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Research Report

The European dimension: Consequences for European monetary policy

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FinMaP-Policy Letter No. 5



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FINMAP -

**FINANCIAL DISTORTIONS AND MACROECONOMIC
PERFORMANCE: EXPECTATIONS, CONSTRAINTS AND
INTERACTION OF AGENTS**

DATE: 12/13/2016

TITLE

**THE EUROPEAN DIMENSION: CONSEQUENCES FOR EUROPEAN
MONETARY POLICY**

by: Paul de Grauwe, London School of Economics

INTRODUCTION

The Eurozone creates a number of new challenges in policy-making in Europe. These challenges exist both for the monetary and the fiscal authorities. In this workpackage we aim at providing novel insights in the nature of these challenges using new approaches in modelling the macro economy. These new approaches highlight the importance of multiple equilibria, herd behaviour and animal spirits (market sentiments).

The first challenge is for the monetary authorities to understand the nature of the transmission of monetary policies. We analyse this transmission process using a behavioural macroeconomic model in which animal spirits play a major role. We contrast this transmission process in a bank based with a market based financial model. As the Eurozone is mainly based on bank finance the comparison with a market based financial model will allow us to identify what is special in the monetary transmission process in the Eurozone.

The second challenge has to do with crisis management. During financial crises panic and fear is likely to take over, creating a potential for self-fulfilling liquidity crises. These can push countries into a bad equilibrium that forces them into imposing excessive austerity thereby reinforcing deflationary dynamics. We provide evidence that these forces have been at work during the sovereign debt crisis of 2010-12.

The third challenge relates to the governance of the Eurozone. It is clear that the Eurozone has not yet achieved a governance structure that will guarantee its long run survival. In a third contribution we use empirical evidence about the nature of economic shocks in the Eurozone to analyse how the Eurozone should be redesigned so as to become sustainable in the long run.

EVIDENCE AND ANALYSIS

In our first contribution we investigate whether the way in which firms finance themselves affects monetary transmission, and if so, in which direction. In one system, firms finance their activities using bank-originated credit (BBF), while in the other they raise their funds from the market (MBF). The first system is an approximation of the EU-based firm financing structure, and the second of the US-type. Both systems are also subject to endogenous non-zero asset price cycles (or bubbles). We analyse these two financing modes in the context of our behavioural macroeconomic model (agent-based model).

In the impulse response analysis, we find that a credit boom caused by a monetary expansion is stronger in a market-based system. The interaction between the actual drop in interest rate with positive market outlook relaxes the credit constraint more than proportionally. That said, the impulse response estimates in the MBF version are much wider than in the BBF-version, suggesting that there is more uncertainty about the transmission process in the former than in the latter.

The macroeconomic effects from this credit expansion (i.e. the effects on output and inflation), on the other hand, are stronger in the bank-based version. This is because less of the market uncertainty is passed through to the real economy, which allows it to expand more. In some sense, the marginal benefit of a unit of credit is higher in a bank-based financing system.

We also looked at the nature of the fluctuations in output and inflation in the two financing regimes. It appears that in the bank based regimes extreme movements in animal spirits (waves of optimism

and pessimism) are higher than in the market based financing regime. This is made clear from Figure 1, which shows the frequency distribution of output gap, inflation and animal spirits. Starting with the latter we observe that there is more concentration of extreme optimism or extreme pessimism in the bank based model than in the market based one. This leads to a flatter frequency distribution of the output in the former model than in the latter, implying that there is more volatility in the output gap in the former model.

