Monetary and fiscal policies in the euro area : independent but nevertheless connected

J. Boeckx
M. Deroose (*)

Introduction

The pre-crisis consensus regarding the conduct of macroeconomic policy largely, or even exclusively, assigns to monetary policy the role of preserving price stability. By doing so, monetary policy also makes a major contribution to macroeconomic stability in the broad sense, for instance by smoothing out cyclical fluctuations. According to this view, and in line with the European governance framework currently in place, fiscal policy does not play an active part in stabilising inflation : above all, it must not be a disruptive factor. It does its job best by making sure that public finances are sound and sustainable, so as not to threaten either price or macroeconomic stability (1). Conversely, the pre-crisis consensus does not foresee any role for monetary policy in preserving sustainable public finances. With both policies having their own specific task – which is also embodied in an independent central bank and clear fiscal rules – they appear to stand in isolation.

Yet the crisis has highlighted numerous links between monetary and fiscal policies. Through its outright monetary transactions (OMT), the European Central Bank (ECB) is (conditionally) supporting government bonds that have come under pressure from the financial markets. In addition, the low interest rate environment – reflecting the slow nominal economic growth – brings down the interest charges that governments have to pay to service their substantially increased debt, while too low inflation and the cyclical contraction in economic activity push up the debt ratio. The introduction of the asset purchase programmes – under which the central banks are buying up mainly government securities – has exerted further downward pressure on the entire yield curve, even pushing the short-term segment into negative territory. These asset purchases (recorded on the assets side of the central bank's balance sheet) are reflected by a corresponding increase in the amount of liquidity that commercial banks hold with the central bank (recorded on the liabilities side). Since central banks usually pay interest on these reserves and as the yield curve has flattened out significantly, central bank reserves and (short-term) government securities have largely become substitutes. The crisis has also called into question the conventional divsion of tasks between monetary and fiscal policies because monetary policy has encountered some limits (i.e. the lower bound for nominal interest rates) in supporting the economic recovery. Consequently, the question arises as to whether fiscal policy should also inject some impetus into the economy.

Research and debate devoted to interactions between monetary and fiscal policies have thus received a new impulse. This article contains some new insight that the crisis has brought. Without wanting to be exhaustive, it mainly draws attention to the importance of a joint analysis of monetary and fiscal policies.

The first part gives an overview of monetary and fiscal policy thinking. It compares the conventional view – which

(*) The authors would like to thank the following NBB colleagues for their valuable comments on this article : Luc Aucremanne, Mélissa Kasongo Kashama, Luc Van Meensel, Arnoud Stevens, Stefan Van Parys, Joris Wauters and Raf Wouters.

(1) Fiscal policy obviously pursues many objectives, but this article focuses on two important macroeconomic tasks : the stabilisation of the economic cycle and the maintainance of sustainable public finances.

proposes a strict division of responsibilities and a clear allocation of tasks among these two policy areas – with an alternative view which focuses specifically on the interactions between these two policy areas. The latter view argues that the combined action of monetary and fiscal policies – in which not only monetary policy but also fiscal policy can play an active part – determines macroeconomic outcomes. The second part discusses the various schools of thought in practice. It concentrates on some recent events experienced during the euro area crisis which have thrown some light on possible gaps in the conventional view. The third part concludes.

1. Different views depending on the monetary policy school of thought

1.1 The conventional view : a strict division of tasks

In the 1960s and 1970s, both monetary policy and fiscal policy played an important role in preserving macroeconomic stability. These two policy domains were quite naturally coordinated for the benefit of the internal as well as external balance. From the 1980s onwards, however, faith in the stabilising capacity of fiscal policy began to wane, shifting in favour of monetary policy. The end result was a consensus focusing on a strict division of tasks : the central bank is responsible for macroeconomic stabilisation (by maintaining price stability, which generally boils down to stabilising output at its potential level) ; the best way the budget authority can contribute to this is by ensuring sound and sustainable public finances.

Monetary policy plays a dominant role in stabilisation[1]

There are all sorts of reasons behind the predominantly stabilising role of monetary policy. In practice, the division of responsabilities appeared to be working. After inflation had spiralled out of control in the 1970s, the new focus of central banks on low and stable inflation rates bore fruit, as there was a definite reduction in macroeconomic volatility from the mid-1980s on (see chart 1). Studies have nevertheless pointed out that, apart from a more effecient monetary policy, the mainly favourable macroeconomic shocks and the structural reforms in the economy (such as more flexible labour and product markets) also helped to stabilise the macroeconomic environment[2]. Theoretically, macroeconomic models have shown that by guaranteeing low and stable inflation, monetary policy would make the best contribution to economic activity[3]. As monetary policy, through setting key interest rates, proved capable of stabilising not just inflation but the output gap too, an active fiscal policy was less necessary for attaining the latter objective.

Furthermore, the stabilising role of discretionary fiscal policy has been called into question. This scepticism has largely been fuelled by the greater acceptance of the Ricardian equivalence hypothesis[4] in a context of rational expectations, as well as by the lack of any empirical consensus on the size of the budget multiplier – i.e. the extent to which a fiscal stimulus influences economic growth. Moreover, fiscal measures are not frequently taken (budgets are usually drawn up once a year), and their design and implemebtation takes time. They therefore risk to only kick in when the economic cycle has already turned, which threatens to make them procyclical. Besides, expansionist measures introduced in bad times are difficult to reverse in good times : a deficit bias may then result in the public debt spiralling out of control. In addition, the crisis legacy from the 1970s (and early 1980s) entailed high deficits and rising debts as fiscal policy was mobilised to support the economy. Consequently, the possibility to deploy discretionary fiscal policy as a countercyclical instrument declined substantially and the priority rather shifted to stabilising and reducing the high levels of government debt.

Unlike active fiscal policy interventions, automatic stabilisers are timely, temporary and targeted. Indeed, in absence of any discretionary action on the part of public authorities, unemployment and social security benefits increase (decrease) in economic downturns (upturns), while tax revenue generally tends to fall (rise), which smooths out cyclical fluctuations. The conventional view thus does give automatic stabilisers a role in evening out economic fluctuations. The bigger the size of the government in the economy, the stronger is the impact of the automatic stabilisers. This is precisely why they are more important in Europe than in the United States. To enable these automatic stabilisers to work freely without generating uncertainty about the sustainability of public debt, it is essential for public finances to be sound.

Sound public finances are also a precondition for monetary policy to effectively play a stabilising role. Both theory and practice have shown that political pressure could prompt a central bank to finance an expansionary fiscal policy by directly lending to governments. The

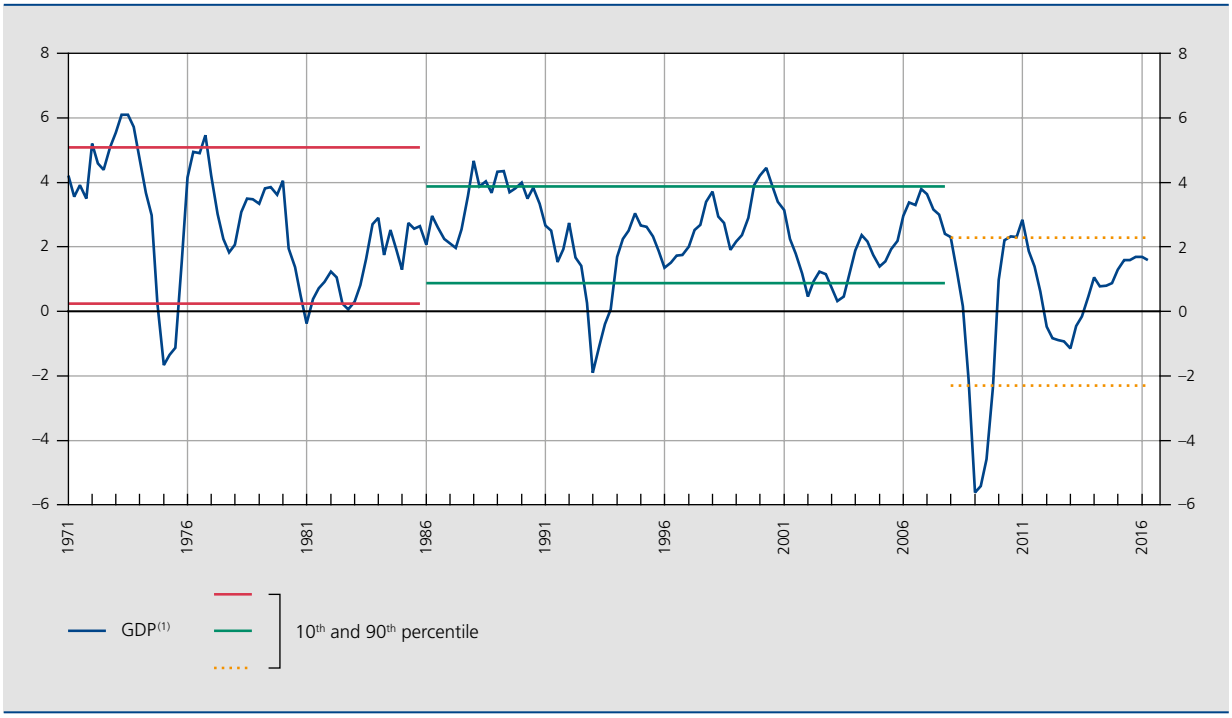
(1) For a more in-depth analysis of the pre-crisis consensus, see, for example, Blanchard *et al.* (2010).

(2) For an overview of the main factors accounting for the "Great Moderation", see Bernanke (2004), for example.

(3) For a discussion on this subject, see Blanchard and Galí (2007).

(4) According to this hypothesis, the private sector will, in reaction to a fiscal expansion and a deterioration of the budget deficit, save more because households and firms assume that the government will once again raise taxation and cut benefits in the future. In its most extreme form, this theory therefore implies that a fiscal expansion does not at all stimulate the economy, just as a fiscal contraction does not slow it down.

