

### IS THERE AN ALTERNATIVE STRATEGY FOR REDUCING PUBLIC DEBT BY 2032?

Like other advanced countries, the euro area is facing a double problem of high unemployment and high debt. Both are interlinked and reduction of one has consequences for the reduction of the other. Europe has prioritised reducing public debt. Financial market pressure, the lack of a “true” central bank, and the lack of trust among member states explain this choice. Yet as this section shows, this choice is not a valid one.

The first reason is that austerity policies are being implemented in euro area economies which are already facing a very degraded economic situation in which fiscal multipliers are high. In such a state attempting to reduce debt by fiscal consolidation brings more debt and more unemployment. Spain is the perfect illustration of this very frustrating dynamics. Consolidation should be postponed until fiscal multipliers are smaller and unemployment lower.

The second reason is that existing treaties and the fiscal compact allow for a more relaxed path for fiscal consolidation. What is considered as valid by the treaties should be the reference for fiscal consolidation. Once again, Spain is a perfect illustration. For Spain to benefit from the OMT program it needs to submit a fiscal plan that is controlled by the European Commission and European Council. Such a plan should be based on a pragmatic view on what is suitable for debt sustainability over the next 20 years.

To judge the interactions between debt and unemployment reduction, we need a model and also to make a number of assumptions regarding the present state of euro area economies and their future. The present output gap, prospect for future growth, value of fiscal multipliers, fiscal plans for the future are needed inputs for a quantified evaluation of the evolution of economies. In order to conduct that evaluation we have designed a specific model, the iAGS model<sup>24</sup>. This model intends first to be sufficiently detailed to explicitly link all macro elements of debt sustainability and unemployment dynamics. Second, as a strong debate still exists about the value of multipliers and about the evaluation of today's output gaps, and also because there is of course irreducible uncertainty about future growth, we have chosen to parameterize the model in such a way that we can conduct a full sensitivity analysis. Third, we had in mind that the model would have

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24. See [www.iags-project.fr](http://www.iags-project.fr) for the appendix describing the iAGS model.

to address the search for the optimal fiscal stance, defined as a better fiscal consolidation under some strong constraints.

The iAGS model is a reduced-form representation of eleven countries of the euro area (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal and Spain). It allows us to compute alternative paths for critical variables of countries' public finances—public debt, fiscal balance, structural primary balance—taking into account the fiscal stance.

Beforehand, we draw on the EU fiscal framework to assess the stringency of EU fiscal rules and explore the scope for an alternative strategy to ensure fiscal sustainability in due respect of EU regulations and treaties.

## 1. Margins for manoeuvre within the actual EU fiscal framework

There are currently five fiscal rules which must be fulfilled by EU Member States. Except for one fiscal rule exclusively related to the Fiscal Compact—the new medium-term fiscal objective, see fifth fiscal rule below—all EU fiscal rules have been in force since at least November 2011.

First, the cornerstone of European fiscal rules remains the public deficit to GDP limit at 3%. Deficits above this threshold can be labelled “excessive deficits”, setting in train an excessive deficit procedure

Second, the public-debt-to-GDP ratio must be limited to 60% of GDP or it must be decreasing towards this level.

The first and second fiscal rules are embedded in the Stability and Growth Pact originally introduced in 2005<sup>25</sup>. They were confirmed by the revised Stability and Growth Pact adopted in November 2011 under Council Regulations 1173/2011, 1175/2011 and 1177/2011.

Third, if the public-debt ratio is above the threshold limit, the ratio will be considered to diminish at a sufficient pace if the difference between actual debt and the 60%-of-GDP limit has been decreasing during the three preceding years at an average yearly rate of 1/20<sup>th</sup> of the difference, as a benchmark. This 1/20<sup>th</sup> debt rule is incorporated in the revised Stability and Growth Pact adopted in November 2011 under Council Regulation 1177/2011, article 2, par. 1bis. It has also been included in the Fiscal Compact, article 4, of the Treaty on Stability, Coordination and Governance in the EMU of March 2012.

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25. The first rule has been the cornerstone of European fiscal rules since 1997 and the first version of the Stability and Growth Pact, whereas the second rule was only a convergence criterion between 1997 and 2005, before it was introduced in the first reformed version of the SGP. Legally speaking, the debt-rule was not a binding constraint on Euro area members states between 1999 (creation of the euro) and 2005.

Fourth, if a Member State is under an excessive deficit procedure, Council Regulation 1177/2011, article 3, states that: *“in its recommendation, the Council shall request that the Member State achieve annual budgetary targets which, on the basis of the forecast underpinning the recommendation, are consistent with a minimum annual improvement of at least 0.5 % of GDP as a benchmark, in its cyclically adjusted balance net of one-off and temporary measures, in order to ensure the correction of the excessive deficit within the deadline set in the recommendation”*. In its article 5, Regulation 1175/2011 restates the same benchmark of a yearly improvement of 0.5% of GDP of the cyclically-adjusted deficit to reach the medium-term fiscal objective of a balanced-budget expressed in structural terms.

Fifth, the medium-term fiscal objective was made more precise in the Fiscal Compact, article 3. It states that general government budgets shall be balanced or in surplus, a criterion that *“shall be deemed to be respected if the annual structural balance of the general government is at its country-specific medium-term objective, as defined in the revised Stability and Growth Pact, with a lower limit of a structural deficit of 0.5 % of the gross domestic product at market prices”*.

Some of the above-mentioned rules are conditional on exceptional circumstances. Such has always been the case for the first rule. However the strictness of exceptional circumstances has largely changed over the years. Between 1999 and 2005, exceptional circumstances meant a recession: a yearly real GDP growth rate of at least -2% permitted automatically delayed austerity to converge towards the 3%-of-GDP limit for the public deficit and balanced budget in the mid-run. A yearly real GDP growth rate of at least -0.75% permitted delayed austerity provided a majority of MS approved these exceptional circumstances. In 2005, the scope of exceptional circumstances was widened to encompass the implementation of structural reforms that were elaborated to cope with the Lisbon agenda strategy, and the implementation of public investment. Moreover, an unexpected economic slowdown could be considered as exceptional circumstances.

The 2011 body of legislation—the 6-pack—recalls the reform of the 1997 version of the SGP. It opens up a scope to use pension reforms as authorizing a public finances' gap vis-à-vis the convergence path towards the medium-run deficit objective (article 5, regulation 1175/2011). The fiscal compact introduced the following (complementary) definition of exceptional circumstances: *“an unusual event outside the control of the (MS) which has a major impact on the financial position of the general government or periods of severe economic downturn as set out in the revised SGP, provided that the temporary deviation (...) does not endanger fiscal sustainability in the medium-term”* (article 3, (b)). The definition of an *“unusual event”* remains unclear.

