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HAS THE STABILITY AND GROWTH PACT MADE FISCAL POLICY MORE PRO-CYCLICAL?

The Stability and Growth Pact has recently been under close examination on the grounds that, rather than being associated with a neutral fiscal policy stance over the business cycle, it may have induced pro-cyclicality during downturns while also being unable to curb loose policies under buoyant economic conditions. However, the existing empirical literature does not find strong support to these arguments. By focusing on the euro area and on those phases of the economic cycle in which swings are particularly strong, it is found here that fiscal policy seems to have been neutral both in mild and severe recessions. In contrast, during upturns and from 1999 onwards, i.e. since the introduction of the Pact, a pro-cyclical bias is at play when economic conditions are particularly favourable. Nevertheless, this occurs also in other industrialised countries. Hence, the surge of pro-cyclicality cannot be associated directly with the adoption of the EU fiscal framework.

The issue of neutrality

According to the traditional Keynesian theory, governments should *actively* operate to smooth economic fluctuations. In particular, during phases of weak economic growth, they should adopt measures, such as tax cuts or new public investments, to foster a recovery in economic activity. In contrast, when growth is above potential, they should cut public expenditure. In other words, they should act counter-cyclically over the business cycle.

The Keynesian doctrine has been the mainstream practice in the conduct of economic policies in the post-World War II period, and it has generally been a successful tool in controlling output fluctuations and inflation.

However, from the 1950s on, and especially during the 1980s, Keynesianism was at the centre of a very intense debate since, according to some economists, an *active* use of fiscal policy could turn out to be helpless, and even harmful, on the grounds that i) recessions might be "self-correcting";[1] ii) there are long and uncertain time lags in the implementation of fiscal measures; iii) institutional constraints may restrict a timely use of fiscal policy and iv) fiscal policy decisions are, often, irreversible.

The spirit underlying the creation of the European Union fiscal framework, as embedded in the Maastricht Treaty (MT) and the Stability and Growth Pact (SGP), is to some extent rooted in this debate: the Pact, in fact, recommends that stabilisation should be achieved by the work of automatic stabilisers *only*, which should be left to operate freely and symmetrically over the cycle (Box 1). Thus, in the original formulation of the Pact, there is no room for active fiscal interventions, i.e. discretionary fiscal policy should be neutral (acyclical).

Yet some critics[2] of the Pact have argued that the implementation of the EU fiscal framework, and in particular the 3% deficit/GDP ceiling, rather than being consistent with

1. Robert Lucas, Nobel Prize in 1995 and founder of the "rational expectations theory", claimed that the market itself takes steps to recover from recessions: once entrepreneurs realise that a recession is under way, they cut prices to attract new consumers. Workers, in turn, curb their wage demands to reduce unemployment. Thus, real money supply and aggregate demand automatically rise and, without any government intervention, output gap shrinks.
2. See, for example, A. H. Hallett, J. Lewis and J. von Hagen (2004), "Fiscal Policy in Europe: an Evidence-based Analysis", CEPR, London.

Box 1 — Automatic stabilizers, discretionary fiscal policy and the links with the business cycle

The developments of public finances, as represented by government budget balances, can be decomposed into an automatic component and a discretionary one. Variations in the automatic component are (at least in the short-run) independent from policymakers' control, since they depend on the tax and benefit systems in place: during the expansion phases of the cycle, the tax base widens and revenues increase, whereas during downturns revenues shrink, due to weaker income and consumption, while social security costs rise. This component dampens deviations of actual output from potential, i.e. it has a stabilising, "countercyclical", effect.

The discretionary, or "structural" component is, in contrast, under the direct control of fiscal authorities and it changes as a result of new policy measures. A common measure of discretionary fiscal policy is the cyclically-adjusted primary balance (CAPB) defined as the residual when cyclical components and interest expenditures are netted out from the nominal budget balance. Changes in the CAPB are referred to as the stance of fiscal policy: when the CAPB rises, the stance becomes contractionary; when the CAPB falls, the stance is expansionary.

The discretionary component of fiscal policy may be counter, pro or a-cyclical whether it is intended to strengthen or weaken the stabilizing effects of automatic stabilizers, or whether it is constant over the cycle.

an acyclical fiscal policy stance, might have induced pro-cyclical budgeting. In fact, the necessity to abide the deficit rule may force governments to drastically cut expenditures during periods in which aggregate demand is already weak. This should hold, in particular, in those countries far from meeting their Medium Term Objective (MTO) of "close to balance or in surplus" budget balances.

