# Leave the euro?

By [Christophe Blot](), [Jérôme Creel](), [Bruno Ducoudré](), [Paul Hubert](), [Xavier Ragot](), [Raul Sampognaro](), [Francesco Saraceno](), and [Xavier Timbeau]()

Evaluating the impact of France leaving the euro zone ("Frexit") is tricky, as many channels for doing this exist and the effects are uncertain. However, given that this proposal is being advanced in the more general debate over the costs and benefits of membership in the European Union and the euro, it is useful to discuss and estimate what is involved.

There is little consensus about the many points involved in an analysis of the issue of membership in the euro. On the one hand, the benefits linked to the single currency 18 years after its creation are not viewed as completely obvious; on the other, it is not evident that the monetary zone has become less heterogeneous, and, possibly linked to that, the current account imbalances built up in the first decade of the euro zone's existence, which have grown since then due to the consequences of the 2008 global financial crisis, are putting constraints on economic policy.

The dissolution of Europe's monetary union would be an unprecedented event, not only for the member states but also from the point of view of the history of monetary unions. Not that there have been no experiences of dissolution — [Rose]() (2007) counted 69 cases of withdrawal from a monetary union since the end of the Second World War — but in many respects these experiences offer little if any basis for comparison ([Blot & Saraceno, 2014]()). Nor do they reveal any empirical patterns that could inform us about the possible misfortunes or chances of success that a break-up of the euro zone might have.

However, the reference to past episodes is not the only tool

with which the economist can carry out an analysis of a break-up of the euro zone. It is indeed possible to highlight the mechanisms that would be at work if the monetary union project in Europe were to be wound up. There are numerous possible pathways to a break-up of the euro zone, and any analysis of the costs and benefits must be interpreted with the utmost caution, since in addition to uncertainty about any quantitative assessment of what is involved, there is also the issue of what scenario an exit would create. In these circumstances, a departure from the euro zone cannot necessarily be understood solely from the point of view of its impact on exchange rates or its financial effects. It is very likely that an exit would be accompanied by the implementation of alternative economic policies. The analysis carried out here does not enter this territory, but merely explains the macroeconomic mechanisms at work in the event of a break-up of the euro zone, without detailing the reaction of economic policy or second-round effects.

The central hypothesis adopted here is that involving a complete break-up of the monetary union, and not the simple departure of France alone. Indeed, if France, the second-largest euro zone economy, were to exit, the very existence of the monetary zone would be called into question. The devaluation of the French franc against the southern Europe countries remaining in the euro zone would destabilize their economies and push them out of the scaled-down euro zone. We do not deal here with all the technical elements related to how a break-up would be organized [1] — launching the circulation of new currencies, liquidation of the ECB and termination of the TARGET system, etc. — but rather on an analysis of the macroeconomic effects [2]. Two types of effects would then be at work. First, the dissolution of the European monetary union would de facto lead to a return to national currencies, and therefore to a devaluation or revaluation of the currencies of the euro zone countries vis-à-vis not only their euro zone partners but also non-euro zone

countries. Second, the redenomination of assets and liabilities now denominated in euros and the prospect of exchange movements would have financial effects that we analyze in the light of past financial crises. Our scenario is therefore for a contained crisis.

A unilateral exit from the euro zone by France and the ensuing break-up of the euro zone exclude a scenario for a common currency where strong cooperation between the old member states would help to maintain a high level of exchange stability and effectively continue the economic status quo. There is little likelihood of a scenario like this, since it would lead to not using the margins of maneuver opened up by the exit and to maintaining the much-denounced and presumed straitjacket. The crisis would be contained in that the most violent effects would be reduced by coordinated policies. This would mean exchange movements that are rapid and substantial, but which stabilize over a time horizon of a few quarters [3]. We assume, furthermore, that each country pursues its own interest without special co-operation.

## I — A summary of the economic mechanisms at work

*The gains expected from leaving the euro zone*

In the first place, leaving the euro zone would mean that the exchange rates between the currencies of the countries that compose it could once again vary against each other. Given this, the question arises of the value at which the exchange rates of these currencies will tend to converge. The expected gains would be, on the one hand, an improvement in competitiveness due to the devaluation of the franc. A devaluation would lead to imported inflation in the short term, before increasing purchasing power and spurring growth. The second gain involves the possibility of defining a monetary and fiscal policy that is differentiated by country, and therefore more appropriate to France's situation.

An exit from the euro zone would also make it possible to set tariffs less favorable to imports from other countries, and thus more favorable to producers on the national territory, but which would also affect consumer prices and thus consumer purchasing power[4].

*The costs of leaving the euro zone*

France's exit from the euro zone would lead to the departure of other countries, which would see their currencies depreciate against the franc, especially the southern European countries. The net effect on competitiveness may prove ambiguous.

A Frexit would lead to currency movements, which would translate into a return of transaction costs on currency exchanges between euro zone countries. Moreover, the break-up of the euro zone would also lead to a redenomination of assets and debts in the national currency. Beyond the legal aspects, these balance sheet effects would impoverish agents who hold assets denominated in a depreciating currency or debts re-denominated in an appreciating currency (and enrich those in the reverse situation). Uncertainties about balance sheet effects, particularly for financial intermediaries and banks, could be expected to lead to a period experiencing a sharp downturn in lending.

How much additional autonomy would be acquired for monetary policy is uncertain at present. Indeed, it is difficult to conceive of a monetary policy that is much more expansionary than the ECB's policy of negative rates and security redemptions [5]. The Banque de France could, of course, buy back the national public debt by creating money, but, in light of the low current interest rates on French sovereign debt, it is not clear that this would lead to significant gains [6]. It should be noted that a persistent current account deficit would need to be financed by external savings and that this external constraint could affect monetary policy, for example

by requiring an increase in short-term and long-term interest rates that could impose capital controls by the government.

Finally, the introduction of trade protectionism would obviously lead to retaliation by the aggrieved partners, which would hurt French exports. The overall net effect on world trade would be negative, with no gain at the national level.

**II – The impact on exchange rates and competitiveness**

A Frexit would not lead to strong gains in competitiveness. We simulated the effect of a Frexit in the following way:

1. We assume that a Frexit would lead to a rapid disintegration of the euro zone;

1. We then use our estimates of long-run equilibrium exchange rates presented in Chapter 4 of the *2017 iAGS Report*. It appears that the equilibrium parity for the new franc would correspond to an actual effective devaluation of 3.6% compared to the current level of the euro. This is a real change, once it has been corrected for the effects of inflation and is effective, that is, taking into account exchange rate fluctuations in relation to different trading partners, possibly in the opposite direction. The new franc would be devalued relative to the German currency, but would appreciate relative to the Spanish currency;

2. Using the empirical estimates of exchange rate adjustments (Cavallo et al., 2005), we determine a short-term exchange rate trajectory. Our estimate is for a 13.7% depreciation of France's effective exchange rate with respect to the other euro zone countries, and an appreciation of 8.6% with respect to the countries that do not belong to the euro zone.

Using simulations with the emod.fr model, we estimate a modest increase in competitiveness. The effect on GDP would be close to 0 in the first year and 0.4% after three years. These

figures are low and refer to a scenario without any readjustment within the euro zone. If we consider the possibility of a gradual adjustment within the euro zone (based on the mechanisms, for example, referred to in *iAGS 2016*), the potential gain would be even lower. Once again it is possible to envisage that the monetary policy conducted by the Banque de France would seek to devalue the French currency more strongly than that of its competitors. But in such a scheme, it is very likely that the latter will in turn wish to preserve their competitiveness and engage in a policy of competitive devaluations.

## III – The financial impact: The effects of the banking crises

The dissolution of the euro zone and the return to national currencies would have significant repercussions for the national banking and financial systems through their international business, and it would bring about a return of exchange rate risk within the euro zone. We first assess the risks that the collapse of the euro zone would have for the banking system. The mechanisms at work are likely to provoke a banking crisis, which could have a high cost for economic activity.

The return to national currencies in a financially integrated space would necessarily entail a major upheaval for the financial system. These effects would not be comparable to those observed at the time the euro was adopted. Indeed, as [Villemot et Durand (2017)](#) have shown, potentially the balance sheet effects would be significant for a low coordination scenario.

The balance sheet effects could be reduced if there were international coordination when leaving the euro. Such co-ordination would make it possible to distribute the ECB's assets and liabilities in a coherent way, notably within the framework of TARGET 2. However, it's difficult to assume a significant level of coordination when leaving the eurozone,

and it is illusory to believe that the difficulties in achieving coordination will lessen. On the contrary, they are likely to increase in a climate of instability instead of one with a shared destiny. As a result, the scenario we use for leaving the euro zone excludes the establishment of a new financial or monetary architecture.

The risk of a banking or financial crisis is central to understanding the impact of the break-up of the euro zone. The impacts would pass through three main channels. The first involves a flight of deposits and savings and the distress liquidation of financial assets. The second is related to the effects of currency misalignments on banks' balance sheets and insurers. The third concerns the sovereign risk that would affect either the public debt and its financing, or if this debt were subject to uncontrolled monetization, the return of intense external pressure. The economic literature includes recent efforts (notably Rogoff and Reinhart, Borio, Schularik, the IMF) to try to evaluate banking or financial crises. It should be clarified at the outset that this literature does not deal with the dissolutions of monetary unions. In the various banking crises recorded since the 1970s by Laeven and Valencia (2010 and 2012), there is no mention of a crisis linked to the dissolution of a monetary union. Nevertheless, the financial dynamics in play in the event of the break-up of the euro zone would be, as mentioned above, risk factors for a banking or financial crisis.

Moreover, the economic literature on currency crises has pointed to the link with banking crises (Kaminsky and Reinhart, 1999). The collapse of a monetary union in reality reflects a crisis situation for the exchange rate system, which leads to revaluations and devaluations with the over-adjustment of exchange rates, as highlighted in the previous section. The reference to the cost of banking crises thus illustrates the potentially negative effects of exiting the euro zone. However, it should be remembered that these costs

correspond to an overall assessment of banking crises that does not make it possible to identify precisely the mechanisms through which the financial shock is propagated into the real economy – an assessment that would involve identifying the impact of rising risk premiums and the effect of credit rationing, where it is much more difficult to determine the uncertainty. An analysis by Bricongne et al. (2010) of the various channels through which the 2007-2008 financial crisis was transmitted suggests that a significant amount remains unexplained. Also, in the absence of a more detailed analysis, we make the assumption that the historical experiences of banking crisis are the main quantitative element that can be used to get close to the eventual negative impact – via the financial effects – of a break-up of the euro zone.

