the expenditure required to acquire the basket is calculated with a specific frequency, in general each month. The simplicity of this computation contrasts with the methodological difficulties encountered when putting it into practice: which goods should be included in the basket? How frequently should these goods be updated? Which establishments should provide the prices? And, the question which perhaps has caused most headaches, how can we distinguish the part in a change in price that is due to a change in the good's quality?

Establishing a methodology to calculate the CPI that satisfactorily answers these questions is of the utmost importance to ensure the index reflects as far as possible the trend in the cost of living. Academic literature has identified three important biases. Firstly, the goods in the shopping basket are not updated immediately when changes occur in the relative prices of the goods.[4] In this respect, when the relative price of a good increases, the expenditure made to buy the CPI's basket of goods is overestimating the expenditure that must be made by a household to acquire a basket that provides it with the same utility. For example, when the price of apples goes up, consumers may substitute them with pears and obtain similar utility. This is known as the substitution bias.

Secondly, given that the quality of goods tends to improve over time, it is necessary to separate the part of the variation in the price that can be attributed to the change in the good's quality from any pure change in price. Not doing so, or only doing so partially, will tend to overstate the CPI compared with the CLI. Lastly, new goods are not included in the CPI basket until after some time has passed, generally a few years after they appear on the market. As the fall in a good's price tends to be concentrated in the first few years (for example in the case of electronic products), taking time to include them in the CPI basket implies that the initial fall in price is not covered by official statistics.

Suspecting that such biases could be considerable, in 1996 the Boskin Commission, made up of five prominent academics,[5] was asked to quantify the measurement error of the CPI in the United States. The findings of their report caused great

1. From a theoretical point of view, the index containing these properties is known as the cost of living index (CLI).
2. In the US, the inclusion of the cost of living concept in calculating the CPI was one of the main recommendations of the Boskin Commission in 1996.
3. In addition to the CPI, inflation can also be measured via other price indices that are normally published by national statistics institutes, such as production prices, export and import prices, etc. Another frequently used resource to measure inflation is the GDP deflator. In the US, the Fed does not use the CPI as its main benchmark index but the index of Personal Consumption Expenditure (PCE).
4. Specifically a Laspeyres index is used that fixes quantities in the base period.
5. The five members the Commission were Michael Boskin, Ellen Dulberger, Robert Gordon, Zvi Griliches and Dale Jorgenson.

commotion: although people already realised that the increase in the cost of living was overstated, their estimates established that the bias had actually been 1.1 pps annually in 1995 and 1996. Approximately half the bias, 0.6 pps, was attributed to the quality change bias.

It should be noted that, since the report was published, important methodological changes have been introduced in the CPI computation which have more than likely reduced these biases. Specifically, substitution between goods within the same category is now permitted (Golden Wonder apples for Fuji, for example) but not substitution between categories (cinema for an online film). New goods are included more quickly in the basket and important methodological advances have been made to adjust for improvements in quality by using, for example, using hedonic regression methods.[6]

In addition to the traditional problems in measuring inflation, we must also add the new challenges brought by new technologies and digitalisation. As innovation is increasing in speed, the bias due to new products on the market and the quality bias may have also increased. Another additional issue is how free goods, so common in the new digital era, should be treated as they are totally excluded from official statistics. This can lead to the CPI being overstated, for instance if the free goods replace goods that previously entailed expenditure (such as a free call via Skype instead of using the telephone).

Although digitalisation represents a considerable challenge for official statistics, the solution could lie in the application of these new technologies themselves. For example, the increasingly widespread use of barcode scanners in shops means that a huge amount of data can be gathered. In this respect, new initiatives related to big data are emerging in academia and business to exploit this information, as is the case of the digital price index developed by Adobe together with the economists Peter Klenow and Austan Goolsbee. Based on online transactions, the trend in consumers' purchasing habits can be recorded in accordance with the price changes of more than 1.4 million goods (compared with the 80,000 included in the CPI). Logically this index excludes all offline purchases so it is far from being representative and cannot replace the CPI but, nevertheless, it may be more reliable for analysing the trend in the price of some electronic goods.[7]

