Europe's new fiscal rules

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Abstract: Europe has put in place a new system of complex fiscal rules. These include the so-called "six pack" to upgrade the Stability and Growth Pact and a new Treaty incorporating the "fiscal compact". Much of the discussion about the new rules has been procedural or theoretical. This paper shows what the rules will mean in practice under a medium-term scenario developed by the OECD. So far, fiscal consolidation has largely been driven by the recent wave of Excessive Deficit Procedures. Only once these commitments have been fulfilled will the new system of rules come into action. Its central pillar will be the requirement to balance budgets in structural terms. The rules imply a tight fiscal stance over the coming years for many European countries by historical standards. Almost all countries will have to be as disciplined as the few countries that managed to make meaningful progress in tackling high debt levels in the past. Over the very long term, the rules imply extremely low levels of debt. Thus, the requirements are not likely to be permanent. The methodology to calculate the structural balance has a number of weaknesses and discretion will be needed in implementing the rules.

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1   Introduction

The sharp deterioration in the public finances in Europe since the financial crisis erupted, combined with a preceding build-up in the debt-to-GDP ratio in many countries, has left the public finances in poor shape. This led to a substantial and necessary upgrading of EU fiscal institutions, notably aimed at dealing with the risks of moral hazard within the euro area. The main elements of these reforms are a strengthening of the Stability and Growth Pact (SGP) around the so-called "six pack" of legislative measures and a new inter-governmental treaty incorporating the "fiscal compact". The latter requires that there must be a rule in national law that the budget position shall converge to a broadly balanced or surplus position in structural terms[1].

Much of the discussion about the new rules has been procedural or theoretical, focusing primarily on the identification of fiscal effort and shortcomings of using the structural balance (e.g. ECB, 2014; Hers and Suyker, 2014; Tereanu et al., 2014). The debate has been further obscured by the complexity of the system based on multiple fiscal rules, and their different effects on debt dynamics in the short and long term[2]. The most comprehensive analysis of the rules so far has been done by Eyraud and Wu (2015). They focused on assessing the past performance of the rules and suggested improvements, but they did not concentrate on medium-term fiscal implications of the rules. In this context, this paper investigates practical relevance of the rules and their implications for fiscal stance under a medium-term scenario developed by the OECD.

The presented analysis shows that, in the near term, the post-crisis fiscal consolidation would largely be guided by the existing Excessive Deficit Procedure (EDP) and the rules would only require modest incremental improvements in the underlying budget balances. However, the fiscal stance will have to be restrictive for a long time. What the rules imply for the budget balances is not out of line with what some countries have managed to achieve. However, some countries will have to show much greater discipline than in the past. Balanced budget commitments in structural terms would likely be central to the new regime. The revision of the Medium-Term Objectives (MTOs) for the budget balance will need to ensure that the required policies are realistic and sensible. The methodology for measuring the cyclically-adjusted budget balance has serious weaknesses and its implications will need to be carefully assessed. The complexity of the rules reduces transparency and could jeopardize the buy-in at national level. It could have been reduced by not introducing the debt convergence rule. According to simulations, this rule is not likely to

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[1]   A structural deficit of up to 0.5% of GDP is allowed for all participating countries, with up to 1% deficit for countries with government debt below 60% of GDP.

[2]   For instance, while a broadly balanced structural budget stabilizes the debt-to-GDP ratio at a low level in the long term (Figure 2), in the short term, it can raise debt if headline budget is in deficit due to a negative output gap. Moreover, fiscal consolidation may increase debt initially if fiscal multipliers are large.

bind. In the long run, the implied steady-state debt levels are extremely low, although this problem emerges pretty far in the future.

The remainder of this paper is organized as follows. The first section briefly sets out the new and revised rules. The second section presents the simulation framework, the baseline scenario and the path of key fiscal variables for OECD EU countries. The final section assesses the system of rules in the light of the simulations.

2 The New and Revised Rules

The EU fiscal framework is based on a system of fiscal rules, enforcement mechanisms and procedural requirements. The SGP has been at the core of these arrangements since its adoption in 1997. It was first revised in 2005. Following the recent financial crisis and against the background of persistent failures to apply these rules effectively (OECD, 2010), the EU fiscal framework was strengthened again.

The two main pillars of recent reforms are the so-called "six pack," comprising five regulations and one directive, and a new inter-governmental treaty, including the "fiscal compact". The "six pack" upgraded and revised the SGP, as well as covered other issues, including macroeconomic governance (OJ, 2011a-f). It also introduced new legal requirements for national budgetary frameworks through a directive. The "fiscal compact," contained in the new treaty, requires that a rule that the budget position shall be "balanced or in surplus" be included in national law and be of "binding force and permanent character, preferably constitutional." Two additional EU regulations that largely focus on procedures around the core requirements, the "two pack," entered into force in May 2013 (EC, 2011a, 2011b).

Most of the reforms aim at improving the enforcement of budgetary discipline through mechanisms and procedures, which are intended to be more binding than in the past. There are new procedures for both the "corrective arm" of the SGP and the "preventive arm" (Appendix 1). An important change is that many decisions by the Council on enforcing budgetary discipline will be taken by reverse qualified majority voting. This solution would make it harder to form blocking majority against the assessment of the European Commission (EC) (OECD, 2012a). There is also a wider range of sanctions, including, for the first time, financial sanctions under the "preventive arm" of the SGP. The possibility of earlier and more graduated sanctions is intended to increase their credibility. In the earlier system, the few financial sanctions were envisaged to be imposed late in the process when a country would already be facing problems. Much stricter requirements for statistical reporting will also improve the transparency and timeliness of the collection and publication of budgetary data for the general government and its sub-sectors.

The new fiscal framework is largely based on the same set of budgetary rules as the 2005 revised SGP. There are two new rules: a debt convergence rule under the "corrective arm," and a benchmark for expenditure growth under the "preventive arm" (Table 1). The debt

convergence rule is temporarily complemented by a transition rule that applies to countries, which were under the Excessive Deficit Procedure (EDP) in 2011, when the new debt convergence rule entered into force.

Table 1. Overview of the EU Fiscal Rules

Fiscal measure bound by the rule:	Rule/correction:	Enforcement mechanism:
General government budget deficit ("deficit rule")	not higher than 3% of GDP *if higher, the structural balance to be adjusted by min. 0.5% of GDP annually*	"Corrective arm" of the SGP, the Excessive Deficit Procedure triggered in case of non-compliance
General government gross debt ("debt convergence rule")	not higher than 60% of GDP *if higher, debt in excess of the 60% of GDP to be reduced by 1/20th annually*	
General government gross debt ("transition debt rule")	*debt to be reduced so as to comply with the debt convergence rule by the end of 3rd year following exit from the Excessive Deficit Procedure which was open in 2011*	
General government structural balance ("MTO/structural balance rule")	not lower than the country-specific Medium-Term Objective (MTO)	"Preventive arm" of the SGP + *"fiscal compact" (with stricter MTO limits than SGP)*
	if the MTO is not achieved, the structural balance to be improved by 0.5% of GDP annually in normal times ("transition to MTO")	
General government expenditures ("expenditure rule")	*growth of expenditures adjusted for discretionary revenues not higher than the long-run average of potential output growth*	"Preventive arm" of the SGP

Note: Text in italics and bold indicates new requirements.
Source: Authors' compilation.

Its aim is to provide them with a less demanding three-year transition period, which starts with the termination of EDP. At the end of the transition period, countries are required to comply fully with the new debt convergence rule. The EU expenditure rule requires the modified expenditure-to-GDP ratio to grow in line with a 10-year average rate of real potential output growth as estimated by the EC (see below) [3]. The modified expenditure is net of cyclical unemployment spending, debt interest expenditure and spending financed through EU structural funds. Moreover, investment spending within this aggregate is smoothed over four years to limit the effect of big jumps, which are not unusual for public investment, on this measure. Discretionary

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[3] For countries that are not yet at their MTO, a "convergence margin" is subtracted from their benchmark expenditure growth, in order to reach the MTO.

revenue measures (both revenue-increasing and -decreasing) are subtracted from it, to ensure a balanced budget over the medium term. It is then deflated by the GDP deflator, to account for the effects of inflation on spending.

Furthermore, a proper enforcement of the structural budget balance rule in line with the MTO would effectively bring a third new rule to the fiscal framework. Compliance with the MTO, already a part of the revised SGP, was very patchy at best in the past (OECD, 2010). However, the strengthening of enforcement under the "preventive arm" and the putting in place parallel national rules in the "fiscal compact" is likely to make the MTOs biding in the future.

