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EDITORIAL

The situation in the euro area is improving but remains at risk, as indicated by President Juncker in his State of the Union speech last September. Pushed by very favourable tailwinds, the moderate economic recovery has continued this year, bringing real GDP above its pre-crisis level and leading to decreased unemployment. However, the euro area recovery has failed to accelerate: the output gap is expected to remain in the negative territory for the ninth year in a row while, contrary to all expectations, core inflation has remained below 1% for more than two years. In addition, long-term unemployment still stood at almost at 6% of the total labour force in 2015.

These developments occurred despite the unprecedented series of unconventional policy measures carried out by the ECB. In a context in which there are risks of low trade growth outside the EU, which imply little support, if any, from net exports, the continuation of the expansion in the euro area relies on domestic demand. But private consumption growth is set to moderate as the boost from low oil prices is fading. Investment continues to be held back by expectations of sluggish demand. A rebalancing from external towards internal demand is needed to support monetary policy and reinvigorate growth.

Against this background, there is a case for a more positive fiscal stance in the euro area in 2017 as advocated by the Commission in its Communication of last November, following three years of neutral fiscal stance. With nominal interest rates being stuck at their zero-lower bound, fiscal policy becomes more efficient to stabilise the economy, while the spillovers from fiscal surplus countries to deficit countries substantially increase. This would allow rebalancing the macroeconomic policy mix and supporting growth, in the respect of the EU fiscal rules.

This report (Part IV) discusses the methodological issues related to the assessment of the euro area fiscal stance. As a general rule, this is done against the objectives of short-term stabilisation of the economy and long-term sustainability of public finances. The interplay between these two objectives and the aggregation issues may prove very complex and the report provides analytical food for thought by raising methodological questions, listing possible solutions and highlighting their strengths and weaknesses.

The report shows also that an appropriate geographical configuration of the aggregate fiscal stance, together with an emphasis on government investments, would benefit the euro area. It would allow a prudent use of the fiscal space where it is available, with positive spillovers to the countries with no fiscal space. It would also be conducive to an improvement in the composition of fiscal policy.

Indeed, Part III of this report shows that the euro area suffers from a gap in government investments. The weakness of public investment constitutes a double source of concern for economic growth, both for the short and the long term. The report shows that, while the decline in government investment is a longer-term phenomenon, its current level is particularly low and likely far from optimal. This has brought public capital-to-output ratios at lower levels than in other advanced economies, with signs that the quality of existing infrastructure stocks is at risk. In addition, the contraction in physical capital investment is also coupled with a reduction in the accumulation of human capital by the government sector. Member States can use historically low interest rates to rebalance the composition of their public finances, expanding investment and maintaining current capital assets, while reforming pension, health care and welfare systems. This would not only ensure that adequate levels of public capital stocks are available in the long term but would also provide short-term stimulus at a time when the recovery proceeds at a moderate pace.

Marco Buti

Director General Economic and Financial Affairs

SUMMARY

The economic recovery is modest and subject to downside risks.

The euro area's fragile recovery continues. After having reached 2.0% in 2015, euro area GDP growth is projected to slow somewhat to 1.7% in 2016 and 1.5% in 2017 (1.8% and 1.6% in the EU). The moderate recovery is visible in the advanced closure of the output gap, although it remains negative, and in the return of unemployment to pre-crisis levels. However, the recovery remains characterised by high long-term unemployment, low investment and low inflation. This is despite an unprecedented monetary stimulus that has brought interest rates to their zero lower bound. The situation is subject to significant, mainly downside risks.

Deficits and debt in the euro area are forecast to continue declining slowly.

The euro area's aggregate deficit is expected to fall by 0.3 pps. to 1.8% of GDP in 2016, mainly thanks to cyclical conditions and lower interest payments. Evidence of the progress in deficit reduction can be seen in the fall in the number of Member States subject to the Excessive Deficit Procedure. At present, six EU Member States are subject to the EDP, of which four (including Greece which is under a financial assistance programme) are in the euro area. This compares to only five Member States with deficits below 3% of GDP in 2010.

Public debt is also receding slightly from its peak of 94.4% in 2014, helped by historically low interest rates. Debt levels, however, remain very high, particularly in some Member States. Both deficit and debt ratios in the euro area are expected to continue declining in 2017, albeit at a slower pace than in recent years.

Following considerable consolidation in the aftermath of the crisis, the fiscal stance of the euro area turned slightly expansionary in 2016.

The fiscal stance provides an insight into the contribution that governments' discretionary fiscal policy decisions have on the economy. A restrictive fiscal stance implies that additional revenues outweigh additional expenditure, leading to consolidation with the aim of strengthening the sustainability of public finances. An expansionary fiscal stance implies the opposite, providing stimulus to the economy.

In response to the sharp increase in public debt during the crisis, the euro area's overall fiscal stance first turned restrictive as Member States undertook significant and much-needed consolidation to safeguard financial stability in unprecedented circumstances and to respond to the risk of contagion across the euro area. The euro area's fiscal stance was then broadly neutral in 2014-2015 and has turned slightly expansionary in 2016.

For 2017, the Commission advocates a positive fiscal stance for the euro area.

In November 2016, the Commission issued a Communication "Towards a Positive Fiscal Stance for the Euro Area". The Communication explains how the current macroeconomic environment implies a strong need for fiscal policy to support the recovery. Moreover, in the current situation of constrained monetary policy, fiscal stimulus is expected to be more efficient than in normal times. The Commission is of the opinion that, in this context, a moderate fiscal expansion in 2017 is appropriate for the euro area on aggregate. The fiscal effort of individual Member States depends on country-specific circumstances and needs to be in line with the Stability and Growth Pact.

The concept of the fiscal stance helps guide the discussion on the appropriateness of fiscal policy by carefully balancing the need to support the economy and the need for sound government finances.

Part IV of this report discusses the methodological issues related to the assessment of the fiscal stance. This is done against the objectives of short-term stabilisation of the economy and long-term sustainability of public finances. A decision on the appropriateness of the fiscal stance requires a delicate balancing between these two objectives. This has to be based on thorough economic analysis but ultimately requires political judgement. The chapters in this report provide analytical food for thought by raising methodological questions, listing possible solutions and highlighting their strengths and weaknesses.

Defining an appropriate fiscal stance starts with clear views on the need for economic stabilisation and fiscal sustainability.

Chapter IV.1. describes how stabilisation and sustainability needs can be quantified. To determine stabilisation needs, it presents an elaborate analysis of cyclical conditions, which takes into account also the evolution of the output gap in recent years, instead of just looking at the output gap in the current year and its expected evolution in 2017. To determine sustainability needs, the chapter looks at the Commission's S1 indicator, which is an indicator of medium-term sustainability centred on the 60% of GDP general government debt ratio that also factors in the costs linked to population ageing.

While tensions can emerge between the stabilisation and the sustainability needs at the aggregate level, differentiated fiscal stances at the Member State level may reinforce both dimensions at the same time.

Chapter IV.2. shows that three elements have to be taken into account when deciding on the appropriate balance between stabilisation and sustainability. First, the possibility of abrupt negative effects needs to be avoided on the stabilisation and the sustainability sides. In particular, the risk of particularly large adverse developments on the macroeconomic side, with long-lasting effects on potential growth or on the social fabric, has to be considered against risks of Member States losing market access. Second, fiscal policy can be particularly effective at stabilising the economy when monetary policy is constrained and private sector deleveraging needs are high. Third, the benefits of fiscal stimulus in terms of stabilisation need to be assessed against the costs in terms of increased risks to sustainability.

Overall, the absence of immediate risks to fiscal sustainability for the euro area as a whole with very low interest rates, coupled with protracted low performance and high risks on the macroeconomic side, tends to favour the importance of stabilisation needs. This highlights the differences between normal times and the current situation. Furthermore, the importance attributed to stabilisation and sustainability needs has to reflect country-specific situations. In particular, it is possible to give more weight to stabilisation where sustainability needs are relatively low, while at the same giving more weight to sustainability in Member States where sustainability needs are high, as reflected in adjustment requirements under the SGP. Differentiated national fiscal stances may thus contribute to an appropriate fiscal stance at the euro area level, addressing both stabilisation and sustainability concerns at the same time. This would counteract the paradox of the euro area, where some countries facing higher sustainability challenges seem to privilege stabilisation needs, while Member States with available fiscal space do not use it to address stabilisation concerns.

The way national fiscal policies interact determines the impact of the fiscal stance at an aggregate level.

Chapter IV.2. also discusses aggregation issues, i.e. how to bring together the situation in 19 individual euro area Member States to a view on the euro area as a whole. It underlines the importance of considering the appropriate fiscal stance at the aggregate euro area level given the presence of spillovers and contagion effects in a monetary union. This is particularly relevant in the present institutional setting of the euro area, where fiscal policy decisions are mostly taken nationally, in the absence of a central stabilisation function. The chapter integrates these effects in the analysis, while showing that depending on its geographical and budgetary configuration, the aggregate fiscal stance can have a different impact on aggregate GDP and debt.

