European Council: wait and sink?

By Jérôme Creel, Paul Hubert and Francesco Saraceno

The European Council meeting being held at the end of the week should have been spent, according to the wishes of the French authorities, on renegotiating the European Fiscal Compact adopted on 2 March 2012. However, renegotiation has not been on the agenda. Alas, the Fiscal Compact does need to be re-opened for debate: it should be denounced for being poorly drafted, and its overly restrictive character needs to be reviewed; ultimately, the text should be amended. The focus of the debate on the structural deficit rule, which is unfairly described as the "golden rule", is wide of the mark in so far as it is the rule on the reduction of public debt that is the more restrictive of the two rules included in the Fiscal Compact. This is the rule that demands to be discussed, and urgently, in order to avoid sinking deeper into a contagion of austerity plans that are doomed in advance…

The conflict over European growth between the French and Italians on the one side and the Germans on the other was probably defused by the agreement late last week with Spain in favour of a coordinated European recovery plan. The plan represents 1% of Europe's GDP, *i.e.* 130 billion euros, though its contours and funding remain to be clarified. The slogan of the European Council has thus been, by a process of elimination, "banking union", in an effort to prevent a new wave of banking and financial crises in the European Union. Is the creation of a banking union important? Certainly. Is it urgent? Less so than a return to growth, which, while it certainly cannot be decreed, can be prepared. Given the state of the current Fiscal Compact, we can conclude that what is being prepared is not economic growth, but recession [1].

The Fiscal Compact, which is contained in Title III of the *Treaty on Stability, Coordination and Governance in the Economic and Monetary Union*, explicitly includes two fiscal rules. The first clarifies what constitutes a budgetary position that is "balanced or in surplus", a term enshrined long ago in the Stability and Growth Pact. According to the Fiscal Compact of March 2012, a budgetary position that is "balanced or in surplus" means a structural deficit of at most 0.5% of GDP. The structural deficit is the cyclically adjusted public deficit, *i.e.* adjusted for the well-known automatic stabilizers; this includes interest charges, among other items. When the structural deficit is exceeded, apart from exceptional circumstances, *e.g.* a "significant" downturn in activity, an automatic adjustment mechanism, whose nature is not specified, must bring it back below this limit. The structural deficit rule is relaxed for Member States whose public debt is below 60% of GDP: the structural deficit ceiling is increased to 1% of GDP.

The second fiscal rule is also a requirement for euro zone Member States with a public debt in Maastricht terms that is greater than 60% of GDP. In 2012, this rule applies to 12 out of the 17 Member States of the euro zone. This second rule aims to reduce the public debt by one-twentieth every year. Unfortunately, the text adopted is poorly written and opens the door to different interpretations, as we show below. It is therefore inapplicable. Even worse, given the current state of the economy, this rule is the more restrictive of the two rules in the Fiscal Compact. It is therefore urgent to pay attention to it and modify it to make it enforceable.

According to Article 4 of the Treaty, "When the ratio of a Contracting Party's general government debt to gross domestic product exceeds the 60% reference value…, that Contracting Party shall reduce *it* at an average rate of one-twentieth per year as a benchmark…." The problem is that "it", which we have put in italics, refers to the public debt ratio rather than to

the difference between the public debt and the 60% reference value. So, in 2012 should Germany, with a public debt in 2011 of a little more than 80% of GDP, reduce its debt by 4 GDP points (one-twentieth of 80% of GDP) or by 1 GDP point (one-twentieth of the difference with the reference value of 60% of GDP)? Legally, it is essential that a clear answer can be given to this kind of question.

Moreover, the Fiscal Compact is silent on the nature of the surplus to be used to reduce the debt: if, to leave room for maneuver in case of a cyclical deficit, this rule were to address the structural deficit – which would therefore need to be explained in the Compact – the debt rule would be even more restrictive than the golden rule: a structural *surplus* would be systematically required to reduce the public debt to 60% of GDP in the 12 Member States whose debt exceeds the reference value. Again, the formulation needs to be clear.

Suppose now that the "it" in Article 4 concerns the difference between the debt and the reference value, and that the rule on debt reduction applies to the entire public deficit. The question can then be asked, which of the two rules – the "golden rule" or the debt reduction rule – places greater restrictions on the Member States, and thus needs to be applied. We have set out, in an appendix [2], the small set of fiscal rules compatible with the Fiscal Compact. The total deficit is the sum of the cyclical deficit and the structural deficit. The cyclical deficit depends on the difference between actual and potential GDP, *i.e.* the output gap, which has an elasticity of 0.5 (average elasticity customary in the literature on the European countries, cf. OECD). The "golden rule" relates only to the structural deficit, while the debt reduction rule concerns the total public deficit, and thus depends on both the output gap and the structural deficit.

For what values of the public debt and the output gap is the "golden rule" more restrictive than the debt reduction rule? Answer: when the output gap is greater than 1 plus one-tenth

of the difference between the original debt and the reference value. This means that, for a country like Germany, the debt reduction rule would predominate over the "golden rule" except in cases of very high growth: the real GDP would have to be at least two points higher than the potential GDP. According to the OECD economic forecast published in May 2012, Germany's output gap in 2012 will be -0.8. The debt reduction rule is thus much more restrictive than the "golden rule". This is also true for France (debt of 86% of GDP in 2011), which would have to have an output gap of at least 3.6 points for the "golden rule" to be binding; yet the OECD forecasts an output gap of -3.3 in 2012. The same holds true for all the countries in the euro zone with a debt greater than 60% of GDP, without exception.

