

Global Economic Outlook

2ND QUARTER 2016 | ECONOMIC SCENARIOS UNIT



01
Global growth is fragile and
reliant on China

02
World trade is sending
warning signs

03
The impact of uncertainty on
growth is greater and more
frequent, although more
short-lived

Index

1 Editorial	3
2 Low and fragile economic growth, dependent on developments in China	5
3 The slowdown in world trade continues into 2016	11
4 Financial volatility and economic growth	15
5 Tables	22

Closing date: 6 May 2016

1 Editorial

Outlook for the global economic scenario has brightened over the last three months, as the downward adjustment in world growth and the slump of financial markets have halted. **The 6.7% growth YoY registered in China's economy in 1Q16** has calmed jitters about the potential shock waves of China's economic reshaping process, which is in fact being smoothed out by authorities' greater monetary and fiscal support. The risk of a dramatic adjustment in the exchange rate, once capital outflows have been curbed, has also been mitigated. As regards the **Fed**, the perspective of very slight interest rate hikes relies on the lack of immediate pressure from prices or wages and the effects of the complex global scenario on employment in the US. The evolution of **commodity prices**, particularly oil, has also been positive in the last quarter. **Prices have increased from levels so low that large dollar-indebted corporations from emerging markets were having troubling servicing their debt.** This in turn triggered deterioration in markets and a negative wealth effect on spending in oil importing economies.

The brighter global scenario is limited in scope and is fragile, however. It does not involve fundamental changes in the factors which cause a background of low growth with exposure to many different sources of uncertainty.

The improvement in recent months is limited because the pace of global growth in the first part of 2016 will be between 2.6% and 3.0% YoY. This is more positive than the 2.5% YoY in 4Q15, but falls short of the **average 3.2% for the 2011-15 period** or the **4% of the decade up to 2008**. Another reason for caution is the **deceleration in global trade**, where the growth in goods and services is at its lowest levels since the collapse at the end of 2008.

Economic outlook is fragile. For example, the Fed has warned of downside risks, confirming the weakness of the present recovery. Furthermore, the fact that the ECB, the Bank of Japan and the Bank of China are applying or are going to apply expansionary measures underlines **how precarious growth is and the difficulty in achieving price stability.**

The **increase in oil prices** is driven above all by the less dynamic supply, but has **not come about through sustained improvement in expected demand.** What is more, the problems which have built up on financial balance sheets in the corporate sector of commodity-producing economies remain a significant concern in view of the weakness of their currencies against the dollars and the fact that their production models are not properly adjusted to a low oil price scenario. This is all taking place against a background in which **China, which has the largest demand increases for commodities, is continuing to shift towards lower trend growth, while also reshaping its economic model towards greater weight of the services sector. This adjustment is taking place slowly** precisely because of the current monetary and fiscal measures. These policies focus on spending and so far have hardly addressed the question of structural reforms to allocate capital and employment more efficiently, so the measures do not iron out unsustainable long term imbalances, such as excess capacity or [increased corporate debt in state-owned enterprises](#).

Economic outlook is also fragile because now there are a greater number of events of uncertainty which are significant enough to affect growth, in this "new normal" period following the 2008-09 global crisis and the 2010-11 European sovereign debt crisis. This is because of two **new developments which spell greater uncertainty in the economic panorama.** First, the extensive use of non-conventional monetary policies (quantitative easing and interest rate anchoring), which can affect correct assessment of risks by economic agents, decoupling it from economic fundamentals and triggering volatility. Two, the more diverse sources of potential risks, as we have emerging economies with an increasing degree of financial integration and which are in turn undergoing adjustment due to the changes under way in China.

In short, **the strength of the economic global economy will continue to be shaped by financial markets which have to cope with a great variety of potential risks** against the background of different economic forces consistent with anaemic growth.

2 Low and fragile economic growth, dependent on developments in China

Available data for the first quarter of 2016 confirm our forecasts of **stabilisation of world GDP growth still at reduced rates but slightly higher than at the end of 2015**. Our BBVA-GAIN¹ index puts the quarterly increase of world GDP at 0.6% (2.9% annualised rate), considerably lower than the average recorded between 2010 and 2015. A pace of growth that could accelerate slightly in the second quarter if the signs of lower deterioration anticipated by the available indicators of production, trade and business confidence are consolidated, but still **not sufficient for the annual increase to reach around 3.2%** (our forecast for 2016 as a whole).

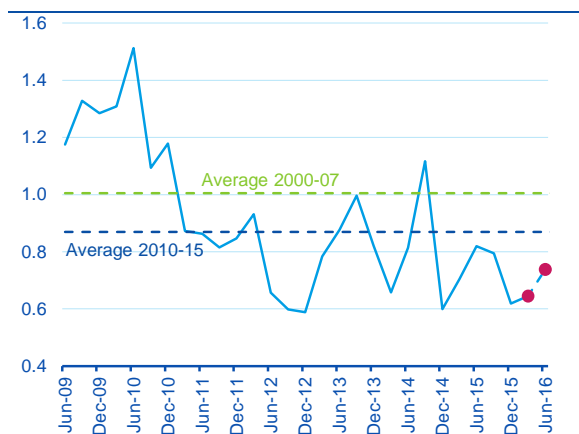
For our forecast to be correct, bearing in mind the progressive slow-down in China and the weakness in the activity cycle in the major emerging countries, it will be **necessary to witness a substantial improvement in economic growth in the US and Japan**, two developed economies where industrial production and export of goods have seen year-on-year falls as a result of the adjustment in the energy sector and the accumulated appreciation of the dollar, on the one hand, and lower Asian demand and the revaluation of the yen on the other. **Resilience in the production of services in the developed block**, which in recent months has lost steam due to the manufacturing adjustment, **is also a necessary condition**.

The sharp increase in financial volatility observed between December 2015 and February 2016, as well as responding to the actual deceleration of global activity, threatened to accentuate it if it continued at the same intensity and translated into a contraction of demand decisions. Since then, financial tensions, as well as the probability of the occurrence of a stress scenario on a global scale, have subsided. **The better than expected balance of economic indicators from China**, lower downward pressure on the value of the yuan, **the recovery of raw material prices and the moderation of expectations on interest rate rises by the Fed have been determining factors**.

The strengthening of stimulus policies, both monetary and fiscal, by the Chinese authorities has contributed to ease the effects of the readjustment in the manufacturing sector on aggregate production and, consequently on the country's trade flows with the rest of the world. In the short term, the implementation of counter-cyclical measures may facilitate a more gradual slow-down of the economy than expected; nevertheless if it is accompanied by a **delay in the correction of fundamental imbalances** such as high leverage in the corporate sector or excess installed capacity in some industries and construction, **the financial vulnerability of China in the face of shocks like the one seen in the summer of 2015 would increase** and, with it, its destabilising potential on the rest of the world.

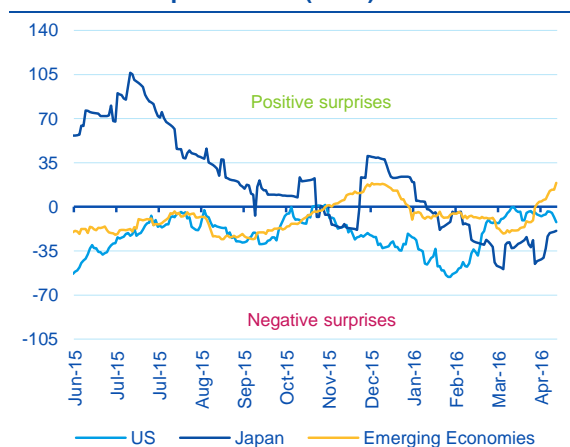
1: See <https://www.bbvarsearch.com/en/publicaciones/global-gdp-growth-to-benefit-from-a-less-stressed-financial-outlook/>

Figure 2.1
World GDP, % q/q. Q1 and Q2 forecasts 2016 based on BBVA-GAIN



Source: BBVA Research

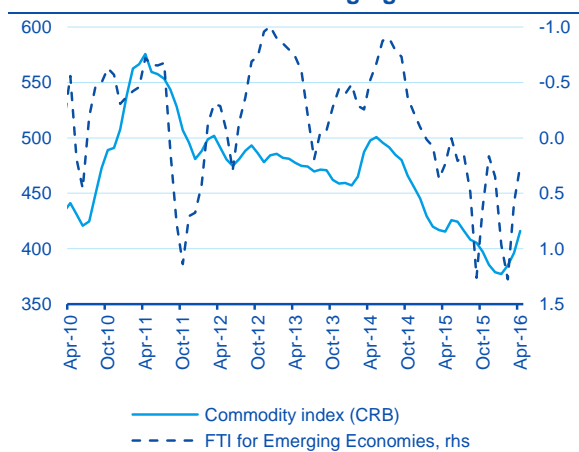
Figure 2.2
Economic Surprise Index (CESI)



Source: BBVA Research and Haver

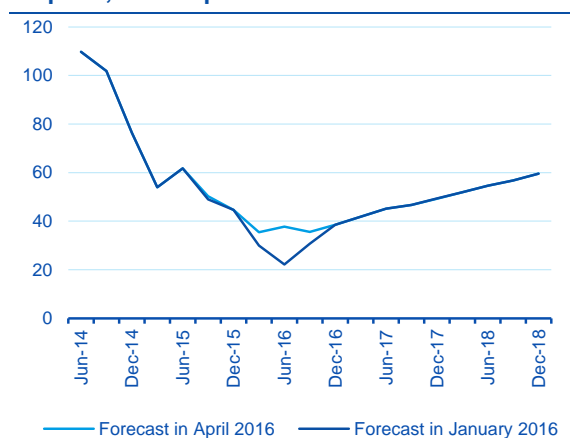
The stabilisation of activity in China partly explains the **recovery of prices of the major raw materials** from the minimum levels reached in January. In the particular case of oil (the WTI barrel price increased by 10 dollars to achieve levels of 43), the increase was due, to a large degree, to greater supply restriction than forecast (reduction in US production, supply cuts in countries such as Iraq and Nigeria, and expectation of an agreement between the OPEC countries to freeze their production)² and to the depreciation of the dollar.