The budgetary composition of the fiscal stance and the quality of government expenditure public finances are crucial.

As widely accepted in the economic literature, the impact of fiscal policy does not only depend on the sign and size of the budget balance, but also on the composition of the fiscal stance in terms of revenue and expenditure measures and, in the longer term, on the quality of public finances. In this respect, the design of the fiscal stance has to be growth-friendly; it has to support job creation and, where necessary, ensure social fairness. Chapter II.2. provides a snapshot of the efficiency and performance of public expenditure across Member States and for different functions: education, health, R&D, general public services, public order and safety, and infrastructure. The analysis, based on an efficiency frontier approach, allows for the classification of Member States according to their relative performance. It also provides broad guidance on the functions in which room for improvement appears to be sizeable. Focussing on a specific function of public expenditure, government investment can provide a double dividend in terms of positive economic impact, boosting demand in the short term as well as supply in the long term, as shown in Part III.

The recovery of government investment spending after the crisis has been slow…

An intensification of government investment efforts would counteract the significant decrease in government investment in Europe since the crisis. An in-depth examination of the evolution of government investment (see Chapter III.2.) shows that the decline in government investment is a longer-term phenomenon, but its current level is particularly low. Moreover, its recovery has been far weaker in comparison to previous crisis periods.

…pointing to the existence of an "investment gap" in the government sector in the EU.

The decline in government investment could at least theoretically respond to an optimising behaviour by the government sector. By discussing three different hypotheses that could explain such a decline, the evidence presented in Chapter III.3. rather points to the existence of a wide and deep government investment gap. Public capital-to-output ratios have gone down in the EU and the euro area and stand now at lower levels than in other advanced economies. At the same time, there are signs that the quality of existing infrastructure stocks is at risk. In addition, the contraction in physical capital investment is also coupled with a reduction in the accumulation of human capital by the government sector.

The weakness of public investment constitutes a double source of concern, both for the short and the long term.

The weak performance of government investment is worrying given the short- and long-term economic impact associated with investment spending. First of all, as a component of aggregate demand, low investment spending is associated with fragile recoveries in the short term. Secondly, persistently depressed government investment can have adverse long-term economic consequences through lower potential output.

Rebalancing the composition of public finances in a context of low interest rates allows Member States to capitalise on investment's double dividend.

Member States can rebalance the composition of their public finances, expanding investment while reforming pension, health care and welfare systems. Historically low interest rates also facilitate an intensification of investment efforts. This would not only ensure that adequate levels of public capital stocks are available in the long term but would also provide short-term stimulus at a time when the recovery is slow.

Attaining the double dividend of short-term stimulus and long-term potential requires, on the one hand, carefully designed and comprehensive strategies conducive to efficient investment and, on the other hand, a choice of investment projects which can be financed by the government and implement rapidly and in a transparent manner.

Part I

Current developments and prospects

1. CURRENT DEVELOPMENTS

1.1. ECONOMIC DEVELOPMENTS AND PERSPECTIVE

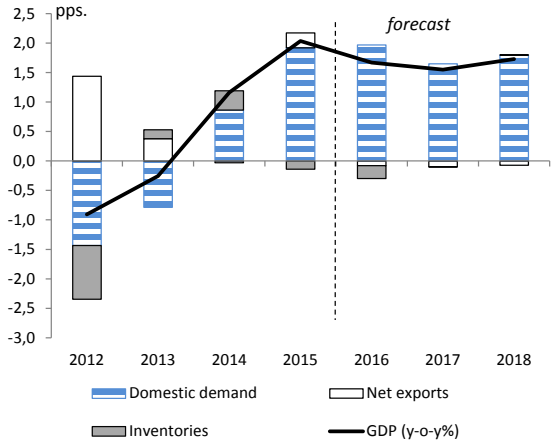
The moderate economic recovery that started in 2013 has continued this year. Pushed by exceptionally favourable tailwinds from low commodity prices, euro depreciation, an accommodative monetary policy and a halt in fiscal consolidation, real GDP has surpassed its pre-crisis level. Graph I.1.1 shows that, since 2015, the recovery has mainly been driven by internal demand. Private consumption remained a strong driver, pushed by the improving labour market and increased real disposable incomes. Investments also started picking up over the past year.

The Commission's autumn forecast 2016 outlook indicates that the recovery will continue but remains fragile. After having reached 2% in 2015, euro area GDP growth is projected to decelerate somewhat to 1.7% in 2016 and 1.5% in 2017 (1.8% and 1.6% in the EU). For 2017, this is slightly less favourable than expected in the Commission's spring forecast.

The aggregate growth figures mask differences across Member States. While real GDP growth is expected to pick up in most Member States in 2017, it is projected to slow down in some, including a number of large Member States (Germany, ([1]) Spain, the United Kingdom), depressing the euro area and EU averages.

Prospects for 2017 are subject to downside risks. Notwithstanding the positive developments the recovery has so far proven timid compared to previous recoveries, as is often the case following major financial crises. ([2]) Economic conditions remain characterised by moderate growth rates, high long-term unemployment, low investment levels and low inflation. Moreover, the outlook is subject to significant downside risks from geopolitical tensions.

Graph I.1.1: **Composition of real GDP growth, euro area**



Source: Commission's autumn 2016 forecast.

The fall in growth in 2017 is likely to be particularly driven by weaker domestic demand. Subdued demand and low trade growth outside the EU imply little, if any, support from net exports. The continuation of the expansion in the euro area therefore relies on domestic demand. But private consumption growth is set to moderate as the boost from low oil prices is fading. Investment continues to be held back by expectations of sluggish demand, low exports and continued corporate deleveraging pressures in some Member States.

The rebalancing from external towards internal demand is in line with a stabilisation of the euro area's historically high current-account surplus. The current account surplus is expected to peak at 3.7% of GDP 2016 driven by low commodity prices. It is expected to edge down to 3.5 % of GDP in 2017 as exports are expected to grow at a lower pace than imports.

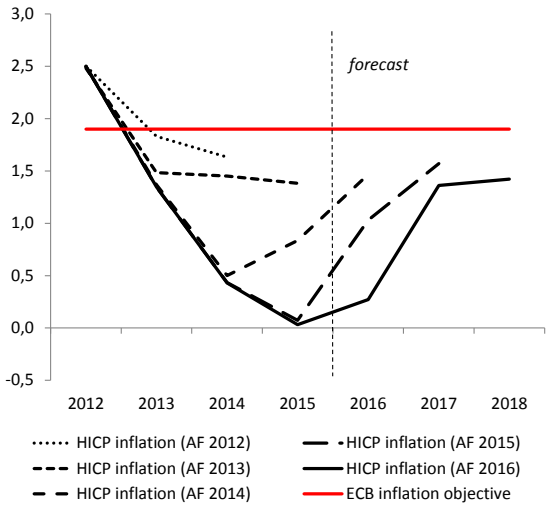
Euro area inflation remains low, on the back of weak domestic demand and low global inflationary pressures. The Commission's autumn forecast 2016 shows that inflation is expected to remain below the ECB's aim of maintaining inflation below, but close to, 2% over the medium term (see Graph I.1.2). Despite a very expansionary combination of quantitative easing and credit easing by the ECB, which has reduced financing costs for companies and households to an unprecedented low level in the euro area and

([1]) In the case of Germany this result is largely driven by calendar effects.

([2]) For comparisons with previous recoveries, see for instance Reinhart, C.M. and Rogoff, K.S. (2008); Furceri, D. and A. Mourougane (2009); Jordà, O, Schularick, M. HP., Taylor, A.M. (2013); European Central Bank (2014); European Commission (2015d).

contributed to a pickup in credit growth, inflation has remained subdued since 2013, also partly reflecting external price developments. Low inflation expectations, as far as they are reflected in low expected profits on top of low demand expectations and deleveraging effects, bring down investments, the component of internal demand which is badly needed today (see discussion in Part III).

Graph I.1.2: **HICP inflation, euro area**



Source: Commission's autumn forecasts, 2012 to 2016.

Investment performance remains feeble, with both private and government investment-to-GDP ratios still below pre-crisis levels. This is despite last year's developments and recent initiatives at the EU level which contribute to tackle the investment gap. In particular, the Investment Plan for Europe focuses on leveraging private funds in economically viable and sustainable investment projects. Such low investment levels can have large implications on the economic performance of the EU, both in the short term (via the demand side) and in the long term (through the supply side). These consequences are extensively discussed in Part III of this report.

