The Impact of Fiscal Rules on Public Finances in the Euro Area

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Introduction

Due to the 2008–09 financial crisis and ensuing economic downturn, budgetary problems are on the policymakers' agenda once again. Fiscal deficits incurred as a result of the financial crisis and economic downturn have caused public debt to rise steeply once again. Moreover, the public debt of some EU countries was already at a high level before the crisis. At a high level of public debt, public finances become susceptible to adverse interest rate and economic growth fluctuations. If interest rates increase, advantageous government programs may be postponed, a debt trap may arise, and crowding out may reduce private investments. Interest rates may increase due to the growing risk aversion and the emergence of risk premiums on sovereign debt. Greece, Ireland and Portugal, which have been the hardest hit by the European debt crisis, have received support from the IMF, and the new EU and the euro area's Financial Stabilization Mechanism and Financial Stability Facility.

The fiscal turmoil has also pointed out again the need for an adequate framework of fiscal management and fiscal rules. Fiscal rules and guidelines, whether quantitative in nature or of a more qualitative character, indicate the way public finances should be managed and the direction in which policymakers should aim public finances to evolve. Fiscal rules seek to provide a solution to the deficit bias problem that is caused by politicians' short-sightedness and the common pool problem. We divide fiscal rules into two categories:

(i) fiscal rules that primarily aim at restricting government spending, budgetary deficits and government debt in order to safeguard fiscal sustainability. The fiscal rules inspired by (neo)classical principles fall into this category.

(ii) Fiscal rules that primarily aim at stabilizing macroeconomic fluctuations. These rules are guided by short-run (new) Keynesian principles of fiscal management.

This paper reviews the principles underlying fiscal rules and applies them to the current European Union. In the European Union, the supranational Stability and Growth Pact (SGP) should provide the necessary guidance to limit governmental borrowing by member states. In addition to the SGP, European countries are implementing various other fiscal rules that bind central, regional and local governments. We provide empirical estimates of the effect of fiscal rules on fiscal variables in the euro area.

Fiscal rules and sustainability of public finance: classical principles

Neoclassical economics assumes that no policy impulses are necessary to stabilize production and employment – as these would represent efficient market outcomes – and proposes that policymakers pursue best a balanced budget strategy. Government expenditures are seen as consumptive and to be financed by current tax revenues. Financing such consumptive expenditures with public debt would crowd out private investments due to increasing interest rates. Although the balanced budget rule is still widely used, it has to be taken into account that a balanced budget does not necessarily have a neutral impact on the economy, as shown by the balanced budget multiplier theorem. In addition, a budget balance does not only result from discretionary policy, but is also affected by automatic stabilizers and expectations. Revenues would also have to be tailored to needs; a discretionary (possibly countercyclical) revenue policy aimed at avoiding any budget deficit or surplus is, however, not self-evident. To

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overcome such difficulties with balanced budget rules, the golden rule is a preferable alternative. Neoclassical economists argue that fiscal deficits are permitted, if destined to finance productive public investments, because these investments would recover their costs in the long run. As a result, a stabilizing policy is possible by means of productive investments while a country's (net) public debt would remain constant in the long term.

Fiscal rules based on (neo)classical principles, concentrate on securing solvency of the government: focusing on the intertemporal budget constraint, they seek to assess if governments will be able to bear the future burden of public debt. The budget is considered to be intertemporally sustainable if the current public debt equals the net present value of expected/ planned future primary balances. With the intertemporal budget constraint, a country's fiscal gap can also be determined. The fiscal gap reflects the net present value of future government expenditures, including servicing public debt, and future revenues. In fact, it is a measure of the additional burden that will need to be imposed on future generations to satisfy the intertemporal budget constraint.

The (public) debt trap has scourged public finances in many European countries in the past. Thus avoiding a recurrence of this experience is a primordial objective of current fiscal policy. The debt trap can be defined as a vicious circle in which an initial budget deficit has to be funded by public debt, which in turn increases a country's interest burden and consequently its deficit, and thus further increases public debt. The debt trap can be stopped using three parameters: raising the primary budget balance as a percentage of GDP, lowering the average rate of interest due on public debt and increasing the growth rate of GDP.

