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Improving the Stability and Growth Pact by integrating a proper accounting of public investments: a new attempt

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Improving the Stability and Growth Pact by integrating a proper accounting of public investments: a new attempt

January 2016

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Abstract - Improving the functioning of the Stability and Growth Pact (SGP) is back on the agenda, especially as the decline in public investment resulting from fiscal adjustment processes implemented according to the current Pact rules is seen as a brake on future economic growth. When discussions about a Pact revision in 2005 were under way, several major authors (for instance: Blanchard and Giavazzi in CEPR February 2004) suggested reverting to a golden rule under which the deficit would exclude investment expenditure, net of amortization. The Pact was revised in 2005 but this proposal was not adopted. This paper presents a new attempt to integrate a proper accounting of investment into the Pact by modifying the formula of the MTO (Medium Term Objective for the budget balance), without losing the other dimensions of the present formula: the partial provisioning of the so-called cost of ageing and the accelerated debt reduction for highly indebted countries. In this way, the public investment programme becomes a centrepiece of the structural policy of a government and not the first instrument of a cyclical policy.

Abstract - L'amélioration du fonctionnement du Pacte de stabilité et de croissance (PSC) figure à nouveau à l'ordre du jour, d'autant que la baisse des investissements publics sous l'effet de processus d'ajustement budgétaire mis en œuvre conformément aux règles du Pacte actuel est considérée comme un frein à la future croissance économique. Lorsque les discussions sur une révision du Pacte étaient en cours en 2015, plusieurs auteurs importants (par exemple : Blanchard et Giavazzi dans CEPR, février 2004) ont suggéré de revenir à une règle d'or dans le cadre de laquelle le déficit exclurait les dépenses d'investissement, après amortissement. Le Pacte a été revu en 2005 mais cette proposition n'a pas été adoptée. Ce papier présente une nouvelle tentative d'intégrer un traitement comptable approprié des investissements dans le Pacte en modifiant la formule du MTO (objectif budgétaire à moyen terme) tout

en conservant les autres dimensions de la formule actuelle : le provisionnement partiel du dit coût du vieillissement et la réduction accélérée de la dette des pays fortement endettés. De cette façon, le programme d'investissements publics devient la pièce maîtresse de la politique structurelle d'un gouvernement et non le premier instrument d'une politique conjoncturelle.

Abstract - De verbetering van de werking van het Stabiliteits- en Groeipact (SGP) ligt weer op tafel, temeer omdat de daling van de overheidsinvesteringen als gevolg van de fiscale aanpassingsprocessen die ingevoerd zijn volgens de huidige regels van het Pact gezien wordt als een rem op de toekomstige economische groei. Tijdens de discussies over een herziening van het Pact in 2005, suggereerden verschillende belangrijke auteurs (bijvoorbeeld: Blanchard en Giavazzi in CEPR van februari 2004) om terug te grijpen naar een gouden regel waarbij de investeringsuitgaven, verminderd met de afschrijvingen, niet in het tekort verrekend worden. Het Pact werd in 2015 herzien, maar dat voorstel werd niet aangenomen. Deze paper stelt een nieuwe poging voor om een adequate verrekening van de investeringen in het Pact op te nemen door de formule van de MTO (middellangetermijndoelstelling voor het begrotingsevenwicht) te wijzigen, zonder de andere dimensies van de huidige formule uit het oog te verliezen: de gedeeltelijke voorziening van de zogenaamde vergrijzingskosten en de versnelde schuldafbouw voor landen met een hoge schuldgraad. Zo wordt het programma van overheidsinvesteringen het kernstuk van het structurele regeringsbeleid en niet het eerste instrument van een cyclisch beleid.

Jel Classification - H6
Keywords - European Fiscal Policy, public debt, sustainability, golden rule, public investments, Stability and Growth Pact, Medium Term Objective

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Executive summary

The rules of the Stability and Growth Pact have been designed to ensure an effective coordination of fiscal policies in the different member states of the euro area. These rules, in the preventive arm of the Pact, focus on an objective of structural budget balance, cyclically adjusted and net of one-off measures, that has to be checked on average over the economic cycle. This objective must allow automatic stabilizers to play in the cycle, i.e. the actual budget balance will fluctuate in function of the cycle around its central value: the Medium Term Objective or MTO.

However, we can see that the current rules of the Pact have pernicious effects, in particular on public investments, which are one of the most growth-enhancing budget items. On the one hand, some countries have strived during the 2000s to catch up with the level of equipment of the most developed countries of the euro area. In doing so, they showed high public investment rates, such as Greece, Ireland, Spain and Portugal. Unfortunately, they have made public investments bear to a large extent the burden of the budgetary adjustment necessary to overcome the effects of the financial crisis of 2008, even though this type of public expenditure is characterized by the highest multiplier effect on employment and economic growth. On the other hand, some more developed countries (like Germany, for instance) have shown for many years a fairly low level of public investments, which is in any case too weak to prevent a decline in their public capital stock as a percentage of GDP. Nevertheless, evidence generally shows that investments help increase the efficiency of public authorities and have many externalities that benefit the growth of the private sector.

To counter underinvestment in the euro area, which puts a brake on the economic recovery and on growth, flexibility mechanisms, together with the Juncker plan, have recently been introduced in the Pact. However, these only partially address the problem.

Consequently, demands are being voiced for an in-depth improvement of the Pact, and in particular the insertion of a golden rule according to which public investments net of amortization could be financed by borrowing. We find plenty of arguments for this in the literature: public investments create potential growth, which, in turn, generates future tax income; public investments represent a cost allocated to the budget of the investment year and a use over the following years, often a long period; investments are a value that implicitly, and at least partially, serves as collateral or compensation for loans financing them. Conversely, some arguments have been put forward for many years against the golden rule, in particular: public investments are not a suitable instrument of counter-cyclical policy because they take a long time to reach maturity and to be implemented, and because working in haste leads to inefficiency; moreover, the golden rule can bring about misuses because, in order not to have to make budgetary adjustments, public authorities put current expenditure in the investments item. This last criticism should be removed within the European framework, where Eurostat is, since the adoption of the Six Pack and the Two Pack, the watchful guardian of accounting orthodoxy.

In this context, this paper proposes a new formula for calculating the medium-term budget balance objective (MTO) that each Member State must set according to the Pact and without changing the logic of the Pact that consists in letting the automatic stabilisers play around the MTO. The public investment

programme contained in the Pact is considered as a structural policy planned in the medium term. There is therefore no question in this approach to promote the use of public investments as an instrument of countercyclical budgetary policy. Instead, it is advisable to sustain potential growth by preserving medium-term investment programmes.

The current MTO calculation rule is based on the public debt sustainability criterion according to which the discounted sum of primary surpluses, under current policies and existing legislation and in an infinite horizon, is higher than or equal to the public debt (concepts as a percentage of GDP). Future primary surpluses are influenced by population ageing, which, in the long term, causes what is called the budgetary cost of ageing, i.e. the discounted sum of primary surplus fluctuations due to ageing in the framework of the present social and tax system which would continue to benefit future generations. The intergenerational equity principle requires that these costs are at least partially pre-financed, which is implied by the sustainability criterion.

The new approach broadens the sustainability criterion by basing it on net assets (value of the assets minus debt, or conversely, of the net debt) and not on debt anymore, the assets resulting from an accumulation process of net investments. Consequently, net investments are added to the future primary surpluses to be taken into account in the sustainability criterion.

By this change, which is economically more justified, this approach puts more emphasis on public investments as an essential and structural component of the stability and growth programme (decided for three years). It broadens the scope of intergenerational or inter-temporal equity by taking into account investments of which the benefit will be felt in future years.

The sustainability criterion of the net assets leads us to define a *basic formula* for determining the medium-term budget balance objective according to which the MTO should be higher than or equal to: (1) a basic threshold that stabilizes the net assets as a percentage of GDP, (2) plus the pre-financing of the budgetary cost of ageing, (3) less net investments. Let's assume that the budgetary cost of ageing is zero. If the assets are equal to the debt (the capital stock is totally financed by borrowing), then the formula comes down to the golden rule such as it has been implemented in the UK: the deficit is on average equal to net investments and the debt ratio is close to 40% of GDP.

The sustainability criterion is a relatively undemanding criterion. It only requires, if strictly observed (equality between net assets and the sum of primary surpluses), to stabilize the net assets as a percentage of GDP. Nevertheless, in most countries, net assets actually are a net debt: the debt ratio largely exceeds the value of assets as a percentage of GDP. Moreover, a high debt ratio increases the risks for the financial stability of public authorities and financial institutions, pushes interest rates upward and severely complicates budgetary policy. Therefore, an effort to accelerate the reduction of the debt ratio is usually added to the sustainability criterion stricto sensu. The current MTO calculation rule incorporates such an additional effort. At what level the debt ratio becomes a problem and puts a strain on growth and interest rates? There is no clear answer in the literature in this regard. The Maastricht Treaty introduced a threshold of 60 percent of GDP: this figure has become a benchmark to achieve, especially for the countries of the euro area. At which pace the debt ratio must converge to 60%? Once again, there is no economic analysis that gives a clear-cut answer in this topic, but the new Treaty on Stability, Coordination and Governance (TSCG) requires a reduction by 1/20th of the difference between the debt ratio and

60%. (Currently, this rule is added as an additional constraint and disrupts the logic underlying the MTO by imposing pro-cyclical budgetary adjustments in periods of low inflation.)

The proposed formula aims at ensuring financial sustainability and to minimize the risks for the financial stability by integrating an additional effort to reduce the debt ratio in countries with a debt exceeding 60% of GDP. It does not take a stand on the pace of debt reduction. However, in the appendix, an assessment is made with a rate of 1/20th of the difference between the debt ratio and 60 percent of GDP.

In total, in what has been called the *basic formula* for calculating the MTO, the incorporation of net investments allows to reduce the medium-term budget balance objective, while the budgetary cost of ageing and the accelerated debt reduction effort requires to increase the balance target. This *basic formula* adds up four components: a long-term stabilization threshold for the debt or net assets, the provisioning for the budgetary cost of ageing, the net public investments and the accelerated reduction of the debt ratio.

The different components of the current basic formula and the proposed formula are compared in the table below.

Table 1: Addition of the components in the current formula and in the new proposed formula

Components	Current formula	Proposed formula
Long-term stabilization threshold of the debt or net assets	- 60% (threshold of the debt ratio) x average growth rate of the long-term nominal GDP	+ Net assets x average growth rate of nominal GDP (2010-2060)
Provisioning for the budgetary cost of ageing	+ 1/3 x discounted budgetary cost of population ageing	+ 1/3 x discounted budgetary cost of population ageing
Accelerated reduction of the debt ratio	Additional effort depending on the debt ratio and equal to: -1.24% + 0.024 x debt ratio	Additional effort depending on the debt ratio and equal to: -1% - 0.05 x net assets – net public investments
Net public investments		- Net public investments

Applied to the situation in Belgium, the proposed *basic formula* adds up the values of the following components: the stabilization threshold: -2.1%, the provisioning of one third for the budgetary cost of ageing: 2.4%, the accelerated debt reduction: 1.9% of GDP and the net public investments: 0.3% (in fact, the net investments are negative) or an MTO of 2.5% of GDP (i.e. a surplus), while the current formula gives an MTO of 1.3% of GDP! The big difference lies in the accelerated debt reduction which in the current formula is only 1.1% of GDP. If we have the same accelerated debt reduction as in the current formula and zero net investments, we would have the same result: a surplus of 1.3%. What is changing, however, is that the government may decide to increase public investments, which would allow a lower MTO. Thus, with a level of net public investments of 1.4% of GDP, which would stabilize the capital stock as a percentage of GDP, the medium-term objective could be reduced to 0% of GDP.

To give an idea of the impact of the proposed formula, it was applied to the other EU countries on the basis of the 2012 figures that determine the current MTOs (and on the basis of an assumption about the value of assets which is not known in the current national accounts). Note that these figures and MTOs will be revised in a few months. This exercise suggests, just like for Belgium, that the new formula is more ambitious than the current one (balance or surplus), unless the accelerated debt reduction of the

current formula is used instead of the reduction by 1/20th of the difference between the debt ratio and 60%, but also that it gives governments the possibility to reduce the MTO by increasing investments.

The MTO calculation rule is not limited to the basic formula mentioned so far. If we follow the current approach, the rule would be the result of the maximum of three elements: (1) the result of the basic formula, (2) the minimum benchmark according to which the MTO is higher than a value for which, in normal circumstances, stabilizers can play without the budgetary balance exceeding the constraint of 3% of GDP, and (3) an absolute minimum of -0.5% of GDP for countries in the euro area and 1% for others. If the new basic formula makes it possible to increase investments in many countries, especially the countries of the euro area, the increase margin will be significantly reduced because the MTO value will be limited by the absolute minimum constraint. One can of course wonder about the theoretical validity of the absolute minimum of -0.5%. This absolute minimum was indeed imposed in reaction to the sovereign debt crisis and could probably be reviewed in a quieter euro area.