The MTO is set in terms of the cyclically-adjusted general government budget position, net of one-off measures (EC, 2013). It should be set such as to ensure debt sustainability, including accounting for population ageing costs, and to provide a safety margin to the headline deficit limit of 3% of GDP, while maintaining room for budgetary maneuver[4]. The rules impose a minimal limit on its level of -1% of GDP for the euro area countries. The "fiscal compact" sets an even stricter limit of -0.5% of GDP for countries with debt above 60% of GDP. Currently, the individual country MTOs range from -1.7% of GDP in Hungary to 0.5% of GDP in Luxembourg. The MTOs are set for all EU countries in a triennial exercise, coinciding with the publication of the Ageing Report by the EC. The MTO can be updated more often, if a country implements structural reforms that affects the sustainability of public finances.

3 How Will the New Fiscal Rules Work?

The functioning of the new EU fiscal framework is complex and opaque, and the implications of the rules are state contingent and thus not obvious. There are four target measures: the headline deficit, debt, the structural budget balance and expenditures, with explicit convergence rules for the debt-to-GDP ratio and the structural budget balance.

Since there are no published official projections or scenarios of the rules' implications, this section presents stylized simulations of fiscal policy under the set of fiscal rules outlined in Table 1, excluding the expenditure rule. Simulations are undertaken for the OECD countries in the European Union, with the exception of Greece and the United Kingdom[5]. The scenarios assume that countries strictly follow the minimum requirement of the most stringent rule in terms of the level of

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[4] Formally, the objective of public debt sustainability or rapid progress towards sustainability can be written as MTO = $-(60*g)/(1+g) + (0.024*d - 1.24) + 0.33*S2E$, where g is the long-run nominal growth rate, d is the debt-to-GDP ratio, and $S2E$ is the EC's indicator of future population ageing costs.

[5] Greece is excluded because of the new EU programme, agreed in August 2015, that will govern fiscal adjustment instead of the fiscal rules. The United Kingdom is excluded, as it is not subject to numerical fiscal rules (the EDP deficit and debt reference values), by the virtue of Protocol 15 on certain provisions relating to the United Kingdom annexed to the Treaty on the Functioning of the European Union.

the underlying budget balance[6]. This excludes the possibility of countries running tighter than required fiscal policy or not fulfilling the rules.

The simulations are based on deficit and debt identities and exogenous assumptions concerning GDP growth and interest rates taken from the OECD long-term projections presented in the November 2014 OECD Economic Outlook (Appendix 2 and Table A2.2). These projections largely incorporate fiscal adjustment under EDPs and EU-IMF programs as of mid-2014, and assume that output gaps close and GDP growth rates converge towards their potential. The focus is on a period from 2017 to 2026, i.e. 10 years after the end of the Economic Outlook's projections.

The assumption of no feedback from fiscal policy to growth is very strong. Thus, Appendix 2 presents a simplified modification of the simulation model where GDP growth is affected by fiscal policy, assuming two plausible fiscal multipliers. This modification does not substantially change the results in terms of which rule is binding (Figure A2.1). However, given the assumption that rules are strictly adhered to, GDP growth and in turn fiscal stance becomes very volatile. This suggests that the strictly implementing fiscal rules may be challenging in practice given likely ensuing macroeconomic volatility. Consequently, the discussion of rules below focuses on the baseline simulation with exogenous growth.

Under the baseline scenario, after current EDPs are closed, the MTO binds in the majority of countries. Given already large consolidation before 2014, the underlying balances are expected to be at or above MTOs levels in more than half of the countries already in 2017 and in most countries by 2019. The debt convergence rule and its transition variant bind in several countries over short spells at the beginning of the simulation period, typically after the excessive deficit correction. Only in Portugal and Finland, these rules bind persistently[7]. In cases when the transition or debt convergence rules bind, the implied underlying balances are relatively high compared with the levels required by the MTOs or transition to MTOs (Table A2.1 in Appendix 2), or with balances maintained in the past.

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[6] When MTOs and debt convergence/transition rules imply the same level of the underlying budget balance (rounded to one decimal point), the MTO is chosen (Table A2.1 in Appendix 2).

[7] Finland is a special case. Despite low gross debt, maintaining the structural balance at the MTO results in breaching the 60% of GDP gross debt ceiling. Since Finland has a net asset position and assets as a share of GDP are assumed to be constant, it must run high budget surpluses to keep the gross debt-to-GDP ratio stable (Barnes et al., 2012). Portugal, on the other hand, has one of the highest debt levels, necessitating a larger surplus than implied by the MTO. This is not the case for Italy, which has similar debt level as Portugal, because the Italian MTO is higher than that of Portugal.

Table 2. Binding Rules in Baseline Simulation

|	current deadline for EDP correction	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Austria	..	..	..	..	debt	=	=	=	=	=	=	=	=	=
Belgium	..	..	..	..	debt	=	=	=	=	=	=	=	=	=
Estonia	..	..	..	..	=	=	=	=	=	=	=	=	=	=
Finland	..	..	..	..	debt	debt	debt	debt	debt	debt	debt	debt	debt	debt
France	2017	3%	3%	3%	3%	3%	trans.	->MTO	->MTO	=	=	=	=	=
Germany	..	..	..	..	=	=	=	=	=	=	=	=	=	=
Ireland	2015	3%	3%	..	->MTO	->MTO	->MTO	->MTO	=	=	=	=	=	=
Italy	..	..	..	..	debt	=	=	=	=	=	=	=	=	=
Luxembourg	..	..	..	..	=	=	=	=	=	=	=	=	=	=
Netherlands	..	..	..	..	debt	=	=	=	=	=	=	=	=	=
Portugal	2015	3%	3%	..	trans.	trans.	debt	debt	debt	debt	debt	debt	debt	=
Slovak Rep.	..	..	..	..	->MTO	->MTO	=	=	=	=	=	=	=	=
Slovenia	..	3%	3%	..	trans.	trans.	debt	=	=	=	=	=	=	=
Spain	2016	3%	3%	3%	3%	->MTO	->MTO	trans.	=	=	=	=	=	=
Czech Rep.	..	..	..	..	=	=	=	=	=	=	=	=	=	=
Denmark	..	..	..	..	->MTO	=	=	=	=	=	=	=	=	=
Hungary	..	..	..	..	->MTO	->MTO	=	=	=	=	=	=	=	=
Poland	2015	3%	3%	..	->MTO	->MTO	->MTO	=	=	=	=	=	=	=
Sweden	..	..	..	..	=	=	=	=	=	=	=	=	=	=

Notes: "3%" is the 3% of GDP deficit ceiling under the current EDP, "trans." is the transition rule, "debt" is the debt convergence rule, "->MTO" stands for the transition to the MTO, "=" marks that the MTO is reached and maintained. Calculations start in 2017, following the end of the projections presented in OECD Economic Outlook No. 96. See Appendix 2 for further details.
Source: Authors' calculations.

The near-irrelevance of the debt convergence rule in the medium term in the simulations, despite high debt levels, stems from the fact that the MTOs imply large enough primary surpluses to lower the debt-to-GDP ratio at a more than sufficient pace. Moreover, as explained below, for countries with debt in a range immediately above 60% of GDP, the required debt reduction is very small and easily dominated by the MTO requirements.

The assumed dominance of the EDP adjustment path and the transition rule avoids the more brutal front-loaded adjustment that the debt convergence rule by itself would imply, especially for countries with debt well above 60% of GDP (Fioramanti and Vicarelli, 2011; Table A2.1 in Appendix 2).

Initial consolidation combined with sustained balanced budgets – in terms of the MTOs – would lead to a substantial reduction of gross debt-to-GDP ratios in most countries over the coming decade (Figure 1). The average annual debt decline will be generally larger for countries with higher initial debt levels (between 2 and 5% of GDP over 2016-26). Nevertheless, for two-thirds of the countries, gross debt will be still above 60% of GDP by 2026. For a few countries with relatively low levels of debt (the Czech Republic, Denmark, Estonia, Luxembourg and Sweden), maintaining budget balances at the minimum required level would result in rising debt. This largely stems from the fact that stabilizing gross debt in countries with net financial assets requires budget surpluses which are relatively large compared with gross financial liabilities when gross assets are kept constant in relation to GDP (Barnes et al., 2012).