Fiscal rules and macroeconomic stabilization: new Keynesian principles

In the 1930s the Great Depression brought about a shift in economic thought. As Keynesianism won ground, cyclical expenses and revenues that act as automatic stabilizers were considered desirable in times of recession when a countercyclical policy is preferred to a balanced budget. This is necessary as market mechanisms alone are assumed not to be sufficiently strong to restore full employment. Moreover, budgetary stabilization policy consists not only of automatic stabilizers, like progressive tax rates and unemployment benefits, but can also be complemented by discretionary interventions that can be (partly) guided by considerations of countercyclical macroeconomic policy management.

Despite the potential benefits of budgetary stabilization policy, Keynesian policy principles displayed some shortcomings in the past. For example, during the 1980s policymakers in many European countries underestimated future debt problems. Moreover, asymmetric applications were often observed. During economic downturns a stabilization policy was applied by raising expenditures and cutting taxes. In booms the policy would, however, require cutting expenditures and raising taxes. Politically, this was very difficult to implement. Furthermore, downturns were often misused by politicians to fund more expenditures than necessary. The resulting deficit bias implies that debt repayment issues also begin to matter as a country is eventually expected to repay its debt. Clearly, there is a limit to both the stabilization possibilities and the lending capacity.

The distinction between cyclical and structural balance can be to used to integrate the two fundamental approaches outlined above. The structural balance can be used to assess the (neo)classical perspective with its emphasis on long-run sustainability issues. The cyclical balance can be used to assess the Keynesian aspect of short-run anti-cyclical stabilization. Taken together, this implies that a structurally balanced budget should be attained in the long run, and a countercyclical policy is prescribed for the short run. A country can incur deficits by increasing expenditures during an economic downturn, as long as those deficits do not surpass the surpluses built up during the preceding economic boom. Consequently, public debt will remain constant in the long run. However, this rule is not precluded from serious limitations. As business cycles are not symmetrical, neither in length nor size, over- and undercompensation can arise. What is more, public choice theory and political economy theory emphasize that there will be insufficient downward flexibility of expenditures during booms due to political factors.

Fiscal rules in the EU: the Stability and Growth Pact and beyond

The first binding set of supranational fiscal rules was introduced by the Treaty of Maastricht in 1992 on the Economic and Monetary Union of the European Union (EMU). Admission to the third and final phase implied the introduction of a common currency unit. To be admitted to the euro area applicants had to meet convergence criteria with regard to price stability, exchange rate stability, the long-term rate of interest and fiscal policy. The last criterion required the absence of excessive budget deficits. Whether a deficit is considered excessive or not is defined by article 104 C §2 and the accompanying Protocol on the Excessive Deficit Procedure: the annual budget deficit should not be higher than 3 percent of GDP, unless it has been on a decreasing path or is of an exceptional and temporary nature. Also, total public debt should not be larger than 60 percent of GDP, unless it has been on a decreasing path and the benchmark is being approached at a satisfactory rate.

The fiscal criteria also apply once countries have joined the euro area since fiscal discipline is crucial for the well-functioning of a common currency. The unified money and capital markets pose the threat that increasing deficits in one or more countries could endanger the stability of the euro zone as a whole. High deficits in one member state could increase interest rates for all member states. Furthermore, the European Central Bank could be put under pressure to mitigate the increase in the rate of interest by relaxing its monetary policy or be pressured to use monetary finance (including buying up government debt) to prop up member states in financial distress. This would be inconsistent with its price stability policy and damage the credibility of the euro area.

In response to a number of shortcomings that had became apparent and to meet broad criticism, the pact was revised in 2005. Firstly, the changes led to a more contextual consideration of member states' circumstances. Henceforth, member countries with a public debt less than 60 percent of GDP could pursue a structural deficit of 1 percent of GDP in the medium term, while countries with a higher debt were expected to pursue a balanced budget or small surplus. Every year countries were required to move a half percent of GDP towards their medium-term objective. When economic growth is higher than projected this would be more than a half percent to allow reduced efforts during an economic downturn. Secondly, since the revision of the pact not only the decline of economic growth is taken into account but also the duration of the economic downturn. Thirdly, the time span in which excessive deficits need to be corrected was broadened from one to two years. Various other adaptations of the pact were proposed but not (fully) implemented (see Fischer et al. 2006 for an extensive overview). Some included the simple proposal of well-known approaches, such as the golden rule or the adoption of a cyclically adjusted budget balance rule. Others present a more complex adjustment of the pact, such as a complex system of tradable deficit permits.