Finally, the first and fifth EU fiscal rules are conditional on exceptional circumstances.

Drawing on these circumstances and on the fourth rule of a yearly improvement of 0.5% of GDP of the cyclically-adjusted deficit, it is possible to show that EU fiscal rules give fiscal leeway under current economic circumstances.

Table 10 below reports the sequence of public deficits and GDP growth rate for France between 2011 and 2013. It is based on two issues of EC forecasts: the latest one (autumn 2012) and the former one (spring 2012). The data show that according to spring 2012 forecasts, the cyclically-adjusted deficit was supposed to decrease by 1.2% of GDP between 2011 and 2013, hence an average yearly improvement which would be consistent with the fourth EU fiscal rule. It remains that the forecast improvement between 2011 and 2012 (resp. 2012 and 2013) was above (resp. below) the requested amount of 0.5% of GDP. According to the latest forecasts though, the decrease in the cyclically-adjusted deficit would now be 2.5% of GDP. On a yearly basis, it means that the improvement in the French fiscal position would be more than two times higher than what current EU fiscal rule requests from a MS under an excessive deficit position, with -1.1% of GDP between 2011 and 2012 and -1.4% of GDP between 2012 and 2013. Moreover, for 2013, the EC now forecasts a GDP growth rate of +0.4%, rather than +1.3% in its spring forecast. This change in the forecast certainly constitutes an “unusual event” and a severe unexpected economic downturn. For both reasons—higher improvement and lower expected economic growth—the current French fiscal stance is tougher than what the EU fiscal rules require. As a consequence, and consistently with EU fiscal rules and EC forecasts, France has fiscal room for manoeuvre that should permit it to delay austerity measures. Last, the requirement to reduce public debt to GDP ratio is assessed on a period of three years and it does not contradict the postponement of austerity. Leaving France margins for manoeuvre to reduce the pace of deficit reduction would certainly improve GDP growth and, meanwhile, it would facilitate the fulfilment of the third EU fiscal rule<sup>26</sup>.

**Table 11. EC forecasts for the French economy**

		2011	2012	2013
<b>Public deficit</b>	Spring 2012	5.2	4.5	4.2
	Autumn 2012	5.2	4.5	3.5
<b>Cyclically-adjusted deficit</b>	Spring 2012	4.1	3.2	2.9
	Autumn 2012	4.5	3.4	2.0
<b>GDP growth rate</b>	Spring 2012	1.7	0.5	1.3
	Autumn 2012	1.7	0.2	0.4

Source: EC forecasts

26. Box 1 in the first part of this Report reviews the literature on the value of the fiscal multiplier during bad times. It shows that a consensus has emerged about its positive and quite substantial value.

Do the same margins for manoeuvre exist for countries like Spain and Portugal, for which the initial public finance position is more unbalanced than France's? Tables 12 and 13 show that between 2011 and 2013, the initial forecast yearly improvements in the cyclically-adjusted deficit of Spain and Portugal were on average respectively equal to 1.2 and 2.5% of GDP according to Spring forecasts. According to the Autumn forecasts, average yearly improvements are supposed to be 1.75 and 2.7% of GDP, hence substantially higher than requirements of the fourth EU fiscal rule.

**Table 12. EC forecasts for the Spanish economy**

		2011	2012	2013
<b>Public deficit</b>	Spring 2012	8.5	6.4	6.3
	Autumn 2012	9.4	8.0	6.0
<b>Cyclically-adjusted deficit</b>	Spring 2012	7.3	4.8	4.8
	Autumn 2012	7.5	6.3	4.0
<b>GDP growth rate</b>	Spring 2012	0.7	-1.8	-0.3
	Autumn 2012	0.4	-1.4	-1.4

Source: EC forecasts.

**Table 13. EC forecasts for the Portuguese economy**

		2011	2012	2013
<b>Public deficit</b>	Spring 2012	4.2	4.7	3.1
	Autumn 2012	4.4	5.0	4.5
<b>Cyclically-adjusted deficit</b>	Spring 2012	6.2	3.0	1.3
	Autumn 2012	6.2	2.5	0.9
<b>GDP growth rate</b>	Spring 2012	-1.6	-3.3	0.3
	Autumn 2012	-1.7	-3.0	-1.0

Source: EC forecasts

As a conclusion, the implementation of structural reforms should not be viewed as the only justification for softening the stance on fiscal austerity: severe economic downturn is also included as an exceptional circumstance to postpone fiscal efforts, and achievements of cyclically-adjusted annual improvements of public finances above a threshold of 0.5% of GDP are not legally required.

The EU does not have to change its position in order to soften the fiscal stances of Euro area countries facing excessive deficits. Notwithstanding a possible change in this position in the future, there are already ample margins for manoeuvre in the short run to escape "self-defeating austerity" under the present legislation.

The following modelling exercise shows just how important it is that these margins for manoeuvre are fully exploited by EU Member States.

## 2. The actual consolidation path is ill-designed

To analyse the sustainability of public finances as well as the output losses of the current strategy, we develop a model describing the main euro area countries<sup>27</sup>. The aim of the new model is to provide a tractable and simplified toolkit (a small-scale dynamic model) based on sound theoretical foundations. This reduced-form model has to be flexible enough to analyse various policy mix scenarios with different sets of possible hypothesis. The first and principal use of the model is to assess the path of the policy-mix in euro area, taking into account trade interdependencies between European countries, and with the rest of the world.

The main features of iAGS model are that:

- The size of multipliers can vary according to the business cycle: fiscal impulses have a greater impact on GDP in bad times (when unemployment rate is very high compared to the equilibrium unemployment rate);
- Fiscal policy can have long run impact on potential GDP through hysteresis effects (austerity can alter potential GDP if investment is lowered for example);
- Euro area economies are interconnected through external trade. A recession in one country lowers demand in its partners, as its imports and their exports fall, so that GDP growth slows down in partner countries.
- The model includes a Taylor rule describing monetary policy where the zero lower bound on interest rate is added. Monetary policy then feeds back on economic activity and government interest expenditures through its effects on long term interest rates. The model then produces higher fiscal multipliers when monetary policy is at the lower bound, which is currently the case for the ECB.