Figure 2.3
Synthetic index of raw materials and BBVA index of financial tensions for Emerging Economies



Source: BBVA Research, Bloomberg and Haver

Figure 2.4
Oil price, dollars per barrel. Forecasts



Source: BBVA Research

The relative weight given by financial agents to the deterioration of the international environment in the reaction of the Fed explains the **delay and moderation in expectations about the next interest rate rise**. In the face of the two increases forecast by the members of the FOMC for 2016, the market has put off the second increase until early 2017. The response of the dollar, depreciating despite the relatively good performance still shown by US domestic demand, and the drop of the US long term sovereign yields have contributed to alleviating financing restrictions on the **emerging world**, as reflected in: (i) **the BBVA index of financial tensions for this region, which has corrected all the rise seen in the first few months of 2016**

2: Oil price forecasts have been adjusted upwards for the middle quarters of 2016 in relation to the January scenario but reproduce the same dynamics as then for the future.

(the improvement has been more gradual in LatAm, conditioned by the idiosyncratic behaviour of Brazil), and (ii) the **reactivation of the inflows of foreign capital** (emerging assets have received net capital inflows since mid-February due, in part, to the search of yield and the capital reallocation towards more profitable financial instruments).

Furthermore, in so far as the developed central banks maintain the monetary policy direction of recent months (strengthening or maintaining stimuli in the case of BCE and the Bank of Japan; caution in normalisation of interest rates on the part of the Fed), **the authorities of emerging economies will have more flexibility to prioritise, among their objectives, the economic recovery, without ignoring the possible accumulation of imbalances**. The gradualness expected by the Fed (a factor that supports flows of capital into the region) and the recent recovery of currencies (a restraint on the potential increase in inflation through price rises for imported goods) reduce the need to tackle aggressive interest rate rises.

Given all this, **the relative improvement in the world economic outlook in the last quarter continues to be fragile and dependent on how the Chinese economy evolves, the resolution of hot spots of instability around Europe (geopolitics, "Brexit", payment of the Greek debt) and a possible slow-down in the US**. In any case, it is not ruled out that episodes of financial volatility can repeat like those at the beginning of this year (of greater or lesser intensity) in a context of heightened uncertainty over the ability of the emerging world to avoid a downturn and of the central banks of developed economies to promote growth.

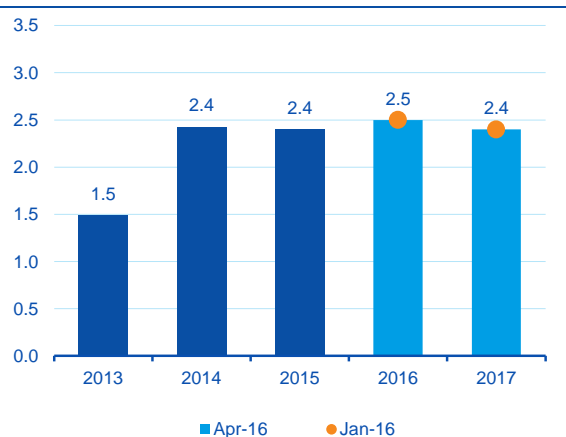
US: moderate growth and downwards risks condition the Fed's response

The US economy has suffered again at the beginning of 2016, as in the two previous years. According to the first official estimate, GDP would have risen barely 0.5% (annualised quarterly rate) in the first quarter, a similar figure to the same period in 2015 which gives continuity to the road to moderate growth seen in the US since then. **The dynamism of private consumption**, which has also begun to moderate, **and the support of the public expenditure are not sufficient to compensate for the fall in exports of goods and the weakness of private capital investment** (despite the improvement in the residential sector, total investment in fixed capital could register in the first quarter of 2016 the first annual correction since 2011). The adjustment of activity in the energy sector and its impact on other dependent industries continue to affect domestic spending on investment.

Leading signals offered by sentiment indicators for the second quarter reinforce the divergence between the evolution of industry (the manufacturing PMI for April shows the lowest figure since 2011, slightly above 50 points) and services, in favour of the latter (business confidence continues to point towards expansion of activity in this sector). **The expectations of economic recovery for next quarters are based on the support of consumption** (the job market is keeping the strength of the past few months, with the pace of job creation stabilising at 200,000 people per month) **and the possible relief brought about by the recent depreciation of the dollar for exports**. To realise **our expectation of 2.5% annual GDP growth** in 2016 (in line with that of 2015 and the January estimate), we will need to witness annualised quarterly advances of the same order in the future.

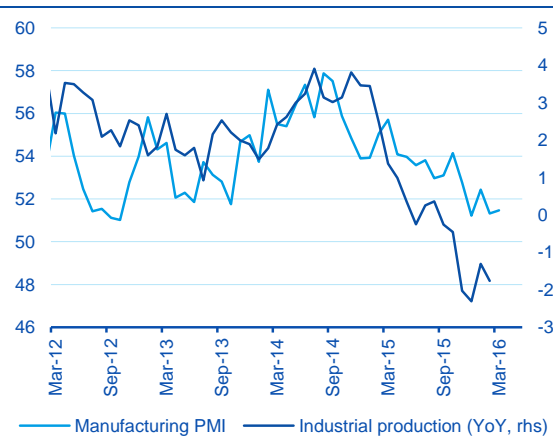
This forecast shows a downwards bias bearing in mind the risks mentioned for the global economy and the behaviour of domestic investment. **Likewise for the reduction in forecasts for reference interest rates during 2016 and 2017 by the members of the FOMC**. As in the central scenario of BBVA Research, **they are now expecting two new rate rises this year and four next years; a path of more aggressive hikes than that discounted by the market and whose bias is also downside** in so far as general inflation is progressively converging towards 1.5%, and the core rate hovers around 2%.

Figure 2.5
USA: GDP (annual change, %)



Source: BBVA Research and Haver

Figure 2.6
US industrial production (%) and business confidence



Source: BBVA Research and Haver

China: stabilisation of activity in the short term and greater risks in the medium term

The increase in financial tensions since mid-2015 due to uncertainty over the future evolution of the yuan and the acceleration of capital outflows, have pushed the Chinese authorities into prioritising the stabilisation of economic activity, trying to avoid a sharp downturn of GDP that would compromise the achievement of economic growth targets.

The strengthening of measures of fiscal support (the public deficit could reach 3% of GDP in 2016), **the keeping of the scheme of liquidity injections into the banking system and the relaxation of some regulatory standards** applied to the central bank and local governments make up the package of stimuli which, up to now, and according to official figures, **are facilitating a very gradual moderation of Chinese activity**. GDP grew by a year-on-year 6.7% in the first quarter of 2016 and **our forecasts improve on the expected annual growth for 2016 by 0.2 points to 6.4%, settling at 5.8% for 2017**. Inflation could be somewhat higher than the forecasts made in January, reaching 2.3% in 2016 and 2.7% in 2017.

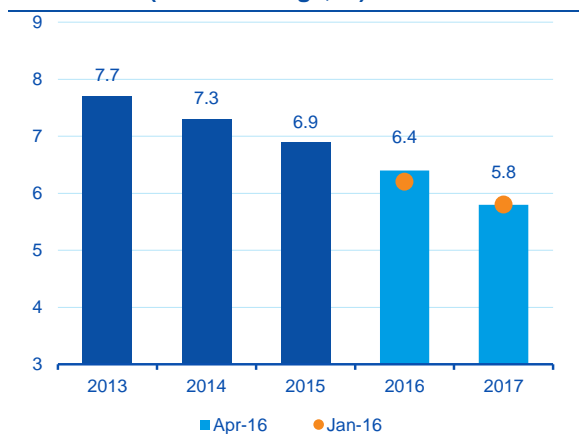
Nevertheless, and independently of this improvement forecast for the short-term growth figures, **the risks lie in the impact that the delay in the programme of structural reforms could have in terms of financial stability and capacity for economic growth in the medium term**. Despite the process of reorientation of production in which the country finds itself (manufacturing sector confidence continues to be in the contracting zone in April, industrial production is growing at rates close to 6% year-on-year, well below those recorded for 2014-2015, and prices of production, though not so pronounced, have continued to fall relentlessly since 2012), **debt has not stopped growing**. According to BIS data, non-financial private sector debt exceeded 205% of GDP in the third quarter of 2015; a tendency for increase which has foreseeably been maintained until now bearing in mind the volume of new debt operations (in particular those arising from bank loans).