As any fiscal rule, the Stability and Growth Pact is also plagued by shortcomings. The numerical values of its benchmarks remain arbitrary and are possibly counterproductive from the perspective of countercyclical fiscal stabilization policy. Furthermore, substantial doubt remains whether the pact is able to deliver fiscal sustainability. The current fiscal climate has only increased this doubt as fiscal prudence appears to be slipping. One of the main targets of criticism concerns the pact's ineffective penalties. A second aspect of the criticism is the increased flexibility of the revised pact. As a considerable series of factors need to be taken into consideration to judge whether a deficit is excessive, loopholes exist and judgment is complicated. As a result, the fiscal rule is assessed to be less transparent and simple. Thus, the increased flexibility also has considerable disadvantages as argued by Buti (2006). With regard to public debt, finally, the pact is clearly a step backwards in comparison to the Treaty of Maastricht as, in addition to the limited contextual approach, the pact does not provide a clear penalty for infringement of the debt benchmark.

Academic research and practical experience provides a number of important principles that should govern fiscal rules. Kopits and Symansky (1998) formulated eight basic properties for an "ideal" fiscal rule. A fiscal rule must be well-defined, transparent, simple, flexible, adequate, enforceable, consistent and efficient. However, as public budgeting and finance is an economic matter, some specific economic requirements are also necessary to enhance a effectiveness of fiscal rules.

Based on the above considerations we deduce the following recommendations:

(i) A *relative measure* to preclude fiscal drag is advisable. A relative measure will also improve a fiscal rule's effectiveness by facilitating comparison over time as well as between countries.

(ii) Comparability is enhanced when there is a *correction for inflation*.

(iii) A budgetary constraint should *not only refer to the balance* to avoid potential adverse effects on the underlying components of the budget balance (e.g., undesirable tax increases to compensate for structural problems on the expenditure side of the balance). Therefore, government expenditures and revenues also need to be included in the design of fiscal discipline.

(iv) Effectiveness will also be enhanced when the rule supports a *medium term* (instead of a short term) approach. That way, policymakers are compelled to pursue a more sustainable fiscal policy since the future consequences of short term measures must be taken into consideration. Possible manipulations of the timing of expenses and revenues in order to change the stock and/or composition of government debt over time are discouraged. Moreover, fiscal policy becomes more predictable which enhances public confidence.

(v) The standard budget balance is insufficient to assess the stance *of fiscal policy*: taking into consideration cyclical and structural effects separately is necessary.

Relating to these economic requirements, the Stability and Growth Pact's effectiveness remains doubtful. The pact contains relative measures for the budget deficit and the public debt. Furthermore, it is a more medium-term oriented approach and incorporates a structural measure. However, nothing has been laid down with respect to the cyclical portion of the budget balance. Moreover, the pact does not pay attention to the underlying parts of the budget balance, nor does it take into consideration the rate of inflation. The necessity of reform is further emphasized when the pact is assessed according to the fundamental requirements of an ideal fiscal rule. Although its simplicity has been widely acknowledged, the enforceability of the pact seemed to be the principal problem both before and after the 2005 reform. This is in accordance with the above-mentioned lack of sufficient and effective penalties.

As a result, member states of the European Union are employing and prolonging the application of domestic alternative rules. One may argue that this is simply to comply with the fiscal rules of the pact. Alternatively, it could be considered that the domestic rules are a means to achieve a more prudent fiscal policy given the shortcomings of the pact. The presence and nature of the complementary domestic fiscal rules is illustrated by data in Table 1. The data are based on the results of two rounds of surveys conducted by the Directorate-General for Economic and Financial Affairs (DG ECFIN) of the European Commission in 2006 and 2008 in order to map out fiscal governance in EU member states. These surveys asked for information directly from the EU member states on the character of the fiscal rules in their country and their coverage, their statutory base, monitoring and enforcement mechanisms, as well as experience with respect to the rules.[1]

Some member states apply more stringent rules than the Stability and Growth Pact. For example, Estonia and Portugal apply a balanced budget rule, the UK and Germany use Golden Rules, Denmark targets strict structural surpluses, and Spain expects its general government to reach a budget surplus of 1 percent of GDP over the business cycle. Only three countries had not introduced their own fiscal rules

[1] The original data are made publicly available at http://ec.europa.eu/economy_finance/db_indicators/fiscal_governance/documents/1-db_fiscal_rules_en.xls.