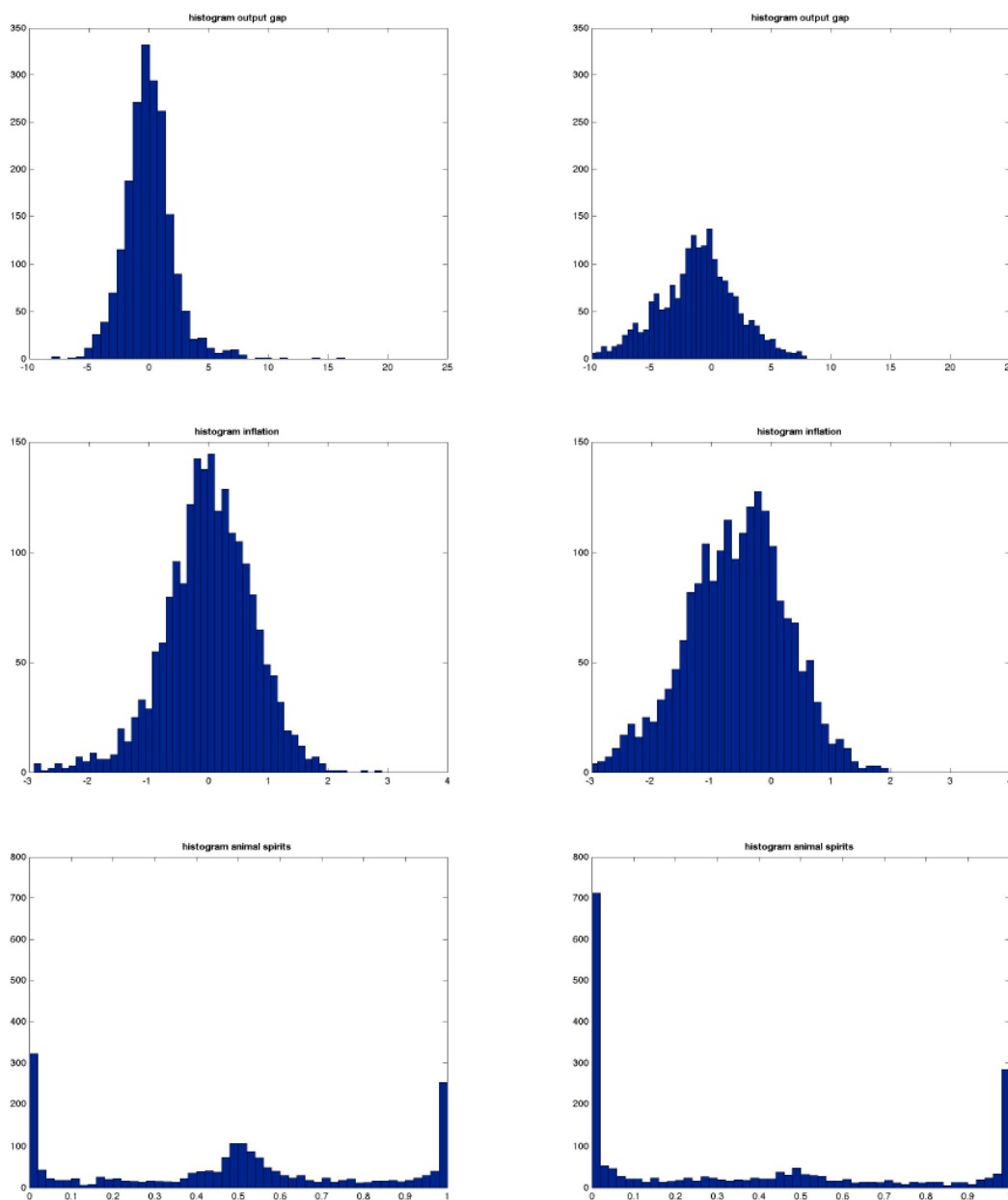


Figure 1: Histograms of output gap, inflation and animal spirits in MBF (left) vs BBF (right). The histograms are calculated using a simulated sample of 500 years. The histograms can also be interpreted as ergodic distributions.

In our second contribution we tested two theories of the determination of the government bond spreads in a monetary union. The first one is based on the efficient market theory. According to this theory, the surging spreads observed from 2010 to the middle of 2012 were the result of deteriorating fundamentals (e.g. domestic government debt, external debt, competitiveness, etc.). The implication of the efficient market theory is that the only way these spreads can go down is by improving the fundamentals, mainly by austerity programs aimed at reducing government budget deficits and debts.

The second theory, while accepting that fundamentals matter, recognizes that collective movements of fear and panic can have dramatic effects on spreads. These movements can drive the spreads away from underlying fundamentals, very much like in the stock markets prices can be gripped by a bubble pushing them far away from underlying fundamentals. The implication of that theory is that while fundamentals cannot be ignored, there is a special role for the central bank that

has to provide liquidity in times of market panic, so as to avoid that countries are pushed into a bad equilibrium.

We tested these theories and concluded that there is strong evidence for the second theory. Results are illustrated in Figures 2 and 3. As can be inferred from these graphical summaries of the results, the high spreads over the period 2008-2012 are to quite a large extent by negative market sentiment and only in few cases (particularly, Greece) do fundamental factors play a major role. In contrast, the ECB's OMT program led to a pronounced turn of sentiment from negative to positive leading to more convergence of interest rates than warranted from a fundamental perspective. The policy implications are that the role of the ECB as lender of last resort in the government bond markets is an important one. The authors conclude that limiting the capacity of the ECB in this regard would come at the risk of undermining this role and by the same token that of the stability of the Eurozone.

