Making The Pact More Flexible: Can It Lead to Less Flexible Fiscal Policies?

Michał Mackiewicz[1]

Abstract

One of the most often discussed features of the Stability and Growth Pact is the rigidity of its 3% deficit rule. In the recent time several reform proposals aim at alleviating the rule in order to allow more room for the automatic stabilizers to operate. As the 3% limit became in the recent years the only binding (at least partially) rule of the Pact's framework, such a reform is likely to cause even further deterioration of the member countries' fiscal balances. The empirical evidence presented in the paper shows that in the past lowering the structural budget surplus had a strong negative impact on a degree of anti-cyclical fiscal stabilization. This, in turn, suggests that the Pact's reform, through higher structural deficits, is likely to *decrease*, rather then increase, the scope of anti-cyclical fiscal actions undertaken by the EMU member countries.

JEL classification: E60, E63; keywords: fiscal policy, stabilization policy, fiscal rules; author's e-mail: mackiewicz@poczta.fm

---

[1] Author is a research assistant at the Institute of Economics, University of Lodz. This paper was prepared when the author was a visiting researcher at the Center for European Integration Studies (ZEI) in Bonn, under the EC Marie Curie programme.

Introduction

Problems with the Stability and Growth Pact (SGP) have become probably the most visible and intense issue in the European economic debate within the last two years. The Pact has been criticized from many different perspectives and some reform proposals have been developed. A thorough review and critique of the reform proposals can be found in Buti, Eijffinger and Franco [2003]. The Pact is criticized mostly for insufficient flexibility in response to economic fluctuations, for working asymmetrically around the cycle as well as discouraging public investment. Recently, another line of criticism has gained importance after the European Commission failed to launch the Excessive Deficit Procedure against Germany, France and Portugal after these countries repeatedly broke the 3% deficit rule. It is stressed that the SGP has become unenforceable and, as such, it can no longer be viewed as a mechanism for fiscal policy coordination in the Eurozone.

In response to these shortcomings, several reforms have been suggested by both the Commission itself (European Commission [2003]) as well as numerous other authors (such as Casella, [2001], Brunila [2002], Buiter and Grafe [2002], Wyplosz [2002], Fatás et al. [2003], to mention only a few). The reform proposals include changing the technical design of the rules (moving to expenditure or debt targets, introducing the golden rule), measures to strengthen discipline of the financial markets, introducing tradable deficit permits, procedural reforms, or even replacing the current framework with the politically independent Fiscal Policy Committees. Throughout the discussion one of the ideas, suggesting that the Pact should be made more flexible (sometimes labeled as "more intelligent"), remains relatively popular. It bases on the conventional wisdom that a rigid deficit rule prevents high deficits during a recession, thus hindering anti-cyclical policy. According to this rationale, alleviating the hard 3% deficit constraint in some way is hence a direct way to more cyclical stabilization as well as tax-smoothing, bringing significant gains in welfare. This idea seems to have played an important role in the process of softening the Pact undertaken in spring 2005, which significantly broadened the scope of "exceptional circumstances" that prevent the Excessive Deficit Procedure from being launched against a country breaking the EMU fiscal rules.

One possible objection to this line of reasoning bases on the observation that if structural budget is close to balance, then under normal conditions there is room for maneuver to accommodate

even quite severe recessions.[2] Another one, presented in this paper, centers around the incorrectness of some *ceteris paribus* assumptions implicitly incorporated in the suggestion of loosening the hard deficit ceiling.

First, it should be noted that in the presence of politically-motivated deficit pressure the "close to balance or in surplus" clause appears not to be actually binding as most of the Euro member countries demonstrate significant structural deficits. Both methodological complexities and the lack of penalty for possible non-compliance resulted in almost complete unenforceability of the Pact's fundamental component. Instead, the hard 3% deficit ceiling became the core rule of the SGP framework. Even taking into account the latest problems with executing the Excessive Deficit Procedure against Germany and France, breaking the deficit constraint by a country is still a major problem and makes the country being perceived as fiscally irresponsible. Thus it should be expected that removing the widely criticized "3%" rule yields, together with potentially some room for anti-cyclical fiscal policy, the further deterioration of public finance in at least some of the Eurozone countries.