Laeven and Valencia (2012) analysed 147 banking crises in developed and emerging countries over the last few decades (1970-2011). They calculated the losses in production as the three-year cumulative loss of actual GDP relative to trend GDP [7]. For the developed countries, the cumulative loss of growth was on average 33 GDP points. During these three crisis years, the public debt increased on average by 21 GDP points (partly due to bank recapitalizations), the central bank's balance sheet increased by 8 GDP points, and the level of non-performing loans increased by 4 percentage points. It should be noted that there was a high degree of heterogeneity in the cost of the crises, depending on the crisis and country in question. For example, the authors' assessment of the cost of the 2008 banking crisis in terms of growth following the bankruptcy of Lehman Brothers was 31 GDP points for the United States and 23 GDP points for the euro zone as a whole. Hoggarth, Reis and Saporta (2002) conducted a similar study and sought to provide robust assessments of trend GDP. They noted cumulative production losses during crisis periods ranging from 13 to 20 GDP points, depending on the indicator chosen. However, these estimates of the cost of banking crises are to be taken with caution, since they are based on numerous

assumptions, in particular on the trajectories that countries would have followed in the absence of a crisis.

**IV – The gains from monetary autonomy**

The gains from an alternative monetary policy would depend on the new direction taken by a monetary policy that remains to be defined and that will determine the conditions for financing the economy. Such a policy would probably be ultra-accommodative due to the financial and banking instability generated by the balance sheet effects.

Evaluations of the contribution of financial conditions in France from 2014 to 2018, however, suggest that these are not the most important factor explaining the sluggishness of economic activity. Over this period, the contribution of financial and monetary conditions to GDP growth is between -0.1 and 0.2 points [8]. There is thus little gain to be expected from a new ultra-accommodative monetary policy (independently of the effects on exchange rates discussed in the first section or the impact of external pressure).

**Conclusion**

This text has attempted to outline the possible consequences of a Frexit, without going into too detailed and therefore perilous quantification.

1. Contrary to what is sometimes advanced, there is little to be expected in terms of competitiveness or manoeuvring room for short-term monetary policy;
2. The main cost would come from the banking or financial crisis arising from balance sheet effects, particularly given the context of a disorderly exit.

At this stage of the analysis, it is difficult to identify the potential positive economic effects of a Frexit, while the risks of a negative impact due to financial effects seem to be very significant.

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[1] These points are to a large extent discussed in *Capital Economics* (2012).

[2] It is difficult to develop a long-term counterfactual scenario in the case of exiting the euro. We therefore focus on the short- and medium-term effects of possible transitions.

[3] We implicitly eliminate the scenario of a currency war where each country would try to gain competitiveness by devaluations that would permanently lead us away from convergence towards a real equilibrium exchange rate.

[4] The introduction of tariffs like this calls for leaving the European Union. Without developing this analysis here, it is very likely that leaving the euro zone would lead to leaving the European Union. There have been assessments of the EU's contribution to intra-European trade and growth that we are not using here in our short-term approach.

[5] Through its quantitative easing program, the ECB essentially purchases sovereign debt bonds, including French debt securities. In February 2017, the outstanding securities held by the ECB under this programme (PSPP) amounted to € 1,457.6 billion. Breaking down the purchases based on the share of the ECB's capital subscribed by the central banks of the member states, the fraction of French debt securities exceeds 200 billion euros.

[6] Getting free from the constraints of the Stability and Growth Pact could be a gain in itself. This assumes that the constraints of the SGP go beyond simply the sustainability of the public debt demand.

[7] These evaluations show, however, that there is a high degree of heterogeneity in the assessed costs depending on the country in question.

[8] https://www.ofce.sciences-po.fr/pdf/documents/prev/prev1016/france.pdf

# How negative can interest rates get?

By [Christophe Blot](#) and [Paul Hubert](#)

On 11 June 2014, the European Central Bank decided to set a negative rate on deposit facilities and on the excess reserves held by credit institutions in the euro zone. This rate was then lowered several times, and has been -0.40% as of March 2016. This raises questions about the reasons why agents, in this case the commercial banks, agree to pay interest on deposits left with the ECB. In an [article](#) on the causes and consequences of negative rates, we explain how the central bank has come to impose negative rates and how far they can go, and then we discuss the costs of this policy for the banks.

To conduct its monetary policy, the ECB requires commercial banks in the euro zone to have an account with the Bank, which is used to meet the minimum reserve requirements[1] and to participate in operations to provide liquidity. This account can also be used to perform clearing transactions between commercial banks. The required reserves are remunerated at a rate set by the ECB. Beyond this amount, in normal circumstances the banks do not receive any other compensation. Moreover, the ECB also provides a deposit facility allowing the banks to deposit cash with the ECB for a period of 24 hours, with remuneration paid at a deposit facility rate.

Prior to 2008, the commercial banks held only the reserves that they needed to meet the minimum reserve requirements (see the graph). Any stock of excess reserves[2] was very small: less than 1 billion euros on average until 2008. The same was true for the balance of deposit facilities, which was 321 million euros on average. Since the crisis, the ECB has replaced the interbank market and has intervened to provide a

large amount of liquidity. Through the banks' participation in various ECB programmes to purchase securities (quantitative easing, QE), they also receive liquidities that are placed in their reserve account, to such an extent that by September 2016 the accumulated stock of excess reserves and deposit facilities reached 987 billion euros. The negative rates do not apply to all monetary policy operations but only to the portion of the cash left on deposit by the banks (total assets of the euro zone banks are 31 trillion euros). At the current rate, the direct annual cost to the banks is thus 3.9 billion euros.

Given that the banks are not required to hold these excess reserves, it is reasonable to ask why they accept to bear this cost. To answer this question, it is necessary to examine the possibilities for trade-offs with other assets that could be used as a substitute for the excess reserves. The reserves are in fact money[3] issued by the central banks solely for the commercial banks and are therefore a very liquid asset. But the rates on the money market are also negative, to such an extent that it is a matter of indifference to the banks whether they have excess reserves and place their liquidities on the interbank market for a week or buy Treasury securities issued by the French or German government, for example, with yields that are also negative.

## Graphique. Reserves and cash

In billion euros – in %
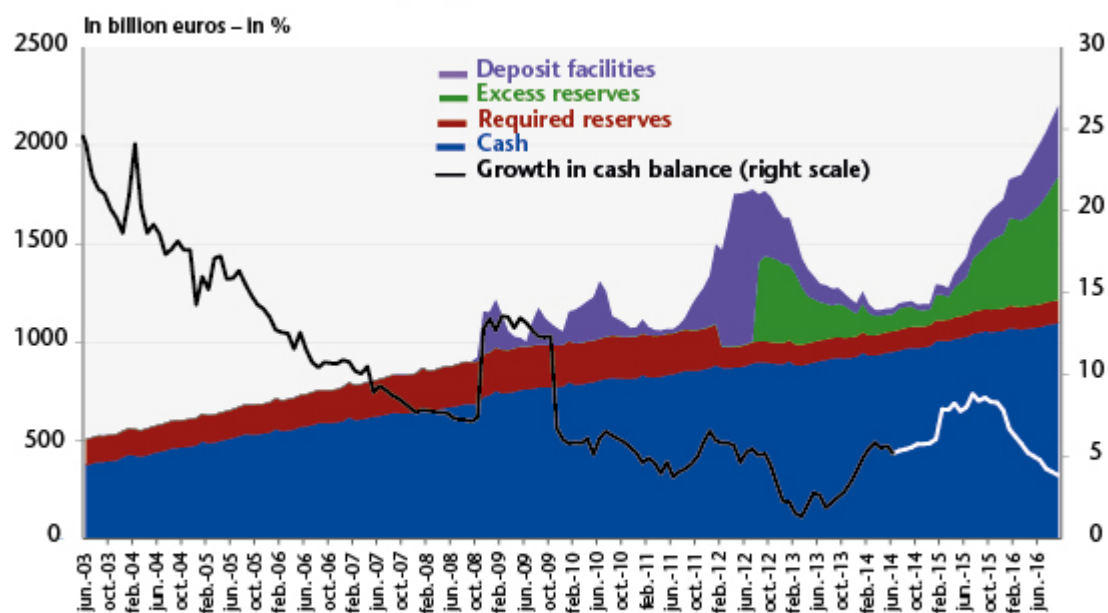


*Note:* The rate of growth of the cash balance (year on year) is shown by a white line during the period of negative rates.

*Source :* ECB.

Actually, the best substitute for the reserves would be to hold the cash directly. The substitution could therefore take place within the monetary base if the banks called for the conversion of their excess reserves and deposit facilities into cash, which has the same properties in terms of liquidity and zero nominal interest. Currently this would mean converting 987 billion euros of reserves into banknotes, nearly doubling the amount outstanding, as the volume of notes in circulation in September 2016 was 1,096 billion euros.

The fact that these agents can have an asset that is not interest-bearing is the argument for why nominal rates cannot be negative. In practice, because there are costs to holding currency in the form of notes, this trade-off does not take place when the threshold for negative rates is exceeded. The nominal rate can therefore be negative. It is clear however that there is a threshold at which holding cash would be preferable. The cost of holding large amounts of cash is not known precisely, but it seems that it is not insignificant, and in any case is higher than the 0.4% currently charged by the ECB.

It seems that in practice there has not yet been any such substitution, since the volume of outstanding notes in circulation has not risen particularly since negative rates were first set (graph). [Jackson (2015)](#) has made an assessment indicating that the various costs of holding money in the form of notes and coins could be up to 2%, which would act as an effective lower bound (ELB) for a reduction in rates.

Beyond the costs that negative rates represent for banks, the expected benefits of such a policy need to be considered, as well as the overall context in which they have been set. Together with negative rates, the ECB is using its targeted long-term refinancing operations (TLTRO II) to enable the banks to finance themselves at negative rates, and is thus urging them doubly (via the cost of their excess reserves and via the rate at which they are financed) to grant credit to the real economy.

[1] Credit institutions are in practice required to leave reserves in this account in the amount of a certain fraction of deposits collected from the non-financial sector. See [here](#) for more details.

[2] Amount of reserves beyond the required reserves.

[3] Together with the banknotes issued, these form what is called the monetary or money base, $M_0$.

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# The ECB is extending its QE

# programme but mixes up its communications

By [Paul Hubert](#)

On Thursday, March 10, after the meeting of its Governing Council, the European Central Bank (ECB) announced a series of additional measures for the quantitative easing of monetary policy. The aim is to prevent the onset of deflation and to boost growth in the euro zone. The key innovation lies in the measure for bank financing at negative rates. While the measures were well received by the markets at the time of the announcement, a lapse in Mario Draghi's communications during the press conference following the Board of Governors meeting greatly undercut some of the impact expected from the decisions taken.

**What decisions were taken?**

– The three key rates set by the ECB were lowered. The main refinancing rate went down from 0.05% to 0%, while the marginal lending rate was cut from 0.30% to 0.25%. Finally, the [deposit facility rate](#), which compensates the excess reserves that banks hold on the ECB's balance sheets, is down from -0.30% to -0.40%. It thus now [costs a bank more](#) to have cash on the ECB's balance sheet.