All these methodological questions regarding the potential bias in calculating inflation would not be very relevant if they did not have such huge implications for economic policy. The price index is used to deflate macroeconomic aggregates. Consequently, real GDP growth could be higher than the figure estimated by official statistics if inflation is overstated, as noted by renowned economists such as Martin Feldstein.[8] Differences in calculating inflation between different countries also make international comparisons difficult: if a country tends to overstate its inflation, compared internationally it would seem to have a worse performance in real terms. By way of example, if we exclude the component of owners' equivalent rent from the US CPI, as the European harmonised index of consumer prices (HICP) does, we might conclude that the economic performance of the US in real terms is even greater than that of the euro area.[9]

Errors in measuring inflation can also have a significant effect on monetary policy: if real inflation is lower than the published figure, the margin to increase monetary stimuli is greater. And also for public accounts, given that state pensions and tax deductions in many countries are indexed to the CPI. In this respect, a study by the research unit of the US Congress estimates that adopting a chain-weighted CPI[10] instead of the traditional CPI would reduce the public deficit by 69.3 trillion dollars in 2023.

In summary, measuring inflation properly is no easy task but its importance means that we must try our best. In this respect new technologies offer a unique opportunity to improve the reliability of official statistics that should not be wasted.

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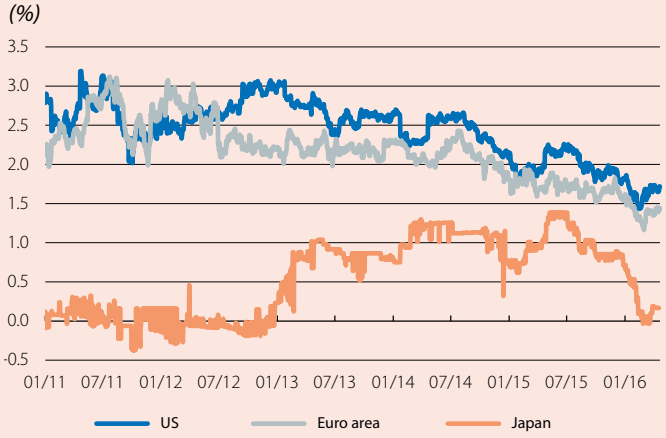
6. This method is based on the hypothesis that the price of an article can be expressed in terms of a series of characteristics via a regression model that estimates the value of each of the characteristics that make up the good. However, a large number of observations are required to adjust the regression model, as well as highly specialised knowledge of the product so, in practice, it is only used for a limited number of goods. In Spain, for example, the INE employs hedonic regression models to adjust for quality in two articles: washing machines and television sets.
7. According to the digital price index, the price of computers fell by 13.1% year-on-year in January 2016 compared with a drop of 7.1% according to the CPI.
8. «The U.S. Underestimates Growth», Wall Street Journal, 18 May 2015.
9. The main difference in calculating the CPI between the United States and Europe lies in how the services received by households for owned property are treated. While the US uses the concept of owners' equivalent rent, this is excluded from Europe's HICP (harmonised index of consumer prices).
10. The chain-weighted CPI allows goods to be substituted when there are changes in relative prices or in consumer habits.

On the use and abuse of inflation expectations embedded in asset prices

Throughout of the last year and a half the trend in inflation expectations in the developed countries might well have been classed as worrying, at least at first sight, as there has been a particularly sharp drop in expectations reflected in the price of financial assets in the United States, the euro area and Japan. Given this circumstance, investors, analysts and members of central banks have all warned of the risk of inflation expectations (IE) becoming unanchored in the long term. However, a «rough» interpretation of these indicators could lead to skewed or erroneous conclusions. To assess whether such concern is well-founded we need to analyse two questions: what is causing this downward trend in IE and just how accurately do the IE contained in financial instruments reflect the true, and unobservable, inflation expectations (TIE).