Analysis presented in this paper suggests that a potential room for anti-cyclical actions, created by the reform, may not result in actual anti-cyclical policy. Perry [2003] suggests that if the underlying structural position is weak, a country may not be able to increase the actual deficit during recessions because of external pressures exerted on the fiscal authorities. One source of the pressure are the financial markets that become increasingly concerned when the deficit-to-GDP ratio is growing. Another is a political pressure, as a government pursuing a high-deficit policy tends to be viewed as economically irresponsible. A consequence can be an actual inability to conduct the proper anti-cyclical fiscal policy.

The analysis presented in this paper shows that, indeed, in the past (before the Pact and Maastricht fiscal constraints became effectively binding), countries with higher structural surplus tended to render stronger overall fiscal reactions to the business cycle fluctuations. The panel analysis based on the sample of 12 European countries in years 1980-1996 shows that while overall output elasticity of budget (in details defined later in the text) equals ca. 1 under structural budget balance, it is reduced by around 40% if the structural deficit increases to 5% of GDP. These results suggest that great caution is needed when alleviating the existing deficit limit, as such a change may not yield actual gains in terms of ability to conduct the proper anti-cyclical fiscal policy.

---

[2] Typically any 1 percentage point decline in GDP is accompanied by deficit increase of ca 0,5% of GDP, so under balanced budget SGP allows to accommodate negative output gaps as large as 6% of potential GDP.

Model specification

The equations explaining the key fiscal variables – general government real expenditure E and revenue R (for the country i at year t) are assumed to be:

(1) $$E_{it} = \overline{E}_{it}(\tilde{y}_{it})^{\varepsilon_G} \qquad R_{it} = \overline{R}_{it}(\tilde{y}_{it})^{\varepsilon_R},$$

where $\overline{E}$ and $\overline{R}$ denote, respectively, the structural levels of expenditure and revenue and $\tilde{y}_{it}$ is the output gap, defined as the ratio of actual to potential GDP. ε_E and ε_R are elasticities of expenditure and revenue with respect to output gap (short-term output elasticities). If e = E/Y, r = R/Y (and, respectively $\bar{e} = \overline{E}/\overline{Y}$, $\bar{r} = \overline{R}/\overline{Y}$) then the above equations can be re-written as:

(2) $$e_{it} = \bar{e}_{it}(\tilde{y}_{it})^{\varepsilon_E - 1} \qquad r_{it} = \bar{r}_{it}(\tilde{y}_{it})^{\varepsilon_R - 1}.$$

Let us define the general government surplus (differently from the conventional definition) as the *ratio* of revenue to expenditure. Such a definition has two advantages, one and the less important of which is the convenience of notation. More importantly, it allows to control for the fact that automatic stabilizers are naturally stronger in the states that have large public sectors in terms of their ratio to GDP. The definition, together with (2), allows to formulate the following equation of fiscal surplus:

(3) $$\log(r_{it}/e_{it}) = \log(\bar{r}_{it}/\bar{e}_{it}) + (\varepsilon_R - \varepsilon_E)\log(\tilde{y}_{it}).$$

Expression $(\varepsilon_R - \varepsilon_E)$ above is the measure of cyclical budget elasticity[3] and is later in the text denoted as ε_S. Equation (3) can be interpreted as a disaggregation of actual surplus into two components: the "structural" surplus, statistically uncorrelated with the business cycle (incorporating also the random component, to be defined later) and the "cyclical" component, incorporating the total impact of the business cycle. What is important, the $\bar{r}_{it}$ and $\bar{e}_{it}$ above are not necessarily equal to the conventional measures of structural expenditure and revenue computed according to the standard "gap-plus-elasticity" methodologies. This is due to the fact that the latter include only technical adjustments, not taking into account any possible reaction functions of fiscal authorities to the business cycle. The possible existence of such reaction functions are of crucial importance in the mechanisms examined in this paper, hence these variables cannot be used.