– [Quantitative easing](#) (QE) has been extended in terms of its scale – securities purchases rose from €60 bn to €80 bn per month – but especially in terms of the types of securities eligible for purchase. While heretofore the ECB has bought government bonds (sovereign and/or local authority bonds), it will now buy high-quality corporate bonds, based on rating agency criteria. This measure is a direct response to the drying up of the supply of government securities and is expected to directly influence the conditions for corporations

active on the bond markets.

– The most significant innovation concerns the [new Targeted Longer-Term Refinancing Operations](#) (TLTRO), which are intended to reboot the channels of bank lending and to provide financing to banks *on the condition that* they finance the real economy. These loans to banks will be at a zero or even negative rate, based on various [criteria](#), including the amount of loans that the banks provide to households and businesses. In other words, the ECB will pay banks meeting these criteria, so that they in turn lend.

**What is the expected impact?**

The effect to be expected from these measures depends on the situation of the credit market. Numerous [studies](#) show that in normal times these measures have a positive effect on the economy. However, this holds true only if it is the *supply* of credit that is currently constricted in the euro zone. Conversely, if the problem lies in the demand for credit on the part of consumers and businesses who have poor prospects in terms of income and profits, then these measures will have little effect. In granting banks such favourable conditions, it is easy to imagine that the ECB is betting on increasing the solvent demand for credit, that is to say, that the ECB is providing banks with strong incentives to lend to households and individuals that might have appeared non-creditworthy in previous conditions. Another expected effect of the lower deposit facility rates and the increase in QE will pass through the channel of a lower exchange rate for the euro, which will promote euro zone exports and increase imported inflation, and therefore overall inflation in the euro zone. This channel is potentially even more important given that the US Federal Reserve has initiated a period of monetary tightening.

Nevertheless, a more relevant economic policy would be to make use of fiscal policy to support demand, especially as the

conditions for State financing are at historically low levels: the French state in 2016 is earning money from issuing [debt of less than 4 years](). Monetary policy would then have all the more effect.

**Why announce that there's no manoeuvring room left?**

At the press conference following the meeting of the Governing Council, Mario Draghi announced that the ECB didn't expect "to reduce rates further", which had the effect of completely changing the financial markets' interpretation of the decisions announced just before that. While the aim of these very expansionary decisions is to further ease monetary and financial conditions and to lower the exchange rate for the euro, the announcement that future changes in the ECB's monetary policy could only be in a more restrictive direction transformed investor expectations.

As one of the main channels for the transmission of monetary policy involves expectations, several studies conducted on data from the US [1], Britain [2] and the euro zone [3] show that a central bank's communications need to be consistent with its decisions, otherwise the impact expected from monetary policy will be limited. This is called the "signal effect" of monetary policy. Mario Draghi's short statement is one such example. The following graph shows the exchange rate of the euro vis-à-vis the dollar during the course of 10 March. The sharp drop at mid-day corresponds to the publication of the decisions taken by the Board of Governors, while the equally sharp rise corresponds to the contradictory message issued a few minutes later at the press conference. We thus see that as a series of highly expansionary measures — one of whose goals is to push down the euro — was announced, the euro eventually rose vis-à-vis the US dollar as if restricting measures had been put in place.

This does not necessarily mean that these decisions will have no effect, but that some of the effect will be lessened, or

even disappear. Some transmission channels other than the signal effect remain operative. While the exchange rate channel has now been limited by the restrictive effect generated by the channel of expectations, we will see in the weeks and months to come whether capital movements induced by the decisions taken will have the effect expected on the euro exchange rate.

Figure. Euro-dollar exchange rate, day of 10 March 2016.



Source: Boursorama.

[1] Hubert, Paul (2015), "The Influence and Policy Signalling Role of FOMC Forecasts", *Oxford Bulletin of Economics and Statistics*, 77(5), 655-680.

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# Do QE programmes create bubbles?

By [Christophe Blot](#), [Paul Hubert](#) and Fabien Labondance

Has the implementation of [unconventional monetary policies](#) since 2008 by the central banks created new bubbles that are now threatening financial stability and global growth? This is a question that comes up regularly (see [here](#), [here](#), [here](#) or [here](#)). As [Roger Farmer](#) shows, it is clear that there is a strong correlation between the purchase of securities by the Federal Reserve – the US central bank – and the stock market index (S&P 500) in the United States (Figure 1). While the argument may sound convincing at first glance, the facts still need to be discussed and clarified. First, it is useful to remember that correlation is not causation. Secondly, an increase in asset prices is precisely a transmission channel for conventional monetary policy and quantitative easing (QE). Finally, an increase in asset prices cannot be treated as a bubble: developments related to fundamentals need to be distinguished from purely speculative changes.

### *Higher asset prices is a factor in the transmission of monetary policy*

If the ultimate goal of central banks is macroeconomic stability [1], the transmission of their decisions to the target variables (inflation and growth) takes place through various channels, some of which are explicitly based on changes in asset prices. Thus, the effects expected from QE are supposed to be transmitted in particular by so-called portfolio effects. By buying securities on the markets, the central bank encourages investors to reallocate their

securities portfolio to other assets. The objective is to ease broader financing conditions for all economic agents, not just those whose securities are targeted by the QE programme. In doing this, the central bank's actions push asset prices up. It is therefore not surprising to see a rise in equity prices in connection with QE in the US.

*Every increase in asset prices is not a bubble*

Furthermore, it is necessary to make sure that the correlation between asset purchases and their prices is not just a statistical artefact. The increase observed in prices may also reflect favourable fundamentals and be due to improved growth prospects in the United States. The standard model for determining the price of a financial asset identifies its price as equal to the present value of anticipated income flows (dividends). Although this model is based on numerous generally restrictive assumptions, it nevertheless identifies a first candidate, changes in dividends, to explain changes in stock prices in the United States since 2008.

Figure 1 shows a clear correlation between the series of dividends [2] paid and the S&P 500 index between April 2010 and October 2013. Part of the rise in equity prices can be explained simply by the increase in dividends: the usual determinant of stock market prices. Looking at this indicator, only the period starting at the beginning of 2014 could then indicate a disconnect between dividends and share prices, and thus possibly point to an over-adjustment.

Figure 1. Quantitative easing and stock market prices in the US
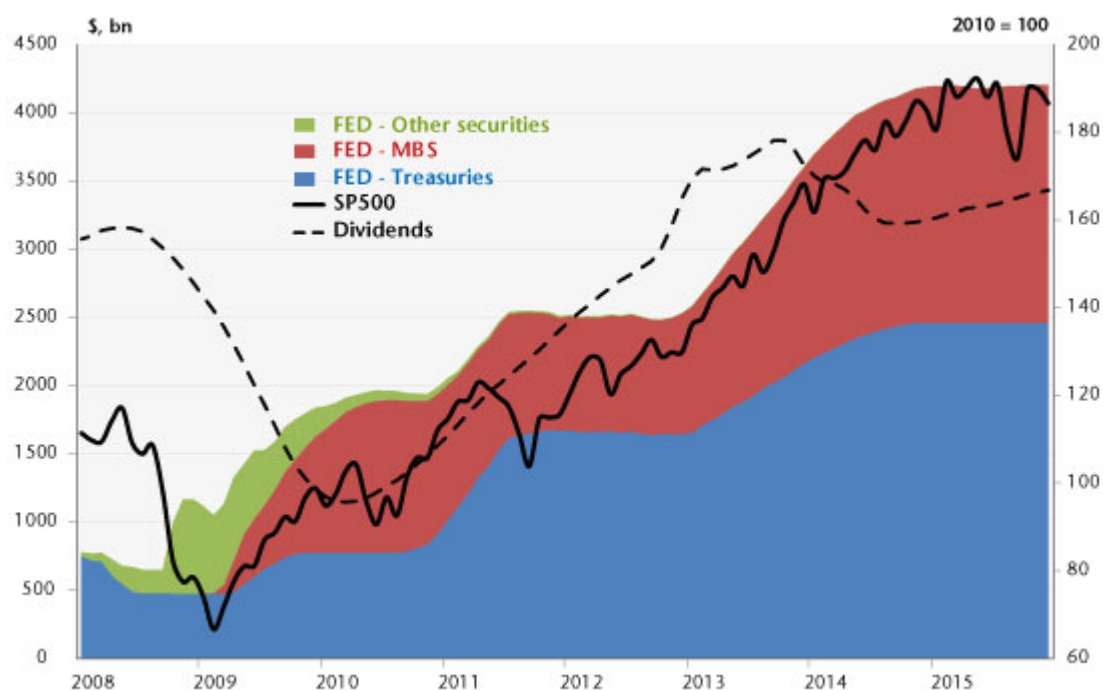
Legend:
FED - Other securities
FED - MBS
FED - Treasuries
SP500
Dividends

## *A correlation that isn't found in the euro zone*

If the theory that unconventional monetary policies create bubbles is true, then it should also be observed in the euro zone. Yet performing the same graph as the one for the United States does not reveal a link between the liquidity provided by the European Central Bank (ECB) and the Eurostoxx index (Figure 2). The first phase in the increase in the size of the ECB's balance sheet, via its refinancing operations starting in September 2008, came at a time when stock markets were collapsing, following the bankruptcy of Lehman Brothers. Likewise, the very long-term refinancing operations carried out by the ECB at the end of 2011 do not seem to be correlated with the stock market index. The rise in share prices coincides in fact with Mario Draghi's statement in July 2012 that put a halt to concerns about a possible breakup of the euro zone. It is of course possible to argue that the central bank has played a role, but any link between liquidity and asset prices is simply not there. At the end of 2012, the banks paid back their loans to the ECB, which reduced the cash in circulation. Finally, the recent period is once again

illustrating the fragility of the argument that QE creates bubbles. It is precisely at a time when the ECB is undertaking a programme of large-scale purchases of securities, along the lines of the Federal Reserve, that we are seeing a fall in world stock indices, in particular the Eurostoxx.