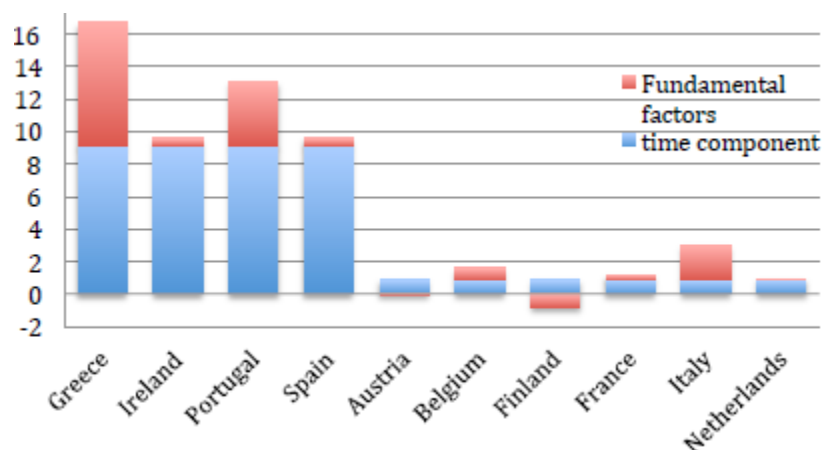


Figure 2. Contribution of fundamentals and time dummies in predicted change in spreads (2008Q1--2012Q2). The figure shows that the largest part of the surge in the spreads during 2008—12 is due to negative market sentiments that were unrelated to the fundamentals (the time dummies). Nevertheless, the fundamentals play some role in explaining the surge in the spreads in the case of Greece and to a lesser extent in Portugal.

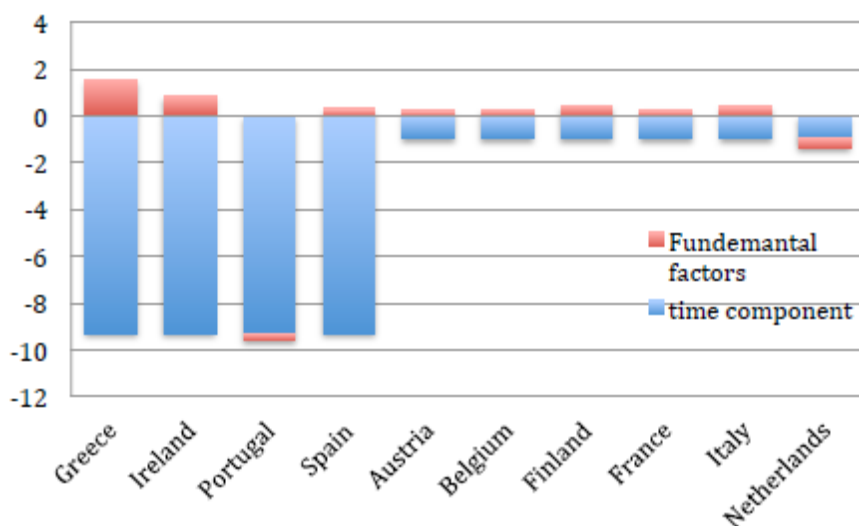


Figure 3. Contribution of fundamentals and time dummies in predicted change in spreads (2012Q1--2013Q4). In contrast to Figure 2, things are different during the second, post--OMT period. The sharp decline of the spreads since OMT is totally dissociated from changes in fundamentals. The latter play no role at all in explaining this decline in the spreads. This result strongly suggests that the ECB's OMT announcement was quite effective in turning around market sentiments. These became very positive and corrected for the excessive pessimism that existed before the announcement. These results also suggest that the view that countries can be pushed into bad equilibria in a self-fulfilling way is the right one.

In our third contribution we focus on the nature of the shocks to which the Eurozone has been subjected and the implication this has for the governance of the Eurozone.

Since the sovereign debt crisis in the Eurozone, member countries have been pushed towards introducing more flexibility into labour and product markets. This drive towards structural reforms was very much influenced by the traditional theory of optimal currency areas (OCA). This theory stresses that in the face of asymmetric shocks member countries should have a sufficient degree of labour and product market flexibility to adjust to these shocks. Without such flexibility adjustment will be impossible, thereby undermining the sustainability of the monetary union.