---

[3] If it is close to 0, than budget balance is insensitive to the short-run changes in GDP. When it is close to 1, the change of output gap by 1 per cent of GDP causes the change of budget balance by ϱ per cent of GDP, where ϱ is approximately equal the share of public revenues in GDP. Strictly speaking, ε_S it is the elasticity of budget balance, measured as the ratio of revenues to expenditures, to output gap, measured as ratio of actual to potential GDP.

As the "structural" deficit, measured by $\log(\bar{r}_{it} / \bar{e}_{it})$, is unknown, it has to be modeled in some realistic way. Three alternative approaches are proposed. Under the first one, it is assumed that the structural deficit follows a deterministic linear trend with a stationary random component, at least within a reasonably short period. This means that $\log(\bar{r}_{it} / \bar{e}_{it}) = \omega_i + \theta_i t + \eta_{it}$, where η_{it} is an i.i.d. disturbance term. Substituting it into (3) yields:

(4) $$\log(r_{it} / e_{it}) = \omega_i + \theta_i t + \varepsilon_S \log(\tilde{y}_{it}) + \eta_{it}.$$

An alternative is assuming that $\log(\bar{r}_{it} / \bar{e}_{it})$ follows a first-order autoregressive process:

(5) $$\log(\bar{r}_{it} / \bar{e}_{it}) = \varphi_i + \mu \log(\bar{r}_{i,t-1} / \bar{e}_{i,t-1}) + \eta_{it}.$$

Iterating backwards yields:

(6) $$\log(\bar{r}_{it} / \bar{e}_{it}) = \varphi_i / (1-\mu) + \sum_{k=0}^{t} \mu^{t-k} \eta_{ik}.$$

After substituting it into (3) one obtains:

(7) $$\log(r_{it} / e_{it}) = \varphi_i / (1-\mu) + \varepsilon_S \log(\tilde{y}_{it}) + \sum_{k=0}^{t} \mu^{t-k} \eta_{ik} \theta_i.$$

Writing (7) for period t-1, multiplying by μ and subtracting from its original form yields finally:

(8) $$\log(r_{it} / e_{it}) = \varphi_i + \mu \log(r_{i,t-1} / e_{i,t-1}) + \varepsilon_S (\log(\tilde{y}_{it}) - \mu \log(\tilde{y}_{i,t-1})) + \eta_{it}.$$

A third possibility considered here is that actual (total) deficit can be modeled as an autoregressive process, while only the changes in output gap influence its level:

(9) $$\log(r_{it} / e_{it}) = \varphi_i + \mu \log(r_{i,t-1} / e_{i,t-1}) + \varepsilon_S (\log(\tilde{y}_{it}) - \log(\tilde{y}_{i,t-1})) + \eta_{it}.$$

If, however, the concept presented in the previous section is correct, then output elasticity of fiscal surplus ε_S in the above equations is a function of surplus itself: higher deficit can reduce the ability of fiscal authorities to respond anti-cyclically, thus reducing (in absolute terms) the value of the coefficient. It should be however noted, that introducing the actual surplus into (4) (or (8), (9), respectively) as the determinant of ε_S causes some serious problems stemming from the fact that surplus is itself strongly correlated with the output gap. For this reason, some structural deficit $\bar{s}_{it}$, uncorrelated with $\tilde{y}_{it}$, has to be used instead. Note, that now the sensitivity measure is allowed to vary, both over time and between the countries:

(10) $$(\varepsilon_S)_{it} = \beta_0 + \beta_1 \bar{s}_{it} + \beta_2 \bar{s}_{it}^2.$$

The term $\beta_2 \bar{s}_{it}^2$ is introduced to allow for the possibility that the relation is non-linear. Substituting (10) into (4) and (8), respectively, yields the final forms of equations:

(11) $$\log(r_{it} / e_{it}) = \omega_i + \theta_i t + \beta_0 \log(\tilde{y}_{it}) + \beta_1 \log(\tilde{y}_{it}) \bar{s}_{it} + \beta_2 \log(\tilde{y}_{it}) \bar{s}_{it}^2 + \eta_{it},$$

$$(12)\qquad \log(r_{it}/e_{it}) = \varphi_i + \mu\log(r_{i,t-1}/e_{i,t-1}) + \beta_0(\log(\tilde{y}_{it}) - \mu\log(\tilde{y}_{i,t-1})) + \\ + \beta_1(\log(\tilde{y}_{it}) - \mu\log(\tilde{y}_{i,t-1}))\bar{s}_{it} + \beta_2(\log(\tilde{y}_{it}) - \mu\log(\tilde{y}_{i,t-1}))\bar{s}_{it}^2 + \eta_{it}.$$

$$(13)\qquad \log(r_{it}/e_{it}) = \varphi_i + \mu\log(r_{i,t-1}/e_{i,t-1}) + \beta_0(\log(\tilde{y}_{it}) - \log(\tilde{y}_{i,t-1})) + \\ + \beta_1(\log(\tilde{y}_{it}) - \log(\tilde{y}_{i,t-1}))\bar{s}_{it} + \beta_2(\log(\tilde{y}_{it}) - \log(\tilde{y}_{i,t-1}))\bar{s}_{it}^2 + \eta_{it}.$$

One should be aware of a potential reverse causality problem caused by the fact that higher sensitivity of budget balance, resulting from structural features of the system of public finance, is likely to lead governments to pursue more careful budget policies in order to avoid high deficits. However, while this structural sensitivity may vary between countries, it is unlikely to fluctuate significantly over time, at least within the sample used here. The estimation methods applied in the analysis are to a large extent robust to this problem due to the fact that they allow for country-specific fixed effects, thus exploiting time rather then cross-sectional variation within the panel.

Data used in estimation

An unbalanced panel of data covering the years 1980-1996 for 12 EU countries[4] is used in the analysis. The chosen period has to fulfill several requirements. Obviously, the sample has to be large to provide sufficient efficiency of the estimator. However, a too long period increases the probability of significant structural shifts within the sample, in particular the large multidirectional swings of $\log(\bar{r}_{it}/\bar{e}_{it})$, making the linear trend used in (11) inappropriate. At the same time, the sample period has to end before the Maastricht treaty and SGP rules effectively started to shape the fiscal policy, hence year 1996 was chosen as the end year of the panel. A total of 197 observations were available for the analyzed period, while this number had to be reduced in some cases due to the lags used.

All the data used come from the European Commission's Ameco database (as for November 2004). The public revenue R_{it} and expenditure E_{it} variables refer to the general government and are computed according to ESA'95 accounting standards. Output gap $\tilde{y}_{it}$ is equal the ratio of real GDP to the potential GDP, both expressed in constant 1995 prices. An important question is which measure of structural fiscal surplus should be used for $\bar{s}_{it}$. The approach followed in this paper would suggest defining it analogically to the actual surplus – as the log of the ratio of structural level of revenues to expenditures. However, both in the public discussion and most

[4] The sample includes: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, and United Kingdom. Spain and Sweden were excluded because the respective time series covered only 3-4 years.

economic analyses the conventionally defined structural deficit-to-GDP ratio is typically used as an indicator of the medium-run position of public finances. This is the reason why the latter is used here in this paper as a measure of $\bar{s}_{it}$.

Table 1 shows the basic descriptive within-sample statistics of the most important variables. As the logarithms used in the model are non-conventional and may be thus difficult to interpret, two additional variables are presented: traditionally computed fiscal surplus and output gap.