The properties and characteristics of the model include assumptions about the variable size of fiscal multipliers, the long-lasting effects of a real crisis on the output gap, and the incidence of risk premia on interest rates, three features of strong relevance in the current and future euro zone context.

Table 14 sums up results of the baseline simulation (see Box 4 for a description of the main underlying hypotheses). In the baseline, we simulate the path of public debt levels (expressed in percentage points of GDP) until 2032, which is the horizon of the 1/20<sup>th</sup> debt rule incorporated in the revised SGP and in the Fiscal Compact. The simulated path of public debt levels depends on the fiscal impulses which have been forecast in the euro area from 2013 to 2015. By assumption at this stage, we assume zero fiscal impulses beyond 2016.

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27. The model is not described in the present report but a complete presentation is available from the OFCE.

The first six columns report the public debt and the structural balance respectively in 2012, 2017 (5-year horizon) and 2032 (20-year horizon). The cumulated fiscal impulse for 2013-2015 sums up the short term fiscal stance in the euro area as it cumulates forecast variations in structural primary government spending and taxes<sup>28</sup>. We report the average annual growth rate of real GDP for 2013-2017 and 2018-2032, and the sovereign rate spread over Germany for 2013-2015.

Table 14 reports how tough austerity will be all over the euro area: between 2013 and 2015, all MS except Germany and Finland will achieve cyclically-adjusted primary improvements in their public deficit equal to or above 2% of GDP. Spain, Portugal, Ireland and Greece will make even stronger efforts. This highly contractionary fiscal stance will make it ever harder to achieve an output gap at or above zero in our simulation: all MS will have to wait until 2019 (Austria, Finland), 2020 (Germany, France, Italy, Spain, Portugal) or 2021 to close the output gap. Meanwhile, the aggregate euro area GDP will plummet to a maximum negative output gap of almost -5%. Hence, the cumulated fiscal impulse, starting already from negative output gaps for which fiscal multiplier effects are strong, will lead to gloomy prospects for the entire euro area. Germany and Austria will be exceptions, since they will face almost no further real cost with their forecast fiscal strategy thanks to milder consolidation plans.

**Table 14. Baseline scenario**

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached	Sovereign rate spread to Germany
	2012	2017	2032	2012	2017	2032	2013-2015	2013-2017	2018-2032	2013-2032	2013-2015
DEU	82	67	26	0.3	0.9	1.8	-0.3	1.4	1.3	-0.7	0.0
FRA	90	91	52	-1.4	-0.2	0.2	-2.9	1.9	2.2	-6.8	0.0
ITA	127	109	18	0.3	2.4	5.5	-2.1	1.6	1.4	-6.5	0.7
ESP	86	101	83	-3.7	-2.1	-2.2	-4.3	1.7	2.3	-9.7	0.8
NLD	69	68	48	-2.9	-0.8	-0.8	-2.9	2.0	2.1	-2.8	0.0
BEL	100	91	38	-0.9	0.6	1.8	-2.2	2.1	2.1	-4.3	0.2
PRT	119	133	79	-2.8	-0.8	0.7	-4.7	0.9	1.8	-10.1	1.2
IRL	118	140	105	-5.0	-2.4	-2.3	-5.7	1.0	2.6	-10.9	1.0
GRC	177	199	93	-0.6	1.3	3.0	-7.5	0.2	2.5	-17.1	1.1
FIN	53	45	8	0.2	0.1	1.9	-1.3	2.4	2.2	-1.9	0.0
AUT	75	68	40	-2.5	-0.3	0.3	-1.9	1.7	1.6	-0.9	0.0
EA	94	88	43	-1.0	0.3	1.2	-2.2	1.6	1.8	-4.8	0.3

Sources : Eurostat, iAGS model.

28. Government spending is net of interest charges, and spending and taxes are adjusted for cyclical variations.

Real divergence across euro area member states under this scenario will thus widen: Greece will hit the floor with a massive output gap of -17%. Ireland, Spain and Portugal will face substantial losses with output gaps reaching abnormal levels around -10%, and France and Italy will be quite harshly hit, touching the ground at -7% after austerity measures are implemented.

This multi-speed euro area in terms of output losses will also be reflected in structural balances and public debt ratios. In 2017, despite substantial fiscal efforts, Spain, the Netherlands, Portugal and Ireland will not be able to bring their cyclically-adjusted deficit under 0.5% of GDP. Spain, Portugal and Ireland will also not be able to reach the public-debt-to-GDP threshold of 60% of GDP by 2032. The case of Greece is interesting, in this respect: it would not achieve this threshold either, despite an extraordinary structural surplus of 3% of GDP and an outstanding negative fiscal impulse of 7.5% of GDP between 2013 and 2015. Fiscal efforts by this country will not be sufficient to achieve the debt target, due to a deflation between 2014 and 2018 which increases real interest rates.

Another striking result with our simulations is the degree of excess austerity implemented by most countries reaching lower debt ratio at the 5-year horizon. Though European rules require only a maximum deficit of 0.5% of GDP, Germany, Italy, Belgium, Greece and Finland achieve structural surpluses. This clearly indicates that there is leeway to perform less restrictive fiscal policies without breaching EU fiscal rules, as for these countries the debt-to-GDP ratio is below 60% of GDP in 2032.

Finally, this baseline scenario questions the issue of public debt sustainability in the euro area. Consistently with the new fiscal framework, it seems relevant to fix a 20-year horizon for assessing debt sustainability. The simulations are then carried over this horizon.

It must be acknowledged that this issue of public debt sustainability is theoretically and empirically unsettled, between promoters of investigating the statistical properties of public finances' variables on the one hand, and, on the other hand, promoters of a "return to economic thinking" (Bohn, 2007). Stated briefly, sustainability refers to the ability of the general government to pay back the domestic public debt. This ability depends on the future available scope for spending cuts and tax hikes, but also on future economic growth.

In our simulations, the public debt sustainability is assessed regarding the ability of countries to meet the objective of bringing back the debt ratio to 60 % of GDP by 2032. Though some countries in our baseline simulations do not reach this 60% threshold, it is noticeable that they achieve substantial reductions in public debt-to-GDP ratios. For instance, Greece would halve its ratio and Ireland's debt would decrease by 35 percentage points of GDP between 2017 and 2032. This downward trend in public debt implies enhanced debt sustainability *stricto sensu*. However the social costs as well as the cost in terms of fiscal balance could make this adjustment

unrealistic. For Greece, Italy, Portugal and Belgium, it would indeed require structural primary surpluses above 3% of GDP for many years, which have rarely been achieved in history of fiscal consolidation. Debt sustainability is a relative concept and may only be assessed regarding the cost of achieving it.