The longer the restructuring of semi-public companies linked to high-overcapacity areas of activity is postponed (in the Five-year Plan presented last March there was no a concrete plan heading in this direction), **the greater the negative impact will be on the profitability and quality of bank assets** and, therefore, on the economy as a whole in the medium term. Among the options under consideration to address the management of corporate debt with the greatest risk of default, are a programme of debt

conversion to capital (*Debt to Equity Swap*)³ and the securitization of outstanding debts as marketable securities. For these initiatives to be successful, as well as overcoming the associated implementation restrictions, they need to be accompanied by a comprehensive action plan, focus on the restructuring of viable firms and benefiting from the participation of the banks to speed up the identification of non-performing loans; a strategy that, for the moment, does not seem to be in place.

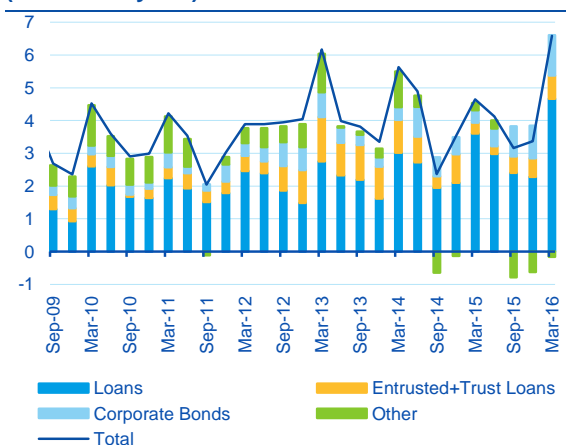
As regards the management of monetary policy, the central bank may carry out new cuts in reference interest rates, though more restrained than those foreseen at the beginning of the year (4.1% and 3.6% are the estimated levels to be reached this year and next, as against 4.35% at the close of 2015), given the other current stimulus schemes. The yuan, after the recent appreciation, may possibly lose value again to levels of 6.8CNY/USD towards the end of 2016

Figure 2.7
China: GDP (annual change, %)



Source: BBVA Research and Haver

Figure 2.8
China: debt, new operations by instrument (trillions of yuan)



Source: BBVA Research and Haver

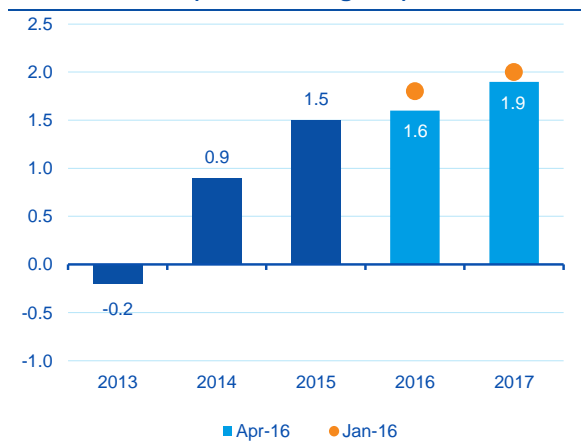
Eurozone: downwards revision of growth forecasts. Political events are the main risk in the short term

After a second quarter 2015 of moderate growth (quarterly GDP rates of 0.3%), **the Eurozone economy would have accelerated its pace of growth in the first quarter of 2016, with an increase in GDP, according to the preliminary indicator, of 0.6%**. The best relative performance expected for France and Germany (with growth rates in the order of 0.5-0.6%) and the dynamism of Spain (increase of 0.8% for the third quarter in a row) would be behind the improvement for the whole area at the start of this year. **The strength of private consumption**, which has recovered to pre-crisis levels, **continues to be the key to the pattern of growth** of the Eurozone, although the recent fall in agent confidence and the level of household debt of some peripheral countries limit the scope of additional support to the aggregate activity.

This, combined with the **modest recovery shown by the capital investment** (in a context of raised external and political uncertainty, and downward pressures on business profits) and the **weakness of external trade** (the effect of the depreciation accumulated by the euro since mid-2014 has begun to diminish, especially in latter months with the currency recovering to levels of 1.15 against the USD), justify the **downward revision of our growth forecasts for 2016 and 2017**. Eurozone GDP could grow this year by 1.6% (0.2pp lower than forecast in January) and by 1.9% in 2017 (-0.1pp).

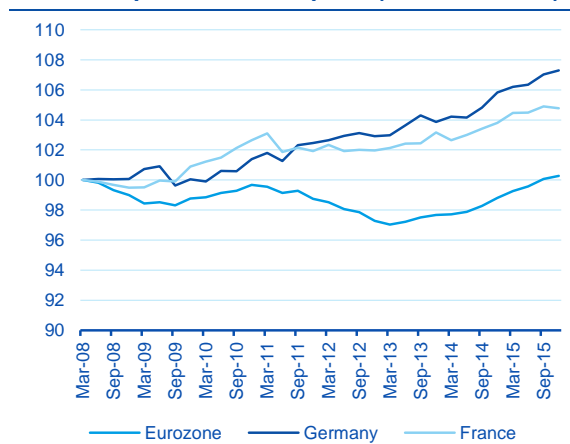
3: See https://www.bbva.com/wp-content/uploads/2016/04/April-2016_China-Equity-for-Debt-Swap.pdf

Figure 2.9
Eurozona: GDP (annual change, %)



Source: BBVA Research y Haver

Figure 2.10
Eurozona: private consumption (base 100=2008)



Source: BBVA Research y Eurostat

In our opinion, **the support for activity that the new stimulus measures by the BCE⁴ may produce and the slightly expansive nature of fiscal policy** in the main countries of the zone **will not be enough to compensate for the negative impact of the aforementioned factors and of the political uncertainty** (referendum on the UK remaining in the EU, electoral processes open or foreseen for 2017, etc.) on private sector confidence and spending decisions. Additionally, it is not ruled out for the proximity of important debt payments on the part of Greece to create tensions in the markets if the agreement being negotiated with public creditors is not reached beforehand.

As regards inflation, we maintain practically unchanged the January forecasts which put the average general rate for 2016 at 0.2% and at 1.3% for 2017. The increase observed in oil prices may alleviate downward pressure on the energy component of the CPI in the shorter term, but in the absence of a sustained increase in the prices of the core items (stable at rates of 1%) general inflation will not meet the ECB's price stability target until 2018.

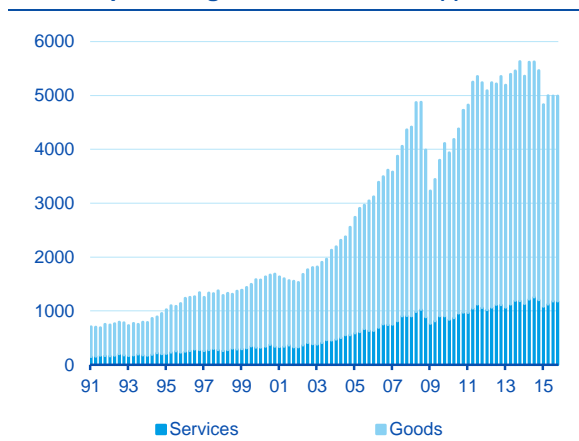
4: See <https://www.bbva.com/wp-content/uploads/2016/04/ECB-Watch-Minutes-April162.pdf>

3 The slowdown in world trade continues into 2016

The current adjustment in world trade is less intense than that of 2008-09, but more persistent and with a greater relative contribution from falling prices.

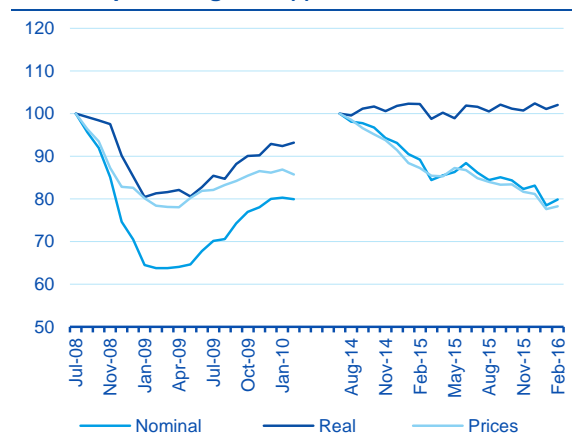
The level of world exports of goods and services⁵ has been falling since the summer of 2014, with a cumulative decline of 14% up to Q4 2015. All the same, this fall is only about half that seen during the financial crisis of 2008 and 2009, the biggest drop in world trade for at least the last 35 years. The breakdown of the movements in goods and services is similar to that of the aggregate: exports of goods have fallen by 15% since mid-2014 compared with the 37% cumulative decline between the end of 2008 and the middle of 2009; and exports of services have fallen by 14% compared with 26% in 2008-09.⁶

Figure 3.1
World exports of goods and services (*)



(*) Quarterly levels expressed in US\$ billions.
Source: IMF

Figure 3.2
World exports of goods (*)



(*) Index July 2008 and August 2014 = 100.
Source: Netherlands Bureau for Economic Policy Analysis

The current dynamic of trade differs from that seen in 2008. At that time, the decline of nearly 40% in the level of world exports took place in just two quarters, with trade credit being practically cut off in an environment in which worldwide financial activity and real activity was at a standstill, especially in developed countries, as well as a strong appreciation of the dollar, which also contributed to the decline in nominal levels of exports and imports. After the adjustment came a sudden and intense recovery, with massive liquidity boosting measures on the part of central banks, support for commercial banking and fiscal expansion. At present, with **four quarters of near stagnation to December 2015, we don't see signs of immediate recovery.**

The breakdown of the nominal levels of world exports of goods⁷ by volume and prices shows another difference between the 2008-09 crisis and the current adjustment. **The 37% fall in exports of goods in 2008-09 came about with a reduction in both prices and volumes** (nominal figures deflated using available price indices) with approximately equal contributions (Figure 2). The prices that had fallen were those of primary goods (-50%), mainly energy (-65%), although the fall in prices of manufactured goods (-10%) was also significant, as can be seen in Figure 3. **In the current economic situation, more than 95%**

5: IMF quarterly balance of payments statistics.