Table 1

Domestic fiscal policy rules in effect since 2008, EU-27

EU member state	Budget balance rule	Expenditure rule	Revenue rule	Debt rule
Austria	1			
Belgium	3	1		
Bulgaria		1		1
Cyprus				
Czech Republic		1		
Germany	3	1		1
Denmark	1	1	1	
Estonia	1			1
Greece				
Spain	2			3
Finland	2	1	1	
France	1	2	1	1
Hungary	1			1
Ireland	1	2		
Italy	2	2		
Lithuania	1	1	1	1
Luxembourg	1	1		1
Latvia			1	1
Malta				
Netherlands		1	1	
Poland				1
Portugal	2			2
Romania	1			1
Sweden	2	1		
Slovenia				2
Slovakia		1		1
United Kingdom	1			1
Total	**26**	**17**	**6**	**19**

Source: Based on own calculations using data from DG for Economic and Financial Affairs of the European Commission.

when the survey was last conducted in 2008 (i.e., Cyprus, Greece and Malta).

The Stability and Growth Pact has established supranational directives with regard to fiscal policy. Yet, member countries maintain a lot of freedom in achieving them. The data show that this eventually leads to a broad set of different domestic rules. Furthermore, those numerous rules do not all prove to be effective according to the European Commission (2009). In addition, most lack independent monitoring and have poor enforcement mechanisms in case of non-compliance. It is also clear that uniformity is missing with regard to fiscal policy rules in the EU. Policymakers are facing a dilemma. On the one hand, the pact seems to be insufficient to achieve its economic objectives, establish uniformity and could seem rather redundant considering the numerous (more stringent) domestic rules. On the other hand, a large portion of those domestic rules is not effective enough to devolve all fiscal power on member states.

A first possible solution to this dilemma would be to use the current structure of supranational rules, complemented by domestic rules to reach the most desirable fiscal policy. For instance, it could be made the responsibility of the member states to regulate the revenues and expenditures underlying the budget balance. However, as mentioned above, there exist large differences in the effectiveness of the currently implemented domestic fiscal rules. Therefore, it would be necessary to co-ordinate the national responsibilities. For example, supranational policymakers could use the above-mentioned requirements as guidelines for the rules implemented by member states.

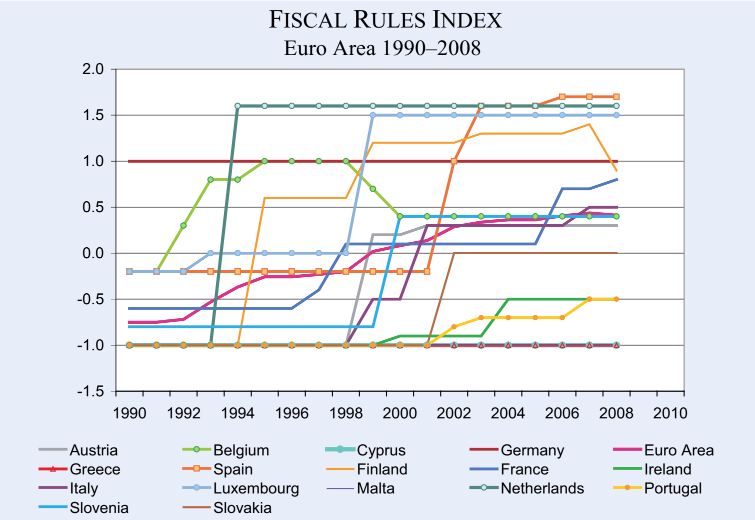
A second solution would be to profoundly reform the pact once again. As mentioned above there have been a large number of proposals to revamp the pact. Therefore, it would be difficult to agree upon the most appropriate reform that would remedy the pact's shortcomings. For example, there are both advocates for and opponents of more supervision of the national fiscal policy by independent economic committees or institutions. Moreover, an unanimous decision of the member states would be necessary as a reform requires the alteration of the regulation of the Council of the European Union. Consequently, this solution seems fairly unlikely to occur, although it would enhance European uniformity and could make domestic fiscal rules superfluous.

Effects of fiscal rules on the fiscal stance in the euro area: empirical evidence

To capture the influence of the institutional features that foster the effective implementation of fiscal rules, DG ECFIN has constructed indexes of strength of fiscal rules, using information on (i) the statutory base of the rule, (ii) the body in charge of monitoring compliance with the rule, (iii) the body in charge of enforcement of the rule, and (iv) the enforcement mechanisms relating to the rule. Based on the strength index for each rule, a comprehensive time-varying Fiscal Rule Index (FRI) for each member state was constructed. This FRI is calculated by summing up all fiscal rule strength indices in force in the respective member state, weighted by the coverage of general government finances using the respective rule (to take into account that, e.g., a fiscal rule applicable to a local or regional government may not be relevant at a national level). Figure 1 displays this Fiscal Rule Index for the euro area countries.