CHART 1 SHARP DECLINE IN MACROECONOMIC VOLATILITY IN THE EURO AREA



Sources: AWM database, EC.
(1) Percentage change compared to the corresponding quarter of the previous year.

accompanying fiscal demand impulse can subsequently result in higher inflation and in the longer run, if excessive, in an inflationary spiral, which can in turn have negative repercussions on welfare[1]. Out of fear of this adverse scenario, many countries have made their central banks independent and put them in charge of price stability, while imposing binding fiscal rules on budget authorities.

The European institutional framework

This conventional view is also reflected in the institutional set-up of the Economic and Monetary Union (EMU). An independent European central bank has thus been established, which is responsible for price stability in the whole currency union. The ECB's Governing Council defines price stability as an inflation rate below, but close to 2 % over the medium term. This medium-term perspective gives the ECB a certain degree of flexibility for attaining its primary objective, making it possible to avoid major fluctuations in economic activity and policy rates that would emerge as a result of immediate reactions to all inflation shocks. In this way, the key objective of price stability is thus beneficial for macroeconomic stability as well. Hence, the ECB also contributes towards another objective assigned to it by the EU Treaty, namely supporting general economic policy.

Moreover, fiscal rules were imposed on national authorities. Within a monetary union, there is a much greater incentive to resort to an irresponsible fiscal policy than in a stand-alone country. Fiscal expansions in fact only have a negligible effect on inflation for the monetary union as a whole (something which holds even more true the smaller the country). The central bank will therefore not raise its policy rates as much as it would if it was only watching over price stability in a stand-alone country. Real interest rates in the country conducting an expansionary fiscal policy are thus lower, which should result in stronger economic growth. The higher policy rates for the monetary union as a whole nevertheless imply a cost for the other Member States. In addition, it was feared that financial markets would not in time penalise any big increase in a Member State's public debt by pushing up the interest rate so as to offset a higher risk of default, but that the penalty would come suddenly (a sudden stop). In order

(1) There are many costs associated with high and variable inflation. High and variable inflation implies that economic stakeholders need to make more (inefficient) efforts to adjust prices and wages correctly and, when this is not done frequently enough, it also disrupts the relative price signal (leading to a misallocation of resources). It results in higher risk premiums, and thus higher real interest rates, which slows down investment. It requires a greater effort from monetary policy when it comes to steering real interest rates. Lastly, an unexpected surge in inflation also triggers an arbitrary redistribution of wealth from lenders to borrowers.

to ensure sound public finances in each of the euro area countries, an attempt was thus made to establish market discipline and impose fiscal rules. The prohibition of monetary financing of public debt and a no-bail-out clause were thus combined with fiscal benchmarks that were all written into EU law[1]. These benchmarks were then further developed in the Stability and Growth Pact (SGP): the government deficit could not exceed 3 % of GDP and the public debt could not go over 60 % of GDP, otherwise the debt must be brought down sufficiently towards the reference value. In addition, the SGP requires Member States to achieve fiscal positions in the medium term that are more or less in balance or showing a slight surplus, so that automatic stabilisers can work freely without pushing the budget deficit over the 3 % reference value. The architects of EMU thus did their utmost to ensure that nothing or nobody would deflect the ECB from its price stability mandate; in other words, they endeavoured to ensure as high a degree of monetary dominance as possible[2].

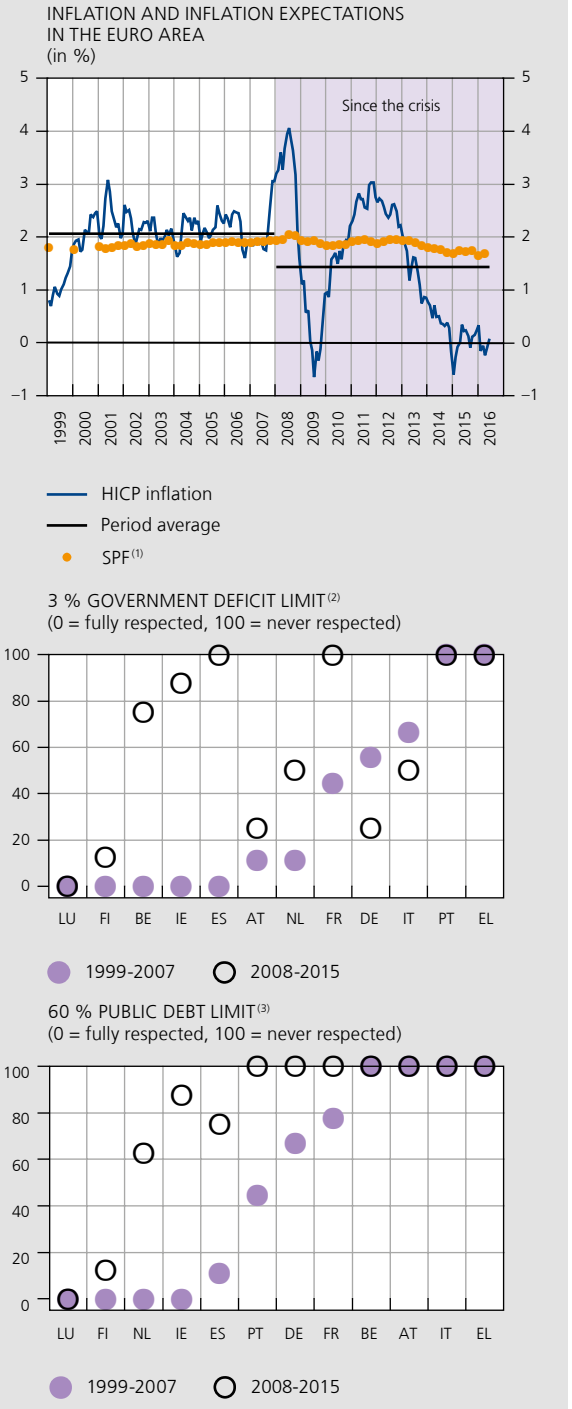
Chart 2 shows that the Eurosystem actually managed to stick very closely to its target over the decade preceding the crisis. Inflation was kept to 2 % on average. On the other hand, the majority of the twelve original euro area member countries did not respect the fiscal rules, often for several years. The Eurosystem nevertheless managed to keep a lid on GDP and inflation volatility in the euro area, so its stabilising role did not come under threat (see also chart 1). But, alongside relatively robust growth and inflation performance, a number of countries have seen the build-up of financial imbalances[3]. Because the pre-crisis consensus did not pay enough attention to the macroeconomic dimension of financial stability and with the analysis of financial risks almost exclusively focused on individual financial institutions, these imbalances remained under the radar. As, at the same time, instruments to tackle these imbalances were lacking, decision-makers faced a difficult task during the crisis.

1.2 Since monetary and fiscal policies are inextricably linked, joint analysis is called for

At the beginning of the 1990s, however, another view also emerged giving both monetary and fiscal policy an explicit role in guaranteeing macroeconomic stability, and price stability in particular. According to this view, rather than just monetary policy on its own, fiscal policy also determines more explicitly how nominal variables develop

(1) See Articles 123, 125 and 126 of the Treaty on the Functioning of the European Union.
(2) See also Praet (2015).
(3) Fur further details and an interpretation of the causes of the crisis in the euro area, see, for example, Baldwin and Giavazzi (2015).

CHART 2 RESPECTIVE ACHIEVEMENT OF THE SPECIFIC TARGET BY THE EUROSYSTEM AND BY NATIONAL BUDGET AUTHORITIES



Sources: EC, ECB, Thomson Reuters Datastream.
(1) Average of the aggregated probability distribution of inflation expectations five years ahead (NBB calculations). Data are extracted from the ECB's quarterly survey of professional forecasters (SPF).
(2) Percentage ratio between the number of years during which the government deficit expressed as a percentage of GDP is above 3 % and the total number of years over the period under consideration.
(3) Percentage ratio between the number of years during which the public debt expressed as a percentage of GDP is above 60 % and the total number of years over the period under consideration.

in the economy. In this article, this alternative view is referred to as the monetary-fiscal theory (in a more narrow form, it is probably better known as the fiscal theory of the price level)[1]. The founding fathers of this approach are Eric Leeper, Chris Sims and John Cochrane; Sargent and Wallace (1981) also reckoned that fiscal policy was playing a role in the behaviour of inflation.

The following takes a more in-depth look at the differences between the conventional monetary theory and the monetary-fiscal theory. The objective here is to highlight some insight from the alternative theory with the help of simple equations, without wanting to be exhaustive though. For more detailed information, readers are referred to the work of the founders of this theory.

The difference between the two views reflects divergent theoretical schools of thought, notably as regards assumptions concerning the behaviour of fiscal policy. The respective frames of thinking are both based on a pair of equilibrium conditions featuring the price level: an equation of exchange and a public debt equation (see chart 3). These two equations are found in all contemporary economic models, albeit more or less explicitly depending on the role given to fiscal policy in determining the price level. Here, both equations solely aim to explain movements in the general price level or inflation. Hence, nothing is said about the stabilisation of the economic cycle or of economic growth. In other words, the analysis here is purely monetary.

In equilibrium, total expenditure for economic transactions (the money supply multiplied by the number of times that each euro is spent annually) is equal to the value of the transactions (equation 1) and the value of outstanding public debt is equal to the discounted value of governments' future primary surpluses needed to repay this debt (equation 2). It should be noted that the latter equation is written in real terms: it is the relative price of public debt – i.e. the nominal value of the outstanding stock of government bonds[2] adjusted for the general price level – which must be equal to the discounted flow of real primary surpluses (government revenue after deducting public expenditure excluding interest charges) that governments are expected to record. This equation displays a parallel with financial asset price-setting: the price of the assets corresponds to the discounted value of revenue flows that these assets are expected to gerenate in the future. In the same vein, economic agents value public debt on the basis of the resources that the government in all likelihood will withdraw from the economy in the future. Note that public debt here refers to the consolidated public debt held by the private sector: it covers not only the budget authorities' debts but also the debt that central banks have recorded on their liabilities side, such as interest-bearing central bank reserves or bank notes. Furthermore, the equation refers to the expected flow of real primary balances.