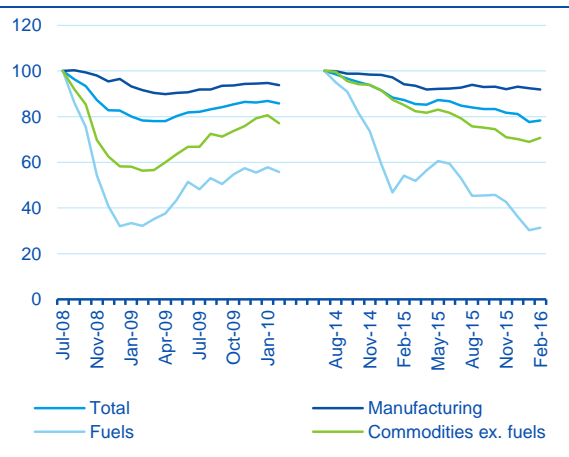
6: Despite the existence of several organisations that provide data on world trade, such as UNCTAD, the World Bank, the WTO, the OECD or the IMF, there is a consensus that the level of exports of goods reached US\$16 trillion in 2015 while those of services surpassed US\$4.5 trillion.

7 It is not possible to carry out a similar analysis for exports of services because of the absence of price indicators that would enable us to discriminate between nominal and volume changes. The indicators presented solve this difficulty.

of the fall in exports of goods is due exclusively to the price contraction effect, with only a slight fall in quantities being observed. Additionally, the composition of prices is somewhat different, in that the fall in energy goods (-71%) outweighs that in other primary goods (-33%), and particularly manufactured goods (-4%).

Once again, and as occurred during 2008-09, the current fall in prices coincides with a significant appreciation of the dollar with respects to the rest of currencies⁸, which could be interpreted as a causal effect, that is, faced with the appreciation of the unit used to price traded goods, the level of these prices should fall. However, our interpretation is that both events are a manifestation of the same factor: world demand, its effective evolution or expectations thereof. The effective reduction in demand in 2008-09, or expectations of a fall due to the anticipated adjustment in China during the recent period. This would have a negative impact on the prices of traded goods and, in turn, feed the first effect, strengthening the dollar due to its position as a risk-free currency.

Figure 3.3
Price of goods exported by type (*)



(*) Index July 2008 and August 2014 = 100
Source: Netherlands Bureau for Economic Policy Analysis

Table 3.1
Exports of goods and services calculated by different institutions (*)

	Goods					Services			
	Unctad	WB	IMF	CPB	BBVA	Unctad	WB	IMF	BBVA
2006	15.7	15.6	17.7	15.4	13.9	13.0	12.7	13.2	11.0
2007	15.7	15.8	15.9	14.8	16.1	20.0	19.3	19.7	17.7
2008	15.0	15.3	14.8	13.9	14.9	12.2	12.7	12.5	13.0
2009	-22.3	-22.5	-22.0	-22.7	-22.0	-9.2	-10.8	-10.9	-11.1
2010	21.9	21.9	21.4	22.2	21.4	9.6	8.0	7.5	7.2
2011	19.9	19.8	21.1	18.8	18.1	12.2	14.5	15.5	11.9
2012	0.7	1.0	0.7	0.6	0.8	2.3	2.4	2.5	2.2
2013	2.2	2.4	3.1	2.2	2.5	5.5	6.1	6.1	5.5
2014	-	0.8	0.9	1.0	2.3	-	5.3	5.3	6.8
2015	-	-	-11.7	-12.1	-9.1	-	-	-5.1	-5.7

(*) Year-on-year rates of change
Source: BBVA Research, Unctad, World Bank, IMF and CPB

New monthly indicators of nominal level and real volume of world exports: up-to-date information of goods and services trade

The most up-to-date information available at the date of writing on the development of world trade goes only as far as the end of 2015. **In these circumstances it would be desirable to have indicators showing us the trends in trade with the most up-to-date data possible**, both because of the significance of this variable for the analysis of the short-term economic situation, as well as to alert us to changes in the phase of the cycle, given its correlation with other signs of activity. With this in mind, we developed four indicators to capture the most up-to-date trend in world exports of goods and services, in nominal terms corrected for price effects.

The strategy followed in order to be able to work with the most up-to-date information possible is to use data for nominal exports and price indicators of countries publishing monthly up-to-date statistics and having a significant share in total world trade⁹. In the indicator for exports of goods we have included 25 countries¹⁰

8: According to the evolution of the multilateral effective exchange rate of the dollar prepared by JP Morgan.

9: We used national statistics, which are much more up-to-date than those of international organisations such as the IMF or the World Bank.

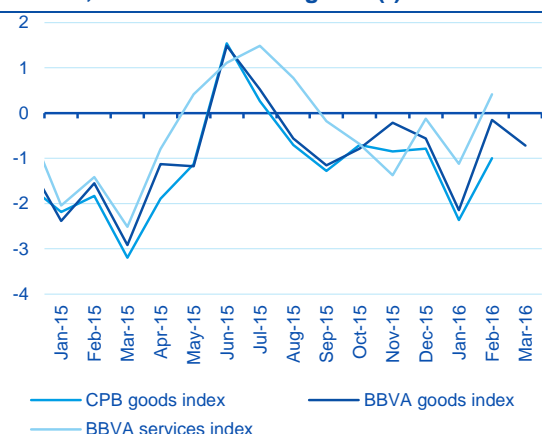
10: The 25 countries in the sample for goods are: Europe: Belgium, France, Germany, Italy, the Netherlands, Spain, Switzerland and Turkey. North America: Canada, US. Latin America: Argentina, Brazil, Chile, Mexico and Peru. Asia and Oceania: Australia, China, Hong Kong, India, Japan, Malaysia, Singapore, South Korea, Taiwan and Thailand.

which in 2014 accounted for 70% of world exports, while in the case of the indicators for services, availability of up-to-date monthly data allows us to incorporate only 16 countries¹¹ which account for 52% of world trade.

To construct our two nominal indicators (goods and services) we added together the exports¹² of the countries selected in each case to obtain an index and applied a three-month moving average to mitigate the high degree of volatility of the data. It is necessary to point out that the dynamics of our indicators of nominal exports of goods and services perfectly replicate those of the available data¹³, which take into account all the information (Table 1). Thus, **the sample of countries selected on the basis of timeliness and frequency of data is representative of total world trade.**

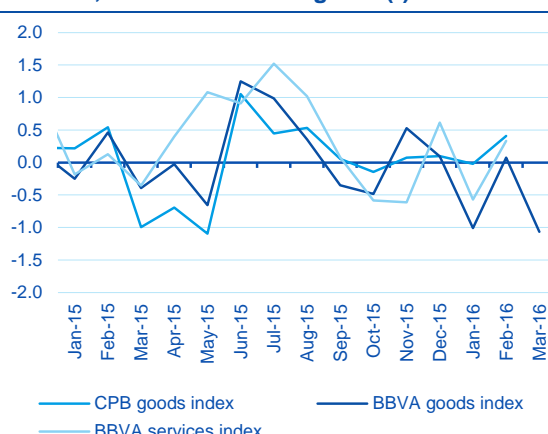
In the case of the indicators of the volumes of goods and services, it is not possible to directly add together values corrected for price effects¹⁴. For each country in the corresponding sample an index of exports is calculated, deflated by its corresponding price index¹⁵, both for goods and for services. The aggregated index for each type of product, good or service results from weighting the rate of monthly change of each country's deflated index by its share in nominal world trade. Lastly, we apply a three-month moving average to smooth the signal.