**Figure 2. Quantitative easing and the stock market index in the euro zone**



Sources: Datastream, ECB, and Eurostat.
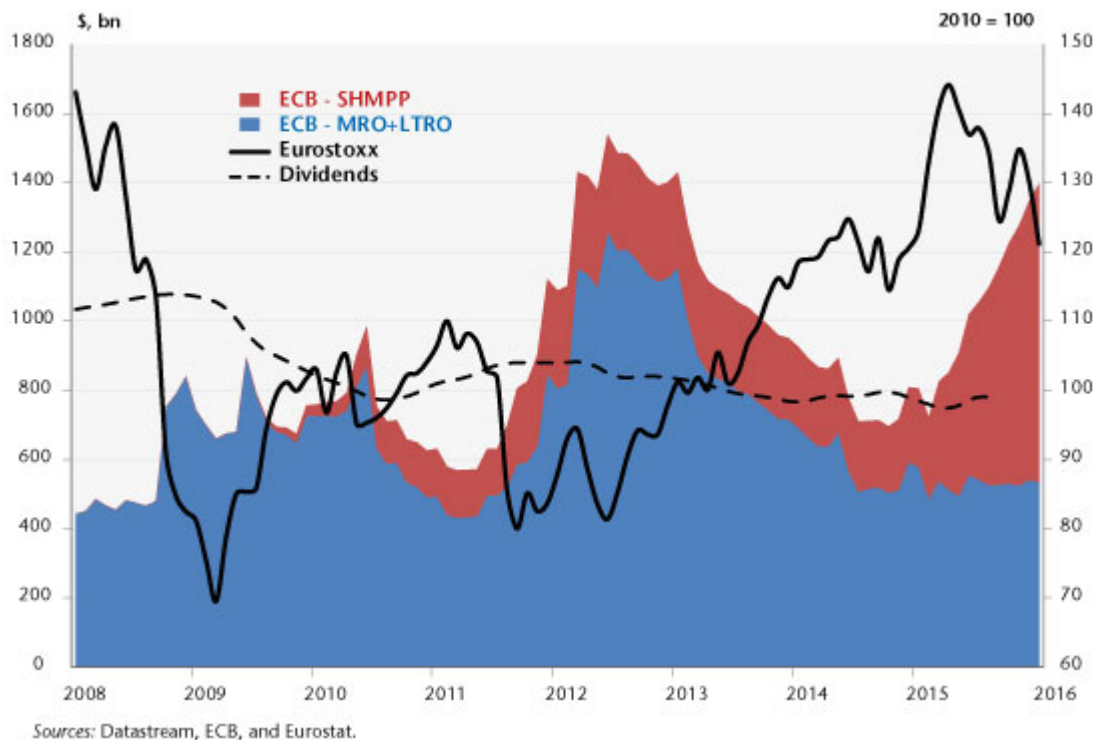
**So does this mean that there is no QE-bubble link?**

Not necessarily. But to answer this question, it is necessary first to identify precisely the portion of the increase that is due to fundamentals (dividends and companies' share prospects). A bubble is usually defined as the difference between the observed price and a so-called fundamental value. In a forthcoming working paper, we endeavour to identify periods of over- or undervaluation of a number of asset prices for both the euro zone and the United States. Our approach involves estimating different models of asset prices and thereby to extract a component that is unexplained by fundamentals, which is then called a "bubble". We then show that for the euro zone, the ECB's monetary policy broadly speaking (conventional and unconventional) does not seem to

have a significant effect on the "bubble" component (unexplained by fundamentals) of asset prices. The results are stronger for the United States, suggesting that QE might have a significant effect on the "bubble" component of some asset prices there.

This conclusion does not mean that the central banks and the regulators are impotent and ignorant in the face of this risk. Rather than trying to dissect every movement in asset prices, the central banks should focus their attention on financial vulnerabilities and on the ability of agents (financial and non-financial) to absorb sharp fluctuations in asset prices. The best prevention against financial crises thus consists of continuously monitoring the risks being taken by agents rather than trying to limit variations in asset prices.

[1] We prefer a broad definition of the end objective that takes into account the diversity of institutionalized formulations of the objectives of central banks. While the mandate of the ECB is primarily focused on price stability, the US Federal Reserve has a dual mandate.

[2] The series of dividends paid shows strong seasonality, so this has been smoothed by a moving average over 12 months.

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# Why can't Greece get out of debt?

By [Sébastien Villemot](#)

Between 2007 and 2015, Greece's public debt rose from 103% to 179% [1] of its GDP (see chart below). The debt-to-GDP ratio rose at an uninterrupted pace, except for a 12-point fall in

2012 following the restructuring imposed on private creditors, and despite the implementation of two macroeconomic adjustment programs (and the beginning of a third) that were aimed precisely at redressing the Greek government's accounts. Austerity has plunged the country into a recessionary and deflationary spiral, making it difficult if not impossible to reduce the debt. The question of a further restructuring is now sharply posed.
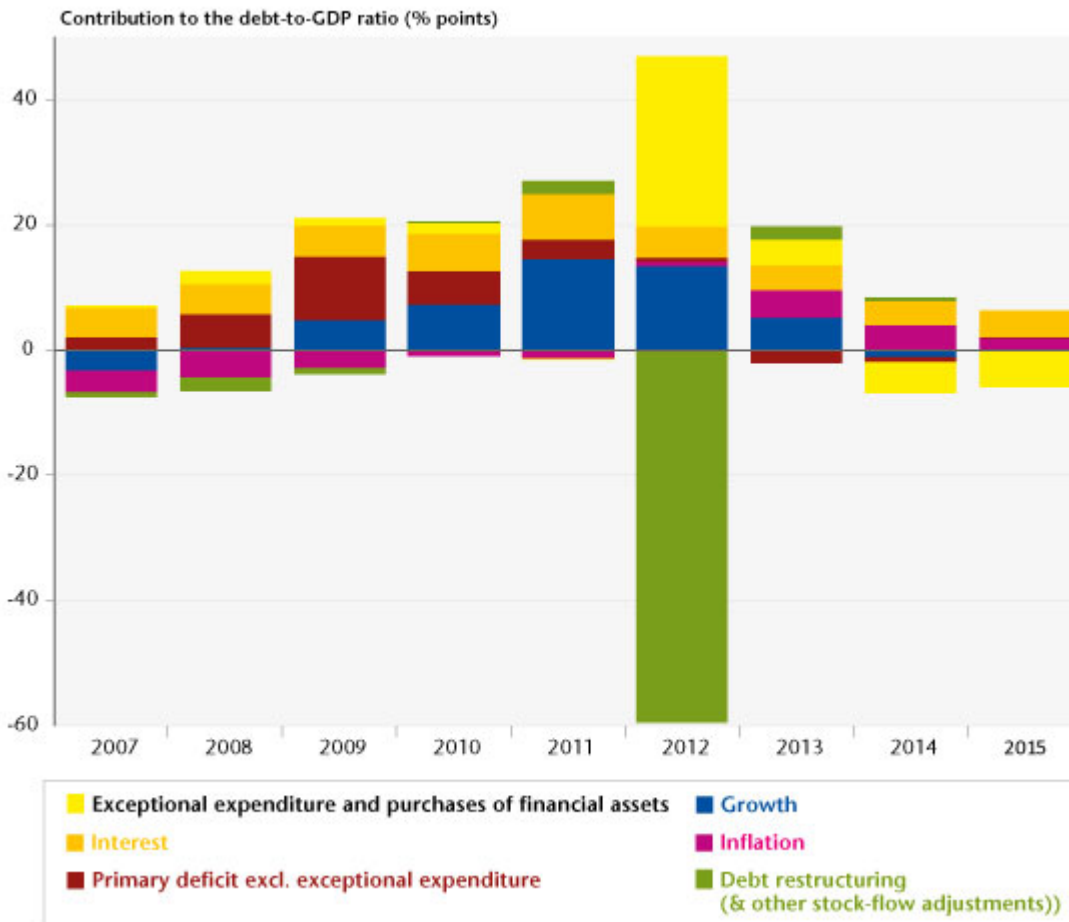


Figure 1. Greece's public debt as % of GDP, 2006-2015
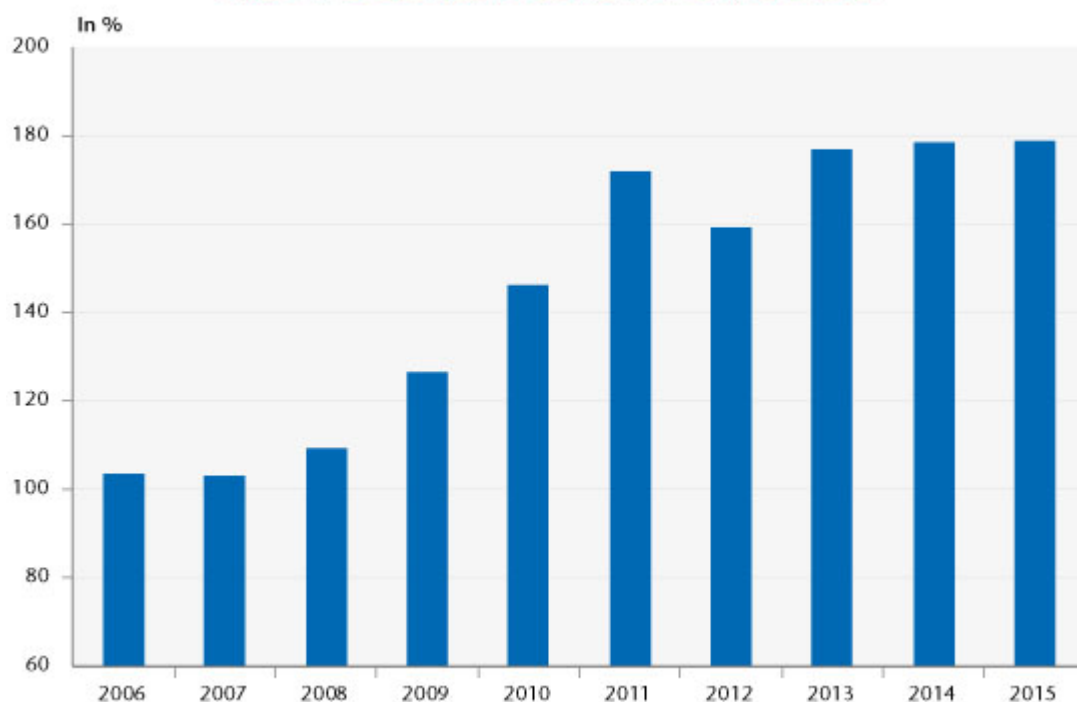
Sources: Eurostat, European Commission..

What explains this failure? How much have the various factors involved (public deficit, austerity, deflation, restructuring, bank recapitalization, etc.) contributed to changes in the debt? To provide some answers, we conducted an accounting breakdown of the changes in the debt ratio: the result is given in the graph below for the period 2007-2015.

Figure 2. Accounting breakdown of changes in the debt ratio

Contribution to the debt-to-GDP ratio (% points)



Legend:
- Exceptional expenditure and purchases of financial assets (yellow)
- Interest (orange)
- Primary deficit excl. exceptional expenditure (dark red)
- Growth (blue)
- Inflation (magenta)
- Debt restructuring (& other stock-flow adjustments)) (green)

*Sources:* Eurostat, European Commission, author's calculations.

Several phases, which correspond to various developments in the Greek crisis, are clearly identifiable on the chart.