The "traditional" monetary theory assumes that monetary policy alone is capable of guranteeing price stability in the long term. Equation 1 embodies this view as it illustrates that, assuming a relatively constant velocity of money in circulation (V) and assuming that monetary policy does

(1) Given the explicit attention that the alternative view devotes to fiscal policy for explaining the path of the general price level, the choice of the term "fiscal theory of the price level" seems quite logical at first. Yet it is the interaction between these two policy areas that is crucial, hence our alternative name. Eric Leeper (2016a) also refers to the "real theory of the price level".

(2) In many advanced economies, this mainly consists of nominal debt securities denominated in national currency, although several countries also issue inflation-linked government bonds or foreign-currency-denominated debt; but there are few issues of this kind.

CHART 3 TWO EQUATIONS FEATURING THE PRICE LEVEL

Equation 1
The equation of exchange

Nominal expenditure: $M_t V_t$ = Nominal GDP: $P_t Y_t$

Equation 2
Valuation of government debt[1]

$$\frac{B_t}{P_t} = E_t \sum_{j=1}^{\infty} \rho^{-j} (T_{t+j} - G_{t+j})$$

Real public debt: $\frac{B_t}{P_t}$ = Sum of expectations: $E_t \sum_{j=1}^{\infty} \rho^{-j}$ (Real primary government balances: $T_{t+j} - G_{t+j}$)

where M is money, V the velocity of money in circulation, P the price level, Y real output, B nominal government debt – including central bank liabilities (such as central bank reserves) – held by the private sector, ρ the real discount rate that discounts the value of future surpluses and which, for simplicity, is assumed to be constant here, T tax revenue, and G government expenditure excluding interest charges.

(1) Here, a simplified version of the equation is shown including only short-term government bonds.

not exert any effect on output in the long run, the central bank is in a position to control the price level (P) in the long term, simply by using its monetary policy instrument (i.e. the money supply (M) in this classic equation of exchange). Neither fiscal policy nor government debt have any specific role to play here, even though they are actually at work in the background, as will be explained below.

In practice, the money supply does not constitute a direct monetary policy instrument. It is rather through setting its policy rate that a central bank endeavours to steer inflation (in this process the money supply will also change)[1]. A higher policy rate slows inflation down, whereas a lower interest rate revives it. In the terminology used by Leeper (1991), monetary policy plays an "active" role here in the sense that it adjusts its instrument adequately with a view to stabilising inflation. This means basically that standard models impose a Taylor rule[2] on monetary policy whereby, in response to a rise/fall in inflation, a central bank eventually has to raise/cut the nominal interest rate more than proportionally in order to steer the real rate in the appropriate direction and restore price stability.

Any change in the policy rate in reaction to inflation shocks also has repercussions on governments' nominal interest charges, which brings us to the second equation. A rise in the nominal policy rate is thus reflected in equation 2 by a proportional increase in nominal debt B (the impact on the interest rate is included in the numerator of the left-hand side). Since the central bank applies the Taylor principle, real interest charges, and with them the debt in real terms, also vary. The left-hand side thus becomes bigger than the right-hand side. For equation 2 to hold and for the economy to stay on a stable path, government debt holders must therefore expect the government to raise its primary balances (T-G).

Standard macroeconomic models are indeed based on the assumption (whether implicit or explicit) that governments always adjust their primary surpluses in such a way as to stabilise real debt (in the terminology used by Leeper (1991), governments thus take on a "passive" role)[3] and expectations concerning this passive role are formed correctly. This is why models assign little importance to the fiscal aspect and to a certain extent disregard equation 2, which in this case is tantamount to a budget constraint for governments. According to this line of thinking, an independent central bank that reacts adequately to inflation is seen as sufficient in itself to achieve price stability.

(1) For more information on the precise functioning of an interest rate policy as opposed to a monetary base policy, see Aucremanne *et al.* (2007).

(2) For more information, see notably Taylor (1999).

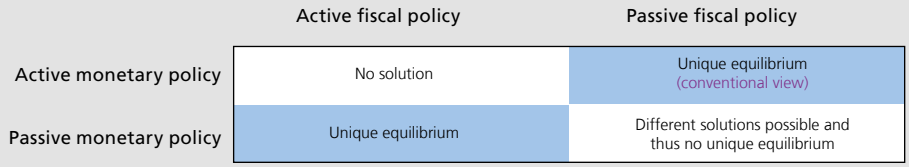
(3) Leeper argues that fiscal policy passively adjusts governments' primary budget surpluses to stabilise real debt and, in this respect, considers the monetary policy stance as an exogenous factor.

However, the monetary-fiscal theory contests the dominance of monetary policy. The fact that the price level (P) also features in equation 2 is emphasised here and implies that fiscal policy may also have an influence on it. This view argues specifically that price stability requires coordination between monetary and fiscal policies, although it might not always be explicitly visible. If governments do not follow the so-called passive rule, restrictive monetary policy will not be able to avert an inflation shock. Sims (2012) and Leeper (2016b) argue as follows: if economic agents are expecting the fiscal policy stance to remain unaltered following a rise in the policy rate, then government bond holders feel better off (they receive a higher rate of return and do not expect the government to raise taxes on the economy) and are therefore tempted to buy more goods and services. Eventually inflation will rise, which goes against the central bank's original objective. Translated into the more "mechanical" terms of equation 2, this means that an increase in P is the only means of stabilising the left-hand side when B increases and the right-hand side remains unchanged. In fact, the monetary-fiscal theory leaves no room for governments defaulting on debt denominated in their own currency because this theory assumes that countries with their own monetary policy want to avoid jeopardising their financial stability.

The monetary-fiscal theory thus provides a less common explanation for the high and accelerating inflation observed in Brazil in the 1980s. Loyo (1999) suggests that this bout of inflation can be explained by the combination of an active monetary policy and an active fiscal policy. By raising its interest rate, the central bank was striving to compress strong inflation. Yet, because the heavier interest burden was not expected to lead to any fiscal consolidation (in other words, the budgetary autority is not taking action to passively stabilise the real public debt), bond-holders felt they were better off, triggering a rise in inflation. So, in this episode, a more restrictive monetary policy led to an even bigger nominal debt and spiralling inflation. According to the monetary-fiscal theory, hyperinflation cannot just have a fiscal origin, as the conventional view proclaims, but can also have a monetary origin. In the first case, spiralling inflation results from the monetary financing of budget deficits, in the second case from the fiscal impact of restrictive monetary policy.

So, the monetary-fiscal theory does not consider equation 2 to be a budget constraint, but rather an equilibrium condition for price stability. To reach equilibrium, the public debt in real terms and inflation must both follow a stable or predictable path. In the monetary-fiscal theory (according to the classification of Leeper (1991), see also chart 4), this objective may be attained by a policy mix of an active monetary policy and a passive fiscal policy (corresponding to the conventional view) as well as by a

CHART 4 DIFFERENT POLICY COMBINATIONS[1] POSSIBLE UNDER THE MONETARY-FISCAL THEORY



(1) Classification by Leeper (1991).

less common combination of a passive monetary policy and an active fiscal policy. The monetary-fiscal theory stresses that some degree of coordination between the two authorities is always necessary if one of them intends to stabilise the price path effectively. In the first policy combination, a restrictive monetary policy puts the brakes on inflation precisely because the government, in reaction to that policy, is assumed to build up primary surpluses. Likewise, an expansive monetary policy is inflationary because governments are supposed to reduce their primary surpluses. When drawing up the SGP rules, the European institutional framework actually foresaw the need for fiscal rules to ensure monetary dominance. However, in the second policy configuration (passive monetary policy and active fiscal policy), it is the budget authority that keeps inflation under control (by determining B and expectations concerning primary balances) while the monetary authority stabilises real debt passively by adjusting its monetary policy stance. This means that, by not reacting at all or insufficiently to inflationary shocks brought on by fiscal policy, the central bank staves off an acceleration of debt and inflation.

By giving free rein to the various interactions between monetary and fiscal policies, the monetary-fiscal theory thus offers a broad spectrum of paths that the economy can follow and which could either put it on track towards equilibrium or lead it away from equilibrium (see chart 4 for an overview). The monetary-fiscal theory thus supplements the conventional theory and gives a more complete picture of the complexity and different aspects of monetary-fiscal coordination.

1.3 What is the "right" view of the world?

The wording of this question is probably too polarising. Based on economic models, monetary policy just like fiscal policy does actually play a role in determining price stability in both theories. The monetary-fiscal theory gives fiscal policy an explicit role, whereas the pre-crisis consensus view does not give it any dominant role and rather tends to disregard it. The monetary-fiscal theory reveals that the conventional approach risks losing sight of some interactions between the two policy areas or making excessive assumptions about the appropriate behaviour of each authority (fiscal policy stabilises debt and monetary policy is able to adjust policy rates without restraint). These gaps certainly proved relevant. The next part of this article looks in more detail at some of the events that punctuated the crisis in the euro area and flagged up where the economic view advocated at the time and the European institutional framework fell short. The monetary-fiscal theory had already noticed the possibility of these problems, as pointed out by the very apt title of a paper by Chris Sims in 1999, "The precarious fiscal foundations of EMU", which would turn out to be quite prophetic. At the same time, the monetary-fiscal theory remains somewhat controversial, in that it is still difficult to implement and makes a range of strong assumptions (for example that it is impossible for a government to default). In certain situations, it can nevertheless provide some valuable insight. The following part will look at these particular cases in more depth.

2. The crisis has revealed gaps in the conventional view and in existing institutions

2.1 In the absence of monetary backing, a self-fulfilling debt crisis could emerge

The monetary-fiscal theory points out that euro area countries actually issue real debt rather than nominal debt. Their debt is in fact denominated in euros, and the issue of euros is not determined by the individual Member States. This situation puts the euro area countries in a more vulnerable position, as financial markets are capable of driving governments to the brink of default in this way.

