

Fiscal consolidation wrong-footed

By Sabine Le Bayon

Should deficit reduction be the priority of governments today?

The constraints imposed by the Stability Pact and especially by the financial markets on Europe's governments do not leave them much leeway. But while there is no avoiding the issue of the sustainability of public debt, we also need to take into account the recessionary impact of austerity programs on economic activity, particularly during a period of recovery. The great majority of studies point to a positive multiplier effect, that is to say, a one point cut (expansion) in the budget results in a decrease (increase) in activity. Furthermore, studies have highlighted that in order to maximize a policy's impact, its *timing* is crucial: the impact on growth and on the public deficit (via its cyclical component) depends on whether or not it is supported by monetary policy, on the fiscal policy conducted by other countries, on the phase of the cycle, and so forth.

Fiscal consolidation, for example, has less impact on activity when it is accompanied by a relaxation in monetary policy and by a currency depreciation. But when interest rates are already close to zero (or in the case of a liquidity trap), the impact of fiscal restraint is not cushioned by a fall in base rates. As the central bank cannot counter disinflation, real interest rates rise, which amplifies the fall in activity. Moreover, in a context of generalized tightening, the exchange rate cannot be a means of supporting activity in every area. This is also true when a policy of fiscal restraint is being implemented within a monetary union where the countries trade mainly among themselves. Thus, according to [the IMF](#), the impact on growth of a budget cut of 1 GDP

point can vary between 0.5% and 2%, depending on whether or not an austerity program is synchronized with the response of monetary policy (Table 1).

Ultimately, the impact on growth feeds back into the state of public finances. When monetary policy can counteract the recessionary effects of fiscal policy, a one-off budget cut of a single GDP point reduces activity by 0.5% after two years. The deterioration in the cyclical deficit then comes to 0.25 GDP point, and the balance ultimately improves by 0.75 point. When interest rates are near zero, a one point negative fiscal stimulus in a country reduces growth by one point and worsens the cyclical deficit by 0.5 point, leading ultimately to an improvement in the deficit of only 0.5 GDP point. Finally, when a liquidity trap (or rates of zero) is combined with generalized budget cuts, a one GDP point negative fiscal stimulus reduces growth by 2 points, because neither monetary policy nor exchange rates can offset the impact of the cuts. This widens the cyclical deficit by one point, and there is therefore no improvement in the public deficit despite the one point structural effort.

Tableau 1. Impact of fiscal consolidation on growth based on various IMF hypotheses

| | Interest rates greater than zero | Interest rates near zero |
|-------------------------------|----------------------------------|--------------------------|
| Isolated fiscal consolidation | - 0.5 | - 1 |
| Global fiscal consolidation | - 0.8 | - 2 |

Source: FMI (2010).

Furthermore, the economy's position in the cycle influences the multipliers. At the bottom of the cycle, for instance, they are amplified: an austerity policy accentuates any deflationary tendencies at work, which intensifies the fall in demand and therefore the impact on activity. However, at the top of the cycle, the disinflationary effects of the austerity measures counteract the inflationary trend usually seen in this phase, thus reducing the multiplier. According to [Creel, Heyer and Plane](#), after one year, and depending on the policy

instruments used, the multiplier lies between 1 and 1.3 points when the economy is in the bottom of the cycle (assuming an output gap of -2%) and between 0.8 and 1.2 points in mid-cycle (an output gap of zero) and the top of the cycle (for an output gap of 2%). At 5 years, the effect is even stronger: between 1 and 1.6 points at the bottom of the cycle, between 0.6 and 1.3 in mid-cycle and between 0 and 1.2 at the top of the cycle. Thus, when the output gap is negative, fiscal consolidation policies are not very effective because they lead to a significant decline in GDP compared to a scenario with no restraint, which limits any fiscal gains to be expected from the austerity policies.

Today everything has come together for the austerity policies to lead to a significant slowdown in growth with little reduction in the deficit, especially in the euro zone. This is why we tried to assess the indirect impact, for France and the major developed countries, of the austerity measures being implemented by their trading partners, in addition to the direct impact of the various national plans. The impact of fiscal restraint (in country A) on demand from its partners (B) depends on the elasticity of imports with respect to the GDP of country A but also on the degree of openness and geographical orientation of exports of the B countries. In the case of France, for a national multiplier of 0.5, the total multiplier is 0.7, once the fiscal restraint policies of the partners are taken into account via foreign trade; for a national multiplier of 1, the total multiplier is 1.5.

