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# "The New Medium-Term Budgetary Objectives and the Problem of Fiscal Sustainability After the Crisis."

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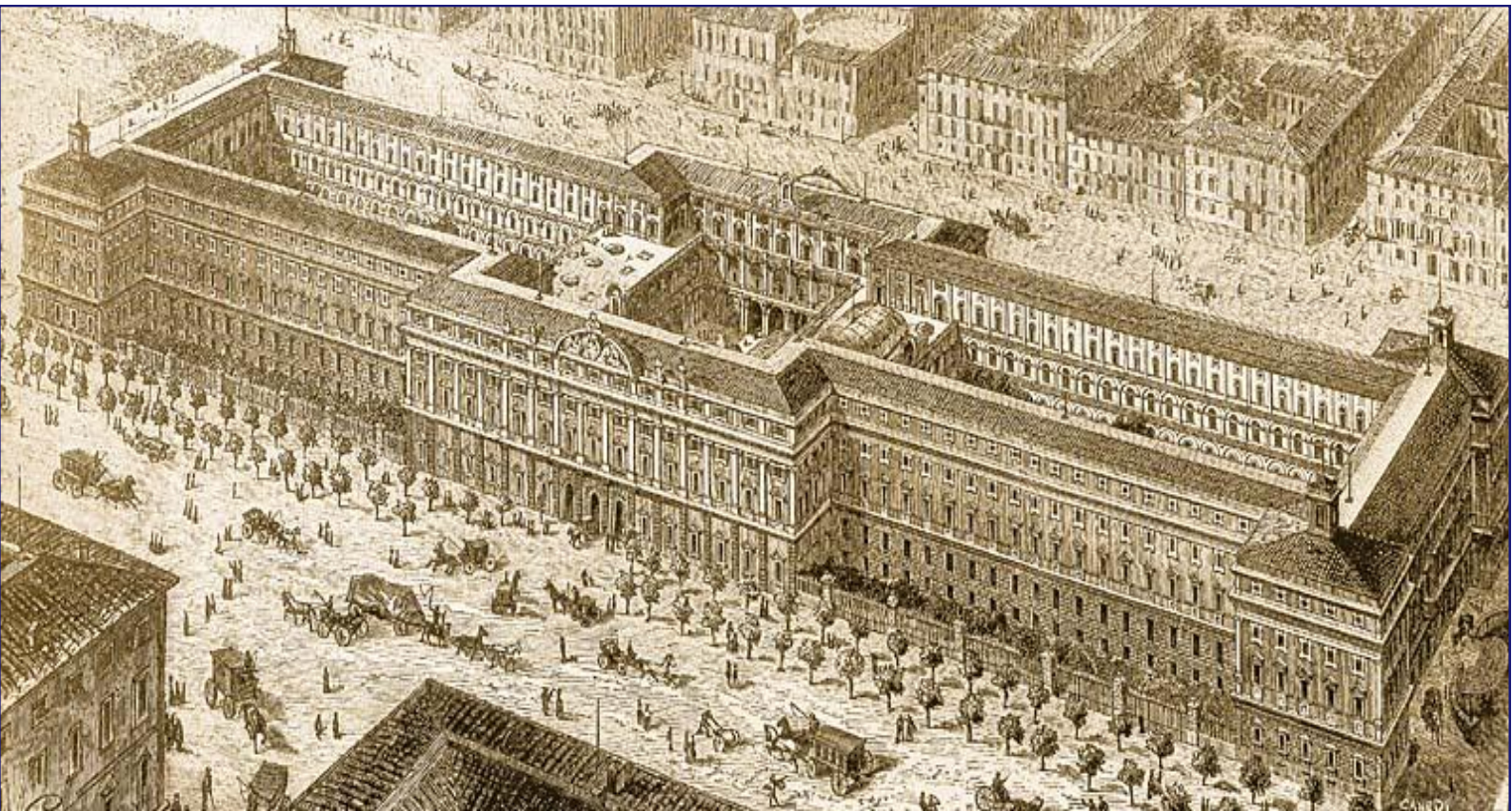

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# "The New Medium-Term Budgetary Objectives and the Problem of Fiscal Sustainability After the Crisis."[1]

Paolo Biraschi(*), Marco Cacciotti(*), Davide Iacovoni(*) and Juan Pradelli(**)

## Abstract

The paper analyses the medium-term objectives (MTOs) recently adopted by the EU Member States as a reference for the multilateral budgetary surveillance, assessing the ability of the new MTOs to promote long-term fiscal sustainability. The paper calibrates the (yet undisclosed) algorithm for computing the minimum budgetary targets that EU countries can declare as MTO and discusses two novel features of the algorithm: a supplementary debt-reduction effort requested from high-debt countries, and the partial frontloading of the expected future increases in age-related expenditure -the cost of ageing-. The paper evaluates the impact of the crisis on EU countries' current as well as future MTOs through the channels of higher public debt, lower growth potential, and higher cost of ageing. On the basis of alternative scenarios for macroeconomic and budgetary conditions as of 2012 -when the next revision of MTOs is scheduled-, the paper concludes that prospective MTOs would be more stringent than the current ones. Therefore, a path for gradual fiscal tightening is already embedded into the European fiscal framework and should be considered when discussing exit strategies. Finally, an alternative indicator linking MTOs to the current fiscal and financial imbalances is presented.

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Keywords: National Budget, Deficit, and Debt, policy objectives, fiscal policy, comparative analysis.

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# 1 INTRODUCTION

The reform of the Stability and Growth Pact (SGP) agreed upon at the European Council of March 2005, introduced a number of relevant amendments to both the preventive and corrective arm of the EU fiscal framework. In particular, a new definition of the medium-term objectives (MTOs), which are part of the preventive arm and inform the EU multilateral budgetary and macroeconomic surveillance, was incorporated in the Stability and Convergence Programmes (SCPs) and their assessment by the European Commission.

EU Member States' SCPs indicate MTOs for budget balances in structural terms, i.e. cyclically-adjusted and net of one-off and temporary measures. The revised SGP establishes that MTOs may be country-specific, depending on national macroeconomic and public finances conditions and having regard to risks to long-term sustainability of public finances. General criteria for determining the medium-term budgetary targets were agreed by the European Council, e.g. MTOs have to consider the government debt, the potential output growth, and a safety margin with respect to the Maastricht limit of 3 percent of GDP for the nominal budget deficit. Eventually, the ECOFIN Council's assessment of SCPs addresses whether the MTOs declared by EU Member States do satisfy the agreed criteria.

Initially, the revised SGP did not provide a well-defined rule or methodology for implementing the MTO determination criteria. Large room for judgmental analysis was then left to each Member State when setting budgetary targets and this represented a potential flaw to the overall credibility of the EU fiscal framework. As recently as 2009, however, Member States and the European Commission completed a joint work elaborating a methodology for computing MTOs that renders operational the MTO determination criteria.[2] The methodology encompasses not only public debt, potential growth, and budgetary safety margins, but also the implicit government liabilities associated with rising expenditure due to ageing populations. Two novel features are incorporated in the quantitative determination of MTOs: a supplementary debt-reduction effort -required from EU countries whose debt-to-GDP ratio exceeds the Maastricht 60 per cent reference value- aimed at promoting convergence of debt ratios towards prudent levels; and a partial frontloading of cost of ageing -requested from all EU countries indistinctly- that seeks to cover part of the future increases in age-related spending-.[3]

A final agreement on the MTO methodology has been introduced in the Code of Conduct (CoC, 2009) that specifies the practical implementation of several aspects of the SGP. In the 2009 updates of SCP, 15 EU countries have declared MTOs calculated using the new methodology. However, neither they nor the European Commission have ever disclosed the

[2] More precisely, the work establishes modalities for computing country-specific minimum budgetary targets that Member States can declare as MTOs. Countries are indeed free to declare MTOs more demanding than those minimum targets.

3 Implicit government liabilities constitute unfunded commitments that are not necessarily backed by law or contractual obligations, but rather grounded in strong expectations by the public, e.g. pension expenditure or liabilities arising in connection with support to the financial sector in times of crisis.

specific algorithm for computing MTOs, including the aforementioned two novel features.

Following the economic crisis, financial bailouts, and fiscal stimulus packages, the public finances in all EU countries have significantly deteriorated since 2008. Nowadays, in fact, issues of fiscal sustainability and implicit liabilities are growing concerns. Not only are governments under pressure to design fiscal exit strategies aimed at reversing the expansionary stance deployed in 2008-2009, but they have also to cope with the higher levels of explicit liabilities inherited from the crisis as well as with the more proximate dates at which age-related expenditures will engage in a growing trajectory. Most EU Member States, in particular, are under the excessive deficit procedure and should implement fiscal adjustments since 2011.

In this context, the current MTOs could potentially play a role as part of the exit strategies. Being a formal and explicit constraint on fiscal policies in terms of medium-term budgetary outcomes, MTOs could help in planning a gradual reversal of expansionary stimulus.[4] More importantly, MTOs would facilitate coping with the problems of high debt and ageing-related implicit liabilities by requesting additional public savings through the supplementary debt-reduction effort and the partial front-loading of cost of ageing.

There is a risk, however, that economic recovery falters because fiscal tightening starts too early and attempts to adjust too much. In this regard, the current MTOs that many EU countries have declared in the 2009 updates of SCP are excessively demanding and imply unrealistically-large budgetary consolidation efforts going forward. Credibility is an issue in this context. In addition, if consolidation is attempted despite of a weak recovery, MTOs could even end up being contractive. While some consequences of the crisis are apparent, like the sharp increase in public debt, others are still uncertain, like the impact on long-run growth potential and cost of ageing. Under changing conditions, the prospective MTOs will probably be more stringent than the current ones and exacerbate the credibility problem.

Against this background, the aim of the paper is threefold. First, to analyze the new MTO methodology and discuss critical aspects of the modalities to take on board government liabilities. Second, to assess the impact of the crisis on the current and future MTOs, showing the incidence of debt, growth, and cost of ageing on the budgetary targets that EU Member States are committed to achieve. Third, noticing that the new MTO methodology focuses on a handful of fiscal and growth variables and thus leaves aside other important determinants of the sustainability of public finances, the paper outlines a simple alternative modality to introduce into the MTOs several factors bearing on the fiscal risk associated to any level of public debt. The proposed modality considers the composition of public debt by maturity, the structure of the private sector indebtedness, and financial market judgements.

[4] Consolidation ought to be gradual because in the current context of low interest rates and loose monetary policy, fiscal multipliers are high and therefore a sudden fiscal adjustment will lead to a large output contraction. Committing governments to fiscal plans beyond normal electoral cycles is difficult. But the EU is better placed to cope with these credibility issues as supra-national arrangements like fiscal rules can be established and must be observed by national governments in single countries despite of their short-term political objectives.

The paper is organized as follows. Section 2 describes the institutional framework of the new MTO methodology. Section 3 explores the analytical underpinnings of MTOs, conducts a calibration exercise to uncover the (yet undisclosed) algorithm for computing MTOs, and provides a critical assessment on the implications on fiscal sustainability of the supplementary debt-reduction effort and the frontloading of cost of ageing. Section 4 assesses the impact of the financial and economic crisis on EU Member States' MTOs and distinguishes between direct and indirect effects associated, respectively, to higher debt levels and lower growth potential. Section 5 elaborates an alternative modality for determining MTOs that replaces the supplementary debt-reduction effort by a synthetic exposure index that measures funding pressures and risks facing all sectors in a given country at a certain point in time. The index includes variables related to the short-term sustainability of public debt, the risk of distress in the financial and banking system, and the build-up of sectoral and external imbalances. Section 6 concludes.

## 2 INSTITUTIONAL FRAMEWORK OF THE NEW MTO METHODOLOGY

The legal basis of the new MTO methodology is found in the Conclusions of the 2005 Spring Council of the European Union (2005a), which defined the main economic principles of the SGP reform and ensured the required political commitment to make the endorsement of the European fiscal framework fully credible.[5]

Given the previous failures to reach MTOs from the large majority of EU Member States, the European Council sought to strengthen the SGP preventive arm by allowing MTOs for structural budget balances to be country-specific and to take into account differences across countries in their economic fundamentals and risks to public-finance sustainability -especially risks associated with demographic changes-. This innovative perspective contrasted sharply with the previous version of SGP, which had adopted a one-rule-fits-all approach and requested EU Member States to achieve indistinctly a medium-term budgetary position close to balance or in surplus regardless of their specific economic conditions.

MTO differentiation, in turn, had to consider the countries' government debt and implicit liabilities –especially those associated with rising age-related expenditure-, potential growth, and a safety margin minimizing chances of having budget deficits breaching the Maastricht 3 percent reference value. In addition, the importance of fiscal soundness for monetary stability in a currency union warranted further differentiation by membership to the Euro Area and ERM II. Thus, Member States adopting the Euro, or in the process of doing it, were requested to declare MTOs in a range between a structural deficit of 1 per cent of GDP -for low debt/high potential growth countries- and a balanced or in-surplus structural budgetary position -for high debt/low

[5] For details, see European Commission (2005, p.79-100; 2006, p.88-109).

potential growth countries-.

Along with the principle of MTO differentiation, the European Council made explicit a triple aim pursued by MTOs: (i) providing the aforementioned safety margin, (ii) ensuring rapid progress towards public-finance sustainability; and (iii) allowing an appropriate budgetary margin of manoeuvre to support public investment. This triple aim suggested that MTOs would facilitate the use of fiscal policies for short-run stabilization purposes -as it had been necessary during 2001-2002-, but would also seek preservation of fiscal soundness in the long run.