However, our simulations also show that the long-run debt-to-GDP ratio in many euro area MS is astonishingly low: 26% in Germany, 18% in Italy, even 8% in Finland. It questions the relevance of fiscal austerity in these countries, because public bonds are highly demanded on financial markets, especially “risk-free” bonds like German Bunds. For this reason, it is highly probable that this baseline scenario goes too far in terms of fiscal sustainability in most euro area countries. To sum up, this scenario considers fiscal restrictions that go beyond the requirements of fiscal sustainability, beyond the requirements of EU fiscal rules and beyond the social resilience of European citizens.

The first variant that we introduce in the baseline scenario refers to “fiscal sustainability” stemming from EU treaties and regulations. Sustainability refers here to the ability of EU MS to converge towards a debt target of 60% of GDP. Therefore, we compute simulations that aim at gauging if all countries can attain the public debt target in 2032. We calculate a sequence of fiscal impulses over 2015-2032 that achieve the target, assuming that fiscal impulses for the years 2013 to 2015 are left unchanged. For simplicity, we set fiscal impulses at -0.5 or +0.5 depending on the gap *vis-à-vis* the target: the fiscal impulse is positive (resp. negative) if actual debt is above (resp. below) the target. The cumulated fiscal impulse is larger than in the baseline scenario for countries which cannot achieve 60% in this scenario, whereas it is lower for the other countries. For the last group of countries, we gather some pieces of information as regards the margins for manoeuvre for future fiscal policy. Structural balance and average annual growth also indicate what would be the costs or gains in terms of fiscal adjustment and impact on economic activity of sticking to the debt target at 20-year horizon.

The question of fiscal sustainability is crucial for Greece, Ireland, Portugal and Spain since they do not attain this targeted level of debt in the baseline scenario, whereas the question of the costs of fiscal retrenchment is crucial for countries that go beyond the requirements of EU fiscal legislation in the baseline scenario.

Table 15 sums up the simulation results where we add further consolidation of 0.5 point of GDP per year from 2016 in order to assess whether the 60 % debt ratio would be met. Striking results are threefold. First, two countries—Ireland and Greece—are still unable to achieve the debt-to-GDP target. It does not preclude fiscal sustainability *per se*, but it entails further social unsustainability of public finances: the fiscal stance over the period 2013-2032 produces a cumulative fiscal impulse which is highly negative and twice as high (in absolute values) as in the baseline scenario. Such a fiscal stance is entirely unrealistic and inefficient: economic growth in the medium-run would be lowered substantially, and the

maximum negative output gap would be even larger. This outcome ensues from the high value of the fiscal multiplier when the output gap is strongly negative, from inertial processes in economic growth once hysteresis is introduced, and from the relatively insufficient decrease in real interest rates, since these two countries suffer from low or negative inflation rates until 2020.

Second, Spain and Portugal achieve the debt target in 2032, but under substantially more restrictive fiscal stances. Fiscal adjustment under such conditions seems unrealistic and unreasonable: between 2013 and 2017, both countries would experience slower economic growth than in the baseline, hence postponing until 2025 (Portugal) and 2027 (Spain) the return to a zero output gap.

Third, countries with public debt levels below the debt target in 2032 have fiscal leeway: indeed, the cumulated fiscal impulse improves by 2.7 percentage points in Germany, 1 in France, 4.2 in Italy, 5.7 in Finland and 1.4 in Austria in this scenario compared to the baseline. Despite fiscal leeway and relatively high fiscal multipliers in the short run, the net gain in terms of economic growth is very small, however. The reason lies in the trade interactions within the euro zone: the enlarged margins for manoeuvre for some countries are compensated by the larger real difficulties incurred by the implementation of a more restrictive fiscal stance in Southern countries and Ireland.

**Table 15. Is it possible to reach the target of 60% in 2032 and what is the cost incurred in terms of growth?**

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached
	2012	2017	2032	2012	2017	2032	2013-2032	2013-2017	2018-2032	2013-2032
DEU	82	68	60	0.3	-0.1	-1.8	2.4	1.5	1.3	-0.7
FRA	90	89	60	-1.4	-1.1	-0.8	-1.9	2.3	2.1	-6.8
ITA	127	109	60	0.3	1.4	0.4	2.1	1.8	1.4	-6.5
ESP	86	104	60	-3.7	-1.3	1.3	-8.2	1.3	2.2	-9.8
NLD	69	68	60	-2.9	-1.6	-1.9	-2.0	2.1	2.0	-2.8
BEL	100	91	60	-0.9	-0.3	-0.6	-0.3	2.3	2.1	-4.3
PRT	119	137	60	-2.8	-0.1	3.7	-8.2	0.4	1.8	-10.2
IRL	118	144	71	-5.0	-1.7	5.2	-13.7	0.5	2.5	-11.0
GRC	177	206	84	-0.6	1.9	8.9	-15.5	-0.4	2.3	-17.3
FIN	53	46	60	0.2	0.1	-4.3	3.4	2.5	2.2	-1.9
AUT	75	69	60	-2.5	-1.2	-1.7	-0.5	1.8	1.6	-0.9
EA	94	89	61	-1.0	-0.3	-0.5	-1.0	1.7	1.8	-4.9

Sources : Eurostat, iAGS model.

#### Box 4. Main hypotheses for the Baseline simulations

Simulations begin in 2013. To do so, we need to set some starting point values in 2012 for a set of determinant variables. Output gaps for 2012 come from OFCE, ECLM, IMK forecasts. Potential growth for the baseline potential GDP is based on Johansson *et al.* (2012) projections (see Table 16). Concerning fiscal policy and budget variables, the main hypotheses follow:

- The public debt in 2012 comes from the European Commission's autumn 2012 forecast;
- We use the OFCE, ECLM, IMK forecasts for fiscal balance in 2012;
- We use the European Commission's autumn 2012 forecast of interest expenditures for 2012; combined with OFCE, ECLM, IMK forecasts of output gaps in 2012, and model estimates of the cyclical part of the fiscal balance, it gives the structural primary balance for 2012;
- Fiscal impulses come from OFCE, ECLM, IMK forecasts for 2013 (see Table 17). For 2014-2015, we use fiscal impulses implied by the Stability and Growth Pact reported in the "Assessment of the 2012 national reform programme and stability programme" for each country.
- Sovereign spreads come from OFCE, ECLM, IMK forecasts for 2013-2015 (see Table 18). We made the hypothesis that the ECB program of unlimited debt buying on the secondary market (Outright Monetary Transactions) is effective and achieves its goal to bring down interest rates for Italy and Spain. Regarding countries relying on the ESM for debt financing, we assume that Ireland will get direct access to financial markets as of 2014, Portugal as of 2015 and Greece as of 2016.