Based on the fiscal packages planned in the various countries, we obtain an impact of foreign plans on national activity of between -0.1 and -0.7 point in 2012, depending on the degree of openness of the countries and the orientation of their trade (Table 2). For France, the restraint planned by its trading partners will cut growth by 0.7 point in 2012, which is almost equal to the savings plan set up by the government (1 point). In Germany, the impact of foreign austerity plans

on GDP is close to that calculated for France: even if Germany is more open, it trades less than France does with the rest of the euro zone, and will benefit more from the US stimulus package in 2012. In the other euro zone countries, foreign fiscal cuts will have an impact of the same magnitude (0.6). In the US, the effects of the stimulus package will be undercut by the austerity measures being implemented elsewhere; while the direct effect of the stimulus package on GDP will be 0.7 point, the lower demand addressed to it will cut growth by 0.2 point, limiting the impact of the expansionary fiscal policy. The slower than expected growth could render the deficit reduction goals obsolete. Using our assumptions of national multipliers of between 0.6 and 0.9, a one GDP point negative fiscal stimulus in all the EU countries actually reduces the deficit by only 0.4 to 0.6 GDP point in each country, once the fiscal restraint of the trade partners is taken into account.

Tableau 1. Impact of fiscal consolidation on GDP in 2012

| | Direct effect | Effect via external demand | Total |
|----------------|---------------|----------------------------|-------|
| France | - 1.0 | - 0.7 | - 1.7 |
| Germany | - 0.3 | - 0.7 | - 1.0 |
| Spain | - 2.3 | - 0.6 | - 3.0 |
| Italy | - 2.1 | - 0.6 | - 2.6 |
| United Kingdom | - 1.9 | - 0.4 | - 2.3 |
| United States | 0.7 | - 0.2 | 0.5 |
| Japan | 1.4 | - 0.1 | 1.3 |

Sources: OFCE calculations and forecasts, October 2011.

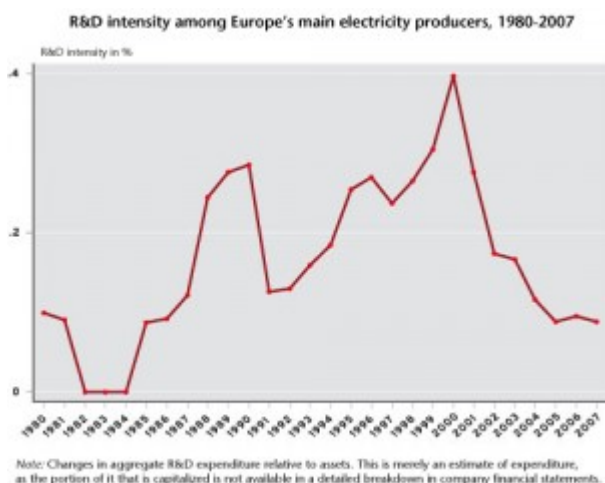
This text refers to the [study of fiscal policy](#) (in French) that accompanies the analysis of the economic situation and the forecast for 2011-2012, available on the [OFCE web site](#).

R&D all at sea: Have electricity producers lost the plot?

By [Evens Salies](#)

Is there an inherent conflict between the technological efforts needed to meet the requirements of environmental policies and the liberalization of electricity markets? In effect, the way R&D spending by European electricity producers has changed over the last three decades can give rise to doubts about the ability of the European Union to meet its goal of reducing greenhouse gas emissions by 80% to 93% by 2050 ([European Commission, COM/2010/0639](#)).

This is shown by the graph below, where we have isolated the expenditure of the 15 main producers. The figure shows a surprising reversal of the trend concomitant with the wave of liberalization in the sector sought by the EU. As concurrence doesn't necessarily mean causation, we took a look at whether the liberalization could be the source of this turnaround.



The R&D spending of Europe's electricity producers has shrunk by 70% between 2000 and 2007, from 1.9 billion euros to 570 million euros (figures adjusted for inflation). The giants EDF and E.ON, which represent the two biggest R&D budgets in the sector, are largely responsible for this decline. R&D spending by the French electricity firm fell 33% from 2000 to 2007, from 568 million euros to 375 million. As readers are probably aware that R&D costs mainly go on personnel, it will come as no surprise that, in the case of EDF, the number of employees engaged in R&D (researchers plus technical support and administration) has fallen by about one-quarter since 2007, but we were not able to break this reduction down by type of activity.