Table 1 Descriptive statistics of the sample

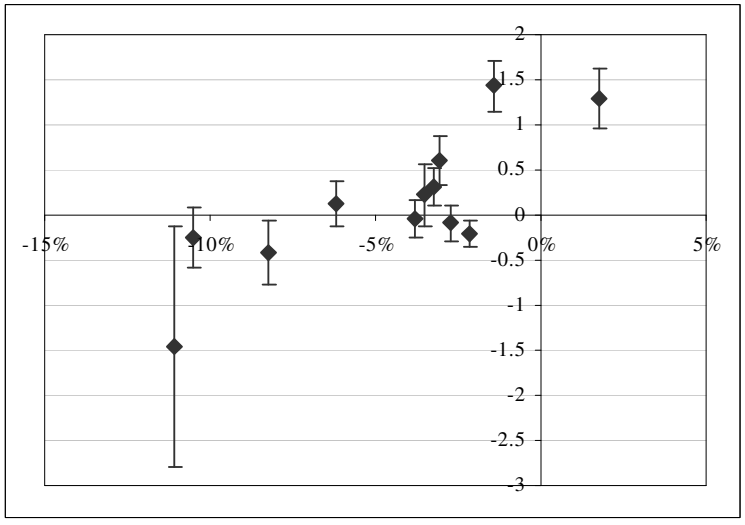
Variable	Description	Mean	Median	Std. deviation
$\log(r_{it} / e_{it})$	Actual surplus^{+}	-0,1015	-0,0783	0,0920
$\log(\tilde{y}_{it})$	Output gap^{+}	-0,0097	-0,0110	0,0240
$\bar{s}_{it}$	Structural surplus^{+++}	-0,0427	-0,0360	0,0402
$r_{it} - e_{it}$	Actual surplus^{++}	-0,0479	-0,0410	0,0417
$\tilde{y}_{it} - 1$	Output gap^{+++}	-0,0093	-0,0109	0,0238

Source: European Commission's Ameco database, author's calculations
$^{+}$ defined in text; $^{++}$ per cent of GDP; $^{+++}$ per cent of potential GDP

Estimation methods and results

As an introductory exploration of the data, equation (8) was estimated independently for each cross-section. Figure 1 shows point estimates of country-specific elasticities ε_i, plotted against average structural deficits in years 1980-1996.

Figure 1 Estimated output elasticities of fiscal surplus (vertical axis, with standard errors), plotted against structural surplus (horizontal axis, in % of GDP)



The figure suggests that, indeed, there might be some correlation between average deficit and the actual output elasticity of budget. To examine the relationship quantitatively, coefficients of equations (11)-(13) were estimated. Results of the estimation are presented in Table 2.

Table 2 Estimation results

Estimation	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
Method	LS	LS	GMM	GMM	LS	GMM	GMM
Effects	Cross-section	None	Cross-section	Cross-section	None	Cross-section	Cross-section
Lags of instruments[+]	x	x	0	1	x	0	1
Theoretical model	(11)	(12)	(12)	(12)	(13)	(13)	(13)
Constant	-0,222*** *-57,476*	-0,006*** *-3,282*	x	x	-0,007*** *-3,243*	x	x
μ	x	0,902*** *41,368*	0,736*** *17,746*	0,733*** *16,187*	0,903*** *43,513*	0,776*** *14,762*	0,773*** *14,739*
β_0	1,200*** *6,679*	1,096*** *9,096*	1,027*** *8,273*	1,073*** *8,722*	1,052*** *9,549*	0,850*** *7,836*	0,888*** *8,650*
β_1	15,589** *2,513*	20,888*** *3,358*	18,613*** *3,213*	20,255*** *2,950*	20,161*** *3,378*	13,913*** *2,822*	15,260*** *2,591*
β_2	90,430 *1,079*	169,424** *1,989*	153,039* *1,804*	164,224* *1,837*	165,280** *1,990*	122,271 *1,614*	131,763 *1,639*
R-sq	0,901	0,885	-0,473	-0,472	0,885	-0,543	-0,541
Adj. R-sq	0,883	0,882	-0,498	-0,497	0,882	-0,568	-0,567
SSR	0,165	0,182	0,297	0,297	0,182	0,311	0,311
DW	1,283	2,021	x	x	2,029	x	x
F-statistic	50,285	351,025	x	x	351,328	x	x
J-statistic	x	x	198,914	198,370	x	195,779	196,993
Instrument rank	x	x	170	170	x	170	170