Figure 1. Gross Debt Reduction under the EU Fiscal Rules

(a) Debt and Average Annual Pace
of Debt Reduction

(b) Gross Debt Levels
(% of GDP)
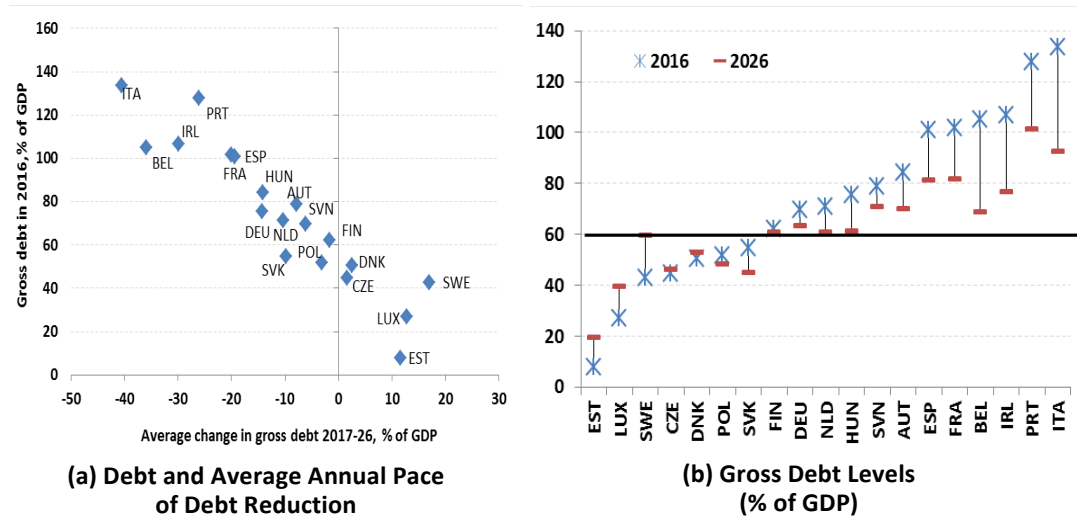
Note: Gross debt refers to the Maastricht definition.
Source: OECD Economic Outlook No. 96 database and authors' calculations.

The simulation results are robust to a modification of the MTO rule that sets the consolidation target based on the output gap. Structural fiscal tightening can be difficult to achieve and may be self-defeating in adverse cyclical conditions, especially when the negative output gap is large. To address this issue, the EC adjusted the interpretation of the rules in 2015 (EC, 2015). In particular, the required MTO adjustment was made conditional not only on the level of the debt but also on the size of the output gap and the position in the economic cycle as proxied by changes in the output gap. This adds to transparency compared with past practices when a laxer EC stance had been explained by vague "exceptional circumstances." The inclusion of this gap-dependent rule in the simulations does not change results. This reflects the fact that many countries are expected to have achieved their MTO at the beginning of the simulation sample, or either output gaps are too small to yield a higher/lower adjustment than otherwise required or other rules (notably the debt convergence and transition rules) dominate.

The baseline scenario for the sequence of the binding fiscal rules and their implications for the fiscal policy stance are sensitive to the underlying economic assumptions. Therefore, results should be treated as indicative only, in the view of the following five caveats.

First, the scenarios assume that countries follow the rules exactly. This has not been the case in the past and there may be under or over-performance relative to the rules. In addition, sticking mechanically to the minimum fiscal rule requirements could imply a high volatility in the fiscal stance, limiting the likelihood that the rules will be applied strictly.

Second, the simulations are sensitive to GDP growth and interest rate assumptions, which are exogenous to fiscal policy in the baseline scenario. However, if GDP growth reacts to fiscal policy, macroeconomic variables and structural fiscal adjustment become highly volatile. Nevertheless,

even under this scenario, the results are little changed compared to the baseline in terms of steady-state levels of debt and structural balances at the end of the simulations, and in terms of the sequence of binding rules. The exception is the debt convergence rule and its transition variant, which bind more often in the multiplier scenario, as debt is higher due to lower growth at the beginning of the simulations.

Third, the simulations are sensitive to initial conditions regarding growth and fiscal outcomes and projections up to 2016. A slippage relative to projections would, for example, imply greater fiscal effort in future years.

Fourth, it is assumed that the MTOs remain at their current levels. However, the MTOs can be revised every three years after the triennial publication of the Ageing Report of the EC. For some countries, a revision could imply tighter deficit ceilings and thus more consolidation and a faster debt decline (Barnes et al., 2012).

Fifth, due to differences between the OECD and the EC concerning estimates of output gaps, automatic stabilizers' and one-offs, the OECD assessment of structural balances may diverge from the official EU estimates, implying different structural consolidation paths[8].

# 4 Assessment of the New Fiscal Rules

Using the stylized simulations, this section assesses the budgetary and wider implications of the new rules. This section considers the balanced structural budget rules, central to the new framework in terms of both their steady-state and dynamic implications.

4.1 The Balanced Budget Rules Imply Very Low Steady-State Debt

A well-known implication of balanced budget rules is that overall budget balances close to zero will typically imply very low steady-state debt-to-GDP ratios (except at very low nominal growth rates). The calculation of the MTO and the requirements of the "fiscal compact" partially recognize this problem, under the MTO formula and through an override in the new treaty's balanced budget requirements in cases where debt is low and there are no other long-run sustainability issues. However, this crucial leeway is bounded from below by a deficit of 1% of GDP. Even this requirement implies very low steady-state debt-to-GDP ratios over the range of nominal growth rates (Figure 2).

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[8] The EC (D'Auria et al., 2010) and the OECD (Johansson et al., 2013) calculate potential output in a similar way, using a Cobb-Douglas production function with labour and capital inputs, but implementation details differ. Consequently, potential output growth rates and output gaps differ for some countries. The cyclical adjustment of budget balances of this paper is the same as the one adopted by the EC (Larch and Turrini, 2009), though the elasticities of budget balances with respect to the output gap differ slightly.

Figure 2. Steady-State Net Debt-to-GDP Ratio
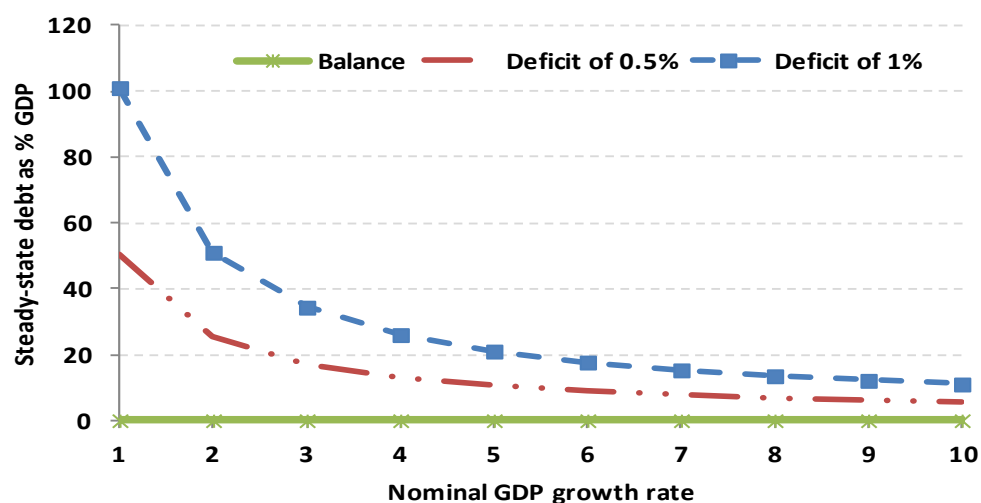
Notes: The figure indicates the level of net debt as per cent of GDP at which debt stabilizes if the budget deficit is indefinitely sustained at 0, 0.5 and 1% of GDP, and nominal GDP grows at the rate indicated on the horizontal axis. The level is calculated as $nd^*=-(1+g)/g*b$, where g is the growth rate and nd^* is the steady-state debt ratio, b is the overall budget balance-to-GDP ratio (for more details see Barnes et al., 2012).
Source: Authors' calculations.

In the coming years, pushing explicit liabilities down to a very low level may be warranted where there are large implicit liabilities (such as unfunded pension commitments)[9] that can partly be accommodated by holding debt below an otherwise appropriate level. Nevertheless, it is a weakness that the "fiscal compact" seeks to put in place rules of a "permanent" character that are unlikely to be tenable on a permanent basis. This also suggests that inserting a numerical value of the "budget balance" in the constitution, as proposed by the "fiscal compact", may not be a good idea.