The outlook is subject to risks that are overall tilted to the downside. Risks have intensified in recent months, mainly in the wake of the UK "leave" vote. Anticipation effects could be triggered by developments over the course of the upcoming negotiations as news emerges about the shape of the future agreement between the UK and the EU. An extended period of uncertainty could also magnify its negative impact. The "leave" vote could also be seen as an indicator of the increased political risks deriving from opposition to globalisation and free trade arrangements and thereby to the outlook for global trade. Risks have increased on the external side, in particular of a disorderly adjustment in China and aggravating geopolitical conflicts. The cycle of advanced economies outside the EU (e.g. the US) could also be more mature than thought, entailing a weaker rebound than expected.

1.2. ASSESSMENT OF SHORT-TERM DEVELOPMENTS IN THE FISCAL BALANCE

1.2.1. Budget deficits

Following the return to moderate growth and large consolidation packages in 2011-2013, deficits have been substantially reduced. From 2011 to 2013, sizeable consolidation was implemented in the euro area and the EU as a whole (Table I.1.1). Despite a halt in consolidation in 2014-2015, the structural deficit in the EU was reduced markedly from 4.6 % of GDP in 2010 to 1.7 % in 2015 and in the euro area from 4.3 % to 1.0 %. In the same period, headline deficit ratios also fell considerably, by around 4 % of GDP, to 2.4 % in the EU and 2.1 % in the euro area in 2015. At country level, while only five Member States recorded deficits below the 3 % of GDP reference threshold in 2010, 22 did so in 2014.

Looking ahead, the aggregate headline budget balance is expected to improve further in 2016 and 2017. In the euro area, the deficit is projected to decrease to 1.8 % of GDP in 2016 and 1.5 % in 2017. A parallel reduction is expected in the EU as a whole, to 2.0 % in 2015 and 1.7 % in 2016. These falls correspond to average annual improvements (by 0.3 % of GDP) amounting to one fourth and one third, respectively, of the annual average observed in 2011-2013. The reduction in deficits is reflected in the lower number of Member States that are subject to an Excessive Deficit Procedure, namely four in the euro area (including Greece which is under a financial assistance programme) and two other EU Member States.

Table I.1.1: **Budget balances in EU Member States (% of GDP)**

	Budget balance					Structural balance					Structural primary balance				
	2013	2014	2015	*2016*	*2017*	2013	2014	2015	*2016*	*2017*	2013	2014	2015	*2016*	*2017*
BE	-3,0	-3,1	-2,5	-3,0	-2,3	-2,7	-2,9	-2,6	-2,7	-2,0	0,6	0,4	0,4	-0,2	0,4
DE	-0,2	0,3	0,7	0,6	0,4	0,1	0,8	0,8	0,6	0,4	2,1	2,6	2,4	2,0	1,7
EE	-0,2	0,7	0,1	0,5	-0,4	-0,6	-0,1	-0,1	0,6	-0,2	-0,5	0,0	0,0	0,7	-0,1
IE	-5,7	-3,7	-1,9	-0,9	-0,5	-3,6	-3,6	-1,8	-1,7	-1,0	0,7	0,3	0,9	0,6	1,2
EL	-13,2	-3,6	-7,5	-2,5	-1,0	2,4	2,4	1,9	2,6	2,7	6,5	6,4	5,5	5,9	5,8
ES	-7,0	-6,0	-5,1	-4,6	-3,8	-2,0	-1,9	-2,8	-3,8	-3,8	1,4	1,6	0,3	-1,0	-1,2
FR	-4,0	-4,0	-3,5	-3,3	-2,9	-3,3	-2,9	-2,6	-2,5	-2,3	-1,1	-0,7	-0,6	-0,6	-0,5
IT	-2,7	-3,0	-2,6	-2,4	-2,4	-1,0	-1,2	-1,1	-1,6	-2,2	3,9	3,4	3,1	2,4	1,6
CY	-4,9	-8,8	-1,1	-0,3	-0,4	-0,8	3,0	1,7	0,2	-1,3	2,3	5,9	4,5	2,8	1,2
LV	-0,9	-1,6	-1,3	-0,8	-1,1	-1,0	-1,6	-1,8	-1,5	-1,7	0,5	-0,2	-0,5	-0,3	-0,6
LT	-2,6	-0,7	-0,2	-0,6	-0,8	-2,0	-1,5	-0,7	-0,9	-1,4	-0,3	0,1	0,9	0,6	0,1
LU	1,0	1,5	1,6	1,3	0,0	2,6	2,5	2,2	1,9	0,4	3,2	2,9	2,6	2,3	0,8
MT	-2,6	-2,1	-1,4	-0,7	-0,6	-2,9	-2,8	-2,2	-1,1	-0,7	0,0	0,0	0,4	1,1	1,4
NL	-2,4	-2,3	-1,9	-0,8	-0,3	-1,0	-0,7	-1,2	-0,5	-0,2	0,6	0,7	0,1	0,6	0,8
AT	-1,4	-2,7	-1,0	-1,5	-1,3	-1,2	-0,7	0,0	-1,0	-0,9	1,4	1,7	2,4	1,2	1,3
PT	-4,8	-7,2	-4,4	-2,7	-2,2	-3,0	-1,9	-2,3	-2,4	-2,4	1,9	3,0	2,3	2,0	2,0
SI	-15,0	-5,0	-2,7	-2,4	-2,0	-1,9	-2,5	-1,9	-2,1	-2,3	0,7	0,7	1,1	0,7	0,4
SK	-2,7	-2,7	-2,7	-2,2	-1,5	-1,7	-2,2	-2,3	-2,0	-1,4	0,2	-0,3	-0,5	-0,5	0,0
FI	-2,6	-3,2	-2,8	-2,4	-2,5	-1,4	-1,8	-1,4	-1,3	-1,6	-0,1	-0,5	-0,2	-0,2	-0,5
EA-19	-3,0	-2,6	-2,1	-1,8	-1,5	-1,4	-1,1	-1,0	-1,2	-1,3	1,4	1,6	1,3	1,0	0,8
BG	-0,4	-5,5	-1,7	-0,9	-0,8	-0,2	-1,8	-1,4	-0,8	-0,8	0,5	-1,0	-0,5	0,1	0,1
CZ	-1,2	-1,9	-0,6	-0,2	-0,6	0,2	-0,8	-0,7	-0,2	-0,8	1,5	0,5	0,4	0,7	0,2
DK	-1,1	1,5	-1,7	-0,9	-2,0	-0,4	0,1	-1,5	0,6	-0,8	1,3	1,6	0,1	1,9	0,4
HR	-5,3	-5,4	-3,3	-2,1	-1,8	-3,3	-3,7	-2,2	-1,8	-2,3	0,2	-0,2	1,4	1,6	1,1
HU	-2,6	-2,1	-1,6	-1,5	-2,3	-1,4	-2,2	-1,8	-2,6	-2,9	3,1	1,8	1,7	0,6	0,1
PL	-4,1	-3,4	-2,6	-2,4	-3,0	-3,3	-2,6	-2,3	-2,8	-3,1	-0,8	-0,7	-0,6	-1,2	-1,5
RO	-2,1	-0,8	-0,8	-2,8	-3,2	-1,0	-0,6	-0,5	-2,6	-3,4	0,7	1,1	1,1	-1,0	-1,8
SE	-1,4	-1,6	0,2	0,0	-0,1	0,1	-0,4	0,3	-0,3	-0,3	0,9	0,3	0,8	0,1	0,1
UK	-5,7	-5,7	-4,3	-3,5	-2,8	-4,4	-5,4	-4,5	-3,8	-2,9	-1,6	-2,7	-2,2	-1,4	-0,5
EU-28	-3,3	-3,0	-2,4	-2,0	-1,7	-1,8	-1,8	-1,7	-1,6	-1,6	0,9	0,8	0,6	0,5	0,4

Source: Commission services; figures for 2016 and 2017 are from the Commission's autumn 2016 forecast.
Note: The structural budget balance is calculated on the basis of the commonly agreed production function method (Havik et al. (2014)).

This improvement in the headline balance is mainly due to improved growth and lower interest rates. Following five years of improvement, the structural balance (i.e. the headline balance corrected for cyclical factors, one-offs and other temporary measures) is projected to edge down to -1.2 % of GDP in 2016 and -1.3 % in 2017 in the euro area and to hover at around -1.6 % in the EU as a whole. Therefore the evolution of the headline balance is largely driven by the impact of the cycle, which is expected to improve both headline balances by 0.3 pp in 2016 and by 0.1 to 0.2 pp in 2017, and of some one-off measures ([3]) in both years. Moreover, the drop in interest expenditure, by 0.3 % of GDP in both areas over the same period, as shown in Table I.1.2, largely compensates the decrease of the primary structural balance by 0.3% of GDP cumulatively in the EU and by 0.6 % of GDP in the euro area.

The fiscal policy orientation varied across Member States in 2015. The fiscal effort in 2015, as measured by the change in the structural balance, shows nine Member States loosening fiscal policy while in the others fiscal policy was tightened or remained neutral. Ireland and Croatia tightened fiscal policy by at least 1 pp while a loosening of at least 1 pp took place in Denmark and Cyprus. Of the remaining Member States, more than two thirds tightened their fiscal policy in a range of 0 to 1 pp, while the others allowed a loosening of their fiscal policy of a similar range, between 0 and 1 pp.