General criteria for the quantitative determination of country-specific MTOs transpired from the triple aim as well as from the broad goals of the SGP reform. For instance, in order to safeguard the long-term sustainability of public finances, MTO values for the structural budget balance should ensure the convergence of debt ratios towards prudent levels and the frontloading of implicit liabilities associated with ageing populations. MTO determination criteria were, nevertheless, too general and even the European Council acknowledged that modalities for implementing and operationalizing them had to be carefully elaborated.[6]

*Towards a methodology for implementing MTO determination criteria*

The consideration of public debt and implicit liabilities in the determination of country-specific MTOs raised a number of conceptual and methodological issues. The main open questions referred to which indicators of government liabilities should be used (stock vs flow measures) and which definition of implicit liabilities should be adopted (broad vs narrow definition, backward- vs forward-looking notions, inclusive or not of contingent liabilities such as financial bailouts). The European Council then deemed that further technical work was needed in order to make the aim related to the rapid improvement of fiscal sustainability fully operational. Nevertheless, in order to proceed immediately with the application of the MTO differentiation principle, it established a transitory period in which MTOs would be determined on the sole basis of the government debt-to-GDP ratio, potential growth, and the budgetary safety margin, leaving implicit liabilities aside for the time being.

At this stage, a major problem with methodological and political implication arose: no clarifications were given by the European Council on how to combine the information on public

[6] The European Council also agreed on general criteria for modulating the adjustment path towards the achievement of MTOs. These criteria ensured continuity and opportunity of the budgetary consolidation efforts that Member States should undertake if their current fiscal positions were far from MTOs. For instance, in countries belonging to Euro Area and ERM II, the annual improvement in the structural budget balance had to be at least 0.5 percentage points of GDP. For all EU countries in need of consolidation, besides, the opportunity for budgetary improvements became an important issue. The European Council introduced a symmetrical approach to fiscal policy over the cycle by requiring countries to enhance fiscal discipline in 'good times' –defined as periods when output exceeds its potential level-, while allowing them to accommodate 'bad times' –characterized by a negative output gap-. Temporary deviations from admissible MTOs or adjustment paths would be allowed for if arising as short-term effects of implementing structural reforms.

debt, potential growth, and safety margin to calculate the country-specific MTOs. Hence, there were no indications on the hierarchical order to be attached to these three variables in determining MTOs. The European Commission view was that more weight should be given to the current level of government debt and the prospects of potential growth. In this regard, the European Commission was particularly concerned because the European Council Conclusions did not make a straightforward reference on the necessity of setting MTO values –based on debt and growth- that should be much more demanding than those values that would just cover the budgetary safety margin. It was then convinced that leaving Member States free to set their MTOs –with the risk of having them covering just the safety margins- could be in conflict with the aim of preserving fiscal sustainability and, in addition, could undermine the credibility of the overall EU fiscal framework. After negotiations, the European Commission and the Member States eventually agreed that the MTO determination criterion related to debt should be given more relevance.[7]

Over the transition period, the conceptual and methodological issues involved in the new approach to gauge MTOs were addressed by the Economic and Financial Committee (EFC), the Economic Policy Committee (EPC), and the Ageing Working Group (AWG). Several proposals were considered, exploring different modalities to combine the variables relevant for determining MTOs in a well-defined quantitative framework.[8] The final agreement on the implementation of MTO determination criteria was achieved in the Spring 2009 and officially came into force in November 2009 with the introduction of the corresponding provisions in the CoC. For the first time 15 EU Member States have declared MTOs computed using the new methodology in their 2009 updates of SCP. However, neither they nor the European Commission have ever disclosed the specific algorithm for computing MTOs.

# 3 ANALYTICAL UNDERPINNINGS OF THE NEW MTO METHODOLOGY

## 3.1 Nature, purpose, and the determination of MTO

The MTO is a quantitative target for the structural budget balance that an EU Member State commits itself to achieve over a certain time horizon, usually the planning horizon of the SCP. The MTO should therefore constrain the country's fiscal policies to eventually deliver an overall budget balance -adjusted by cyclical fluctuations, net of one-offs and temporary measures, and expressed as percentage of GDP- that meets the target or improves upon it.[9]

[7] A number of arguments were advanced to justify such decision: the current debt ratio is an observed variable and does not rely on assumptions, while estimates for long-term potential growth are uncertain and may fluctuate substantially in the short term; and the current debt ratio is one of the main indicators for assessing public-finance sustainability at any possible time horizon.

8 For details on the proposals, see European Commission (2007, p.91-95; 2008, p.106-110). Highly disputed issues concerned the indicators of implicit liabilities to be used and the need of setting MTOs that would neither penalize countries that had implemented pension reforms nor discourage those that had reforms in the pipeline

[9] Policies leading to the achievement of MTO, in addition, must satisfy other constraints requiring the path of budgetary adjustment to be gradual, without exhibiting sudden, large, and possibly politically-unfeasible consolidations near the end of the planning horizon. For instance, a country running a structural deficit far away from the MTO is committed to improve the structural budget

Being a formal constraint on fiscal policies in terms of medium-term budgetary outcomes, the quantitative determination of country-specific MTOs has always been a politically-sensitive issue subject to negotiations, agreement, and institutional arrangements. As indicated in section 2, MTO was given a triple aim that largely shapes the MTO determination criteria.

First, the MTO intends to provide a safety margin against the possibility that, given an unexpected worsening of economic conditions, the nominal budget deficit suddenly rises and exceeds the Maastricht 3 percent of GDP reference value. This notion underpins the country-specific MTO minimum benchmark, calculated using a country's sensitivity of budget balance to output gap together with an estimate of output volatility –e.g. the extreme (negative) value of the country's output gap that might occur in the future with a certain probability-10. Thus, a country whose budget balance is more (less) sensitive to cyclical fluctuations -probably as a result of institutional arrangements concerning the operation of automatic stabilisers- should be committed to a more (less) demanding MTO and therefore to a tighter (looser) medium-term target for the structural budget balance. A similar commitment is expected from a country exhibiting a business cycle with large (small) output movements since an unexpected, large drop in economic activity is more likely (unlikely) to occur, dragging down the budget balance.

Second, the MTO aims to ensure progress towards sustainability of public finances, defined broadly to include both the explicit liabilities corresponding to the current stock of debt and the implicit liabilities associated with the expected deterioration of fiscal balances due to rising age-related expenditure induced by demographic trends (i.e. the cost of ageing).

As far as sustainability of explicit liabilities is concerned, the MTO seeks convergence of high debt levels towards the Maastricht 60 percent of GDP reference value. Thus, a country whose debt-to-GDP ratio is above (below) that threshold should pursue a more (less) demanding MTO, as well as a country having low (high) prospective growth rates of potential GDP. High-debt and low-growth countries would then seek to achieve a stronger fiscal position leading to debt growth below nominal GDP growth, eventually converging to the Maastricht reference value.

With respect to sustainability of implicit liabilities, the MTO aims at the partial frontloading of the cost of ageing. Such a frontloading requires a country to improve budget balances and increase public savings in the present (hence reducing the pace of debt accumulation or even increasing assets), so that it makes additional financial resources available in the future (under the form of a lower debt burden or even a higher stock of assets) to cope better with the increase in age-related expenditure when it eventually kicks-in. According to this notion, a more (less) demanding MTO is therefore expected from a country facing a high (low) cost of ageing or is willing to frontload a larger (smaller) proportion of that cost.

Third, the MTO allows for room of manoeuvre for a country that chooses to undertake public investment as a means to support aggregate demand or to promote economic growth. In particular, a low-debt country is granted a less demanding MTO so that its fiscal budget can accommodate additional investment spending without failing to fulfil the committed MTO.

For the purpose of this section, we presume that the MTO determination criteria are being implemented by a formal rule or algorithm that sets a minimum value for the MTO a country can declare and commit to achieve (i.e. a minimum budgetary target the country must go for). In fact, the CoC explicitly gives freedom to all EU countries to commit themselves to

balance each year until reaching the MTO by an amount of (at least) 0.5 percentage points of GDP. This ensures that budgetary consolidation starts early in time and constitutes a rather continuous process.

[10] For details, see European Commission (2007, p.104-107) and Codogno and Nucci (2007).

more ambitious targets than those implied by the MTO determination criteria, 'as if' there was a formal rule for implementing them.[11]

In the 2009 updates of SCP, 15 EU countries have declared the MTOs that result from implementing the MTO determination criteria as agreed in Spring 2009. But they have not disclosed the MTO methodology underlying their committed budgetary targets. In the next part of this section, we attempt to uncover that algorithm on the basis of the CoC statements, official publications by the European Commission, some pieces of information collected from the 2009 updates of SCP, a few assumptions concerning the algorithm specification, and the countries' declared MTOs following the new methodology.

### 3.2 A calibrated model for the MTO determination

From an analytical point of view, the algorithm implementing the MTO determination criteria loads as input the fiscal and macroeconomic variables relevant for the MTO triple aim, and delivers as output the minimum budgetary target that a country can go for. Given the minimum target resulting from the algorithm (hereinafter denoted MTOMT), a country must commit to achieve an MTO (denoted MTOD, with D standing for 'declared') that is equal or more demanding than that minimum. While MTOD is observed, MTOMT is not, but it must satisfy MTOMT ≤ MTOD.

To uncover the MTOMT algorithm, we follow closely the CoC statements on the matter.[12] Our reading of the CoC suggests the MTOMT must be the most demanding value among three alternatives: (i) the country-specific MTO minimum benchmark (MTOMB), which constitutes the aforementioned safety margin and whose value has been already disclosed by the European Commission (2007, p.107); (ii) the country-specific commitment by participants of Euro Area and ERM II to achieve at least a structural deficit of 1 percent of GDP (MTOEA); and (iii) the country-specific MTO that addresses the issues of sustainability of public finances and budgetary manoeuvre granted to low-debt countries (MTOSM, with S standing for 'sustainability' and M for 'manoeuvre'). Hence, for country i the algorithm states

**(1) MTOMTi = Max (MTOMBi, MTOEAi, MTOSMi)**

with MTOEAi being -1 if country i belongs to Euro Area or ERM II and 0 otherwise.

The CoC gives some guidance on how to calculate the MTOSM by saying that it should encompass three components: (i) the budget balance that stabilises the debt-to-GDP ratio at 60 percent given a country's long-term growth rate of potential GDP; (ii) a supplementary debt-reduction effort for countries whose debt exceeds 60 percent of GDP; and (iii) a proportion of the adjustment needed to cover the present value of the future increase in age-related expenditure (i.e. the cost of ageing). The precise algorithm for computing these three components of MTOSM, however, is not disclosed in the CoC but we now attempt to uncover it.

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[11] Countries belonging to the Euro Area and ERM II have indeed made use of that freedom by committing themselves to achieve MTOs above a structural deficit of 1 percent of GDP, even when the triple aim of MTO warrants a less demanding level.

[12] The more informative part of the CoC concerning the MTO determination states: *"Specifically, the country-specific MTOs should take into account three components: i) the debt-stabilising balance for a debt ratio equal to the (60% of GDP) reference value (dependent on long-term potential growth), implying room for budgetary manoeuvre for Member States with relatively low debt; ii) a supplementary debt-reduction effort for Member States with a debt ratio in excess of the (60% of GDP) reference value, implying rapid progress towards it; and iii) a fraction of the adjustment needed to cover the present value of the future increase in age-related government expenditure. This implies a partial frontloading of the budgetary cost of ageing irrespective of the current level of debt. In addition to these criteria, MTOs should provide a safety margin with respect to the 3% of GDP deficit reference value and, for euro area and ERM II Member States, in any case not exceed a deficit of 1% of GDP."* (CoC, 2009, p.4).

The debt-stabilising balance is a standard result in the analysis of debt dynamics and should be computed as -(60 gi)/(1+gi), where gi denotes country i's long-term growth rate of potential GDP at current prices and is regularly estimated by the Ageing Working Group (AWG) for all EU countries.[13]

The adjustment needed to finance the country's cost of ageing is simply the S2E indicator calculated by the AWG as part of its framework for assessing long-term sustainability of public finances.[14] By reading several 2009 updates of SCP, we find evidence that the CoC's required proportion of this adjustment is either 33 percent of the S2E indicator or the annualized value of cost of ageing cumulated until 2040.[15] In the former case, we must use 0.33 S2Ei for country i.

The supplementary debt-reduction effort is a novel feature of the MTOSM, with neither the literature on debt sustainability nor the AWG sustainability framework offering an apparent counterpart. We therefore must make a specification assumption taking into account the stated purpose of the effort, namely to induce convergence of debt-to-GDP ratios in high-debt countries towards the Maastricht 60 percent reference value. Accordingly, we specify the effort to be proportional to the excess of the debt-to-GDP ratio over and above the 60 percent reference value. Hence, we postulate k (di - 60) where di is country i's debt-to-GDP ratio and the parameter k is calibrated below.

Summarizing our discussion, the three components of MTOSM for country i are given by

**(2) MTOSMi = -(60 gi)/(1+gi) + k (di - 60) + 0.33 S2Ei .**

To calibrate k, we take advantage of the countries' MTOs declared in the 2009 updates of SCP and proceed guided by an educated guess. Nowadays, high-debt EU countries -which would be relatively more penalized by the supplementary debt-reduction effort- are likely to prefer having as much fiscal space as possible in order to cope with the crisis and promote the recovery. Consequently, it is likely that in the 2009 updates of SCP, they have declared their MTOD equal to their minimum budgetary targets MTOMT. By assuming such a case, for a high-debt country j we can set MTOMTj = MTODj; or alternatively use (1) and (2) to obtain equation (3) below. By applying equation (3) to a high-debt country j, we obtain one equation in the unknown parameters k that allows us to calibrate it.