How can producers meet the technical challenge posed by alternative energy while spending so little on R&D? Some people might believe that the situation is not as dramatic as implied by the graph above. Indeed, the R&D expenditures of the large electrical groups constitute only the bare minimum (around 10%) of the total, which is mainly spent by equipment manufacturers and public research laboratories. Looking at the figures for total private spending, it can be seen that there has been a relative increase since 2000 in the shares intended not only to increase energy efficiency, but also to produce electricity from renewable energy sources. This is the result of numerous support measures for innovation (measures to purchase "green" electricity, financing for public / private partnership projects, etc.), without omitting the research tax credit also enjoyed by EDF.

It is nevertheless best to hold off before celebrating the above-mentioned shift in environmental innovation from the producers to the manufacturers, as the competition might well wind up by undermining the ability of the former to acquire these innovations. The question of why R&D spending has been falling thus remains relevant. Were levels abnormally high in

the past, when producers enjoyed the status of public monopolies? It is in any case possible to find objective reasons for the decline, beginning with the liberalization of the markets in the European Union which, as several studies have shown, was the event triggering this radical change in the innovation policy of the electricity producers [1].

The thesis put forward in these studies is that the expected increase in competition following the opening up of these markets makes the value of the producers' future income more uncertain. The argument in support of this thesis is that some research projects directed towards public policy objectives (those reducing emissions) do not any yield short-term cost savings that would benefit the producers. The producers have thus refocused on their core business and abandoned research programs that are not procuring them any tangible benefits, particularly in terms of patents. In Europe, however, these sacrificed environmental innovation projects are now being developed by the manufacturers (for example, Vestas in the field of wind power). Research in nuclear power is being taken over by research providers such as Areva and Siemens. The producers are tending to replace these by programs with shorter research time frames that focus on energy demand management or improvements in energy efficiency. Note that the nature of innovation as a public good makes producers cautious, as they are supposed to bear the costs of the research projects but will not be the only ones to reap their benefits. This encourages some players to engage in "free riding", and therefore leads to underinvestment in R&D at the aggregate level in the sector.

Interestingly, we find that this switchover gives rise to an acceleration of R&D spending in the period just prior to liberalization. First observed in the United States, this phenomenon can be seen clearly in Europe when looking at R&D levels. When the Directive containing the common rules for the internal electricity market was passed in 1996, the decline in

spending that ensued was actually preceded by an increase that was even greater than that observed on average between 1980 and 1995.

However, the establishment of market rules does not explain everything. The restructuring / fragmentation taking place as the sector has opened up is not without consequences for innovation. In a way that is similar to what has been observed in other sectors like ICT, the major electricity groups began to take on debt – which necessarily came at the expense of spending on research and other investments – as they engaged in new acquisitions. Companies reorganized their research by outsourcing. The example in France is that of EDF Energies Nouvelles, since August 2011 a wholly-owned subsidiary of EDF. The industrial organization that exists today in the electrical power sector is an oligopoly with a competitive fringe. Although the activities of the main traditional producers are subject to separate accounting, they still form vertically integrated groups, from production to marketing.

This restructuring and fragmentation evokes a hypothesis that is well-known to economists concerning the advantage of large companies in terms of innovation: the *Schumpeterian hypothesis* [2]. Formally, the question is whether the intensity of R&D – that is to say, the ratio of R&D expenditure to a size variable (the balance sheet, for example) – is positively correlated with size. We were able to demonstrate this link in a sample of 15 major European electricity producers for the period 1980-2007 [3]. However, this result is largely contingent on the period under study, during which most producers were protected from new market entrants and competitive pressure on the territory where they were doing business as public enterprises, then called “natural monopolies”.

This position gave them at least three advantages that have now disappeared. First is a kind of “right of first refusal” on the use of innovations provided by equipment manufacturers,

while they were also less fearful of being imitated on their own innovations. The potential for replication was limited to a very specific area of □□activity for each country, usually the country, which made it possible to spread the costs of innovation over all domestic consumers. Moreover, as they were certain not to lose their customers, the traditional producers could take risks in launching basic research projects. Finally, the regulation of tariffs ensured a predictable level of revenue.