One of the most widely-used measures to estimate inflation expectations is based on the difference between the nominal yield on a fixed-rate investment and the real yield on a similar inflation-linked investment. This difference is called the breakeven inflation rate (BEIR).[1] In the US, the 10-year BEIR has gone from 2.2% at the end of 2014 to 1.5% currently, while in Europe it has not fallen quite so sharply, going from 1.1% to 0.9%, and in Japan it has dropped from 1.1% to 0.3%. Five-year, five-year forward BEIR, which are less affected by distortions caused by temporary shocks to the inflation rate such as those resulting from fluctuations in the price of oil, and reflecting medium and long-term inflation expectations, have behaved in a very similar way: since the end of 2014 they have fallen by 0.6 pps in the US, down to 1.7% at present, by the same figure in the euro area, down to 1.4%, and by close to 1 pp in Japan, down to 0.1%. Inflation-linked swaps, for their part, have fallen in line with the BEIR, both in the case of 10-year IE and their forward version. With regard to markets for inflation-linked options, of note is the recent rise in premia to hedge desinflationary scenarios in the medium term.[2]

Five-year, five-year forward inflation expectations *



Note: ** Obtained from inflation-linked bonds. In the case of Japan, from the swaps market.*
Source: *CaixaBank Research, based on Bloomberg data.*

However, BEIR not only reflect the TIE of agents involved in bond or swap markets but also contain other components that cannot be directly observed; specifically, an inflation risk premium (IRP) and a liquidity risk premium (LRP). The former is associated with the uncertainty among market participants that the TIE does not coincide with the inflation that will actually occur, while the latter represents the compensation received by investors due to the lower liquidity of index-linked bonds compared with their parents; i.e. nominal bonds. The IRP increases with the degree of uncertainty (greater dispersion of expectations) which, all things being equal, pushes up the BEIR (those holding nominal bonds demand a higher yield because they are subject to more risk) while, also all thing being equal, an increase in the LRP pushes the BEIR down.[3]

Empirically, several studies by the Federal Reserve (Fed) have focused on the US case in an attempt to determine which factors have led, and to what extent, to the drop in inflation compensation indicators. Although their findings do not always coincide, mostly due to the methodology used to produce estimates, they do suggest that the TIE remains firmly anchored at a level between 2% and 2.5% and attribute most of the drop in the BEIR to the LRP and, to a lesser extent, the IRP. Regarding the latter, several authors have found that the degree of dispersion in IE based on surveys carried out on various groups has narrowed significantly over the last few years in line with the downward trend shown by different estimates of the IRP, but this can only explain a small part of the recent fall in the BEIR (less than 10 bps).[4] For its part, it is estimated that the LRP has increased by

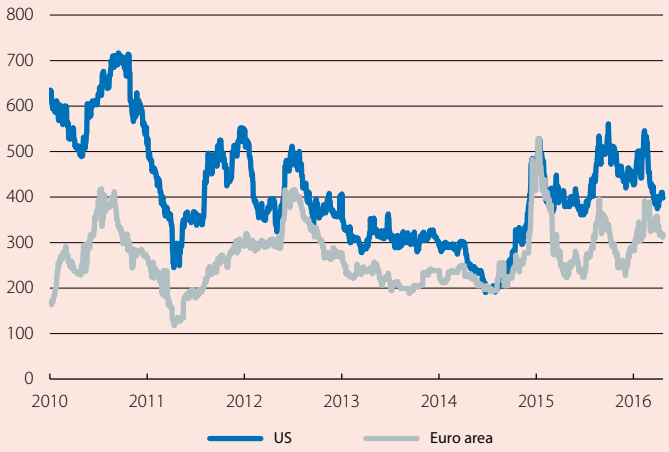
1. For a detailed description of each of the financial instruments mentioned in this article, see the Focus «Inflation expectations and financial instruments: a valuable duo» and the Dossier «Measuring inflation expectations: the devil is in the detail» of the MR04/2014 and MR02/2015, respectively.
2. In particular, a higher probability has been assigned to a scenario of inflation below 2% in the US and 1% in the euro area over the next five years.
3. Specifically $TIE_{t,T} = BEIR_{t,T} - IRP_{t,T} + LRP_{t,T}$. For more details, see D'Amico, S., Kim, D. and M. Wei (2014); «Tips from TIPS: the informational content of Treasury Inflation-Protected Security prices». Finance and Economics Discussion Series 2014-24, Board of Governors of the Federal Reserve System.
4. See Nechio, F. (2015), «Have Long-Term Inflation Expectations Declined?». Economic Letter 11/2015, Federal Reserve Bank of San Francisco.