Countries in the euro area continue to display considerable variation in the characteristics of their fiscal rules, possibly more than one would expect in a common currency area. Over time, an increase in the euro area average fiscal rule index is observed, suggesting an increasing importance of the fiscal rules in the euro area fiscal management.

Figure 1



Source: European Commission.

To analyse the effects of fiscal rules on the fiscal stance, we estimated panel regressions for the 16 euro area countries for the period 1995–2008. We estimate the impact of the fiscal rule index on (1) the fiscal balance, (2) the primary fiscal balance, (3) government spending, (4) government revenue, (5) the structural primary balance, (6) the cyclical fiscal balance, (7) the fiscal impulse and (8) the primary fiscal balance gap. To do so, we add the Fiscal Rule Index to otherwise fairly standard estimations of these eight budgetary reaction functions that include also the lagged dependent variable, the output gap and the debt level. This approach makes it also possible to consider the essence of both the classical and the Keynesian aspects of fiscal policy rules as outlined in the first two sections of this article. The presence of the output gap reflects the importance of cyclical factors in fiscal variables, the presence of the debt level the impact of fiscal sustainability considerations. We include a constant and/or trend if they improve the estimation results further. Country-specific fixed or random effects were included in some cases but are not reported.

In most cases, regression results confirm the existing literature: the effects of the output gap and lagged debt on the fiscal variables are similar to those found in other empirical estimations of fiscal balance equations (see, e.g., Claeys 2008, and Ballabriga and Martinez-Mongay 2003). An increase in debt contributes to a lower total balance (column 1), reflecting the interest burden, but also to a higher primary balance, reflecting a stabilizing mechanism, as a high debt level increases the (perceived) need to improve the primary fiscal balance. The Fiscal Rules Index has in most cases a significant positive effect on the fiscal balance (both on the total fiscal balance and the primary fiscal balance (column 2). This suggests that fiscal rules have had a deficit reducing effect and are in that sense important for the workings of fiscal policy in the euro area: stronger fiscal rules in a country and over time contribute to a lower deficit. Fiscal rules tend to have a negative effect on government spending (column 3), while no significant effect on government revenues (column 4).

Table 2

Panel estimation of the effects on fiscal rules on fiscal stance, euro area-16 countries

Dependent variable	(1) Fiscal balance[a]	(2) Primary balance[b]	(3) Total government spending[c]	(4) Total government revenue[d]	(5) Structural primary balance[e]	(6) Cyclical fiscal balance[f]	(7) Fiscal impulse[g]	(8) Primary fiscal balance gap[h]
Constant			3.00*** (0.80)	8.10*** (1.81)	– 0.32 (0.28)	0.16** (0.08)		2.67 (0.64)
Lagged dependent variable	0.64*** (0.05)	0.71*** (0.05)	0.93*** (0.02)	0.79*** (0.05)	–0.76*** (0.05)	0.39 (0.05)	– 0.15** (0.07)	0.46*** (0.08)
Output gap[i]	0.08 (0.06)	0.07 (0.06)	0.05 (0.06)	0.06 (0.05)	–0.12* (0.06)	0.26*** (0.02)	0.12** (0.06)	0.22 (0.13)
Lagged debt[j]	– 0.008** (0.003)	0.01** (0.005)	0.002 (0.004)	0.02* (0.01)	0.01** (0.003)	– 0.001 (0.001)	0.001 (0.002)	– 0.06** (0.03)
Fiscal Rules Index[k]	0.41*** (0.13)	0.32** (0.15)	– 0.24* (0.12)	– 0.32 (0.22)	0.28** (0.13)	– 0.005 (0.03)	– 0.001 (0.12)	– 0.98** (0.42)
Time trend		– 0.0001 (0.0001)						
Adjusted R2	0.65	0.59	0.95	0.97	0.68	0.74	0.13	0.54
S.E. regression	1.70	1.67	1.36	0.99	1.57	0.44	1.62	2.62
Log likelihood	– 384.38	– 366.17	– 332.7950	– 262.34	– 365.83	– 122.24	– 389.35	– 281.66
Durbin Watson	1.50	1.63	1.87	1.94	2.03	1.66	1.99	1.71
Mean dep. variable	– 1.42	1.68	44.84	43.39	1.32	0.20	0.12	– 2.09
No. Obs.	198	191	198	198	197	206	206	153