Figure 4
Nominal indices: BBVA for exports of goods and services, and CPB index of goods(*)



(*) monthly rate of change in percentage, moving three-month average.
Source: BBVA Research, CPB

Figure 5
Volume indices: BBVA for exports of goods and services, and CPB index of goods(*)



(*) monthly rate of change in percentage, moving three-month average.
Source: BBVA Research, CPB

The Netherlands Bureau for Economic Policy Analysis (CPB) publishes monthly indicators of trade in goods¹⁶, which for exports shows similar trends to those presented here. **However, our indicator is more up-to-date; at the time of writing we have a first estimate for March¹⁷. Moreover, in the case of services there is no up-to-date and frequent reference information for either nominal levels or the volume of trade corrected for the price effect, so our indicators expand the short-term information available on world trade** (see Figures 4 and 5).

11: The 16 countries in the sample for services are: Europe: Belgium, Denmark, France, Germany, Greece, Italy, Portugal, Turkey and the UK. North America: US Latin America: Brazil. Asia and Oceania: Australia, India, Israel, Japan and South Korea.

12: Data in national currencies are converted into dollars at the corresponding rates.

13: See note 2.

14: We deflate the nominal levels of each country by its corresponding price index, adjusted to the basket of products that are local and therefore not comparable with other economies.

15: In the majority of cases it is necessary to convert the indices from a quarterly to a monthly frequency.

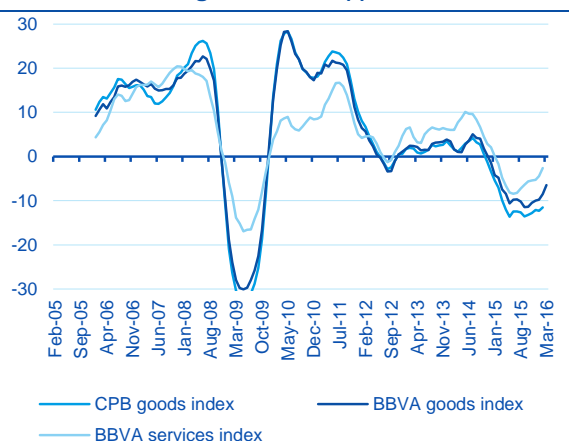
16: Monthly monitor of world trade in goods: <http://www.cpb.nl/en/world-trade-monitor>. It is published in the last ten days of each month with information corresponding to the two previous months.

17: With information as of 1 May: 50% of the exports of goods incorporated each month by the indicator, i.e. 35% of total world exports.

The annual deceleration in world exports of goods and services continued in the first quarter of 2016

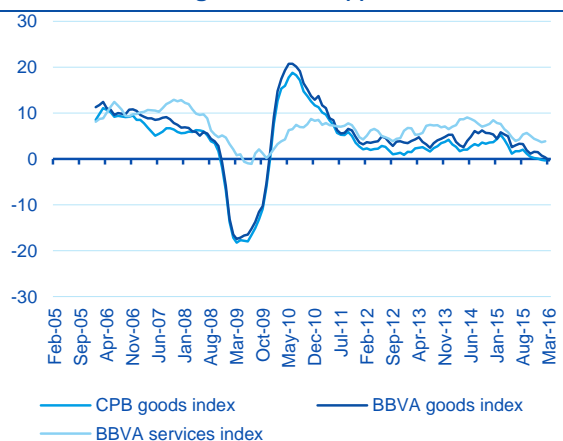
The level of trade in goods and services continued to fall in the first months of the year, both in nominal terms and by volume. With data to March (provisional, with 14 of the 25 countries forming the indicator), exports of goods fell more sharply than in Q4 2015, in both nominal and real terms. Exports of services, with almost complete information from the indicator to the end of February, also fell, but less sharply than in late 2015. Year-on-year rates (Figures 6 and 7) show how in the case of the nominal level of exports, the declines are less steep than in the second part of 2015, but this improvement derives from the acceleration of the price indicators, thus **in terms of volume the slowdown in world trade continues.**

Figure 6
Nominal exports of goods and services, BBVA indices and CPB goods index (*)



(*)annual rate of change in percentage, moving three-month average
Source: BBVA Research, CPB

Figure 7
Exports in volumes of goods and services, BBVA indices and CPB goods index (*)



(*)annual rate of change in percentage, moving three-month average
Source: BBVA Research, CPB

4 Financial volatility and economic growth

1. Introduction

Over the course of the past few decades monetary policy has been the political instrument of choice for public authorities of developed economies to reactivate growth of their economies, and indirectly of the world economy, in periods of weakness such as the one we are currently experiencing and guaranteeing stability around full employment or potential growth. However, **there is a generalised and growing fear in the financial markets that what we shall refer to as the hypothesis of the “*new monetary conflict between full employment and financial stability*” may become true.**

This hypothesis asserts that **in the current context (strongly conditioned to the sequels of the financial and debt crises experienced by the developed economies in the period 2007-2011), monetary policy at developed countries has lost efficacy in stabilizing domestic (and global) economic growth around its potential or full-employment level without destabilizing financial markets sooner or later (compromising in this way the short-term stabilization of economic growth reached).**

This fear partly can explain the generalised downward revision of economic growth forecasts for 2016 and the following years by financial agents and analysts in response to the unexpected increase in financial volatility since mid-2015, after a long period of stability at low levels.

This article explores statistically the possible occurrence, in line with the aforementioned hypothesis¹⁸, of a structural change in the dynamics of global financial volatility and in its relation with world economic growth from 2012 (i.e. in the period subsequent to the recent financial and debt crisis of the developed economies) relative to its characteristics prior to 2007 (i.e. in the pre-crisis period).¹⁹

2. What justifies the change in the relationship between volatility and growth?

The aforementioned thesis of a reduction in the efficacy of developed countries' monetary policy (due to the increase of its destabilising effects over the financial markets) has been theoretically and empirically justified in several research and opinion articles by Lawrence Summers²⁰ in recent years²¹. The key to this reduction would be the current conjunction of the following two conditions:

- (i) a strong misalignment between the observed level of the interest rate and that (hypothetically lower²²) level required to sustain full employment, and
- (ii) the impossibility of diminishing short-term interest rate lower enough to correct such misalignment given its proximity to zero (and the consequent need for recurring to unconventional monetary policy instruments for stabilising growth around its full employment value).

On the other hand, an additional fear that this loss of efficacy could compromise not only the economic growth of developed economies but also the world's finds its justification in the presence of restrictions on

18: In any case, the results of this article are enough for corroborating or refuting such hypothesis, which only serve the purpose of motivating our exercise.

19: The term "financial volatility" refers to the volatility of prices of and returns on the equities, bonds and currencies most commonly traded on the financial markets. In this case, we will use as the indicator of financial volatility the VIX index, which is an implied measure of the volatility of the Standard & Poor's 500 stock exchange index, since this is an indicator highly correlated with the most widely used measures of global financial volatility (such as the global volatility index developed by BBVA Research) but for which there is greater availability of data. For world economic growth we will use a converted-to-monthly version of the world GDP produced by the BBVA-GAIN model from quarterly world GDP data and monthly economic indicators such as IPIs and PMIs.

20: Professor at Harvard University and ex-secretary of the U.S Treasury.

21: See for example "Reflections on the 'new secular stagnation hypothesis'", a chapter in the book: http://voxeu.org/sites/default/files/Vox_secular_stagnation.pdf.

22: As a consequence of the sizable reduction in wealth experienced by the population segments with higher propensity to consume during the recent financial crisis and by the aging of population (and the associated high saving rates).

the possibility that an increase of emerging economies growth could be able to counter an eventual stagnation of the developed economies. Between these restrictions stand:

- (i) the exhaustion China's development model during last decade and its transition to lower levels of average growth (consistent with the correction of the current over-investment situation and its population aging), and
- (ii) the narrow margin for expansive monetary and fiscal policies in the emerging economies given the drop in commodity prices and the high levels of debt, specially by firms.

3. Correlation between financial volatility and economic growth

Figure 4.1 shows the negative correlation between the trend in world economic growth and that in world financial volatility, while Table 4.1 quantifies this correlation, in terms of both the contemporaneous values of these variables (-44%) and the lagged or advanced values of one against the other.

Table 4.1 suggests that the VIX anticipates world economic growth, which is confirmed by the result of statistical tests showing that current movements in the VIX help to predict future fluctuations in world economic growth but that the converse does not occur²³.

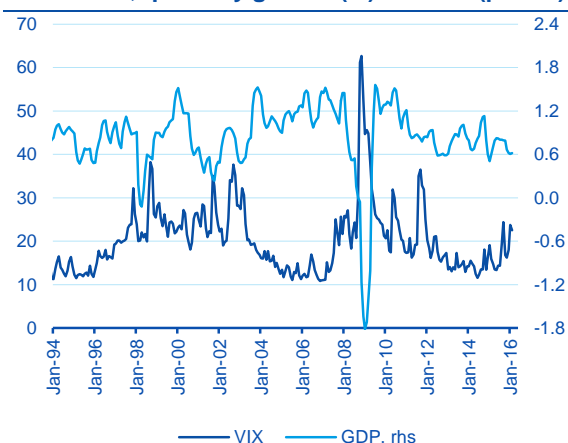
These statistical results regarding the correlation between the VIX and world economic growth are what usually lead financial agents and analysts to revise their growth forecasts downwards when they see unexpected changes in volatility.