around 70 bps. This increase would largely be due to the effects of the slump in the price of crude oil and the episodes of volatility occurring on the international financial scene in 2015 and the beginning of 2016.[5] Although it is true that LRP have shown a downward trend in the long term as a consequence of the growing size and depth of the inflation-linked bond market, financially turbulent episodes have always been accompanied by significant upswings in liquidity premia. This phenomenon has been observed in the second half of 2015 and at the start of this year when the shock of the oil market and fears of a sharp slowdown in world growth led to spikes in global risk aversion and a flight to quality on the part of investors, principally to (nominal) Treasury bonds from the US, Germany and Japan.

This results in a threefold corollary. Firstly, in spite of the sharp drop in various inflation compensation indicators, TIE have generally remained anchored at the Fed's inflation target. Secondly, the LRP has been the main reason for these drops since the end of 2014. Lastly, the size of this component is susceptible to sudden, sharp increases in periods of financial agitation, making variables such as the BEIR and inflation-linked swaps less useful in terms of their informational content under such circumstances. Nonetheless, given the uncertainty regarding risk premia estimates implied in the BEIR, it may still be the case that TIE have fallen slightly over the last few months, as suggested by some surveys on professionals in the US. One possible explanation for this drop would come from how agents' inflation expectations are formed which, as the current situation of inflation is used to extrapolate to the future, could suffer from bias such as short-sightedness.[6]

Premia on five-year inflation-linked options *

(bps)



Note: ** Por the US, 2% floor and for the euro area, 1% floor.*
Source: *CaixaBank Research, based on Bloomberg data.*

In summary, fluctuations in the risk premia contained in financial asset prices make it difficult to observe real inflation expectations. During periods of high uncertainty and financial volatility, the LRP represents the main obstacle to calculating such expectations and it is therefore crucial to determine this risk premium. Once both components have been deducted, various estimates of TIE show that this is still in line with the Fed's target of 2%, suggesting that inflation expectations in the US are well anchored.

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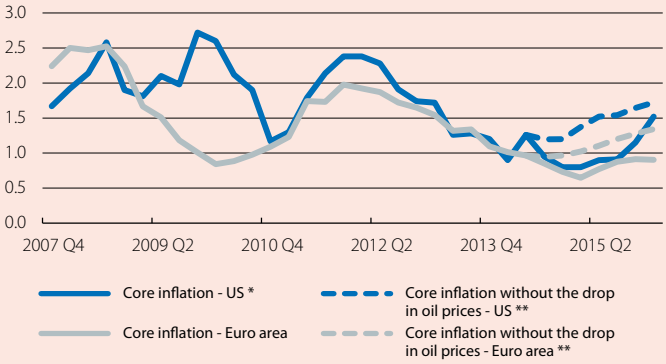
5. See Gospodinov, N. et al., (2016). «Are Long-Term Inflation Expectations Declining? Not So Fast, Says Atlanta Fed» Macroblog, Federal Reserve Bank of Atlanta.
6. On this issue, see Faust, J. and Wright, J. (2013). «Forecasting Inflation» Handbook of Economic Forecasting, vol. 2A.

The quest for missing inflation

In 2016 the United States will have enjoyed six years of positive economic growth and the euro area, lagging behind somewhat in its recovery, will record its third year of growth since the great global economic and financial crisis. However, although both economies are now in an advanced phase of the cycle and in spite of years of ultra-expansionary monetary policy, their respective inflation rates are still anaemic.[1] Specifically, in March US inflation stood at 0.9% while in the euro area stood at –0.1%. What is the cause of this lack of dynamism in inflation?

Core inflation eliminating the downward effect of the drop in oil prices

Year-on-year change (%)



Notes: ** Core inflation without rent for the US. ** Core inflation is assumed to move in line with the energy component as from July 2014. In the estimated model we have used data for the euro area (EU-15) and US from 2002 Q1 to 2016 Q1.*
Source: *CaixaBank Research, based on data from Eurostat and the Bureau of Labor Statistics.*

The sharp drop in oil prices (76% between mid-2014 and the beginning of 2016) and in the price of other commodities lies behind a large part of this sluggish inflation. For this reason it is better to look at core inflation, free from the volatility found in the energy and food components. In the US core inflation[2] stood at a considerable 1.5% in March but remained below 1% on average during 2014 and 2015, running significantly below the US Federal Reserve 2% target. Similarly, in the euro area core inflation has also remained below 1% on average since the beginning of 2013.