With a closer analysis of the accelerated debt reduction effort and with more precisions on the assets or investments to take into account, the new formula proposed here represents a significant and structural improvement of the Pact rules. It has a theoretical foundation and, unlike in the current formula, the specific treatment of investments favours a more effective distribution of the budgetary policy objectives among the different levels of governance. The MTO can indeed be directly distributed among the different levels of governance without planning some sort of exception or compensation between the levels of governance that invest and those that do not, which is always politically difficult. Moreover, the objectives to be assigned to public bodies are expressed in terms of changes in net assets, which is more consistent with the business management principles.

The new formula does not require a revision of the treaties. Nevertheless, the absolute minimum constraints set in the Treaty on Stability, Coordination and Governance could be gradually extended if we want, in the logic of the formula proposed here, to promote public investments to simply maintain the public capital to GDP ratio.

Synthese

De regels van het Groei- en Stabiliteitspact hebben tot doel het begrotingsbeleid van de lidstaten van de eurozone op efficiënte wijze te coördineren. Het preventieve luik van die regels is gericht op de doelstelling van een structureel begrotingssaldo, gecorrigeerd voor het conjunctuureffect en eenmalige maatregelen. Die dient gemiddeld gecontroleerd te worden over de economische cyclus. Die doelstelling moet ervoor zorgen dat de automatische stabilisatoren hun rol in de cyclus kunnen spelen: het effectief begrotingssaldo varieert naargelang van de cyclus rond zijn centrale waarde (de MTO of middellangetermijndoelstelling).

We stellen echter vast dat de huidige regels van het Pact nadelige effecten met zich meebrengen, meer bepaald op de overheidsinvesteringen die nochtans gelden als een van de begrotingsrubrieken die het sterkst de groei stimuleren. Enerzijds kenden sommige landen, die tijdens de jaren 2000 het uitrustingsniveau van de geavanceerde landen van de eurozone probeerden in te halen, hoge overheidsinvesteringen. Dat geldt bijvoorbeeld voor landen zoals Griekenland, Ierland, Spanje en Portugal. Die landen hebben een groot deel van de begrotingsaanpassing die nodig was door de gevolgen van de financiële crisis van 2008 verhaald op de overheidsinvesteringen, hoewel dat soort overheidsuitgaven het grootste multiplicatoreffect heeft op de werkgelegenheid en de economische groei. Anderzijds kampen een aantal meer geavanceerde landen al jaren met een redelijk laag niveau van de overheidsinvesteringen. Dat niveau is in ieder geval veel te laag om de daling van de kapitaalvoorraad van de overheid in procent van het bbp een halt toe te roepen. Het is reeds algemeen gebleken dat investeringen de doeltreffendheid van de overheid kunnen verhogen en talrijke externe effecten hebben die bijdragen tot de groei van de privésector.

Om iets aan de onderinvestering in de eurozone te doen, die het economisch herstel vertraagt en op de groei weegt, werden er onlangs samen met het plan-Juncker flexibiliteitsmechanismen ingevoerd in het Pact. Die bieden echter maar een gedeeltelijke oplossing voor het probleem.

Vandaar dat er stemmen opgaan om het Pact grondiger te verbeteren en om, meer bepaald, een gouden regel in te voeren de overheidsinvesteringen minus de afschrijvingen gefinancierd zouden kunnen worden door middel van leningen. Er is een overvloed aan argumenten in de literatuur: de overheidsinvesteringen vormen een bron van potentiële groei die, op zijn beurt, een bron vormt van toekomstige fiscale opbrengsten; de overheidsinvesteringen zijn kosten die worden toegewezen aan de begroting van het investeringsjaar en die tijdens de daaropvolgende jaren, vaak een lange periode, worden gebruikt; de investeringen zijn een waarde die impliciet, of ten minste gedeeltelijk, wordt gebruikt als onderpand of tegenprestatie voor de lening waarmee ze gefinancierd worden. Er worden daarentegen al vele jaren bepaalde argumenten opgeworpen tegen de gouden regel, met name de volgende: enerzijds vormen de overheidsinvesteringen geen goed anticyclisch beleidsinstrument omdat hun voorbereiding, realisatie en uitvoering te veel tijd vergt en omdat overhaast te werk gaan tot inefficiëntie leidt. Anderzijds kan de gouden regel tot ontsporingen leiden omdat de bevoegde instanties de lopende uitgaven in de categorie investeringen onderbrengen om geen begrotingsaanpassingen te moeten uitvoeren. Die laatste kritiek is niet relevant in een Europese context waarin Eurostat, sinds de goedkeuring van het Six Pack en het Two Pack, waakt over de boekhoudkundige orthodoxie.

Deze paper stelt daarom een nieuwe methode voor om de doelstelling voor het begrotingssaldo op middellange termijn (MTO) te berekenen, waarbij elke lidstaat die doelstelling bepaalt zonder de logica van het Pact te wijzigen, nl. de automatische stabilisatoren laten spelen rond de MTO. Het programma van overheidsinvesteringen wordt hier beschouwd als een structurele beleidsmaatregel die op middellange termijn wordt gepland. Het is in deze benadering dus niet de bedoeling om een discretionair anticyclisch begrotingsbeleid via overheidsinvesteringen te voeren. Het is daarentegen nodig om de potentiële groei te ondersteunen door de investeringsprogramma's op middellange termijn te behouden.

De huidige berekeningsmethode van de MTO is gebaseerd op het houdbaarheidscriterium van de overheidsschuld, die stelt dat (in procent van het bbp) de geactualiseerde waarde van de toekomstige primaire overschotten, bij ongewijzigd beleid en ongewijzigde wetgeving en onbepaald in de tijd, hoger is dan of gelijk aan de overheidsschuld. De toekomstige primaire overschotten worden beïnvloed door de vergrijzing, die op lange termijn leidt tot wat de budgettaire kosten van de vergrijzing genoemd worden: de geactualiseerde som van de variaties van het primair overschot die veroorzaakt worden door de vergrijzing in het kader van het huidige sociale en fiscale systeem waarvan de toekomstige generaties kunnen blijven genieten. Het beginsel van intergenerationele billijkheid vereist dat die kosten, ten minste gedeeltelijk, voorgefinancierd worden, wat het houdbaarheidscriterium impliceert.

De nieuwe voorgestelde formule breidt het houdbaarheidscriterium uit door het te baseren op de nettoactiva (waarde van de activa min de schuld of, omgekeerd, van de nettoschuld) in plaats van op de schuld. De activa zijn hier het resultaat van een proces van opbouw van de netto-investeringen. De netto-investeringen worden bijgevolg opgeteld bij de toekomstige primaire overschotten waarmee rekening gehouden moet worden in het houdbaarheidscriterium.

Door deze verandering, die op economisch vlak meer gegrond is, legt de nieuwe formule meer de nadruk op de overheidsinvesteringen als essentieel en structureel element van het stabiliteits- en groeiprogramma (goedgekeurd voor drie jaar). Ze breidt de reikwijdte van de intergenerationele en intertemporele billijkheid uit naar de investeringen die de komende jaren voordelen zullen opleveren. Het houdbaarheidscriterium van de netto-activa leidt tot de opstelling van een *basisformule* om de doelstelling voor het saldo op middellange termijn te bepalen. Die formule stelt dat de MTO groter dan of gelijk aan een basisdrempel moet zijn die de netto-activa in procent van het bbp stabiliseert, plus de voorfinanciering van de budgettaire kosten van de vergrijzing min de netto-investeringen. In de veronderstelling dat de budgettaire kosten van de vergrijzing gelijk zijn aan nul, indien de activa gelijk zijn aan de schuld (de kapitaalvoorraad wordt volledig gefinancierd door middel van leningen), dan komt de formule neer op de gouden regel die werd ingevoerd in het Verenigd Koninkrijk: het tekort is gemiddeld gelijk aan de netto-investeringen en de schuldgraad ligt dicht bij 40% van het bbp.

Het houdbaarheidscriterium is relatief weinig veeleisend. Het komt erop neer dat, indien het criterium strikt in acht genomen wordt (gelijkheid tussen de nettoactiva en de som van de primaire overschotten), de nettoactiva in procent van het bbp gestabiliseerd moeten worden. In de meeste landen zijn de nettoactiva evenwel een nettoschuld: de schuldgraad overschrijdt ruim de waarde van de activa in procent van het bbp. Een hoge schuldgraad vergroot de risico's voor de financiële stabiliteit van de overheid en de financiële instellingen, stuwt de rentevoeten de hoogte in en bemoeilijkt het begrotingsbeleid. Daarom wordt in het algemeen een inspanning voor versnelde schuldafbouw

toegevoegd aan het houdbaarheidscriterium stricto sensu. In de huidige berekeningsmethode van de MTO wordt bovendien een dergelijke bijkomende inspanning opgenomen. Vanaf welk niveau wordt de schuldgraad problematisch en weegt die op de groei en de rentevoeten? Er is hieromtrent geen duidelijk antwoord voorhanden in de literatuur. Met het Verdrag van Maastricht werd een grens van 60% van het bbp ingevoerd: dat cijfer werd een te bereiken referentie, in het bijzonder voor de landen van de eurozone. In welke tempo moet de schuldgraad convergeren naar 60%? Er is wederom geen economische analyse die hier een antwoord op geeft. Het begrotingsverdrag vereist evenwel een vermindering met 1/20ste van het verschil tussen de schuldgraad en 60%. (Momenteel dringt die regel zich op als een bijkomende beperking en verstoort die de onderliggende logica van de MTO door procyclische budgettaire aanpassingen op te leggen in een periode van lage inflatie.)

De nieuwe voorgestelde formule poogt de financiële duurzaamheid te waarborgen en de risico's voor de financiële stabiliteit te beperken door een bijkomende inspanning voor de verlaging van de schuldgraad te integreren voor de lidstaten met een schuld van meer dan 60% van het bbp. Ze zegt niets over het tempo van de schuldafbouw. In de bijlage wordt evenwel een evaluatie uitgevoerd met een tempo van 1/20ste van het verschil tussen de schuldgraad en 60% van het bbp.

In totaal kan – door rekening te houden met de netto-investeringen in de zogenaamde basisformule voor de berekening van de MTO – de doelstelling voor het begrotingssaldo op middellange termijn verlaagd worden, terwijl de budgettaire kosten van de vergrijzing en de inspanning voor versnelde schuldafbouw een verhoging van de saldodoelstelling nodig maken. Die basisformule telt vier elementen op: een stabiliseringsdrempel op lange termijn van de schuld of de nettoactiva, de budgettaire kosten van de vergrijzing, de netto-overheidsinvesteringen en de versnelde schuldafbouw.

In de onderstaande tabel worden de componenten van de huidige basisformule en de voorgestelde formule vergeleken.

Optelling van de componenten die de basisformule van de MTO vormen in de huidige en de voorgestelde formule

Componenten	Huidige formule	Voorgestelde formule
Stabiliseringsdrempel op lange termijn van de schuld of de nettoactiva	- 60% x gemiddelde groeivoet van het nominale bbp	+ Nettoactiva x gemiddelde groeivoet van het nominale bbp (2010-2060)
Voorziening van de budgettaire kosten van de vergrijzing	+ 1/3 x geactualiseerde budgettaire kosten van de vergrijzing	+ 1/3 x geactualiseerde budgettaire kosten van de vergrijzing
Versnelde schuldafbouw	Bijkomende inspanning afhankelijk van de schuldgraad die gelijk is aan: -1,24% + 0,024 x schuldgraad	Bijkomende inspanning afhankelijk van de schuldgraad die gelijk is aan: -1% - 0,05 x nettoactiva - netto-overheidsinvesteringen
Netto-overheidsinvesteringen		- Netto-overheidsinvesteringen

Wanneer de voorgestelde *basisformule* wordt toegepast op de Belgische situatie, telt die de waarde op van de volgende componenten: een stabiliseringsdrempel -2,1%, de voorziening van 1/3 voor de budgettaire kosten van de vergrijzing: 2,4%, de versnelde afbouw: 1,9% van het bbp en de netto-overheidsinvesteringen: 0,3% (die in wezen negatief zijn), of een MTO van 2,5% van het bbp (een overschot), terwijl de huidige formule uitkomt op een MTO van 1,3% van het bbp! Het grote verschil ligt in de versnelde schuldafbouw die in de huidige formule slechts 1,1% van het bbp bedraagt. Als wij uitgaan van dezelfde versnelde schuldafbouw en netto-investeringen van nihil, zouden wij op hetzelfde

resultaat uitkomen: een overschot van 1,3%. Wat er evenwel verandert, is het feit dat de regering zou kunnen besluiten de overheidsinvesteringen te verhogen. Hierdoor zou een lagere MTO mogelijk gemaakt worden. De middellangetermijndoelstelling zou zo tot 0% van het bbp teruggebracht kunnen worden met netto-overheidsinvesteringen van 1,4% van het bbp die de kapitaalvoorraad in procent van het bbp zouden stabiliseren.