The *hypothesis of the new monetary conflict between full-employment and financial stability* described in the previous section suggests that we should find major structural changes in this pattern of correlations when comparing the pre- and post-crisis periods. Table 4.1 shows that the evidence confirms this assumption: **the correlation in the post-crisis period (after 2012) is nearly double that corresponding to the pre-crisis period (before 2007)**.

However, **the correlation between any pair of macro-financial variables is a deceptive guide in trying to quantify the causal impact of one variable on the other**. This is due to the impossibility of discounting in advance the existence of bidirectional causality between the variables (in other words the possibility that variations in the first are capable of affecting the second and that variations in the second are also capable of affecting the first). **Unravelling these causal impacts on the basis of correlations requires recourse to theoretical knowledge of the relation between the two variables being studied, incorporating it into an econometric model that expresses that relation**, as we do in the remainder of this article.

23: We carried out the traditional Granger causality test, finding that the VIX "causes" in Granger's sense, world economic growth, but not vice versa.

Figure 4.1
World GDP, quarterly growth (%) and VIX (points)



Source: BBVA Research and CBOE

Table 4.1
Correlations. Units of time: months

	VIX		
	1997-2016*	1997-2007	2012-2016*
GDP(t-3)	-31%	-11%	21%
GDP(t)	-44%	-17%	-26%
GDP(t+3)	-39%	-22%	-40%

Source: BBVA Research and CBOE

4. From correlation to causality (or anticipation)

Scientific literature studying the causal relation between financial volatility and economic growth, whether theoretical or empirical, is relatively limited and recent, due to the complexity (high non-linearity) of the models required by such studies. Nonetheless, thanks to the digital revolution, which has brought substantial improvements in computing capacity and the efficiency of statistical data analysis, great advances have been made in this area in the past few years²⁴.

In the light of these advances, there is a broad consensus that variations in financial volatility are attributable to unexpected changes in the flow, nature and/or processing of information received by financial agents able to alter their degree of uncertainty regarding future trends of prices of and returns on the listed financial instruments (shares, bonds, currencies, derivatives, etc.) forming the object of their transactions on the financial markets.

From this point of view **it is to be expected that changes in the pace of global economic growth may trigger fluctuations in global financial volatility, but also that changes in financial volatility (not caused by previous changes in economic growth) should cause changes in the pace of economic growth.** The econometric exercise in the following section seeks to unravel these effects quantitatively, although we will first briefly explain the possible channels through which, in accordance with our current theoretical understanding, these two causal effects can be transmitted.

Effect of growth on volatility

New data on economic activity, including both the official GDP data and the more frequent data on indicators that serve to anticipate the quarterly GDP data before their official publication, constitute one of the pieces of information to which financial agents and analysts attach most importance in the process of revising their financial forecasts.

24: We would highlight the following contributions (which will form the basis of the theoretical considerations of the remainder of this article): (i) "Risk Matters: the real effects of volatility shocks", article by Juan Rubio-Ramírez (permanent academic collaborator with BBVA Research), Jesús Fernández-Villaverde et al., published in 2011 in American Economic Review vol.101, no. 6 (pp. 2530-61) and (ii) "The impact of uncertainty shocks", article by Nicholas Bloom, published in 2009 in Econometrica Vol.77, No. 3 (pp. 623-385).

It is therefore to be expected that the publication of unexpected data on any of these variables will have the substantial potential to alter financial agents' uncertainty about the future trend of economic growth and, through the transactions carried out in reaction, to change the levels of financial volatility observed.

More specifically, **the publication of information showing or anticipating unexpectedly low economic growth data for one or more of the world's economies may lead in certain circumstances to an increase in financial agents' uncertainty about the future growth of these economies and of the world economy. It may also involve increased uncertainty about key variables for determining and forecasting future trends in prices of listed financial instruments**, such as future revenues, current and capital expenditure and financial solvency of companies and households. For example, many analysts *partly* attribute the increase in financial volatility (and the fall in the price of oil) since mid-2015 to an effect of this type caused by the disappointing data on the growth of China's economy in the past few quarters²⁵.

Financial volatility's "anticipation" of growth

Despite their great importance, **data on indicators of economic activity are only a small portion of the information processed by financial agents and analysts when revising their forecasts**, including those of economic activity.

Therefore **it is to be expected that only a small fraction of the fluctuations in financial volatility will be explicable by the effect of fluctuations in economic growth** (in fact, the results of our statistical exercise suggest that it is a negligible fraction). The rest would be explained by other "**uncertainty shocks**" which would cover all unexpected data or news, excluding data on economic activity, which also alter financial agents' uncertainty about the future path of the prices of the main financial instruments.

Among these alternative uncertainty shocks we would highlight the following categories:

1. Other data or news items that also alter uncertainty about future economic growth, such as: unexpected announcements of changes in monetary and fiscal policies (such as the US Federal Reserve's announcement of "tapering" in 2014), unexpected announcements of reforms or significant laws, announcements of possible natural disasters, etc.
2. Data or news items that alter uncertainty about the risk of default or bankruptcy on the part of counterparties (issuers of bonds, shares and other listed financial instruments with an appreciable weight in the average financial investor's portfolio), such as the unexpected announcement of the failure of a systemic financial institution (like Lehman Brothers in 2008).

Note that both categories of uncertainty shocks are capable not only of affecting short-term financial volatility but also of causing alterations in short- and long-term economic growth, by altering real investment decisions (for example postponing investments until the environment becomes less uncertain) or household saving decisions (precautionary saving).

The above explanation obliges us to reformulate, in precise terms, the question about the impact of financial volatility on economic growth. **There are no good theoretical grounds for expecting fluctuations in financial volatility *per se* to cause (*sensu stricto*) alterations to economic growth, but there are good grounds for thinking that several of the alternative uncertainty shocks (those other than unexpected data on economic activity) which are capable of altering levels of financial volatility are also capable of altering future economic growth.** In this last case, if the effect on financial volatility precedes the effect on economic growth, then unexpected changes in financial volatility must constitute an advance indicator of unexpected changes in future economic growth.

25: However there are other very important factors behind this increase in financial volatility, such as the change of system for setting the exchange rate of the China's currency and the new features in the regulation of its stock markets.

In other words, given our current degree of theoretical understanding, it seems highly questionable to assert that alterations in financial volatility can, *per se*, cause alterations in economic growth. However, **since financial volatility usually responds if not instantaneously then in any case more quickly than economic activity to the kind of alternative uncertainty shocks described previously, it is indeed to be expected that changes in financial volatility should foreshadow changes in economic growth when these kinds of shocks occur.**

However, hereinafter we shall refer to the “effect” of financial volatility on growth to refer to this adumbration of changes in future economic growth by current variations in financial volatility. We must not forget that we are dealing with the causal effect of alternative uncertainty shocks (other than unexpected data on economic activity), firstly on financial volatility and then on economic growth.

5. Quantifying the “effect” of volatility on growth

We now go on to summarise the results of our econometric exercise²⁶ aimed at:

1. Unravelling the fraction of the correlation between financial volatility and economic growth due to the causal impact of growth on volatility, thus enabling us to isolate the remaining fraction which reflects changes in growth anticipated by volatility (given their common origin in uncertainty shocks).
2. Determining whether the “effect” of financial volatility on economic growth (or more precisely whether the effect of the uncertainty shocks on both variables) is different in the post-crisis period (after 2011) from what it was in the pre-crisis period (before 2007), as suggested by the *hypothesis of the new monetary conflict between full-employment and financial stability*.

A first result of the exercise to highlight is the negligible role played by economic activity shocks (i.e. unexpected data on economic growth) in explaining variations in levels of financial volatility. Therefore, it is the alternative uncertainty shocks that explain the fluctuations in financial volatility and its ability to anticipate fluctuations in world economic growth (precisely those caused, with a bigger lag, by those very shocks).

Figure 4.2 compares the effect of a typical or average alternative uncertainty shock on financial volatility (in logarithms) in the pre- and post-crisis periods. We see that the magnitude of the average shock (given by the variation in the logarithm of the VIX in the initial period) is similar in both periods, but that now the effect quickly fades (in just six months) whereas in the past it was very persistent (more than two thirds of the initial effect still persisted after six months).

Figure 4.4 compares the effect of a transitory increase in the VIX²⁷ (caused by alternative uncertainty shocks) on world economic growth in the pre- and post-crisis periods, while Figure 4.5 makes the comparison for the case of a permanent increase in the VIX²⁸. We see clearly that **at present an equivalent increase (in percentage terms) in the VIX anticipates a greater fall in economic growth in the very short term, but a smaller and less persistent fall at longer terms.**

The findings shown by the foregoing Figures are consistent with the *global secular stagnation hypothesis* (described in the introduction) if they are explained as the product of the effectiveness of the developed economies’ non-conventional monetary policies (interest rates close to zero and QE) in “artificially” restoring calm on the financial markets despite the increase in underlying uncertainty. This should mean that the initial increase in the VIX in reaction to an uncertainty shock of equivalent magnitude would now evaporate much

26: The appendix shows the technical details of the exercise, but the following are the main results of interest obtained.