**(3) MTODj = Max (MTOMBj, MTOEAj, -(60 gj)/(1+gj) + k (dj - 60) + 0.33 S2Ej).**

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[13] The CoC itself states: *"Potential growth and the budgetary cost of ageing should be assessed in a long-term perspective on the basis of the projections produced by the Working Group on Ageing attached to the Economic Policy Committee."* (CoC, 2009, p.4). For long term growth projections, see European Commission and Economic Policy Committee (2008, 2009). (2008, 2009).

[14] See European Commission (2009b). The S2E indicator measures the permanent adjustment in the structural primary balance-to-GDP ratio that would allow financing the cost of ageing calculated over an infinite time horizon. It boils down to a weighted average of the future increments in age-related spending-to-GDP ratio vis-à-vis the initial ratio, with weightings that depend on discounting factors involving future interest and growth rates. S2E depends on the time profile of expected variations in the age-related expenditure and not on the levels of spending.The CoC itself states: *"Potential growth and the budgetary cost of ageing should be assessed in a long-term perspective on the basis of the projections produced by the Working Group on Ageing attached to the Economic Policy Committee."* (CoC, 2009, p.4). For long term growth projections, see European Commission and Economic Policy Committee

[15] Our pieces of evidence are the following. Germany's SCP states: *"The medium-term objective of -½% of GDP results under both possible calculation methods, i.e. whether 33% of the costs as a result of ageing are prefinanced or all costs as a result of ageing are covered until 2040."* (p.27). Bulgaria's SCP states: *"According to the long-term estimates of the Ageing Working Group to the EPC at the EC, a structural budget deficit of 1.8% of GDP would satisfy the condition for long-term sustainability of fiscal policy by pre-financing 33% of implicit liabilities."* (p.30). Italy's SCP states: *"With reference to the new methodology for calculating Medium Term Objectives (MTO) including implicit liabilities as agreed at the EU level, Italy has opted for the partial front-loading of the cost of ageing, in the amount of 33 per cent."* (p.17). Luxembourg's SCP states: *"Thus, in the case of Luxembourg, a medium term budgetary objective of +0.5% of GDP in structural terms with the ensuing budget surpluses should allow providing financially for the coverage of the additional public expenditure caused by demographic ageing from here to the 2040 horizon."* (p.10-11).

At the end of 2008 -the last year for which accurate data are available- Italy was the most indebted EU country. In its 2009 update of SCP, Italy declared MTOD of zero –i.e. a balanced budget in structural term-; since MTOMB is -1.4 and MTOEA is -1, then we assume it should have been MTOD=0=MTOMS. Taking on board the values of gj, dj, and S2Ej for Italy reported in table 2, the equation solves for the calibrated parameter k = 0.033.

The calibrated algorithm provides us with estimates of MTOMT and MTOSM, denoted MTOMT* and MTOSM*. Table 1 reports these estimates for EU countries together with their MTOD (if any).

For the 15 countries that did declare MTO, two comparisons between MTOMT* and MTOD give us some comfort about the reliability of our estimates in terms of approaching the true (undisclosed, unobserved) MTOMT.[16] First, the condition MTOMT ≤ MTOD must always hold and we find that our estimates do satisfy MTOMT* ≤ MTOD in 11 out of the 15 countries.[17] Second, using again an educated guess, a case can be made that countries would prefer either to declare MTOD very close to MTOMT –to gain as much fiscal space as possible, as argued before- or to declare MTOD well above MTOMT –to signal commitment towards fiscal discipline that might bring about gains in terms of market confidence and even financial stability-.[18] MTOD being neither close nor far from MTOMT is unlikely to be a preferred option. Our estimates MTOMT* indeed reproduce the case made for extreme options: leaving Luxembourg aside, in 7 out of 14 countries the MTOMT* differs from MTOD by less than 0.3 percentage points –Germany, Ireland, Italy, Latvia, Hungary, Malta, Netherlands-; in 6 countries the discrepancy between MTOMT* and MTOD is larger than 1 percentage point -Bulgaria, Estonia, France, Austria, Finland, and Sweden-; and only in Poland the discrepancy of 0.5 percentage points is neither small nor large.

[16] There are 9 countries that did not declare MTO in their 2009 updates of SCP and 3 countries did not even submit the SCP at the time of this writing.

[17] As for the remaining 4, in Ireland, Hungary, and Netherlands our MTOMT* only slightly exceeds the MTOD value or the lower bound of the MTOD range, while is Luxembourg the failure must be due to the country choosing to use the annualized value of cost of ageing cumulated until 2040 and not the 0.33 S2E

[18] A country announcing a commitment to a very demanding MTO -i.e. well above MTOMT- may lack credibility and hence it makes no sense to make such announcement. In addition, there is the risk of declaring a too ambitious MTO and subsequently find that recovery falters and it is difficult -even undesirable- to deliver fiscal consolidation, which would undermine the confidence sought in the first place. We think these arguments apply to Italy and hence warrant the educated guess underlying the algorithm calibration, namely that this country has declared an MTOD close to MTOMT.

Table 1: MTOMT* vs MTOs declared in SCP 2009 (% of GDP unless otherwise specified).

| Country | | Growth rate of potential GDP at current prices - average 2010-2060 (%) | Budget balance stabilising debt-to-GDP ratio at 60% (1) | Debt at end of 2008 | Estimated supplementary debt-reduction effort (2) | S2E | MTOSM* (3) | MTOMB | MTOEA | MTOMT* = Maximum (MTOMB, MTOEA, MTOSM*) | MTO declared by country in SCP 2009 (4) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Belgium | BE | 3.8 | -2.2 | 89.8 | 1.0 | 4.8 | 0.3 | -1.3 | -1.0 | 0.3 | no comm. |
| Bulgaria | BG | 3.7 | -2.1 | 14.1 | 0.0 | 1.5 | -1.6 | -1.8 | | -1.6 | 0.5 |
| Czech Republic | CZ | 3.6 | -2.1 | 30.0 | 0.0 | 3.7 | -0.9 | -1.6 | | -0.9 | no comm. |
| Denmark | DK | 3.8 | -2.2 | 33.4 | 0.0 | 1.4 | -1.7 | -0.5 | -1.0 | -0.5 | no comm. |
| Germany | DE | 3.2 | -1.9 | 65.9 | 0.2 | 3.3 | -0.6 | -1.6 | -1.0 | -0.6 | -0.5 |
| Estonia | EE | 3.8 | -2.2 | 4.6 | 0.0 | -0.1 | -2.2 | -1.9 | -1.0 | -1.0 | 0.0 or higher |
| Ireland | IE | 4.4 | -2.5 | 43.2 | 0.0 | 6.7 | -0.3 | -1.5 | -1.0 | -0.3 | -0.5 to 0.0 |
| Greece | EL | 3.7 | -2.1 | 99.2 | 1.3 | 11.5 | 3.0 | -1.4 | -1.0 | 3.0 | no comm. |
| Spain | ES | 3.9 | -2.2 | 39.7 | 0.0 | 5.7 | -0.4 | -1.2 | -1.0 | -0.4 | no comm. |
| France | FR | 3.9 | -2.2 | 67.4 | 0.2 | 1.8 | -1.4 | -1.6 | -1.0 | -1.0 | 0.0 |
| Italy | IT | 3.5 | -2.0 | 105.8 | 1.5 | 1.5 | 0.0 | -1.4 | -1.0 | 0.0 | 0.0 |
| Cyprus | CY | 4.8 | -2.7 | 48.4 | 0.0 | 8.3 | 0.0 | -1.8 | -1.0 | 0.0 | n.a. |
| Latvia | LV | 3.4 | -2.0 | 19.5 | 0.0 | 1.0 | -1.7 | -2.0 | -1.0 | -1.0 | -1.0 |
| Lithuania | LT | 3.5 | -2.0 | 15.6 | 0.0 | 3.2 | -1.0 | -1.9 | -1.0 | -1.0 | no comm. |
| Luxembourg | LU | 4.6 | -2.6 | 13.5 | 0.0 | 12.9 | 1.6 | -1.0 | -1.0 | 1.6 | 0.5 |
| Hungary | HU | 3.7 | -2.1 | 72.9 | 0.4 | 1.5 | -1.2 | -1.6 | | -1.2 | -1.5 |
| Malta | MT | 3.7 | -2.1 | 63.6 | 0.1 | 5.7 | -0.1 | -1.7 | -1.0 | -0.1 | 0.0 |
| Netherlands | NL | 3.5 | -2.0 | 58.2 | 0.0 | 5.0 | -0.4 | -1.1 | -1.0 | -0.4 | -0.5 to 0.5 |
| Austria | AT | 3.7 | -2.1 | 62.6 | 0.1 | 3.1 | -1.0 | -1.6 | -1.0 | -1.0 | 0.0 |
| Poland | PL | 3.5 | -2.0 | 47.2 | 0.0 | -1.2 | -2.4 | -1.5 | | -1.5 | -1.0 |
| Portugal | PT | 3.9 | -2.2 | 66.3 | 0.2 | 1.9 | -1.4 | -1.5 | -1.0 | -1.0 | n.a. |
| Romania | RO | 3.8 | -2.2 | 13.6 | 0.0 | 4.9 | -0.6 | -1.8 | | -0.6 | n.a. |
| Slovenia | SI | 3.4 | -2.0 | 22.5 | 0.0 | 8.3 | 0.7 | -1.6 | -1.0 | 0.7 | no comm. |
| Slovakia | SK | 3.7 | -2.2 | 27.7 | 0.0 | 2.9 | -1.2 | -2.0 | -1.0 | -1.0 | no comm. |
| Finland | FI | 3.7 | -2.1 | 34.2 | 0.0 | 4.5 | -0.6 | -1.2 | -1.0 | -0.6 | 0.5 |
| Sweden | SE | 3.9 | -2.3 | 38.0 | 0.0 | 1.6 | -1.7 | -1.0 | | -1.0 | 1.0 |
| United Kingdom | UK | 4.1 | -2.4 | 55.5 | 0.0 | 3.6 | -1.2 | -1.4 | | -1.2 | no comm. |

(1) Computed as -(60*g)/(1+g) where g is average nominal potential GDP growth rate over 2010-2060.
(2) Computed as 0.033*(d - 60) where d is 2008 debt as percentage of GDP.
(3) Computed as -(60*g)/(1+g)+0.033*(d - 60)+0.33*S2E
(4) Declared MTO: 'no comm.' indicates that no commitment is explicitly made by the country in the SCP 2009; 'n.a.' indicates SCP 2009 is not available.
Note: Luxembourg declared MTO is below MTOMT* because the country opted to cover cost of ageing cumulated up to 2040.
Sources: Debt levels are from 2009 Updates of Stability and Convergence Program, submitted by countries in January 2010.
Debt for Cyprus, Portugal, and Romania in 2012 is from European Comission 2009 Autumn forecast and refers to 2011.
Average nominal potential GDP growth rates over 2010-2060 and S2E indicators are from European Commission's Ageing Report 2009 and Sustainability Report 2009.

## 3.3 Strengths and weaknesses of the new MTO methodology

Three advantages of the new methodology for implementing MTO determination criteria should be acknowledged vis-a-vis the ad hoc approach adopted during the transition period established by the European Council.

First, the MTO methodology enhances the transparency, simplicity, and political commitment of the procedures for setting medium-term budgetary targets. It is apparent that, despite of the algorithm for calculating minimum targets not being yet disclosed to the general public, the CoC's statements provide enough guidance on the rationale and effective implementation of the several components of the algorithm. Simplicity of the MTO methodology facilitates understanding and technical discussion between the parties interested in the EU fiscal framework –notably the European Commission and Member States engaged in multilateral budgetary surveillance, SCP assessments, and excessive deficit procedures-. In addition, fiscal prudence is likely to be strengthened because countries no longer can set too loose MTOs that just cover the minimum benchmarks -as they could during transition phase-.

Second, MTOs are now embedded into a well-defined quantitative framework: for each EU country, precise values can be computed for the MTO minimum benchmark, the debt-

stabilising budget balance, the supplementary debt-reduction effort, and the partial frontloading of the cost of ageing. The analytical pieces of the whole framework –output gaps, budgetary sensitivities, Maastricht reference values, sustainability indicators, etc.- take extensive stock of theoretical and applied work jointly developed by the European Commission and Member States. This ensures compatibility of the MTO methodology with other formal procedures existing at EU level.

Third, MTOs give now an explicit role to government liabilities, both explicit and implicit, in the setting of minimum budgetary targets. MTOs, therefore, can modulate the constraints imposed on budgetary policies of a Member State to its own fiscal behaviour in the past –summarized by the current public debt level- as well as to its fiscal challenges in the future –especially the impact of ageing on public spending-.