In 2016 and 2017, more Member States are expected to make their fiscal policy less restrictive. Consolidation is expected to take place in 11 countries, with a maximum tightening of the structural balance of 1.5 pp in Malta and 1.6 pp in the UK culminated over the two years. The largest loosening, by 2.9 pp over the two years, is expected in Cyprus. However, in several Member States, these averages conceal significant differences in the fiscal policy orientation between the two years.

([3]) See Chapter II.5. of European Commission (2015b), Report on Public Finances in EMU 2015.

Table I.1.2: **Euro area - Breakdown of the general government budget balance (% of GDP)**

	2012	2013	2014	2015	*2016*	*2017*
Total revenue (1)	46,1	46,7	46,8	46,5	46,2	46,1
Total expenditure (2)	49,7	49,7	49,4	48,5	48,0	47,7
Actual balance (3) = (1) - (2)	-3,6	-3,0	-2,6	-2,1	-1,8	-1,5
Interest (4)	3,0	2,8	2,7	2,4	2,2	2,1
Primary balance (5) = (3) + (4)	-0,6	-0,2	0,1	0,3	0,4	0,5
One-offs (6)	-0,4	-0,1	-0,2	-0,2	0,0	0,1
Cyclically adjusted balance (7)	-2,5	-1,4	-1,3	-1,2	-1,2	-1,2
Cyclically adj. prim. balance = (7) + (4)	0,5	1,4	1,4	1,2	1,0	0,9
Structural budget balance = (7) - (6)	-2,1	-1,4	-1,1	-1,0	-1,2	-1,3
Structural primary balance = (7)-(6)+(4)	0,9	1,4	1,6	1,3	1,0	0,8
Change in actual balance:		**0,7**	**0,4**	**0,5**	**0,3**	**0,2**
of which - Cycle		-0,4	0,2	0,4	0,3	0,2
- Interest (reverse sign)		0,2	0,1	0,3	0,2	0,1
- One-offs		0,3	-0,2	0,1	0,2	0,1
- Structural primary balance		0,5	0,2	-0,2	-0,4	-0,2
Change in cycl. adj. primary balance		0,9	0,0	-0,2	-0,2	-0,1
Change in structural budget balance		0,7	0,3	0,0	-0,2	0,0

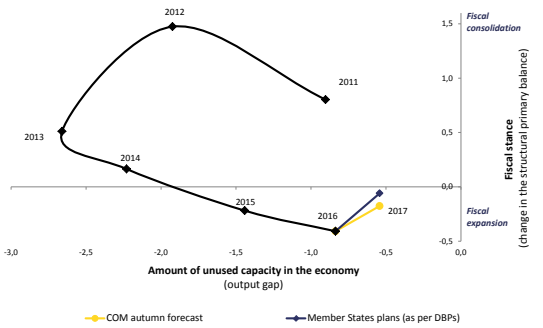
Source: Commission services. Numbers for 2016 and 2017: Commission's autumn 2016 forecast.
Note: Differences between totals and sum of individual items are due to rounding.

1.2.2. Assessing the euro area's fiscal stance

The fiscal stance in the euro area, as measured by the change in the structural primary balance, is expected to be broadly neutral in 2017. After a period of strong consolidation, the aggregate fiscal stance in the euro area turned broadly neutral in 2014-2015. It was slightly expansionary in 2016, while it is expected to be broadly neutral again in 2017, according to the Commission's autumn 2016 forecast. Compared to the cyclical position of the euro area, fiscal policy adopted a pro-cyclical stance in the period 2011-2013, when the aggregate output gap was negative and widening. While the fiscal contraction further compressed growth, this was regarded as necessary to safeguard financial stability at the height of the sovereign debt crisis and to respond to the risk of contagion across the euro area. Thereafter, fiscal policy has become more countercyclical, with a neutral or supportive fiscal stance at a time of still negative (though shrinking) aggregate output gap.

The current macroeconomic environment implies a strong need for fiscal policy to support the recovery. This is particularly related to the slow recovery, increased risks and still large unused productive capacities, which could become entrenched. Equally importantly, in the current situation of constrained monetary policy, fiscal stimulus is expected to be more efficient than in normal times. The Commission Communication of 16 November 2016 (see Part IV) argues that, in this context, a fiscal expansion of up to 0.5% of GDP in 2017 is appropriate for the euro area on aggregate.

Graph I.1.3: **Euro area fiscal stance over 2011-2017**



Source: Commission's autumn forecasts.

Furthermore, a positive fiscal stance in the euro area can address both sustainability and stabilisation needs if supported by the appropriate geographical configuration. The importance attributed to stabilisation and sustainability needs has to reflect country-specific situations and may thus differ across Member

Table I.1.3: **Composition of changes in the government debt ratio in EU Member States (% of GDP)**

	Gross debt ratio						Change in debt ratio	Change in the debt ratio in 2015-17 due to:		
	2012	2013	2014	2015	2016	2017	2015-17	1. Primary balance	2. Interest & growth	3. Stock-flow adjustment
BE	104,1	105,4	106,5	105,8	107,0	107,1	1,3	0,4	-0,7	1,6
DE	79,9	77,5	74,9	71,2	68,1	65,7	-5,5	-3,6	-1,9	0,0
EE	9,7	10,2	10,7	10,1	9,4	9,5	-0,5	-0,3	-0,8	0,6
IE	119,5	119,5	105,2	78,6	75,4	73,6	-5,0	-3,2	-1,7	-0,2
EL	159,6	177,4	179,7	177,4	181,6	179,1	1,7	-2,9	0,9	3,7
ES	85,7	95,4	100,4	99,8	99,5	99,9	0,1	2,9	-1,7	-1,1
FR	89,5	92,3	95,3	96,2	96,4	96,8	0,6	2,6	-0,3	-1,7
IT	123,3	129,0	131,9	132,3	133,0	133,1	0,8	-3,0	3,2	0,6
CY	79,3	102,2	107,1	107,5	107,1	103,7	-3,8	-4,3	0,3	0,3
LV	41,3	39,0	40,7	36,3	40,0	37,2	0,9	-0,3	-0,6	1,7
LT	39,8	38,7	40,5	42,7	40,8	43,3	0,6	-1,6	-0,2	2,3
LU	21,8	23,5	22,7	22,1	23,2	23,3	1,2	-2,1	-1,9	5,2
MT	67,6	68,4	67,0	64,0	62,1	59,9	-4,1	-3,1	-2,7	1,7
NL	66,4	67,7	67,9	65,1	63,0	61,3	-3,8	-1,0	-0,9	-2,0
AT	82,0	81,3	84,4	85,5	83,5	81,1	-4,4	-1,5	-1,1	-1,8
PT	126,2	129,0	130,6	129,0	130,3	129,5	0,6	-3,9	1,6	2,9
SI	53,9	71,0	80,9	83,1	80,2	78,3	-4,8	-1,1	-0,6	-3,1
SK	52,2	54,7	53,6	52,5	53,3	52,7	0,3	0,8	-0,9	0,4
FI	53,9	56,5	60,2	63,6	65,4	67,1	3,4	2,7	0,0	0,7
EA-19	91,4	93,7	94,4	92,6	91,6	90,6	-2,0	-0,9	-0,7	-0,3
BG	16,7	17,0	27,0	26,0	29,4	26,3	0,2	0,0	-0,2	0,4
CZ	44,5	44,9	42,2	40,3	39,7	39,1	-1,2	-1,1	-0,7	0,5
DK	45,2	44,7	44,8	40,4	38,9	38,3	-2,0	0,4	0,5	-3,0
HR	70,7	82,2	86,6	86,7	85,0	84,3	-2,4	-2,9	1,7	-1,2
HU	78,2	76,6	75,7	74,7	73,4	72,5	-2,2	-2,2	-0,8	0,8
PL	53,7	55,7	50,2	51,1	53,4	55,0	3,9	2,1	-0,8	2,6
RO	37,3	37,8	39,4	37,9	38,9	40,2	2,3	2,9	-1,6	0,9
SE	37,8	40,4	45,2	43,9	41,6	39,9	-4,1	-0,7	-3,5	0,0
UK	85,1	86,2	88,1	89,1	89,2	88,9	-0,2	1,4	0,0	-1,6
EU-28	85,3	87,4	88,5	86,6	86,0	85,1	-1,5	-0,4	-0,5	-0,4

Source: Commission services; figures for 2016 and 2017 are from the Commission's autumn 2016 forecast.
Note: Differences between the total and the sum of individual items are due to rounding. The contribution of interest and growth to the change in the debt ratio is the so-called "snowball" effect.