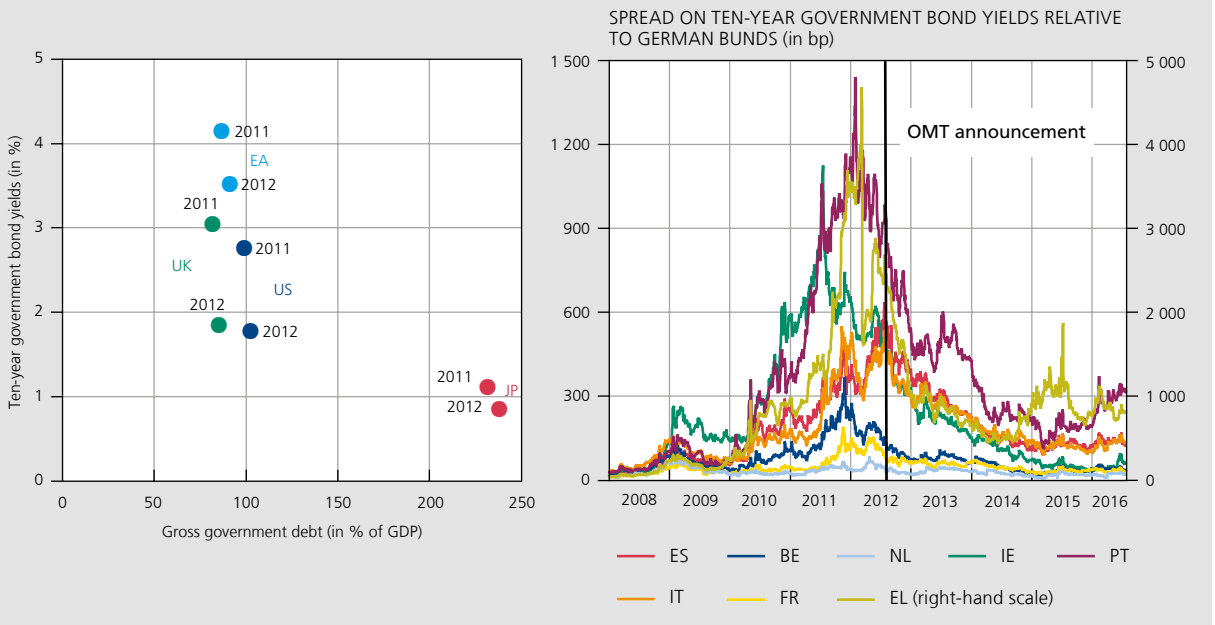
Equation 2 presented in chart 3 above can help to explain that. In order to maintain equilibrium, an increase in real debt needs to go hand in hand with expectations of higher primary surpluses in the future. If, however, it is assumed that a government does not envisage withdrawing resources from the economy or is not in a position to do so (in equation 2, the right-hand side is smaller than the left-hand side), the prospect of default emerges and investors demand higher risk premiums to cover this risk. The story is different when the debt is of a nominal nature. When nominal debt goes up, equilibrium can be re-established through future fiscal consolidation efforts but also via an increase in the price level. The nominal debt is after all just a claim on euros in the future; for the government of a country that has its own central bank, the domestic currency is theoretically available. Consequently, equation 2 can in principle always be respected, which as good as rules out any payment default [1]. The nominal government debt therefore presents no credit risk, although possibly at the expense of price stability.

The conventional view thus rules out this interaction between the government and the central bank for understandable fear of monetary financing and too high inflation. In order to ensure monetary dominance, it therefore calls for the establishment of independent central banks and in the euro area the ECB is even prohibited from monetary financing of public debt. The strict principles set out in the Treaty thus underline the very real nature of the euro area countries' public debt: they imply that the ECB – and for that matter other member countries and the European Union as a whole – would refrain from intervening if the government bond markets (and thus the single currency) were to come under pressure from financial markets. Default of a Member State was acknowledged as a possibility. This is less so in a country that has its own central bank, since the latter can in principle assume the role of lender of last resort on the government bond markets. Merely expecting that this will occur generally tends to have a stabilising effect [2]. The euro area countries were therefore susceptible to self-fulfilling market expectations that could turn a government liquidity crisis into a solvency crisis.

The sovereign debt crisis in the euro area has indeed made the lack of monetary backing all the more evident. While the fiscal fundamentals for the monetary union as a whole over the period 2010-2012 turned out to be no worse than in other advanced economies, the interest rates that euro area governments had to pay on their debt security

(1) The impossibility of government default is one of the key assumptions made by the monetary-fiscal theory.
(2) See also Draghi (2014).

CHART 5 GOVERNMENT DEBT RATIOS AND FINANCIAL TENSIONS



Sources: ECB, IMF, Thomson Reuters Datastream.

issues rose much more than elsewhere (see chart 5) because of the higher risk premiums. The self-fulfilling panic on the markets gained footing in vulnerable countries of the euro area, considerably widening the yield spreads on their government bonds vis-à-vis those from countries regarded as safe havens. While the uncertainty surrounding the sustainability of public debt was indeed justified in some euro area countries, the macroeconomic and financial fundamentals had not deteriorated to the point where such a sharp revaluation was justified. Alongside the prospect of governments defaulting, expectations also arose that some countries could be forced to leave the EMU. This would enable them, fully in line with the monetary-fiscal theory, to resort to using inflation as an instrument to stabilise real government debt. Apart from fears of an explicit markdown of the existing public debt (default risk), doubts about the irrevocability of the euro (redenomination risk) added to the upward pressure on interest rates on government bonds.

Since government bond rates usually serve as a benchmark for other market interest rates, the fragmentation of the bond markets has also disrupted the transmission and uniformity of monetary policy. The ECB has subsequently adopted several measures with the aim of countering the fragmentation in the euro area. In the end, it was the announcement, in the summer of 2012, of OMTs[1] – a programme of conditional purchases of government bonds of euro area countries under pressure – that broke the vicious circle between market expectations and government debt dynamics. In this way, the ECB has taken on the role of lender of last resort on the government bond markets, showing that it was ready to and capable of nipping any (unjustified) attack on a Member State's public debt in the bud.

The OMTs therefore provide an instrument for safeguarding the stability of the financial system in the short term. Long-term solvency, however, requires active efforts to be made by the governments themselves. This principle is not just embodied in the OMT design – the asset purchases can only be made if the countries in question respect the conditions set out in a macroeconomic adjustment programme – but also in the European institutional framework. The strict budgetary rules of the SGP provide for this, for example, but they unfortunately came up short because they were not binding enough. Moreover, it should be pointed out that, on the eve of the crisis, most euro area countries' public finances were not deemed to be problematic. In several countries, concern about public finances only emerged after governments were forced to face up to the repercussions of a burst credit bubble, not only on the macroeconomic front but also with respect to the need to save domestic banks in trouble. Combined with high interest rates reflecting panic on the markets, sluggish economic growth has exerted additional pressure on the sustainability of the government debt. This underlines the importance of monitoring and safeguarding macroeconomic and financial stability, both for public finances and monetary policy. Since the crisis, several initiatives have been taken to this end at the European institutional level. The creation of a banking union should improve supervision of the banking sector and facilitate the winding-up of failed credit institutions without the government having to intervene. The establishment of the European Stability Mechanism (ESM) – which provides conditional financial assistance to countries in difficulty – helps the euro area Member States to better guard against major asymmetric shocks. Lastly, the economic governance has been expanded, and the imbalances in the private sector – such as the build-up of excessive debt for instance – are now being monitored.

2.2 The return to 2 % inflation : does fiscal policy also have a role to play ?

Just like governments, who may struggle to garantee the sustainability of their debt positions when they fall victim to a self-fulfilling market panic, a central bank may, in the event of a deflationary dip in the economy, encounter difficulties in steering real interest rates when for example its policy rate is close to its lower bound (as in the case of the euro area)[2]. Other policy areas may then assist to achieve the objective of the other policy. This insight is a cornerstone of the monetary-fiscal theory which gives full recognition to the essential role of policy coordination, but it is only recently that it has taken on importance in the conventional view, precisely because of the confrontation with exceptional situations. This latter view gives fiscal policy an important role in absorbing the surplus capacity left in the economy when monetary policy starts to hit limits. The monetary-fiscal theory comes to a more radical conclusion since, in such situations it assigns a dominant role to fiscal policy in guaranteeing that inflation stays on a stable and predictable path. Before looking more closely at a potential role for fiscal policy in absorbing the macroeconomic imabalance between savings and investment, the article briefly sets out how the Eurosystem turned out to be virtually the only actor stimulating the recovery in the euro area.

(1) The OMTs are in conformity with European law and, more particularly, do not go against the prohibition of monetary financing since the asset purchases are made on the secondary and not the primary market, are subject to strict conditions that must preserve the incentive for countries to keep their public finances sound and are carried out with a view to safeguarding price stability in the medium term. To date, the OMTs have not yet been activated.

(2) For a description of the challenges that the lower bound on policy rates pose for monetary policy, see for example box 1 in the Annual Report of the National Bank of Belgium (NBB, 2015) and box 1 in Cordemans *et al.* (2016).