The consideration of explicit liabilities as determinants of MTOs involves a clear distinction between low-debt and high-debt countries and allows for a differentiated treatment of both groups. Low-debt countries are granted a larger margin of manoeuvre in managing government debt -for instance to finance additional public investment-. They are not seen as posing immediate threats for the macroeconomic and financial stability of E(M)U, and any slight increase in their debt levels is not perceived as a potential source of destabilising, cross-border, financial spillovers. High-debt countries, on the other hand, are required to achieve more demanding MTOs, which boils down to generate higher public savings –as proportion of GDP- in order to gradually reduce their debt ratios and the potential threats they entail to the E(M)U. The supplementary debt-reduction effort implements such a requirement in practice.[19]

The introduction of implicit liabilities in the MTOs, in particular, ensures that a budgetary safety margin is being procured so as to cope with the projected increase in age-related expenditure. A full frontloading of the cost of ageing would pre-finance the whole expected increase in age-related expenditure over a long term horizon, whereas a partial frontloading implies that the remaining gap will have to be somehow financed later on –e.g. through the implementation of additional structural reforms to cut prospective spending, or the reduction of other public expenditures unrelated to social security, or the increase in taxes, or a mix of the previous alternatives-. To acknowledge Member States' ownership on the choice of policies financing the cost of ageing, the new MTO methodology opted for a partial degree of frontloading. Nevertheless, a minimum degree of frontloading is required from all EU countries (the coefficient k discussed above), because if they were free to choose any arbitrary degree, the incentives to implement pension reforms or to maintain those already enacted would be weaker. By contrast, in order to strengthen these incentives, the CoC states that MTOs could be revised regularly and in any case after the implementation of major structural reforms having an impact on age-related expenditures.

*A critical assessment of MTOs and the long-term sustainability of public finances*

In the remaining part of this section, we assess critically the extent to which the specific modalities for introducing government liabilities into the MTO algorithm make or not a substantial contribution to the preservation of long-term sustainability of public finances, which admittedly should be the ultimate goal of those modalities. Contrary to the great expectations created by the new MTO methodology, the analysis shows that, on the one hand, the supplementary debt-reduction effort does not accelerate significantly the convergence of debt-

[19] A hypothetical high-debt country facing no cost of ageing could target a MTO that only stabilizes the debt-to-GDP ratio at 60 percent. Such a budgetary strategy would be fully consistent with the intertemporal budget constraint under the assumption of no uncertainty. If instead uncertainty is allowed for, that strategy neither can be deemed sustainable nor can be consistent with the limits set by the SGP. In case of a prolonged period of low growth and/or high interest rates, a high-debt country should then be required to consolidate public finances more and faster than a low-debt country.

to-GDP ratios towards the Maastricht 60 percent reference value, and, on the other, the partial frontloading of cost of ageing falls short of providing enough incentives to undertake structural reforms to reduce the future path of age-related expenditure vis-à-vis the alternative of engaging in a standard medium-term consolidation process.

According to the supplementary debt-reduction effort in equation (2), for a high-debt country, a 10 percentage point (p.p.) increase in the debt-to-GDP ratio raises the MTOSM* by 0.33 p.p. of GDP, and, provided that MTOSM* is the maximum in equation (1), it also raises the MTOMT* by the same amount. To be sure, such an increase in the MTOMT* represents a significant adjustment on the structural budget balance that should be achieved in the medium-term. It is then apparent that the required effort penalizes high-debt countries and imposes the necessity of further fiscal tightening in the next few years.

But the stated purpose of the supplementary debt-reduction effort is to ensure rapid progress towards sustainability, not to penalize high-debt countries for its own sake by triggering further requirements of fiscal discipline. Therefore, an assessment of the effort on its own merits should be based on how much it accelerates convergence of the debt ratio towards the Maastricht 60 percent reference value, and not on how much medium-term consolidation it requires from high-debt countries. In this regard, it turns out that the effort has little impact –if any- on the pace at which the debt-to-GDP of a high-debt country would decline over time if the MTO were reached as scheduled, and even if the MTO were permanently hit. In other words, the supplementary debt-reduction effort is ineffective as a means of inducing convergence, as the simple debt dynamics exercise below illustrates.

Consider a high-debt country having representative values for all the relevant variables and parameters involved in the dynamics of public debt and the determination of MTOs: nominal GDP growth rate is constant at 3.5 percent, nominal interest rate is 5 percent, the S2E is constant at 2.5 percent of GDP (as the simple average for Germany, France, Italy, and UK), MTOMB is -1.5 percent of GDP, and MTOEA is -1 percent of GDP. The country inherits a level of debt that could be 70, 90, or 110 percent of GDP. Assume that in each and every year, the country declares MTOD identical to the MTOMT and is always capable of achieving the committed target by running a structural budget balance in line with MTOMT. Finally, consider two algorithms for computing MTOMT: the first MTOMT is the current one adopted in the EU given by equation (3) with k=0.033; the second MTOMT is similar to equation (3) but with k=0, thus excluding the supplementary debt-reduction effort. The paths of debt-to-GDP ratio corresponding to the alternative initial debt levels and the two MTOMT algorithms are depicted in Figure 1. The paths of MTOMTs are depicted in Figure 2.

In the figures, the MTOMTs drive the dynamics of the debt ratios at any time. The MTOMT with supplementary debt-reduction effort initially follows the MTOSM, which is more demanding than MTOMB and MTOEA, and is updated periodically as the debt ratio declines over time; at some point, however, the MTOEA prevails and then MTOMT stabilises at -1 percent of GDP. The MTOMT without the supplementary debt-reduction effort is always constant at the MTOEA of -1 percent of GDP.

Fig. 1 **Debt paths under MTOMT with and without supplementary debt-reduction effort SDRE (% of GDP)**

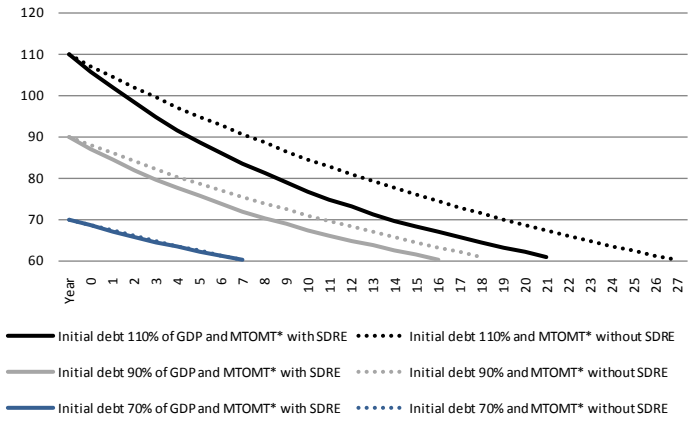
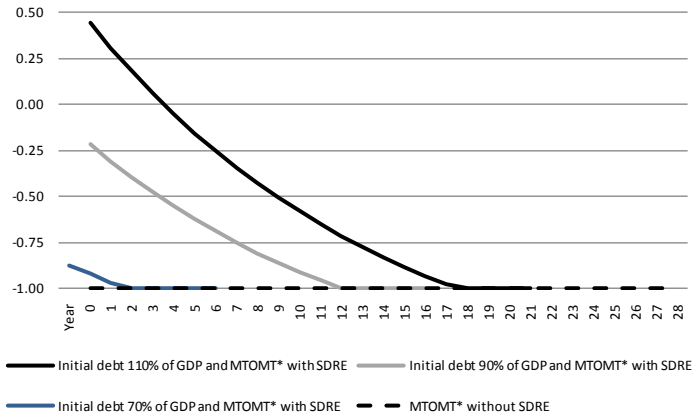



Fig. 2 **Paths of MTOMT with and without supplementary debt-reduction effort SDRE (% of GDP)**




The exercise puts forward that the MTOMT with supplementary debt-reduction effort does not perform terribly better than the MTOMT without such effort in terms of inducing faster convergence of the debt-to-GDP ratios towards the 60 percent value. For initial debt levels at 70 and 90 percent of GDP, the paths of debt ratio for the two MTOMTs are almost indistinguishable. Starting with debt at 110 percent of GDP, the MTOMT with effort needs 23 years to bring debt below 60 percent of GDP, while the MTOMT without effort needs just 6 years more.

The intuition shown by the exercise can be extended to a formal argument. The variation in the debt-to-GDP ratio depends on the net borrowing as proportion of GDP and the growth dividend given by -(d g)/(1+g). For nominal GDP growth g=3.5 percent and debt d=100 percent of GDP, the growth dividend is around 3.5 percent of GDP. For any reasonable value of parameter k, the corresponding MTOMT is much smaller than the growth dividend. For instance,

in the exercise with k=0.033, the more demanding MTOMT is just 0.4 percent of GDP. It then turns out that for high-debt countries the growth dividend largely dominates the net borrowing resulting from hitting MTOs and thus drives the pace of debt dynamics regardless of the size of MTOs. The argument indeed holds not only for very-high-debt countries but also for high-debt countries because both the MTOMT and the growth dividend are decreasing in the level of debt.

Hence, for practical purposes, the inclusion of supplementary debt-reduction effort in the methodology for implementing the MTO determination criteria does little to ensure more rapid progress towards sustainability -vis-à-vis the exclusion of such effort-. There is, on the other hand, the effect of imposing larger consolidation efforts in the medium-term, but this is inconsistent with the purpose stated by the CoC.

Turning to the frontloading of the cost of ageing, it should be noted that explicit and implicit liabilities affect symmetrically the long-term solvency condition of the government. In the intertemporal budget constraint, the future increases in spending flows associated with ageing can be converted into a notional stock by computing net present values (NPV). That notional stock is fully comparable with the current stock of outstanding debt as both will imply the necessity of collecting taxes to pay for either additional primary spending or interests. For the same token, structural reforms that reduce future age-relating expenditure imply a reduction in the NPV of future spending flows that is comparable to a one-shot reduction in the outstanding debt stock.

The symmetry acknowledged in the solvency condition is absent in the MTO determination. Note first that the supplementary debt-reduction effort depends on the stock of explicit liabilities, while the frontloading of the cost of ageing is indeed a flow given by a proportion (say 0.33) of the S2E indicator. Consider a country with a debt ratio of 100 percent of GDP that undertakes pension reforms and improves permanently the primary balance-to-GDP ratio by 0.5 percentage point (p.p.). The S2E indicator declines by a similar amount and hence the MTOMT would decrease by 0.17 p.p. through the frontloading of cost of ageing. Assuming the interest-growth differential to be constant at 1.5 percent over time (as in the previous simulations), the NPV of the permanent improvement in the primary balance ratio is 33.3 percent of GDP. Therefore, from the point of view of intertemporal solvency, the pension reforms deliver an improvement equivalent in NPV to a one-shot reduction in the outstanding debt of 33.3 p.p. of GDP. But as far as MTOMTs are concerned, such a one-shot reduction in the debt-to-GDP ratio would bring about a decline in MTOMT of 1.09 p.p. through the supplementary debt-reduction effort.

It is apparent then that, for a Member State considering a standard short-term budgetary consolidation that reduces the debt ratio against the alternative of launching a long-term structural reform, but both having the same impact on solvency, the MTOs does not offer a balanced incentives but a clear preference for consolidation and very limited gains for structural reforms. It might be argued that there are reasons why explicit and implicit liabilities are not directly comparable, but still the difference between the gains in terms of lower MTOs resulting from reducing one or the other (1.09 vs 0.17) is too large and probably unwarranted.

# 4 THE IMPACT OF THE FINANCIAL AND ECONOMIC CRISIS ON MTOS

## 4.1 The current situation of the EU Member States

The financial and economic crisis along with the expansionary policies undertaken to support aggregate demand have led to sizable budget deficits and borrowing needs, in a scale never seen before during the postwar period. The budgetary outcomes are not expected to recover rapidly in the next few years and indeed the mounting debt levels will have to be carried over for many years. The severity of the 2008-2009 crisis and the magnitude of the fiscal challenges going forward are apparent from a comparison between the SCP updates submitted by EU Member States in 2007, 2008, and 2009, in terms of declared MTOs, dates of achievement, and gaps between structural budget balances and MTOs (Table 2).

**Table 2: Declared MTOs, dates of achievement, and gaps between structural budget balances and MTOs in SCP 2007, 2008, and 2009 (% of GDP).**