[+] *lags of instruments of the predetermined regressors;*
*/**/*** *denote estimates significant at, respectively, 10, 5 and 1 per cent confidence level.*

For equation (11) the standard fixed effects procedure was used, modified in the sense that it allows for varying trend slope θ_i (estimation (I)). When the lagged dependent variable is used as a regressor, the LS-based methods are inconsistent and biased, so in principle they should not be used for estimation of equations (12) and (13). However, according to Kiviet [1995], in case of persistent series (high values of μ) the respective bias is small and OLS estimator performs well on a RMSE criterion compared with other estimators. For this reason, and as a robustness check, the OLS estimates are also reported (estimations (II) and (V)).

As the central method of estimating the dynamic models, the Arellano-Bond [1991] generalized method of moments procedure is used, with two modifications. The data set allowed only to use the $\log(r_{it-2}/e_{it-2}),\ldots,\log(r_{it-11}/e_{it-11})$ as instruments for differenced lagged dependent variable, instead of potential maximum lag of 16 periods. The second, more important problem is imposing non-linear restrictions on parameters in equation (12). The problem was solved by an iterative procedure – the value of μ, estimated as coefficient of $\log(r_{it-1}/e_{it-1})$, was then subsequently used to build the regressors $(\log(\tilde{y}_{it})-\mu\log(\tilde{y}_{i,t-1})$ used in the next iteration. In all cases the procedure produced fast convergence toward stable values of $\hat{\mu}$, for any starting values given between 0.3 and 1.0, and was halted when change became smaller than 10^{-6}. Estimates of μ reported in (III) and (IV) are values computed from the last iterations.

In estimations (III) and (VI) the instruments for the independent variables are their values lagged by 1 year. However, such a procedure may be sensitive to violation of the assumption of regressors other than the lagged dependent variable being strictly exogenous. Hence, as a robustness check, in estimations (IV) and (VII) the respective values lagged by 2 years were used as instruments. As Table 2 shows, this modification has only minor impact on the results.

The computed J-statistics allow to construct the Sargan test for overidentifying restrictions. The test does not reject, at 1 per cent confidence level, the null hypothesis that the applied overidentifying moment conditions are valid.

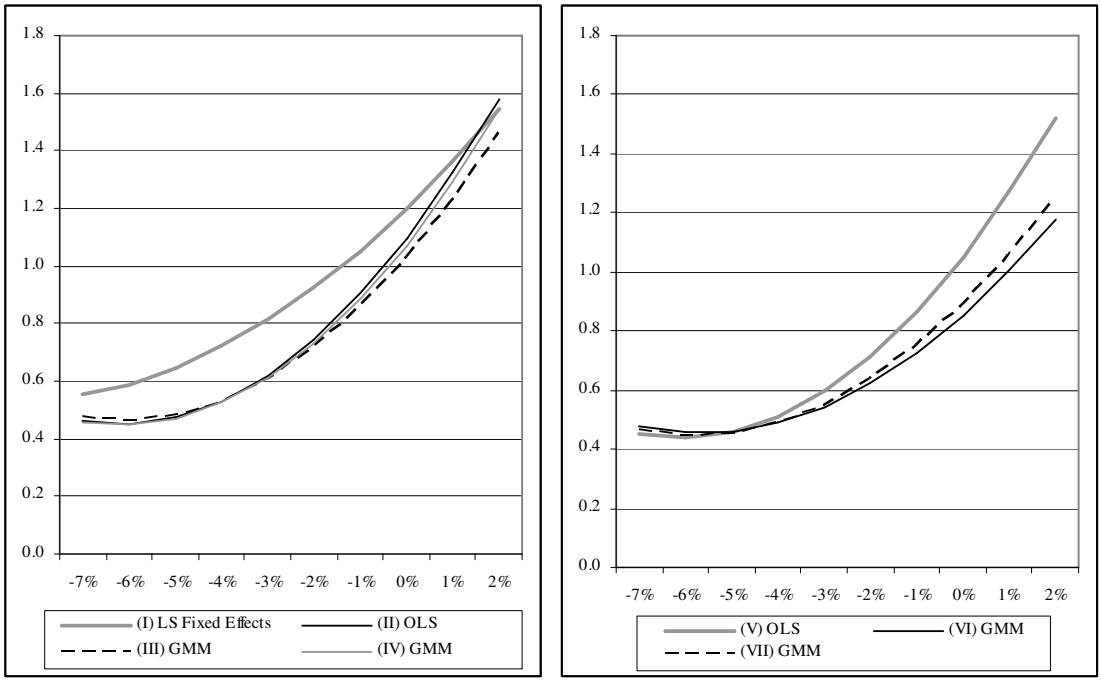
Following the Arellano [1987] approach, all the reported t-statistics are computed using the White coefficient covariance estimates that are robust to arbitrary within cross-section residual correlation. The estimates of μ are all highly significant, and all GMM estimates show the similar order of magnitude. It suggests fiscal deficit or surplus being a moderately persistent variable. When interpreting the estimates obtained from the OLS method, one should note that the respective estimate is typically upward-biased, as the calculated value is likely to incorporate also the influence of possible cross-section-specific effects.