This suggests that the Schumpeterian impact of rent appropriation dominated the negative effect on the incentive to innovate due to the lack of actual or potential competition. Once the sector was opened to competition, some of the advantages listed above disappeared. The vast majority of customers remained loyal due to the significant cost of switching, but an increasing share of the electricity produced was sold on weakly regulated wholesale markets at volatile prices. The Schumpeterian hypothesis could therefore disappear, and competition would lead to stifling the innovation fostered by spending on R&D.

An oligopoly of producers with a competitive fringe

Europe's electric power sector is characterized by a small number of large producers (oligopoly) that hold a large share of the market, while a large number of small firms (the competitive fringe) each have a small part of the residual market. Contrary to the received wisdom about competition, the fringe can have an impact on wholesale prices. In practice, since electricity cannot be stored, a producer asked by a carrier that is responsible for balancing production and consumption can offer the output of a power plant with low marginal costs at a price above the cost. An example is a producer at a marginal plant which, in times when demand is running up against production capacity (the peak), is requested to ensure the overall balance as a last resort.

[1] The study by Kammen, D.M. and R. M. Margolis (“Underinvestment: the energy technology and R&D policy challenge”, *Science, Energy-Viewpoint*, no. 285, 1999, pp. 690-692) had anticipated this situation for the United States. A study by P. Sanyal (“The effect of deregulation on environmental research by electric utilities”, *Journal of Regulatory Economics*, Vol. 31, no. 3, 2007, pp. 335-353) was the first to use econometrics to show how the liberalization of the electricity market was related to the fall in R&D spending.

[2] Please see http://en.wikipedia.org/wiki/Creative_destruction .

[3] “A test of the Schumpeterian hypothesis in a panel of European electric utilities”, *Document de Travail de l’OFCE*, no. 2009-19, <http://www.ofce.sciences-po.fr/pdf/dtravail/WP2009-19.pdf>.

What new European austerity plans await us in 2012?

By [Eric Heyer](#)

To meet French commitments vis-à-vis Brussels to a general government deficit in 2012 of 4.5% of GDP, the French Prime Minister Francois Fillon announced a new plan to cut the budget by 7 billion euros. Will the plan, announced 7 November, be sufficient? Certainly not! So what new austerity

plans should we expect in the coming months, and what impact will they have on growth in 2012?

In early October 2011, among the points we indicated in our forecast dossier was that, of all the finance bills approved in Europe, no major country has met its commitment to reduce the deficit.

This will be the case in particular of Italy and the UK, which could face a gap of between 1.5 and 2 percentage points between the final public deficit and their commitment. In the case of France and Spain, the gap will probably be 0.6 and 0.7 point, respectively. Only Germany will come very close to its commitments (Table 2).

Unlike in previous years, the implementation of these commitments would seem probable: in an uncertain financial context, being the only State not to comply with its promise of fiscal consolidation would be punished immediately by more expensive financial terms on the repayment of its debt.

This will therefore require the adoption of new austerity plans in the coming months. But by attempting to reduce their deficits too early, too quickly and in a synchronized fashion, the governments of the European countries are running the risk of a new downturn. Indeed, as we noted in a recent study, tightening budget policy during a cyclical downturn in all the European countries and doing so in a situation of a persistent "liquidity trap" is contributing to the formation of a strong multiplier, close to unity.

How many billion euros will be targeted by the next fiscal savings plans? What impact will they have on economic growth? Several possible cases were considered.

Case 1: Each country respects its commitment alone

In order to isolate the impact on growth of the national savings plan and those of the partners, we have assumed that each country meets its commitment alone. Under this

assumption, the effort would be significant in Italy and the UK, which would present new austerity plans for, respectively, 3.5 and 2.8 points of their GDP (56 and 48.7 billion euros). France and Spain would implement an austerity plan two to three times smaller, about 1.2 points of GDP, representing 27 and 12.1 billion euros, respectively. Finally, the German savings plan would be the weakest, with 0.3 point of GDP (7 billion euros) (Table 1).