States. In particular, it is possible to give more emphasis to stabilisation where sustainability needs are relatively low, while giving more weight to sustainability in Member States where sustainability needs are high. Differentiated national fiscal stances may thus contribute to an appropriate fiscal stance at the euro area level, addressing both stabilisation and sustainability concerns at the same time**.** Spillovers across Member States should be considered, which are expected to be larger than usual in the current context of low inflation and low interest rates.

At the same time the sustainability of public finances needs to be ensured over the medium term. The accumulation of public debt is historically unprecedented –outside of war episodes– so that in some Member States active fiscal policy may exacerbate confidence problems rather than address them, further weighing on the recovery. Part IV of this report provides an extensive discussion of the methodological issues related to the assessment of the fiscal stance and proposes a framework and methodological tools to analyse it.

1.3. DEVELOPMENTS IN DEBT

At aggregate level, the debt ratio is expected to continue to slowly decline after having peaked in 2014, thanks to past efforts and a favourable snowball effect. Average debt in the EU peaked at 88.5 % of GDP in 2014 and, after seven years of continued increase, it is expected to edge down to 86 % in 2016 and 85.1 % in 2017 (Table I.1.3). Similarly, in the euro area, the debt ratio is projected to decline marginally from its peak of 94.4 % in 2014 to 91.6 % in 2016 and 90.6 % in 2017. The expected decline in the debt ratio in 2016 and 2017 is driven by several factors, namely an improvement in the primary balance, the snowball effect (which combines the impact of lower interest expenditure and higher nominal GDP growth) and some stock-flow adjustments.

Debt levels continue to vary widely across Member States. The debt-to-GDP ratios of five

Member States (Belgium, Greece, Italy, Cyprus and Portugal) are expected to exceed 100 % in 2016. In seven Member States (Ireland, Spain, France, Austria, Slovenia, Croatia, Hungary and the UK), ratios are projected to remain well above 60 %, but below 100 % (just below in the case of Spain). Debt in Germany, the Netherlands and Finland is expected to be between 60 % and 70 % of GDP with an increasing trend in the case of Finland. In the remaining Member States, debt is expected to remain below the 60 % of GDP threshold.

In most Member States, primary surpluses, higher nominal growth and lower interest expenditure are set to continue to have a favourable impact on debt developments in 2016 and 2017. The snowball effect is expected to continue to contribute to debt reduction in most Member States through lower interest payments, the economic recovery and higher inflation expectations. Primary surpluses are expected to help reduce debt ratios in many countries, while primary deficits in Belgium, Spain, France, Slovakia and Finland as well as some non-euro area Member States are expected to weigh on debt dynamics. Stock-flow adjustments are relevant in a number of Member States as well.

1.4. COMPOSITION OF PUBLIC FINANCES

Before 2013, fiscal consolidation was driven mainly by revenue increases. In the EU as a whole, the revenue-to-GDP ratio increased almost two points, from 43.5% in 2010 to 45.4% in 2013. At the same time, the expenditure-to-GDP ratio fell from 49.9% to 48.7%. In the euro area, the revenue-to-GDP ratio increased by more than two points, from 44.3% in 2010 to 46.7% in 2013, while the expenditure-to-GDP ratio fell from 50.5% to 49.7%.

Since 2014, expenditures have been kept under control. The expenditure-to-GDP ratio in the EU is projected to decrease by 1.5 points, from 48.1% in 2014 to 46.6% in 2017. Over the same period, revenues are expected to fall slightly, from 45.2% of GDP to 44.9%. In the euro area, a similar trend is observed. Expenditures are expected to decline from 49.4% of GDP in 2014 to 47.7% in 2017 while revenues are expected to fall by much less over the same period, from 46.8% to 46.1%.

The aggregate trends reflect broad-based developments in the Member States. The projected cumulated change in the revenue ratio in 2016 and 2017 ranges from a 3.5 pp decline in Romania to a 0.8 pp increase in the United Kingdom. The expected cumulated change in the expenditure ratio ranges from a 6.1 pp fall in Greece to a 0.9 pp increase in Poland. In addition to Poland, expenditure is expected to increase in Germany and the three Baltic countries while falling in all other Member States.

One way in which Member States may increase revenue is limiting the use of, or reducing the generosity of, tax expenditures. Tax expenditures are reductions in government revenue through preferential tax treatment of specific groups of tax payers or specific economic activities. EU Member States make ample use of tax expenditures with a wide variety of aims including employment creation, innovation, education, entrepreneurship, home ownership and income distribution. According to Kalyva et al. (2014), reported tax expenditures add up to a non-negligible share of GDP in many EU Member States: the sum of all tax expenditures as a percentage of GDP could amount to 2%-4% of GDP in some countries, but in half of those that report these figures ([4]) it stands below 1% of GDP. While tax expenditures may be motivated by relevant economic or social goals, they are not necessarily the most cost-efficient instrument and may in some cases lead to severe economic impact and distortions. Cost-benefit analysis and in depth reviews are warranted in many cases to enhance the efficiency of the overall revenue system. Box I.1.1 discusses the importance of reporting on, and reviewing, tax expenditures on a regular basis.

Most of the decline in the revenue ratio appears to be of a structural nature, while this is only partly the case on the expenditure side. Looking at the change from 2014 to 2017, the drop in the structural revenue ratio is broadly identical to the change in nominal terms, with the expected decline inter alia reflecting the impact of recent labour tax cuts in a number of Member States. On the expenditure side, however, only 0.5 pp of the decline ratio in both the EU and the euro area is estimated to be structural. This reflects the diverse nature of the main factors driving the expenditure ratio, namely the impact of the economic recovery on automatic stabilisers and lower interest expenditure.

([4]) For the limitations of the measure indicated and the limited sample of countries where data are available see also OECD (2010).

Box I.1.1: Reporting on tax expenditures in EU Member States

Tax expenditures are reductions in government revenue through preferential tax treatment of specific groups of tax payers or specific economic activities. EU Member States make ample use of tax expenditures with a wide variety of aims including employment creation, innovation, education, entrepreneurship, home ownership and income distribution. While tax expenditures may be motivated by relevant economic or social goals, they are not necessarily the most cost-efficient instrument and may in some cases lead to severe economic impact and distortions. (European Commission (2014c)).

The European Commission and other international organisations ([1]) regularly emphasise the need to report on and review tax expenditures as part of national budget management given their implication on fiscal consolidation as well. In this line, governments should describe clearly the use of tax expenditures in their tax systems, and provide an explanation of the main policies in place. This should include defining the benchmark situation (from which the tax expenditure is a deviation), the estimated cost of the measure in lost revenue and its coverage. In addition to reporting tax expenditures in the budget, governments should also carry out regular evaluations of the tax expenditures they apply. The evaluations may be conducted by independent bodies or commissions, if this is thought more appropriate, and should assess the efficiency and cost effectiveness of current tax expenditures. Member States may choose to carry out more extensive evaluations on a less frequent basis (i.e. less than once a year).

In this context, under the EU Directive on requirements for budgetary frameworks (2011/85/EU), Member States have been required since 1 January 2014 to publish detailed information on the effect of tax expenditures on revenue (Article 14(2)). However, the Directive does not specify a standardised procedure for evaluating tax expenditures.

The analysis presented in Table I.1.a provides an updated overview of the current reporting on tax expenditures in EU Member States (European Commission (2015c)). Table I.1.a shows in which Member States reporting on tax expenditures is required under national law, and also gives further detail on the coverage of national reporting: the time period reported on and the categorisation of tax expenditures used. The information provided shows that in 2015, 19 Member States now regularly report on tax expenditures. Reporting practices do, however, vary widely across countries, and the reports produced therefore also vary, in terms of their presentation, depth and coverage.

In 2015, a national legal requirement to report on tax expenditures was in place in 14 of the 19 Member States that currently report regularly. Reporting on tax expenditures varies in terms of the levels of government covered. While tax expenditures administered by central government are always covered, those related to local taxes and social security funds appear to be generally less well documented mainly due to the heterogeneity of the taxes applied (European Commission (2015c)). Member States' reporting practices do, however, share some general common features:

a) Reporting is typically carried out on an annual basis, by the Ministry of Finance, the Ministry for the Economy or the tax authorities, or by services reporting to one of these. b) tax expenditures are most often identified in reference to their tax category or tax base c) expenditures are often grouped according to the type of tax measure (e.g. allowances, rate relief or exemptions), the purpose (e.g. supporting low-income earners or reducing the tax on certain types of housing) or the sector (e.g. households, businesses or agriculture).

However, the time period covered and the categorisation ([2]) of tax expenditures used varies greatly. Similarly, some countries' reporting is backward-looking and others' forward-looking.

([1]) See, e.g., IMF (2011), OECD (2010) and European Commission (2014c). For a more detailed discussion, see Bauger (2014).

([2]) ESA 2010 introduces explicit new rules on how tax credits are to be recorded in national accounts. This is a significant change from the method previously used under ESA 95. Tax credits that constitute non-contingent government liabilities are now treated as expenditure instead of as a reduction in tax revenue, and are recorded at the moment when a government recognises the obligation to pay. The new system of recording on a gross (rather than a net) basis leads to an increase in total revenue and in total expenditure, compared to the approach used in the past.