The estimate of β_0, representing the average output elasticity of budget surplus under the assumption of cyclically balanced budget, is highly significant in all cases. In a typical situation, when the automatic stabilizers are allowed to work freely, the elasticity is expected to take the values slightly above one. Such a belief results from the fact that the elasticity is the sum of output elasticities of state revenue (roughly equal to 1, as the revenue can be viewed as proportional to output), and elasticity of expenditure. The latter can be expected to be small, as highly output-elastic expenditures, such as unemployment benefits, tend to have a relatively small share in total expenditures. The estimation results (I)-(IV) seem to be roughly in line with these

expectations. Estimations (VI) and (VII) yield somewhat smaller values, possibly due to the fact that in equation (13) β_0 captures purely the dynamic effects of change in surplus, while omitting any possible static effects.

Estimations (I)-(VI) show estimates for β_1 being statistically significant at the confidence level 0,01, the estimation (VII) doing the same at the 0,02 level. These results show that, indeed, there is a statistically significant impact of structural fiscal balance on the output elasticities of surplus. Non-linearity of this impact only in some cases has been confirmed at the 0,05 or 0,1 confidence level. However, this result may be due to multicollinearity, as removing the squared term from the specification caused also estimates of β_1 to change the order of magnitude and become insignificant. Attempts to apply the 3rd order polynomial (not reported here) did not notably change the results and the respective coefficient was statistically insignificant.

Figure 2 Implicit output elasticities of budget surplus (vertical axis), conditional on the values of structural surplus expressed as per cent of GDP (horizontal axis)



Estimated values $\hat{\beta}_0$, $\hat{\beta}_1$ and $\hat{\beta}_2$ allow to compute the implicit elasticities of surplus, conditional on the values of structural surplus. Results are presented in Figure 2. Depending on the specific form of equation, the calculated values of $\varepsilon_S(\bar{s})$ differ slightly, while all of them show the same order of magnitude. They can be divided into three groups. The first group consists of one element – the $\varepsilon_S(\bar{s})$'s based on the LS estimator with fixed effects, assuming a stable trend of the underlying structural balance. It yields the highest values of elasticity of budget under high deficits – for structural surplus equal -5% of GDP, the corresponding elasticity amounts to 0,65,

while under balanced budget reaches 1,20. The latter value is close to values in the second group of results, obtained for specification (12), where it amounts to $1{,}03 \div 1{,}10$. In this group, however, the implicit elasticities under 5% GDP deficit are notably lower, between 0,47 and 0,48. The same results are yielded by estimation (V), however, it should be noted that they were obtained with a method which is potentially seriously biased. The last group consists of elasticities based on estimations (VI) and (VII). They, in turn, present the same order of magnitude under high deficits (0,45 and 0,46) while under balanced budget the computed values amount to $0{,}85 \div 0{,}89$. The latter results are smaller than unity, which contradicts an earlier supposition that elasticities are expected to be slightly greater than 1. As it was mentioned before, the lower values can be probably attributed to the fact that in specification (13) they measure only the dynamic impact, while in the previous equations the $\varepsilon_S(\bar{s})$'s measured the static influence.