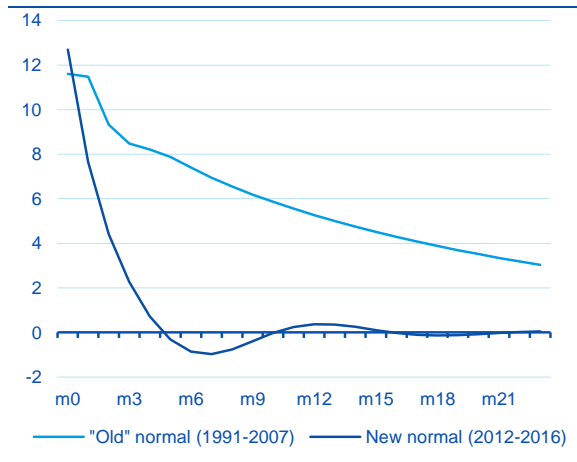
27: What is shown is the growth forecast as affected by an initial increase in the VIX (caused by alternative uncertainty shocks) compared with the unaffected forecast and its immediate reversion thereto. The initial increase is equal to the standard deviation of the residuals for the VIX.

28: What is shown is the growth forecast as affected by a permanent increase in the VIX (caused by alternative uncertainty shocks) compared with the unaffected forecast. The increase is equal to the standard deviation of the residuals for the VIX.

more quickly and that consequently the negative impact on growth (albeit greater now than before, initially) would also do likewise.

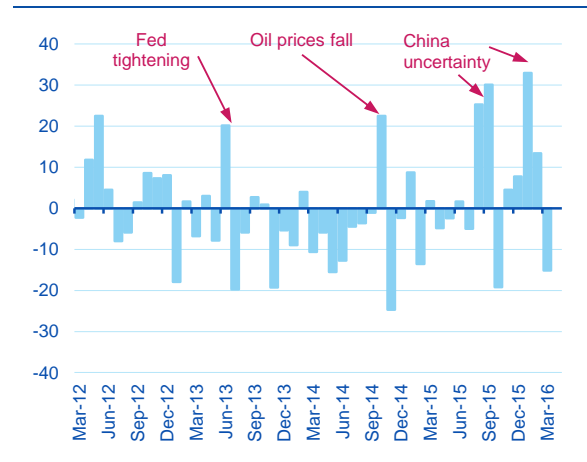
However, other plausible hypotheses unconnected with monetary policy (or with the *global secular stagnation hypothesis*) can also be posited. For example, the results could simply be reflecting a change in the nature of the shocks (although the similarity and average magnitude of the shocks argue against this hypothesis), such that shocks in the pre-crisis period would predominantly reflect credible and fundamental information whereas now shocks would predominantly reflect less credible or more rumour-based information. An additional discovery of our exercise which supports this hypothesis, and other alternative hypotheses, is that **the frequency of major uncertainty shocks (see Figure 4.3) is now twice what it was in the pre-crisis period**, which might be interpreted as the reflection of a change in the nature of the shocks, but also as a reflection of the predominance of bad luck (sampling accident) or even of greater nervousness in the post-crisis period.

Figure 4.2
Reaction of the VIX to a shock that increases uncertainty (%). Horizontal axis: months



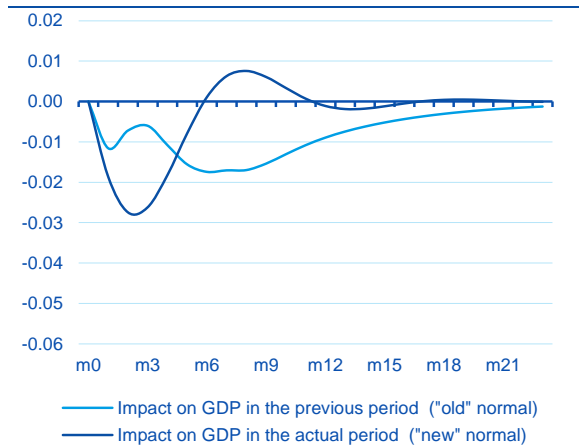
Source: BBVA Research

Figure 4.3
Uncertainty shocks (% immediate change in VIX)



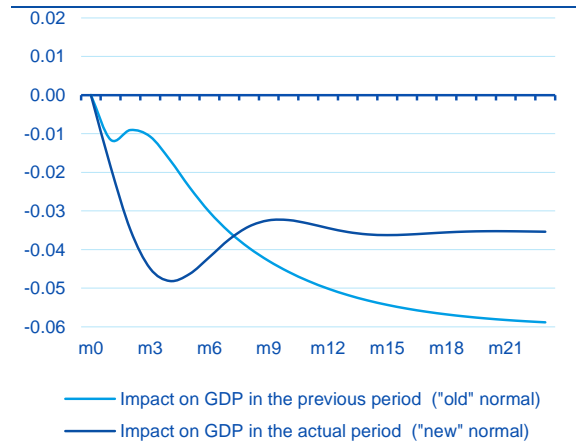
Source: BBVA Research and CBOE

Figure 4.4
Effect on GDP (p.p., QoQ) of a transitory increase in the VIX (due to alternative uncertainty shocks)
Horizontal axis: months



Source: BBVA Research

Figure 4.5
Effect on GDP (p.p., QoQ) of a permanent increase in the VIX (due to alternative uncertainty shocks)
Horizontal axis: months



Source: BBVA Research

Methodological Appendix

Summary: we used two dual VAR models (logarithm of the VIX and world growth), one for the pre-crisis sample and another for the post-crisis sample, and their residuals are broken down into two types of shock: economic activity shocks (defined as “all those that contemporaneously affect economic growth”) and alternative uncertainty shocks (defined as “all those that contemporaneously affect the VIX”), which are orthogonal since the VAR residuals are too (so that it is not necessary to introduce identification restrictions). The exercise consists in comparing the impulse responses of these two VAR models.

- Model: vector autoregression (VAR)
- Lags: in accordance with AIC (Akaike Information Criterion)
- Frequency: monthly
- Endogenous variables: logarithm of the VIX, QoQ growth in world GDP (BBVA-GAIN)
- Pre-crisis sample: March 1997 – December 2007
- Post-crisis sample: January 2012 – March 2016
- Source of data: VIX (CBOE) and world GDP (National Accounts, IMF and calculations of BBVA Research)

5 Tables

Table 5.1

Macroeconomic Forecasts: Gross Domestic Product

(Annual average, %)	2012	2013	2014	2015	2016	2017
United States	2.2	1.5	2.4	2.4	2.5	2.4
Eurozone	-0.8	-0.2	0.9	1.5	1.6	1.9
Germany	0.6	0.4	1.6	1.4	1.7	1.8
France	0.2	0.7	0.2	1.2	1.3	1.6
Italy	-2.8	-1.8	-0.3	0.6	1.0	1.4
Spain	-2.6	-1.7	1.4	3.2	2.7	2.7
United Kingdom	1.2	2.2	2.9	2.3	1.8	1.9
Latam *	2.9	2.6	0.7	-0.5	-1.0	1.7
Mexico	4.0	1.4	2.1	2.4	2.2	2.6
Brazil	1.9	3.0	0.1	-3.9	-3.0	0.9
Eagles **	5.8	5.5	5.2	4.6	4.7	4.9
Turkey	2.1	4.2	3.0	4.0	3.9	3.9
Asia Pacific	5.8	5.8	5.6	5.5	5.3	5.1
Japan	1.7	1.5	0.0	0.5	0.8	0.8
China	7.7	7.7	7.3	6.9	6.4	5.8
Asia (ex. China)	4.3	4.3	4.2	4.3	4.4	4.5
World	3.4	3.3	3.4	3.1	3.2	3.4

* Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

** Bangladesh, Brazil, China, India, Indonesia, Iraq, Mexico, Nigeria, Pakistan, Philippines, Russia, Saudi Arabia, Thailand and Turkey.

Forecast closing date: 6 May 2016.

Source: BBVA Research and IMF

Table 5.2

Macroeconomic Forecasts: Inflation

(Annual average, %)	2012	2013	2014	2015	2016	2017
United States	2.1	1.5	1.6	0.1	1.3	2.0
Eurozone	2.5	1.4	0.4	0.0	0.2	1.3
Germany	2.1	1.6	0.8	0.1	0.0	1.2
France	2.2	1.0	0.6	0.1	0.1	1.3
Italy	3.3	1.2	0.2	0.1	0.1	1.3
Spain	2.4	1.4	-0.2	-0.5	-0.3	1.7
United Kingdom	2.8	2.6	1.5	0.1	0.7	1.6
Latam *	7.8	9.2	12.7	17.5	32.9	34.4
Mexico	4.1	3.8	4.0	2.7	2.8	3.1
Brazil	5.4	6.2	6.3	9.0	8.6	5.2
Eagles **	5.1	5.2	4.5	4.4	4.2	4.1
Turkey	8.9	7.5	8.9	7.7	8.1	7.8
Asia Pacific	3.8	4.0	3.3	2.2	2.7	3.1
Japan	0.0	1.6	2.7	0.8	0.7	1.5
China	2.6	2.6	2.0	1.4	2.3	2.7
Asia (ex. China)	4.7	5.1	4.4	2.9	3.0	3.5
World	4.4	4.2	3.9	3.8	5.0	5.4

* Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

** Bangladesh, Brazil, China, India, Indonesia, Iraq, Mexico, Nigeria, Pakistan, Philippines, Russia, Saudi Arabia, Thailand and Turkey.