Table 16. Main hypotheses for 2012

in %

	Public debt	Fiscal balance	Structural primary balance	Interest expenditures	output gap	potential growth
Source	European Commission	OFCE, ECLM, IMK	OFCE, ECLM, IMK	European Commission	OFCE, ECLM, IMK	OFCE, ECLM, IMK
DEU	81.7	-0.2	2.7	2.4	-1.0	1.3
FRA	90.0	-4.4	1.2	2.6	-6.2	2.0
ITA	126.5	-2.5	5.8	5.5	-5.5	1.3
ESP	86.1	-7.4	-0.7	3.0	-8.5	2.0
NLD	68.8	-4.4	-0.9	2.0	-2.8	2.0
BEL	99.9	-3.5	2.6	3.5	-4.8	2.0
PRT	119.1	-5.5	1.7	4.5	-6.1	1.5
IRL	117.6	-8.0	-1.0	4.0	-7.4	2.2
GRC	176.7	-6.7	4.8	5.4	-14.1	1.9
FIN	53.1	-0.9	1.3	1.1	-2.1	2.2
AUT	74.6	-3.0	0.1	2.6	-1.1	1.6

Sources: European Commission, OFCE, ECLM, IMK forecasts.

**Table 17. Fiscal impulse**

in % of GDP

	2013	2014	2015
DEU	0.0	-0.3	0.0
FRA	-1.8	-0.6	-0.5
ITA	-2.1	0.0	0.0
ESP	-2.5	-1.2	-0.6
NLD	-1.2	-1.2	-0.5
BEL	-0.8	-0.6	-0.8
PRT	-2.9	-0.6	-0.2
IRL	-1.8	-2.1	-1.8
GRC	-3.9	-2.7	-0.9
FIN	-1.3	0.0	0.0
AUT	-0.9	-0.3	-0.6

Sources: OFCE, ECLM, IMK forecasts.

**Table 18. Sovereign spreads relative to German interest rate on public debt**

in %

	2013	2014	2015
DEU	0.0	0.0	0.0
FRA	0.1	0.0	0.0
ITA	1.3	0.8	0.0
ESP	1.5	0.8	0.0
NLD	0.1	0.0	0.0
BEL	0.5	0.1	0.0
PRT	1.4	1.2	1.0
IRL	1.4	1.5	0.0
GRC	1.4	1.2	0.9
FIN	0.0	0.0	0.0
AUT	0.0	0.0	0.0

Sources: OFCE, ECLM, IMK forecasts.

### 3. Searching for a less costly alternative strategy

In this section, we address the issue of the opportunity to soften (or spread) and to delay the consolidation. The scope of alternative scenarios is inevitably infinite and any scenario reducing the strength of fiscal consolidation would improve growth but it may also undermine the sustainability of public debt<sup>29</sup>. The identification of any alternative strategy is then fundamentally based on a trade-off between

29. The model does not integrate any mechanism through which debt would have a negative effect on activity per se.

growth and debt. The stronger is the consolidation, the costlier it is in terms of output losses and the more debt is reduced unless the size of the fiscal multiplier exceeds 2 (see Part 1 of this report). Conversely, a more cautious path of consolidation may delay the reduction of debt but it would improve growth. The aim of this study is then to identify an efficient strategy, that is a strategy reducing the output losses of consolidation while keeping constant the objective for public debt. In theory, it resumes to an optimal control problem which may be solved using the appropriate algorithm. But there is no guarantee that the optimal solution may one that can be implemented in practice. This is why we are seeking a solution compatible with the spirit of the various fiscal rules governing EMU member states. Taking into account the objective of the TSCG, we maintain the objective for public debt at 60% of GDP in 2032. We also claim that the current rules leave leeway for an alternative strategy. Firstly, the minimum annual improvement of the cyclically-adjusted balance (net of one-off measures) of 0.5% of GDP is held to be consistent with the needed correction of the excessive deficit. In addition most EMU countries have scope to invoke the exceptional circumstances escape clause as they face a “*an unusual event*” (see section 1 of this Part 4 of the Report).

i) Starting from this, we first consider the case where the consolidation is spread out from 2013 onwards. We implement a yearly consolidation of 0.5 point of GDP consistent with the objective of 60 % of debt in 2032 as identified in the previous section. The main difference with the scenario described in Table 15 is that we replace the scheduled consolidation path from 2013 until 2015 (see Table 17 in Box 4) by a consolidation, which does not exceed 0.5% of GDP from 2013 until 2032. For those countries (Greece and Ireland) where the 60% debt ratio was not reached in 2032, we implement the same spread consolidation strategy from 2013 to 2032. The aim here is simply to check whether a milder consolidation would reduce the output losses while maintaining the objective of bringing the debt ratio back towards 60% in twenty years. In such a case, it must be noted that the strategy is not differentiated as the yearly fiscal stance will be the same for each country. The only difference is that the consolidation is stopped as soon as the 60% debt ratio is reached. In each case, we assess whether this alternative strategy leads to a reduction in the output losses. For Greece and Ireland, we may also compare the level of public debt in 2032.

ii) In a second step, we proceed the same way except that consolidation is also delayed. The start of the consolidation is chosen according to the date where it is the most efficient (see Box 5 for detailed explanations on the way this optimal date is chosen).

### *Is it more appropriate to spread the consolidation?*

The efficiency of such a strategy, where austerity is softened but not delayed, should first be assessed regarding the average growth over the period. From this, it appears clearly that on the 2013-2017 period, the average growth for the euro area as a whole is 0.6 point higher (Table 19) than in a scenario where the consolidation is not spread over time and corresponds to what has been announced by the national governments in their convergence plans (in these plans, consolidation occurs when it hurts more, that is when the size of the fiscal multiplier is the highest). Consolidation would be spread meaning that a larger share of the consolidation would be implemented when the output gap has recovered. The negative impact on growth would then be reduced.