In the euro area (from 2009 up to now), monetary policy has been following a practically constant expansive stance, while fiscal policy is less steady

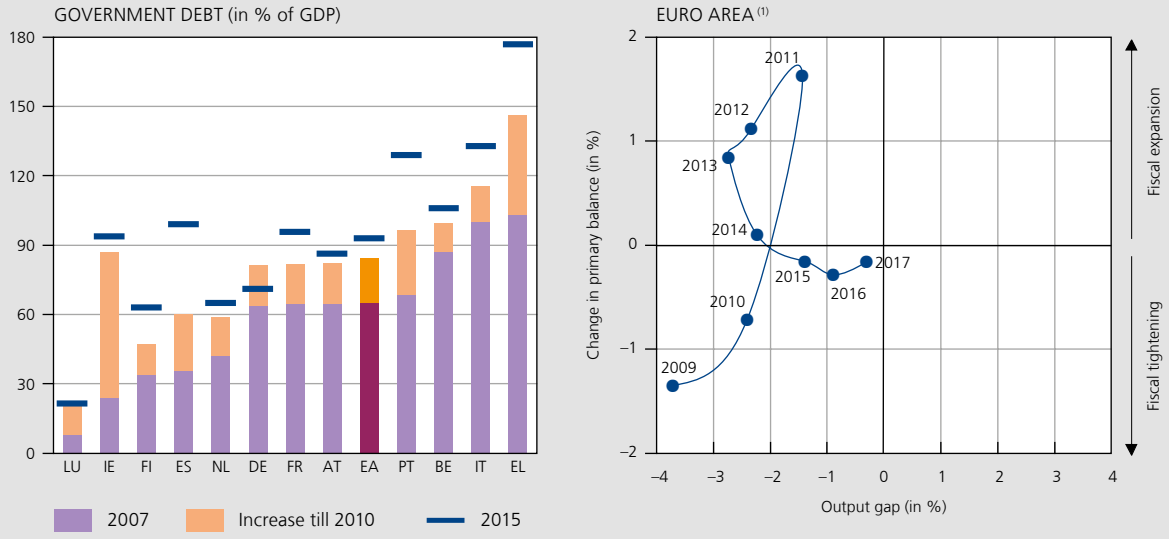
Generally speaking, three phases can be observed in the fiscal policy conducted in the monetary union as a whole (see chart 6): a stimulus phase between 2009 and 2010, a consolidation phase from 2011 to 2013 and more recently, a phase where fiscal policy has followed a more neutral stance. In this regard, changes in the primary government balance adjusted for cyclical fluctuations (the variable appears on the y-axis) are looked at. This balance can be considered a gauge of discretionary fiscal action since it does not take account of either interest charges on the government debt or the impact of the automatic stabilisers.

During the first phase of the crisis, both monetary and fiscal policy measures were adopted in a bid to soften its impact. So, the ECB started by lowering its policy rates in October 2008 before implementing an arsenal of policy measures so that this monetary stimulus would also feed through to households and businesses, despite the turmoil raging in the financial system. More or less at the same time, the European Commission launched its "European Economic Recovery Plan" that has helped to coordinate the discretionary stimulus programmes at both national and European level (given the depth of the recession, automatic stabilisers on their own would not have been enough). The rapid and robust recovery of economic activity which began in late 2009 (see chart 1) proves that this policy mix did indeed bear fruit.

However, as of end-2010, fiscal policy entered a consolidation phase. On the one hand, panic on the financial markets (see section 2.1) forced governments to cut their spending. Drastic budget consolidation measures were required to reduce the uncertainty about the sustainability of government debt and the resultant high risk premiums. On the other hand, the SGP rules required the stimulus to be reversed in due course so that the budget authorities could once again focus their efforts on maintaining sound public finances. It was thought that this was the most efficient way in which governments could help guarantee macroeconomic stability in the longer term. Academic research [1] also found that the short-term effects of a consolidation policy on activity are not necessarily negative (in other words, the fiscal multiplier can also be negative) – as long as it involves adjusting public expenditure and not taxation [2]. A strengthened European fiscal governance framework [3] that puts the emphasis on budgetary discipline – certainly in rhetorical terms – has thus seemed to kill two birds with one stone: encouraging sustainable

(1) See, for example, Alesina and Ardagna (2010) and Alesina *et al.* (2012).
(2) There are several mechanisms that explain the stimulative effect of a fiscal consolidation. For instance, lower public expenditure implies lower taxation in the future, which makes households revalue their permanent income and step up their consumption. A financially sound governement also instils more confidence, which in turn should stimulate consumption and investment.
(3) See, for example, Melyn *et al.* (2015).

CHART 6 EXCESSIVE DEBT COMPELS FISCAL CONSOLIDATION



Source: EC.
(1) The data for 2016 and 2017 are forecasts.

debt reduction without weighing down economic activity, or indeed even helping it.

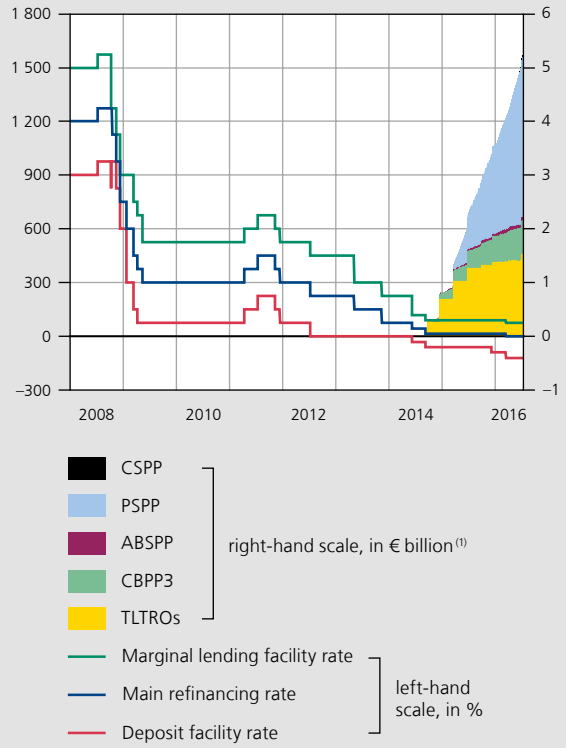
However, chart 6 also shows that the fiscal consolidation phase running from 2011 to 2013 took place in the context of a negative output gap. More recent studies, both theoretical and empirical[1], suggest that, in periods of deep recession, when production capacity is under-utilised and monetary policy has more difficulty offsetting any new negative macroeconomic shocks, a fiscal contraction would hamper economic growth more than in normal times and thus certainly more than in the "expansive consolidation" perspective. Conversely, a higher positive multiplier also implies that a discretionary government stimulus in times of crisis can be a lot more powerful than in normal times (see below). So, there is a growing clamour for fiscal expansion. The modified dialogue of the IMF, among others, which has become more nuanced since the crisis, fits into this picture.

At the euro area level, however, one cannot yet speak of an expansionary fiscal policy. The fiscal stance has become more neutral though since 2014 (and it is expected to stay that way) as the financial tensions had abated significantly and, in many cases, considerable fiscal efforts have been made. Overall, from late 2010 to 2015, monetary policy largely remained the only active player stimulating the recovery. In the first instance, the Eurosystem further expanded its accommodating policy by again lowering its short-term policy rates and introducing balance-sheet measures aimed at transmitting this stimulus uniformly to the rest of the economy. However, by the end of 2014, policy rates were approaching their lower bound, which meant that conventional monetary policy was beginning to reach its limits. In a context of persistently low inflation forecasts and moderate growth dynamics, the ECB was compelled to provide further stimulus and thus started implementing its arsenal of non-standard balance-sheet measures (see chart 7)[2].

Thus, the Eurosystem launched its targeted longer-term refinancing operations (TLTROs) in 2014, which enabled the banks to get cheap long-term financing, albeit on condition that they step up their lending to the private sector. Moreover, the Eurosystem started buying up assets like asset-backed securities, covered bank bonds, sovereign bonds and, more recently, non-financial private sector bonds. By doing so, monetary policy has tried to exert pressure on the whole spectrum of interest rates rather than just steering short-term rates. Once these more favourable borrowing conditions feed through to households and firms, they will boost consumption and investment and thus bring inflation back to a level close to 2 %[3].

With the introduction of these non-conventional measures, the central bank has shown that neither its willingness to act nor its arsenal of instruments for stimulating the economic recovery are yet exhausted. However, as these instruments are new and have not yet been put to the test, it is harder to assess their impact. This can add to the uncertainty among economic agents, in itself unfavourable to economic growth, so that it cannot be excluded that these measures turn out to be less efficient than traditional monetary policy. Moreover, these balance-sheet measures can be accompanied by side effects, another reason why they are rightly qualified as

CHART 7 MONETARY POLICY STIMULUS



Sources: ECB, Thomson Reuters Datastream.

(1) The covered bond purchase programme (CBPP3) started in October 2014, the asset-backed securities purchase programme (ABSPP) followed in November 2014, the public sector purchase programme (PSPP) in March 2015 and the corporate sector purchase programme (CSPP) in June 2016. The first series of TLTROs was launched in September 2014 and the second one in June 2016. The chart reflects the sum of the two.

(1) For theoretical studies, see for example Christiano *et al.* (2011) and Woodford (2011). For empirical research, see for example Blanchard and Leigh (2013) and Auerbach and Gorodnichenko (2012).

(2) For more information or the non-standard balance-sheet measures, see the discussion of euro area monetary policy in the Annual Report of the National Bank of Belgium (NBB (2015) and NBB (2016)).

(3) For more information about operating differences between the traditional monetary policy instrument, notably the policy rate, and the new balance-sheet measures, see Cordemans *et al.* (2016).

non-conventional measures. With inflation running at below-target levels for several years now (see chart 2) and a negative output gap for seven years (see chart 6), additional demand-support measures from other policy areas are thus welcome. So, since the end of 2013, the Governing Council, in the introductory statement made at the end of the monetary policy meetings, has not only insisted on the importance of fiscal consolidation, but also on its composition, which must be growth-friendly. In more recent statements, the Council has emphasised that fiscal policy has to support the economic recovery, especially when there is room for budgetary manoeuvre.

What does eonomic theory say about a bigger stabilising role for fiscal policy ?