Except in cases of very strong growth, the debt reduction component dominates the structural deficit component. Yet it is the latter that is the focus of all the attention.

When a treaty is open to such differences in interpretations, isn't it normal to want to revise it? When a treaty requires intensifying austerity measures in an area like the euro zone, whose GDP is almost 4 percentage points below its potential, according to the estimates of an organization, the OECD, that is generally not suspected of overestimating the said potential, is it not desirable and urgent to renegotiate it?

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[1] A recent post emphasized the risks of social instability and the potential losses that might result from austerity-induced contagion in the euro zone (*cf*. Creel, Timbeau and Weil, 2012).

[2] Annex:

We start by defining with *def* the total public deficit, which includes a structural component *s* and a cyclical component *dc*:

$$def = s + dc$$

All the variables are expressed as a proportion of GDP. The cyclical component is composed of the variation in the deficit that occurs, thanks principally to the action of the automatic stabilizers, when the economy deviates significantly from its potential. A reasonable estimate is that the deficit increases by 0.5 point per point of lost output. The cyclical component can thus be expressed as:

$$dc = - 0.5\ y$$

where we define *y* as the output gap, *i.e.* the difference between GDP and its potential level.

The rules introduced by the fiscal compact can be expressed as follows:

$$s_1 < 0.5,$$

that is, the structural deficit can never exceed 0.5% of GDP (s_1 refers to the first aspect of the rule), and

$$def = - (b_0 - 60)/20,$$

that is, the total deficit must be such that the public debt (expressed as a proportion of GDP) is reduced every year by one-twentieth of the difference between the initial public debt (b_0) and the 60% reference level. The debt rule can thus be re-written in terms of the structural deficit as:

$$s_2 = def - dc = 0.5\ y - (b_0 - 60)/20.$$

We thus have 2 possible cases for when the structural deficit component is less restrictive than the debt reduction component:

Case 1

$s_1 < s_2$ if $y > 1 + (b_0 - 60)/10$.

Assume the case of a debt level like Germany's (b_0 = 81.2 % of GDP). Case 1 implies that the structural deficit component will be less restrictive than the debt reduction component if and only if y > 3.12%, that is, if Germany has a GDP that is at least three points higher than its potential. If a country has a higher level of debt (*e.g.* Italy, at 120% of GDP), then y > 7%!

Case 2

If the debt reduction rule concerns the structural deficit (rather than the total public deficit), then we have:

$s_1 < 0.5$

and

$s_2 = -(b_0 - 60)/20$

In this case, $s_1 < s_2$ if $1 < -(b_0 - 60)/10$, which will never happen so long as the public debt is greater than the reference level.

A boost for the minimum wage or for income support?

By Guillaume Allègre

The government has made a commitment to an exceptional, "reasonable" boost to the French minimum wage, the "SMIC", and to indexation based on growth, and no longer just on workers' purchasing power. In *Les Echos*, Martin Hirsch has argued for strengthening the RSA [the French income support scheme] rather than the SMIC. The point is not to oppose the working

poor, the target of the RSA, and low wages: redistribution policies need to attack, not just poverty, but inequality throughout the income chain.

In terms of reducing inequalities, there are several strategies: one strategy aims to reduce inequality in individual earnings; a second aims to reduce inequalities in living standards between households, the level at which people are presumed to live in solidarity. There are legitimate grounds for both these strategies. The RSA *activité* [the income supplement for the working poor] and the SMIC are thus not substitutable (see also "le SMIC ou le RSA?" in French). Unlike the RSA, the fight against poverty is not the objective of the SMIC. The SMIC aims "to ensure that employees with the lowest salaries share in the country's economic development". A high minimum wage has the effect of reducing inequalities across the bottom of the wage scale, with increases in the minimum wage impacting up to two times the SMIC. Given the increase in unemployment, in precarious jobs and in part-time work, full-time employees on the minimum wage are certainly not the poorest in society, but they are far from well-off. The SMIC reduces the income gap between the working class and the middle class, which is an objective in itself (though some in the middle class may take a dim view of this: by its very nature, reducing inequality isn't going to satisfy everyone). In particular, it is not the same thing to receive a high salary or to receive a low salary supplemented by targeted social benefits. These benefits do not confer any rights to a pension or to unemployment benefits. In terms of dignity, the minimum wage level is the value that a society places on work. Social benefits targeted at the poorest people put them in a position of being assisted, which has consequences in terms of social representations (individual and collective). As work is performed by individuals, it is not illegitimate to try to reduce inequalities between employees and not only between the employees' households.

The proposed boost to the RSA is ambiguous, as the term "RSA" designates both the minimum social benefits for the unemployed and the inactive population (the "base" RSA, formerly the RMI and API benefits) and the income supplement for the working poor (RSA *activité*). If the proposal for a boost applies only to the RSA *activité*, it would then be inconsistent with the objective of targeting the most disadvantaged households. If, on the contrary, it concerns the RSA as a whole, which would be legitimate, then it is necessary to be more explicit and to assume that it will benefit mainly the unemployed and the inactive [1]. In March 2012, there were 1.59 million people receiving just the base RSA, and 689,000 the RSA *activité* (all France), *i.e.* only one-third of RSA recipients received the *activité* component.