However, before we start studying this lack of dynamism in inflation, it is important to note another particular feature of prices: the fall in the price of crude oil has also pushed down the rates of core inflation. In particular it has lowered the costs of production and transport, pushing down the price of other products (indirect effect). It might also have lowered agents' inflation expectations which, in turn, tends to reduce inflationary pressure (second-round effect).[3] By way of example, a change in inflation expectations influences wage negotiations between companies and workers insofar as reductions in inflation expectations promote lower wage rises and consequently less upward pressure on inflation. According to our estimates, these effects are far from trivial. For instance, without indirect and second-round effects, core inflation in the US and euro area would have been 0.4 and 0.3 pps, respectively, above the figures reached in 2014 and 2015 (see the first graph).[4]

At this point perhaps the most surprising fact is not so much the moderate inflation rates but rather how long they are taking to reach the 2% level. The Phillips curve is the usual theoretical framework used to analyse inflation dynamics, emphasising the negative relationship observed between inflation and the output gap (actual GDP less potential GDP),[5] throughout the economic cycle: negative output gaps tend to push down inflation while positive output gaps push it up. The output gap for the advanced economies as a whole was located in negative terrain in 2009 after years of positive gaps and, although the gap has been closing more or less constantly since then, it is still negative. Specifically the euro area is further from closing its output gap than the United States. Undoubtedly this slow recovery in economic activity, particularly in the euro area, explains a large part of inflation's lethargy. In other words, advanced economies have not reached their full productive potential so we should not be surprised that inflationary pressures have yet to emerge (see the second graph).

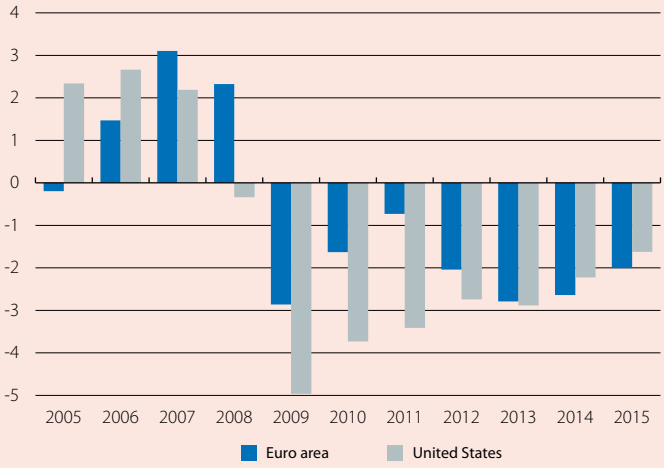
Nonetheless, we must also take into account the difficulties encountered in measuring potential GDP and therefore the output gap. In fact, the margin of error in estimating this theoretical variable has increased considerably over the last few years given that, due to the strong, prolonged crisis, part of production capacity has become obsolete after years of inactivity. More directly measurable indicators of production capacity such as those related to the labour market show that the production gap is possibly smaller than the one shown by the output gap, so it should have involved greater inflationary pressures.

1. In this Dossier, see the article «A brief history of inflation as a monetary phenomenon» which analyses the growth in the money supply as a key factor in determining long-term inflation.
2. For the US we have used core inflation without owners' equivalent rent as its computation is more similar to the euro area's core inflation.
3. See the Focus «Low inflation: oil and nothing else? in MR03/2016.
4. The indirect effect has probably been more significant because, as mentioned below, inflation expectations have remained relatively stable over the last few years.
5. A negative output gap means there is a surplus of unused production capacity (see the article «Potential GDP, a crucial but unclear concept» in the Dossier of MR05/2013).

On the other hand, according to numerous studies inflation's sensitivity to movements in the output gap has steadily diminished over the last few years: for a given output gap, we observe a lower inflation rate. This decreased sensitivity, known as the «flattening of the Phillips curve», is one of the arguments presented in numerous studies to explain why there was no desinflation during the financial crisis of 2008 when the output gaps in the advanced countries fell very quickly to negative terrain («missing desinflation»).