During expansions, the argument follows, the Pact did not provide any incentive to "save for rainy days" in order to improve budget balances and to have enough room for manoeuvre during "bad times". Hence, the Pact would have been unable to curb the pro-cyclical bias characterising the conduct of fiscal policy in upturns since, at least, the 1970s onwards.

Are these criticisms sensible? Is it true, in other words, that in the euro area the adoption of the Pact has been associated with a deterioration of the pro-cyclical fiscal bias during "bad times", and with a persisting pro-cyclicality during "good-times"? Answers to these issues have been rather controversial.

Institutionally, the European and Ecofin Councils have recently recognised that the Pact has not eradicated the pro-cyclical bias of fiscal policy during expansions. As a consequence, the March 2003 Ecofin Council amended the Pact with a norm that, if applied, would have a clear effect of improving counter-cyclicality during upturns: it was recommended that Members States whose deficits exceeded the close-to-balance or in-surplus requirement should improve their cyclically-adjusted budget position by 0.5% of GDP.

As for a possible pro-cyclical bias induced by the Pact in downturns the Ecofin Council has not taken a clear position. The 0.5% adjustment rule on structural balances, since it has to be applied both in good and bad times, will have the effect of enhancing pro-cyclicality when the cycle is slowing. However, the reform of the Pact by the Ecofin Council (March, 2005) goes clearly towards curbing pro-cyclical budgeting in downturns by introducing a wider (and milder) set of conditions under which an excess over the 3% reference value can be considered as "exceptional", thus exempting a country from the Excessive Deficit Procedure. These modifications will presumably have an effect of mitigating the pro-cyclical bias in bad times.[3] In sum, the overall effect of these new norms is *a priori* rather ambiguous, when the cycle is negative.

Results from the empirical research on the possible pro-cyclical bias generated by the Pact are still contradictory. The OECD[4] notably stresses that, for a group of 21 industrialised countries, fiscal policy has been pro-cyclical in upturns and countercyclical in downturns. However, when the focus is placed on the euro area only, the results do not support the hypothesis of more pro-cyclicality during the post-1992 period. The European Commission[5] finds that fiscal policy has not actively responded to cyclical conditions, before and after the introduction of the EU fiscal framework. The existence of a pro-cyclical bias in good times is advocated, but the empirical evidence very weak.

In sum, data seem to slightly support the hypothesis of counter-cyclicality in downturns whereas evidence of a pro-cyclical bias in upturns is scant.

Here the attempt is to shed more light on these issues, by relying on an empirical approach based on a new definition of "good" and "bad" times, and notably by focusing on those phases of the cycle when economic conditions are *particularly* buoyant or *particularly* negative.

3. The original version of Regulation 1467/97 gave definitions as to when an excess over the reference 3% ceiling could be considered exceptional: the excess had to result from an unusual event outside the control of the Member State or it had to result from a severe economic downturn. A severe economic downturn was defined as an annual fall of real GDP of at least 2%. Instead, the new version of the Regulation will consider as exceptional an excess over the reference value which results simply from a negative growth rate of GDP.
4. OECD (2003), Economic Outlook No 74.
5. European Commission (2004), Focus on "The pro-cyclicality of fiscal policy in EMU", *Quarterly Report in the Euro Area*, vol. 3, No 2.

A bias after 1999?

Before presenting the results of the analysis, it is important to underline that the occurrence of a pro-cyclical bias may depend on different factors, other than the adoption of a rule-based system, as the one characterising the EU fiscal framework.