The pre-crisis conventional view did not give a major role to discretionary fiscal policy in macroeconomic stabilisation, but the recession changed this. It is mainly in extreme situations that some form of discretionary fiscal policy may be beneficial for supporting aggregate demand. As mentioned above, fiscal stimulus during a deep recession can have a more positive effect on economic activity. Studies highlight particularly that, when monetary policy encounters its limits, the short-term fiscal multiplier can be higher than in normal times. Recent findings thus corroborate ideas going back to Keynes, on the importance of a fiscal expansion when the central bank has exhausted all its means of of relaxing monetary policy.

On the basis of a model developed by Erceg and Lindé (2014) that is both stylised (and therefore simplified) and calibrated (i.e. based on selected parameters that are not estimated but still plausible), the different impact of a government stimulus (in particular a temporary increase in public expenditure of 1 % of GDP) is shown here. It is worth pointing out that, in this model, the sustainability of public finances is a given : following the fiscal stimulus economic agents expect the government to return to budget balances that will keep the debt on a sustainable path in the longer term. The model therefore fits in with the conventional view, as the fiscal policy is passive. It should also be noted that the model-based simulations primarily serve to explain qualitative differences in the magnitude of the fiscal multiplier depending on the various scenarios and not to put a precise figure on its size.

In normal times (see blue line in chart 8), the central bank counters the inflationary effect of a fiscal expansion by raising its policy rate, which enables it to stabilise inflation and the output gap. As inflation remains unchanged, a higher nominal rate leads to a higher real interest rate, which slows down private demand and results in a multiplier of less than 1. This specific case gives a multiplier of 0.2 on impact (see upper right-hand graph). A negative demand shock that weighs so heavily on economic activity and inflation that it pushes the policy rate down towards its lower bound, radically alters the impact of a fiscal expansion. In the simulation, the recession prevents the central bank from raising its nominal rate for two years[(1)]. In this scenario, the inflationary impact of the fiscal stimulus pushes down the real interest rate, which in turn boosts private consumption and investment and thus leads to a fiscal multiplier higher than 1 (here, its value at impact is 2, see upper right-hand graph again). The longer the central bank is constrained by the lower bound (and so the deeper the recession), and the stronger the inflation response, the higher the multiplier. More complex models that take account of e.g. households and/or companies facing liquidity or credit constraints produce even higher multipliers.

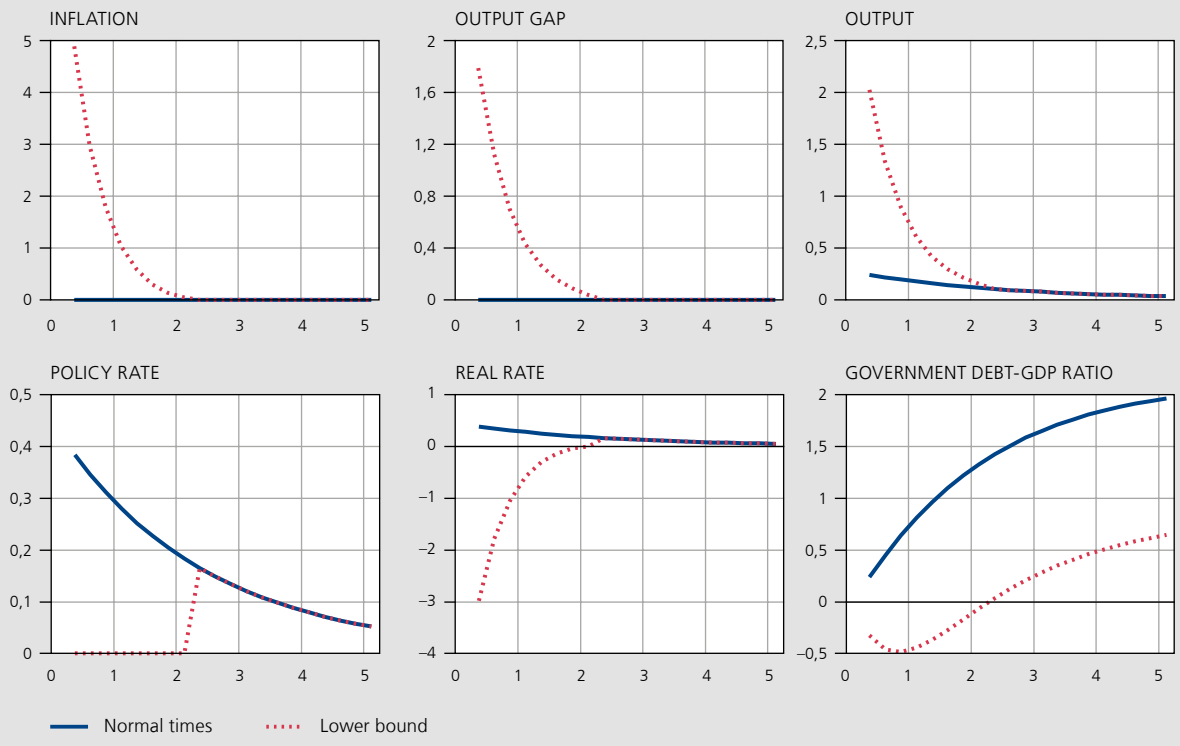
A higher multiplier in bad times also means that a fiscal expansion will not necessarily increase the government debt, on the contrary (see lower right-hand graph). Compared with normal times, a stimulus of the same size should generate higher tax revenue in crisis times, lower interest charges should compress public expenditure and the positive impact on GDP should reduce the debt/GDP ratio. Although not taken into account in this model, a fiscal expansion can also be beneficial for financial stability, as long as it does not undermine confidence in the sustainability of public finances. If the fiscal expansion is sizeable, it can shorten the period in which the central bank sees its scope of action limited by the lower bound and therefore speed up the exit from the low interest rate environment[(2)].

In fact, the model developed by Erceg and Lindé (2014) is a model that embodies the consensus view : the central bank actively ensures price stability (and consequently macroeconomic stability in the broad sense), while (discretionary) fiscal policy passively controls the debt ratio. Recently, the conventional view has qualified that, in exceptional circumstances – such as at the lower bound –, fiscal policy can also be used for guaranteeing macroeconomic stability without however losing sight of the objective of ensuring the sustainability of public finances. The monetary-fiscal theory, which does not set this division of tasks in stone, emphasises from the outset the dominant stabilising role of fiscal policy in a lower bound environment. The mechanism is nonetheless different : instead of a discretionary fiscal stimulus which is

(1) The fiscal expansion considered in this simulation does not have any impact on this timespan.

(2) For an overview of the risks for financial stability that the low interest rate environment entails, see for instance Boeckx *et al.* (2015).

CHART 8 IMPACT OVER FIVE YEARS OF A TEMPORARY INCREASE IN PUBLIC EXPENDITURE



Source: Erceg and Lindé (2014).

expected to be scaled back in the future, it attributes a more radical role to fiscal policy. It should provide a large-scale stiumulus specifically aimed at guaranteeing price stability (see Sims, 2016).

In a lower bound scenario, this theory reckons that the conventional combination of active monetary policy and passive fiscal policy is unrealistic. Monetary policy *de facto* risks becoming passive (the central bank cannot cut its policy rate any further, or in a situation of abundant liquidity, additional M no longer has any impact on the price level in equation 1, see chart 3) and is no longer able to guarantee price stability[1]. Likewise, if the budgetary authority is perceived as being passive, the economy may follow an unstable path, as this combination of passive policies will have difficulty halting a deflationary spiral (resulting from a number of different causes). The passive nature of the budgetary authority notably implies that a rise in the real debt ratio (given that the price level is falling) must be accompanied by growing primary surpluses (equation 2 thus stays an identity, see chart 3). Sims (1999) argues that, in a deflationary depression – when government debt ratios are definitely on the rise too –, a strict interpretation of the original rules of the SGP would impose precisely a passive fiscal policy of this kind. On the other hand, price stability in the monetary-fiscal framework rightly calls for a credible change of regime in favour of an active fiscal policy when monetary policy is no longer able to work actively enough: governments must reduce their primary surpluses without this requiring a full consolidation in the future. If this is perceived as credible by the private sector, this measure should put a stop to a deflationary trend and the higher price level should help stabilise the real debt.

Thus it appears that there is a role reserved for discretionary fiscal stimulus in a lower bound environment. But some nuance and caution is required.

A few comments

First of all, the crisis did not settle the debate on the size of the short-term fiscal multiplier (generally low in normal

(1) It is worth pointing out that the monetary-fiscal theory does not take account of the non-standard monetary policy measures enabling the central bank to continue to steer long-term interest rates and thus to provide further economic stimulus.

times) and, to a lesser extent, its sign (usually positive). A whole host of factors come into play here – notably the monetary policy stance, but for instance also the position in the economic cycle, the composition and duration of fiscal measures as well as the initial debt level[1]. Countries with a high debt ratio may thus have a smaller, or even negative, multiplier. Governments of most euro area countries remain thus confronted with a delicate balancing exercise between preserving sustainability, on the one hand, and macroeconomic stability, on the other hand. Especially when budgetary room for manœuvre is limited, intelligent measures need to be adopted. A growth-friendly but budget-neutral change in the governement budget, on the expenditure side, could for instance consist of a shift from non-productive expenditure towards public investment. The multiplier for the latter generally tends to be high, and moreover can be further raised in an environment of low interest rates and under-utilisation of production capacity.

Next, the monetary-fiscal theory stresses that a fiscal expansion is in itself not necessarily a stimulant. Expectations (and consequently government communication too) about the future path of primary balances are just as crucial for a fiscal intervention to have the desired effect. If policy-makers want an increase in the debt to push prices up, they will have to put in place a credible communication strategy giving reassurances that there will be no future consolidation as a counterpart to the fiscal expansion and that monetary policy will tolerate the subsequent acceleration of inflation towards its target (which will in turn help stabilise the debt ratio).