Output gap

Deviation with regard to potential GDP (%)



Source: *CaixaBank Research, based on IMF data (WEO, April 2016).*

In addition to the problems involved in measuring the output gap, the substantial increase in trade and financial relations between countries, i.e. globalisation, has been put forward as one of the causes for the flattening of the Phillips curve. This phenomenon has helped advanced countries to import an increasing number of goods and services from those with lower production costs, pushing down the final price for their domestic consumers. In other words, using the conceptual framework proposed by the Phillips curve, a country's inflation is increasingly determined by the output gap at a global level instead of by that country's own output gap. However, this explanation, although very intuitive, has not been convincingly validated empirically: some studies support it, especially the one by Borio and Filardo (2007), while others find no clear impact, such as the studies carried out by the IMF and White (2008).[6]

Lastly, a second factor that seems to be helping to flatten the Philips curve is the greater stability of inflation expectations. Specifically the capacity demonstrated by central banks to keep inflation low and stable has meant that inflation expectations are also more stable. As has been mentioned previously, the very anchoring of inflation expectations ends up making inflation more stable as well. In particular, the long-term inflation expectations of US consumers have remained constant over the last six years at around 2.8% even though the economy has gone from a deep recession to a notable recovery.[7]

In short, various elements have contributed to the current situation of sluggish inflation but particularly the sharp fall in oil prices, an economic recovery slower than usual, lower inflation sensitivity to economic activity and more anchored inflation expectations thanks to the improved credibility of central banks. However, throughout 2017 we expect inflation to pick up considerably both in the US and the euro area due to the recovery in the price of crude and the further narrowing of output gaps.

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6. See, Borio, C. and Filardo, A. (2007) «Globalisation and inflation: New cross-country evidence on the global determinants of domestic inflation»; White, W. (2008), «Globalisation and the Determinants of Domestic Inflation», BIS Working Paper No. 250; and the IMF, «World Economic Outlook October 2013» «The dog that didn't bark: has inflation been muzzled or was it just sleeping?», chapter 3.
7. See the article «On the use and abuse of inflation expectations embedded in asset prices» in this Dossier for a broader examination of measurements of a market's inflation expectations. See also the article «Measuring inflation expectations: the devil is in the detail» in the Dossier of MR02/2015.

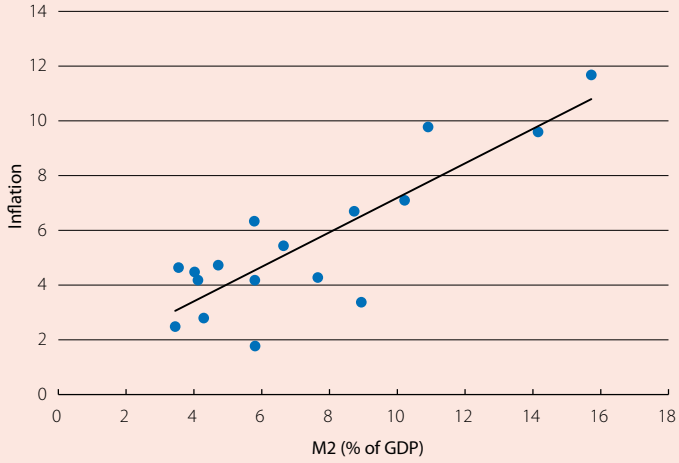
A brief history of inflation as a monetary phenomenon

What child has never dreamed of having a machine that prints money? Just imagine: all the toys in the world within our grasp! Nevertheless, what our imagination did not take into account was the fact that money is mainly used as a medium of exchange and, consequently, the more money there is in an economy, the more its goods and services will cost: and there is no point in having double the salary if the cost of living also doubles. The current economic situation, however, contradicts this simple logic, or at least appears to: the monetary stimulus programmes implemented by the US Federal Reserve (Fed) and the European Central Bank (ECB), among others, have resulted in a sharp increase in the creation of money over the last five years but, far from rocketing, inflation has remained persistently below the central banks' targets. We will now examine the reason for this apparent contradiction.