The underlying assumption of the OCA prescription for structural reform is that asymmetric shocks are permanent (e.g. permanent changes in preferences or productivity shocks). When the shocks are temporary it does not follow that more flexibility is the answer. More specifically, when the shocks are the result of unsynchronised business cycle movements, the way to deal with them is by stabilisation efforts.

We provide empirical evidence to suggest that the most significant shocks in the Eurozone have been the result of boom and bust, driven by waves of optimism and pessimism (animal spirits). These business-cycle movements have been relatively well-synchronised. What was not synchronised was the amplitude of these business-cycle movements, where some countries experienced much greater amplitude in business cycles than others.

In principle, these business-cycle movements could be stabilised at the national level without the need for budgetary union. However, as the amplitude of these movements is so different, countries experiencing the deepest recession are likely to be hit by 'sudden stops', i.e. liquidity outflows triggered by fear and panic, which forces them to switch off the automatic stabilisers in the budget, preventing them from conducting any stabilisation (see De Grauwe, Paul and Ji, Yuemei, *The Future of the Eurozone* (September 2014). The Manchester School, Vol. 82, pp. 15-34, 2014).

POLICY IMPLICATIONS AND RECOMMENDATIONS

Our research leads to a number of policy implications and recommendations.

First, the use of behavioural macroeconomic models allows us to detect a much richer short-term (business cycle) dynamics than mainstream DSGE models. The latter in fact produce a very shallow business cycle theory. It can even be argued that these DSGE-models do not have a business cycle theory. Fluctuations in economic activity in these models are always and exclusively the result of outside shocks. Without these exogenous shocks these models do not produce endogenous business cycle movements. These models are therefore a poor tool to understand the dynamics of capitalism, which is driven by endogenous booms and busts. Our recommendation is that public authorities (European Commission, European Central Bank) should turn their attention to the use of agent-based macroeconomic models.

Second, our finding that bank based financing models produces greater fluctuations in economic activity than market based financing regimes creates a greater responsibility for the ECB in stabilizing economic activity. The paradox is that, compared the US Fed, the ECB seems to have been less concerned about output stabilization.

Third, our finding that during the sovereign debt crisis, the spreads in the government bond markets are dissociated from underlying fundamentals and are driven mainly by movements of panic and fear provides the main justification for the role of the ECB as a lender of last resort in the government bond markets of the Eurozone.

Fourth, It will be necessary to move into a budgetary union to make the Eurozone sustainable in the long run. By centralising part of the national budgets into a common budget managed by a common political authority, the various increases in budget deficits following from a (common) recession translate into a budget deficit at the union level. As a result, the destabilising flows of liquidity between

countries during the recession disappear, and the common budgetary authority can allow the automatic stabiliser in the common budget to perform its role in smoothing the business cycle.

The willingness to move in the direction of a budgetary union, however, is minimal. This has much to do with the absence of a “deep variable” in the monetary union. This deep variable is the sense of belonging to the same (European) nation and that creates the political basis for organizing transfers between countries. The absence of this deep variable makes it inevitable that one looks for schemes that introduce some stabilisation at the Eurozone level without going all the way towards budgetary union. Put differently, any reform will have to be based on taking small steps.

The proposals to introduce a common unemployment insurance scheme are such a small step. Our empirical results suggest that a common unemployment insurance scheme will have to put more emphasis on inter-temporal insurance and less on inter-country insurance. This also implies that a common unemployment insurance scheme should have the capacity to issue bonds during recessions, and to do the opposite during an economic boom, making sure that over the business cycle there would be no net issue of common bonds. In this way the common unemployment insurance scheme can become a precursor of a more ambitious program of Eurobond issuance.

RESEARCH PARAMETERS

Our research has been based on various methodologies. The first one was the use of sophisticated non-linear macro-economic models, in which agents with limited cognitive abilities use simple heuristics to make forecasts. We introduce rationality in these models by allowing these agents to learn from their mistakes. This leads them to switch between different heuristics. It is this switching behaviour that introduces a dynamics in which waves of optimism and pessimism drive the business cycle. We used these models to produce policy simulations

The second methodology used econometric methods. We applied this methodology to test our main hypothesis, i.e. that during the sovereign debt crisis government bond spreads were driven mainly by market sentiments. These had the effect of driving these spreads away from their underlying fundamental values.