The implementation of the RSA *activité* has up to now failed in two ways ("The failings of the RSA income support scheme"): according to the final report of the National Evaluation Committee, it has had no discernible impact on employment, and poverty reduction has been severely limited because of a major lack of take-up of the *RSA activité* component. We can move quickly over the first point, as there is little emphasis these days on the incentive aspect of the RSA. The main problem of a boost to the RSA *activité* is indeed the lack of take-up: in the report, take-up for the RSA *activité* component alone is estimated at 68% in December 2010 [2]. And this is not a matter of the programme coming on line: between December 2010 and March 2012, the number of RSA *activité* beneficiaries increased only marginally in mainland France, from 446 000 to 447 000. Linking eligibility for the RSA *activité* to both earned income and family expenses and mixing into a single instrument beneficiaries of a social minimum and the working poor, who are sometimes very well integrated into the labour market, poses problems both in terms of improper assessment of eligibility for the provision and stigmatization. This highlights two causes of the lack-of take-up of the RSA *activité*: insufficient awareness of the scheme, on the one

hand, and voluntary lack of take-up, on the other: 42% of non-applications who do not exclude themselves from eligibility declare that they did not file a claim because they "get by financially otherwise", and 30% did not file a claim because they did "not want to depend on welfare, to owe something to the state" (p.61). Better information would not be sufficient to solve the problem of lack of take-up. Increasing the minimum wage, on the contrary, has the great advantage of automatically benefitting those affected without fear of stigmatization, since it involves labour income.

Unlike the RSA, increasing the gross SMIC increases labour costs. However, there are several strategies to raise the minimum wage that would not have a net effect on labour costs: the increase could be offset by a reduction in employers' social contributions. One could also ease employee social security contributions on low wages. But this proposal would probably be censured by the Constitutional Council, which in 2000 knocked down the exemption of the CSG tax on low wages on the grounds that the progressivity of the CSG would then no longer depend on the household's ability to pay [3]. Finally, a more extensive reform aimed at merging the CSG tax and the income tax would make it possible to reduce taxes on low wages and thus increase the net minimum wage. The integration of the PPE in-work negative income tax would also make it possible to show the amounts involved directly on the payslip.

The fight against inequality clearly should not stop with inequalities in wages between full-time workers. It is also necessary to attack involuntary part-time work, by enabling the workers concerned to move into full-time work and/or by making part-time work more costly by lowering the rate of general tax relief on employer social contributions.

Basically, there is no reason to want to vary the level of the base RSA relative to the minimum wage. However, since the base RSA is indexed to prices, its level has fallen sharply relative to the minimum wage since the early 1990s (see

Périvier, 2007). It would therefore be legitimate to significantly raise the base RSA (even if this means reducing the rate of accumulation of the RSA *activité* component) and to index it to the minimum wage level. This would definitively solve the question of whether to boost the minimum wage or the RSA.

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[1] Here it can be seen that the "simplification", which consists of combining two instruments into one, is not facilitating public debate.

[2] This lack of take-up is partially due to the fact that, for some of those who are eligible (about a third), the potential gains are very low or even non-existent due to the deduction of the sums paid under the RSA *activité* from the PPE in-work negative income tax. But the lack of take-up is nevertheless high even when looking at the potential gainers (and not simply all those eligible).

[3] Decision No. 2000-437 DC dated 19 December 2000: "Whereas, while the legislature has the right to change the base of the general social contribution to alleviate the burden on the poorest taxpayers, this is subject to the condition that it does not undermine the existence of conditions of equality between taxpayers; that the provision in question does not take account of the taxpayer's income other than from an activity or of income of other household members or of dependents within it; that the choice made by the legislature to not take into consideration all the contributory capacities does not create, between the taxpayers concerned, a manifest inequality that violates Article 13 of the Declaration of 1789."

Social networks today. A decidedly small world

by Michel Forsé

Everyone has undoubtedly had personal experience at least once in their lives of what is suggested by the notion of a “small world”. You meet a complete stranger and you realize that you share a mutual acquaintance. Back in the 1960s, Stanley Milgram provided empirical validation of this intuitive notion by trying to determine how many intermediaries it took on average to link two individuals who did not know each other in a large country like the United States. He conducted a clever experiment that yielded a striking result: 5.2 intermediaries sufficed (or 6 “degrees of separation”, as the saying goes). Other studies since then have produced figures of about the same order. Without going into the technical details, however, these studies had certain problems, including that many of the subjects surveyed dropped out during the studies, and the number of participants were relatively small.

The recent advent of social networks on the Internet has provided an opportunity to consider this issue again, this time on a much larger scale since the Net covers the entire planet. The networks formed by instant messaging, Twitter and Facebook have been studied from this angle. The question posed was always the same: how many intermediaries does it take to link two individuals selected at random from one of the networks. And while the figures may vary slightly, every time the response confirmed or amplified what could be expected based on Milgram’s work.

The case of Facebook is particularly instructive, since it is the largest network analyzed to date. An investigation conducted in 2011 covered 721 million people and some 69 billion links that exist among them. On this basis, it took

an average of 4.7 intermediaries to connect two Facebook subscribers worldwide. This figure drops even further, to 4.3, if we restrict ourselves to the United States. There is no doubt therefore that this largely confirmed the theory of a "small world".