Om een idee te geven van de impact van de voorgestelde formule, werd die toegepast op de andere EU-landen op basis van de cijfers van 2012 die de huidige MTO bepalen (en een hypothese met betrekking tot de waarde van de activa die niet gekend is in de huidige nationale rekeningen). Die cijfers en MTO's zullen binnen enkele maanden herzien worden. Daaruit kunnen we besluiten dat, net zoals voor België, de voorgestelde formule ambitieuzer is dan de huidige formule (evenwicht of overschot), tenzij de versnelde schuldafbouw van de huidige formule wordt gebruikt in plaats van de vermindering met 1/20ste van het verschil tussen de schuldgraad en 60%, en ook dat die de mogelijkheid biedt aan de regeringen om de MTO te verlagen door de investeringen te verhogen.

De berekeningsmethode van de MTO wordt niet beperkt tot de basisformule die tot hiertoe is aangevoerd. Indien wij de huidige benadering overnemen, zou de regel het resultaat zijn van het maximum van drie elementen: (1) het resultaat van de basisformule, (2) de minimumbenchmark die inhoudt dat de MTO hoger is dan een waarde waarvoor de stabilisatoren kunnen spelen in normale omstandigheden, zonder dat het begrotingssaldo de grens van 3% van het bbp overschrijdt en (3) een absoluut minimum van -0,5% van het bbp voor de landen van de eurozone en -1% voor de andere landen. Hoewel de nieuwe basisformule de mogelijkheid biedt de investeringen te verhogen, zal de marge voor de verhoging in veel landen – en in het bijzonder de landen van de eurozone – zeer beperkt zijn omdat de waarde van de MTO op de beperking van het absolute minimum zal stuiten. De theoretische geldigheid van het absolute minimum van -0,5% kan uiteraard in vraag gesteld worden. Dat absolute minimum werd immers opgelegd als antwoord op de staatsschuldencrisis en zou waarschijnlijk herzien kunnen worden in een kalmere eurozone.

Indien er een grondigere analyse wordt uitgevoerd van de inspanning voor versnelde schuldafbouw en de te verrekenen activa en investeringen nader bepaald worden, houdt de nieuwe voorgestelde formule een aanzienlijke en structurele verbetering in van de regels van het Pact. Ze is theoretisch onderbouwd en door de bijzondere behandeling van de investeringen worden, in tegenstelling tot de huidige formule, de doelstellingen van het begrotingsbeleid efficiënter verdeeld onder de verschillende beleidsniveaus. De MTO kan immers rechtstreeks verdeeld worden onder de verschillende beleidsniveaus zonder dat er een uitzondering gemaakt moet worden of een compensatie voorzien moet worden tussen de beleidsniveaus die investeren en degenen die niet investeren, wat op politiek vlak altijd ingewikkeld is. Bovendien worden de aan de openbare instellingen toe te wijzen doelstellingen uitgedrukt in termen van verandering van hun nettoactiva, wat meer in lijn ligt met de beheersbeginselen van de ondernemingen.

De nieuwe formule vereist geen herziening van de verdragen. De beperkingen van het absolute minimum waarin het Verdrag inzake stabiliteit, coördinatie en governance voorziet, zouden niettemin desgewenst geleidelijk uitgebreid kunnen worden in lijn met de voorgestelde formule: voldoende overheidsinvesteringen bevorderen om de verhouding tussen het overheidskapitaal en het bbp te bewaren.

Synthèse

Les règles du Pacte de stabilité et de croissance ont pour but d'assurer une coordination efficace des politiques budgétaires des États membres de la zone euro. Ces règles, dans leur volet préventif, sont axées sur un objectif de solde budgétaire structurel, corrigé des effets du cycle économique et des mesures ponctuelles, qu'il s'agit de vérifier en moyenne sur le cycle économique. Cet objectif doit permettre de laisser jouer les stabilisateurs automatiques dans le cycle, c'est-à-dire que le solde budgétaire effectif pourra fluctuer en fonction du cycle autour de sa valeur centrale : le MTO ou Medium Term Objective.

On constate, cependant, que les règles actuelles du Pacte ont des effets pervers, notamment sur l'investissement public qui est pourtant un des postes budgétaires les plus porteurs de croissance. D'une part, occupés pendant les années 2000 à rattraper le niveau d'équipement des pays avancés de la zone euro, certains pays manifestaient des taux d'investissement public élevés. Les pays comme la Grèce, l'Irlande, l'Espagne et le Portugal, par exemple, sont dans ce cas. Ils ont fait porter sur l'investissement public une grande part de l'ajustement budgétaire nécessité par les conséquences de la crise financière de 2008, alors que ce type de dépense publique présente le plus grand effet multiplicateur sur l'emploi et la croissance économique. D'autre part, certains pays plus avancés connaissent depuis de très nombreuses années, un niveau assez faible de l'investissement public, niveau en tous cas trop faible pour empêcher leur stock de capital public en pourcentage du PIB de s'éroder. Or, il est généralement démontré que les investissements permettent d'accroître l'efficacité des pouvoirs publics et ont de nombreux effets externes qui bénéficient à la croissance du secteur privé.

Face au sous-investissement dans la zone euro, qui freine la reprise économique et pèse sur la croissance, des mécanismes de flexibilité, en liaison avec le plan Juncker, ont été introduits récemment dans le Pacte, mais ils ne répondent que partiellement au problème.

Dès lors, des voix s'élèvent pour réclamer une amélioration plus profonde du Pacte et, notamment, l'introduction d'une règle d'or selon laquelle l'investissement public net des amortissements pourrait être financé par l'emprunt. Les arguments ne manquent pas dans la littérature : les investissements publics sont source de croissance potentielle qui, elle-même, est source de recettes fiscales futures, les investissements publics représentent un coût qui est imputé au budget de l'année de l'investissement et une utilisation qui se déroule sur les années suivantes, souvent sur une longue période, les investissements constituent une valeur qui sert implicitement, et au moins en partie, de collatéral ou de contrepartie à l'emprunt qui les finance. À l'opposé, certains arguments sont depuis de longues années évoqués contre la règle d'or, en particulier : d'une part, les investissements publics ne sont pas un bon instrument de politique contra-cyclique parce que leur délai de maturation et de mise en œuvre est long et agir dans la précipitation engendre de l'inefficacité, d'autre part, la règle d'or peut engendrer des dérives parce que, pour ne pas procéder à des ajustements budgétaires, les autorités classent dans la catégorie investissement des dépenses courantes. Cette dernière critique devrait être levée dans le cadre européen où Eurostat est, depuis l'adoption du Six Pack et du Two Pack, le garant jaloux de l'orthodoxie comptable.

Dans cette perspective, ce papier propose une nouvelle formule de calcul de l'objectif de solde budgétaire à moyen terme (MTO) que doit se fixer chaque État membre, conformément au Pacte et sans modifier la logique du Pacte qui consiste à laisser jouer les stabilisateurs automatiques autour du MTO. Le programme d'investissement public y est considéré comme une politique structurelle planifiée à moyen terme. Il n'est donc pas question dans cette approche de promouvoir l'utilisation des investissements publics comme un instrument d'une politique budgétaire contra-cyclique. Par contre, il y a lieu de soutenir la croissance potentielle en préservant les programmes d'investissement à moyen terme.

La règle de calcul du MTO actuelle est basée sur le critère de soutenabilité de la dette publique selon laquelle la somme actualisée des surplus primaires, à politique et législation inchangée et à un horizon infini, est supérieure ou égale à la dette publique (ces concepts formulés en pourcentage du PIB). Les surplus primaires futurs sont influencés par le vieillissement de la population qui occasionne à long terme ce que l'on appelle le coût budgétaire du vieillissement, c'est-à-dire la somme actualisée des variations du surplus primaire provoquées par le vieillissement dans le cadre du système social et fiscal d'aujourd'hui dont pourrait continuer à bénéficier les générations futures. Le principe d'équité intergénérationnel demande que ces coûts soient, au moins partiellement, préfinancés, ce qu'implique le critère de soutenabilité.

La nouvelle formule proposée élargit le critère de soutenabilité en le basant sur l'actif net (valeur des actifs moins dette, ou, inversement, de la dette nette) et non plus sur la dette. L'actif y est le résultat d'un processus d'accumulation des investissements nets. Par conséquent, les investissements nets sont ajoutés aux surplus primaires futurs à prendre en considération dans le critère de soutenabilité.

Par ce changement, économiquement plus fondé, cette approche met plus l'accent sur l'investissement public comme élément essentiel et structurel du programme de stabilité et de croissance (décidé pour trois ans). Elle élargit la portée de l'équité intergénérationnelle ou inter-temporelle, à l'investissement dont les bénéfices se feront sentir durant les années futures. Le critère de soutenabilité de l'actif net conduit à définir une *formule de base* pour déterminer l'objectif de solde à moyen terme selon laquelle le MTO devrait être supérieur ou égal à un seuil de base qui stabilise l'actif net en pourcentage du PIB, plus le préfinancement du coût budgétaire du vieillissement, moins l'investissement net. Supposons que le coût budgétaire du vieillissement soit nul, si l'actif est égal à la dette (le stock de capital est totalement financé par l'emprunt), alors la formule revient à la règle d'or telle qu'elle a été implémentée au Royaume Uni : le déficit est en moyenne égal à l'investissement net et le taux d'endettement est proche de 40 % du PIB.

Le critère de soutenabilité est un critère relativement peu exigeant. Il revient, s'il est strictement respecté (égalité entre actif net et somme des surplus primaires), à stabiliser l'actif net en pourcentage du PIB. Or, dans la plupart des pays, l'actif net est en fait une dette nette : le taux d'endettement dépasse largement la valeur des actifs en pourcentage du PIB. Or, un haut taux d'endettement accroit les risques sur la stabilité financière des pouvoirs publics et des institutions financières, il pousse les taux d'intérêt à la hausse et complique singulièrement la politique budgétaire. C'est la raison pour laquelle un effort de réduction accélérée du taux d'endettement est en général ajouté au critère de soutenabilité strict. La règle de calcul actuelle du MTO intègre d'ailleurs un tel effort additionnel. À partir de quel niveau le taux d'endettement devient-il problématique et pèse-t-il sur la croissance et les taux d'intérêt ? Il n'y a

pas de réponse claire dans la littérature à ce sujet. Le Traité de Maastricht a introduit un seuil de 60 pourcent du PIB : ce chiffre est devenu une référence à atteindre, en particulier pour les pays de la zone euro. À quel rythme le taux d'endettement doit-il converger vers 60 % ? Une nouvelle fois, il n'y a pas d'analyse économique qui s'impose dans ce domaine, mais le Traité budgétaire exige une réduction de 1/20ème de l'écart entre le taux d'endettement et 60 %. (Actuellement, cette règle s'ajoute comme une contrainte supplémentaire et perturbe la logique sous-jacente du MTO en imposant des ajustements budgétaires pro-cycliques en période de faible inflation.)

La nouvelle formule proposée vise à assurer la viabilité financière et à minimiser les risques pour la stabilité financière en intégrant un effort additionnel de réduction du taux d'endettement pour les États ayant une dette supérieure à 60 % du PIB. Elle ne prend pas position sur le rythme de désendettement. Toutefois, en annexe, une évaluation est faite avec un rythme de 1/20ème de l'écart entre le taux d'endettement et 60 pourcent du PIB.

Au total, dans ce que l'on a appelé la formule de base de calcul du MTO, la prise en compte de l'investissement net permet de diminuer l'objectif de solde budgétaire à moyen terme, tandis que le coût budgétaire du vieillissement et l'effort de réduction accélérée du taux d'endettement exige d'augmenter l'objectif de solde. Cette formule de base additionne quatre éléments : un seuil de stabilisation à long terme de la dette ou de l'actif net, le coût budgétaire du vieillissement, l'investissement public net et la réduction accélérée du taux d'endettement.

Une comparaison des composantes de la formule de base actuelle et de la formule proposée est donnée dans le tableau ci-dessous.