The idea that inflation is higher when the money supply is larger is actually one of most long-standing laws in the discipline of economics. Its origins can be traced back to the writings of the philosophers Martín de Azpilcueta and Tomás de Mercado from the Salamanca School, and also Jean Bodin and David Hume, who were concerned about the impact of precious metals from Spain's American colonies flooding the market.[1] And in the 20th century Irving Fisher, one of the great economists of his time, formalised this notion by providing it with an analytical framework which became popular thanks to the famous saying by the holder of the Nobel Prize for Economics, Milton Friedman:

Long-term inflation and money supply

Year-on-year change, average 1970-2015 (%)



Source: *CaixaBank Research, based on IMF data.*

«Inflation is always and everywhere a monetary phenomenon in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output»[2]

Today this statement is still fully accepted by economists. However, the relationship between the money supply and inflation lay at the heart of the argument between the two main schools from the 1940s to 1970s: Keynesian economists and monetarists. Both sides accepted Fisher's formalisation which is actually a simple mathematical identity: the value of transactions in an economy must be equivalent to the amount of money circulating in that economy.[3] However, while Keynesians were thinking of the short term, during which prices remain relatively rigid, monetarists were focusing on the long term when prices lose their rigidity and adjust to the money supply. Due to this difference in emphasis, Keynesians argued that inflation is mainly affected by real variables (such as the unemployment rate) while monetarists defended the idea that it is primarily a monetary phenomenon (i.e. caused by variations in the money supply). Ultimately this discussion helped to enhance economic theory. At present the distinction between a short-term view with price rigidity and a long-term view with flexible prices is a basic instrument for economic analysis. Although real factors are relevant for short-term fluctuations in inflation we realise that, in the long term, it is determined by growth in the money supply.

The different relationship between the money supply and inflation over different timespans is also well documented and backed by empirical studies. To illustrate its relationship in the long term we have calculated the average annual inflation rate and the average annual growth in the money supply between 1970 and 2015 for a group of 17 advanced economies. As can be seen in the first graph the correlation between both is positive and strong: economies that experienced higher growth in their money supply on average also experienced higher inflation on average.

This exercise may be simple but very similar results can be found in more sophisticated analyses. For example, using advanced statistical techniques, Haug and Dewald (2004) and Assenmacher-Wesche and Gerlach (2007),[4] among others, have extracted the cyclical components and long-term trends for inflation and the money supply in a group of industrialised countries. They have

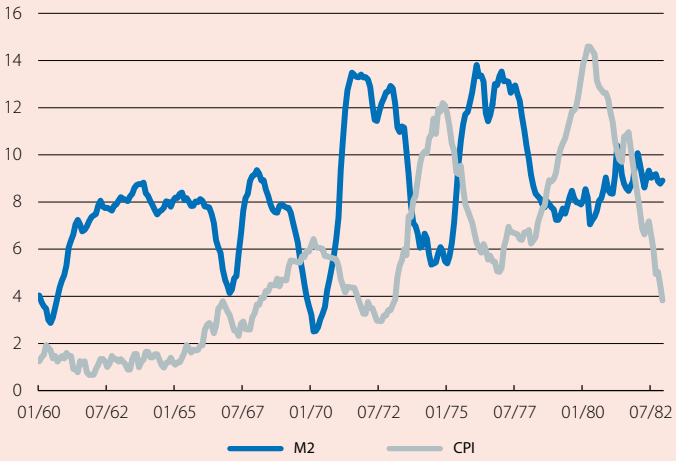
1. Remember that, at the time these authors lived (the 16th to 18th century), silver and gold coins were widely used as currency of exchange.
2. Friedman, M. (1970), «The Counter-Revolution in Monetary Theory», Institute of Economic Affairs Occasional Paper, no. 33.
3. In other words, $PY = vM$, where Y is the output volume, P is the economy's level of prices, v is the speed at which money circulates and M is the money supply. This expression is correct by definition and can be interpreted as a way of defining v (not observable in the real world).
4. Haug, A. and Dewald, W. (2004), «Longer-term effects of monetary growth on real and nominal variables, major industrial countries, 1880-2001», ECB Working Paper Series, and Assenmacher-Wesche, K. and Gerlach, S. (2007), «Interpreting euro area inflation at high and low frequencies», European Economic Review.

found there is a strong correlation between long-term trends in inflation and the money supply while their cyclical components do not seem to be correlated. Assenmacher-Wesche and Gerlach (2007) also show that the cyclical component of inflation correlates with the economy's capacity utilisation. In other words their findings are consistent with the consensus that emerged between Keynesians and monetarists: in the short term real economic activity is a significant determining factor for inflation but in the long term this will ultimately depend on the trend in the money supply.