Conclusions

Analysis presented in this paper suggests that there is a positive relationship between the structural surplus and the cyclical elasticity of budget. It suggests that while under a balanced structural budget the respective elasticity takes the values of 0,9÷1,2 (depending on the definition and equation specification), it is reduced by 46÷57% on average, when structural deficit reaches the level of 5% of GDP. According to the preferred interpretation, under high permanent fiscal deficits, the pressure coming from either financial or political markets does not allow the typical government to borrow more in downturn, thus narrowing the room for anti-cyclical fiscal policy. The presence of such a relationship raises some scepticism about the possible results of making the Stability and Growth Pact more flexible by alleviating the existing deficit rule. According to results obtained here, possible deterioration of public finance in the Eurozone countries resulting from such a reform is likely not to be coupled with stronger anti-cyclical policy. Then, if the Pact is to be reformed, the reform should possibly go in a different direction, incorporating more comprehensive measures than merely adjusting the tight deficit rule to the growing deficit pressure in some of the EMU member countries.

References

Arellano M., 1987, *Computing Robust Standard Errors for Within-groups Estimators*, Oxford Bulletin of Economics and Statistics, 49, 431-434

Arellano M., Bond S. R., 1991, *Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations*, Review of Economic Studies, 58, 277-297

Balassone F., Monacelli D., 2000, *EMU Fiscal Rules: Is There a Gap?*, Banca d'Italia, Temi di discussione, 375

Barrell R., Dury K., 2001, *Will the SGP Ever Be Breached?*, in Brunila, Buti and Franco [2001]: 235-255

Beetsma R., 2001, *Does EMU Need a Stability Pact?*, in Brunila, Buti and Franco [2001]: 23-52.

Brunila A., Buti M., Franco D. (eds.), 2001, *The Stability and Growth Pact – The Architecture of Fiscal Policy in EMU*, Palgrave, Basingstoke

Brunila A., 2002, *Fiscal Policy: Coordination, Discipline and Stabilization*, Bank of Finalnd, Helsinki, Discussion Paper No 7-2002

Buiter W. H., Grafe C., 2002, *Patching up the Pact: Some Suggestions for Enhancing Fiscal Sustainability and Macroeconomic Stability in an Enlarged European Union*, Centre for Economic Policy Research, London, Discussion Paper No 3496

Buti M., Eijffinger S., Franco D., 2003, *Revisiting the Stability and Growth Pact: grand design or internal adjustment?*, European Commission Economic Papers, Brussels

Casella A., [2001], *Tradable Deficit Permits*, in Brunila, Buti and Franco [2001]: 394-413

Eichengreen B., 2002, *Europe.s Instability Pact*, available at *emlab.berkeley.edu/users/eichengr/*

European Commission, 2003, *Public Finances in EMU – 2003*, Brussels

Fatás, A., Hughes Hallett, A., Sibert, A., Strauch, R. and von Hagen, J., 2003, *Stability and Growth in Europe: Towards a Better Pact*, Centre for Economic Policy Research, London

Kiviet J. F., 1995, *On Bias, Inconsistency, and Efficiency of Various Estimators in Dynamic Panel Data Models*, Journal of Econometrics, No 68

Perry G., 2003, *Can Fiscal Rules Help Reduce Macroeconomic Volatility in the Latin America and the Caribbean Region?*, World Bank Policy Research Working Paper 3080

Wyplosz C., 2002, *Fiscal Policy: Rules or Institutions?*, paper prepared for the Group of Economic Analysis of the European Commission, April