| Country | | SCP 2007 | | | | | | | SCP 2008 | | SCP 2009 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | MTO declared by country (1) | Date to achieve MTO (2) | Structural balance 2007 | Distance to MTO (3) | Structural balance 2010 | Distance to MTO (3) | Achievement of MTO by 2010? | MTO declared by country (1) | Date to achieve MTO (2) | MTO declared by country (1) | Date to achieve MTO (2) | Structural balance 2009 | Distance to MTO (4) | Structural balance 2012 | Distance to MTO (4) | Achievement of MTO by 2012? |
| **Belgium** | **BE** | 0.5 | 2009 | -0.3 | -0.8 | 1.0 | 0.5 | yes | 0.5 | n.d. | no comm. | n.d. | -3.7 | | -2.0 | | |
| **Bulgaria** | **BG** | 1.5 | 2010 | 2.9 | 1.4 | 3.1 | 1.6 | yes | 1.5 | t.p.p. | 0.5 | n.d. | -1.0 | -1.5 | 1.0 | 0.5 | yes |
| **Czech Republic** | **CZ** | -1.0 | 2012 | -4.1 | -3.1 | -2.5 | -1.5 | no | -1.0 | 2012 | no comm. | n.d. | -5.5 | | -2.6 | | |
| **Denmark** | **DK** | 0.75 to 1.75 | t.p.p. | 3.5 | 2.3 | 2.5 | 1.3 | yes | 0.75 to 1.75 | t.p.p. | no comm. | n.d. | -0.6 | | -0.8 | | |
| **Germany** | **DE** | 0.0 | 2007 | -0.3 | -0.3 | 0.0 | 0.0 | yes | 0.0 to 0.5 | n.d. | -0.5 | n.d. | -1.5 | -1.0 | -3.0 | -2.5 | no |
| **Estonia** | **EE** | 0.0 | t.p.p. | 1.2 | 1.2 | 1.3 | 1.3 | yes | 0.0 | 2011 | 0.0 or higher | n.d. | -0.8 | -0.8 | 0.5 | 0.5 | yes |
| **Ireland** | **IE** | 0.0 | 2007 | 0.5 | 0.5 | -0.7 | -0.7 | no | 0.0 to 0.5 | n.d. | -0.5 to 0.0 | n.d. | -9.3 | -9.0 | -6.8 | -6.6 | no |
| **Greece** | **EL** | 0.0 | 2012 | -2.8 | -2.8 | -0.5 | -0.5 | no | 0.0 | n.d. | no comm. | n.d. | -7.8 | | -2.1 | | |
| **Spain** | **ES** | 0.0 | 2007 | 2.2 | 2.2 | 1.9 | 1.9 | yes | 0.0 | n.d. | no comm. | n.d. | -10.0 | | -4.6 | | |
| **France** | **FR** | 0.0 | 2012 | -2.0 | -2.0 | -1.0 | -1.0 | no | 0.0 | 2012 | 0.0 | n.d. | -5.8 | -5.8 | -2.8 | -2.8 | no |
| **Italy** | **IT** | 0.0 | 2011 | -2.2 | -2.2 | -0.5 | -0.5 | no | 0.0 | n.d. | 0.0 | n.d. | -3.6 | -3.6 | -2.0 | -2.0 | no |
| **Cyprus** | **CY** | 0.0 | 2007 | 0.3 | 0.3 | 0.8 | 0.8 | yes | 0.0 | n.d. | n.a. | n.d. | -3.4 | | na | | |
| **Latvia** | **LV** | -1.0 | t.p.p. | -0.5 | 0.5 | 1.7 | 2.7 | yes | -1.0 | n.d. | -1.0 | n.d. | -8.1 | -7.1 | -0.5 | 0.5 | yes |
| **Lithuania** | **LT** | -1.0 | 2009 | -1.2 | -0.2 | 1.1 | 2.1 | yes | -1.0 | 2010 | no comm. | n.d. | -7.5 | | -1.7 | | |
| **Luxembourg** | **LU** | -0.8 | 2007 | 0.7 | 1.5 | 1.6 | 2.4 | yes | -0.8 | n.d. | 0.5 | n.d. | 0.4 | -0.1 | -4.0 | -4.5 | no |
| **Hungary** | **HU** | -0.5 | n.d. | -4.8 | -4.3 | -2.5 | -2.0 | no | 0.5 | n.d. | -1.5 | n.d. | -2.5 | -1.0 | -1.5 | 0.0 | yes |
| **Malta** | **MT** | 0.0 | 2010 | -2.1 | -2.1 | 0.1 | 0.1 | yes | 0.0 | 2011 | 0.0 | n.d. | -3.3 | -3.3 | -3.3 | -3.3 | no |
| **Netherlands** | **NL** | -1.0 to -0.5 | t.p.p. | -0.3 | 0.5 | 0.8 | 1.6 | yes | -0.5 to -1.0 | t.p.p. | -0.5 to 0.5 | n.d. | -3.5 | -3.5 | -3.6 | -3.6 | no |
| **Austria** | **AT** | 0.0 | 2010 | -0.7 | -0.7 | 0.1 | 0.1 | yes | 0.0 | n.d. | 0.0 | n.d. | -2.6 | -2.6 | -2.4 | -2.4 | no |
| **Poland** | **PL** | -1.0 | 2011 | -2.4 | -1.4 | -1.1 | -0.1 | no | -1.0 | 2012 | -1.0 | n.d. | -7.1 | -6.1 | -2.9 | -1.9 | no |
| **Portugal** | **PT** | -0.5 | 2010 | -2.1 | -1.6 | -0.3 | 0.2 | yes | -0.5 | n.d. | n.a. | n.d. | -6.6 | | na | | |
| **Romania** | **RO** | -0.9 | n.d. | -3.4 | -2.5 | -2.7 | -1.8 | no | -0.9 | 2012 | n.a. | n.d. | -7.1 | | na | | |
| **Slovenia** | **SI** | -1.0 | t.p.p. | -0.8 | 0.2 | -0.1 | 0.9 | yes | -1.0 | n.d. | no comm. | n.d. | -4.8 | | -2.1 | | |
| **Slovakia** | **SK** | -1.0 or higher | 2010 | -3.0 | -2.0 | -1.2 | -0.2 | no | -1.0 | 2010 | no comm. | n.d. | -5.2 | | -2.6 | | |
| **Finland** | **FI** | 2.0 | t.p.p. | 4.2 | 2.2 | 2.8 | 0.8 | yes | 2.0 | t.p.p. | 0.5 | n.d. | 0.3 | -0.2 | -1.0 | -1.5 | no |
| **Sweden** | **SE** | 1.0 | t.p.p. | 2.4 | 1.4 | 3.4 | 2.4 | yes | 1.0 | t.p.p. | 1.0 | n.d. | 1.4 | 0.4 | 0.6 | -0.4 | no |
| **United Kingdom** | **UK** | no comm. | n.d. | -3.0 | | -1.9 | | | no comm. | n.d. | no comm. | n.d. | -9.0 | | -4.7 | | |

(1) Declared MTO: 'no comm.' indicates that no commitment is explicitly made by the country in the SCP; 'n.a.' indicates SCP is not available.
(2) Date to achieve MTO: 'n.d.' indicates that the date of achievement is not declared in the SCP; 't.p.p.' indicates the MTO is achieved throughout the programme period; 'n.a.' indicates the SCP is not available
(3) For Denmark and Netherlands, distance to the central point of MTO range; for Slovakia, distance to the minimum value of MTO range.
(4) For Ireland and Netherlands, distance to the central point of MTO range; for Estonia, distance to the minimum value of MTO range.
Sources: SCP 2007's declared MTO and structural balances are from European Commission's Public Finances in EMU 2008, p.37 and country annexes respectively.
SCP 2008's declared MTO are from 2008 Updates of Stability and Convergence Program.
SCP 2009's declared MTO and structural balances are from 2009 Updates of Stability and Convergence Program, submitted by countries in January 2010.

In the 2007 updates of SCP, submitted before the crisis unfolded, the expectation was that achieving MTOs would not be a too difficult task. In fact, all countries but UK declared MTOs and were committed to achieving them no later than 2012. There were 12 countries whose initial structural budget balance as of 2007 was already above the declared MTO value. Consolidation efforts were expected from the 14 countries with a 2007 budgetary position below MTO, but the required efforts were fairly small as the gap to be bridged by gradually improving structural budget balances over the programme period was less than 2.5 p.p. of GDP for 11 out of 14 cases. Overall, as early as 2010, three years after the update submission, as many as 17 countries would have achieved their committed MTOs.

The picture radically changed as EU Member States started to factor in the fiscal effects of the crisis and policy interventions. By the time of submitting the 2008 updates of SCP, the uncertainty of the environment and the difficulties to envisage future macroeconomic and policy scenarios induced EU countries to relax commitments on MTOs. Eventually they declared

MTOs but postponed the date of achievement or refrained from committing themselves to any date. Only 5 out of 27 EU Member States indicated that their MTOs would be achieved throughout the programme period.

At present, the 2009 updates of SCP recently submitted are meant to incorporate at length the impact of the crisis on public finances and to discuss consolidation policies to be implemented to restore fiscal soundness –especially those EU Member States going through the excessive deficit procedure-. The expectation now is that achieving MTOs in the aftermath of the crisis would be rather difficult and sizable consolidation efforts should be undertaken.

On the one hand, as many as 13 EU countries have either refrained from declaring MTOs or failed to submit the SCP 2009 updates altogether. Reluctance to declare MTOs and achievement dates suggests that countries are seeking flexibility to modulate their exit strategies -whose short-run effects are certainly contractive- to the pace of the economic recovery –which is expected to be slow-.[20] On the other hand, there are 15 countries that declared MTOs but posted an initial structural budget balance in 2009 far below the MTO values –with the sole exception of Sweden-. The political feasibility of the consolidation efforts needed to achieve the committed MTOs remains to be seen. Only a small handful of countries would reach their MTOs in 2012, three years after the update submission.[21]

In any case, it must be recognized that the credibility of MTOs as constraints on medium-term fiscal policies has been undermined since the beginning of the crisis, either because countries are not committed to achieve any target or because they are committed to achieve too ambitious targets.

## 4.2 Crisis, public debt, and MTOs

The current MTOs declared in the 2009 updates of SCP have been set using the debt stocks at the end of 2008, which for practical purposes should be deemed pre-crisis levels of debt. The future MTOs to be set around 2012, instead, will be based on the much larger post-crisis debt levels. The ongoing crisis-driven debt accumulation, therefore, will imply more demanding MTOs vis-à-vis the current ones. In particular, some countries whose debt ratios were below 60 percent in 2008 will exceed that threshold and so the supplementary debt-reduction effort will kick in. In addition, most countries having high debt levels already in 2008 will be required to intensify their debt-reduction efforts.

Figure 3 presents the current MTOs -if declared- along with our estimates MTOMT* for the debt stocks at the end of 2008 and 2012 –as reported by EU countries in their SCP 2009 updates-.22 The MTOMT*s computed using the 2012 debt constitute estimates of the impact on MTOs of the debt accumulation induced by the crisis. For 13 countries, the crisis-driven increase in the debt ratio between 2008 and 2012 would lead to more demanding MTOMT* in 2012 vis-à-vis today's, in some cases with MTOMT* rising more than 0.5 p.p. of GDP. Ireland, Spain, Cyprus, Netherlands, and UK are the pre-crisis low-debt countries that would turn into

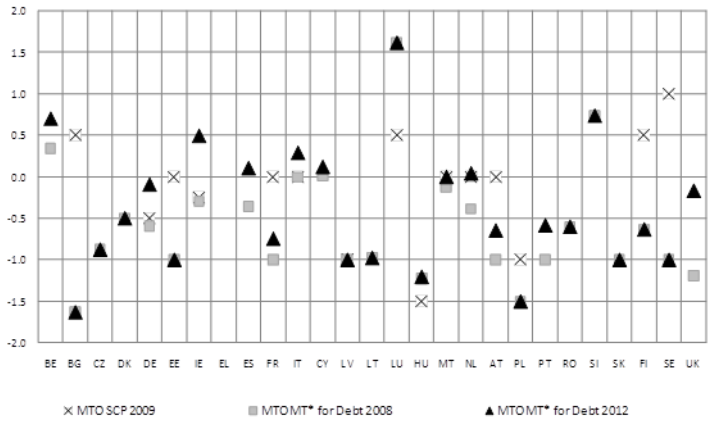
[20] For instance, the countries' own projections indicate that the EU average output gap would be 4.2 percent of potential GDP in 2010 and still 2.3 percent in 2012.

[21] Several EU Member States countries have not declared MTOs so the gap to be bridged cannot be properly assessed. But if we consider the less demanding requirement on the budgetary targets, namely the MTOMBs whose representative value is around -1.5 percent of GDP, it turns out that the initial budgetary positions of EU countries incurring in structural deficits are, on average, 3.5 p.p. below the representative MTOMB. As the gap is quite sizable, the European Commission and Member States have agreed that annual improvements in structural budget balances should be larger than the 0.5 p.p. of GDP figure discussed above.

[22] Table 3 at the end of this section reports all the estimates underlying Figures 3, 4, and 5.

post-crisis high-debt countries and be imposed the supplementary debt-reduction effort. Belgium, Germany, Greece, France, Italy, Malta, Austria, and Portugal, on the other hand, would remain as high-debt countries and be requested additional debt-reduction efforts.

**Fig. 3 MTOs declared in 2009 SCP vs MTOMT* for debt stocks at the end of 2008 and 2012 (% of GDP)**




## 4.3 Crisis, potential growth, and MTOs

The current MTOs have been set using the latest AWG projections of potential growth and age-related expenditure covering 2008-2060, which are involved in computing the debt-stabilising budget balance and the partial frontloading of cost of ageing –i.e. the fraction 0.33 of the S2E indicator-. The AWG projections were elaborated early in 2008 and predicated on a baseline scenario for demographic and macroeconomic variables that did not envisage the current crisis (hereinafter referred to as the no-crisis scenario). To address the lack of realism of the baseline scenario, AWG has recently made available an alternative set of scenarios and projections of growth and age-related expenditure that do take the crisis on board and explore different paths of recovery. The so-called lost decade scenario, in particular, envisages lower growth rates of potential GDP for all EU countries until 2020 –vis-à-vis the no-crisis scenario-.23 The bottom line remains, nevertheless, that the current MTOs do rely on an already unrealistic set of projections based on the no-crisis scenario.

As suggested by several empirical studies, the crisis is likely to depress potential GDP growth for several years as well as to change the cost of ageing over a long-term horizon.24 The future MTOs ought to incorporate these realities, which are disregarded throughout by the current MTOs. More demanding future MTOs will result from the deterioration of growth potential in all EU countries, whereas, on the other hand, the ambiguous effect of the crisis on the cost of ageing might increase or decrease MTOs depending on country-specific features of pension and health systems.

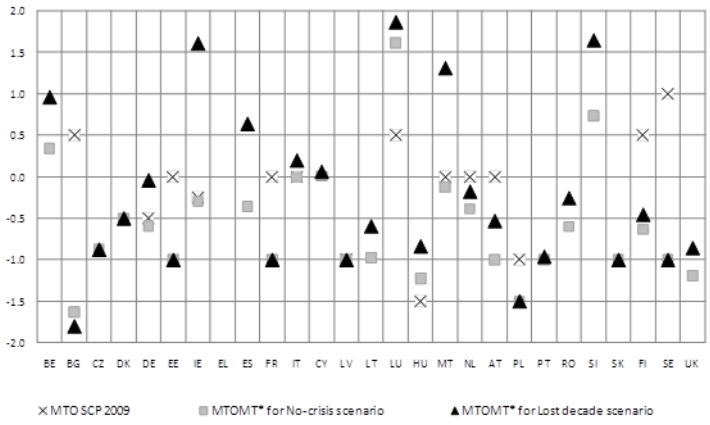
Figure 4 presents the current MTOs -if declared- along with our estimates MTOMT* for the AWG no-crisis and lost decade scenarios. For the latter scenario, the MTOMT*s provide an

[23] For details, see European Commission and Economic Policy Committee (2009, p.177-188) and European Commission (2009b, p.47-53).