The main reason for this result is that there would be less consolidation since consolidation is more efficient (in terms of debt reducing) when the output gap is closed. The most striking difference is identified for Greece where the average growth between 2013 and 2017 is 3.6 points higher than if the current expected consolidation path is implemented. Besides, this strategy would enable Greece to reduce debt in 2032 more significantly even though the cumulated fiscal stance would be loosened, amounting to -3.3 points of GDP in the spread consolidation scenario against -15.5 points otherwise. It must however be noticed that from 2018 until 2032, growth would be slightly reduced in the scenario where consolidation is softened since it also involves that it is spread over a longer period of time. The situation of Greece is the most symptomatic of this ill-designed consolidation. Actually, the Greek public deficit results mainly from cyclical effects and interest payments. The structural deficit amounts to -0.6 % of GDP for 2012 which is already near the so-called "golden rule" enacted in the fiscal compact. Then it is urgent for Greece to reduce the path of consolidation. This is the only condition for growth to resume, which may contribute to the reduction of the cyclical-deficit. Such a strategy would also avoid a deflation episode in Greece. The real interest rate between 2013 and 2017 would be indeed 2 points less than in the scenario where the fiscal stance is what is currently scheduled in the convergence programme. Finally, spreading the consolidation would lead to structural surplus of 0.8% for Greece in 2017 instead of 1.9 % for the scenario where consolidation is not spread. By 2032, the structural balance would reach 3.5% of GDP, which is still quite high relative to historical standards but it is nevertheless significantly less than in the baseline scenario( 8.9% of GDP).

If we turn to the other countries, results are in the same vein even if the contrast is less striking. Thus, the average growth for the 2013-2017 period would be higher for all euro area countries except Austria, where there would no changes in growth. For the other countries, the benefit would range from 0.1 point in Germany to 2.2 points in Ireland. Portugal, Spain and Italy would be the countries benefiting the most from such a strategy.

**Table 19. Is it more appropriate to spread fiscal impulses over time?**

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached
	2012	2017	2032	2012	2017	2032	2013-2032	2013-2017	2018-2032	2013-2032
DEU	82	72	60	0.3	-1.1	-1.3	1.8	1.6	1.3	-0.5
FRA	90	86	60	-1.4	-1.0	-0.9	-1.3	2.6	2.1	-4.7
ITA	127	104	60	0.3	-0.6	0.9	2.4	2.6	1.2	-2.7
ESP	86	96	60	-3.7	-2.6	0.8	-6.0	2.5	2.1	-6.3
NLD	69	69	60	-2.9	-1.5	-1.9	-1.9	2.2	2.0	-2.3
BEL	100	89	60	-0.9	-1.0	-0.7	0.4	2.7	2.0	-2.9
PRT	119	119	60	-2.8	-0.9	1.9	-3.9	1.9	1.6	-4.2
IRL	118	125	67	-5.0	-3.7	3.9	-9.5	2.7	2.3	-5.6
GRC	177	150	60	-0.6	0.8	3.5	-3.3	3.2	2.0	-8.0
FIN	53	54	60	0.2	-2.1	-3.0	2.0	2.7	2.1	-1.1
AUT	75	71	60	-2.5	-1.5	-1.5	-0.7	1.8	1.6	-0.8
EA	94	90	62	-1.0	-1.3	-0.4	-0.4	2.3	1.8	-3.1

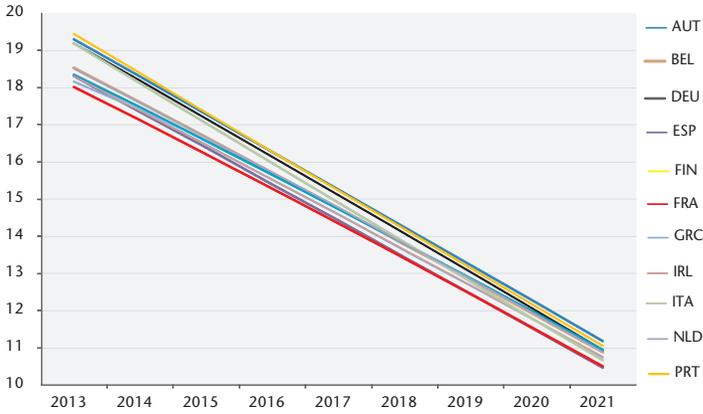
Sources : Eurostat, iAGS model.

### Box 5. An algorithm for a “well balanced austerity”

Simulating a (small, negative) fiscal impulse on a certain year (and no fiscal impulse for any other year) and then running the model enables to determine the level of debt in 2032. We may then compare the path of debt reduction with the alternative path of neutral budgetary policy (Figure 25). It is inducing a debt reduction (as compared to the reference path) if multipliers are not too large and sufficient time is left for debt reduction to occur. As the fiscal impulse is small this is an approximation of the first derivative of debt to GDP ratio 20 years from now relative to impulse in any year from now. If the model is linear (no hysteresis and fixed fiscal multiplier), then, the graph is independent of initial conditions and derivatives are independent of the size of the impulse. If not, then the graph is a linearization of the problem on a current state of the economy (described by initial conditions or state variable at a given period) and for a small shock.

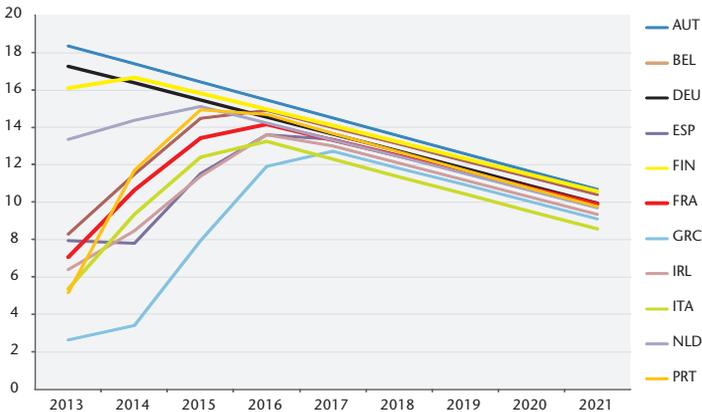
Things get a bit more complicated when one considers that the underlying dynamic for Figure 25 is more realistic and allows for some non linearity (hysteresis and time-varying fiscal multiplier). Figure 26 is based on a cycle (output gap) dependent multiplier and includes negative output gaps described above as initial conditions to the system. In such a model and initial conditions, multipliers are higher than a given critical value for which it is equivalent to engage fiscal restriction now or one year later, for a given amount of debt reduction. Thus postponing the negative fiscal impulse by one year or more is more efficient for debt reduction.