***: significant at a 1% level. **: significant at a 5% level. *: significant at the 10% level.
[a] Net lending /Net borrowing (-) as a % of GDP under the Excessive Deficit Procedure, source Eurostat. – [b] Primary fiscal balance as a % of GDP, source Eurostat. – [c] Total general government expenditure as a % of GDP, source Eurostat. – [d] Total general government revenue as a % of GDP, source Eurostat. – [e] Structural primary fiscal balance as a % of GDP, source: European Commission data. – [f] Source: European Commission data. – [g] Fiscal impuls = -Δ (structural primary balance/GDP). – [h] Primary fiscal balance gap = primary fiscal balance – debt to GDP* (interest rate – growth rate). – [i] Source: European Commission data. – [j] General government consolidated gross debt as a % of GDP, source Eurostat. – [k] Fiscal Rules Index compiled by the EU Commission.

In column 5, the reaction function for the structural primary fiscal balance is estimated, a measure that is closely linked to the fiscal stance and to the long-run fiscal sustainability. It shows that a stronger Fiscal Rule Index improves the structural primary fiscal balance, a finding that confirms the results of the European Commission (2010) for the sample of all EU countries.[2] A higher debt level also increases the structural primary fiscal balance indicating – as indicated in column (2) – a stabilizing effect from high debt on the primary structural deficit. An increase in the output gap reduces the structural primary fiscal balance suggesting some pro-cyclicality in this discretionary part of the fiscal balance. In the literature, some studies find pro-cyclicality in the structural primary balance, while in others evidence for the more desirable property of anti-cyclicality is found. In the estimation of the cyclical fiscal balance, column (6), the output gap plays an import role, reflecting the role of automatic stabilizers; the Fiscal Rule Index does not seem to have an effect on the cyclical deficit. Column (7) displays the estimation results for the fiscal rule for the fiscal impulse. An increase in the output gap increases the fiscal impulse, implying again a pro-cyclical bias in discretionary fiscal policy. A higher fiscal rule index may somewhat reduce the fiscal impulse even if the coefficient is not estimated precisely. Finally, primary fiscal balance gaps, column (8), are reduced by a higher Fiscal Rule Index.

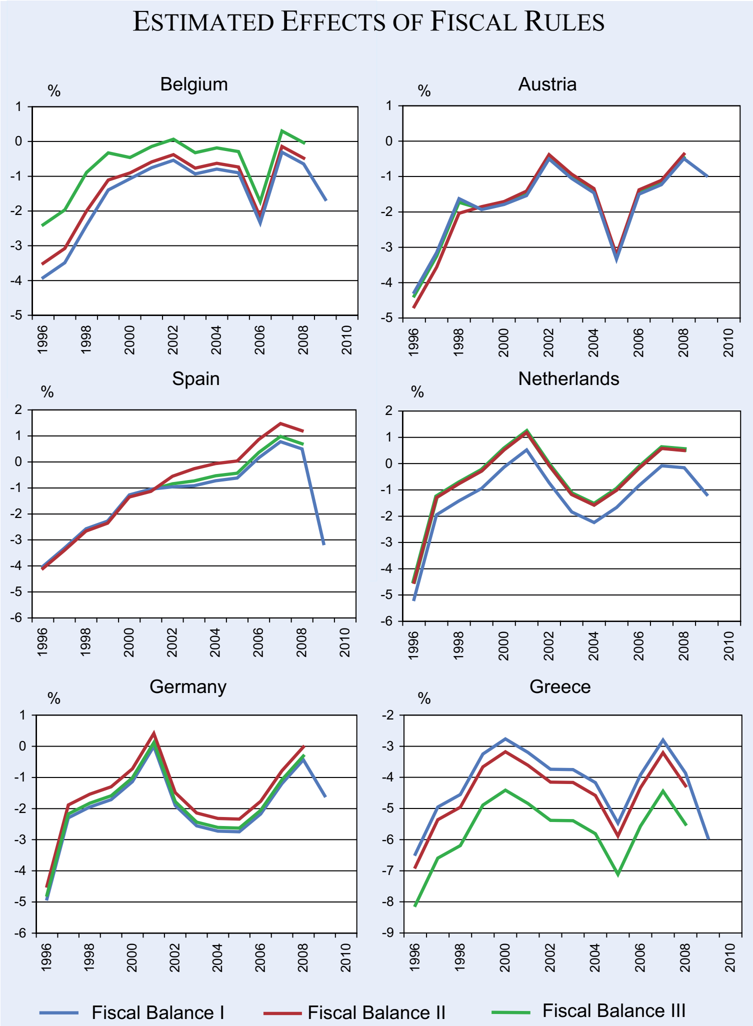
To estimate the effects of the fiscal rules on the fiscal balance more specifically, we can also use the regression results in a more precise manner: if we put the coefficient on the fiscal rule index to zero (or in an alternative interpretation, if the fiscal rule index always had a value of zero) in the estimated fiscal balance equation estimated in column (1) of Table 2, we would obtain an estimate of the fiscal balance in the hypothetical case that fiscal rules had no effect on fiscal discipline and therefore on fiscal balances.