(Continued on the next page)

Box (continued)

d) the reports generally use the «revenue forgone» method for calculating tax expenditures, but there are significant differences in methodology (e.g. whether revenue is estimated on a cash or accruals basis).

e) some Member States link tax expenditures to the expenditure side of the budget and the relevant reports are discussed in the Parliament (e.g. Belgium, Denmark, Germany, Greece, Spain, France, Austria, Portugal and Finland).

Finally, some Member States have also recently produced one-off tax expenditure reviews or inventories. These reports are generally more extensive, produced in some cases by independent experts (e.g. in Denmark, Ireland and Finland) and may include reviews of or opinions on specific tax expenditure items.

Table I.1.a: **National reporting on tax expenditures and characteristics of regular reporting practices**

Country	Legal requirement	National reporting		Time coverage	Categorization
		Regular (annual*)	non-regular (latest)		
BE	X	X		t-5, t-4, t-3, t-2, t-1	tax base, purpose
BG	X	X	2012		
CZ			2015		
DK	X	X	2009	various years	tax base
DE	X	X	2009	t-2, t-1, t, t+1	tax base, type of tax measure, purpose, sector
EE		X		t, t+1	tax base, purpose
IE			2010		
EL	X	X		t-2	tax base, purpose, sector
ES	X	X		t+1	tax base, type of tax measure, expenditure category
FR	X	X	2011	t-1, t, t+1	tax base, expenditure category
IT	X	X	2010/11	t, t+1, t+2	type of tax measure, purpose, sector
NL	X	X		t-2, t-1, t, t+1, t+2, t+3, t+4	tax base, sector, law, policy area
AT	X	X		t-3, t-2, t-1	tax base, sector
PT	X	X		t-2, t-1, t, t+1	tax base, purpose
SK	X	X		t-2, t-1, t, t+1, t+2, t+3	tax base
FI		X	2010	t-1, t, t+1	tax base, purpose
LV		X		t-2, t-1	tax base
HU	X	X		t+1	tax base
PL		X		t-1	tax base, purpose
SE	X	X		t-1, t+1, t+2	tax base, type of tax measure, purpose/sector (expenditure category or technical tax expenditure)
UK		X		t-1, t	tax base

Sources: Commission Services based on national sources.

Note: For Finland time coverage refers to numbers published for individual tax expenditure items by the Ministry of Finance. In the VAT reports there is a wider coverage of years. «n.a.» is the abbreviation for «not available».

Overall, information on the tax expenditures in force or planned in Member States is still often incomplete, and the data provided are not fully comparable across countries and over time. This makes it more difficult to identify possible improvements to fiscal and tax arrangements, and can thus make fiscal policymaking less effective and efficient. This can, in turn, affect the strength of countries' national budgetary frameworks as –more or less hidden– losses of revenue may weaken the positive effect to be gained from new measures increasing transparency on the expenditure side. The EU Directive on requirements for budgetary frameworks (2011/85/EU) and the changes that entered into force under the current European System of Accounts (ESA 2010) are expected to improve budgetary transparency and strengthen budgetary discipline.

Table I.1.4: **Government revenue and expenditure (% of GDP)**

	Revenue						Expenditure					
	2012	2013	2014	*2015*	*2016*	*2017*	2012	2013	2014	*2015*	*2016*	*2017*
BE	51,6	52,7	52,0	51,3	50,8	50,9	55,8	55,7	55,1	53,9	53,8	53,2
DE	44,3	44,5	44,7	44,7	44,7	44,8	44,3	44,7	44,4	44,0	44,1	44,4
EE	39,0	38,4	39,1	40,5	40,3	40,2	39,3	38,5	38,5	40,3	39,9	40,6
IE	33,8	34,1	34,1	27,6	27,2	27,1	41,8	39,8	37,8	29,4	28,1	27,6
EL	46,6	49,1	47,0	47,9	49,1	48,3	55,4	62,3	50,6	55,4	51,6	49,3
ES	37,6	38,6	38,9	38,6	38,0	37,8	48,1	45,6	44,9	43,8	42,6	41,6
FR	52,0	52,9	53,4	53,5	53,2	53,4	56,8	57,0	57,3	57,0	56,5	56,3
IT	47,8	48,1	47,9	47,8	47,4	46,9	50,8	50,8	50,9	50,4	49,7	49,3
CY	36,1	36,4	39,4	39,0	38,3	37,7	41,9	41,3	48,2	40,1	38,5	38,1
LV	36,3	36,1	35,9	35,8	35,8	36,4	37,1	37,0	37,5	37,1	36,6	37,5
LT	33,0	32,9	34,0	34,9	34,5	35,0	36,1	35,5	34,7	35,1	35,1	35,8
LU	44,6	44,4	43,8	43,7	43,0	41,2	44,3	43,4	42,3	42,1	41,7	41,2
MT	38,9	39,2	41,1	42,0	40,0	39,6	42,5	41,8	43,2	43,4	40,7	40,2
NL	43,2	43,9	43,9	43,2	43,9	43,8	47,1	46,3	46,2	45,1	44,7	44,0
AT	49,2	49,9	50,0	50,6	49,2	49,2	51,5	51,2	52,8	51,6	50,7	50,5
PT	42,9	45,1	44,6	44,0	43,7	44,0	48,5	49,9	51,8	48,4	46,4	46,1
SI	44,5	45,3	45,0	45,1	43,1	42,8	48,6	60,3	50,0	47,8	45,5	44,8
SK	36,3	38,7	39,3	42,9	39,9	40,3	40,6	41,4	42,0	45,6	42,1	41,8
FI	54,0	54,9	54,9	54,9	54,9	54,4	56,2	57,5	58,1	57,7	57,3	56,9
EA-19	46,1	46,7	46,8	46,5	46,2	46,1	49,7	49,7	49,4	48,5	48,0	47,7
BG	34,1	37,1	36,6	39,0	36,6	37,3	34,5	37,6	42,1	40,7	37,5	38,1
CZ	40,5	41,4	40,3	41,3	40,5	40,5	44,5	42,6	42,2	42,0	40,7	41,1
DK	54,8	55,5	57,4	53,9	53,8	51,9	58,3	56,5	56,0	55,7	54,8	53,9
HR	41,8	43,0	42,9	43,6	44,2	44,3	47,1	48,3	48,3	46,9	46,3	46,1
HU	46,2	46,8	46,9	48,5	46,4	47,0	48,6	49,3	49,0	50,0	48,0	49,4
PL	39,0	38,4	38,7	38,9	39,1	39,5	42,7	42,4	42,1	41,5	41,6	42,4
RO	33,6	33,3	33,6	34,9	31,6	31,5	37,2	35,4	34,4	35,7	34,5	34,7
SE	50,8	51,0	50,0	50,5	49,8	49,9	51,7	52,4	51,5	50,3	49,8	50,0
UK	38,1	39,0	38,0	38,5	39,2	39,3	46,3	44,7	43,7	42,8	42,7	42,1
EU-28	44,7	45,4	45,2	44,9	44,9	44,9	49,0	48,7	48,1	47,3	46,9	46,6

Source: Commission services; figures for 2016 and 2017 are from the Commission's autumn 2016 forecast.

2. IMPLEMENTATION OF FISCAL SURVEILLANCE

The EU fiscal framework, as laid down by the Stability and Growth Pact (SGP), aims at ensuring budgetary discipline through two main requirements. First, Member States are required to keep their general government deficit and debt positions not above the reference values of 3% and 60% of GDP respectively, and to prompt their correction if these two criteria are temporarily not fulfilled. ([5])([6]) Second, they are required by the preventive arm of the SGP to achieve and maintain their medium-term budgetary objective (MTO), which corresponds to a cyclically-adjusted target for the budget balance, net of one-offs and temporary measures. ([7]) As explained in Box I.2.1, country-specific MTOs are defined so as to secure the sustainability of public finances and allow the automatic stabilisers to operate without breaching the reference value for the deficit as defined in the Treaty.

2.1. THE EXCESSIVE DEFICIT PROCEDURE

The Excessive Deficit Procedure (EDP) ensures that Member States correct their excessive deficit and debt positions, measured against the reference values of 3% and 60% of GDP, thus operationalising the requirements set in the Treaty. ([8]) This section focuses on the implementation of the EDP since the previous Report on Public Finances was published. The country-specific developments are summarised in Tables I.A1.1, I.A1.2 and I.A1.3. ([9])

Currently, six Member States are in EDP, one of which is under an economic adjustment programme (Greece).

2.1.1. Euro area Member States

On 18 May 2016, on the basis of its 2016 spring forecast, the Commission adopted reports in accordance with Article 126(3) of the Treaty for Belgium, Italy and Finland.