[24] Because of institutional features of many EU countries' pension and health systems, a sufficiently long period of lower output levels would give rise to a tilted, upward shift in the path of age-related expenditures as proportion of GDP, eventually increasing the cost of ageing. Other countries, by contrast, would experience a reduction in the cost of ageing. See European Commission (2009b, p.51-52).

estimates of the impact on MTOs of the lower growth potential and changing cost of ageing that would characterise the aftermath of the crisis. MTOMT*s in the lost decade scenario are tighter than in the no-crisis scenario for 15 countries. Differences of more than 0.5 p.p. of GDP between the two scenarios are observed in Belgium, Germany, Ireland, Malta, Spain, Austria, and Slovenia. Interestingly, it is the large increase in the cost of ageing that leads to tightening in the MTOs so as to frontload the corresponding implicit liabilities. The reduction in the average long-term growth rates of potential GDP have little direct effect on MTOMT*s through the debt-stabilising budget balance.

**Fig. 4 MTOs declared in 2009 SCP vs MTOMT* for no-crisis and lost decade scenarios (% of GDP)**




## 4.4 An integrated scenario for the crisis aftermath

We construct an integrated scenario by combining the debt projected for 2012 and the long-term projections of growth and age-related expenditure under the lost decade scenario. Figure 5 reports the current MTOs -if declared- along with our estimates MTOMT* for the integrated scenario. Our estimates now give an order of magnitude of the overall impact on MTOs of the crisis, mediated through the explosion of debt -which indeed has already started in 2009- and the rise in implicit liabilities resulting from lower potential growth and higher cost of ageing –if the lost decade scenario were to materialize-. There are 19 countries with MTOMT*s for the integrated scenario that exceed the MTOMT* underlying the current MTOs. Belgium, Germany, Ireland, Spain, Malta, Portugal, Slovenia, and UK are those with the largest increases of MTOMT* in the integrated scenario vis-a-vis the current situation. The cases of Ireland and Spain are particularly worrisome because both explicit and implicit liabilities rise significantly.

MTOs cannot be below the true MTOMT that we try to estimate through MTOMT* and we note that future MTOMT* are much higher than current MTOMT*. Therefore, our analysis suggests that, conditional upon the materialization of the underlying projections on debt and potential growth, a tightening on MTOs is a likely outcome of the next round of revisions around 2012. The debate on exit strategies for EU Member States should then take on board that MTOs based on the new methodology will become more demanding in the future following the deterioration of public-finance conditions already taking place.

**Fig. 5 MTOs declared in 2009 SCP vs MTOMT* for debt 2008/no-crisis and debt 2012/lost decade (% of GDP)**

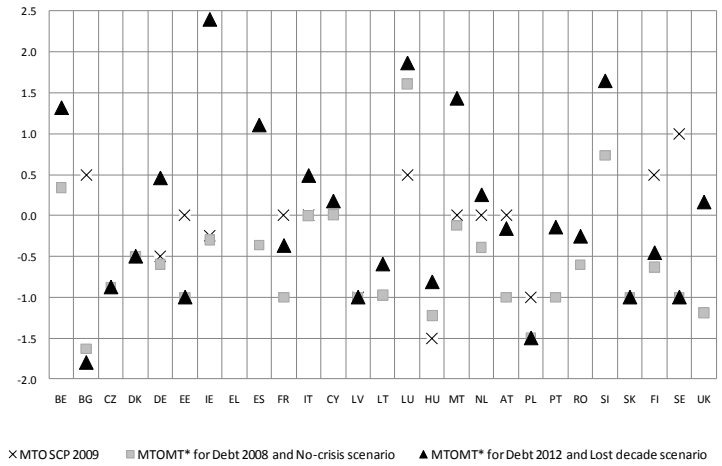



**Table 3: MTOMT* under debt as of 2008 and 2012 and no-crisis and lost decade scenarios (% of GDP unless otherwise specified).**

| Country | | Growth rate of potential GDP at current prices - average 2010-60 (%) | | Budget balance stabilising debt-to-GDP ratio at 60% in scenario … | | Debt | | Supplementary debt-reduction effort (calibrated) for debt as of … | | S2E | | MTOSM* for no-crisis scenario and debt as of … | | MTOSM* for lost decade scenario and debt as of … | | MTOMB | MTOEA | MTOMT* = Maximum (MTOMB, MTOEA, MTOSM*) for no-crisis scenario and debt as of … | | MTOMT* = Maximum (MTOMB, MTOEA, MTOSM*) for lost decade scenario and debt as of … | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No-crisis scen. | Lost decade scen. | No-crisis scen. | Lost decade scen. | 2008 | 2012 | 2008 | 2012 | No-crisis scen. | Lost decade scen. | 2008 | 2012 | 2008 | 2012 | | | 2008 | 2012 | 2008 | 2012 |
| Belgium | BE | 3.8 | 3.7 | -2.2 | -2.1 | 89.8 | 100.6 | 1.0 | 1.3 | 4.8 | 6.4 | 0.3 | 0.7 | 1.0 | 1.3 | -1.3 | -1.0 | 0.3 | 0.7 | 1.0 | 1.3 |
| Bulgaria | BG | 3.7 | 3.6 | -2.1 | -2.1 | 14.1 | 14.4 | 0.0 | 0.0 | 1.5 | 0.8 | -1.6 | -1.6 | -1.8 | -1.8 | -1.8 | | -1.6 | -1.6 | -1.8 | -1.8 |
| Czech Republic | CZ | 3.6 | 3.6 | -2.1 | -2.1 | 30.0 | 42.0 | 0.0 | 0.0 | 3.7 | 3.7 | -0.9 | -0.9 | -0.9 | -0.9 | -1.6 | | -0.9 | -0.9 | -0.9 | -0.9 |
| Denmark | DK | 3.8 | 3.7 | -2.2 | -2.1 | 33.4 | 48.3 | 0.0 | 0.0 | 1.4 | 1.2 | -1.7 | -1.7 | -1.7 | -1.7 | -0.5 | -1.0 | -0.5 | -0.5 | -0.5 | -0.5 |
| Germany | DE | 3.2 | 3.1 | -1.9 | -1.8 | 65.9 | 81.0 | 0.2 | 0.7 | 3.3 | 4.8 | -0.6 | -0.1 | 0.0 | 0.5 | -1.6 | -1.0 | -0.6 | -0.1 | 0.0 | 0.5 |
| Estonia | EE | 3.8 | 3.5 | -2.2 | -2.1 | 4.6 | 14.2 | 0.0 | 0.0 | -0.1 | -0.5 | -2.2 | -2.2 | -2.2 | -2.2 | -1.9 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Ireland | IE | 4.4 | 4.1 | -2.5 | -2.4 | 43.2 | 83.9 | 0.0 | 0.8 | 6.7 | 12.1 | -0.3 | 0.5 | 1.6 | 2.4 | -1.5 | -1.0 | -0.3 | 0.5 | 1.6 | 2.4 |
| Greece | EL | 3.7 | 3.6 | -2.1 | -2.1 | 99.2 | 117.7 | 1.3 | 1.9 | 11.5 | 10.7 | 3.0 | 3.6 | 2.7 | 3.3 | -1.4 | -1.0 | 3.0 | 3.6 | 2.7 | 3.3 |
| Spain | ES | 3.9 | 3.8 | -2.2 | -2.2 | 39.7 | 74.1 | 0.0 | 0.5 | 5.7 | 8.6 | -0.4 | 0.1 | 0.6 | 1.1 | -1.2 | -1.0 | -0.4 | 0.1 | 0.6 | 1.1 |
| France | FR | 3.9 | 3.7 | -2.2 | -2.2 | 67.4 | 87.1 | 0.2 | 0.9 | 1.8 | 2.7 | -1.4 | -0.7 | -1.0 | -0.4 | -1.6 | -1.0 | -1.0 | -0.7 | -1.0 | -0.4 |
| Italy | IT | 3.5 | 3.3 | -2.0 | -1.9 | 105.8 | 114.6 | 1.5 | 1.8 | 1.5 | 1.9 | 0.0 | 0.3 | 0.2 | 0.5 | -1.4 | -1.0 | 0.0 | 0.3 | 0.2 | 0.5 |
| Cyprus | CY | 4.8 | 4.6 | -2.7 | -2.6 | 48.4 | 63.4 | 0.0 | 0.1 | 8.3 | 8.2 | 0.0 | 0.1 | 0.1 | 0.2 | -1.8 | -1.0 | 0.0 | 0.1 | 0.1 | 0.2 |
| Latvia | LV | 3.4 | 3.2 | -2.0 | -1.8 | 19.5 | 56.8 | 0.0 | 0.0 | 1.0 | 1.5 | -1.7 | -1.7 | -1.3 | -1.3 | -2.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Lithuania | LT | 3.5 | 3.2 | -2.0 | -1.8 | 15.6 | 41.0 | 0.0 | 0.0 | 3.2 | 3.8 | -1.0 | -1.0 | -0.6 | -0.6 | -1.9 | -1.0 | -1.0 | -1.0 | -0.6 | -0.6 |
| Luxembourg | LU | 4.6 | 4.5 | -2.6 | -2.6 | 13.5 | 29.3 | 0.0 | 0.0 | 12.9 | 13.5 | 1.6 | 1.6 | 1.9 | 1.9 | -1.0 | -1.0 | 1.6 | 1.6 | 1.9 | 1.9 |
| Hungary | HU | 3.7 | 3.4 | -2.1 | -2.0 | 72.9 | 73.6 | 0.4 | 0.4 | 1.5 | 2.2 | -1.2 | -1.2 | -0.8 | -0.8 | -1.6 | | -1.2 | -1.2 | -0.8 | -0.8 |
| Malta | MT | 3.7 | 3.5 | -2.1 | -2.0 | 63.6 | 67.3 | 0.1 | 0.2 | 5.7 | 9.7 | -0.1 | 0.0 | 1.3 | 1.4 | -1.7 | -1.0 | -0.1 | 0.0 | 1.3 | 1.4 |
| Netherlands | NL | 3.5 | 3.4 | -2.0 | -2.0 | 58.2 | 73.0 | 0.0 | 0.4 | 5.0 | 5.5 | -0.4 | 0.0 | -0.2 | 0.3 | -1.1 | -1.0 | -0.4 | 0.0 | -0.2 | 0.3 |
| Austria | AT | 3.7 | 3.6 | -2.1 | -2.1 | 62.6 | 73.8 | 0.1 | 0.5 | 3.1 | 4.5 | -1.0 | -0.6 | -0.5 | -0.2 | -1.6 | -1.0 | -1.0 | -0.6 | -0.5 | -0.2 |
| Poland | PL | 3.5 | 3.3 | -2.0 | -2.0 | 47.2 | 55.8 | 0.0 | 0.0 | -1.2 | -1.4 | -2.4 | -2.4 | -2.4 | -2.4 | -1.5 | | -1.5 | -1.5 | -1.5 | -1.5 |
| Portugal | PT | 3.9 | 3.8 | -2.2 | -2.2 | 66.3 | 91.1 | 0.2 | 1.0 | 1.9 | 3.1 | -1.4 | -0.6 | -1.0 | -0.1 | -1.5 | -1.0 | -1.0 | -0.6 | -1.0 | -0.1 |
| Romania | RO | 3.8 | 3.6 | -2.2 | -2.1 | 13.6 | 31.3 | 0.0 | 0.0 | 4.9 | 5.6 | -0.6 | -0.6 | -0.3 | -0.3 | -1.8 | | -0.6 | -0.6 | -0.3 | -0.3 |
| Slovenia | SI | 3.4 | 3.5 | -2.0 | -2.0 | 22.5 | 42.7 | 0.0 | 0.0 | 8.3 | 11.1 | 0.7 | 0.7 | 1.6 | 1.6 | -1.6 | -1.0 | 0.7 | 0.7 | 1.6 | 1.6 |
| Slovakia | SK | 3.7 | 3.8 | -2.2 | -2.2 | 27.7 | 42.2 | 0.0 | 0.0 | 2.9 | 2.9 | -1.2 | -1.2 | -1.2 | -1.2 | -2.0 | -1.0 | -1.0 | -1.0 | -1.0 | -1.0 |
| Finland | FI | 3.7 | 3.6 | -2.1 | -2.1 | 34.2 | 54.4 | 0.0 | 0.0 | 4.5 | 4.9 | -0.6 | -0.6 | -0.5 | -0.5 | -1.2 | -1.0 | -0.6 | -0.6 | -0.5 | -0.5 |
| Sweden | SE | 3.9 | 3.8 | -2.3 | -2.2 | 38.0 | 45.2 | 0.0 | 0.0 | 1.6 | 3.1 | -1.7 | -1.7 | -1.2 | -1.2 | -1.0 | | -1.0 | -1.0 | -1.0 | -1.0 |
| United Kingdom | UK | 4.1 | 4.0 | -2.4 | -2.3 | 55.5 | 90.9 | 0.0 | 1.0 | 3.6 | 4.4 | -1.2 | -0.2 | -0.9 | 0.2 | -1.4 | | -1.2 | -0.2 | -0.9 | 0.2 |

Sources: Debt levels are from 2009 Updates of Stability and Convergence Program, submitted by countries in January 2010.
Debt for Cyprus, Portugal, and Romania in 2012 is from European Comission 2009 Autumn forecast and refers to 2011.
For both no-crisis and lost decade scenarios, the average nominal potential GDP growth rates over 2010-2060 and S2E indicators are from European Commission's Ageing Report 2009 and Sustainability Report 2009.