In 2007, prior to the financial storm, the GDP-to-debt ratio was stable: the negative effect of the budget deficit (including interest), which increases the ratio's numerator, was offset by the positive impact of growth and inflation, which increase the denominator. So the situation was stable, at least temporarily, even though the debt level was already high (103% of GDP, which also explains the significant interest burden).

This stability was upset with the onset of the global financial crisis in 2008 and 2009: growth disappeared and even entered negative territory, while the primary deficit was rising, partly due to the "automatic stabilizers", and by 2009 came to 10 percentage points of GDP.

Given the intensity of the fiscal crisis, an initial adjustment plan was implemented in 2010. As the austerity measures began to bite, the primary deficit began to fall (to almost zero in 2012, excluding extraordinary expenses). But austerity also resulted in intensifying the recession: in 2011, growth (very negative) contributed nearly 15 GDP points to the increase in debt. Austerity also led to reducing inflation, which dropped to almost zero, and which is therefore no longer playing its natural role of cushioning debt. Meanwhile, the interest burden remained high (rising to 7.2 GDP points in 2011).

It should be recalled that the accounting breakdown presented here tends to underestimate the negative impact of growth and to overestimate the impact of the budget deficit. Indeed, a recession generates a cyclical deficit, through the automatic stabilizers, and therefore indirectly contributes to debt through the channel of the budget balance. However, to identify the structural and cyclical components of the budget deficit, an estimate of potential growth is needed. In the Greek case, given the depth of the crisis, this exercise is quite challenging, and the few estimates available diverge considerably; for this reason, we preferred to stick to a purely accounting approach.

2012 was a year for big manoeuvres, with two successive debt restructurings in March and December. On paper, there was a substantial cancellation of debt (measured in terms of the stock-flow adjustment): almost 60 GDP points. But what should have been a significant reduction was largely offset by opposing forces. The recession remained exceptionally intense and accounted for 13.5 GDP points of the increase in debt. Above all, the main negative effect came from bank recapitalizations, which were necessitated by the writing off of public debt securities, which were largely held by domestic banks. In accounting terms, these recapitalisations take two forms: grants to banks (recorded as extraordinary expenses) or

purchases of newly issued shares (recorded as purchases of financial assets) [2], which is why these two categories are grouped on the graphic. The category of purchases of financial assets also recognizes the establishment of a financial cushion to finance future bank recapitalizations [3].

In 2013, the debt-to-GDP ratio once again rose sharply, even though the primary balance (excluding exceptional expenses) showed a surplus. Bank recapitalizations (19 billion euros) were a heavy burden and were only partially covered by the sale of financial assets. The recession, although less intense, and deflation, now well established, made the picture even gloomier.

In 2014 and 2015, the situation improved, but without leading to any decline in the debt-to-GDP ratio, even though the primary deficit excluding exceptional spending was almost zero. Deflation persisted, while growth failed to restart (the 2014 upturn was moderate and short-lived), and the banks had to be recapitalized again in 2015 (for 5 billion euros). The interest burden remained high, despite the decision of the European creditors to lower rates on the loans from the European Financial Stability Facility (EFSF): several years would be needed before this shows up in the effective interest burden. Only the sales of financial assets made it possible to hold down the increase in debt, which is clearly not sustainable in the long run since there is a limited stock of these assets.

The table below shows the cumulative contribution of each factor for the period as a whole, and for the sub-period during which Greece was under programme (2010-2015).

**Cumulative contribution of each factor**

| | 2007-2015 | 2010-2015 |
|---|---|---|
| Growth | 41.7 | 39.7 |
| Inflation | -1.8 | 8.7 |
| Primary deficit excl. exceptional expenditure | 23.9 | 6.2 |
| Interest | 44.7 | 30.3 |
| Exceptional expenditure & purchase of fin. assets | 25.7 | 22.1 |
| Debt restructuring (& other stock-flow adjustments) | -58.7 | -54.6 |
| **Total** | **75.4** | **52.4** |

Sources: Eurostat, European Commission, author's calculations..

The two main contributors to the increase in debt are growth (negative) and the cost of interest. In other words, the total increase in debt is due primarily to a "snowball effect", which means the automatic increase due to the differential between the real interest rate and growth (the infamous "r-g"). The debt forgiveness in 2012 was not even sufficient to offset the snowball effect accumulated over the period. The bank recapitalizations that became necessary due in particular to the cancellation of debt were a heavy burden. The primary deficit, which is under the more direct control of the Greek government, comes only in 4th position from 2007 to 2015 (and doesn't contribute much at all over the period 2010-2015).

It is therefore clear that the sharp rise in the debt-to-GDP ratio since 2007 (and especially since 2010) was not primarily the result of the Greek government's fiscal irresponsibility, but resulted instead from an erroneous consolidation strategy that was based on a logic of accounting austerity and not on coherent macroeconomic reasoning. An upturn in growth and inflation will be necessary to achieve any substantial debt reduction. But the new austerity measures set out in the third adjustment plan could cause a return to recession, while the constraints of price competitiveness within the euro zone make it impossible to foresee any renewal of inflation. A significant reduction of debt that is not conditional on a new destructive phase of austerity would allow a fresh start; in a

previous study[4], we showed that a restructuring that cut Greece's debt to 100% of its GDP would correspond to a sustainable scenario. However, Europe's member states, which are now Greece's main creditors, are currently rejecting such a scenario. The path to reducing Greek debt now looks more uncertain than ever…

[1]  The data for 2015 are not yet fully available. The figures quoted for this year are projections by the European Commission published on 4 February 2016.

[2]  These holdings in bank capital are recorded here at their purchase value. Any subsequent deterioration in these holdings is not reflected in the chart, because this would not lead to a further increase in the gross debt (although it would increase the net debt).

[3]  In 2012, Greece bought 41 billion euros worth of EFSF bonds. Of this total, 6.5 billion were immediately given to the Bank of Piraeus, while 24 billion were lent to 4 big banks (which benefited from partial cancellation of their debt in 2013 against equity participations by the Greek State for a lesser value). The remaining 10 billion were returned unused by Greece to the EFSF in 2015, following the agreement of the Eurogroup on 22 February.

[4] See Céline Antonin, Raul Sampognaro, Xavier Timbeau and Sébastien Villemot, 2015, "La Grèce sur la corde raide" [Greece on the tightrope], *Revue de l'OFCE*, no. 138.

# The secular stagnation equilibrium

By [Gilles Le Garrec](#) et [Vincent Touzé](#)

The economic state of slow growth and underemployment, coupled with low inflation or even deflation, has recently been widely discussed, in particular by [Larry Summers](#), under the label of "secular stagnation". The hypothesis of secular stagnation was expressed for the first time in 1938 in a speech by A. Hansen, which was finally [published in 1939](#). Hansen was worried about insufficient investment and a declining population in the United States, following a long period of strong economic and demographic growth.

In a [*Note by the OFCE (*no. 57 dated 26 January 2016 [in French]*)*,](#) we studied the characteristics and dynamics of a secular stagnation equilibrium.

A state of secular stagnation results when an abundance of savings relative to demand for credit pushes the "natural" real interest rate (what is compatible with full employment) below zero. But if the real interest rate permanently remains above the natural rate, then the result is a chronic shortage of aggregate demand and investment, with a weakened growth potential.

To counter secular stagnation, the monetary authorities first reduced their policy rates, and then, having reached the zero lower bound (ZLB), they implemented non-conventional policies called quantitative easing. The central banks cannot really force interest rates to be very negative, otherwise private agents would have an interest in keeping their savings in the form of banknotes. Beyond quantitative easing, what other policies might potentially help pull the economy out of secular stagnation?

To answer this crucial question, the model developed by [Eggertsson and Mehrotra](#) in 2014 has the great merit of clarifying the mechanisms behind a fall into long-term stagnation, and it is helping macroeconomic analysis to update its understanding of the multiplicity of equilibria and the persistence of the crisis. Their model is based on the consumption and savings behaviour of agents with a finite lifespan in a context of a rationed credit market and nominal wage rigidity. As for the monetary policy conducted by the central bank, this is set at a nominal rate using a [Taylor rule](#).

According to this approach, secular stagnation was initiated by the 2008 economic and financial crisis. This crisis was linked to high household debt, which ultimately led to credit rationing. In this context, credit rationing leads to a fall in demand and excess savings. Consequently, the real interest rate falls. In a situation of full employment, if credit tightens sharply, the equilibrium interest rate becomes negative, which leaves conventional monetary policy toothless. In this case, the economy plunges into a lasting state of underemployment of labour, characterised by output that is below potential and by deflation.

In the model proposed by Eggertsson and Mehrotra, there is no capital accumulation. As a result, the underlying dynamic is characterized by adjustments without transition from one steady state to another (from full employment to secular stagnation if there's a credit crisis, and vice versa if credit doesn't tighten much).

To extend the analysis, we considered the accumulation of physical capital as a prerequisite to any productive activity ([Le Garrec and Touzé, 2015](#).). This highlights an asymmetry in the dynamics of secular stagnation. If the credit constraint is loosened, then capital converges on its pre-crisis level. However, exiting the crisis takes longer than entering it. This property suggests that economic policies used to fight

against secular stagnation must be undertaken as soon as possible.

There are a number of lessons offered by this approach:

- To avoid the ZLB, there is an urgent need to create inflation while avoiding speculative asset "bubbles", which could require special regulation. The existence of a deflationary equilibrium thus raises the question of the appropriateness of monetary policy rules that are overly focused on inflation.
- One should be wary of the deflationary effects of policies to boost potential output. The right policy mix is to support structural policies with a sufficiently accommodative monetary policy.
- Cutting savings to raise the real interest rate (e.g. by facilitating debt) is an interesting possibility, but the negative impact on potential GDP should not be overlooked. There is a clear trade-off between exiting secular stagnation and depressing potential GDP. One interesting solution could be to finance infrastructure, education or R&D (higher productivity) through government borrowing (raising the real equilibrium interest rate). Indeed, an aggressive investment policy (public or private) funded so as to push up the natural interest rate can meet a dual objective: to support aggregate demand and to develop the productive potential.

# European Semester: assessing the aggregate fiscal stance is good, discussing about its economic impact is better

by [Raul Sampognaro](#)

On November the 26th, the ECFIN launched the European Semester and published the [2016 Annual Growth Survey](#) and the [Euro Area policy recommendation](#). The ECFIN states that the large spillovers from fiscal policy decisions and the current constraints on the single monetary policy call for strengthened attention to the aggregate fiscal stance at the euro area level. The recommended aggregate fiscal stance should take into account the cyclical position of the euro area. Moreover, a broadly neutral aggregate fiscal stance for the next years in the euro area appears appropriate to ECFIN in light of downside risks to growth and the persistent economic slack.