But this still needs to be explained. While many models exist, two seem paramount: one based on a world of clusters connected by weak links, and another that invokes hubs at various levels (international, national, regional, local) demonstrating relative scale invariance. Up to now, these models have been seen as rivals, but there may be potential for combining them, as is suggested in an article published on this subject in the *Revue de l'OFCE*.

Would returning to the drachma be an overwhelming tragedy?

by Céline Antonin

Following the vote in the Greek parliamentary elections on 17 June 2012, the spectre of the country leaving the euro zone has been brushed aside, at least for a while. However, the idea is not completely buried, and it is still being evoked in Greece and by various political forces around the euro zone. This continues to pose the question of the cost of a total default by Greece for its creditors, foremost among them France. The analysis published in the latest *OFCE Note* (No. 20, 19 June 2012) shows that, despite the magnitude of the potential losses, several factors could mitigate the consequences for the euro zone countries of a default by the

Greek state.

The withdrawal of Greece from the euro zone, which is not covered in the Treaties, would cause a major legal headache, as it would involve managing the country's removal from the Eurosystem [1]. In case of a return to a new drachma, which would depreciate sharply against the euro [2], the burden of the public debt still outstanding would be greatly increased, as would private debt, which would still be denominated in euros. Many financial and nonfinancial firms would go to the wall. Legally, Greece could not unilaterally convert its debt into new drachmas. Since the country's public debt is not very sustainable and it is denominated almost exclusively in euros, Greece would certainly default (at least partially) on its public debt, including its foreign debt [3]. Given that the main holders of Greek debt are euro zone countries, what would be the magnitude of the shock in the case of a Greek default?

While more detail about this can be found in the *OFCE Note (No. 20, 19 June 2012)*, the focus here is on providing a breakdown of the exposure of the euro zone countries (in particular France) to Greek public and private debt. Exposure to Greek public debt involves three main channels:

1) The two aid packages of May 2010 and March 2012;

2) Participation in the Eurosystem;

3) The exposure of the commercial banks.

An analysis of these channels shows that the main source of exposure of the euro zone countries to losses is the two support plans. The maximum exposure of the euro zone countries through this channel is 160 billion euros (46 billion euros for Germany and 35 billion euros for France). Euro zone countries are also exposed to Greek government debt through their participation in the Eurosystem: indeed, the Eurosystem's balance sheet swelled dramatically to support the vulnerable countries in the euro zone, notably Greece.

However, given the Eurosystem's capacity to absorb losses (over 3,000 billion euros), we believe that the potential losses for the countries of the euro zone are not likely to be realized if Greece were to default unilaterally on its public debt. Finally, the euro zone's banking system is exposed to 4.5 billion euros in Greek sovereign risk and up to 45 billion euros from the Greek private sector [4].

The cumulative exposure of the euro zone to Greek debt, excluding the Eurosystem, amounts to a maximum of 199 billion euros (2.3% of the euro zone's GDP, cf. Table), including 52 billion euros for Germany (2% of GDP) and 65 billion euros for France (3.3% of GDP). If we include exposure to the Eurosystem, the cumulative exposure of the euro zone to Greek debt comes to 342 billion euros (4% of euro zone GDP), including 92 billion for Germany (3.6% of GDP) and 95 billion (4.8%) for France. France is the most heavily exposed euro zone country, due to the exposure of its banks to Greek private debt through subsidiaries in Greece. If we consider only Greek government debt, however, it is Germany that appears to be the country most exposed to a Greek default.

Summary of the exposure of different countries to Greek debt

In billion euros

	1) Support lans		2) Eurosystem		3) Commercial banks		Total	Total excl. Eurosystem
	1st plan	2e plan	SMP	TARGET2	Public debt	Private debt		
Germany	14.7	31.4	12.5	27.3	1.3	5.1	92.3	**52.5**
Austria	1.5	3.2	1.3	2.8	NC*	NC*	8.8	4.7
Belgium	1.9	4.0	1.6	3.5	0.1	0.0	11.1	6.0
Cyprus	0.1	0.2	0.1	0.2	NC	NC	0.6	0.3
Spain	6.5	13,8	5.5	12.0	0.1	0.5	38.4	20.9
Estonia	0.0	0.3	0.1	0.3	NC	NC	0.7	0.3
Finland	1.0	2.1	0.8	1.8	NC	NC	5.7	3.1
France	11.1	23.6	9.4	20.5	1.3	29.1	95.0	**65.1**
Ireland	0.9	0.0	0.7	1.6	NC	NC	3.2	0.9
Italy	9.7	20.7	8.3	18.0	0.2	1.1	58.0	31.7
Luxembourg	0.1	0.3	0.1	0.3	NC	NC	0.8	0.4
Malta	0.1	0.1	0.0	0.1	NC	NC	0.3	0.2
Netherlands	3.1	6.6	2.6	5.7	NC	NC	18.0	9,7
Portugal	1.4	0.0	1.2	2.5	NC	NC	5.1	1.4
Slovakia	0.5	1.1	0.5	1.0	NC	NC	3.1	1.6
Slovenia	0.3	0.6	0.2	0.5	NC	NC	1,6	0.9
Total EZ	**52.9**	**107.7**	**45.0**	**98.0**	**2.9**	**35.8**	**342.3**	**199.3**

[NC => NA]
NA: Not available, as the BIS gives only the exposures of Germany, Belgium, France, Italy and Spain. The totals are thus calculated without taking into account the second tier banks, except for Germany, Belgium, France, Italy and Spain and the Euro Zone Total.
Sources: "The Economic Adjustment Programme for Greece – First review summer 2010", ECB, EFSF, BIS *Quarterly Review* (June 2012), Bank of Greece, author's calculations.