Figure 25. Debt reduction in 2032 for a 1.0 fiscal impulse on a given year



Fixed multiplier, no hysteresis

Figure 26. Debt reduction in 2032 for a 1.0 fiscal impulse on a given year, non linear model



Cycle dependant multiplier and hysteresis

The algorithm is then simple: given an initial debt to GDP ratio, given a time-frame for reducing debt to 60% (20 years), given a maximum fiscal impulse of  $I_{max}=\pm 0.5$ , Figure 25 is used to select the timing of the first fiscal impulse based on the maximum efficiency of fiscal impulse. Figure 25 suggest that austerity is more efficient (in terms of debt reduction) when the negative fiscal impulse is done in the first period, and thus suggest a pattern of fiscal impulses of  $I_{max}$  for the first years until it is sufficient to bring down debt to target level. Such an algorithm selects the more parsimonious sequence of fiscal impulses to reduce debt.

Following dynamics represented by Figure 26, the afore-mentioned algorithm states that fiscal impulses should not start in 2013 in most countries. The necessary sequence for debt reduction would thus follow a pattern of no impulse

before the inflexion date and  $I_{\max}$  for some time from the inflexion date, as long as necessary to reduced debt to 60% in 2032. The Table 14 indicates the date where it is optimal to start the consolidation according to these calculations.

It may happen—as we describe it below—that debt target is not achievable through this process. This means that given  $I_{\max}$  and the underlying dynamic of the economy, debt target is not sustainable. This is a probably more satisfying definition of sustainability than usually used as it is forward looking in the long term. Then, it may be computed for instance what  $I_{\max}$  would allows for the 60% debt-to-GDP ratio to be reachable.

Following the algorithm described above, we calculate the best timing to engage in fiscal restriction. We show that in case of a large negative output gap, waiting is more efficient for debt reduction, due to the higher current value of the fiscal multiplier. Accordingly, we find that there are 6 countries for which it would be optimal to delay the start of the consolidation (Table 20). The model emphasizes that the wider is the output gap, the more it is optimal to postpone consolidation. The efficiency of the consolidation would be increased in so far as time would be given for growth to recover. Such a strategy implicitly boils down to a 2-step approach. It stresses that it is first needed to let the cyclically-adjusted deficit be reduced in line with the closing of the output gap. Then, once the output gap is closed, it becomes more efficient to undertake the fiscal consolidation per se, that is the needed reduction of the structural deficit. Thus, for Greece, it would be more efficient to start the consolidation from 2017. For France, Spain and Ireland, it would be better to implement a neutral fiscal policy until 2016. Finally, for Netherlands and Portugal, the reduction of debt would be optimized if consolidation started in 2015.

Comparing Table 20 to Table 15, we show that delaying the fiscal consolidation leads to a higher average growth in 2013-2017 in concerned countries, and for the euro zone as a whole (2.4% for the 2013-2017 period, against 1.7% without delaying the adjustment). Greece is again the country which would benefit most from delaying its fiscal consolidation. Yearly average growth would be 4.5 points higher between 2013 and 2017. Then, as the output gap would close more rapidly, the average growth would be slightly inferior from 2018 to 2032. It must also be noticed that postponing consolidation would achieve the same target for debt, relatively to the situation where consolidation is only spread over time, with a cumulated fiscal impulse that would be only half as large. This is largely explained by the cycle-dependent multiplier, which makes austerity less painful since it is postponed until the multiplier reaches a lower value. Similarly, Portugal, Spain, and Ireland combine a gain of 0.5 to 0.6 point of growth on average over the same period when they delay fiscal consolidation and implement a greater reduction in their structural deficit. For France, the average growth would be 0.2 point higher compared to the situation where the consolidation is only spread. This improve-

ment would stem from the better prospects of trade partners within the euro area. It remains to be said that this mild improvement would give a net gain of 0.5 point in comparison with the baseline situation where the French government sticks to its current fiscal commitments.

For Austria and Germany, the alternative strategy would not entail a significant lower consolidation. Then, on the one side, those countries would benefit from a stronger growth in the rest of the euro area. But, on the other side, interest rates would be higher as a result of a relative tightening of monetary policy, through the Taylor rule. For Germany, real interest rates would on average amount to 1.7% when consolidation is delayed in all other euro area countries against 1% in the scenario where the current commitments are respected.

**Table 20. Is it more appropriate to postpone the start of fiscal adjustment?**

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached	Starting date of fiscal impulses (sign of FI)
	2012	2017	2032	2012	2017	2032	2013-2032	2013-2017	2018-2032	2013-2032	
DEU	82	74	60	0.3	-1.3	-1.1	1.6	1.6	1.3	-0.7	2013 (+)
FRA	90	86	60	-1.4	-1.2	-0.8	-1.1	2.8	2.1	-4.0	2016 (-)
ITA	127	107	60	0.3	-0.7	1.3	1.9	2.4	1.3	-3.0	2013 (+)
ESP	86	95	60	-3.7	-4.0	2.4	-7.3	3.1	1.9	-5.7	2016 (-)
NLD	69	72	60	-2.9	-2.1	-1.6	-2.1	2.3	2.0	-2.1	2015 (-)
BEL	100	90	60	-0.9	-1.3	-0.5	0.1	2.7	2.0	-3.2	2013 (+)
PRT	119	116	60	-2.8	-1.7	1.9	-3.3	2.4	1.6	-3.3	2015 (-)
IRL	118	123	78	-5.0	-5.1	2.7	-8.0	3.2	2.2	-4.7	2016 (-)
GRC	177	141	60	-0.6	-0.3	2.8	-1.5	4.1	1.9	-7.1	2017 (-)
FIN	53	56	60	0.2	-2.3	-2.8	1.8	2.6	2.2	-1.3	2013 (+)
AUT	75	72	60	-2.5	-1.6	-1.4	-0.9	1.7	1.6	-0.9	2013 (-)
EA	94	88	60	-1.0	-1.6	-0.1	-0.7	2.4	1.7	-2.9	

Sources : Eurostat, IAGS model.

#### 4. “Well-balanced austerity” and sensitivity to baseline hypotheses

As we have seen before, the path of fiscal consolidation determines the sustainability of public debt, and a “well-balanced” austerity helps achieving the target of 60% in 2032 without huge losses in term of growth. However, such simulations hinge on the assumption that negative output gaps are large in most countries of the euro area (see Table 16 in Box 4). Results strongly depend on this assumption

since it implies high fiscal multipliers, and postponing the fiscal adjustment is a way to reduce them. The other strong assumption concerns yield spreads. In the baseline scenario, we assumed that the OMT program of ECB would succeed in diminishing Italian and Spanish sovereign interest rates, helping these countries to achieve sustainability of their public debt. In this part, we discuss these two assumptions.