Opening the debate about the aggregate fiscal stance constitutes an important step in the improvement of the macroeconomic policy framework in the EA. In fact, the crisis that Euro zone has been facing since 2012 can be explained to a large extent by the fragilities in the monetary union. The lack of economic policy coordination emerged as one of the most important weaknesses. Before the crisis, the ECB was left alone to deal with common shocks while the fiscal policy was supposed to manage asymmetric shocks. Furthermore, the fiscal policy was supposed to safeguard public debt sustainability. This double objective was supposed to be assured by the compliance with the Stability and Growth Pact (SGP) rules. This framework failed during the crisis. First, the rules of the SGP were focused only on public debt sustainability and

neglected the impact of fiscal policy on macroeconomic stabilization. Second, the decentralization of the procedures resulted in a bad aggregate outcome. The asymmetry in the rules implies ill-calibrated adjustments in deficit countries while anything forces countries with fiscal space to implement growth supportive policies.

In order to assess about the global orientation of fiscal policy the weighted sum of changes in structural balances is the traditional indicator used in the European Semester. This figure evaluates the evolution of deficits in the long run, once the cyclical effects are purged. This figure depends crucially on the way structural deficits are calculated and hence on the assumptions about the potential output used: even under common budgetary assumptions, the evolution of structural balance can evolve in different ways (see lines 2 and 3 of the table 1, which are computed using the same assumptions in terms of fiscal policy). On the basis of this indicator, the aggregate fiscal stance in the euro area is neutral or slightly expansionary in 2015 and 2016. This assessment is shared by the 2016 independent Annual Growth Survey (iAGS).  On the basis of the announcements of the Member States in their Stability Programmes, the iAGS team forecast that the fiscal consolidation will start again in 2017. This result differs with ECFIN forecasts, based on a no-policy change scenario that only takes into account the measures already implemented.

### Table 1. Aggregate Fiscal Stance

Change in structural balance

| Assumptions | 2015 | 2016 | 2017 |
|---|---|---|---|
| 2016 iAGS | -0.1 | -0.1 | 0.2 |
| ECFIN, Autumn Forecast | -0.1 | -0.1 | -0.1 |
| ECFIN, based on OECD's output gap | 0.0 | -0.1 | -0.1 |

Note: The 2017 change of structural balance is computed on a no-policy change scenario by ECFIN, and the iAGS scenario takes into account commitments of Member States in their last Stability Programmes.
Source: Ameco, OECD, Draft Budgetary Plans and Stability Programmes.

If the change of the structural balance shows that fiscal policy is broadly neutral in the euro area as a whole, the

assessment of its economic impact needs to be completed. In the [2016 independent Annual Growth Report](#), we propose a new way to compute the aggregate fiscal stance that takes into account the most recent advances in the literature. According to several authors the multipliers of public expenses — which are decreasing in most of the bigger euro area economies— are higher than those associated with tax changes —which are decreasing and should have an expansionary impact. This is particularly true when output gaps are negative. Hence, the proposed indicator of the aggregate fiscal stance proposed is based on a weight that takes into account the macroeconomic impact of fiscal policy.

When the composition and the localisation of the fiscal impulses are taken into account, the assessment of the aggregate fiscal stance is modified. According to our calculation, fiscal policy will be slightly contractionary in 2016 (-0.1 point of GDP, table 2) in spite of the decrease in the aggregate structural balance. This paradox can be explained by the localisation of the impulsion, which has low impact in Germany and the composition of the expansion in Italy and in Spain (based on large tax cuts with a low multiplier partially compensated by an effort in expenses with a high multiplier).

**Table 2. Impact of fiscal policy on Euro Area GDP**

In points of GDP

| Impact of fiscal policy on EA GDP | 2015 | 2016 | 2017 |
|---|---|---|---|
| 2016 iAGS | 0.1 | -0.1 | -0.2 |
| ECFIN, Autumn Forecast | 0.2 | 0.0 | 0.1 |
| ECFIN, based on OECD's output gap | 0.0 | -0.1 | 0.1 |

*Source:* Ameco (Autumn Forecast 2015) and OECD (EO 97).

The apparent paradox of a fiscal loosening with recessionary effects raises the matter of the fiscal space —expansionary policies should be larger in unconstrained countries— and the flexibilities in the application of SGP —expansion should be done in countries with high multipliers. Analyzing the situation of each Member State vis-à-vis the SGP, it appears

that very few countries have fiscal space with respect to the rules of the SGP. According to the ECFIN analysis of [Draft Budgetary Plans](), only Germany would have some fiscal space but the efficiency of a timid German based stimulus would be limited, at least from a GDP point of view. This raises new questions and particularly about the creation of a common fiscal capacity that would enable implementation of a counter-cyclical budgetary policy, especially when there is no scope for monetary policy like a situation of liquidity trap and deflation. This is the rational of the Juncker Plan that aims to increase investment in the euro zone. However, the plan relies on unrealistic leverage assumptions and the selection of investment projects, based on the profitability of the project, may lead to a pro-cyclical bias. This plan may not be sufficient to generate the demand shock needed to escape from the Zero Lower Bound, suggesting that a permanent is needed.Taking into account the very high levels of unemployment and underemployment, even the highest value of the fiscal impulse (+0.1% GDP) is far too low to deliver significant stimulus. A coordinated increase of public investment with a focus on the Europe 2020 targets would be a proper policy change for a more balanced economic policy. With the implementation of the golden rule of public investment, such a stimulus could be achieved in line with the European fiscal rules.

# The redistributive effects of the ECB's QE programme

By Christophe Blot, Jérôme Creel, Paul Hubert, Fabien Labondance and Xavier Ragot
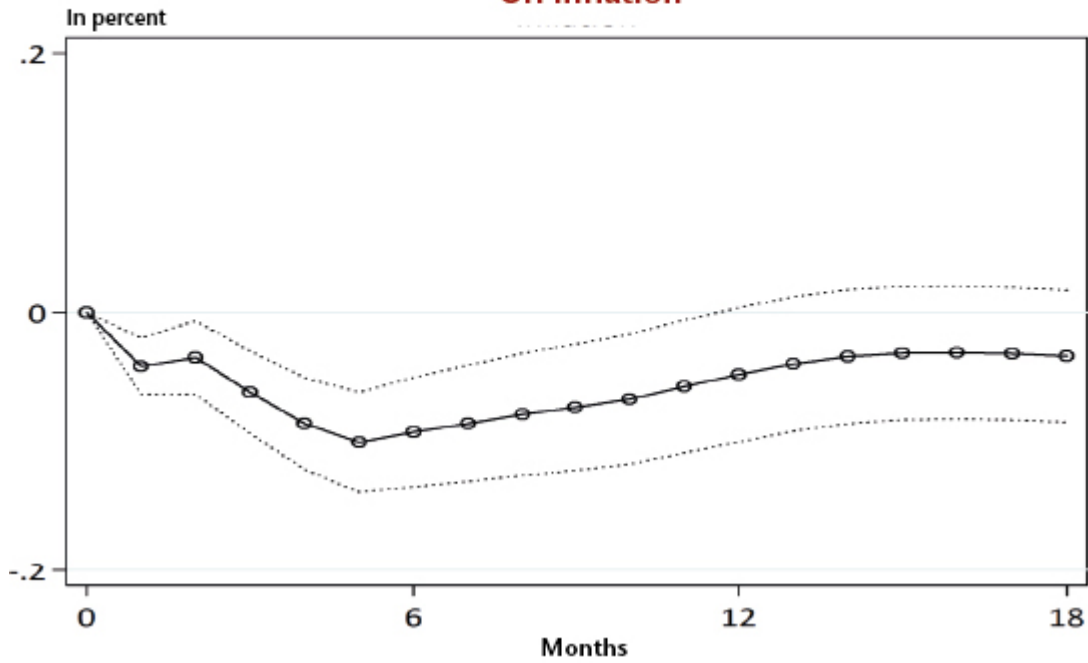
Rising inequality in income and wealth has become a key issue in discussions of economic policy, and the topic has inserted itself into evaluations of the impact of monetary policy in the US and Japan, the precursors of today's massive quantitative easing programmes (QE). The question is thus posed as to whether the ECB's QE policy has had or will have redistributive effects.