These amounts constitute an upper bound: they represent the maximum potential losses in the worst case scenario, namely the complete default of Greece on its public and private debt. Furthermore, it is impossible to predict with certainty all the chain reactions associated with a Greek exit from the euro zone: everything depends on whether the exit is coordinated or not, whether a debt rescheduling plan is implemented, the magnitude of the depreciation of the drachma against the euro, and so on.

The "reassuring" element in this analysis is the magnitude of the potential losses (Table): the shock of a Greek exit would be absorbable, even if it would generate a shock on each member country and widen its deficit, undermining the members'

efforts to restore balanced budgets. However, this analysis also points out how intertwined the economies of the euro zone are, even if only through the monetary union, not to mention the mechanisms of the solidarity budget. A Greek exit from the euro zone could therefore open a Pandora's Box – and if other countries were tempted to imitate the Greek example, it is the euro zone as a whole that could go under.

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[1] The Eurosystem is the European institution that groups the European Central Bank and the central banks of the countries in the euro zone.

[2] On this point, see A. Delatte, What risks face the Greeks if they return to the drachma?, OFCE blog, 11 June 2012.

[3] The foreign debt designates all the debt that is owed by all a country's public and private debtors to foreign lenders.

[4] This refers to a textbook case, where the drachma's depreciation would be so great that the currency would no longer be worth anything.

Economic policy-making tools for pre- and post-crisis periods

by Zakaria Babutsidze and Mauro Napoletano

The worldwide financial crisis has questioned the relevance of economic models that are currently used by central bankers and macro analysts. In contrast, the recent economic events seem

to be better described by models featuring boundedly rational heterogeneous agents and wherein markets do not necessarily clear at all times. Agent Based Models (ABMs) are a new class of models that embed all the above features, and therefore qualify as a promising alternative to conventional models.

An economic crisis, such as the current one, is a clear divide between processes before and after it. For instance, economic policies can be split into two groups: pre-crises and post-crisis policies. While the latter aim at helping the economy to move out of the crises to a more favourable state, the former policies concentrate on averting it.

Currently popular economic models can (to an extent) discuss post crisis policies. These models view economies as closed systems that move along one of (few) balanced equilibria. A modeller can introduce a large external shock in the system that can be interpreted as the crisis and further discuss policies to help the system move back to the previous (or even better) equilibrium. However, there is a problem with these policies. The main assumption of modern mainstream economics is hyper-rational agents, which assumes that economic agents (including households) possess complete information about the future of the economy and by acting rationally on this information the future that was foreseen is actually realized.

Modellers argue that this is reasonable even if we know that people do not optimize. The argument is that due to market selection only the best performing agents will survive. As optimization guarantees the best response to the current situation every agent that is present at the equilibrium has to be behaving “as if” she is optimizing. Notice that this argument rests on the notion of equilibrium and says nothing about how this equilibrium will be reached. Now recall that modellers had to assume a large shock knocking the system out of the equilibrium in order to discuss the crisis. Then the approximation with hyper-rationality cannot properly describe the agent behaviour after crisis.

Concerning pre-crises policies the problems are even greater. Current mainstream models exclude the possibility of generating the crises endogenously. While, it is a known fact that modern economic crises are rarely related to external shocks. They are generated endogenously by the system. They emerge from the factors (like non-price interactions, localized learning processes, outrageous banking and investment practices etc.) that are directly assumed away from the mainstream modelling. Therefore, these models are inherently inadequate to discuss policies directed to prevention of crises.

We believe that an economic tool that is to be successful in designing economic policy to avert the economic crises requires three characteristics. Firstly, it has to take account of the individual behaviour. Secondly, it has to model the behaviour in a way that is consistent not only with equilibrium, but also with non-equilibrium states. Finally, it has to allow for the possibility of endogenously generating crises.

Currently popular policy making tools fail in at least one of these three respects. Take for example Dynamic Stochastic General Equilibrium (DSGE) models. They represent the workhorse of modern monetary policy. This modelling strategy conforms to the first requirement listed above: DSGE is a micro-founded modelling strategy that replaced previous techniques that were abstracting from individual agent behaviour and thus were prone to Lucas (1976) critique.[1]

Alas, DSGE fails in two other respects. Microeconomic behaviour is based on perfect foresight that requires hyper-rational agents that were mentioned above, and therefore, as argued above, does not describe well agent behaviour during the out-of-equilibrium dynamics. In addition to this, stochasticity of the system allows only for small perturbations and large shocks (such as crises) have to be exogenously injected in the system. Perhaps, these failures

are the cause of difficulties that DSGE modelers are having in predicting and managing current crises, as acknowledged by some central bankers (Trichet, 2010; Kocherlakota 2010).

It is true that DSGE models take into account micro-behaviour as well as institutions (see for example Smets and Wouters 2003), which is the model widely used by European Central Bank). However, what they fail to take into account is the possibility of endogenous (co-)evolution of these structures, the heterogeneity and non-price interactions among economic agents that can lead the system to breakdown without external interference.