In the case of Belgium, gross government debt reached nearly 106% of GDP in 2015, well above the 60% of GDP reference value and Belgium was not projected to make sufficient progress towards compliance with the debt reduction benchmark but the Commission report concluded that the debt criterion should be considered as complied with. ([10]) The data suggested that prima facie the debt criterion as defined in the Treaty appeared not to be fulfilled. However, after taking into account the relevant factors, namely (i) the unfavourable economic conditions which made the respect of the debt rule particularly demanding; (ii) the expectation that compliance with the required adjustment towards the MTO was broadly ensured; and (iii) the implementation of ambitious growth-enhancing structural reforms in line with the authorities' commitment which was expected to contribute to debt reduction in the medium/long term, the report

([5]) Article 126 TFEU lays down the Excessive Deficit Procedure, which is further specified in Council Regulation (EC) 1467/97 "on speeding up and clarifying the implementation of the excessive deficit procedure", amended in 2005 and 2011, which represents the corrective arm of the SGP.
Relevant legal texts and guidelines can be found at:http://ec.europa.eu/economy_finance/sgp/legal_texts/index_en.htm

([6]) In particular, a Member State is not compliant with the debt criterion if its general government gross debt is greater than 60% of GDP, and it is not sufficiently diminishing and approaching 60% of GDP at a satisfactory pace.

([7]) The preventive arm of the SGP is contained in Council Regulation (EC) 1466/97 "on the strengthening of the surveillance of budgetary positions and the surveillance and coordination of economic policies", which was amended in 2005 and 2011. Together with the procedure for the avoidance of excessive government deficit laid down in Article 126 TFEU, further specified in Council Regulation (EC) 1467/97, in European Parliament and Council Regulation (EU) No 1175/2011, Council Regulation (EU) No 1177/2011 and Regulation (EU) No 1173/2011 on the effective enforcement of budgetary surveillance in the euro area, form the SGP.

([8]) The concept of "sufficiently diminishing" and "satisfactory pace" is crucial in the assessment of compliance with the debt criterion for Member States whose general government gross debt is greater than 60% of GDP. These requirements are specified in Regulation 1467/97 as being fulfilled if "the differential [of the general government gross debt] with respect to the reference value has decreased over the previous three years at an average ½th per year as a benchmark". The Regulation then specified that "the requirement under the debt criterion shall also be considered to be fulfilled if the budgetary forecasts of the Commission indicate that the required reduction in the differential will occur over the three-year period encompassing the two years following the final year for which data are available". It further indicates that "the influence of the cycle on the pace of debt reduction" should be taken into account.

([9]) All the country-specific developments regarding the Excessive Deficit Procedure can be followed up at: http://ec.europa.eu/economy_finance/economic_governance/sgp/corrective_arm/index_en.htm.

([10]) See footnotes ([6]) and ([8]) in Chapter I.2.

concluded that the debt criterion should be considered as complied with.

Italy's debt-to-GDP increased slightly to 132.3% in 2015 and the transitional debt rule was not projected to be complied with either in 2015 or 2016 but the Commission report concluded that the debt criterion should be considered as complied with. The data suggested that prima facie the debt criterion as defined in the Treaty appeared not to be fulfilled. However, after taking into account the relevant factors, similar to those for the case of Belgium, namely (i) the unfavourable macroeconomic conditions and in particular still very low inflation which made the respect of the debt rule particularly demanding, (ii) the expectation that compliance with the required adjustment towards the MTO was broadly ensured once the fiscal flexibility requested by Italy for 2016 was granted; and (iii) the expected implementation of ambitious growth-enhancing structural reforms in line with the authorities' commitment which was expected to contribute to debt reduction in the medium/long term, the report concluded that the debt criterion should be considered as complied with. The Commission announced that it will revise its assessment of relevant factors in a new report under Article 126(3) TFEU as further information on the credibility and appropriateness of Italy's resumption of the adjustment path towards the MTO for 2017 becomes available.

In Finland, the general government gross debt increased to 63.6% of GDP, above the treaty reference value. Moreover, both Finland's 2016 Stability Programme and the 2016 Commission spring forecast projected that Finland would not comply with the debt reduction benchmark but the Commission report concluded that the debt criterion should be considered as complied with. The data suggested that prima facie the debt criterion as defined in the Treaty appeared not to be fulfilled. However, when relevant factors were taken into account (broad compliance with the recommended adjustment path towards the MTO in 2016, the fact that the debt corrected for the effects of the cycle would have remained below the 60% reference rate in 2015) the report concluded that the debt criterion should be considered as complied with.

While no new EDPs were opened, the EDP was abrogated for Cyprus, Ireland and Slovenia on 17 June 2016 as their deficits had been brought below 3% of GDP in a durable manner.

On 12 July 2016, the Council considered that neither Spain nor Portugal had taken effective action to correct their excessive deficit and gave them notice to correct the excessive deficit without fine. Following these decisions, the regulation foresees that the Council imposes a fine. However, in view of the reasoned requests submitted by the two Member States, the Council based on a recommendation by the Commission on 8 August 2016 decided to set the amount of the fine at zero. On the same date, the Council decided to give notice to both countries under Article 126(9) of the Treaty, setting a deadline of 2016 and 2018 for Portugal and Spain respectively to put an end to the excessive deficit situation.

Both countries had to submit a report on action taken by 15 October, following which the EDPs were put in abeyance. In its Communication of 16 November 2016, the Commission announced that both procedures should be kept in abeyance at this stage. Given that Portugal is compliant with the fiscal effort requested by the Council, the Commission considered that it had taken effective action in response to the Council decision of 8 August 2016. Given that Spain is projected to achieve the headline deficit target required by the Council in 2016, the procedure will be kept in abeyance at this stage. At the same time, the targets for 2017 and 2018 are currently not projected to be met on a no-policy-change basis, indicating that there are risks to the timely correction of the excessive deficit.

As the Commission came to the conclusion that the Excessive Deficit Procedures of both Member States should be held in abeyance, the event that required a proposal by the Commission to suspend parts of the European Structural and Investment Funds following the decision of non-effective action of 12 July 2016 was no longer present and the Commission therefore, following a structured dialogue with the European Parliament, did not put forward such proposal.

Box I.2.1: **The update of the minimum Medium-Term Objectives**

The Medium-Term Objective (MTO) is at the core of the preventive arm of the Stability and Growth Pact. The MTO represents a country-specific structural budgetary position that each Member State should achieve. According to Regulation (EC) 1466/97 the MTOs should be set so as to:

(i) provide a safety margin with respect to the 3% of GDP deficit limit. For each Member State, this safety margin is estimated in the form of a minimum benchmark that takes past output volatility and the budgetary sensitivity to output fluctuations into account.

(ii) ensure sustainability or rapid progress towards sustainability. This is assessed against the need to ensure the convergence of debt ratios towards prudent levels with due consideration to the economic and budgetary impact of ageing populations.

(iii) in compliance with (i) and (ii), allow room for budgetary manoeuvre, in particular taking into account the needs for public investment.

By setting a budgetary target in structural terms –i.e. cyclically adjusted and net of one-off and other temporary measures– the preventive arm of the Pact aims to ensure that the underlying fiscal position of Member States is conducive to medium-term sustainability, while allowing for the free operation of the automatic stabilisers.

Every three years, the Commission provides lower bound (minimum) MTOs, taking into account Member States' respective debt levels, the country-specific sustainability challenge posed by the costs of ageing population and the specific dynamics of the automatic stabilisers. In addition to the 3-yearly revisions of these lower bound minimum MTOs, countries undertaking structural reforms with a major impact on the sustainability of the public finances can also have their minimum MTOs revised on a case-by-case basis, in agreement with the Commission. In particular, the introduction of major pension reforms having an impact on long term fiscal sustainability could result in a revision of the minimum MTO.

The Member States then present their MTOs in the forthcoming SCPs by adopting either an MTO in line with these lower bounds or a more ambitious one if, in their view circumstances are deemed to warrant it. Euro area and ERM2 Member States must have an MTO that corresponds to at least -1% of GDP. In addition to the requirements set by the minimum MTOs, signatories to the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (TSCG), namely all euro area Member States plus Bulgaria, Denmark and Romania, have further committed themselves to MTOs of at least -0.5% of GDP, unless their debt ratio is significantly below 60% of GDP and the risks in terms of the long-term sustainability of their public finances are low. ([1])

Early 2016, the Commission provided Member States with updated minimum Medium-Term Objectives (MTOs). The Commission maintained the commonly agreed methodology of the previous (2012) update. ([2]) Table I.2.a shows the MTOs as nominated by Member States in their 2016 Stability and Convergence Programmes. These are applicable for the budgetary year 2017 and beyond.