In a paper prepared for the European Parliament, [Blot et al. (2015)](#) point out that the empirical literature gives rise to two contradictory conclusions. In the US, the Fed's base rate cuts tend to reduce inequality. Conversely, in Japan an expansionary QE type policy tends to increase inequality. So what's the situation in Europe?
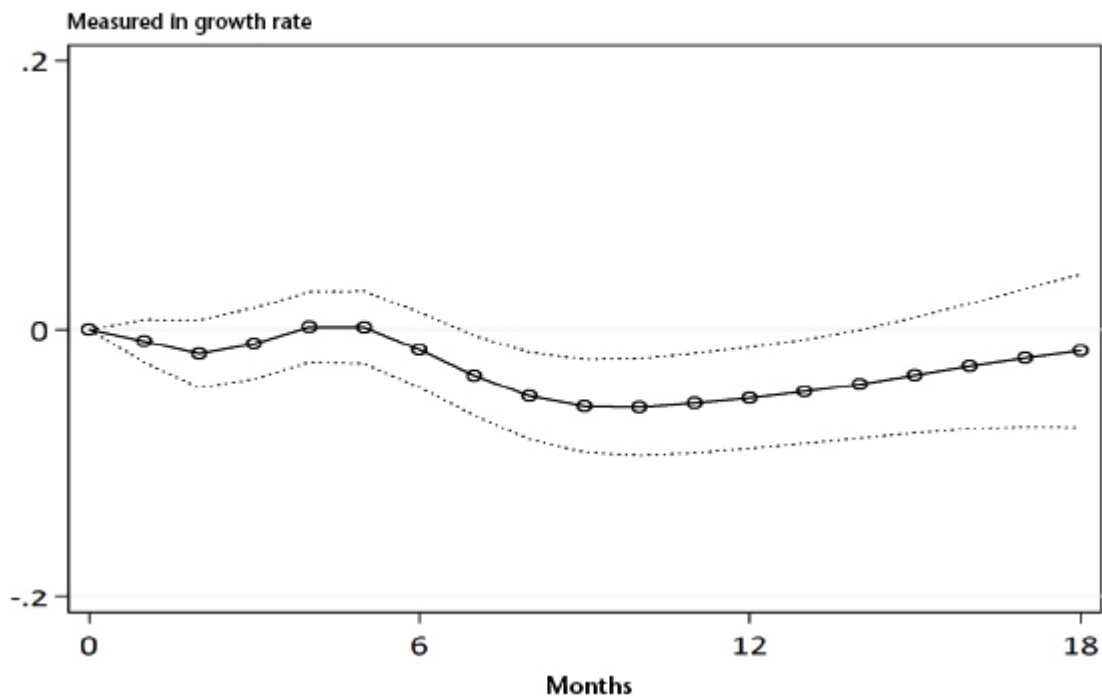
Based on macroeconomic data aggregated for the euro zone as a whole, Blot et al. (2015) show that while European monetary policy, conventional and unconventional, have indeed had an impact on the unemployment rate, the number of hours worked and the rate of inflation (see graphs), this was limited. This result suggests that the ECB's expansionary monetary policy has tended to reduce inequality, but not by much. So when the ECB finally decides to wind up its expansionary policy, we can expect a slight increase in inequalities to follow. Because of this effect, though small, Blot et al. (2015) suggest that the ECB should be held accountable not just for price stability or economic growth, but also for the impact of its policies in terms of inequality and the mechanisms needed to take this into account.
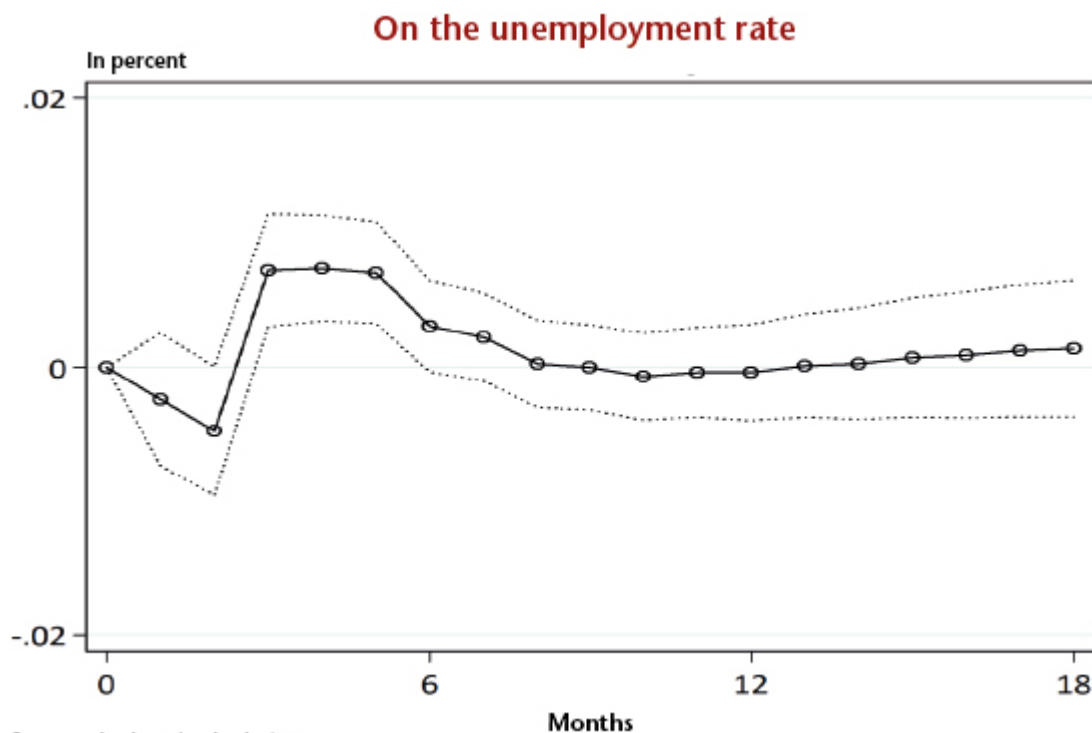
# Figures. The impact of a restrictive monetary policy shock
## (0.2 percentage point hike in the implicit interest rate)
### in the euro zone...

## On inflation

In percent



Months

## On hours worked

Measured in growth rate



Months

**On the unemployment rate**

In percent

.02

0

-.02

0   6   12   18

Months

*Source:* Authors' calculations.

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# Argentina's experience of debt crisis

By [Augusto Hasman](#) and [Maurizio Iacopetta](#)

There is still a lot of uncertainty around the possible paths that Greece can follow in the near feature. One possible path, which may be still averted by the current negotiation, is that Greece will default on the upcoming debt obligations (see graphics [here](#) for a detailed list of the upcoming Greek debt deadlines), thus spiraling into a currency and credit crisis and possibly resulting in a "Grexit"[1].

The Greek debt crisis shares some similarity with the Latin American debt crisis of the 1990s and early 2000s. In both Greece and Latin America, debts are mostly bond debts or debts to international institutions. Similarly to Greece, many Latin

American countries had become more and more open in the decades before the crisis. The series of financial crises started with Mexico's December 1994 collapse. It was followed by Argentina's $95 billion default (the largest in history at that time, although later on Argentina resumed some of the payments), Brazil's financial crisis (1998-2002) and Uruguay's default (2002).

Argentina is viewed as benchmark for getting insights on the possible macroeconomic consequences of a Grexit, partly because it abandoned the peg with the dollar as a result of its mounting fiscal crisis. Nevertheless, some have pointed out at marked differences between the two economies, in terms of industry structure as well as trade composition (see [here](#) for instance).

Here, we review the different steps followed by Argentina during the crisis and propose some statistics related to developments of key economic indicators in Argentina before and after the crisis. For comparison purposes, we also provide key figures of the Greek's economy.

## Argentina and Greece at time of considerable stress

Greece entered the European and Monetary Union in 2001, meaning an irrevocably fixed exchange rate regime and the adoption of the Euro as legal tender. By *early 2010*, *Greece* risked defaulting on its public debt and had to call for a financial rescue to international institutions. On the other hand, at time of the crisis, Argentina had its currency, the peso, 'immutably' fixed to the US dollar on a one-to-one basis. As today's Greek situation, when Argentina defaulted in late 2001, the country's economy and government were both experiencing considerable stress. 2001 was the third consecutive year of serious recession for Argentina, foreign direct investment had virtually stopped, and inflation, interest rates and the budget deficit all were soaring. The IMF had provided loans to keep the peso stable, on the

condition that the government would adopt fiscal and monetary discipline. Argentina's economic problems became a serious crisis in December 2001, when the IMF denounced the government's inability to put its financial house in order and suspended its loans. This development was followed almost immediately by a banking crisis and violent public protests that produced a rapid succession of six presidents in two weeks. Figure (1) depicts the behavior of Argentinian key economic indicators before and after the 2001 devaluation. Figure (2) shows the Greek's indicators since 1998[2]. A quick inspection of the two figures reveals that:

-The magnitude of the decline of Greece's GDP during the crisis, counting from its highest point in 2008 is roughly the same as that observed in Argentina during a recessionary period before the devaluation: 25%.

– The rise in the unemployment rate has been much more severe in Greece that in Argentina. In Argentina, unemployment, rose from 12.4% in 1998 to 18.3% in 2001 whereas in Greece it went up from less than 10% in 2008 to over 25% to this day. Both in Argentina and in Greece the inflation had been relatively low before the debt crisis; in fact in Greece it has even been negative in recent years.

## The recovery

What is somewhat surprising is what happened in Argentina after the crisis.

First, after a short period of turbulence, the Gross Domestic Product, in constant dollars, began to rise at an astonishing pace of almost 10 percent per year, until the 2007-08 financial crisis. Second, the unemployment rate declined from 18 percent to about 7 percent. Third, the poverty rate went down even below the level observed in the heyday of the pegged exchange rate. But financial indices deteriorated. First the difficulties in accessing external credits and the loss of

credibility of the government pushed up the bond spreads from 4000 basis points before the crisis to ten times as much after the crisis. Second, the inflation rate seems to have stabilized at a double digit figure. According to some scholars (see for instance [Alberto Cavallo](#) "Online and official price indexes: Measuring Argentina's inflation" Journal of Monetary Economics, 2012) there has been a systematic attempt by government authorities to greatly underestimate or underreport the inflation rate. Therefore, the GDP gain may not be as high as the one showed in Figure 1. Although the Argentinian economy has gone into a sustained period of growth, it would be unwarranted to make an automatic link between the renaissance of the Argentinian economy and the dramatic conclusion of the crisis with the abandonment of the peg and the debt default.

Some have pointed out that the recovery period coincided with a boom in the price of primary commodities (soybeans), which notoriously account for an important part of Argentinian exports. Clearly the increase in commodity prices has been a windfall for Argentinian agricultural producers with possible trickling effects on the rest of the economy. Yet, the magnitude of the windfall itself can hardly account for the large GDP gains. In fact, soybean was sold in Iowa at an average price of $4.57 per bushel in the year 2000 and at $5.88 in the year 2005. Only since 2010 prices have gone up substantially more, but at that point, the Argentinian economy had already gone through almost a decade of economic boom. Furthermore, the high price of soybeans in the second half of the 1990s (it was $7.32 in 1997) does not seem to have been helpful to avoid the economic depression. The route to recovery in Argentina has been characterized by setbacks, but also by a number of inventiveness that may have played a role in defraying the shock of the crisis.

### Bank runs

At the end of November 2001, rising worries about a peso

devaluation and a deposit freeze, increased overnight interest rates sharply. Additionally, spreads between US Treasury bonds and Argentine government bonds increased by 5,000 basis points.  In order to stop the effects of a bank run, the Minister of Economy Domingo Cavallo announced a freeze on bank deposits. As in Greece, this measure considerably reduced the capacity of depositors to withdraw and manage their bank deposits. The deposit freeze had even accentuated the feeling among the population that a crisis was going to explode, and a series of demonstrations surged along the country. Subsequently, the IMF announced a cut of its support to Argentina, as it had failed to meet the conditions tied to the rescue program and Argentina lost its last source of funding. With a total amount of almost USD 22bn in 2000 and 2001, Argentina was the largest debtor the IMF had at the time. In the protests and raiding that followed, 24 people died. President De La Rúa and his cabinet resigned soon after these events.

## Claims after the currency devaluation

 The government decided to 'pesofy' the loans at a rate of A$1 (Argentinean peso) for each dollar (USD) owned by banks and A$1.4 for each dollar deposited in a bank. Alternatively, people could get a government bond (Boden 2012), that paid A$775.12 for a nominal of USD$100, when the official dollar was 4.35A$/USD. A less attractive bond was issued the following year: it paid A$930 for a nominal of USD$100 but could only be converted at 8.95A$/USD.

### Massive use of money-bonds

 In 2001, different Argentinean provinces started to print their own quasi-currencies, several emergency bonds (technically called Treasury Bills for Debt Settlement) issued between 2001 and 2002. They were created as a way of alleviating the enormous financial and economic crisis that occurred in Argentina in 2001. These bonds were considered a

"necessary evil" that initially allowed to cover the absence of money circulation. While at first the issuing of these quasi-currencies was controversial, it later gained acceptance partly because of the size of the issue and partly because of the magnitude of the crisis. These bonds circulated in parallel to the Argentinean peso. They could be used to pay some taxes, shopping and even salaries. As the pesos, they were denominated in different values 1, 2, 5, 10, 20, 50 and 100 to facilitate transactions (nominally equivalent to a Convertible Peso). The most popular bond was the Patacon that was issued in Buenos Aires. This bond had an interest rate of 7% and there were two series (Series A maturing in 2003, while the B in 2006). It is estimated that the total issue amount for the Patacons only reached 2.705 millions. Once the economic recovery of Argentina started in late 2003, the government honored 100% the principal of these outstanding bonds, and even the interests were eventually paid. Up to 13 quasi-currencies were issued by different provinces during that period.