## 4.2 The Consolidation Pace Will Be Demanding

The appropriate policy stance during a phase of debt reduction must balance consolidation requirements with the effects of fiscal retrenchment on aggregate demand and the need to signal a credible commitment to fiscal discipline (OECD, 2012b). However, there is no clear quantitative benchmark for the appropriate pace of consolidation or the appropriate budget balance or the appropriate pace of debt reduction. Nevertheless, past experience may indicate revealed preferences and what is feasible.

The current consolidation process will be large and prolonged by historical standards. The length and depth of the total consolidation effort since 2009/10 would be around 5% of GDP or more in half of the countries. This is relatively high by historical OECD standards (Guichard

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[9]   For instance, the latest EC Ageing Report projects age-related expenditure to increase by 2040 by more than 4% of GDP in Slovenia, Luxembourg and Belgium (EC, 2015b).

et al., 2007; OECD, 2012c; Figure 3). Half of the countries in the sample have managed to implement a larger consolidation in the past, but it had not been sustained. The post-2009 consolidation effort has largely been guided by the EDP and EU-IMF programs – as incorporated in the OECD Economic Outlook projections (OECD, 2014). Post-EDP consolidation guided by the rules is expected to be modest (Figure 3). This underlines the centrality of the recent EDPs and EU-IMF programs in guiding the current consolidation process, with the new system of rules gradually coming into play. Given the large scale of the required consolidation in many countries, the outcome under current EDPs will be a key test of the renewed commitment to greater fiscal discipline in the euro area and the credibility of the governance regime. The pace of consolidation of 0.5% of GDP in the underlying position under the balanced budget requirements is fairly modest compared with what some countries have already undertaken since the crisis started.

Figure 3. Consolidation under the EU Fiscal Rules (% of Potential GDP)
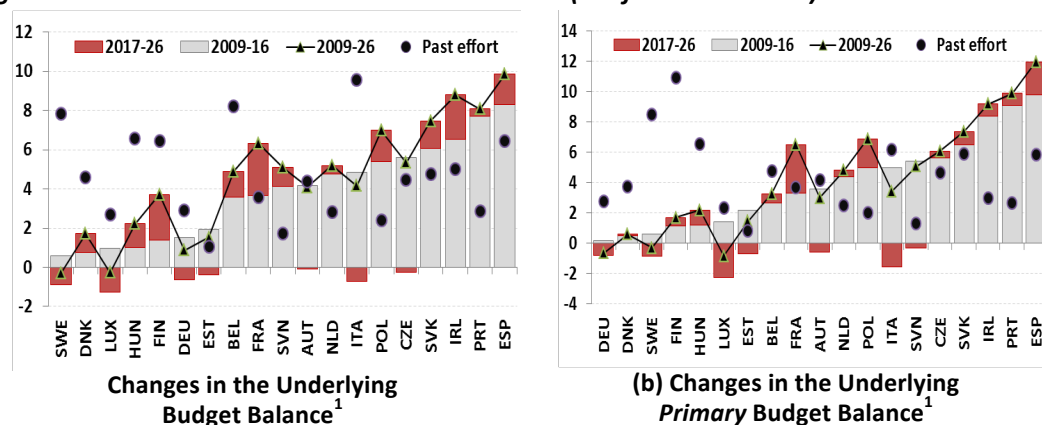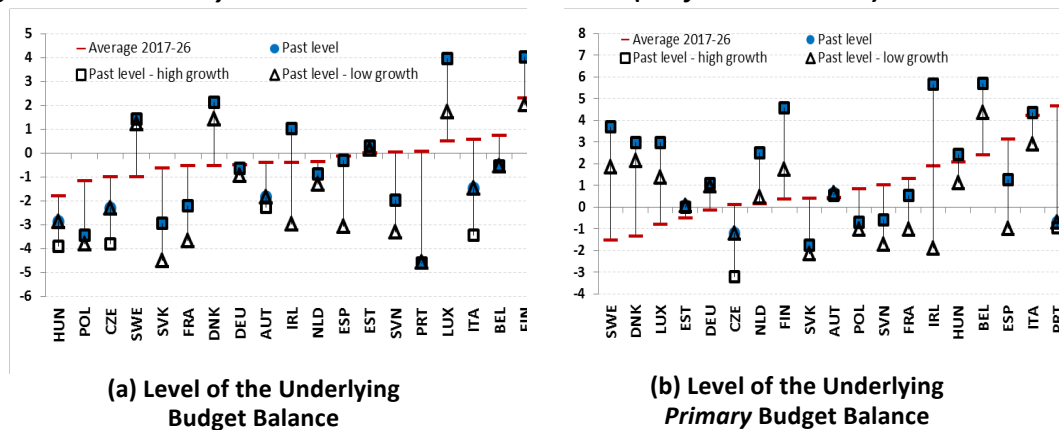

Notes: Past effort relates to the biggest consolidation between 1990 and 2008 (depending on data availability). The sample 2017-26 refers to the baseline simulations of the EU fiscal rules. Past consolidation denotes the cumulative positive change in the underlying (primary) balance over an uninterrupted period of years during which the balance improved annually. This period, however, includes years when the balance worsened by up to 0.3% of potential GDP.
[1] For Finland, Germany, Hungary, Poland, the Slovak Republic and Sweden, the 2009-15 sample begins in 2010 or 2011, reflecting the actual start of consolidation.
Source: OECD Economic Outlook No. 96 database and authors' calculations.

4.3   The Fiscal Stance Will Need to Be Tight for Many Years

The post-consolidation budget balance stance in terms of the level of the required balance under the rules would be tighter in both overall and primary terms than over any five-year period on average during the past three decades in most euro area countries where data are available (Figure 4). This is particularly true for the required overall underlying balance. Moreover, the balances implied by the rules look even higher when compared with past levels attained in periods of below-average growth. The highest levels of budget balances were usually achieved and sustained in periods of high growth.

Figure 4. Fiscal Policy Stance under the EU Fiscal Rules (% of Potential GDP)

(a) Level of the Underlying Budget Balance	(b) Level of the Underlying *Primary* Budget Balance

Notes: Past level relates to the country-specific 5-year period since 1990 (depending on data availability) with the highest average level of underlying budget balances. Past level – high growth refers to the highest average balance of underlying budget balance in a 5-year period with above-average GDP growth. Past level – low growth refers to the highest average balance of underlying budget balance in a 5-year period with below-average GDP growth. Average GDP growth was computed over 1980-2014. The sample 2017-26 refers to the baseline simulations of the EU fiscal rules.

Source: OECD Economic Outlook No. 96 database and authors' calculations.

The differences with past performance are, however, arguably not enormous on average. The additional annual effort under the rules compared with past experience in terms of the maintained budget balance is typically of the order of 1% of GDP. Nevertheless, in some countries (e.g. France, Italy, Slovenia and Spain), the structural balance requirement is more than 1% of GDP higher than balances typically attained in the past, especially compared with those attained in periods of below-average growth. Given that some countries have achieved such a performance in the past, the EU fiscal rules can therefore be seen as requiring almost all countries to move closer to what countries that reduced the debt-to-GDP ratio in the past were able to do. This is desirable in view of the trend increase in government debt in most countries since the 1970s, which contributed to very high debt at present.

In most countries, the best performance in terms of the budget balance was immediately prior to the beginning of the financial crisis in 2008. This reflects the general, if insufficient, improvement in budget balances in the run-up to and during monetary union compared with earlier experience. These budget balances were maintained in the context of nominal GDP growth that is similar to that forecast for 2017 to 2026, except for those economies that built up large current account imbalances and are expected to grow less rapidly.

In the medium term, macroeconomic conditions may not, however, be as conducive for public finances as before the crisis. Many governments benefited from "revenue buoyancy" in the pre-crisis period thanks to booms in the financial and housing markets. This is unlikely to be a supporting factor in the future. With many European countries having

budget balances at levels that have been rarely achieved in the past, this could keep overall demand weak and limit the offset of restrictive fiscal policies by exports[10]. Moreover, choosing the appropriate structure of consolidation measures will be crucial. If productive public investment or education spending is cut, the fiscal consolidation may result in lower potential output (Cournéde et al., 2013).