In particular, the literature identifies the concern for sustainability, the uncertainty surrounding potential output and the "electoral cycle" as factors possibly accounting for a pro-cyclical bias.[6]

We might expect discretionary fiscal policy to exhibit pro-cyclicality also in periods, (or countries) when (where) fiscal rules are not binding, when at least one of the factors listed before is at play. Empirically, two strategies are conventionally used to isolate the effect of the introduction of the EU fiscal framework in shaping the response of fiscal policy to the cycle:

i) The first relies on a comparison between the pre- and post-1992 or 1999 periods, where these dates are identified as years when the Maastricht Treaty and the SGP became operational. The idea is that, assuming all other factors (political economy, sustainability concerns, etc.) are similar for the euro area countries (before and after 1992 or 1999) we should observe an increase in pro-cyclicality in downturns, after the introduction of the single currency.[7]

ii) The second strategy is based on comparing fiscal policy as conducted in the euro area and in a "control" group of industrialised countries.[8] Here the underlying idea is that all industrialised countries have been characterised by similar factors affecting pro-cyclicality. Then, if the Pact has had an additional distorting effect of boosting pro-cyclicality, we should observe a deterioration of the pro-cyclical bias from 1999 onwards *relative* to other industrialised countries.[9]

We follow both these lines of investigation in studying a sample ranging between 1981 and 2005 and an interval (1999-2005) specifically corresponding to the period in which the Pact has been activated.

The analysis is based on a pool of 10 euro area countries (EA10):[10] the aim of the exercise is to highlight common euro area trends, rather than individual countries experiences. Two other groups of countries are studied. In the first (EU13) the UK, Sweden and Denmark are added to the euro area panel. In the second (OECD15), the US and Japan are added to the EU13 group (Box 2).

Results are reported in terms of the sensitivity of the fiscal stance to cyclical fluctuations, i.e. the percentage point (pp) change in the cyclically-adjusted budget balance associated with a percentage point increase in the output gap. The fiscal stance is defined as pro-cyclical if the sensitivity is negative (i.e. a lax policy stance associated with a rising output gap), counter-cyclical if it is positive and acyclical if it is not statistically different from zero.

Table 1a shows that during slowdowns (negative output gap) fiscal policy does not seem reactive to cyclical conditions over the whole period, for the euro area and the whole group of countries. The results do not change when the post-1999 period is considered, indicating the absence of a rise in pro-cyclicality following the introduction of the Pact.

Box 2 — Modelling pro-cyclicality and asymmetry in fiscal policy

A "fiscal rule approach" is used to estimate the reaction of discretionary fiscal policy, as represented by the CAPB, to the lagged output gap (stabilisation motive) and lagged CAPB and debt (sustainability motive). Due to lack of sufficiently long time series for yearly data, estimations are based on a panel specification:

$$CAPB_{it} = \alpha + \theta_1 CAPB_{it-1} + \theta_2 DEBT_{it-1} + \beta\, OG_{it-1} + \varepsilon_{it}$$

where CAPB is the cyclically-adjusted primary balance in terms of actual GDP, DEBT is the government consolidated debt in terms of actual GDP and OG is the output gap as percentage deviation of actual GDP from potential GDP (all data are taken from the OECD May 2005 Economic Outlook). A positive ß coefficient signals an (aggregate) counter-cyclical fiscal stance, while a negative one is associated with procyclicality.

The hypothesis of an asymmetrical fiscal policy stance in slowdowns and upturns is tested by interacting a dummy variable with the output gap, with the dummies equal to one when the output gap is negative (the threshold level γ is assumed equal to zero):

$$CAPB_{it} = \alpha + \theta_1 CAPB_{it-1} + \theta_2 DEBT_{it-1} + \beta_1\, OG_{it-1} + \beta_2 OG_{it-1} I_{OG<\gamma} + \varepsilon_{it}$$

A $ß_2$ coefficient significantly different from zero would indicate the presence of some asymmetrical effect. When ß2 is positive, the fiscal policy responds more counter-cyclically (or less pro-cyclicality) to the cycle.

When the threshold γ around which the policy would switch its stance is unknown, a more sophisticated approach is needed, based on a grid search and on an asymptotic theory for the construction of a confidence interval around the threshold.*

* See J. Cimadomo (2005) "Testing Nonlinearity in Fiscal Policy", CEPII Working Paper, forthcoming.

6. For a more detailed description on the factors behind pro-cyclicality see OECD (2003) and European Commission (2004) *op. cit.*
7. See, for example, C. Wyplosz (2002), "Fiscal Policy: Institution vs. Rules", CEPR Discution papers n° 3238.
8. See, for example, J. Gali and R. Perotti (2003), "Fiscal policy and monetary integration in Europe", NBER WP N° 9773.
9. It is important to recall that the Pact was not (fully) respected by some Members countries. For instance, Germany and France in 2002, 2003 and 2004, and Italy in 2004 did not abide the 3% deficit rule. However, it is generally recognised that the EU fiscal framework had some effective impact in the conduct of fiscal policy in the euro area. In other words, had not the Pact been in place, the fiscal stance of Member Countries would have been looser.
10. Excluding Luxemburg and Greece, for data availability reasons.