# 5 AN ALTERNATIVE METHOD FOR THE SUPPLEMENTARY DEBT-REDUCTION EFFORT

## 5.1 Public debt and the specification of an 'exposure index'

On theoretical grounds, an important feature of the new MTO methodology is that it establishes a link among three issues involved in the conduct of fiscal policy and the setting of credible budgetary targets: the amount of outstanding debt, the existence of implicit liabilities, and the determination of possible leeway to undertake discretionary measures and public investment. On practical grounds, nevertheless, the advantages of the MTO methodology have been severely undermined by the current crisis and the discretionary policies deployed to cope with it inasmuch as debt ratios have skyrocketed and eventually overshadowed any other variable in the determination of MTOs. As indicated in section 4, the supplementary debt-reduction effort will soon apply to several EU countries, making the exit strategies tougher.

The financing of deficits, stimulus packages, or other forms of fiscal interventions in times of crisis often relies heavily on public debt issuance. In this particular crisis, the increase in explicit liabilities in many EU countries during 2008-2009 has not been a consequence of profligate governments but of governments coping either with the collapse of an unsustainable debt-led growth process at home (UK, Ireland) or with the contraction of output due to the collapse in international trade (Germany, Italy). In such a context, focusing narrowly on the level of public debt may not be sufficient to address the stance of fiscal policy in order to set MTOs. Characteristics of the public debt, the performance of financial and banking system, and sectoral and external imbalances may all be important and worth considering in assessing the fiscal stance in the short- and medium-term.

Against this backdrop, in this section we elaborate an alternative formulation for MTOs in which the supplementary debt-reduction effort is replaced by a synthetic exposure index that measures funding pressures and risks facing all sectors in a given country at a certain point in time. The exposure index not only includes the public debt-to-GDP ratio but also several variables related to the short-term sustainability of public debt, the risk of distress in the financial and banking system -and thus the implicit liabilities for the public sector associated to possible bail outs-, and the build-up of sectoral and external imbalances.[25]

For the public sector, we consider the composition of debt in terms of residual maturity and the share held by non-resident investors. Maturity composition is gauged by the stock of government liabilities coming due in the next three years, which simultaneously measures short-term refinancing needs and is a proxy for rollover risk facing the government.26 The share of foreign holdings of public debt assesses the reliance of the government on foreign savings to

[25] A similar analysis has been carried out by the European Commission (2010, pp.220-232), which has stressed the need to expand economic surveillance beyond the budgetary dimension to address other macroeconomic imbalances, including competitiveness developments and underlying structural challenges within the euro area.

[26] Another way to measure the refinancing risk would be to express the amount of debt maturing in the following three years as a ratio of the amount of total debt rather than as a ratio of GDP. In this context we felt it was more consistent with what has been done for other variables to express the amount of debt maturing in the following three year as a ratio of GDP.

place debt in the market, as well as its exposure to a situation where investors increase home bias –as observed in the current crisis-.

The banking sector's risk exposure on assets is assessed focusing on debtors' characteristics to emphasize counterparty risk. We first separate credit extended to domestic agents and to foreigners. Within domestic debtors, we consider the share of loans given to households and to corporates, whereas within foreign debtors, we consider the share of loans given to residents of emerging markets and to residents of developed countries. Funding pressures facing the banking sector, on the other hand, is gauged by the banks' total debt, the share of debt maturing in the next three years, and the ratio between total domestic loans and domestic deposits. The latter is a sort of funding gap measuring the reliance of the banking system on the wholesale funding markets, as well as its exposure to a situation where these markets dry up. This risk is of increasing relevance in the modern financial system because, while in old-fashioned banking crises depositors run against depository institutions, the current crisis has featured runs of lenders and investors financing banks through the wholesale funding market.

As far as sectoral imbalances are concerned, we consider the net borrowing position of four sectors -households, non-financial corporate, financial corporate, and the general government- as an indicator of their financing needs originated in income-expenditure imbalances.

Finally, external imbalances are assessed using the net borrowing position of the economy as a whole –i.e. the current account- and the debt composition by maturity aggregated across the aforementioned four sectors. Together the two indicators measure the funding pressures facing the country, arising from income-expenditure imbalances and short-term refinancing needs. In addition, they reflect the country's exposure to a liquidity crisis or even to a sudden stop.

*Data and results*

For the variables described above, we collected data corresponding to the main 10 Euro Area countries in 2005 -well before the start of the crisis- and 2009 -the last year in terms of data availability-.27 All variables are expressed in terms of GDP. We then selected six sub-indices addressing the exposure of public sector, the composition of foreign assets, domestic assets, and liabilities of the banking sector, and the sectoral net borrowing and debt composition of the four sectors mentioned above. For each sub-index we ranked the performance of all countries from the best grading 1 to the worst performer grading 10. We averaged the single sub-component scores along all the dimensions under study and ranked the countries accordingly.28

[27] Data for GDP and public debt are from AMECO. The figures on the "share of public debt maturing in the following 3 year" and the "Foreign holding of public debt" are either from national Central Banks' or National Debt Management Bodies or National Treasury sources. Data on the "Banking Sector, loan exposure to foreign debtors" are from BIS (Consolidated foreign claims of reporting banks - ultimate risk basis). As they are expressed in million of dollar the ratio with respect to GDP has been obtained using IMF GDP in PPS (WEO database). Data on "Banking Sector, loan, exposure to domestic debtors" are from, ECB, Money, banking and financial markets, MFI balance sheets. Data on Banking sector funding are from ECB, Money, banking and financial markets, MFI balance sheets as far as the ratio between loan and deposit is concerned. Debt securities outstanding as well as Debt securities maturing in the following 3 year are from national Central Banks and National Treasury databases. Data on sectoral net borrowing are from AMECO. Data on sectoral short-term refinancing needs are from national central banks or treasuries as far as the series of "Financial Corporates Bonds", "Non-financial Corporates – Bonds" and "General Government short-term share of public debt" are concerned. Data on Non-financial corporate (loans) and on short-term household loans are from Eurostat, financial Accounts Database.

[28] The average is un-weighted. Some preliminary analysis suggests that the ranking of countries is sensitive to alternative weighting schemes for aggregating the sub-indices.

The resulting ranking constitutes the exposure index, giving 1 to the best performer and 10 to the worst. The higher the value assigned by the indicator to a country, the more exposed the country is from a financial and fiscal point of view. Thus, the exposure index intends to provide an easy read of each country's fiscal and financial position relative to its peers within the Euro Area. In addition, as the exposure indicator summarizes variables associated with the funding pressures of the four sectors, it can be seen as measuring the outstanding amount of public as well as private liabilities in the economy. The exposure index and the underlying sub-indicators are reported in Table 4.

As far as the public debt sub-index is concerned, Italy and Greece rank poorly. Italy presents the highest debt in 2009 but performs relatively well in terms of the share of debt held by foreigners. By contrast, Greece presents a slightly lower public debt in 2009 with a similar maturity composition as the Italian one, but features a larger foreign exposition. From 2005 to 2009, the relative position of Portugal deteriorates due to the increase in the level of public debt, whereas the positions of Belgium and the Netherlands worsen on the account of higher debt held abroad. In spite of the increase in the debt-to-GDP ratio in 2009, the relative average positions of Germany, Ireland, and France stay constant, whereas the overall condition for Austria improves.29

The bank loan exposure to foreign countries (second sub-index) is a useful indicator of the degree of financial internationalization. However, in times of crisis, it becomes a good proxy of the risk of financial contagion. In 2009, Ireland scores high in terms of banking sector exposure to advanced economies whereas Austria is largely exposed towards emerging markets. Looking at the domestic bank exposure (third sub-index), Ireland and Spain lead the ranking with respect to peer countries. The sub-index on the banking sector funding measure stress felt by banks in case of a liquidity crisis or a depositors run. Ireland is again the most exposed country in 2009, followed by Spain and the Netherlands.

The analysis of sectoral balances (fifth sub-index) shows that Greece is again the worst performer in 2009, with imbalances in both households and the government leading to a large current account deficit. Portugal and Ireland also perform poorly with sizable government borrowing and external imbalances. Sectoral short-term refinancing needs indicator (last sub-index) rank Ireland and Portugal as the most exposed economies in 2009, given their high stocks of short-term debt held by financial corporates, non-financial corporate, and households. Italy follows due to the high amount of outstanding short-term public debt.

The exposure index at the bottom of Table 4 shows that from 2005 to 2009 Ireland has worsened significantly as a consequence of imbalances borne by the household and financial corporate sectors. By contrast, the relative positions of Italy and Greece have deteriorated mainly on the account of the increasing public debt. But since the exposure indicator for Italy does not signal any particular stress in the financial corporate's and households' indebtedness, the country exhibits middle risk.

[29] Due to some lack of comparable data among countries, data concerning the composition by maturity of government debts for 2005 are referred to debt maturing in the first year and not in the first three years. This aspect can somehow affect the relative performance of countries with large Treasury Bill programs (like Italy, France and Germany), which could turn out to be low ranked even having a high average maturity of total debt.

**Table 4: Ranking of countries and the composition of the exposure index**

| | | BE | DE | IE | EL | ES | FR | IT | NL | AT | PT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Public sector | | | | | | Public debt | | | | | |
| | 2009 | 8 | 5 | 3 | 9 | 1 | 6 | 10 | 2 | 4 | 7 |
| | 2005 | 8 | 7 | 1 | 9 | 2 | 6 | 10 | 3 | 5 | 4 |
| | | | | | | Share of debt maturing in the following 3 yrs | | | | | |
| | 2009 | 9 | 4 | 2 | 8 | 3 | 7 | 10 | 5 | 1 | 6 |
| | 2005 | 9 | 4 | 3 | 2 | 5 | 10 | 7 | 6 | 1 | 8 |
| | | | | | | Foreign holdings of public debt | | | | | |
| | 2009 | 5 | 4 | 8 | 7 | 3 | 6 | 2 | 9 | 1 | 10 |
| | 2005 | 4 | 2 | 9 | 7 | 3 | 5 | 1 | 6 | 8 | 10 |
| | | | | | | Relative position average | | | | | |
| | 2009 | 7.3 | 4.3 | 4.3 | 8.0 | 2.3 | 6.3 | 7.3 | 5.3 | 2.0 | 7.7 |
| | 2005 | 7.0 | 4.3 | 4.3 | 6.0 | 3.3 | 7.0 | 6.0 | 5.0 | 4.7 | 7.3 |
| Banking sector - loan exposure to foreign debtors | | | | | | Developed countries | | | | | |
| | 2009 | 8 | 6 | 10 | 1 | 5 | 7 | 2 | 9 | 4 | 3 |
| | 2005 | 9 | 8 | 1 | 2 | 5 | 7 | 3 | 10 | 6 | 4 |
| | | | | | | Emerging markets | | | | | |
| | 2009 | 9 | 2 | 5 | 6 | 8 | 4 | 1 | 7 | 10 | 3 |
| | 2005 | 7 | 4 | 1 | 3 | 8 | 5 | 2 | 9 | 10 | 6 |
| | | | | | | Relative position average | | | | | |
| | 2009 | 8.5 | 4 | 7.5 | 3.5 | 6.5 | 5.5 | 1.5 | 8 | 7 | 3 |
| | 2005 | 8 | 6 | 1 | 2.5 | 6.5 | 6 | 2.5 | 9.5 | 8 | 5 |
| Banking sector - loan exposure to domestic debtors | | | | | | Households | | | | | |
| | 2009 | 2 | 6 | 10 | 3 | 9 | 5 | 1 | 7 | 4 | 8 |
| | 2005 | 3 | 7 | 9 | 2 | 6 | 4 | 1 | 10 | 5 | 8 |
| | | | | | | Corporates | | | | | |
| | 2009 | 1 | 2 | 10 | 3 | 9 | 4 | 5 | 7 | 6 | 8 |
| | 2005 | 1 | 4 | 10 | 3 | 8 | 2 | 5 | 6 | 7 | 9 |
| | | | | | | Relative position average | | | | | |
| | 2009 | 1.5 | 4.0 | 10.0 | 3.0 | 9.0 | 4.5 | 3.0 | 7.0 | 5.0 | 8.0 |
| | 2005 | 2.0 | 5.5 | 9.5 | 2.5 | 7.0 | 3.0 | 3.0 | 8.0 | 6.0 | 8.5 |
| Banking sector funding | | | | | | Loan/deposit ratio | | | | | |
| | 2009 | 1 | 3 | 10 | 2 | 5 | 7 | 9 | 6 | 4 | 8 |
| | 2005 | 1 | 3 | 9 | 2 | 6 | 5 | 10 | 8 | 4 | 7 |
| | | | | | | Debt securities outstanding | | | | | |
| | 2009 | 2 | 5 | 9 | 1 | 6 | 3 | 4 | 10 | 7 | 8 |
| | 2005 | 3 | 5 | 9 | 1 | 7 | 2 | 4 | 10 | 6 | 8 |
| | | | | | | Debt securities maturing in the following 3 yrs | | | | | |
| | 2009 | 1 | 3 | 9 | 4 | 6 | 2 | 5 | 10 | 7 | 8 |
| | 2005 | 3 | 6 | 9 | 1 | 8 | 2 | 4 | 10 | 5 | 7 |
| | | | | | | Relative position average | | | | | |
| | 2009 | 1.3 | 3.7 | 9.3 | 2.3 | 5.7 | 4.0 | 6.0 | 8.7 | 6.0 | 8.0 |
| | 2005 | 2.3 | 4.7 | 9.0 | 1.3 | 7.0 | 3.0 | 6.0 | 9.3 | 5.0 | 7.3 |
| Sectoral net borrowing | | | | | | Non-financial corporations | | | | | |
| | 2009 | 5 | 4 | 2 | 3 | 7 | 6 | 9 | 1 | 8 | 10 |
| | 2005 | 3 | 5 | 4 | 2 | 10 | 8 | 7 | 1 | 6 | 9 |
| | | | | | | Households and NPISH | | | | | |
| | 2009 | 7 | 3 | 6 | 10 | 1 | 4 | 5 | 9 | 2 | 8 |
| | 2005 | 6 | 1 | 9 | 10 | 8 | 4 | 3 | 7 | 2 | 5 |
| | | | | | | General goverment | | | | | |
| | 2009 | 5 | 1 | 9 | 10 | 8 | 7 | 4 | 3 | 2 | 6 |
| | 2005 | 5 | 7 | 1 | 9 | 2 | 6 | 8 | 3 | 4 | 10 |
| | | | | | | ROW - current account | | | | | |
| | 2009 | 4 | 1 | 7 | 10 | 8 | 6 | 5 | 2 | 3 | 9 |
| | 2005 | 3 | 2 | 7 | 10 | 8 | 6 | 5 | 1 | 4 | 9 |
| | | | | | | Relative position average | | | | | |
| | 2009 | 5.3 | 2.3 | 6.0 | 8.3 | 6.0 | 5.8 | 5.8 | 3.8 | 3.8 | 8.3 |
| | 2005 | 4.3 | 3.8 | 5.3 | 7.8 | 7.0 | 6.0 | 5.8 | 3.0 | 4.0 | 8.3 |
| Sectoral short-term refinancing needs | | | | | | Financial corporates - bonds | | | | | |
| | 2009 | 1 | 3 | 9 | 4 | 6 | 2 | 5 | 10 | 7 | 8 |
| | 2005 | 3 | 6 | 9 | 1 | 8 | 2 | 4 | 10 | 5 | 7 |
| | | | | | | Non-financial corporates - bonds | | | | | |
| | 2009 | 4 | 9 | 6 | 3 | 2 | 10 | 5 | 7 | 1 | 8 |
| | 2005 | 3 | 9 | 2 | 7 | 4 | 10 | 6 | 8 | 1 | 5 |
| | | | | | | Non-financial corporates - loans | | | | | |
| | 2009 | 8 | 1 | 10 | 2 | 5 | 6 | 9 | 3 | 4 | 7 |
| | 2005 | 9 | 1 | 10 | 3 | 5 | 4 | 8 | 6 | 2 | 7 |
| | | | | | | Households | | | | | |
| | 2009 | 1 | 3 | 10 | 9 | 5 | 2 | 4 | 6 | 7 | 8 |
| | 2005 | 1 | 5 | 10 | 9 | 3 | 2 | 4 | 6 | 8 | 7 |
| | | | | | | General government | | | | | |
| | 2009 | 9 | 4 | 2 | 8 | 3 | 7 | 10 | 5 | 1 | 6 |
| | 2005 | 9 | 4 | 3 | 2 | 5 | 10 | 7 | 6 | 1 | 8 |
| | | | | | | Relative position average | | | | | |
| | 2009 | 4.6 | 4 | 7.4 | 5.2 | 4.2 | 5.4 | 6.6 | 6.2 | 4 | 7.4 |
| | 2005 | 5 | 5 | 6.8 | 4.4 | 5 | 5.6 | 5.8 | 7.2 | 3.4 | 6.8 |