Addition des composantes formant la formule de base du MTO dans la formule actuelle et dans la formule proposée

Composantes	Formule actuelle	Formule proposée
Seuil de stabilisation à long terme de la dette ou de l'actif net en pourcentage du PIB	- 60 % (seuil du taux d'endettement) x taux de croissance moyen du PIB nominal à long terme	+ Actif net x taux de croissance moyen du PIB nominal (2010-2060)
Provisionnement du coût budgétaire du vieillissement	+ 1/3 x coût budgétaire actualisé du vieillissement de la population	+ 1/3 x coût budgétaire actualisé du vieillissement de la population
Réduction accélérée de la dette	-1,24 % + 0,024 x taux d'endettement	Effort supplémentaire en fonction du ratio de la dette et égal à : -1 % - 0,05 x actif net
Investissement public		- Investissement public net de l'amortissement du capital

Appliquée à la situation de la Belgique, *la formule de base* proposée additionne les valeurs des composantes suivantes : seuil de stabilisation de -2,1 %, le provisionnement d'1/3 du coût budgétaire du vieillissement de 2,4 %, la réduction accélérée de 1,9 % du PIB et l'investissement public net de 0,3 % (qui, en fait, est négatif), soit un MTO de 2,5 % du PIB (donc un surplus), alors que la formule actuelle donne un MTO de 1,3 % du PIB ! La grande différence vient de la réduction accélérée de la dette qui dans la formule actuelle n'est que de 1,1 % du PIB. Supposons la même réduction accélérée de la dette et un investissement net nul, on aurait le même résultat qu'actuellement, soit un surplus de 1,3 %. Ce qui change, cependant, c'est que le gouvernement pourrait décider d'augmenter les investissements publics, ce qui autoriserait un MTO moindre à due concurrence. Ainsi, avec un investissement public net

de 1,4 % du PIB, qui permettrait de stabiliser le stock de capital en pourcent du PIB, l'objectif de moyen terme pourrait être ramené à 0 % du PIB.

Pour donner une idée de l'impact de la formule proposée, celle-ci a été appliquée aux autres pays de l'UE sur base des chiffres de 2012 qui conditionnent les MTO actuels (et d'une hypothèse concernant la valeur de l'actif qui n'est pas connue dans les comptes nationaux actuels). Notons que ces chiffres et ces MTO vont être revus dans quelques mois. On peut en conclure, comme pour la Belgique, que la formule proposée est plus ambitieuse que la formule actuelle (équilibre ou surplus), à moins que la réduction accélérée de la dette de la formule actuelle soit utilisée plutôt que la réduction de 1/20ème de l'écart entre le taux d'endettement et 60%, mais qu'elle ouvre aussi la possibilité pour les gouvernements de réduire le MTO en accroissant les investissements.

La règle de calcul du MTO ne se limite pas à la formule de base évoquée jusqu'ici, Si on se calque sur l'approche actuelle, la règle serait le résultat du maximum de trois éléments : (1) le résultat de la formule de base, (2) le minimum benchmark qui veut que le MTO soit supérieur à une valeur pour laquelle dans des circonstances normales, les stabilisateurs peuvent jouer sans que le solde budgétaire ne dépasse la contrainte de 3 % du PIB, et (3) un minimum absolu de -0,5 % du PIB pour les pays de la zone euro et - 1 % pour les autres. Si la nouvelle formule de base ouvre la possibilité d'accroître les investissements, dans de nombreux pays, en particulier les pays de la zone euro, la marge d'accroissement sera très réduite parce que la valeur du MTO butera sur la contrainte du minimum absolu. On peut évidemment se poser la question de la validité théorique du minimum absolu de -0,5 %. Ce minimum absolu a été, en effet, imposé en réponse à la crise des dettes souveraines et pourrait sans doute être revus dans une zone euro apaisée.

Moyennant une analyse plus fine de l'effort de réduction accélérée du taux d'endettement et moyennant une précision sur les actifs ou investissements à prendre en compte, la nouvelle formule proposée est une amélioration significative et structurelle du dispositif du Pacte. Elle est fondée théoriquement et, contrairement à la formule actuelle, le traitement spécifique de l'investissement favorise une distribution plus efficace des objectifs de la politique budgétaire entre les différents niveaux de pouvoir. Le MTO peut, en effet, être directement réparti entre les différents niveaux de pouvoirs sans devoir prévoir d'exception et de compensation entre les pouvoirs investisseurs et ceux qui ne le sont pas, ce qui est toujours politiquement compliqué. De plus, les objectifs à assigner aux organismes publics s'expriment en termes de variations de leur actif net, ce qui est plus cohérent avec les principes de gestion des entreprises.

La nouvelle formule ne demande pas de révision des traités. Néanmoins, les contraintes de minimum absolu prévues dans le Traité sur la Stabilité, la Coordination et la Gouvernance pourraient être progressivement élargies si l'on veut, dans la logique de la formule proposée, promouvoir des investissements publics suffisants pour simplement maintenir le rapport du capital public au PIB.

1. Should we reconsider the place of public investments in the SGP?

The long economic crisis that the EU has been facing since 2008 has led some key players to suggest changing economic policy and, in particular, to foster public investment financed by borrowing – and this in the context of high public debt. According to the IMF (WEO, October 2014), "infrastructure is an indispensable input in an economy's production"; it is very often a necessary, albeit not sufficient, condition for economic growth. "The stock of public capital has declined significantly as a share of output[1] over the past three decades across advanced, emerging and developing economies." Yet investment in infrastructure raises output in the short-term by stimulating aggregate demand and in the long-term by increasing aggregate supply. According to the IMF, an additional investment of 1% of GDP increases output by 0.4% in the short term and by 1.5% in the medium term. This is particularly true when production capacities are largely underused and when interest rates are low. The IMF concludes that the time has come to boost public investment in countries where conditions allow this, while pointing out that investment choices and management must be effective if we want such a policy change to be beneficial. But these recommendations are difficult to implement in Europe under the rules of the Stability and Growth Pact. Flexibility mechanisms have been introduced but they only partially address the problem.

Improving the functioning of the Stability and Growth Pact is back on the agenda, especially since the decline in public investment resulting from fiscal adjustment processes brought about by the current Pact rules is seen as a brake on future economic growth. When discussions took place about revising the Pact in 2005, several major authors (Blanchard et al., February 2004) suggested reverting to a golden rule under which the deficit would exclude investment expenditure, net of amortization. The Pact was revised in 2005 but this proposal was not adopted. However, the rules were clarified and significantly improved, especially by giving priority to the concept of (cyclically adjusted) structural deficit. At present, the golden rule is once more on the agenda of policy makers and economists[2].

Three approaches can justify the use of the golden rule. The economic approach gives priority to public spending that is likely to stimulate, or preserve in the case of fiscal consolidation, one of the driving forces of potential growth (long-term growth). The social approach aims at ensuring intergenerational equity: public investment benefits future generations, it is therefore fair to let them bear their share of the financing burden. Finally, the financial approach considers investment as a value (potentially resale value) that serves as collateral – a mortgage – for the debt incurred to finance it. Each of these approaches has its own logic and would tend to enlarge or reduce the scope of investment expenditure that has to be taken into account in a golden rule. Thus, an economic or social approach would include R&D or education expenditure, while a purely financial approach would include loans and equity investment in private companies[3]. As one might guess, these issues may have some ideological connotations which should be taken into consideration if these rules are eventually to be adopted by policymakers.

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1 See annex for a small set of indicators.

2 See, for instance, P. Maystadt (2012) and most recently, A. Truger, 2015.

3 The credits granted and shares are not booked in the net financing requirement which is addressed in the Maastricht Treaty, but of course they weight on the debt (as defined in the Maastricht Treaty) that finances them.

These three approaches which justify a golden rule are all structural in nature. Yet the reason that is usually put forward for them is cyclical. Under the golden rule, investments are not subject to the constraint of the budgetary balance: accordingly, they can be used as an instrument of macroeconomic stabilization of economic cycles. This fourth approach, or this deviation from the underlying concept, has been the subject of much criticism in the literature. The main criticism is practical: it takes many years to design and decide on efficient investments. As a result of such inertia, investments should part of medium-term programmes rather than short-term political reactions. Indeed, their late implementation could have a pro-cyclical impact. Following this logic, investments should be immune to fiscal consolidation carried out after a crisis. If this cyclical approach can be avoided, it would be advisable to consider including the golden rule in the rules of the Stability and Growth Pact and, in particular, in the rule which defines the medium-term structural budgetary position.

2. A new formula to set the medium-term objective for the budgetary position

The current logic of the Pact's rules is the following: regardless of the economic cycle (or, in other words, of temporary demand shocks), each country sets a (structural, cyclically adjusted, net of one-off and temporary measures) budgetary position target: the Medium-Term Objective (MTO). This objective is set with a view to ensuring the sustainability of public finances, with the constraint that the deficit should not exceed 3% of GDP under normal cyclical conditions. Moreover, it takes into account the initial objective of the Maastricht Treaty, according to which the debt ratio should decline at a satisfactory pace towards the ceiling of 60% of GDP. To this end, the MTO is guided by a minimal rule founded on three elements: a baseline given by a level of deficit consistent with a debt ratio of 60% of GDP, an additional effort proportional to the gap between the country's debt ratio and the ratio of 60% and, finally, provisioning for a third of the long-term budgetary cost of ageing.

This rule is fundamental and applies at national level but, depending on the different legislations and internal processes, it will determine the development and organization of public finance management at the different levels of government - central, regional, local. Thus, for example, if the MTO is budget balance, balance will be more often required for all entities of the public sector[4]. Consequently, entities that invest will have to finance their investments from the year's revenues. This "pay-as-you-go" type of financing can result in under-investment (Blanchard, Poterba, etc.), which is harmful to long-term growth.

The rationale of the rule setting the current MTO is based on public debt sustainability[5]. The idea is that, in the long term, the discounted sum of primary surpluses, under current policies and existing legislation, is higher than or equal to the public debt (concepts in % of GDP). Consequently, it does not take into account the asset value of some expenditures and, in particular, of investments. The proposal developed in this paper aims at broadening the rationale determining the MTO to sustainability of the net general government assets: public sector assets value minus public debt, instead of debt alone.

However, most of the countries have a debt which exceeds the value of their assets. Beyond the very broad criterion of sustainability, the level of debt ratio may create a liquidity or default problem, resulting in debt rescheduling, renegotiation of certain loans or even a declaration of bankruptcy. Even if a country meets the abovementioned sustainability criterion, an unexpected economic shock can result in continued downward pressure on government revenues, increased primary expenditure or interest expenses. In particular, if the shock widens the gap between the GDP growth rate and the interest rate, a snowball effect will be created, the dynamics and size of which will depend on the starting debt ratio[6].

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4 In the European system of accounts (ESA 2010), the public sector includes all the resident institutional units of the national economy which are controlled by the public administrations. Within the public sector, a distinctions is made between the sector of the public administration and that of public companies. In this paper, the words "public sector", "public administration" and "government" all refer to the sector of public administrations.

5 See, in particular: European Commission, "Sustainability Report 2009".

6 If the gap between the interest rate and growth rate increases by 1%, the primary surplus will have to be adjusted by 1% of GDP when the debt ratio reaches 100% and by 0.4% of GDP when the debt ratio reaches 40%.

The risk of default depends collectively on three elements:

– The size of the adjustment: given the debt dynamics – or snowball effect: the longer the government waits to take measures, the higher the starting debt ratio and the larger the adjustment.

– The impact of the adjustment on growth and, by extension, on the debt ratio itself: under certain circumstances, themselves depending on the multiplier and on the elasticity of government expenditure and revenue with respect to GDP, the debt ratio could increase when the government decides to consolidate the budget[7].

– The political and technical capacity of the government to carry out the adjustment: political fragility or a difficult political context makes the government powerless.

The risk premium demanded by lenders increases with the probability of default risk. It follows that the increased interest rate amplifies the snowball effect and the size of the adjustment that has to be made[8]. Besides the condition of solvency, two elements have to be taken into account together: the speed of adjustment and the debt level, since the speed is conditioned by the debt level.

In the light of these considerations, the debt ratio should - by way of precaution - be reduced to below a threshold that decreases the default risk and the risk premium; more or less rapidly, depending on the circumstances. The MTO can be temporarily defined as the level of balance which allows the debt ratio threshold to be reached within the proposed time frame. In this respect, a key issue is how to define the debt ratio threshold and time.

2.1. Public finance sustainability based on net assets and not only on debt

The evolution of the assets depends on the accumulation of annual investments (the notion of investment will be defined later, we focus here on the rationale behind the MTO setting) and on the capital depreciation, based on the usual formula: $K_t = I_t + (1 - \delta).K_{t-1}$ with *I* being the investments, *K* the gross public sector capital stock and δ the depreciation rate. The formula, expressed as a percentage of GDP, is: $k_t = gi_t + \frac{1-\delta}{1+y}.k_{t-1}$, with *gi* the investment rate and *y* the GDP growth rate. Likewise, the debt ratio[9] evolves according to the equation: $b_t = -sp_t + \frac{1+i}{1+y}.b_{t-1}$

with *b* being the debt ratio as a percentage of GDP, *sp* the primary surplus as a percentage of GDP and *i* the implicit interest rate on the public debt. The dynamic equation of net assets, that is to say the assets minus the debt as a percentage of GDP[10], is:

7 The concept of "self-defeating consolidation" is used in recent literature. Any budgetary adjustment that exceeds a certain debt ratio, which is equal to the opposite of the multiplier minus the revenue elasticity to GDP, will lead to an increased debt ratio in the short term.