Table 1. Amount needed to meet the public deficit commitments in 2012

| | Germany | France | Italy | Spain | United Kingdom |
|--|---------|--------|-------|-------|----------------|
| If each country meets its commitment alone | | | | | |
| In billions of euros | 7.0 | 27.0 | 56.0 | 12.1 | 48.7 |
| In GDP points | 0.3 | 1.3 | 3.5 | 1.1 | 2.8 |
| If the EU countries respect their commitments | | | | | |
| In billions of euros | 22.3 | 39.8 | 63.9 | 19.6 | 55.2 |
| In GDP points | 0.9 | 2.0 | 4.0 | 1.8 | 3.2 |
| If the euro zone countries meet their commitments | | | | | |
| In billions of euros | 16.6 | 36.1 | 61.7 | 17.9 | |
| In GDP points | 0.6 | 1.8 | 3.9 | 1.7 | |

Source: OFCE calculations.

These different national austerity plans, taken in isolation, would have a non-negligible impact on the growth of the countries studied. With the exception of Germany, which would continue to have positive growth in 2012 (0.9%), this kind of strategy would plunge the other economies into a new recession in 2012, with a decline in their GDP ranging from -0.1% for Spain to -2.9% for Italy. France would experience a decline in activity of -0.5% and the British economy of -1.9% (Table 2).

Table 2. Impact on GDP of meeting the deficit reduction commitments in 2012

| In % | Germany | France | Italy | Spain | United Kingdom |
|--|---------|--------|-------|-------|----------------|
| OFCE forecast | | | | | |
| GDP | 1.2 | 0.8 | 0.4 | 0.9 | 0.7 |
| Public deficit (in GDP points) | -1.4 | -5.2 | -3.4 | -5.0 | -8.0 |
| If each country meets its commitment alone | | | | | |
| GDP | 0.9 | -0.5 | -2.9 | -0.1 | -1.9 |
| Public deficit (in GDP points) | -1.3 | -4.5 | -1.5 | -4.4 | -6.5 |
| If the EU countries respect their commitments | | | | | |
| GDP | -0.3 | -1.7 | -3.9 | -1.5 | -2.6 |
| Public deficit (in GDP points) | -1.3 | -4.5 | -1.5 | -4.4 | -6.5 |
| If the euro zone countries meet their commitments | | | | | |
| GDP | 0.1 | -1.4 | -3.6 | -1.2 | 0.3 |
| Public deficit (in GDP points) | -1.3 | -4.5 | -1.5 | -4.4 | -8.2 |
| Remainder of commitments for 2012 | -1.3 | -4.5 | -1.5 | -4.4 | -6.5 |

Source: OFCE calculations.

Case 2: All the EU countries meet their commitment

Of course, if all the major European countries were to adopt the same strategy at the same time, then the savings effort would be greater. It would amount to about 64 billion euros in Italy and 55 billion euros in the UK, accounting for 4 and 3.2 percentage points of GDP, respectively. The additional effort would be about 2.0 percentage points of GDP for France and Spain (respectively 39.8 and 19.6 billion euros) and 0.9 GDP point for Germany (22.3 billion euros). In total for the five countries studied, the cumulative savings effort would represent more than 200 billion euros in 2012.

The shock on the activity of these countries would be powerful: it would cause a violent recession in 2012 for some countries, with a fall in GDP of -3.9% in Italy (against -5.1% in 2009), and -2.6 % in the UK (against -4.9% in 2009). France would be close to recession (-1.7%), as would Spain (-1.5%), while German GDP would decline slightly (-0.3%).

Case 3: Only the countries in the euro zone meet their commitment

As the UK has already implemented a substantial austerity program, and given that their constraints in terms of the deficit are more flexible than those of countries in the euro zone, we assumed that only the major countries in the euro zone complied with their commitments on the public deficit. Under these conditions, the cumulative savings effort would represent more than 130 billion euros in 2012, almost half of which would be from Italy alone (61.7 billion).

The recessionary shock would thus be focused on the euro zone, with a recession in all the countries studied except Germany (0.1%). The British economy would avoid a new period of recession (0.5%), but it would not meet the target of 6.5 percentage points of GDP for the public deficit, which would come to 8.2 GDP points.

The G20 Summit in Cannes: Chronicle of a Disappointment Foretold?

By [Jérôme Creel](#) and [Francesco Saraceno](#)

Too long and too technical, the [final declaration](#) of collective action of the G20 Summit in Cannes shows that no clear and shared vision of the economic and financial turmoil that is rocking the global economy has emerged at the Summit. And as Seneca reminds us, the disappointment would have been less painful if success had not been promised in advance.