Table 1 – Cyclical sensitivity of discretionary fiscal policy*

	1981-2005		1999-2005	
Tab 1a	OG < 0%	OG < -3%	OG < 0%	OG < -3%
EA10	-0.03	-0.02	-0.03	-0.07
EU13	0	0	-0.02	-0.03
OECD15	0	0	0.03	0.01
Tab 1b	OG > 0%	OG > 3%	OG > 0%	OG > 3%
EA10	-0.06	-0.12	-0.12	-0.26
EU13	-0.01	-0.05	-0.1	-0.26
OECD15	-0.04	-0.06	-0.02	-0.23

*Percentage point (pp) change in the structural balance (CAPB) associated with a one pp increase in the output gap (OG), during bad times (OG<0%) and very bad times (OG<-3%); during good times (OG>0%) and very good times (OG>3%).

Note: grey cells: non significant results = a-cyclical policy; green cells: significant and negative results = pro-cyclical policy.

Source: OECD data, author's calculations.

We might expect, however, that the 3% deficit ceiling is binding, thus resulting in a pro-cyclical stance, only during particularly bad times. When the attention is placed on "particularly severe" recessions, identified as period in which the output gap is larger than -3%, the picture changes slightly: we observe that pro-cyclicality slightly increases in the euro area only after 1999 (sensitivity decreases from -0.03 to -0.07) but this fall is not statistically significant.

In contrast, Table 2 highlights that fiscal policy has reacted significantly (in a statistical sense) to debt levels, in the entire sample of countries but in particular in the euro area in the post-1999 period: for each percentage point of increase in the debt to GDP ratio, the structural balance improves by 0.09 pp in the euro area after 1999 and by 0.06 pp for the whole set of countries.

Table 2 – Debt sensitivity of discretionary fiscal policy*

	1981-2005	1999-2005
EA10	0.02	0.09
EU13	0.02	0.09
OECD15	0.01	0.06

*Percentage point (pp) change in the structural balance (CAPB) associated with a one pp increase in the debt/GDP ratio.

Note: green cells: significant results.

Source: OECD data, author's calculation.

We might conclude then that there is no significant evidence of a pro-cyclical bias in downturns induced by the Pact, as claimed by some commentators. Moreover, the Pact seems to have strengthened the concern for sustainability by governments, leading to tighter policies when public indebtedness grows.

Secondly, we ask whether a pro-cyclical bias in upturns was present before the introduction of the Pact and whether the Pact has not been able to curb it. It should be recalled that the existing empirical literature (European Commission, Wyplosz, *etc.*) does not provide evidence for a relevant pro-cyclical bias in the conduct of fiscal policy during recoveries. Table 1b highlights that, indeed, when "good times" are defined as periods of positive output gaps, the sign of the sensitivity coefficient is negative, indicating pro-cyclicality, but too close to zero to be considered significant. Thus, we label the policy as acyclical.

When, however, the attention is placed on episodes of *particularly* large expansions, identified as periods of output gaps higher that 3% of GDP,[11] we find that the (common) stance of euro area fiscal policy has still been acyclical in the whole period but has turned clearly and significantly pro-cyclical during the last seven years. In this interval, for each pp increase in the output gap (above 3%), the structural balance deteriorates by 0.26 pp in the euro area. However, when the sample is extended to the non-EA countries, the coefficient does not change much: the surge of a pro-cyclical bias cannot be associated with the adoption of the EU fiscal framework. Other factors may help to explain this bias: in particular, during the 1999-2000 recovery, budgetary authorities had generally overestimated potential growth. The anticipation of structurally higher revenues could have led governments to cut taxes and/or increase expenditures, thus exacerbating the pro-cyclicality of their fiscal policy stance.

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11. The 3% threshold on the output gap is identified endogenously in an econometric model. See J. Cimadomo (2005), "Testing Nonlinearity in Fiscal Policy", CEPII Working Paper (forthcoming).

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