4.4 Resetting the MTOs Could Push the Tightness of Policy Further Beyond Previous Norms

As the baseline scenario shows, the main effect of the EU fiscal rules – once the consolidation is completed – would be to maintain structural budget balances at the MTOs for a long period. The methodology for setting MTOs would appear to demand going forward an even stricter budget balance for high-debt countries, mainly driven by projected increases in debt-to-GDP ratios. In addition, slower projected medium-term nominal growth increases the required budget balance, owing to worse debt dynamics. Given the front-loading of consolidation, this "belt and braces" approach could be viewed as being excessive in requiring a further front-loading of the fiscal adjustment.

4.5 Cyclical Adjustment Is Challenging

Measures of structural balance have theoretical advantages but are difficult to implement in practice and this could undermine fiscal rules based on them. The structural budget balance shows the balance net of the effects of the business cycle and any temporary measures. Thus, its change should indicate discretionary changes in fiscal policy and fiscal rules based on it should allow automatic stabilizers to work. The output gap and the semi-elasticity used to calculate the structural balance are unobserved. There are several ways to estimate them. Results vary depending on a particular method employed and are estimated with large uncertainty, especially in real time. The EU uses a common methodology to estimate output gaps, based on a production function approach (EC, 2005, 2006). This approach ensures cross-country consistency but may prevent the EC from fully reflecting diverse circumstances across economies.

Output gap estimates are revised frequently, implying that the assessment of the required and achieved fiscal effort may change over time. For instance, the unweighted average absolute revision in budget balances for 2007 between the EC's Autumn 2008 and its Autumn 2011 forecasts was 1.3% of GDP (Figure 5). This suggests a revision of the output gap of around 2.6% of GDP, based on an average semi-elasticity of the budget balance to the output gap of about 0.5. To mitigate this

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[10] Simultaneous consolidation in the euro area countries in 2011-13 is found to have damped output via cross-border spillovers (Int'Veld, 2013). Although these results were obtained under crisis conditions (high share of credit-constrained households and interest rates at the zero lower bound), these conditions are not likely to disappear in the euro area anytime soon.

problem, the EC uses its most favorable forecast of the output gap and structural balance between its most recent forecast and forecast made in spring of the previous year. A similar provision, which accounts for revisions of output gap projections between the start of the EDP and the ex-post assessment, applies to structural effort under the "corrective arm".

Figure 5. EC's Estimates of the 2007 Structural Balance in 2008 and 2011 (% of Potential GDP)
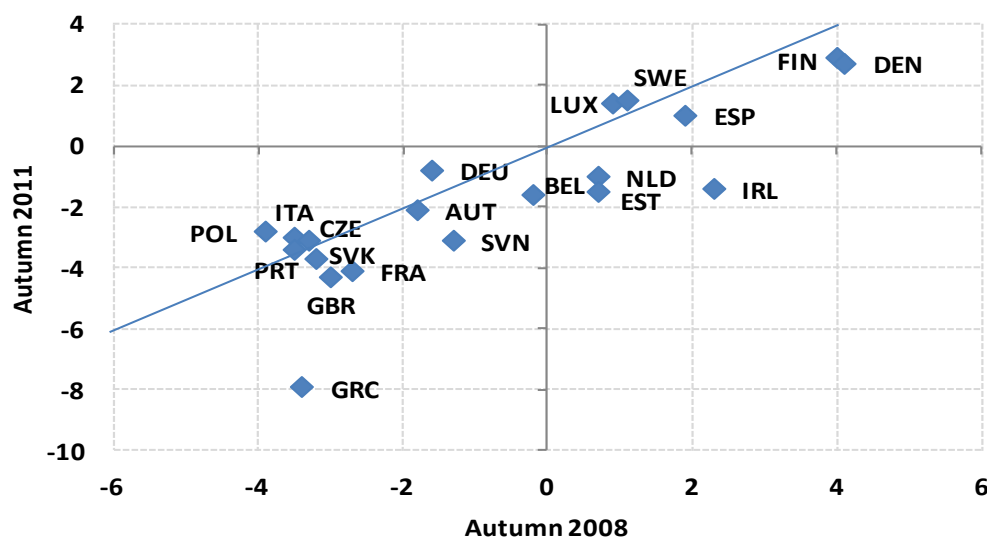
Source: European Commission European Economic Forecasts.

Cyclical tax revenues may not be captured adequately with constant semi-elasticities of tax revenues with respect to the output gap. During the upswing of the credit cycle, estimates of the structural budget balance failed to account for the revenue buoyancy generated by booms in asset prices, including real estate, and in the construction sector (Price and Dang, 2011). To minimize this bias, structural consolidation effort under the "corrective arm" is adjusted for possible revenue windfall or shortfall, and is complemented by a bottom-up assessment of consolidation measures taken. In the "preventive arm", the time-varying sensitivity of revenues to the cycle and changes in their structure is only partially accounted for because the change in the structural balance (adjustment towards the MTO) is assessed together with expenditure benchmark compliance (see below). The EC also tries to consider the main discretionary budgetary measures in the bottom-up assessment but they are not formally included in the assessment of fiscal rules.

The refinements to the MTO rule implementation address the known shortcomings of structural budget balance rules but they also add to the complexity and hence reduce the transparency. Moreover, the refinements are not applied consistently throughout both arms of the SGP nor throughout all the rules. They only apply to the structural balance but not, for instance, the debt convergence rule.

4.6   Expenditure Rule

The expenditure rule is, in principle, more immune to the drawbacks of cyclical adjustment mentioned above. In general, if the expenditure to GDP ratio is required to grow in line with potential GDP, this rule is equivalent to the structural balance rule, without some of its limitations, such as the reliance on uncertain estimates of cyclically-adjusted revenues and their structure. Although the rule also uses an unobserved potential output growth, it tends to be less prone to revisions than output gap level (Koske and Pain, 2008; Bouis et al., 2012) and can be made even more stable by using medium-term growth averages. It supports debt sustainability in that it motivates the government to use non-structural windfall revenues generated during booms to pay down debt, rather than to increase spending. At the same time, it allows for revenue shortfalls during recessions.

The expenditure rule still has some drawbacks. The greatest is the offset of the discretionary revenue measures corresponding to the bottom-up fiscal effort assessment in the "corrective arm". In theory, accounting for discretionary measures ensures balancing the structural revenues with expenditures and hence the attainment of a balanced budget in the long run. However, adjusting for discretionary measures is not easy in practice. They do not rely on cyclical adjustment, but their quantification requires a counterfactual, usually a "no-policy-change" (NPC) scenario. The size of the direct effects of a policy measure has to be estimated and is thus subject to uncertainty. Hence, both the NPC and the actual additional effect of the policy measures are difficult to quantify. Moreover, there is no EU-wide common methodology or guidelines for estimating discretionary measures. The measures are usually quantified by the respective government and may not be comparable across member countries.

4.7   Overall Design of the Rules

Multiple rules add to the complexity of the system considerably without yielding clear gains. This is further reinforced by the complicated and often inconsistent implementation of the rules. The EC main document explaining the rules (EC, 2012), not including all the refinements introduced since then, together with the 2015 interpretation document (EC, 2015a) are 140 pages long. Consequently, it may be difficult to achieve political or public "buy-in" around the framework, and options to develop fiscal rules at the national level may become severely curtailed. This partly reflects the different institutional status of the different rules, but again such a distinction does not appear a necessary part of having fiscal rules at the EU level. Furthermore, poorly designed rules without solid foundations can undermine the credibility of the framework as a whole.

One way to reduce the complexity at little cost would have been not to introduce the new debt convergence rule, and use the MTO or the expenditure benchmark rule instead as the measure of sufficient progress towards the debt limit of 60% of GDP. As shown in the baseline scenario,

the debt convergence rule adds very little to the EU fiscal framework from a substantive economic perspective. The MTOs are sufficient in the medium to long term to bring down debt, whereas the debt convergence rule tends to require large, potentially self-defeating, adjustment over short periods. Adding a rule that is close to redundant or that creates macroeconomic volatility when it binds has a high cost in terms of complexity relative to the gains its imposition achieves. In addition, the debt convergence rule lacks a sound economic rationale and could imply very high budget surpluses for countries with very high debt, while having very little impact on countries where debt is above but close to 60% of GDP[11]. The main justification of this rule is procedural. The debt convergence rule is subject to the stricter enforcement requirements of the "corrective arm" of the SGP, while the MTO and expenditure benchmark are part of the "preventive arm."