According to the official announcements, the disappointment was palpable at the end of a G20 summit in which no significant progress was achieved – on the most important issues of the moment, the revival of growth in particular. The crucial issues of agriculture and finance gave rise simply to declarations of intent, with a reminder of the commitments made on these ... in 2008! The disappointment must be kept in perspective, however, as the G20 is primarily a forum for discussion rather than for decisions. Indeed, what remains of the commitments made in April 2009 by the G20 in London, mired in global recession? The expansionary fiscal policies? Forgotten, as a result of the public debt that they have produced – debt, by the way, that was perfectly predictable. Strengthened financial regulation? Repeatedly trotted out, but still not implemented, despite the determination displayed in Paris on 14 and 15 October 2011. The desire to avoid protectionism? Barely mentioned, nor did this succeed in

preventing the outbreak of 36 [trade disputes](#) brought before the WTO, including 14 involving China, the EU and / or the United States. All that remains is a monetary policy that is “expansionary as long as necessary”, in the words of the pre-Summit statements. So does the fate of the international monetary system depend simply on the good will of the central bankers, independent as they are?

The meeting was also troubled by the crisis hitting the euro zone, which virtually forced off the agenda such important issues as the resurgence of protectionism, which was relegated to paragraphs 65 to 68 of a 95-paragraph document. At Cannes, the emerging economies and the US were spectators of a drama unfolding between Paris, Berlin, Rome and Athens.

The crisis hitting the euro zone is a result of the heterogeneity of its constituent countries, much as the financial crisis triggered in 2007 was a result not just of a lack of financial regulation but also of the increasing heterogeneity between mercantile countries and countries presumed to be the El Dorados of investment, on the one hand China and Germany, and on the other, the United States and Ireland. This European heterogeneity, one of four deficiencies of the euro zone, has led countries with a surplus in their current accounts to finance countries running a deficit. Alone, and with its priority on the fight against inflation imposed by the Treaty of the EU, the ECB is unable to promote convergence within the euro zone. However, in the short term it can end the crisis in the euro by agreeing to provide full coverage of public debts in the euro zone (see [\[1\]](#), [\[2\]](#) or [\[3\]](#)), and by significantly increasing its [purchases of government debt in Europe](#). This would maintain European financial stability and perhaps generate inflationary expectations, thereby helping to lift Europe’s economy out of the [liquidity trap](#) in which it has been mired since the beginning of the financial crisis. Note that despite its activism, the US Federal Reserve has not so far managed to

create such expectations and remains caught in the same kind of liquidity trap.

In the longer term, it is necessary to review European economic governance. The active use of economic policy in the United States and China contrasts with the caution displayed by the ECB and with the European reluctance to pursue expansionary fiscal policies, and more generally with the decision to build European economic governance on a refusal of discretionary policies. It would be desirable for the ECB, while preserving its independence, to be able to pursue a [dual mandate](#) on inflation and growth, and for the [rules that discipline](#) fiscal policy to be “smarter” and more flexible.

Giving the economic policy authorities an opportunity to implement discretionary policies should not mean forgetting about the risks posed by the absence of a coordinated approach, which may lead the US Congress to threaten unilateral compensatory taxes on goods imported from countries whose currency is undervalued. This move is evoking the specter of protectionism, and the G20 countries should consider a mechanism to coordinate policy so as to avoid the trade wars that are already being more or less explicitly declared.

Furthermore, a currency war does not seem to be an effective way to protect our economies: the under-or overvaluation of a currency is a complex concept to apply, and the impact of a currency's value on exports and imports is made very uncertain by the international fragmentation that characterizes the production of goods and services. Rather than employing a defensive policy, it is definitely better to substitute an [active industrial policy](#) to take advantage of new technological niches that create business and jobs.

Finally, for words to have real meaning – to “build confidence and support growth” in the advanced economies and “support growth” while “containing inflationary pressures” in the

emerging economies ([G20 Communiqué](#), Paris, 14-15 October 2011) – we must challenge the “contagion of [fiscal contraction](#)” that is now shaking the euro area and, rather than an additional phase of rigor, put recovery plans on the agenda in the advanced economies while interest rates are still low. These plans must be targeted in order to generate growth and not jeopardize the solvency of public finances: it is thus necessary to encourage public investment. To maximize their overall impact, these plans need to be coordinated, including with the actions of the central banks, so that the latter can support them by maintaining low interest rates. The Summit in November 2011 was very timely for this kind of coordinated approach to emerge. Unfortunately, it didn't.