One promising tool for economic policy design goes under the name of Agent Based Modelling (ABM). The characteristics of this approach are discussed at greater length in a recent OFCE briefing paper by Napoletano, Gaffard and Babutsidze 2012. In contrast to mainstream economics (such as DSGE), ABM is more flexible to model relevant processes as dynamical systems of heterogeneous agents who interact through price and non-price channels. The approach treats time as the key variable. This is in contrast to orthodox models. Take the crises again. In mainstream modelling at the moment of crisis new equilibrium becomes known to everyone instantaneously and perfectly rational individuals adjust their choices accordingly. This drives the system to the new equilibrium. In ABM individuals do not get information about new equilibrium to which the system is supposed to converge to and each individual has to navigate in its own way. This feature allows for the plethora of learning processes (which, according to Howitt 2012 are extremely scarce in modern Macroeconomic theory) to be also taken on board.

ABM concentrates on open-ended dynamics and allows for an equilibrium (defined as an ergodic state of the system) as an emergent and optional outcome (Leijonhufvud 2011). While current mainstream modelling is based on the centralized information processing structure that is fed with all the

available information in the system, ABM takes a bottom-up approach that starts modelling realistic micro-foundations (in contrast to DSGE) and analyses the resulting behaviour of the model at upper levels. The dynamics of aggregate variables are the result of complex, continuously (and endogenously) changing micro-structure. This yields substantial advantages in modelling policy on macro (LeBaron and Tesfatsion 2008), as well as on industry (Chang 2009) and market (Duffy and Unver 2008) levels.

Using Agent Based tools a modeller can specify the agent's micro behaviour and understand how the dynamics of the system leads to the critical state and a subsequent breakdown (endogenously generated crisis). This is a common occurrence in physical systems and Agent Based approaches are routinely used for their analysis. Using such a model the policies to direct the path of the economy away from the critical state can be discussed. From this prospective ABM has clear advantage in discussing pre-crisis policies over orthodox approaches.

Another substantial advantage of the methodology is its easiness to be implemented in a computational environment. Behavioural rules can be passed to the agents in computer simulations and respective outcomes can be observed. This is important for two reasons. Firstly, this makes models easily understandable for policy-makers that are not necessarily proficient in mathematics that current orthodox methods heavily rely on (Uri Wilenski, the developer of the most popular computational environment for ABM – NetLogo, is repeatedly making this point). Secondly, behavioural rules (and other settings) can be easily adjusted to fit the problem at hand. Due to their concern with the equilibrium, mainstream models are less flexible and consequently less appropriate for policy-making.

However, there are disadvantages to the approach. Detailed discussion of approach's shortcomings is presented in the

above-mentioned OFCE briefing paper. Here we concentrate on the one that is shared by all non-equilibrium approaches. It is that ABM does not (cannot) provide a comprehensive analysis of all the paths the model allows for. Once you leave the equilibrium, the number of paths an economic system can take become infinite. Therefore, in most of the cases, comprehensive analysis is not feasible.

While this criticism is relevant in face of commonly accepted practice in economic science, it is irrelevant to the ABM's powers as a policy-making tool. Policy makers are not concerned with all the possible scenarios in all the possible types of economies. They have a very specific problem at hand. They operate in a specific country/region, they are given a very specific initial condition (currently existent in the economy) and they want to achieve a certain well-defined goal with a specific policy tool. Agent Based Modelling gives them the opportunity to fine-tune the model to their specific situation and then analyse the effects of a specific policy instrument. The policy instrument controls one (or very few) parameters of the model. Given a specific market/economy and specific initial conditions exhaustive analysis of these policy tool can be performed and welfare improving (if not optimal) policy can be designed.

Merits of every modelling approach can be debated. But allowing diversity in approaches is bound to make policy discussions more stimulating and is likely to help the discipline avert the crises that are now seen as the crises of the discipline itself (Kirman 2010).

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[1] However, DSGE models downplay the possibility of multiple

equilibria. Thus, their ability to overcome the Lucas critique by introducing micro-foundations presents only a limited advantage.

Positions of French and German Banks in European interbank lending network

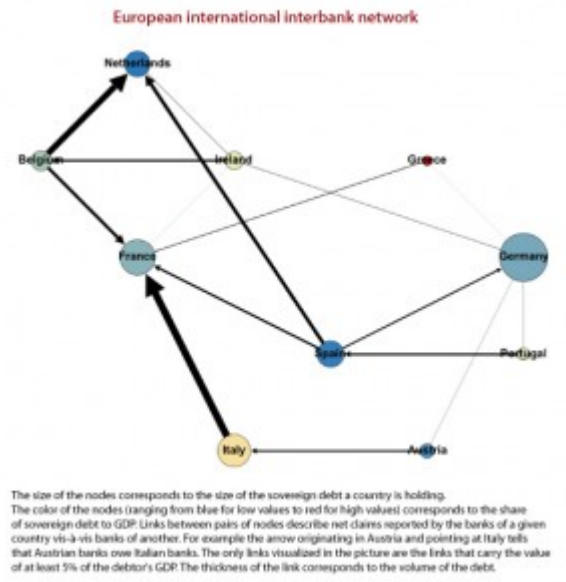
by Zakaria Babutsidze

Recent desperate cries for help from French and other European banks raise the question of exactly what type and how much trouble have they managed to get themselves into. The question can be approached from many angles. Here I try to gain insights into the topic by analyzing the cross-border interbank lending network. This is a network that facilitates the flow of much needed liquidity across the sovereign borders within the Eurozone. Due to high interconnectedness, banks in each country affect (and are affected) directly or indirectly (by) the banks in all other countries. Banks of different countries play different roles in this vital network: some are net creditors, others are net debtors. In this post I take on the challenge of contrasting the behavior of the two largest creditors in the system (the banking sectors of France and Germany) who are often blamed for the recklessness in their lending practices.