5 Conclusions

The baseline simulations of this paper suggest that balanced budget requirements in structural terms will be in practice at the heart of the new EU fiscal rules. In terms of the current phase of consolidation, for most EU countries additional efforts after 2016 guided by the rules will be modest relative to the consolidation that has already taken place or that is programmed under the EDPs. This underlines the importance of successfully implementing the current EDPs in shoring up credibility. If consolidation is not successfully achieved during the coming years, the new framework will have much more work to do in terms of achieving consolidation with negative implications for the credibility of the whole system.

The role of the rules will be, in essence, to ensure that the fiscal stance is sufficiently tight to bring down debt-to-GDP ratios to more prudent levels. This kind of constraint on policy in "good times" is exactly where fiscal rules are needed to deal with political economy pressure to spend rather than save. The implied fiscal stance under the new EU fiscal rules, both in overall and primary balance terms, can be thought of as requiring all countries to meet the standards of those that managed to make meaningful progress in tackling high debt levels in the past.

The system of rules carries some risks. This includes their complexity. The potential future revisions of the MTOs, and in some instances the debt convergence rule, could require much tighter budget balances than in the past. The resulting large consolidation could not only affect aggregate demand negatively, but also potential growth when inappropriate measures are adopted. Furthermore, the measurement of the structural budget balance is likely to create problems, so it may be more appropriate to rely on the expenditure rule instead. Mechanical rules are never able to

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[11]   In addition, the approach used in the debt convergence rule arguably further increases the emphasis on gross, rather than net, debt and could create incentives for sale or transfer of assets.

cover all contingencies and may thus become suboptimal (Wyplosz, 2012). For this reason, it is essential that the new EU fiscal rules are applied with appropriate discretion (OECD, 2012a). The rules need to be enforced tightly where this is necessary, but it would be harmful and counterproductive in terms of the credibility of the fiscal framework to apply them too mechanistically. This highlights the importance of national and EU efforts to put in place independent expert fiscal councils at the national level.

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Appendix 1: Key Reforms to the Stability and Growth Pact

This appendix reviews the recent key reforms to the Stability and Growth Pact (SGP).

Faster and Clearer Implementation of the Excessive Deficit Procedure (EDP)

A numerical benchmark for reducing the debt-to-GDP ratio when it is above 60%: the debt ratio must fall by an amount approximately one-twentieth of the debt excess over the 60% ceiling, taking into account the effect of the cycle. For three years following the correction of excessive deficits, i.e. when the new rule enters into force, the benchmark does not apply in full, but sufficient progress towards compliance is necessary.

The previous definition of "exceptional" circumstances as a major "unusual event outside the control" of the government is complemented by a "severe economic downturn for the euro area or the European Union as a whole".

There is a stronger economic assessment of compliance, including implicit liabilities, up-front costs of pension reforms and other structural reforms, excessive macroeconomic imbalances and potential growth. According to the latest EC interpretation, structural reform plans could even serve as a waiver for structural adjustment under both arms of the SGP (EC, 2015a).

Corrective action can be requested within three months, compared with the standard deadline of up to six months, if the EC identifies an urgent need for action.

Clearer Requirements under the "Preventive Arm"

The country-specific budgetary Medium-Term Objectives (MTOs) for the cyclically-adjusted budget balance (net of one-offs) remain in place together with the required 0.5% of GDP consolidation per year to reach the MTO. "Windfall revenues" and the impact of structural reforms are taken into account.

The benchmark for a "significant" deviation from MTOs is set at 0.5% of GDP in one year or 0.25% of GDP per year over two years, while compliance with an expenditure benchmark, windfall revenues, up-front costs of pension reforms and events outside a country's control should also be taken into account. For countries with debt above 60% of GDP or "pronounced sustainability risks", an improvement of more than the

existing 0.5% of GDP consolidation benchmark will be considered. In addition to the debt level, the EC recently made the required MTO adjustment conditional on the output gap and its changes (EC, 2015a).

The procedure for determining non-compliance is expected to take six months at the most. The EC should formally report its recommendations to the Council. If a EC's recommendation is not taken up by the Council, the recommendation is subject to approval on a reverse simple majority votes.

Assessment of the progress towards MTOs now includes the path of expenditure (net of discretionary revenue measures), which is be expected to grow below a medium-term growth rate of potential GDP until the MTO is achieved. Expenditures exclude interest, unemployment benefits and EU matching payments.

Effective Enforcement of Budgetary Discipline for the **Euro Area** *Countries*

An interest bearing deposit of up to 0.2% of GDP is required, where a country fails to take action in response to a Council's recommendation to correct a "significant deviation" from the MTO. The Council's decision is subject to reverse qualified-majority voting, although qualified-majority voting can amend the proposal.

A non-interest bearing deposit of up to 0.2% of GDP can be required if the Council identifies an excessive deficit and a country is already subject to an interest bearing deposit or non-compliance is "particularly serious".

A fine of up to 0.2% of GDP if the Council, acting under Article 126(8) of the EU Treaty, decides that a country has not taken effective action to correct its excessive deficit. Outstanding non-interest bearing deposits will be converted to a fine. The fine under Article 126(11) of the Treaty remains available.

The EC will have the power to investigate where there are "serious indications" of possible manipulation of statistics, which may be sanctioned with a fine of up to 0.2% of GDP.

Appendix 2: Assumptions Underling Fiscal Simulations

Fiscal Rules

The most binding rule in terms of the required underlying budget balance is assumed to apply between 2017 and 2026. Prior to 2017 the

fiscal projections of the November 2014 OECD Economic Outlook are taken (OECD, 2014). They largely incorporate fiscal adjustment under EDPs and EU-IMF programs, implying that for most countries which are still under EDPs, they will be ended by 2016. The following rules are analyzed.

The 3% deficit ceiling: the headline deficit should not exceed 3% of GDP. If it does, the structural balance in the following year is reduced by 0.5% of potential GDP. It is assumed that during the EDPs the 3% deficit ceiling rule takes precedence over the other rules even if the debt convergence rule or the MTO requirements imply a larger adjustment.

Debt convergence rule: if the debt-to-GDP ratio (Maastricht definition) exceeds 60%, the debt ratio should be reduced by 1/20th of the excess over 60% of GDP per year. According to the EC guidelines (EFC, 2012), this implies achieving the backward-looking benchmark debt target:

$$d^*_t = 60+0.95/3(d_{t-1}-60)+0.95^2/3(d_{t-2}-60)+0.95^3/3(d_{t-3}-60)$$

where d_t is the debt to GDP ratio in year t. In practice, in addition to the backward-looking benchmark, this rule also has a forward-looking and a cyclically-adjusted dimension and at least one of the three has to be complied with, but the latter two are not used in the simulations.

Debt transition rule: for countries that were in the EDP in November 2011, the debt convergence rule will start applying in the fourth year after the correction of the EDP. During this transition period, the debt ratio has to decline at a sufficient pace, approximated in the scenario by a constant adjustment of the underlying balance between year t and $t+4$ which ensures meeting the backward-looking part of the debt convergence rule in year $t+4$. The required annual structural adjustment during this transition period in the simulation cannot exceed 0.75% of GDP.

The Medium-Term Objective (MTO): the structural balance objective agreed for each country must be met (Table A2.1) and, if not, progress towards it should be made by consolidating 0.5% of potential GDP each year. Countries that have met their MTOs are assumed to retain that stance in terms of the underlying budget balance. MTOs are kept constant over the simulation period.

The **benchmark for expenditure** is not modeled, as it is equivalent in the context of this exercise to maintaining the structural balance at a constant level.

Baseline Model Simulations

The simulations are based on set of budget balance and debt accounting identities:

$$\text{NLGXQ}_t = (NLGXQU_t + e * GAP_t)/(1 + GAP_t/100) \qquad (A2.1)$$

$$NLGQ_t = 100 * \left(NLGX_t - \frac{IRR_t}{100} * GGFA_{t-1} + \frac{IRP_t}{100} * GGFL_{t-1} \right)/GDP_t \qquad (A2.2)$$

$$GNFLQ_t = 100 * (GNFL_{t-1} - NLG_t)/GDP_t \qquad (A2.3)$$

$$GGFLQ_t = GNFLQ_t + GGFAQ_t \qquad (A2.4)$$

$$GGFAQ_t = GGFAQ_{t-1} \qquad (A2.5)$$

where *NLGX* and *NLGXU* are actual and structural primary budget balance, *NLG* is the overall budget balance, *GNFLQ* and *GGFLQ* are net and gross general government debt, GGFA is general government (gross) assets, *IRR* and *IRP* are implicit interest rates earned on assets and paid on debt, *GAP* is an output gap as a per cent of potential GDP, GDP is nominal (actual) GDP, and e is the semi-elasticity of the budget balance with respect to the output gap, based on the OECD estimates from Girouard and André (2005). Variables with *Q* and *QU* at the end are expressed as a percent of actual and potential (nominal) GDP, respectively. For the sake of simplicity, equation (A2.5) assumes that financial assets are kept unchanged as a share of GDP from their 2016 levels, as projected in OECD (2014).