Can the central banks influence the expectations of private agents?

By Paul Hubert

Can the forecasts of a central bank influence the expectations of private agents, and if so what are the reasons for this? A few hours after the press conferences of Ben Bernanke and Mario Draghi, here are some explanations.

The awarding of the [2011 Nobel Prize in Economics](#) to Thomas Sargent and Chris Sims for “their empirical research on causal effects in macroeconomics” highlights the role of the expectations of private agents in economic policy decisions. Because the expectations of businesses and households about

inflation and growth affect their decisions on investment, consumption, savings, and wage demands, these are at the heart of the interaction between economic policies and their effects.

Since the 1980s, the main instrument of monetary policy has been the interest rate set by the central bank. Changes in this affect the economy and allow the central bank to arbitrate between economic growth and inflation through [several channels](#), and in particular interest rates, credit, asset prices, exchange rates and, finally, expectations. Indeed, in the course of their daily decision-making, businesses and households base themselves on numerous expectations about consumption, investment, future capacity and future wages and prices, etc. These expectations then play a central role in the determination of economic variables. Changes in the central bank rate thus send signals about the future state of the economy and future monetary policy, and alter the expectations formed by private agents.

However, the expectations channel is ambiguous, and changes in the base rates can be understood in different ways: private agents may respond to lower rates by consuming and investing more, which may indicate that growth will be stronger in the future, bolstering their confidence and their willingness to consume and invest. In contrast, the same agents may feel that current growth is lower than expected, prompting the central bank to intervene, which reduces their confidence, and hence their willingness to consume and invest... Since the 1990s, the central banks have been complementing interest rates with the [effect of announcements](#) to clarify their future intentions. Communication seems to have become a [tool of monetary policy](#), and two types can be distinguished. Qualitative communication includes interviews and speeches, while quantitative communication consists of the publication of the central bank's forecasts of inflation and growth.

In a [recent working paper](#), we analyze the effect of the

forecasts of inflation and growth published quarterly by the central banks of Canada, Sweden, the UK, Japan and Switzerland. With the help of surveys conducted by Consensus Forecasts of professional forecasters from financial and non-financial sectors, we show that the inflation forecasts of the central banks of Sweden, the UK and Japan are a significant factor in the inflation forecasts of private agents. In other words, the publication of the central bank inflation forecasts leads to a revision of the forecasts of private agents. It also appears that the opposite is not true: the central bank forecasts do not respond to the forecasts of private agents.

Two factors could explain the central bank's influence: first, the inflation forecasts of the central bank could be higher quality, making it rational for private agents to be influenced by them so as to improve their own forecasts of macroeconomic variables. Second, the inflation expectations of the central bank can influence private agents because they transmit signals, either about future decisions on monetary policy, or about the private information available to the central bank. This type of influence is independent of the forecasting performance of the central bank.

To determine the sources of this influence, we evaluated the relative forecasting performance of the central banks and private agents and tested whether the central bank's influence on private expectations depends on the quality of its forecasts. Estimates showed that, in our sample of central banks, only the central bank of Sweden produced significant, regular and robust inflation forecasts that were better than those of private agents. We also found that the degree of influence depends on the quality of the inflation forecasts. In other words, the inflation forecast over a short horizon (1 or 2 quarters), which a historical analysis of forecast performance tells us are of low quality, do not influence private agents, whereas those of higher quality do influence them. Furthermore, the longer-term inflation forecasts of

Sweden's central bank managed to influence private expectations even when their quality was low, and the better the quality, the stronger the influence.

While the central banks in the United Kingdom, Japan and Sweden all succeed in influencing private expectations by publishing their macroeconomic forecasts, it appears that the reasons for this influence differ. The first two use the transmission of signals, while the Swedish central bank uses both possible sources for influencing private expectations: its greater forecasting capability and the sending of signals. The consequence of these results is that the publication by the central bank of its macroeconomic forecasts could facilitate and render more effective the establishment of the desired monetary policy by shaping private expectations. This transmission channel, which is faster because it relies only on the provision of forecasts, could thus allow the central bank to affect the economy without changing its key interest rate, in practice making it an additional policy instrument.