Inspired by visualization of the network by The New York Times, I use the data on Consolidated Banking Statistics issued in December 2011 by the Bank for International Settlements. The data comprises the claims of banks in a given country filed vis-à-vis banks in other countries as of June

2011. Numbers do not include holdings of sovereign debt. The data is available only for 10 out of 17 Eurozone countries: France, Germany, Italy, Spain, The Netherlands, Austria, Ireland, Belgium, Portugal and Greece. As I am interested in the role of national financial systems in European network I cancelled out the counter-claims across the borders and proceeded with the volume of the net claims of one European country banking sector vis-à-vis others.

The resulting network connects each of the 10 countries to the other nine. Each connection has a direction that reflects the current debt balance of a country's banks vis-à-vis another country's banks. I apply simple weighted network analysis to the data in order to dissect the European interbank lending network. The volume of mismatch between the claims vis-à-vis partners is used for weighting the links in the network. To make the methodology clearer consider a hypothetical example. Banks of country A owe 100 Euros to the banks of country B. At the same time, banks of country B owe 40 Euros to banks of country A. Then the mismatch between the countries amounts to 60 Euros which country A owes to country B. This way I determine the direction of each link in our network, or who is the creditor and who is the debtor. In addition to this, I take into account the value of the mismatch in the following way. If country C owes country D 30 Euros, we say that the link between A and B, which we have discussed earlier, is twice stronger than that between C and D.



A quick glance at the network visualization on Figure 1 is enough to notice the special role French and German banks are playing in the system. Banks in these two countries are the ones that are exposed the most to the problems in other European countries.

Recognizing that European cross-border interbank lending network is tightly embedded into global interbank lending network I augment the data with the three largest global players: The United Kingdom, The United States and Japan. In what follows I report two sets of results: one – for isolated European interbank lending network (that I call a closed network), the other – for the extended (open) network that includes three large international players. In the latter case, non-Eurozone countries are taken into account in the calculations but are excluded from the presented rankings.

There are a few important characteristics of the network that we can look at. I concentrate on country rankings with respect to statistics describing country's banks' access to interbank loans, their importance in facilitating interbank liquidity flow and their overall role as lender's or receivers of the loans.

Ranking of countries with respect of different measures for closed and open European cross-border interbank networks

Panel A

	Closeness	
	Closed	Open
1	Belgium	France
2	Germany	Germany
3	Netherlands	Belgium
4	Italy	Netherlands
5	Austria	Austria

Panel B

	Betweenness	
	Closed	Open
1	Netherlands	France
2	Italy	Netherlands
3	Austria	Italy
4	Portugal	Ireland
5	Spain	Austria

Panel C

	In-Degree	
	Closed	Open
1	France	Germany
2	Germany	France
3	Netherlands	Spain
4	Italy	Netherlands
5	Spain	Italy

Panel D

	Eigenvector	
	Closed	Open
1	France	France
2	Netherlands	Germany
3	Germany	Netherlands
4	Belgium	Belgium
5	Italy	Austria

Note: **France and Germany are highlighted with uniform colors.**

The measure that allows us to rank the countries in our network with respect to their access to loans is closeness centrality. This statistic measures the distance of the country's banks to the banks of all the other countries in the network. Higher centrality implies shorter distance. This, in its turn, means that banks do not have to go far in search of financial resources. Panel A of Table 1 presents the ranking of the countries with respect to closeness centrality. When the European network is considered in isolation from the rest of the world it is Germany that has the easiest access to liquidity, while France does not appear in first half of the list. However, when European network is regarded as being embedded in global interbank lending network France tops the list leaving Germany at close second. This allows to conclude that French banks go mainly outside the Eurozone for borrowing money, while German banks balance their borrowings between European and non-European banks.

Panel B of Table 1 presents rankings with respect to betweenness centrality, which measures how much control do a country's banks have over the liquidity flow through the network. This statistic calculates the frequency with which the country appears on the routes that money has to travel from every country to every other country. Higher centrality means that the banking system of the country lies on large

number of routs between pairs of other countries. In this respect the closed European network is independent of influence of France and Germany. This points to the fact that banks in the system can reach each other without necessarily going through Germany or even France. The major brokers within the Eurozone seem to be the Dutch banks. Once extra-European links are considered French banks lead the board, while Germany does not appear in top five. France's top seat in open network implies that it plays the role of a broker between European and non-European banks.

Next measure is the in-degree of the country in the weighted network. This statistic basically measures how important of a creditor a given country is for the other members of the network. Being largest creditors France and Germany swap the places as we move from closed to open network. From here we can conclude that Germany, although being larger creditor than France, has heavier non-European presence. This, clearly, is good for German banks in such turbulent times for Europe. In contrast French banks are more exposed to European risk.