Actual and potential GDP and implicit interest rates earned on assets and paid on debt are exogenous. They are taken from the OECD long-term projections, derived from a growth convergence framework (Johansson et al., 2013). In this framework, potential output is based on a Cobb-Douglas production function of projected trend employment, human and physical capital and labor efficiency.

Alternative Model Simulations with Endogenous GDP Growth, Inflation and Interest Rates

To allow for more realistic simulations, alternative model assumes a simple feedback between the fiscal policy stance and GDP growth, and endogeneity of inflation and interest rates as set out below.

Actual real GDP *GDPV* growth is assumed to converge to potential output *GDPVTR* growth and reacts with a one-year lag to changes in the primary structural balance:

$$dlog(GDPV_t) =$$
$$= dlog(GDPVTR_t) +$$

$$+ 0.2 * dlog(GDPV_{t-1}/GDPVTR_{t-1}) -$$
$$-0.3 * log\ (GDPV_{t-1}/GDPVTR_{t-1}) + FM * d(NLGXU_{t-1}) \tag{A2.6}$$

The convergence parameters imply that the initial output gaps estimated for the EU countries are mostly closed after 4-5 years since the beginning of the simulations. Sensitivity analysis assumes fiscal multipliers ranging from -0.5 to -1.0, reflecting different combinations of expenditure and revenue-based consolidation measures and the assumption that the zero lower bound and crisis-related financial frictions do not bind.

Inflation (π) is modeled as an inflation expectation augmented Philips curve:

$$\pi_t = 0.3 * \pi_{t-1} + 0.7 * \pi^{target} + 0.2 * GAP_t \tag{A2.7}$$

where inflation expectations are assumed to be a weighted average of past inflation and inflation target (π_{target}) of 2%.

The short-term interest rate *(IRS)* responds to the change in the output gap and converges to a natural nominal interest rate determined by the inflation target and long-term potential output growth:

$$\Delta IRS_t = -0.2 * \left[IRS_{t-1} - constant - ((GDPV_{t-1}/GDPVTR_{t-10})^{\frac{1}{10}} - 1) - \right.$$

$$\left. - \pi^{target} \right] + 0.5 * \Delta GAP_t \tag{A2.8}$$

The long-term interest rate *(IRL)* is modeled as a 10-year average of future short-term interests, plus a country-specific term premium *term*, and a fiscal risk premium *(FiscRisk)*:

$$IRL_t = term + \sum_{j=0}^{9} IRS_{t+j}/10 + FiscRisk_t, \tag{A2.9}$$

The fiscal risk premium is zero when gross government debt is below or equal to 75% of GDP and it increases by 2 basis points for each percentage point of debt exceeding 75% of GDP and by additional 2 basis points for debt exceeding 125% of GDP.

The implicit interest rate paid on gross government debt *(IRP)* is modeled as a weighted average of the past implicit interest rate and the current long-term and short-term market interest rates:

$$IRP_t = (1 - RFSH_t) * IRP_{t-1} + RFSH_t * (0.25 * IRS_t + 0.75 * IRL_t) \tag{A2.10}$$

The weights *(RFSH)* reflect the share of debt maturing within one year.

Changes in the implicit interest rate received on government financial assets *(IRR)* reflect changes in the short-term interest rate and changes in the OECD aggregate long-term interest rate IRL_{OECD}:

$$\Delta IRR_t = 0.95 * \Delta IRL_t^{OECD} + 0.05 * \Delta IRS_t \qquad \text{(A2.11)}$$

Table A2.1. Underlying Budget Balances under MTO, Transition and Debt Rules for Selected EU Countries (% of Potential GDP)

		2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Austria	MTO	-0.9	-0.7	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	trans	-0.9	-0.7	-0.4	..	..	..	..	..	..	..	..	..	..
	debt	-0.9	-0.7	-0.4	0.4	-0.7	-0.9	-1.1	-1.3	-1.5	-1.7	-1.8	-1.9	-1.9
Belgium	MTO	-2.0	-1.3	-0.6	-0.1	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	trans	-2.0	-1.3	-0.6	..	..								
	debt	-2.0	-1.3	-0.6	0.6	-1.6	-2.7	-3.1	-3.4	-3.6	-3.8	-4.0	-4.1	-4.2
Czech Rep.	MTO	-0.5	-1.0	-0.7	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
	trans	-0.5	-1.0	-0.7	..									
	debt	-0.5	-1.0	-0.7	..									
Denmark	MTO	-1.5	-1.6	-1.5	-1.0	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	trans	-1.5	-1.6	-1.5	..									
	debt	-1.5	-1.6	-1.5	..									
Estonia	MTO	0.3	0.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	trans	0.3	0.3	0.4	..									
	debt	0.3	0.3	0.4	..									
Finland	MTO	-1.1	-0.7	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	trans	-1.1	-0.7	-0.4	..									
	debt	-1.1	-0.7	-0.4	4.1	2.0	2.2	2.5	2.0	2.1	2.1	2.0	2.0	1.9
France	MTO	-3.4	-3.0	-2.7	-2.2	-1.7	-1.2	-0.6	-0.1	0.0	0.0	0.0	0.0	0.0
	trans	-3.4	-3.0	-2.7	-1.9	-1.4	-1.1	-0.9	-0.8	..	..			
	debt	-3.4	-3.0	-2.7	4.5	2.4	0.9	-0.2	-1.0	-1.6	-2.0	-2.1	-2.2	-2.3
Germany	MTO	0.3	0.1	0.1	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	trans	0.3	0.1	0.1	..									
	debt	0.3	0.1	0.1	-2.1	-1.2	-1.0	-1.0	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
Hungary	MTO	-3.5	-3.0	-2.9	-2.4	-1.9	-1.7	-1.7	-1.7	-1.7	-1.7	-1.7	-1.7	-1.7
	trans	-3.5	-3.0	-2.9	..									
	debt	-3.5	-3.0	-2.9	-2.5	-2.9	-3.4	-3.7	-3.8	-3.8	-3.8	-3.8	-3.8	-3.7
Ireland	MTO	-2.2	-2.3	-2.3	-1.8	-1.3	-0.8	-0.3	0.0	0.0	0.0	0.0	0.0	0.0
	trans	-2.2	-2.3	-2.3	-1.8	-1.3	..							
	debt	-2.2	-2.3	-2.3	-0.8	-0.9	-1.4	-2.3	-3.0	-3.5	-3.7	-3.7	-3.7	-3.6
Italy	MTO	0.1	0.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	trans	0.1	0.3	0.7	..									
	debt	0.1	0.3	0.7	5.7	-1.2	-1.4	-0.8	-1.6	-2.1	-2.5	-2.8	-3.1	-3.2
Luxembourg	MTO	2.5	1.7	1.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	trans	2.5	1.7	1.8	..									
	debt	2.5	1.7	1.8	..									
Netherlands	MTO	-0.9	-0.9	-0.9	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	trans	-0.9	-0.9	-0.9	..									
	debt	-0.9	-0.9	-0.9	0.8	-1.1	-1.6	-1.6	-1.8	-1.9	-1.9	-2.0	-2.0	-2.0
Poland	MTO	-3.2	-2.8	-2.6	-2.1	-1.6	-1.1	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
	trans	-3.2	-2.8	-2.6	..									
	debt	-3.2	-2.8	-2.6	..									
Portugal	MTO	-1.6	-0.9	-0.9	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	trans	-1.6	-0.9	-0.9	-0.4	0.1	..							
	debt	-1.6	-0.9	-0.9	4.3	2.7	1.5	0.1	0.3	0.2	-0.2	-0.2	-0.4	-0.6
Slovak Rep.	MTO	-2.9	-2.3	-1.9	-1.4	-0.9	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
	trans	-2.9	-2.3	-1.9	..									
	debt	-2.9	-2.3	-1.9	..									
Slovenia	MTO	-1.8	-1.2	-1.0	-0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	trans	-1.8	-1.2	-1.0	-0.2	0.2	..							
	debt	-1.8	-1.2	-1.0	3.3	1.7	0.4	-0.2	-0.2	-0.2	-0.2	-0.3	-0.3	-0.3
Spain	MTO	-2.6	-2.1	-1.6	-1.1	-0.6	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	trans	-2.6	-2.1	-1.6	-1.1	-0.6	-0.1	0.4	..					
	debt	-2.6	-2.1	-1.6	3.9	1.9	0.6	-0.2	-1.0	-1.1	-1.2	-1.3	-1.5	-1.6
Sweden	MTO	-0.7	-0.6	-0.1	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
	trans	-0.7	-0.6	-0.1	..									
	debt	-0.7	-0.6	-0.1	..									