8 The default risk can be assessed more realistically by the markets when the primary surplus is largely positive. In this case, if the government defaults, it is no longer compelled to call on the market for funding.

9 To simplify things, stock-flow transactions (in particular, credit granting and equity participation) are not taken into account in the equations.

10 Introducing a rate of return of the public investments would be a theoretical exercise here. In practice, the public investment return is to be found in various components of public accounts: property income, taxes, greater productivity of civil servants, rent, etc. In the rationale below, the return rate is not taken into account but we assume the forecasted primary surplus includes the investment return.

$$k_t - b_t = gi_t - \frac{\delta + i}{1 + y}.k_{t-1} + sp_t + \frac{1 + i}{1 + y}.(k_{t-1} - b_{t-1})$$

or:

$$k_t - b_t = spc_t + \frac{1 + i}{1 + y}.(k_{t-1} - b_{t-1})$$

with $spc_t = sp_t + gi_t - \frac{\delta+i}{1+y}.k_{t-1}$ the corrected primary surplus (current primary surplus), i.e., excluding investment expenses net of amortization and net of financing costs. According to the dynamic equation of net assets, variations in investment (*gi*) financed by borrowing do not impact the net assets (or, in other words, the net debt).

Step by step, the evolution of the net assets can be calculated (to simplify the writing, *t* and not *t-1* is the starting point) as follows:

$$k_{t+N} - b_{t+N} = \sum_{j}^{N} spc_{t+j}.\left(\frac{1 + i}{1 + y}\right)^{N-j} + \left(\frac{1 + i}{1 + y}\right)^{N}.(k_t - b_t)$$

or

$$(k_{t+N} - b_{t+N}).\left(\frac{1 + i}{1 + y}\right)^{-N} = \sum_{j}^{N} spc_{t+j}.\left(\frac{1 + i}{1 + y}\right)^{-j} + (k_t - b_t)$$

Going towards the limit $N \to \infty$, the solvency requirement implies that net assets are positive or equal to zero :

$$\lim_{N\to\infty}(k_{t+N} - b_{t+N}).\left(\frac{1 + i}{1 + y}\right)^{-N} \geq 0$$

Assuming that *spc* is constant over time, it follows that the current primary surplus required for solvency is: $spc \quad \geq -\frac{i-y}{1+y}.(k_t - b_t)$

The corresponding deficit *(d)* is:

$$d_t \leq -\frac{y}{1 + y}.(k_t - b_t) + gi_t - \frac{\delta}{1 + y}.k_t$$

In other words, a fiscal policy which was always restricted to financing net public investment by issuing debt, would imply $k = b$ and a deficit equal to the net investments

If the current primary surplus is not constant, the equation is written as follows:

$$-\sum_{j}^{\infty}(spc_{t+j} - spc_{t+1}).\left(\frac{1 + i}{1 + y}\right)^{-j} - \sum_{j}^{\infty} spc_{t+1}.\left(\frac{1 + i}{1 + y}\right)^{-j} \leq (k_t - b_t)$$

This implies that the required current primary surplus is a result of:

$$spc_{t+1} \geq -\frac{i-y}{1+y}.(k_t - b_t - b'_t)$$

with $b'_t = -\sum_j^{\infty}(spc_{t+j} - spc_{t+1}).\left(\frac{1+i}{1+y}\right)^{-j}$ is the implicit debt ratio resulting from the reduction of the future primary balances mainly due to the increase of the expenditures linked to the ageing population.

The corresponding deficit is therefore:

$$d_{t+1} \leq -\frac{y}{1+y}.(k_t - b_t) + gi_t - \frac{\delta}{1+y}.k_t - \frac{i-y}{1+y}.b'_t$$

This equation is an extended version of the golden rule where the deficit is equal to the net investment less the cost of ageing and less the impact of GDP growth on the denominator of the net assets.

Assuming an equal sign in the preceding formula, the evolution of the net assets can be deducted. Respecting the sustainability condition should imply that the change in net assets is equal to the provisioning of the cost of ageing:

$$\Delta k_{t+1} - \Delta b_{t+1} = \frac{i-y}{1+y}.b'_t$$

The increase in net assets can be obtained either through an increase in assets, for example, through the accumulation of physical or financial assets like contributions to an ageing fund[11], or through debt reduction.

Nevertheless, this condition, if it imposes an equal sign in the above-mentioned formula, is relatively weak. For instance, if the cost of ageing is nil, it implies that the net assets – which can be largely negative at time t – will simply stay constant as a percentage of GDP. If the debt ratio is very high, the risk of default will increase. At a certain threshold the risk becomes detrimental to growth. This is why a strict inequality sign is required by adding an accelerated debt reduction term to the usual sustainability condition. This term is although difficult to design and calibrate. Several mechanisms are possible, one of which would impose that the debt is subject to a reduction requirement that speeds up in line with the gap between the observed debt ratio and a maximum debt ratio (b^*). [As in the present MTO formula, the 60% maximum debt ratio provided for in the Treaties is chosen as the level of debt which contains the risk of default within prudent bounds.] The evolution of the net asset becomes:

$$\Delta k_{t+1} - \Delta b_{t+1} = \frac{i-y}{1+y}.b'_t + \lambda.(b_t - b^*)$$

with $0 \leq \lambda \leq 1$, if $b_t \geq b^*$, otherwise $\lambda = 0$

[11] If the fund for ageing makes financial investments, asset k must include grants of credit and equity investments. Belgium has created a fund for ageing that is invested in government bonds. The fund is thus part of the consolidated government debt.

This rule can then be translated in more restrictive values for primary surplus and deficit:

$$spc_{t+1} = \lambda.(b_t - b^*) - \frac{i-y}{1+y}.(k_t - b_t - b'_t)$$

$$d_{t+1} = -\lambda.(b_t - b^*) - \frac{y}{1+y}.(k_t - b_t) + gi_t - \frac{\delta}{1+y}.k_t - \frac{i-y}{1+y}.b'_t$$

If the MTO is set using this equation, which actually calculates the deficit ($MTO = -d_{t+1}$), concerns about the following elements are all simultaneously taken into account: accelerated debt reduction, sustainability of net assets, golden rule[12], provision of budgetary cost of ageing (partial provisioning if only one third of *b'* is taken into account as in the current rule).

2.2. Integrating the objective of accelerated reduction in the gap between the debt ratio and the 60% ceiling

As mentioned above, the main reason to introduce an accelerated debt reduction term in the formula is related to the default risk, which would be an increasing function of the debt ratio. At what debt threshold would the risk be sufficiently high to impose a significant risk premium and jeopardise the growth path of a country? The literature mentions a debt ratio ceiling beyond which the default risk increases[13]; nevertheless, assessing the value of such a ceiling is rather imprecise. Although it is imprecise in economic theory, in EU legislation this value is very precise. Following the Maastricht Treaty, a ceiling of 60% of GDP is now the rule for EU countries. However, after the crisis of 2008, few countries still have a debt ratio lower than 60%. If, originally, an MTO close to balance was considered sufficient to result progressively in a debt ratio below 60%, after the sovereign debt crisis, for the heavily indebted countries that are coming out of an excessive deficit procedure, the convergence is judged to be too slow. An effort to reduce annually the gap between the debt ratio and the ceiling of 60% by 1/20th is now required in addition to the current MTO formula, which already includes a mechanism for the accelerated reduction of the debt ratio for the countries whose debt exceeds 60% of GDP.

The constraint of reducing the gap between the debt ratio and the ceiling of 60% by 1/20th can be expressed as follows:

$$b_{t+1} - 60\% \leq 0.95.(b_t - 60\%) \text{ or } \Delta b \leq -0.05.(b - 0.6)$$

12 Note that the strict golden rule, under which the deficit is equal to the net investment less the provisioning for the budgetary cost of aging, implies that the net asset converges towards zero:
If

$$spc_{t+1} + \frac{i}{1+y}.(k_t - b_t) = 0$$

$$\Delta k_{t+1} - \Delta b_{t+1} = -\frac{y}{1+y}.(k_t - b_t)$$

then the net asset tends towards zero for infinity at a pace that depends on the rate of growth of GDP.

13 See, in particular: BI H., "Sovereign Default Risk Premia, Fiscal Limits and Fiscal Policy", Bank of Canada, Working Paper/Document de travail 2011-10, and the controversy around the debt ceiling mentioned in: Reinhart C. M. and K. S. Rogoff "Growth in a time of debt". AEA, December 2009

This constraint implies that the budgetary balance (deficit) develops according to the formula:

$$d_{t+1} \leq 3\% - (0.05 - \frac{y}{1+y}).b_t$$

On the introduction of this additional constraint, the following criticisms can be made:

– The higher the nominal growth, the higher the authorized deficit will be. The constraint has obvious pro-cyclical characteristics.

– The higher the debt ratio, the smaller the permitted deficit, provided that the nominal growth rate is lower than 5%. But the reverse holds true when the nominal growth exceeds 5%: a high debt ratio allows a higher deficit.

– Finally, the growth considered here is the nominal growth, which includes inflation. A reduction in inflation and, a fortiori, deflation reduces the deficit that is allowed. Conversely, an increase in inflation leads to an increase in the deficit that is allowed. This again leads to pro-cyclical policies.

This constraint is clearly not suited for the coordination of the short-term fiscal policies in the countries of the euro area.

Can this rule inspire fiscal policy in the medium term?

Firstly, the pro-cyclical characteristics of the constraint shall not play since the constraint would be applied to the medium-term (structural) objective of government balance (*d**), and the GDP growth rate would be the potential growth rate and not the actual growth. As for the increase in the GDP deflator, it would be based on the medium-term target set by the ECB. In this context, the higher the potential growth, the higher the targeted deficit, which is perfectly allowable[14].

Secondly, the parameter values of the term requiring an accelerated debt reduction in the extended sustainability condition can be based on the abovementioned constraint, according to which the gap between the debt ratio and the 60% threshold should decrease by 1/20 each year. In this case, the threshold (b^*) would be 60% and the lambda parameter would equal 0.05. Alternatively, the current MTO formula contains a term for accelerated debt reduction of the same nature that could be considered. In this case, lambda is equal to 0.024

Thirdly, in order to be consistent with the approach which is centred on the net assets, the accelerated debt reduction term can be transformed in the following manner: $-\lambda.(b-0.6) = -\lambda.(b-k) - \lambda.(k-0.6)$. The 60% threshold is a medium-/long-term objective that should be compared with the ratio of public capital to GDP [15]. As with the public capital/output ratio, it is around 40%, which is the reference set in the British golden rule. Using these figures, the accelerated debt reduction term can be made concrete as follows: $-\lambda.(b-0.6) = -0.05.(b-k) - \lambda.(0.4-0.6) = -0.05.[(b-k)-0.2] = -0.05.(b-k) + 0.01$.

[14] However, the 3% constraint set in the Maastricht Treaty is an absolute constraint. As we just mentioned it, if the sum of the potential growth and of the inflation target is above 5%, the medium-term deficit target could go beyond 3%.

[15] In the dynamic equation $\Delta k = gi - \left(\frac{\delta+y}{1+y}\right).k = 0$, the stock of capital as a percentage of GDP at the steady state is constant and is calculated as follows: $k = gi.\left(\frac{1+y}{\delta+y}\right)$

2.3. Proposal for improving the MTO formula

The new MTO formula is obtained by combining the new formula for the medium-term budget balance objective with the formula for the accelerated debt reduction.

The new MTO formula is:

$$-d_{t+1} = -\left[\lambda - \frac{y}{1+y}\right].(k_t - b_t) - (\lambda.0.6) - \left[gi_t - \frac{\delta}{1+y}.k_t\right] + \text{⅓}.\left[\frac{i-y}{1+y}.b'_t\right]$$

With lambda being either 0.05 or 0.024 like in the current formula. In the text which follows, we shall envisage the formula with the more constraining lambda:

[net assets x average growth rate of nominal GDP (2010-2060)] + [additional efforts depending on the debt ratio and equal to: -1% - 0.05 x net assets] – [net public investments[16]] + [⅓ x updated budgetary cost of ageing (AWG)]

This formula must be compared with the current one:

[- 60% x average growth rate of nominal GDP (2010-2060)] + [additional effort depending on the debt ratio and equal to: -1.24% + 0.024 x debt ratio] + [⅓ x updated budgetary cost of ageing (AWG)]

A quantitative illustration of the new formula for different values of the debt ratio is presented in the table below, as well as a comparison with the current rule. The assumptions illustrated in the exercise concerning the growth, the budgetary cost of ageing and the implicit interest rate on debt are close to the "average" of the countries of the euro area. Three assumed debt ratios are presented: 50%, 100% and 150%. The assets are set at 40% of GDP. For each of these hypotheses, the table illustrates two scenarios: scenario A, with net investments reaching 0.7% of GDP, and scenario B, with net investments of 1.5% of GDP. With regard to net investments, the figure of 0.7% of GDP is the 1995-2007 average for the European countries and euro area countries drawn from A. Truger, 2015, Table 2, p. 27. Note that the Truger estimate for the euro area in 2015 is -0.1% of GDP.