In fact it is natural that changes in the money supply should take some time to appear in inflation. Returning to our childhood dream of having a machine that prints money, it would be reasonable to assume that the first few notes would make us richer: initially the prices of toys and sweets would remain the same. However, as the weeks passed shopkeepers would end up increasing their prices: inflation is a long-term monetary phenomenon because prices are rigid in the short term. Or at least this was the consensus reached between monetarists and Keynesians. However, eight years have now passed since central banks such as the Fed and ECB began strong monetary expansion to boost their economies after the Great Recession but this expansion has yet to be passed on to inflation, suggesting there must be other relevant mechanisms in play. As discussed in the article «The quest for missing inflation» in this Dossier, over the last few years changes have occurred in how advanced economies work that could explain why prices are taking longer to lose their rigidity. On the one hand the anchoring of inflation expectations means that, in the short term, participants renegotiate prices based on expectations that coincide with the central bank's target. However, in the long term these expectations will only remain rationally anchored if the trend in the money supply is in line with the inflation target. On the other hand globalisation means that part of the money created by a country ends up outside its economic borders, thereby effectively reducing the amount of currency in circulation in the economy in question.

US: inflation and money supply

Year-on-year change (%)



Source: *CaixaBank Research, based on data from the Fed of St. Louis.*

Another obvious difference compared with other episodes is that the recovery in the aggregate demand in advanced economies is slower than expected, making it more difficult for inflation to pick up. For example, in a recession weak credit acts as a brake on demand and thereby reduces inflationary pressures. In fact, a study by the ECB shows that, during recessions, the creation of money by the central bank becomes decoupled from growth in credit.[5] Moreover, this decoupling is particularly acute when the recession is accompanied by a financial crisis. The role of credit is fundamental because it acts as a transmission mechanism for the creation of money and its circulation (which is what really affects inflation). As mentioned in a previous *Monthly Report*,[6] there are currently three key factors affecting this transmission: the weak demand for credit (due to heavy borrowing and an uncertain environment), greater caution on the part of suppliers of credit (due to the regulatory changes of Basel III) and relatively low yields in advanced economies (encouraging investors to invest liquidity in other economies with more attractive rates of return). However, as the economic recovery accelerates, these brakes will disappear. In fact, the first two factors can be seen in the banking system's large surplus reserves, especially in the core European countries. If banks decide to turn this surplus into credit, the ECB will have to drain off the excessive liquidity to avoid activating the relationship between the money supply and inflation. In this respect we should not forget the experience of the United States in the 1960s and 70s. As shown by the second graph, although the Fed's accommodative monetary policies in the 1960s and early 70s did not immediately result in higher inflation, this finally reached rates of 14% by the end of the 1970s and the Fed was only able to control it after convincing participants of its commitment to stable growth in the money supply.

In short, the notion that inflation is directly related to the trend in the money supply is one of the oldest and most resilient in the discipline of economics. However, this relationship becomes much stronger over the medium to long term. Although today we do not have higher inflation in response to the large injections of liquidity by central banks, this is due to short-term factors so that the monetary authorities need to remember that, eventually, inflation will be determined by the trend in the money supply.

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5. ECB, «Money and credit growth after economic and financial crises – a historical global perspective», Monthly Bulletin, February 2012.
6. See the Dossier «Inflation: merely a monetary phenomenon?» in MR02/2015.

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Customer funds	296,599
Receivable from customers	206,437
Profit atributable to Group	814
Market capitalisation	18,702
Customers (million)	13.8
Staff	32,242
Branches in Spain	5,211
Self-service terminals	9,631

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	MILLION €
Social	308.8
Research and education	61.3
Spreading culture and knowledge	129.9
TOTAL BUDGET	**500**

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