Notes: "trans." is the transition rule, "debt" is the debt convergence rule, "MTO" stands for the transition to the MTO or marks that the MTO is reached and maintained.
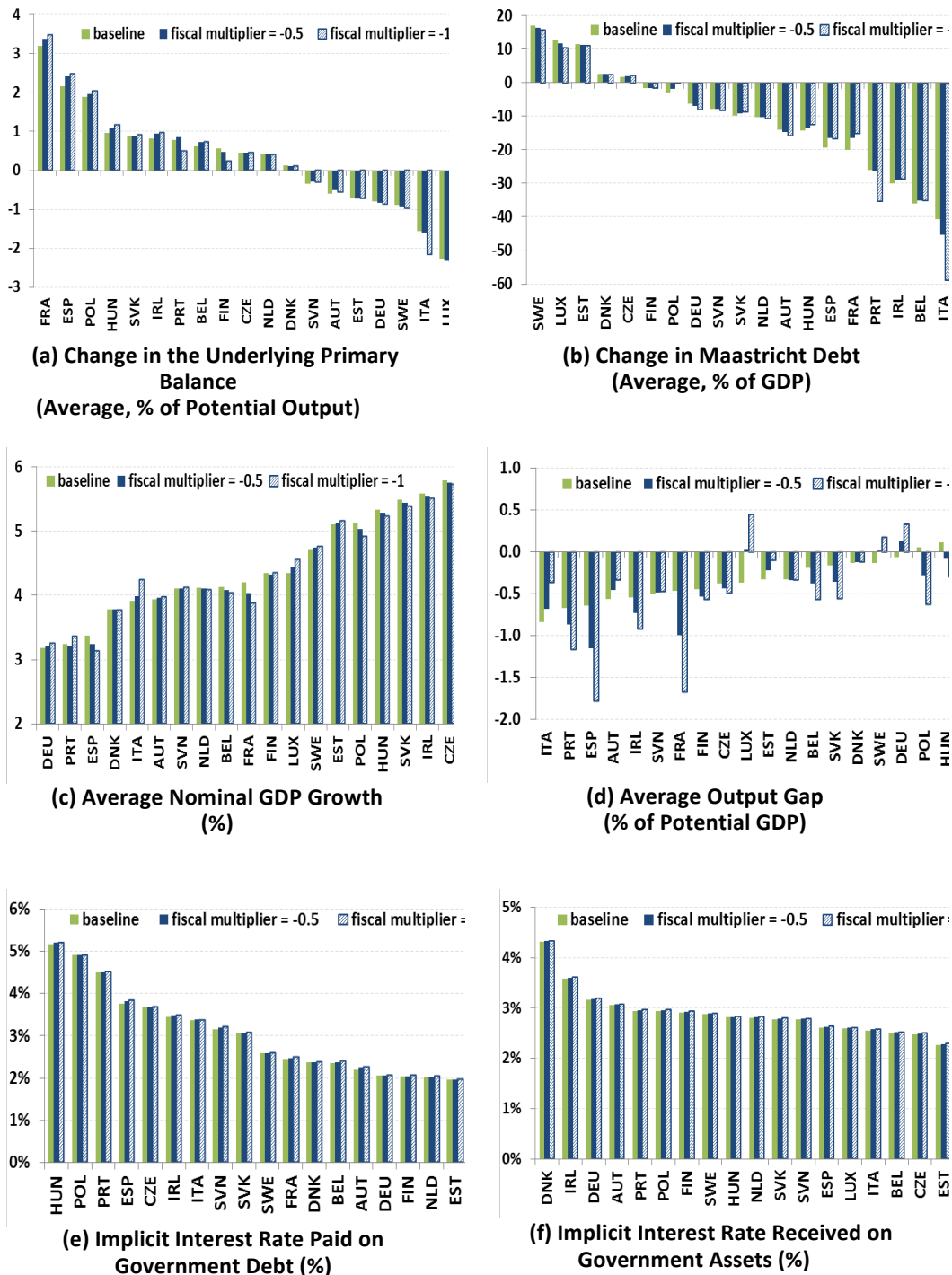Source: Authors' calculations.

Table A2.2. Summary of Macroeconomic Assumptions for the Baseline Simulation

	Average levels 2017-26 (in %; st. dev. in parentheses)			2016 levels		
	Real GDP growth	Infla tion	Implicit interest rate paid	Output gap (% of potential GDP)	Maastr icht debt (% of GDP)	Budget balance (% of GDP)
Austria	2.0	1.9	2.2	-3.4	84.4	-1.8
	(0.2)	(0.2)	(0.3)			
Belgium	2.1	2.0	2.3	-1.2	105.0	-1.3
	(0.2)	(0.1)	(0.3)			
Czech Republic	3.8	1.9	3.7	-2.3	44.8	-1.5
	(0.3)	(0.1)	(0.8)			
Denmark	1.7	2.0	2.4	-1.1	50.7	-2.3
	(0.1)	(0.1)	(0.2)			
Estonia	3.1	2.0	2.0	-2.1	8.0	-0.2
	(0.5)	(0.1)	(0.6)			
Finland	2.4	1.9	2.1	-2.8	62.4	-1.8
	(0.2)	(0.2)	(0.4)			
France	2.3	1.9	2.4	-2.8	101.8	-4.1
	(0.1)	(0.2)	(0.5)			
Germany	1.1	2.0	2.1	-0.6	69.5	0.2
	(0.1)	(0.0)	(0.4)			
Greece	4.3	1.7	4.7	-8.7	171.4	0.2
	(0.5)	(0.5)	(0.8)			
Hungary	2.3	3.0	5.2	0.7	75.7	-2.5
	(0.2)	(0.0)	(0.3)			
Ireland	3.6	1.9	3.4	-3.5	106.7	-2.7
	(0.1)	(0.2)	(0.0)			
Italy	2.1	1.8	3.4	-5.3	133.5	-2.1
	(0.1)	(0.3)	(0.2)			
Luxembourg	2.4	1.9	1.8	-2.4	27.1	0.5
	(0.3)	(0.1)	(0.4)			
Netherlands	2.1	1.9	2.0	-2.1	71.2	-2.2
	(0.2)	(0.1)	(0.4)			
Poland	2.6	2.5	4.9	0.2	51.7	-2.6
	(0.4)	(0.1)	(0.5)			
Portugal	1.4	1.8	4.5	-4.3	127.6	-2.3
	(0.2)	(0.2)	(0.5)			
Slovak Republic	3.5	2.0	3.1	-1.0	54.8	-2.2
	(0.5)	(0.1)	(0.2)			
Slovenia	2.2	1.9	3.2	-3.3	78.9	-2.4
	(0.4)	(0.2)	(0.1)			
Spain	1.5	1.8	3.8	-4.2	100.9	-3.3
	(0.2)	(0.2)	(0.5)			
Sweden	2.8	1.9	2.6	-1.0	42.9	-0.6
	(0.2)	(0.0)	(0.6)			

Source: OECD long-term projections, OECD Economic Outlook No. 96, and authors' calculations.

Figure A2.1 Main Fiscal and Macroeconomic Variables under Various Scenarios Over 2017-2026

(a) Change in the Underlying Primary Balance
(Average, % of Potential Output)

(b) Change in Maastricht Debt
(Average, % of GDP)

(c) Average Nominal GDP Growth
(%)

(d) Average Output Gap
(% of Potential GDP)

(e) Implicit Interest Rate Paid on Government Debt (%)

(f) Implicit Interest Rate Received on Government Assets (%)

Source: OECD Economic Outlook No. 96 database and authors' calculations.