We can see that in the scenario where net investments are set to 0.7%, the MTO calculated according the current and the new formulas are very close. Any change in the planned net investments modifies the MTO in proportion, which is precisely the purpose of the proposed approach. Nevertheless, the absolute minimum set in the Treaty on Stability, Coordination and Governance (TSCG) constrains the deficit to 0.5% of GDP and accordingly the investment margin.

Applied to the situation in Belgium, the proposed basic formula adds the values of the following components: the stabilization threshold -2.1%, the provisioning of one third of the budgetary cost of aging by 2.4%, the accelerated debt reduction by 1.9% of GDP and the net public investment by 0.3% (the net investment, in fact, is negative) or an MTO of 2.5% of GDP (i.e. a surplus), while the current formula gives an MTO of 1.3% of GDP! The big difference comes from the accelerated reduction of debt which

[16] We assume that the rate of return of public investments as such is not taken into account. It could possibly be taken into account in the assessment by the Ageing Working Group of the average growth of the budgetary cost of ageing.

in the current formula is only 1.1% of GDP. Suppose the same accelerated debt reduction as in the current formula and zero net investment applied to the new formula, we would have the same MTO: a surplus of 1.3%. What is changing, however, is that the government may decide to increase public investment, which would allow MTO to a lesser amount. Thus, with a level of net public investment of 1.4% of GDP, which would stabilize the capital stock in percent of GDP, the medium-term objective could be reduced to 0% of GDP.

To give an idea of the impact of the proposed formula, it was applied to the other EU countries on the basis of 2012 figures that determine the current MTO (and an assumption about the value of assets which is not known in the current national accounts). Note that these figures and MTO are given in an annex since they will be significantly reviewed downward in a few months. This suggests, as in Belgium, that the new formula is much more ambitious than the current formula (surplus) for countries with a high level of debt (and certainly too ambitious to be realistic for countries which cumulate a high debt and a high cost of ageing), unless the Accelerated Reduction of the current formula of debt is used instead of the reduction of 1/20th the difference between the debt ratio to 60%, but on another side it also opens the possibility for governments to increase investment.

Table 2: Comparison of the current formula for the minimum MTO with the proposed formula

		Scenarios A 1/			Scenarios B 2/		
		1	2	3	1	2	3
Elements of the formula							
Debt-assets stabilising balance							
MTO	-y/(1+y). 60%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%	-1.6%
New formula	y/(1+y). (k-b)	-0.3%	-1.6%	-3.0%	-0.3%	-1.6%	-3.0%
Supplementary debt reduction							
MTO	-1.24%+0.024.b	0.0%	1.2%	2.4%	0.0%	1.2%	2.4%
New formula	-Lambda.(k-b)-x	-0.5%	2.0%	4.5%	-0.5%	2.0%	4.5%
Cost of ageing							
MTO	0.33.(i-y)/(1+y).b'	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
New formula	0.33.(i-y)/(1+y).b'	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Net investments							
MTO		-	-	-	-	-	-
New formula	-(gi+delta/(1+y).k)	-0.7%	-0.7%	-0.7%	-1.5%	-1.5%	-1.5%
Budget balance objective	Total						
MTO		-1.0%	0.2%	1.4%	-1.0%	0.2%	1.4%
New formula		-0.8%	0.3%	1.5%	-1.6%	-0.5%	0.7%
Primary surplus							
MTO		-0.7%	2.3%	5.2%	-0.7%	2.3%	5.2%
New formula		-0.4%	2.4%	5.3%	-1.2%	1.6%	4.5%
Assumptions							
Growth	y	2.8%	2.8%	2.8%	2.8%	2.8%	2.8%
Implicit interest rate	i	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Public debt in % of GDP	b	50.0%	100.0%	150.0%	50.0%	100.0%	150.0%
Assets in % of GDP	k	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Implicit liabilities	b'	300.0%	300.0%	300.0%	300.0%	300.0%	300.0%
Cost of ageing	CoA=(i-y)/(1+y). B'	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Net investments in % of GDP	-(gi+delta/(1+y).k)	0.7%	0.7%	0.7%	1.5%	1.5%	1.5%
Speed of adjustment	lambda	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Constant of adjustment	x	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%

1. Net investments at 0.7 of GDP.
2. Net investments at 1.5 of GDP.

3. Should the organisation of the Stability and Growth Pact be adapted?

3.1. Working of the new rule

The adjustment of the rule used to calculate the MTO does not change the general functioning of the Stability Pact. The European Semester requires the Member States to set up a Stability and Growth Programme where they determine their MTO and the structural balance path to reach this MTO. As regards this structural balance path, automatic stabilisers allow fluctuations of the real balance within the available margins with respect to the maximum deficit limit of 3% of GDP. The new formula to calculate the minimum MTO would be used, which means that the MTO would no longer be a single objective, but rather a path of annual objectives: the MTO path[17]. This path is determined, in particular, by the investment programme, which becomes one of the pillars of the Stability Programme and of the Council country specific recommendations. If the structural balance excluding net investment expenditure planned for the current year and the following years departs, at unchanged policy, from the MTO path excluding net investment expenditure, an adjustment process of this structural balance will have to be planned in the Stability Programme so as to make the structural balance converge towards the MTO path. The adjustment towards the MTO path would follow the interpretative rules set out by the Commission in its communication of January 2015 to the European Parliament[18].

Let us take an example. Let us assume that the MTO excluding net investment expenditure is estimated at 0%. Let there be a public investment programme that, after deduction of amortization, amounts to 0.7% the first year, 0.9% the second year and 1.2% the third year. The path given by the basic formula of the MTO would then be -0.7%, -0.9 and -1.2% of GDP. If we assume that the current structural balance excluding net investments is -1% of GDP instead of zero, this means that an adjustment of the current structural balance excluding net investments should be carried out for 1% of GDP. As is the case currently, a staggering of the effort could be required, for example 0.5% of GDP per year with an additional effort for the countries that are in an excessive deficit procedure.

If we take the golden rule into account, is the maximum deficit constraint of 3% of GDP still relevant?

In order not to exceed the 3% limit, the Commission calculates a "minimum benchmark", which is the maximum structural deficit level at which the automatic stabilisers in a "normal" cycle do not take the deficit beyond the 3% limit. This minimum benchmark is of the order of -1.8% for most countries. Some countries, in fact the Scandinavian countries where the automatic stabilisers play a greater role, show higher values.

[17] By way of illustration, the new formula to calculate the minimum MTO applied to the data for the calculation of the MTO with the current formula is presented in annex.

[18] European Commission, "Making the best use of the Flexibility within the existing Rules of the Stability and Growth Pact", Communication from the Commission to the Parliament, January 2015. In particular, Annex 2: Matrix for specifying the annual fiscal adjustment towards the Medium-Term Objective (MTO) under the preventive arm of the Pact.

Let us assume that a country is in an exceptional situation in comparison with the current situation of most countries: the assets and the debt are in balance and the budgetary cost of ageing is nil. The calculation of the MTO is limited to the net investments component. Theoretically, net investments should not exceed the minimum benchmark. And yet we see that on average over the 1995-2007 period, net investments seldom exceed 1.8% of GDP[19]. Only a few countries have experienced higher levels without exceeding 3%: Estonia, Greece, Cyprus, Luxembourg, Portugal, and Rumania. Some of these countries can afford it, such as Luxembourg, while others have faced management difficulties or need to catch up with the other economies and have benefited from special financing. One can conclude that, in the vast majority of cases, net investments will not cause the norm to be exceeded, but that circumstances specific to certain countries or exceptional circumstances could lead to the excess being allowed to exceed the minimum benchmark. This case is described in the above-mentioned interpretative Communication of the European Parliament [20] under "Investment clause". But for the time being, the vast majority of countries will have to set a deficit target that is substantially lower than net investments (lower than the golden rule) because of their indebtedness and the partial prefinancing of the budgetary cost of ageing.

The Treaty on Stability, Coordination and Governance (TSCG) has strengthened budgetary discipline by imposing a maximum limit of 0.5% of GDP to the MTO, i.e. to the structural deficit. This limit can be set at 1% of GDP when the debt ratio is markedly lower than 60% of GDP and sustainability risks are low. Does the new MTO formula contradict these limits? The answer is obviously positive if net investments themselves are subject to no limit.

The MTO definition used in 2012 takes these constraints into account. The MTO is calculated as the maximum of the following components: the minimum benchmark, an absolute minimum of -1% (or -0.5% since the TSCG) and the calculation formula. This maximum can be calculated with the new formula. In the table in annex, the MTO calculation has been applied to the 2012 data, which served as a basis to determine the current MTOs. We can see that the absolute minimum of -0.5% of the TSCG would be very restrictive for a significant number of countries (IE, ES, FR, IT, AT, PT) and that if this constraint is released, for example by returning to a maximum of -1% such as in 2012, with the new formula, public investments would considerably increase.

The table in annex shows that the MTO (with the constraint of the minimum benchmark and of an absolute minimum of -1%) is not very different from the present MTO, provided that the net investments taken into account have a more balanced level. For example, they could be considered in such a way that the public capital stock grows at the same pace as GDP, which is far from being the case right now, and leads to a downward trend of the public capital - GDP ratio. Nevertheless, for a comparable MTO level, there is a major difference in expenditure composition because this MTO level can only be achieved because public investments are higher than at present (which can also be seen in the table). For most countries, this would represent an important policy change ranging from 1 to 2% of GDP of additional investments and also a rise, often of the same magnitude, in the current balance, excluding net investments. Consequently, the new rule implies a change to a more dynamic policy, one that is

[19] See in annex the figures for the average net investments for each European country over the 1995-2007 period, as well as an estimate for 2015 (source: Truger).

[20] European Commission, "Making the best use of the Flexibility within the existing Rules of the Stability and Growth Pact", Communication from the Commission to the Parliament, January 2015.

more focused on long-term growth, because public investments are not only investments in buildings, but also investments in infrastructure and R&D since the revision of the ESA2010 (see graphs in annex).

3.2. Which public expenditure should be taken into account among the investments subject to the golden rule?

The three approaches justifying the use of a golden rule have been touched on above. Choosing one approach or another is not neutral as concerns the determination of public investments to be taken into account in the golden rule. According to the economic and social approaches, government investments recorded in the national accounts are eligible for inclusion in the golden rule insofar as they drive growth. A. Truger reviews the literature, which tends to show a positive impact of public investments on potential growth. The investments particularly concerned are investments in public administration, education and transport. As Truger points out, investments in defence are more questionable. In the literature, other types of expenditure are sometimes mentioned, such as current expenditure on education, healthcare and R&D. Usually, the inclusion of these types of expenditure is rejected because it would leave the way open to many drift risks[21]. Therefore, as a first step, we would recommend to stick to the investment expenditure in the national accounts[22], which includes investment expenditure (but not current expenditure) in education, R&D and retirement homes. These needs must become a priority in the future.

The financial approach, closer to the sustainability concept at the basis of the MTO calculation, will focus on the asset value, the market value of government investments. To give an example, if public authorities invest in office buildings, these will have a market value that will be the compensation of the debt incurred to buy or build them. Let us take another example. The construction of a highway may lead to it being leased to the private sector, which will operate it through a toll system; but depending on the terms of the contract, the investment will be counted as a public investment. Not all public investments included in the national accounts are likely to be handed over to private investors or, in any case, without a substantial discount. On the other hand, the financial approach would tend to include in public investments grants of credit and acquisitions of shares by the public sector in the private sector. Therefore, when public authorities bail out a bank, the equity they acquire may have little value at the time of acquisition, but when the crisis is avoided, the share value on the stock exchange increases and improves the net assets of the public sector.

The gradual deployment of the new national accounts methodology under the acronym ESA 2010 has led to the broadening of the scope of the public sector to a series of organisations. The criteria used to

21 One quotation among others on this subject: "The adoption of a golden rule has been proposed several times in the past. The main criticism raised against its implementation is that it would yield over-investment in physical capital to the detriment of other items at least as "productive," like spending on education. In addition, a grey zone in the definition of public investment would lead to creative accounting by governments, who would have the incentive to classify as investment expenditures not strongly linked to the creation of future productive capacity." Dervis K., Saraceno F. (2014): "An Investment New Deal for Europe, Brookings up front, 3 September.