Finally, Eigenvector centrality measures the importance of the country's banks in the system more accurately. It takes into account not only creditor and debtor positions in the network but also the identity of the countries that a given country has ties with. According to this measure French banks play an absolutely central role in the network under discussion. Germany comes second once we discuss an open network. The difference between France and Germany is driven by the differences in their European/non-European credit ratio as well as by the differences in composition of European credit. The most notable difference is France's extreme exposure to troubled Italy.

A broader view at Table 1 allows us to make an additional conclusion regarding the behavior of French and German banking systems. From the table it is apparent that going from closed to open network (which adds American, British and

Japanese banking systems to the picture) affects positions of France much more than those of Germany. This implies that German banks keep balance in their activity between European and non-European partners. They diversify their risk more efficiently. While French banks put all their eggs in one basket – Europe, which might not be the best strategy to pursue.

All in all, the present analysis shows that the prize for reckless lending goes rather to French than to German banks. They are central in the network by virtually any measure. In visualization in Figure 1 French credit, directly or indirectly, can reach all countries except Germany and Netherlands, while German credit only extends to four countries. And, importantly, that list of four does include Italy.

"Buy French": From the slogan to the reality

By Jean-Luc Gaffard, Sarah Guillou, Lionel Nesta

The current election campaign is lending weight to simplistic proposals like the slogan "buy French", which evokes the need for France to re-industrialize. And to accomplish this, what could be simpler than to convince the population to buy native products designated with a special label? This is also more politically correct than advocating a straightforward return to protectionism. Employment is expected to benefit, along with the balance of trade. But if we look more closely, not only is it difficult to identify the geographical origin of products, but even if that were possible, any preference that

these products might enjoy could well wind up in job losses. This solution for dealing with the need for re-industrialization ultimately reflects a refusal to get to the bottom of the problem.

Can we really define what it means to “buy French”? Does it mean buying the products of French companies? What about buying products made in France by foreign companies instead of buying products made abroad by French companies? These simple questions show that it is not so easy to pin down what is “Made in France”. One major difficulty is that the final goods produced in a country usually incorporate intermediate goods manufactured abroad. It may even happen that the components of a final product are manufactured by a competitor in another country. The iPhone is emblematic of this fragmentation. Should we refrain from purchasing intermediate goods from low-wage countries even though this makes it possible to produce final goods at a lower cost and boost exports by being more competitive on price? Those who think so should no longer be touting German industry as an example, since everyone knows about the growing share of imported inputs in the production of the final goods Germany exports (OECD, *Measuring Globalisation: OECD Economic Globalisation Indicators 2010*, p. 212).

Imagine, nevertheless, domestic consumers who are able to identify products with a high labour content and are ready to make sacrifices out of a spirit of economic patriotism. Don’t the polls tell us that over two-thirds of consumers would be willing to pay more for French goods? While there are doubts about whether they would actually do this, it would be risky to ignore the opportunity cost of such a choice. Buying more expensive products simply because they are French reduces purchasing power. Other goods and services would not be purchased or would be bought for less abroad. The balance sheet for employment is far from certain.

Should this exercise in economic patriotism actually

materialize, it would be a way that consumers form attachments to certain types of products, in this case based on their place of manufacture, which would in turn reduce the intensity of competition. This could lead the companies concerned to cut back on their efforts to become more competitive on price and other factors. Why, indeed, should they shell out for expensive and risky investments when have a guaranteed customer base? It's a safe bet that they will not do this much, if at all. The national economy would then be locked in a low technology trap, doomed to slower growth, obviously with damaging consequences for employment in the medium and long term. This would also deprive the economy of the means to innovate and improve the competitiveness of its products.

Finally, it is likely that the willingness to buy French products would benefit products that replace goods made elsewhere in Europe rather than goods made in developing countries, either because the latter are no longer manufactured at all in France or because the price differences with French products would still be prohibitive. Ultimately it would not be possible to avoid further shifts in production to low-wage countries, with the consequent job losses. Furthermore, from a European perspective the non-cooperative character of this kind of measure could lead our European partners to adopt reciprocal measures, which would be detrimental to exports and employment.

The slogan "buy French" masks a refusal to see that the downturn is a global phenomenon which calls for a comprehensive response at the European level, and a refusal to consider a proactive industrial policy that takes into account the realities of supply as well as demand.

This is not just a matter of looking the other way. France is undergoing a deindustrialization process that threatens its capacity for growth. But who can deny that this phenomenon has accelerated with the crisis and that this acceleration is set to increase as the general austerity measures and restrictions

on bank credit further undermine domestic and European demand for consumer durables? Unless we are willing to accept that an entire segment of industry in France and elsewhere in Europe is destroyed, with no hope of ever returning, and with as a consequence still greater disparities between countries and sharper conflicts of interest, it is clearly urgent to support this kind of demand.

Is this kind of support "the solution"? Of course not: propping up demand will not be enough, as an industrial policy aimed at strengthening the supply side is also needed. The point is not to protect domestic production nor to promote the conquest of foreign markets through competition on taxation or social charges, but to stimulate investments designed to produce new goods and services, which is the only way to create stable jobs. Rather than try to rely on dubious slogans, the goal should be to consolidate production that has the advantage of being high quality in terms of design, safety and reliability, and which corresponds to what French and European consumers genuinely want.

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 GPD points	0.3	1.5	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
Reminder 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.