[2] We also estimated (1)-(8) for the entire sample of EU countries. In that case, results are largely consistent with Table 2.

Figure 2 provides for Belgium the estimated fiscal balance according to (1). The estimated impact of fiscal rules on the fiscal balance is defined as the difference between Fiscal Balance I (blue line: fiscal balance if fiscal rules are ineffective, viz., fiscal rules are non-existent) and Fiscal Balance II (red line: fiscal balance with effect of fiscal rules according to panel estimation 1). As can be seen, the estimated impact of fiscal rules is not negligible.

We can take the analysis even one step further by re-estimating panel estimation (1) and allowing country-specific slope coefficients for the fiscal rule index variable. In that case we allow for the possibility that countries differ in the way fiscal rules impact on fiscal variables; in the panel estimations in Table 2 such country-specific elasticities for the Fiscal Rules Index were not considered. In the case of Belgium, this increases even further the estimated effect of fiscal rules: to see this, consider Fiscal Balance II and Fiscal Balance III (green line, deficit with effect fiscal rules

Figure 2



Source: Own calculations.

according to panel estimation with country-specific FRI-slopes) in Figure 2. With country-specific estimates of the Fiscal Rules effect on the fiscal balance, the estimated fiscal rules coefficient in case of Belgium, is more than double in size compared to the original panel estimation that assumes equal slopes across the euro area countries. In the case of Belgium, the estimated difference is the largest of all countries. In other countries the difference with the first panel estimation without country-specific slopes is smaller. According to this estimation, the deficit moderating effect of fiscal rules can improve the fiscal balance by as much as 1 percent.

In a similar vein, we find for Austria that the effect of the fiscal rules is much smaller. In the case of Spain the effect of fiscal rules on the fiscal deficit is initially also small, but increases consistently over time. Also for the Netherlands, the fiscal rules have some impact on moderating fiscal deficits and in this case there is no distinguishable difference between the panel estimation without and the estimation with country-specific slopes on the fiscal rules index. In the case of Germany, the effect of the fiscal rules index decreases in the panel regression with country-specific slopes on this variable. Greece is a special case: its fiscal rule index reached the lowest (and negative) score of all countries. Given a positive coefficient in the panel estimation without and with country-specific slope on the FRI, this would imply that the inadequate fiscal rules in Greece actually contributed to a higher fiscal deficit. Taken together, these findings suggest that fiscal rules exert a non-negligible effect on fiscal balances in the euro area, even if the effects may differ somewhat between countries and over time.

Conclusion

The recent fiscal turmoil in the euro area, casts some doubts on the adequacy of the Stability and Growth Pact in delivering fiscal stringency as it did not achieve satisfactory results in practice. Practically all EU countries are implementing and prolonging the application of (sub)national fiscal rules; the pact seems to be insufficient and redundant considering the numerous domestic rules. At the same time, many of those domestic rules do not seem effective enough to devolve all fiscal power on member states. Since another reform of the pact is improbable in the short run, the only solution to the problem is to maintain the pact's fiscal constraints and complement them with better co-ordinated national fiscal rules. Our empirical estimates indicate that the existing framework of national fiscal rules – notwithstanding the inconsistencies in design, implementation and enforcement – exerts a non-negligible effect on fiscal variables in the euro area, even if the effects may differ between countries and over time reflecting the idiosyncrasies of fiscal management and (changes in) the framework of national fiscal rules.

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