### *Closed output gaps in 2012*

The implications of a low output gap in our model are twofold: on the one hand, spontaneous growth is strengthened in order to close the output gap, and on the other hand, fiscal multipliers are higher, hampering growth when fiscal impulses are negative. The final outcome in term of growth is therefore ambiguous, and depends on the level of the output gap and on the size of the fiscal adjustment performed. If, in contrast, we assume that we are in a situation of “new normal”, characterised by a closed output gap in 2012, average growth during the period 2013-2017 is lower in all countries except Portugal, Ireland and Greece compared to the baseline scenario, which benefit from low fiscal multipliers while making their strong fiscal adjustment (Table 21).

**Table 21. What if the output gap were zero in 2012 (New normal)?**

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached
	2012	2017	2032	2012	2017	2032	2013- 2032	2013- 2017	2018- 2032	2013- 2032
DEU	82	72	39	0.3	0.0	0.8	-0.3	1.3	1.3	-0.3
FRA	90	89	75	-4.4	-2.1	-2.1	-2.9	1.7	2.0	-1.2
ITA	127	113	51	-2.5	0.0	2.6	-2.1	1.1	1.3	-1.3
ESP	86	97	105	-7.4	-4.1	-4.6	-4.3	1.6	2.1	-2.0
NLD	69	70	64	-4.4	-2.0	-2.2	-2.9	1.8	2.0	-0.8
BEL	100	93	62	-3.5	-1.4	-0.5	-2.2	1.9	2.0	-0.7
PRT	119	111	64	-5.5	-0.8	0.9	-4.7	1.4	1.6	-1.1
IRL	118	118	92	-8.0	-2.9	2.2	-5.7	1.9	2.3	-1.5
GRC	177	140	42	-6.7	1.6	4.5	-7.5	1.8	1.9	-0.6
FIN	53	49	25	-0.9	-0.1	0.4	-1.3	2.1	2.2	-1.5
AUT	75	72	53	-3.0	-1.1	-0.7	-1.9	1.5	1.6	-0.4
EA	94	88	61	-3.2	-1.2	-0.5	-4.7	1.5	1.7	-0.9

Sources : Eurostat, iAGS model.

The most striking case is Greece, where GDP growth is on average 1.6 point higher, implying positive inflation rates and much lower real interest rates on average over the period 2013-2017 (1.7% compared to 4.4% in the baseline scenario). Higher growth and lower interest rates lead to a much stronger debt reduction over 20 years: the debt to GDP ratio is back to 42% instead of 93% in the baseline scenario, for the same cumulated fiscal impulse (-7.5%). Portugal and Ireland also end up with lower debt ratios, even if the difference with the baseline scenario is less striking.

This change in the assumption regarding current output gaps makes it clear that the plea for strong and immediate fiscal retrenchment is based upon the existence of a so-called “new normal” path of economic growth. Drawing on such an assumption, the iAGS model reports simulation results which are at odds with the current Greek state of the economy, for instance. The “new normal” assumption is pretty much normative, but it lacks empirical validity.

### *Higher spreads over the German sovereign bond yield*

To assess the sensitivity of results to this hypothesis, we simulate the path of public debts under the alternative hypothesis that sovereign spreads above the German rate observed in 2012 persist until 2015 (see Table 22). These high spreads, especially for Greece, Portugal and Ireland, imply that these three countries would almost surely stay in the ESM (European Stability Mechanism) until 2015 to fund their debt and deficit.

In this alternative scenario, the average spread over the German rate would be higher for each country except for countries in the ESM. Specifically, we assume that the average spread would be 250 basis points higher for Italy and Spain, 150 basis points higher for Belgium and 80 basis points higher for France and Austria.

First, higher yield spreads occur in the beginning of the simulation, when public debt is high. It lasts only three years, but as a result the average public debt in the euro area would be 4 points higher (in % of GDP) in 2017 and 7 points in 2032.

*Second*, the most stricken countries would be Italy and Spain, with debt ratios 22 points higher than in the baseline scenario. In these two countries, the minimum output gap reached would be respectively 0.9 point and 1.3 point below the one reached in the baseline. As a consequence, the structural balance would be 1.4 point lower for Spain, due to higher government interest charges. Respecting the structural balance rule would then imply more negative fiscal impulse for this country.

Third, we also computed optimal strategies consisting in delaying and postponing the fiscal adjustment. With higher yield spreads, the main results are:

- Spain would not reach the 60% debt level in 2032;

— Italy would attain the 60% debt level in 2032, but it is conditioned by further fiscal consolidation.

**Table 22. What if sovereign spreads to German rate were higher?  
(2012 spreads persist until 2015)**

	Public debt (% of GDP)			Structural balance (% of GDP)			Cumulated fiscal impulse (% of GDP)	Average annual growth		Maximum negative output gap reached	Sovereign rate spread to Germany
	2012	2017	2032	2012	2017	2032	2013- 2015	2013- 2017	2018- 2032	2013- 2032	2013- 2015
DEU	82	67	26	0.3	1.0	1.8	-0.3	1.4	1.3	-0.7	0.0
FRA	90	91	56	-1.4	-0,5	0.0	-2.9	1,9	2.2	-6.9	0.9
ITA	127	121	40	0.3	0.6	4.2	-2.1	1.4	1.4	-7.4	3.8
ESP	86	112	105	-3.7	-3.8	-3.6	-4.3	1.4	2.3	-11.0	4.0
NLD	69	68	50	-2.9	-0.9	-0.9	-2.9	1.9	2.1	-2.9	0.4
BEL	100	94	44	-0.9	0.1	1.4	-2.2	2.0	2.1	-4.5	1.5
PRT	119	133	78	-2.8	-0.7	0.7	-4.7	0.9	1.8	-10.1	1.2
IRL	118	140	106	-5.0	-2.5	-2.4	-5.7	1.0	2.6	-11.1	12
GRC	177	199	92	-0.6	1.4	3.1	-7.5	0.2	2.5	-17.1	1.2
FIN	53	45	8	0.2	1.0	1.8	-1.3	2.4	2.2	-2.0	0.3
AUT	75	69	42	-2.5	-0.4	0.2	-1.9	1.7	1.6	-1.0	0.8
EA	94	92	50	-1.0	-0.2	0,8	-4.7	1.6	1.8	-5.1	1.4

Sources : Eurostat, iAGS model.