| | | BE | DE | IE | EL | ES | FR | IT | NL | AT | PT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Exposure index | 2009 | 4.8 | 3.7 | 7.4 | 5.0 | 5.6 | 5.2 | 5.0 | 6.5 | 4.6 | 7.1 |
| | 2005 | 4.8 | 4.9 | 6.0 | 4.1 | 6.0 | 5.1 | 4.8 | 7.0 | 5.2 | 7.2 |
| Relative position | 2009 | 3 | 1 | 10 | 5 | 7 | 6 | 4 | 8 | 2 | 9 |
| | 2005 | 2 | 4 | 8 | 1 | 7 | 5 | 3 | 9 | 6 | 10 |

## 5.2 The application of the exposure index to the new MTO calculation

The fiscal and financial exposure index can be used to rank all countries on a 0-1 interval, as presented in Figure 6. In order to compute minimum budgetary targets MTOMT*s taking on board a wider range of liabilities as well as sectoral and external imbalances, we use the exposure index in substitution of the (calibrated) supplementary debt-reduction effort. The results are reported in Table 5. On average, MTOMT*s with exposure index are more or less demanding depending on the assessment of imbalances in the banking, financial corporate, and household sectors. High-debt countries with low underlying sectoral imbalances converge to a minimum budgetary target less stringent than what estimated using the supplementary debt-reduction effort.

Under the no-crisis scenario, Germany, the country with the less worrying sectoral imbalances, has an MTOMT* with exposure index less demanding that the MTOMT* with supplementary debt-reduction effort (-0.8 percent of GDP rather than -0.6 percent). Compared to the MTO declared in the 2009 update of SCP, this result would assure to German authorities some additional leeway for expansionary fiscal policy in case of need.

For Italy, an economy with high-debt but limited sectoral imbalances, our alternative methodology implies a less demanding MTOMT* (-1 percent of GDP instead of a balanced positions). The difference is substantial as it would allow to Italy to save, ceteris paribus, two years of the 0.5 p.p. consolidation required by the SGP.

By contrast, the introduction of the exposure index would require a much tighter MTOMT* for Ireland (0.7 percent of GDP against -0.3 percent). Being an economy characterized by low public debt but with large external imbalances and refinancing needs, fiscal policy should consolidate to improve public finances but also to reduce persistent external imbalances.

**Fig. 6 Exposure index**

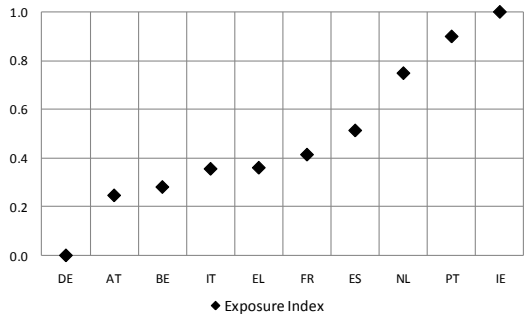


Table 5: MTOMT* using Exposure Index (% of GDP unless otherwise specified).

| Country | | Growth rate of potential GDP at current prices - average 2010-60 (%) | | Budget balance stabilising debt-to-GDP ratio at 60% | | Exposure Index | S2E | | MTOSM* using Exposure Index | | MTOMB | MTOEA | MTOMT* = Maximum (MTOMB, MTOEA, MTOSM*) using Exposure Index | | MTOMT* = Maximum (MTOMB, MTOEA, MTOSM*) using supplementary debt-reduction effort | | MTO declared by country in SCP 2009 (1) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No-crisis scen. | Lost decade scen. | No-crisis scen. | Lost decade scen. | | No-crisis scen. | Lost decade scen. | No-crisis scen. | Lost decade scen. | | | No-crisis scen. | Lost decade scen. | No-crisis scen. | Lost decade scen. | |
| Belgium | BE | 3.8 | 3.7 | -2.2 | -2.1 | 0.3 | 4.8 | 6.4 | -0.3 | 0.3 | -1.3 | -1.0 | -0.3 | 0.3 | 0.3 | 1.0 | no comm. |
| Germany | DE | 3.2 | 3.1 | -1.9 | -1.8 | 0.0 | 3.3 | 4.8 | -0.8 | -0.2 | -1.6 | -1.0 | -0.8 | -0.2 | -0.6 | 0.0 | -0.5 |
| Ireland | IE | 4.4 | 4.1 | -2.5 | -2.4 | 1.0 | 6.7 | 12.1 | 0.7 | 2.6 | -1.5 | -1.0 | 0.7 | 2.6 | -0.3 | 1.6 | -0.5 to 0.0 |
| Greece | EL | 3.7 | 3.6 | -2.1 | -2.1 | 0.4 | 11.5 | 10.7 | 2.1 | 1.8 | -1.4 | -1.0 | 2.1 | 1.8 | 3.0 | 2.7 | no comm. |
| Spain | ES | 3.9 | 3.8 | -2.2 | -2.2 | 0.5 | 5.7 | 8.6 | 0.2 | 1.2 | -1.2 | -1.0 | 0.2 | 1.2 | -0.4 | 0.6 | no comm. |
| France | FR | 3.9 | 3.7 | -2.2 | -2.2 | 0.4 | 1.8 | 2.7 | -1.2 | -0.8 | -1.6 | -1.0 | -1.0 | -0.8 | -1.0 | -1.0 | 0.0 |
| Italy | IT | 3.5 | 3.3 | -2.0 | -1.9 | 0.4 | 1.5 | 1.9 | -1.2 | -1.0 | -1.4 | -1.0 | -1.0 | -1.0 | 0.0 | 0.2 | 0.0 |
| Netherlands | NL | 3.5 | 3.4 | -2.0 | -2.0 | 0.7 | 5.0 | 5.5 | 0.4 | 0.6 | -1.1 | -1.0 | 0.4 | 0.6 | -0.4 | -0.2 | -0.5 to 0.5 |
| Austria | AT | 3.7 | 3.6 | -2.1 | -2.1 | 0.2 | 3.1 | 4.5 | -0.9 | -0.4 | -1.6 | -1.0 | -0.9 | -0.4 | -1.0 | -0.5 | 0.0 |
| Portugal | PT | 3.9 | 3.8 | -2.2 | -2.2 | 0.9 | 1.9 | 3.1 | -0.7 | -0.2 | -1.5 | -1.0 | -0.7 | -0.2 | -1.0 | -1.0 | n.a. |

(1) Declared MTO: 'no comm.' indicates that no commitment is explicitly made by the country in the SCP; 'n.a.' indicates SCP is not available.
Sources: For both no-crisis and lost decade scenarios, the average nominal potential GDP growth rates over 2010-2060 and S2E indicators are from European Commission's Ageing Report 2009 and Sustainability Report 2009.

# 6 CONCLUSIONS

The objective of this paper has been threefold. Firstly, by relying on the information contained in the last batch of the SCPs, it analyzed the new MTO methodology recently adopted by EU Member States on the basis of a calibrated algorithm that closely follows the still undisclosed formulation on which Member States agreed upon. In this framework, the most critical aspects regarding the modalities to take on board government liabilities have then been extensively discussed.

Secondly, it presented an assessment of the impact of the current crisis on the modalities for determining MTOs. Current and future lower bounds for MTOs have been calculated measuring the incidence on the budgetary targets of changes in public debt, potential growth, and the projected cost of ageing.

Thirdly, relying on the presumption that the new MTO methodology focus only on a handful of fiscal and growth variables and neglects other important determinants affecting the short-term sustainability of public finances, the paper has outlined a simple alternative modality to introduce into the MTO determination, together with the level of current public debt, other elements connected with the building-up of external and domestic imbalances. The proposed modality to take into account of such explicit current liabilities is based on the construction of an exposure indicator. This indicator adopts a simple metric -based on a number of variables such as the composition of public debt by maturity, the structure of the private sector indebtedness, and financial market judgements- and allows for easily ranking countries along different fiscal and financial dimensions.

Our results show that the new MTO values heavily depend on the current debt ratios. Given the relevance of this channel, the credibility of the medium-term fiscal targets is chiefly influenced by the consolidation of current budget balances. Such a consolidation, on the other hand, may eventually be procyclical in coincidence with the large slumps of the economy in the present. By contrast, the new MTO formulation gives less incentive to undertake structural reforms which may contain the projected increase in age-related expenditure and reduce non-contractual future spending commitments without necessarily adjusting current budget balances.

Furthermore, by analysing what reported in 2009 SCPs, the paper showed that, due to the impact of the crisis, EU Member States reacted either delaying the date of achievement of MTOs or even not declaring them. In this respect, the new MTOs methodology appears as being quite sensitive to the impact of current crisis, determining tighter targets which would require additional budgetary efforts on top of the ones already planned by governments. This could reduce governments' incentives in committing towards too ambitious objectives over the medium term horizon, leading to a reduced political ownership of this rule and eventually undermining fiscal discipline.

On the basis of debt and GDP growth projections, the paper also proved that the new MTO methodology would result in more restrictive targets at the moment of their revision scheduled for 2012.

Finally, the introduction of the fiscal and financial exposure indicator in the algorithm for computing minimum budgetary targets shows that, in times of crisis, countries with large domestic and/or external imbalances may be called for to set fiscal targets much more ambitious than those determined on the sole basis of the current debt-to-GDP ratio. Notwithstanding the relevance of these results, it has also to be highlighted that our findings should be interpreted with caution. First of all, they are still subject to large uncertainty as the exposure indicator is heavily influenced by the variables chosen to perform the ranking of countries. Secondly, even on the basis of a common set of initial variables, the relative position of a country could vary according to the modalities chosen to group the sub-indicators considered in the construction of the exposure index. Given these constraints, the exposure index metric should be considered as a preliminary attempt aimed at introducing in the current policy debate two important issues: the impact of current explicit liabilities on the determinants of fiscal targets; and the role of domestic and external imbalances for the conduct of efficient and credible fiscal policies.

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