Forecast closing date: 6 May 2016.

Source: BBVA Research and IMF

Table 5.3

Macroeconomic Forecasts: Current Account

(Annual average, % GDP)	2012	2013	2014	2015	2016	2017
United States	-2.8	-2.3	-2.9	-2.7	-3.0	-3.2
Eurozone	1.3	2.1	2.5	3.2	3.2	3.0
Germany	7.1	6.8	7.4	8.6	8.0	7.2
France	-1.2	-0.8	-0.9	-0.2	-0.3	0.0
Italy	-0.4	0.9	1.9	2.2	2.6	2.5
Spain	-0.2	1.5	1.0	1.4	2.1	2.5
United Kingdom	-3.3	-4.5	-5.1	-5.2	-5.4	-5.5
Latam *	-1.9	-2.6	-2.9	-3.5	-3.7	-2.5
Mexico	-1.3	-2.4	-1.9	-2.8	-3.1	-3.2
Brazil	-3.0	-3.1	-4.3	-3.4	-2.1	-1.0
Eagles **	0.9	0.5	0.6	0.7	0.5	0.7
Turkey	-6.2	-7.9	-5.4	-4.5	-4.4	-4.3
Asia Pacific	1.1	1.3	1.7	2.6	2.1	1.9
Japan	1.0	0.7	0.5	3.3	3.0	2.6
China	2.6	2.0	2.1	3.1	2.4	2.3
Asia (ex. China)	-0.1	0.7	1.4	2.3	1.9	1.5

* Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

** Bangladesh, Brazil, China, India, Indonesia, Iraq, Mexico, Nigeria, Pakistan, Philippines, Russia, Saudi Arabia, Thailand and Turkey.

Forecast closing date: 6 May 2016.

Source: BBVA Research and IMF

Table 5.4

Macroeconomic Forecasts: Government Balance

(Annual average, % GDP)	2012	2013	2014	2015	2016	2017
United States	-6.8	-4.1	-2.8	-2.7	-3.0	-3.0
Eurozone	-3.7	-3.0	-2.6	-2.1	-1.9	-1.6
Germany	-0.1	-0.1	0.3	0.7	0.0	0.3
France	-4.8	-4.0	-4.0	-3.5	-3.4	-3.0
Italy	-2.9	-2.9	-3.0	-2.6	-2.3	-1.5
Spain	-6.8	-6.6	-5.8	-5.0	-3.9	-2.7
United Kingdom	-8.4	-5.7	-5.6	-4.3	-3.4	-2.2
Latam *	-2.3	-2.3	-4.2	-6.0	-5.3	-4.5
Mexico	-2.6	-2.3	-3.2	-3.5	-3.0	-2.5
Brazil	-2.5	-3.0	-6.7	-10.2	-9.0	-7.3
Eagles **	-1.4	-2.0	-2.7	-4.8	-4.6	-3.9
Turkey	-2.0	-1.2	-1.3	-1.2	-2.0	-1.9
Asia Pacific	-2.6	-2.9	-2.8	-3.5	-3.6	-3.1
Japan	-7.6	-9.2	-7.9	-6.7	-6.0	-5.5
China	-1.1	-1.5	-1.8	-3.5	-4.0	-3.5
Asia (ex. China)	-3.8	-4.1	-3.7	-3.6	-3.2	-2.8

* Argentina, Brazil, Chile, Colombia, Mexico, Peru and Venezuela.

** Bangladesh, Brazil, China, India, Indonesia, Iraq, Mexico, Nigeria, Pakistan, Philippines, Russia, Saudi Arabia, Thailand and Turkey.

Forecast closing date: 6 May 2016.

Source: BBVA Research and IMF

Table 5.5

Macroeconomic Forecasts: 10-year government bond yield

Annual Average, %	2012	2013	2014	2015	2016	2017
United States	1.79	2.34	2.53	2.13	2.02	2.49
Germany	1.57	1.63	1.25	0.54	0.47	0.75

Forecast closing date: 6 May 2016.
Source: BBVA Research and IMF

Table 5.6

Macroeconomic Forecasts: Exchange Rates

Annual Average	2012	2013	2014	2015	2016	2017
USD-EUR	0.78	0.75	0.75	0.90	0.91	0.89
EUR-USD	1.29	1.33	1.33	1.11	1.10	1.12
GBP-USD	1.59	1.56	1.65	1.53	1.49	1.66
USD-JPY	79.77	97.45	105.82	121.07	118.44	128.50
USD-CNY	6.31	6.20	6.14	6.23	6.63	6.99

Forecast closing date: 6 May 2016.
Source: BBVA Research and IMF

Table 5.7

Macroeconomic Forecasts: Official Interest Rates

End of period, %	2012	2013	2014	2015	2016	2017
United States	0.25	0.25	0.25	0.50	1.00	2.00
Eurozone	0.75	0.25	0.05	0.05	0.00	0.00
China	6.00	6.00	5.60	4.35	4.10	3.60

Forecast closing date: 6 May 2016.
Source: BBVA Research and IMF

DISCLAIMER

This document has been prepared by BBVA Research Department. It is provided for information purposes only and expresses data, opinions or estimations regarding the date of issue of the report, prepared by BBVA or obtained from or based on sources we consider to be reliable, and have not been independently verified by BBVA. Therefore, BBVA offers no warranty, either express or implicit, regarding its accuracy, integrity or correctness.

Estimations this document may contain have been undertaken according to generally accepted methodologies and should be considered as forecasts or projections. Results obtained in the past, either positive or negative, are no guarantee of future performance.

This document and its contents are subject to changes without prior notice depending on variables such as the economic context or market fluctuations. BBVA is not responsible for updating these contents or for giving notice of such changes.

BBVA accepts no liability for any loss, direct or indirect, that may result from the use of this document or its contents.

This document and its contents do not constitute an offer, invitation or solicitation to purchase, divest or enter into any interest in financial assets or instruments. Neither shall this document nor its contents form the basis of any contract, commitment or decision of any kind.

In regard to investment in financial assets related to economic variables this document may cover, readers should be aware that under no circumstances should they base their investment decisions in the information contained in this document. Those persons or entities offering investment products to these potential investors are legally required to provide the information needed for them to take an appropriate investment decision.

The content of this document is protected by intellectual property laws. It is forbidden its reproduction, transformation, distribution, public communication, making available, extraction, reuse, forwarding or use of any nature by any means or process, except in cases where it is legally permitted or expressly authorized by BBVA.

This report has been produced by the Economic Scenarios Unit:

Chief Economist for Economic Scenarios

Julián Cubero
juan.cubero@bbva.com

Sara Balaña
mariasara.balina@bbva.com

Rodrigo Falbo
rodrigo.falbo@bbva.com

Rodolfo Mendez
rodolfo.mendez@bbva.com

Jorge Redondo
jorge.redondo.caballero@bbva.com

BBVA Research

Group Chief Economist

Jorge Sicilia Serrano

Developed Economies Area

Rafael Doménech
r.domenech@bbva.com

Spain

Miguel Cardoso
miguel.cardoso@bbva.com

Europe

Miguel Jiménez
mjimenezg@bbva.com

US

Nathaniel Karp
Nathaniel.Karp@bbva.com

Emerging Markets Area

Cross-Country Emerging Markets

Analysis
Alvaro Ortiz
alvaro.ortiz@bbva.com

Asia

Le Xia
le.xia@bbva.com

Mexico

Carlos Serrano
carlos.serranoh@bbva.com

Turkey

Alvaro Ortiz
alvaro.ortiz@bbva.com

LATAM Coordination

Juan Manuel Ruiz
juan.ruiz@bbva.com

Argentina

Gloria Sorensen
gsorensen@bbva.com

Chile

Jorge Selaive
jselaive@bbva.com

Colombia

Juana Téllez
juana.tellez@bbva.com

Peru

Hugo Perea
hperea@bbva.com

Venezuela

Julio Pineda
juliocesar.pineda@bbva.com

Financial Systems and Regulation Area

Santiago Fernández de Lis
sfernandezdelis@bbva.com

Financial Systems

Ana Rubio
arubiog@bbva.com

Financial Inclusion

David Tuesta
david.tuesta@bbva.com

Regulation and Public Policy

María Abascal
maria.abascal@bbva.com

Digital Regulation

Álvaro Martín
alvaro.martin@bbva.com

Global Areas

Economic Scenarios

Julián Cubero
juan.cubero@bbva.com

Financial Scenarios

Sonsoles Castillo
s.castillo@bbva.com

Innovation & Processes

Oscar de las Peñas
oscar.delaspenas@bbva.com

Contact details:

BBVA Research

Azul Street, 4
La Vela Building - 4 and 5 floor
28050 Madrid (Spain)
Tel.: +34 91 374 60 00 and +34 91 537 70 00
Fax: +34 91 374 30 25
bbvaresearch@bbva.com
www.bbvaresearch.com
Legal Deposit: M-31256-2000