An example drawn from the stock market world illustrates the crucial role of communication in determining the outcome of an action (see Cochrane 2011 and 2014). If a firm wants to push down the price of its shares to boost their marketability, it will announce a share split. By doing this, the number of shares increase without altering the revenue flows expected or forecast by the firm. The firm is very transparent about this in its communciation to market participants and thus the price per share will decline in a perfectly predictable way. In terms of fiscal policy and applied to equation 2 (see chart 3), the right-hand side remains unchanged (no future fiscal consolidation announced), so an increase in the nominal debt pushes up the price level while the real value of government debt, as with a share split, remains unaltered. If, however, a firm wants to raise real resources via a new share issue, it does its utmost to prevent the share price from declining, the latter meaning a dilution for existing shareholders. To this end, the firm strives to issue an amount of shares equivalent to the expected revenue from the new capital injection. Once again, it strives to convince investors of this via an appropriate communication strategy. In terms of equation 2 and fiscal policy, the right-hand side goes up proportionally as the government debt gets bigger. Consequenlty, the price level remains unchanged. Put in simple terms, the monetary-budgetary theory recommends that, when the central bank is no longer able to fully implement an active monetary policy, thus putting price stability at risk, governments should opt for a "public debt split", rather than a "public debt issue".

Lastly, the monetary-fiscal theory warns of the dangers associated with excessive fiscal inflation. This can arise quite suddenly owing to a simple downward revision of expectations concerning primary balances and thus even without any additional budget deficits occuring. While in the current context, additional inflation may be beneficial, the negative experience with debt monetisation has shown that too much proves to be harmful. Cochrane (2014) thus argues that clear communication by the government (ideally in consultation with the central bank) on the path of budget balances is of paramount importance for steering market expectations in such a way that fiscal policy has the desired effect on economic activity and inflation. In practice, however, that would require a radical change in the institutional framework. In the euro area, such close coordination certainly cannot be taken for granted because monetary policy, being set at the euro area level, has to take account of 19 national budgetary authorities and not just one federal budgetary authority. The following sub-section looks at how the institutional structure of the euro area influences the current policy mix and the options for change now being envisaged.

2.3 The European institutional framework and an optimal policy mix

The monetary-budgetary theory prescribes that price stability (and consequently macroeconomic stability too) always requires some coordination (at least implicit) between the monetary and budgetary authorities. The European institutional framework has not cast this insight aside but has not implemented it optimally either. It was in fact created solely with a view to staving off excessively high inflation; in other words, it was just like the conventional view ill-prepared for a scenario with too low inflation and interest rates at the lower bound. The following examines the way in which some aspects of the budgetary governance framework interact with monetary policy: the overriding attention given to securing sustainable budget positions rather than macroeconomic stabilisation (at least

(1) For an overview of the impact of various fiscal instruments, see for example Nautet *et al.* (2014) and Checherita-Westphal *et al.* (2015).

in theory), a perception of asymmetry and the still purely national focus, all of which make it hard to actually implement an appropriate fiscal stance for the euro area.

Focus on sustainable public finances

When the central bank is concerned about excessively high inflation, binding fiscal rules ought to guarantee an appropriate behaviour on the part of national governments. But, as already mentioned, the monetary-fiscal theory draws attention to the fact that these rules do not necessarily lead to the desired reaction when too low inflation becomes a preoccupation and when monetary policy is approaching its limits. It is therefore encouraging to note that the SGP sees a role for fiscal policy in supporting the economy, albeit on the strict condition that this does not jeopardise public finances.

On the one hand, there are no stimulus restrictions for countries with some fiscal space and, on the other hand, the rules also offer some flexibility for countries that have no or very little fiscal space. For instance, the reference value for the government deficit applies to the headline balance and not the primary balance. In a low interest rate environment where governments see their interest charges fall, this also means that the public authorities have more room for stimulus before overshooting the reference value. This is a prescription consistent with the monetary-fiscal theory which effectively suggests allocating the margin freed up by lower interest charges to smaller primary surpluses. Moreover, the 2005 reform of the SGP introduced the concept of a medium-term objective (MTO). It is in structural terms – and thus with the exception of cyclical effects and one-off factors – that the adjustments to the balance are requested with a view to attaining this objective. In this way, progress towards a sustainable government debt ratio is guaranteed and, at the same time, some demand-side support is possible since automatic stabilisers can work freely and thus less effort is required in bad times. As the structural balance also comprises interest charges, there is in this case too some tolerance for lower interest charges leading to less ambitious targets for primary balances. More recently, the 2011 reform provides for a more general escape clause from fiscal adjustment requirements. Countries can invoke this clause when exceptional circumstances beyond their control are affecting the economy. Furthermore, in 2015, the application of the fiscal rules was relaxed for countries falling under the preventive arm of the SGP. Depending on the position in the economic cycle, a matrix indicates that, in bad times, less effort is needed without the rules being broken. Under the corrective arm of the SGP, Member States may ask to extend the deadline set for correcting their excessive budget deficit.

However, the wider possibility since the crisis of taking stability considerations into account also raises the risk that Member States with no budgetary room are nevertheless authorised to step up spending while countries with budgetary room do not support aggregate demand. This not only raises the question whether the fine balance the SGP aims at between the sustainability of debt in the long term and macroeconomic stabilisation in the short term is (further) undermined in practice, but also whether countries with some fiscal space must be encouraged to make use of it so as to move towards a more expansive fiscal stance for the euro area as a whole. This argument is examined below.

Asymmetry and national focus

Although the SGP has been reformed since the crisis, it is still characterised by a degree of asymmetry – for countries that overshoot the targets, there is not only no limit to stimulate, but no incentive either – and a strictly national focus – so fiscal policy for the monetary union as a whole is simply the sum of individual Member States and is thus not set directly. As a consequence, certain positive spillover effects between countries and policy areas do not materialise. The ECB (2016) also suggests that these two features of the SGP do not necessarily lead to optimal results.

Take, for example, the fiscal consolidation efforts made by almost every country in the euro area since the end of 2010 (see chart 9). Even if this might possibly be justified from a national perspective, the simultaneous implementation of consolidation measures has slowed down the economic recovery[1]. With fiscal policy being more restrictive, it has fallen to the ECB to deal with these shocks so as to put the recovery back on track.

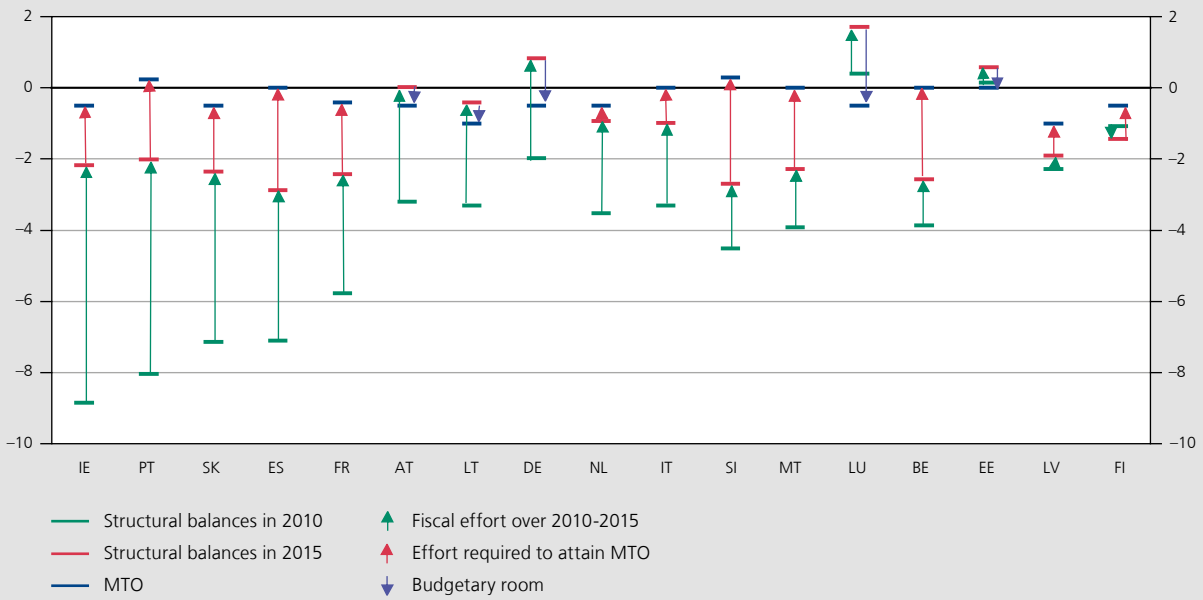
The more neutral fiscal stance for the euro area since 2014 seems to be appropriate but its composition is therefore not optimal (as repeatedly indicated by the Eurogroup)[2]. Countries that have some budgetary room are not applying it and are not obliged to this either (asymmetry concept), while countries that have no budgetary room do not always respect the rules of the SGP. Better coordination between countries thus seems desirable, as a

(1) A study by In't Veld (2013) thus points to the large negative spillover effects caused by the simultaneous implementation of consolidation programmes in the euro area coutries.

(2) See for instance the Eurogroup's statement on the draft budgetary plans for 2016 on 23 November 2015.

CHART 9 ASYMMETRIC FISCAL RULES

Structural balances and MTOs[1] (in % of potential GDP)



Source: EC.

(1) Countries are ranked according to the size of the fiscal improvement observed over the period 2010-2015. Greece and Cyprus are not included because the former is still subject to an adjustment programme and the latter has recently closed such a programme. The MTOs are the new objectives as set in the assessment of the 2016 Stability Programmes and approved by the EC.

fiscal stimulus in the first group would make it easier to eliminate macroeconomic and budgetary imbalances in the other Member States and would create the conditions for a return to price stability.