22 Among these investment expenditures, we also find those relating to education. They are above all dedicated to buildings, but with the development of ICT, investment expenditure in software, applications and assistance for the learning process will undoubtedly have to grow.

consider an organisation as being part of the public sector have been clarified and strengthened[23]. It is not so much the deficit that has been impacted but the consolidated debt, since the debt of these organisations (as far as it is not the compensation of an investment in public debt) increases the public debt in the sense of Maastricht. In our approach, not only would the debt be consolidated, but also all of the assets of these organisations. Moreover, we note that the integration of new organisations in the public sector resulting from the new ESA 2010 methodology is taking place only gradually in Belgium and elsewhere since the statistical office – the National Accounts Institute in Belgium - does not always have a comprehensive list of all the public units likely to be classified in the sector of public administration.

Clearly, significant progress has been made in the statistical information about the public sector through the national accounts. But this is not sufficient as these accounts do not presently incorporate full balance sheet accounts[24]. It may be that ignorance leads decision-makers to focus on one aspect of the balance sheet: the debt, forgetting that this debt has a compensation. This task is not insurmountable but it will take time. Meanwhile, interim solutions can be found and implemented. One option is to include only the net investments of the national accounts and the net capital stock as asset value. Added to this asset value would be the estimated value of the credits granted and the State's shares , weighted if necessary by the insolvency risk of these credits and shares (this weighting is done for the banks, so why not for public authorities).

Eurostat monitors closely the statistical institutes of Member States. These, following the entry into force of the Six Pack, are required to be independent institutions. Eurostat and the statistical institutes are perfectly able to develop the methodology to determine the public spending that are subject to the golden rule.

3.3. How can the implementation of the MTO be coordinated at the different levels of governance?

The implementation of the current MTO formula leads to a structural budget balance in most countries. On the whole, a target close to balance means that investments must be almost entirely funded by current revenues. This target is rather new. Even Germany has usually experienced a fairly stable structural deficit of around 1% of GDP in the past. Moreover, the new national accounts methodology broadens the scope of the public sector: a number of organisations previously considered as "companies" have tilted to the public sector, which has marginally increased the overall deficit but above all increased the public debt. Consequently, the general rule of budget balance has been applied to them and has changed their management style, since investments in a year must now be funded on the basis of their returns in that year, which is entirely impossible. In Belgium, it is feared that hospitals or rest homes will be included in the public sector and undergo the same constraint. This explains the call to revise the accounting rules, while the root of the problem lies in the public sector target and the way in which the target is distributed among the entities making up the public sector. Indeed, it is usually politically easier and

[23] The general government sector (S.13) includes all institutional units that are non-market producers, whose output is intended for individual and collective consumption, and mainly financed by compulsory payments made by units belonging to other sectors, and institutional units principally engaged in the redistribution of national income and wealth.

[24] A partial balance sheet (non-financial wealth) of the public administrations will be published by the Belgian National Accounts Institute for the first time in October 2015. Additional items should be provided in 2017.

even inevitable to impose the target imposed from above (at European level), namely the balanced budget, onto all levels of governance and all organisations making up the public sector.

Of course, nothing in the Pact requires that. It is quite possible, at the level of a country, to allow a deficit for the entities that invest and to allow in compensation a surplus for entities supporting the budgetary cost of ageing, while having an overall balance. However, in the case of levels of governance or organizations that are totally independent from the central government, such a distribution could be politically very complex to achieve. In practice, it would be advisable to provide a distribution rule where the golden rule would play its role, while it plays no role at the level of the entire public sector.

The organisation of the budget policy in Belgium is one example of this issue. The bulk of the debt and of the budgetary cost of ageing is to be attributed to entity I, which is made up of the Federal government and social security (a sustainability gap of 5.1% of GDP and -0.1% for entity II), whereas the bulk of the investment is borne by entity II, which consists of the regions and the local authorities (1.9% of GDP out of a total of 2.2%). With the current formula for calculating the MTO, the accelerated term for reducing the debt and the budgetary cost of ageing should be attributed to entity I, while the term for stabilising the debt ratio to its 60% level would be distributed in proportion to the debt of each entity. Since the debt of the different levels of governance is negligible compared to that of the federal government, the MTO will essentially be calculated for the federal government (a surplus of 0.75% of GDP), while the other entities will set for themselves an MTO close to balance. We see that the current rule is not really suitable for implementing a dynamic investment policy.

The main advantage of the new formula is that it is more easily distributed among the entities making up the public sector. First, as concerns public organisations, they have a balance sheet and thus it is fairly easy to calculate the net assets which are equal to equity. According to the rule, the value of equity and net assets does not decrease. If it decreases (e.g. due to the amortisation of assets), it means that some of the profits (grants) should be dedicated to the reconstruction of the net assets. Furthermore, if the organisation invests by financing the investment through borrowing, this operation does not change net assets or equity. This applies to the above-mentioned schools, universities, hospitals, retirement homes, etc. The distribution of the MTO among the levels of governance is slightly more complex because a genuine balance sheet is not available for public administrations. On the other hand, we have, in principle, the net capital stock consistent with the national accounts and, therefore, with public investments. As a first approximation, the capital stock can be used as a measurement of the public assets (to which an assessment of the current value of credits and consolidated participations of the public sector should be added, if needed[25]). In Belgium, the net capital stock as a percentage of GDP has declined steadily from 48% in 1995 to 37% in 2011[26]. (Note that at cruising speed, the net capital stock as a percentage of GDP is 37% for an amortisation rate of 4% and a gross investment rate of 2.5%, which corresponds to a net investment rate of 1.1%). The assessment of the capital stock per level of governance is not available, but should not raise any difficulties. As regards the budgetary cost of ageing, its assessment by level of governance has already been carried out by the Federal Planning Bureau. In the formula, it remains to be determined which level should take charge of the accelerated debt reduction. As the debt is mainly located in the federal government, the latter should take charge of this component.

[25] An assessment methodology should be conceived for this, if possible in the framework of extended national accounts.

[26] Source: NAI, to be published.

4. Conclusion

The new MTO calculation formula presented in this paper is put forward neither to correct past errors of budget policy, nor to boost the European economy after seven years of crisis. For both objectives, the Commission launched in January 2015 an "Investment Plan for Europe" together with a more flexible interpretation of the existing rules of the Pact. For the future, these reactions do not fundamentally change the strictness of the system. A structural underinvestment has appeared and will continue. The new formula proposed here represents a significant and structural improvement of the system. This improvement is all the more urgent since it is necessary to avoid future mistakes that are likely to recur with the current formula. In particular, the new formula has a theoretical foundation. It focuses on public investment as a key pillar for the growth, but also on intergenerational equity for both the burden of the investment and for the burden of the costs of ageing. In addition, it aims to ensure financial viability and minimise the risks of default by public authorities by integrating the rule of debt ratio reduction for countries where this rate exceeds 60% of GDP. This accelerated reduction of the debt ratio is based on the structural deficit rather than on the actual deficit, which constitutes a significant progress. Finally, it promotes a more efficient distribution of the budget policy among the different levels of governance. The new formula does not require a revision of the Treaties. It can be implemented quickly if the investment and capital concept are taken as defined in the national accounts. Nevertheless, the absolute minimum constraints set in the Treaty on Stability, Coordination and Governance (TSCG) could be extended if we want sufficient public investments to simply maintain the public capital to GDP ratio.

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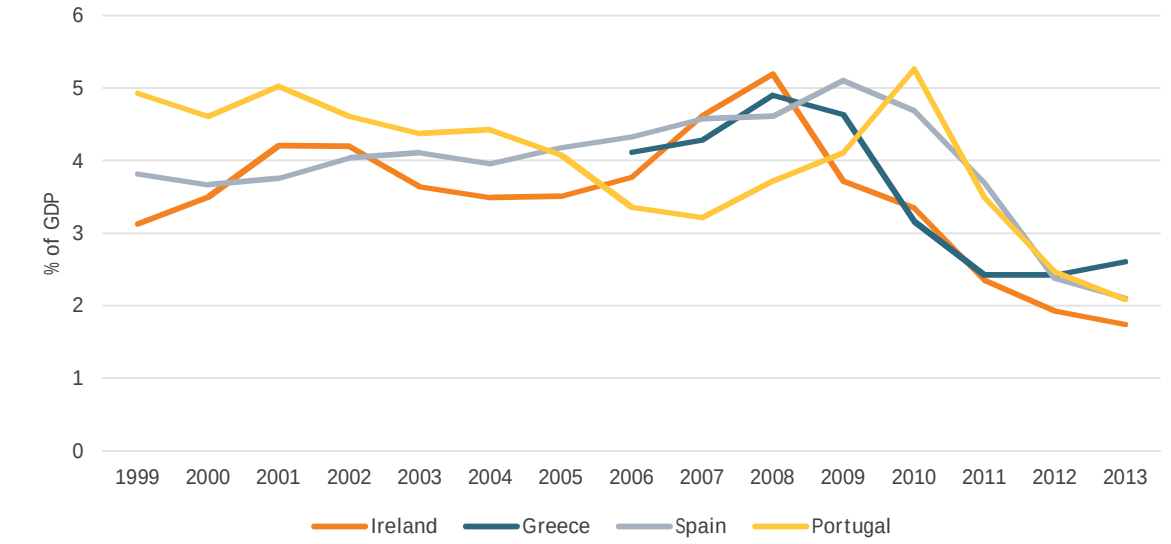
Annexes

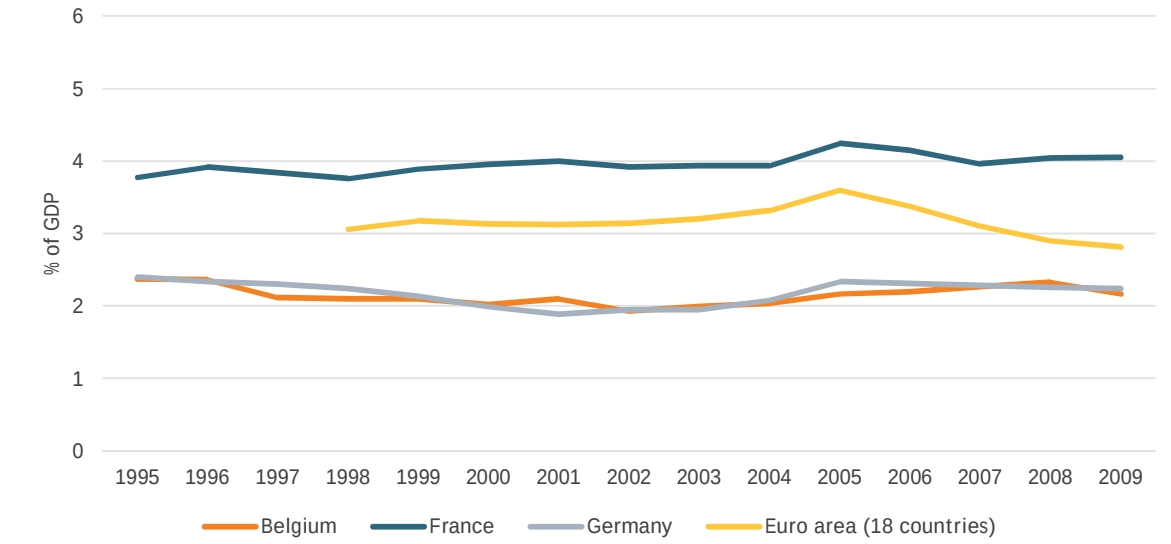
Annex 1: Graphs

Graph 1: Public investment as a percentage of GDP



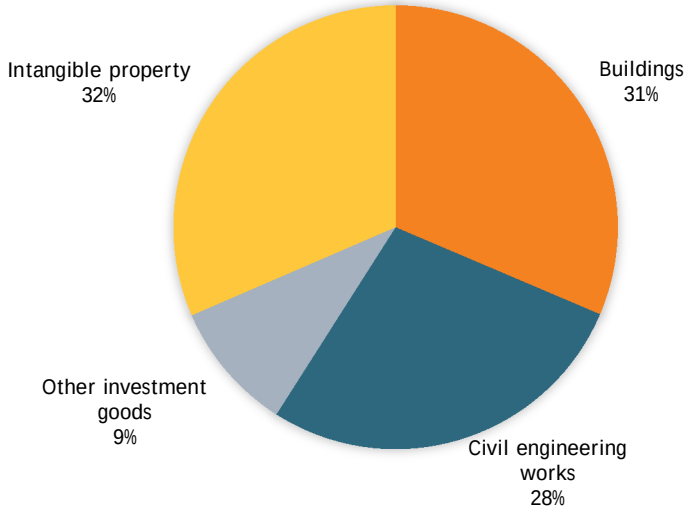
Source: Eurostat database.