## Credit

Figure (1) shows that in Argentina the "Sovereign Bond Interest Rate Spreads, basis points over US Treasuries" has been growing for the last 18 years showing the difficulties Argentina has had in accessing to international credit market. The difficult access to foreign funding has pushed the Argentinean government to get financed internally through the central bank, retirement funds and the tax agency. The high inflation that resulted from this policy (close to 26%, unofficial measures) has made the use of local credit extremely expensive for companies and households. However, as Argentina started posting large surpluses on the fiscal and current accounts after the default and large devaluation of the peso, access to foreign finance became less urgent. Argentina took a hardline approach against creditors. By 2010, 92% of the Argentine defaulted debt had been restructured.

However, ongoing litigation by holdout creditors could lead to a new Argentine default in the near future.

In conclusion, the Argentina exit from the debt crisis through a default did not have long lasting dramatic consequences on real activities as many had anticipated. The crisis meant a transfer of wealth from depositors to debt holders and promoted exports. After an abrupt decline, GDP quickly started its ascent and the country experienced high rates of growth in the 2000s, which reduced significantly unemployment.

Nevertheless the period right after the devaluation was characterized by political instability, large macroeconomic fluctuations and social revolts. The political stability that followed, might have played a role in sustaining growth, but the rate of inflation climbed at double-digit figures and the various price control mechanism introduced by the government have created a lot of frictions in the business sector. Finally, the increasing isolation of the government from the international political arena partly, due to the outstanding litigation with international lenders, could, in the long run, have negative repercussion on trade.



Figure 1. Argentina

Figure 2. Greece
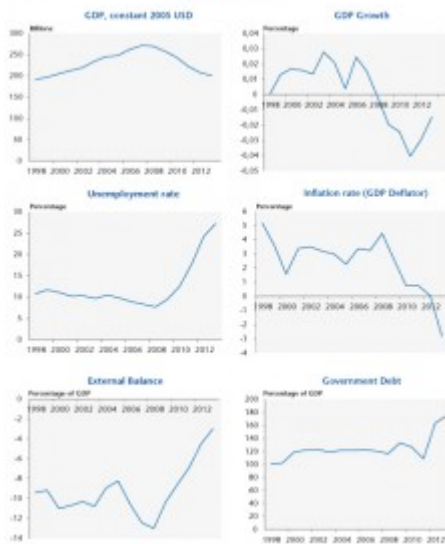
Source: World Bank and Eurostat, computations of authors.

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[1] "Grexit" is a combination of "Greece" and "exit" and refers to the possibility of Greece leaving the Euro area.

[2] The plots are generated using World Bank data, except for the level of 2013 Greek debt/GDP ratio, which is taken from Eurostat.

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# The planetary alignment has not always been favourable to the euro zone countries

By Eric Heyer and Raul Sampognaro

In 2015, the euro zone economies will benefit from a

favourable "planetary alignment" (with the euro and oil prices down and financial constraints on the economy easing), which should trigger a virtuous circle of growth. Over the previous four years (2011-2014), the "planetary alignment" that existed was in a diametrically opposite direction: the euro and oil prices were high, with financing conditions and the fiscal stance very tight.

In a recent article, we propose an evaluation of the impact of these four factors on the economic performance of six major developed countries since 2011 (France, Germany, Italy, Spain, the UK and USA).

It is clear from our analysis that the combination of these shocks explains a large part of the differences in growth recorded during the period 2011-2014 between the United States and the major European economies. A non-negligible part of this performance gap is explained in particular by the difference in the economic policies adopted, with a policy mix that has been much more restrictive in the euro zone than in the case of the US. In particular, a very sharp fiscal adjustment took place in the countries experiencing pressure on their sovereign debt, such as Spain and Italy. In addition, the effects of the pressure on sovereign debt were multiplied by financial fragmentation, which can be seen in the deterioration of private sector financing terms, whereas the quantitative easing measures taken by the Fed and the Bank of England helped to prop up financing conditions in these countries. It was not until Mario Draghi's speech in July 2012 and the announcement of the OMT programme in September 2012 that the ECB's actions were sufficient to reduce the financial pressure. While exchange rate trends tended to support activity in the euro zone throughout 2011-2014, the contribution of this factor depended on the way the various countries were integrated with global trade flows [1] and on the scale of wage disinflation, which was particularly pronounced in Spain. Finally, the rise in oil prices held back

Europe's growth, while it had less impact in the United States, which [benefited from the exploitation of shale oil](#).

The cumulative loss in GDP was very significant in Spain (-10 points between 2011 and 2014), Italy (-7.5 points) and France (-5 points) and more moderate in the UK (-3 points) and Germany (-2.5 points). In contrast, the cumulative impact since 2011 on growth in the United States was zero, suggesting that real growth in the US was in line with spontaneous growth [2] (Figure 1).

**Figure 1. Cumulative impact on GDP of various shocks since 2011**

In GDP points
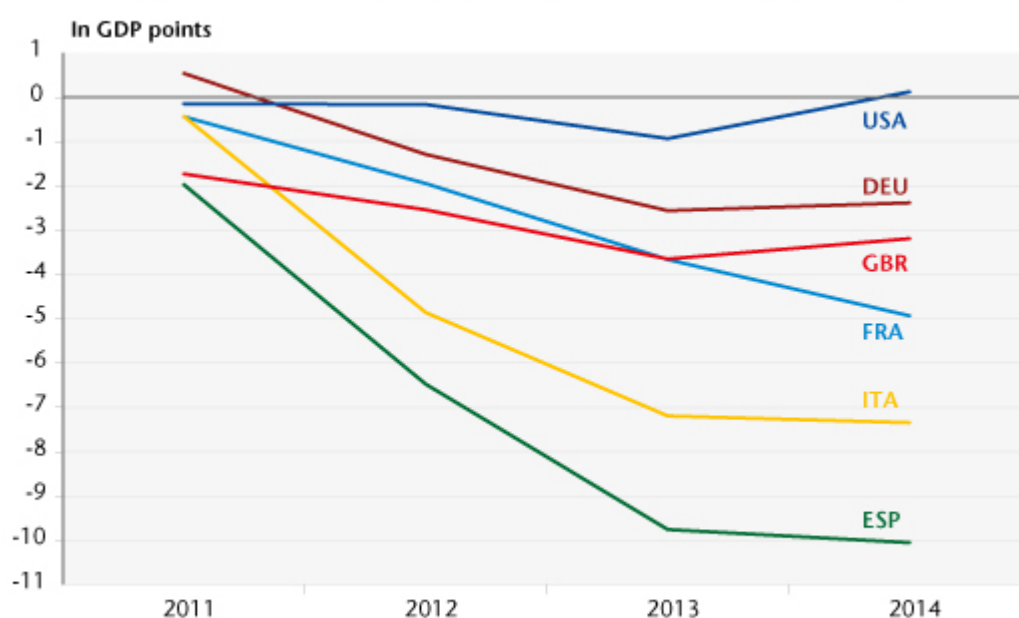


*Sources:* National accounts, OFCE calculations.

Thus, in the absence of these shocks, Europe's spontaneous growth could have exceeded the rate of potential growth, as in the United States (Figure 2). This would have led in the euro zone countries in particular to a long-term convergence of GDP with its potential level, to a reduction in imbalances on the labour market, to the normalization of capacity utilization, and to a recovery in the public accounts.

Figure 2. Difference in growth and the cumulative impact on GDP of various shocks for countries over the period 2011-2014

In GDP points

Difference in growth with the USA (2011-2014)
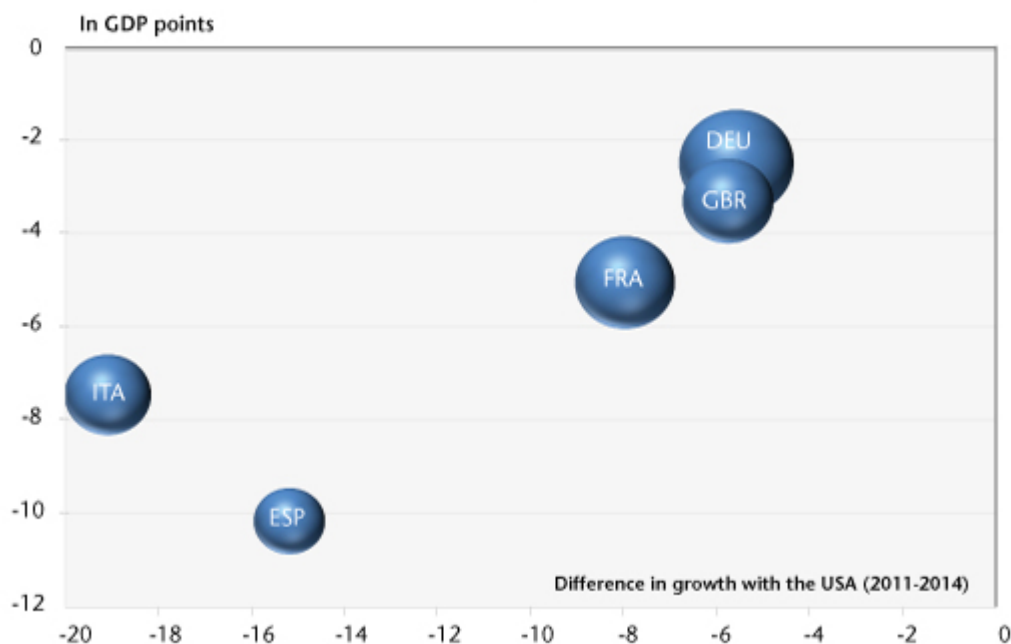
*Sources:* OECD eo96 for the output gap, national accounts, OFCE calculations for the impact of the shocks.

Go to the full version of our study.

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[1] The impact of these competitiveness shocks differs across countries because of differences in the elasticity of foreign trade, but also due to variations in the countries' degree of exposure to trade and to intra / extra euro zone competition. For more on this, see Ducoudré and Heyer (2014).

[2] An economy's spontaneous growth results from its long-term potential growth (which depends on structural factors that determine in particular changes in the global productivity of the factors and the labour force) and the rate of closing the output gap, which was deepened in most countries by the 2008-2009 crisis and which depends on an economy's capacity to absorb the shocks that hit it.