Blanchard *et al.* (2016), for instance, show that, in a context where interest rates are at the lower bound, an increase in public expenditure in euro area countries with more fiscal space exerts a positive effect on their output and inflation, as well as on output and prices in countries that have been affected the most by the crisis. More specifically, a stimulus in the core euro area countries to the tune of 1 % of EMU's GDP would boost output there by almost 3 % and by just over 1 % in the most vulnerable countries. Because of the lower bound, the fiscal stimulus pushes down the real interest rate in the two regions. In addition, economic activity in the vulnerable countries is supported by stronger net exports owing to the deterioration of the terms of trade and higher domestic demand in the stronger Member States. Arce *et al.* (2015) also reckon that in a lower bound context, a temporary increase in public spending in the stronger Member States exerts substantial positive spillover effects on the vulnerable countries. In addition, if monetary policy backs up this fiscal stimulus with a policy of forward guidance – in other words, the central bank announces that it intends to raise its policy rate a bit later than prescribed by the standard policy rules –, the positive effect already exerted by the national measures is strengthened.

Even if the above-mentioned spillover effects, notably via trade relations, remain limited in size, a fiscal stimulus sends out a positive signal at the aggregate level. It indicates that the euro area is able and willing to call on all policy areas to guarantee macroeconomic stability.

The fiscal stance of the monetary union as a whole as well as its composition, and the interaction with other policy domains thus requires more attention. The establishment of a European Fiscal Board, as set out in the Five Presidents' Report (EC, 2015), is a first step in this direction. Initially, the Board is to advise the European Commission on the appropriateness of the fiscal stance in the Member States as well as in the Monetary Union. By doing so, the aggregated fiscal policy should better fit in with the monetary policy set by the ECB for the euro area and the fiscal effort should be better divided across countries. The ambitions of the Five Presidents' Report go even further: they propose in the longer run setting up a Treasury for the euro area and a central macroeconomic

stabilisation function. The creation of these central fiscal policy instruments should help to better absorb idiosyncratic shocks as well as steer the aggregate fiscal stance more appropriately. That must contribute to implementing a more effective macroeconomic policy mix, in the light of an integral analysis of monetary and fiscal policy.

Conclusion

The crisis has revealed the many interactions between monetary and fiscal policies. After the Eurosystem had already announced back in 2012, in the wake of the sovereign debt crisis, that it was prepared to make targeted interventions on the market of government bonds to guarantee the irreversibility of the euro, it has, in response to the persistently low inflation, set up a large-scale government bond purchase programme. The role attributed to fiscal policy in absorbing suplus capacity in the economy and also in getting inflation back on track to 2 % is another example of an interaction between the two supposedly independent policy areas. While, after the sovereign debt crisis, the focus was mainly on reducing budget deficits, the question that arises today is how an appropriate fiscal stance for the Monetary Union as a whole can contribute to a faster recovery and an inflation rate in line with the central bank's target.

By combining insight from the academic literature with the experience gained in the euro area throughout the crisis years, this article attemps to provide a non-exhaustive overview of how monetary and fiscal policy together determine the path of key macroeconomic variables.

According to the the conventional view, price stability must be guaranteed by monetary policy, which has all the necessary instruments to this end. Fiscal policy contributes by ensuring the sustainability of public finances. But the two policy areas nevertheless only focus on their own objective: they are neither in a position to nor allowed to help one another. This view was also translated into the original European institutional framework which features key elements as an independent central bank, a formal prohibition of monetary financing and strict budgetary rules based on preventing any slippage in public finances.

In the literature on the "fiscal theory or the price level" (which we refer to in this article by the wider term of monetary-fiscal theory), however, this conventional view is just one of the possible policy constellations. This theory allows a wider range of behaviour of both fiscal and monetary policies, which is why it argues in favour of a joint analysis of the two policy domains. As there is no such joint analysis in either the conventional view or in the institutional architecture of EMU, both monetary and fiscal policies were put to the test by the crisis, as the central bank was constrained in lowering policy rates and governments saw liquidity probems turn into solvency problems. Monetary policy and fiscal policy have proved to be independent but also more closely connected; a more holistic approach has opened up some new insight.

Progress has certainly been made thanks to the various policy initiatives – for instance, the OMTs have been approved and the new European Fiscal Board should help work out an appropriate fiscal stance for individual Member States as well as for the Monetary Union, so that fiscal policy can align with monetary policy. EMU will nevertheless benefit from further steps towards a fiscal union as set out in the Five Presidents' Report. An integral analysis of monetary and fiscal policy can help effectively translate these proposals into concrete measures.

Bibliography

Alesina A. and S. Ardagna (2010), "Large changes in fiscal policy: Taxes versus spending", in *Tax Policy and the Economy*, NBER, 24, 35-68.

Alesina A., C. Favero and F. Giavazzi (2012), *The output effect of fiscal consolidations*, NBER Working Paper 18336.

Arce O., S. Hurtado and C. Thomas (2015), *Policy spillovers and synergies in a monetary union*, Banco de España, Working Paper 1540.

Aucremanne L., J. Boeckx and O. Vergote (2007), "Interest rate policy or monetary base policy: implications for a central bank's balance sheet", NBB, *Economic Review*, December, 17-26.

Auerbach A. and Y. Gorodnichenko (2012), "Measuring the output responses to fiscal policy", *American Economic Journal – Economic Policy*, 4, 1-27.

Baldwin R. and F. Giavazzi (2015), *The Eurozone crisis: A consensus view of the causes and a few possible solutions*, VoxEU ebook.

Bernanke B. S. (2004), *The great moderation*, Speech at the meeting of the Eastern Economic Association, Washington DC, 20 February.

Blanchard O. and J. Galí (2007), "Real wage rigidities and the New Keynesian model", *Journal of Money, Credit and Banking*, 39, 35-65.

Blanchard O., G. Dell'Ariccia and P. Mauro (2010), "Rethinking macroeconomic policy", *Journal of Money, Credit and Banking*, 42, 199-215.

Blanchard O. and D. Leigh (2013), "Growth forecast errors and fiscal multipliers", American Economic Association, *American Economic Review*, 103 (3), 117-120.

Blanchard O., C. J. Erceg and J. Lindé (2016), *Jump-starting the euro area recovery: would a rise in core fiscal spending help the periphery?*, *NBER Macroeconomics Annual 2016*, 31.

Boeckx J., P. Ilbas, M. Kasongo Kashama, M. De Sola Perea and C. Van Nieuwenhuyze (2015), "Interactions between monetary and macroprudential policy", NBB, *Economic Review*, September, 7-27.

Checherita-Westphal C., P. Hernández de Cos and T. Warmedinger (2015), *Fiscal multipliers and beyond*, ECB, Occasional Paper Series 162.

Christiano L. J., M. Eichenbaum and C. Evans (2011), "When is the government spending multiplier large?", *Journal of Political Economy*, 119(1), 78-121.

Cochrane J. H. (2011), "Understanding policy in the Great Recession: Some unpleasant fiscal arithmetic", *European Economic Review*, 55, 2-30.

Cochrane J. H. (2014), "Monetary policy with interest on reserves", *Journal of Economic Dynamics and Control*, vol. 49(C), 74-108.

Cordemans N., M. Deroose, M. Kasongo Kashama and A. Stevens (2016), "The ABC of quantitative easing or the basics of asset purchases by central banks", NBB, *Economic Review*, June, 29-41.

Draghi M. (2014), *Unemployment in the EA*, Speech at the Annual central bank symposium in Jackson Hole, 22 August.

EC (2015), *Completing Europe's Economic and Monetary Union*, Report by J. C. Juncker.

ECB (2016), "The euro area fiscal stance", *Economic Bulletin*, 75-96.

Eggertsson G.B. and P. Krugman (2012), 'Debt, deleveraging, and the liquidity trap : A Fisher-Minsky-Koo approach', *The Quarterly Journal of Economics*, 127(3), 1469-1513.

Erceg C. J. and J. Lindé (2014), "Is there a fiscal free lunch in a liquidity trap ?", *Journal of the European Economic Association*, 12(1), 73-107.

in't Veld J. (2013), *Fiscal consolidations and spillovers in the euro area periphery and core*, EC, Economic Papers 506.

Leeper E. M. (1991), "Equilibria under "active" and "passive" monetary and fiscal policies", *Journal of Monetary Economics*, 27, 129-47.

Leeper E. M. (2016a), *Real theory of the price level*, https : / / bfi.uchicago.edu / sites / default / files / file_uploads / Leeper_Background_3 %20copy.pdf.

Leeper E. M. (2016b), *Rethinking the central bank's mandate (and other things)*, Presentation at the Riksbank's conference on Rethinking the central bank's mandate, Stockholm, 3-4 June.

Loyo E. (1999), *Tight money paradox on the loose : A fiscalist hyperinflation*, Harvard University.

Melyn W., L. Van Meensel and S. Van Parys (2015), "European governance framework for public finances : presentation and evaluation", NBB, *Economic Review*, September, 73-99.

Mersch Y. (2016), *Monetary policy in the euro area : Scope, principles and limits*, Keynote speech at the Natixis Meeting of Chief Economists, Paris, 23 June.

Nautet M, R. Schoonackers, P. Stinglhamber, and L. Van Meensel (2014), "Is governement spending the key to succesful consolidation ?", NBB, *Economic Review*, June 29-44.

NBB (2015), *Report 2014*.

NBB (2016), *Report 2015*.

Praet P. (2015), *Public sector security purchases and monetary dominance in a monetary union without a fiscal union*, Speech at the Conference : The ECB and Its Watchers XVI, Frankfurt am Main, 11 March 2015.

Sargent T.J. and N. Wallace (1981), 'Some unpleasant monetarist arithmetic' Federal Reserve Bank of Minneapolis, *Quarterly Review*, Fall.

Sims C.A. (1999), "The precarious fiscal foundations of EMU", DNB, *De Economist*, 147(4), 415-436.

Sims C.A. (2012), "Gaps in the institutional structure of the euro area", Banque de France, *Financial Stability Review*, 16, 217-222.

Sims C.A. (2016), *Fiscal policy, monetary policy and central bank independence*, Speech at the annual central bank symposium in Jackson Hole, 26 August.

Taylor J.B. (1999), *A historical analysis of monetary policy rules*, NBER Working Paper, 6768.

Woodford M. (2011), "Simple analytics of the government spending multiplier", *American Economic Journal : Macroeconomics,* 3(1), 1-35.