Graph 2: Public investment as a percentage of GDP



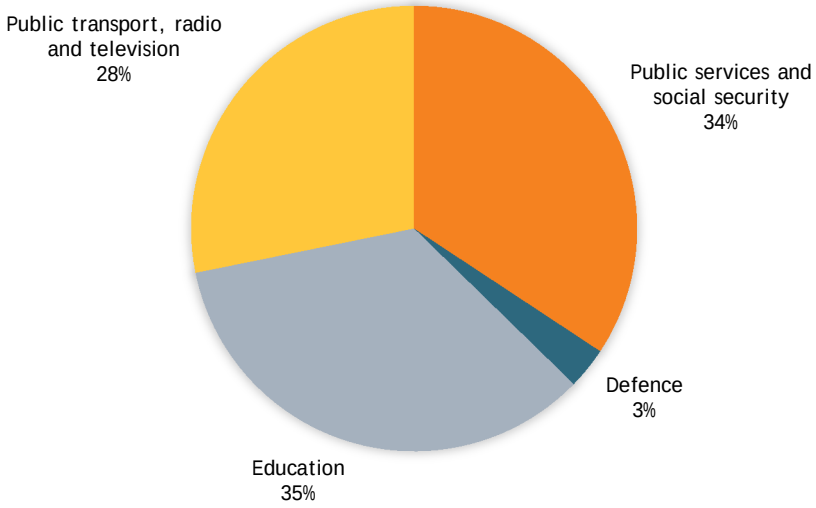
Source: Eurostat database.

Graph 3: Public investments by nature in Belgium
as a proportion of the total; 2013



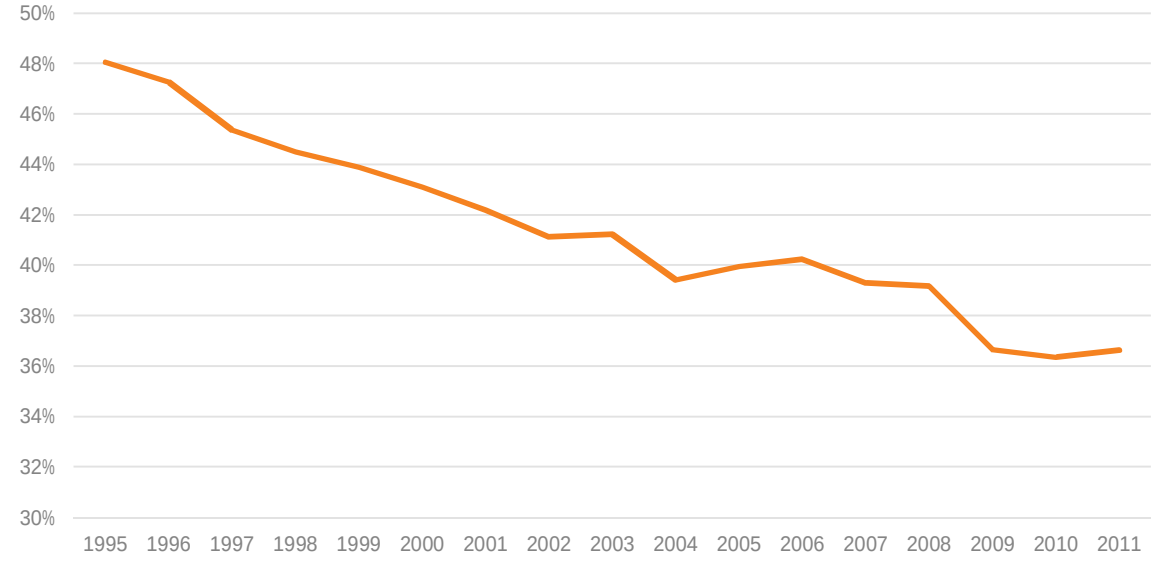
Source: NIC and own calculation

Graph 4: Public investments by function in Belgium
as a proportion of the total; 2013



Source: as a proportion of the total; 2013.

Graph 5: Net capital stock of general government (S13) in Belgium
as a percentage of GDP



Source: NIC and own calculations.

Annex 2: Applying the new MTO formula to the data used in the current formula

The table below shows primarily the data and the minimum MTO calculated by the European Commission in 2012. Two minimum MTO were calculated: MTO 1 and MTO 2. Both take into account the budgetary cost of ageing, to 2040 and with an infinite time horizon respectively. Next, the table shows additional elements that should allow the new formula to be calculated. The public investments as a percentage of GDP come from Truger, who himself derived them from the Commission's documents. Public capital as a percentage of GDP is fixed at 40% by convention and through lack of data. The net assets are equal to this figure minus the debt ratio. Two other MTO are mentioned: MTO 3 is calculated using the new formula on the basis of estimated public investments for 2015. Finally, MTO 4 is calculated with the same formula but using the investment amount that would stabilize the capital-GDP ratio.

Table 3: Minimum MTO according to the present definition and a new definition

	Present definition on the basis of the 2012 update											New definition on the basis of the 2012 update										
	Debt (2011) % of GDP	Average nominal GDP growth (2013-2060), %	Minimum bench-mark	Euro area and ERM2	Debt stabiliz-ing bal-ance at 60%	Supplemen-tary debt reduction effort % of GDP	Cost of ageing (infinite horizon) % of GDP	CoA (2040)	MTO 1 and 2 – basic formula	MTO 1	MTO 2	Net investment % of GDP -Average 1995-2007	Steady state capital % of GDP	Net investment % of GDP 2015	Net assets % of GDP	Net assets stabilizing balance % of GDP	Supplemen-tary debt reduction effort % of GDP	MTO 3 basic formula	MTO 3	Net investment stabilizing the capital-GDP ratio	MTO 4 basic formula	MTO 4
	(1)	(2)	(3)	(4)	(5)= -60*(2)	(6)	(7)	(8)	(9')=(5)+(6) +0.33*(7)	(9)=max [(3); (4); (5)+(6) +0.33*(7)]	(10)= max [(3); (4); (5)+(6) +(8)]	(11)	(12)=40%	(13)	(14)	(15)=(2)*(14)	(16)=-0.01-0.05*(14)	(17')=(15)+(16)+0.33*(16)-(13)	(17)=max [(3); (4); (15)+(16) +0.33*(7) -(13)]	(18)=(12)*(2)	(19')=(15)+(16)+0.33*(7)-(18)	(19)=max [(3); (4); (15)+(16) +0.33*(7)-(18)]
BE	98.0	3.6	-1.7	-1.0	-2.2	1.1	7.2	3.8	1.3	1.3	2.8	0.0	40.0	-0.3	-58.0	-2.1	1.9	2.5	2.5	1.4	0.7	0.7
BG	16.3	3.3	-1.7		-2.0		2.0	0.6	-1.3	-1.3	-1.4	1.2	40.0	3.0	23.7	0.8		-1.6	-1.6	1.3	0.1	0.1
CZ	41.2	3.6	-1.7		-2.2		3.7	1.0	-0.9	-0.9	-1.2	-0.4	40.0	-0.3	-1.2	0.0		1.5	1.5	1.4	-0.3	-0.3
DK	46.5	3.6	-0.7	-1.0	-2.2		3.0	1.7	-1.2	-0.7	-0.5	-0.1	40.0	0.6	-6.5	-0.2		0.2	0.2	1.4	-0.7	-0.7
DE	81.2	2.8	-1.5	-1.0	-1.7	0.7	2.1	0.9	-0.3	-0.3	-0.1	0.0	40.0	0.0	-41.2	-1.2	1.1	0.6	0.6	1.1	-0.5	-0.5
EE	6.0	3.7	-1.8	-1.0	-2.2		0.9	0.4	-1.9	-1.0	-1.0	2.9	40.0	2.2	34.0	1.3		-0.6	-0.6	1.5	0.1	0.1
IE	108.2	4.3	-1.2	-1.0	-2.6	1.4	4.2	1.7	0.2	0.2	0.5	1.6	40.0	0.0	-68.2	-2.9	2.4	0.9	0.9	1.7	-0.9	-0.9
EL	165.3	3.2	-1.9	-1.0	-1.9	2.7	1.5	0.1	1.3	1.3	0.9	2.3	40.0	-0.5	-125.3	-4.0	5.3	2.3	2.3	1.3	0.5	0.5
ES	68.5	3.7	-1.5	-1.0	-2.2	0.4	2.4	0.3	-1.0	-1.0	-1.0	1.9	40.0	-0.5	-28.5	-1.1	0.4	0.7	0.7	1.5	-1.3	-1.0
FR	85.8	3.7	-1.6	-1.0	-2.2	0.8	0.8	0.3	-1.1	-1.0	-1.0	0.8	40.0	0.1	-45.8	-1.7	1.3	-0.2	-0.2	1.5	-1.6	-1.0
IT	120.1	3.3	-1.7	-1.0	-2.0	1.6	0.3	-0.4	-0.2	-0.2	-0.7	0.5	40.0	-0.5	-80.1	-2.6	3.0	1.0	1.0	1.3	-0.9	-0.9
CY	71.6	3.9	-1.8	-1.0	-2.3	0.5	5.9	2.0	0.1	0.1	0.1	2.7	40.0	0.5	-31.6	-1.2	0.6	0.8	0.8	1.6	-0.3	-0.3
LV	42.6	3.5	-1.8	-1.0	-2.1		-1.9	-6.0	-2.7	-2.7	-1.0	-2.6	40.0	0.6	-2.6	-0.1		-1.3	-1.0	1.4	-2.1	-1.0
LT	38.5	3.5	-1.8	-1.0	-2.1		3.3	0.7	-1.0	-1.0	-1.0		40.0		1.5	0.1		1.1	1.1	1.4	-0.3	-0.3
LU	18.2	3.8	-1.7	-1.0	-2.3		8.4	3.3	0.5	0.5	1.0	2.4	40.0	1.7	21.8	0.8		1.9	1.9	1.5	2.1	2.1
HU	80.6	3.2	-1.5		-1.9	0.7	1.0	-0.9	-0.9	-0.9	-1.5	-0.5	40.0	1.2	-40.6	-1.3	1.0	-1.1	-1.1	1.3	-1.2	-1.2
MT	72.0	3.4	-1.9	-1.0	-2.0	0.5	4.6	0.8	0.0	0.0	-0.8	1.9	40.0	1.0	-32.0	-1.1	0.6	0.0	0.0	1.4	-0.3	-0.3
NL	65.2	3.4	-1.4	-1.0	-2.0	0.3	5.3	2.5	0.0	0.0	0.8	0.9	40.0	0.2	-25.2	-0.9	0.3	1.0	1.0	1.4	-0.2	-0.2
AT	72.2	3.4	-1.8	-1.0	-2.0	0.5	3.6	2.2	-0.4	-0.4	0.7	0.5	40.0	0.3	-32.2	-1.1	0.6	0.4	0.4	1.4	-0.7	-0.7
PL	56.3	3.4	-1.9		-2.0		0.7	0.2	-1.8	-1.8	-1.8	0.5	40.0	1.8	-16.3	-0.6		-2.1	-1.9	1.4	-1.7	-1.7
PT	107.8	3.5	-1.8	-1.0	-2.1	1.3	0.2	-0.2	-0.7	-0.7	-1.0	2.2	40.0	-1.2	-67.8	-2.4	2.4	1.3	1.3	1.4	-1.3	-1.0
RO	33.3	3.3	-1.8		-2.0		3.4	0.9	-0.9	-0.9	-1.1	2.2	40.0	2.5	-6.5	0.2		-1.2	-1.2	1.3	0.0	0.0
SL	47.6	3.3	-1.7	-1.0	-2.0		7.1	2.7	0.4	0.4	0.7	1.7	40.0	2.5	-7.6	-0.3		-0.4	-0.4	1.3	0.8	0.8
SK	43.3	3.5	-1.5	-1.0	-2.1		5.0	1.9	-0.5	-0.5	-0.2	-0.1	40.0	-0.4	-3.3	-0.1		1.9	1.9	1.4	0.1	0.1
FI	48.6	3.5	-0.5	-1.0	-2.1		5.2	3.5	-0.4	-0.4	1.4	0.7	40.0	0.5	-8.6	-0.3		0.9	0.9	1.4	0.0	0.0
SE	38.4	3.7	-0.9		-2.2		2.9	1.2	-1.3	-0.9	-0.9	1.0	40.0	1.4	1.6	0.1		-0.4	-0.4	1.5	-0.5	-0.5
UK	85.7	4.0	-1.5		-2.4	0.8	2.4	0.5	-0.8	-0.8	-1.1	0.8	40.0	1.1	-45.7	-1.8	1.3	-0.9	-0.9	1.6	-1.4	-1.4