([1]) This applies also to those non-euro area signatories that have declared themselves bound by the provisions of the Fiscal Compact (Denmark, Bulgaria and Romania).
([2]) See European Commission (2016c) Section 1.2, available online at http://ec.europa.eu/economy_finance/publications/eeip/pdf/ip021_en.pdf

(Continued on the next page)

Box (continued)

Table I.2.α:**MTOs as nominated in the spring 2016 Stability Programmes**

	MTO
BE	0
BG	-1
CZ	-1
DK	-0.5
DE	-0.5
EE	0
IE	-0.5
ES	0
FR	-0.4
HR	-1.75
IT	0
CY	0
LV	-1
LT	-1
LU	-0.5
HU	-1.5
MT	0
NL	-0.5
AT	-0.5
PL	-1
PT	0.25
RO	-1
SI*	0.25
SK	-0.5
FI	-0.5
SE	-1
UK*	-0.75

Source: Commission's autumn forecasts.
Note: * in the case of Slovenia, the table shows the minimum MTO, since Slovenia nominated an MTO in its 2016 Stability Programme, which does neither adequately take into account the need to bring debt below the Treaty reference value nor the implicit liabilities related to ageing. In the case of the UK, the Table shows the minimum MTO, as the UK has not nominated its MTO.

Adherence to the MTO, or the adjustment path towards it, was used as a relevant factor in assessing compliance with the debt criterion, as it is supposed, under normal macroeconomic circumstances, to ensure sustainability or rapid progress to sustainability in the medium term. As part of the update of the minimum MTOs, the Commission has aimed at checking and ensuring the consistency of the updated minimum MTOs with respect to the debt rule in the medium-term, as signalled in the Communication «On steps towards Completing Economic and Monetary Union» (21 October 2015). ([3]) It finds that for most Member States, compliance with the adjustment path implied by the preventive arm yields compliance with the debt rule in the medium term, based on the SGP scenario of the Commission's debt sustainability analysis. ([4]) This is not surprising, given that the construction of the minimum MTOs yields at sustainable public finances. However, in a small number of Member States, the minimum MTOs may not be sufficiently stringent under the current economic conditions to ensure debt rule compliance in the medium and long term.

([3]) https://ec.europa.eu/transparency/regdoc/rep/1/2015/EN/1-2015-600-EN-F1-1.PDF
([4]) A detailed description of the methodology can be found in European Commission (2016e) available at: http://ec.europa.eu/economy_finance/publications/eeip/pdf/ip018_en.pdf

In addition, Portugal submitted an adequate Economic Partnership Programme (EPP) as requested in the Council decision to give notice to take measures to correct the excessive deficit. The Council on 6 December 2016 provided an opinion on the Programme, considering that the EPP included a broadly adequate set of fiscal-structural reforms which would be supportive to an effective and lasting correction of the excessive deficit as a development of its National Reform Programme and Stability Programme. At the same time, some recommendations by the Council are still only partly backed by concrete measures, notably those regarding the sustainability of the social security system. The Commission and the Council will monitor the implementation of the reforms in the context of the European Semester and the post-programme surveillance.

2.1.2. Non-euro area Member States

No EDPs were opened or abrogated for Non-euro area Member States in the course of 2016. Currently, only two non-euro area Member States remain in the EDP procedure, namely Croatia and the UK. In both cases, the procedure is currently in abeyance. Croatia has a 2016 deadline to correct its excessive deficit and the UK has a 2016-17 deadline to correct its excessive deficit.

2.2. THE EUROPEAN SEMESTER AND THE FISCAL COUNTRY-SPECIFIC RECOMMENDATIONS

Member States submitted the 2016 Stability or Convergence Programmes (SCPs) in April this year thereby updating their medium-term fiscal plans. Most Member States planned to converge towards their MTOs, including those currently above it. All Member States which envisaged an overall deterioration of their structural balance in the 2016 SCPs were at or above their MTO and planned to remain adhering to them throughout the programme horizon, with the exception of Romania and Cyprus. At the same time, all Member States below their MTO intended to pursue a structural adjustment. By the end of the programme horizon, sixteen Member states would be in vicinity or above their MTO according to the recalculated structural balances, while three Member states (Spain, France and Slovenia) would maintain a distance to their MTO of more than 1% of GDP through 2019.

The MTO would be reached via a back-loaded adjustment of the order of 0.3% of GDP in the euro area and 1% of GDP in the EU throughout the period 2016-2019 as measured by the change in the structural balance. The Stability Programmes planned a slightly expansionary fiscal stance in 2016, followed by a resumption of fiscal consolidation in 2017 in the EU, but a nearly unchanged stance in the euro area. Fiscal consolidation was then expected to pick up in a somewhat back loaded fashion, with the bulk of the improvement in the structural balance being projected for 2018 and 2019. The loosening of the fiscal stance in 2016 was confirmed by the DBPs in October which however foresaw a partial reversal in 2017 with a slight improvement in the structural balance by 0.1% of GDP.

On 12 July 2016, based on the information provided in the 2016 SCPs (and in the National Reform Programmes), the Council adopted country-specific recommendations (CSRs) as part of the 2016 European Semester. This formally concluded the annual policy monitoring process entailed by the 2016 European Semester. The 2016 CSRs were addressed to 27 of the EU's 28 Member States and to the euro area as a whole, with the latter having been endorsed by the Council already on 18/19 February to allow the euro area dimension to be taken into account in the Member States National Reform and Stability programmes and the CSRs. To avoid duplication, there were no CSRs for Greece as it is still subject to an economic adjustment programme.

In the area of fiscal policy, Member States were recommended to comply with the requirements of the SGP. The Member States under an Excessive Deficit Procedure were recommended to ensure the correction of the excessive deficits within the time limits allowed. The Member States in the preventive arm of the SGP were recommended to ensure sufficient progress towards, or to stay at, their MTOs, with each recommendation providing guidance on the size of the adjustment to be delivered. In the current context, striking an appropriate balance between the different components of public finances was seen as crucial to preserving their growth-friendliness. On the revenue side Member States

were recommended to step up efforts to make tax systems fairer, more transparent and effective in providing incentives for job creation. On the expenditure side Member States were recommended to target both higher efficiency and the performance of individual expenditure sources. The ageing population called for reforms in long term care, pensions and health care ensuring the sustainability and/or the adequacy of the social security systems in Member States. In addition, Member States were recommended to focus on expenditure that will raise productivity in the future and will have positive spill-overs on the wider economy such as education, research and development, transport and communications. Finally, Member States were recommended to address the high tax wedge on labour. CSR in the fiscal area are reported in Annex I.1.

2.3. CLOSING THE FISCAL SURVEILLANCE CYCLE IN THE EURO AREA: DRAFT BUDGETARY PLANS

Autumn 2016 marked the fourth time that the Commission carried out an assessment of Member States' Draft Budgetary Plans (DBPs) for the forthcoming year. This monitoring procedure was introduced by the Two-Pack with the aim of enhancing the surveillance and coordination of budgetary and economic policies within the euro area.

All the euro area countries complied with the requirement and submitted their DBP in due time. ([11]) In line with the provisions of the Two-Pack Code of Conduct, two countries, Lithuania and Spain submitted no-policy change DBPs due to caretaker governments being in place. The incoming governments are expected to submit full DBPs once they take office.

The picture emerging from the DBPs is of a continued sluggish economic recovery amid challenging global conditions. Fiscal policy is planned to be broadly neutral. The macro-fiscal outlook emerging from the DBPs is similar the Commission 2016 autumn forecast and foresees a slight weakening in GDP growth from 1.7% in 2016 to 1.6% in 2017. The aggregate headline deficit for the euro area 18 (Greece is excluded as it is under a financial assistance programme) according to the DBPs is forecast to fall to 1.8% of GDP in 2016, down from 2% in 2015. In 2017, the aggregate deficit ratio is planned to decline to 1.5% of GDP. Having peaked in 2014, the aggregate debt ratio in 2017 based on the DBPs is planned to decrease slightly to 89% of GDP from 90.1% in 2016. This corresponds to deterioration in the structural balance in 2016 by 0.2 percentage points of GDP, which then remains broadly unchanged in 2017.

On the basis of the DBPs themselves, the Commission did not identify any case of "particularly serious non-compliance" with the provisions of the SGP. Nonetheless, there were some DBPs according to which the planned fiscal effort is insufficient in view of the existing imbalances. That is why the assessments of the DBPs flagged different degrees of risk and requested, where needed, appropriate action by the Member States in order to ensure compliance with the SGP. On the other hand, in countries that are above their MTO the budgetary situation could provide some scope to ensure a supportive budgetary stance, while preserving the long-term sustainability of national public finances. This approach was in line with the Commission communication "Towards a positive fiscal stance for the euro area" of 16 November 2016. ([12])

In order to facilitate comparison, the assessment of the plans was summarised in three broad categories, which have different meanings, depending on whether a Member State was in EDP or not (i) "compliant", (ii) "broadly compliant" and (iii) "at risk of non-compliance". The opinions of the Commission are presented Tables I.2.1 and I.2.2.

Five DBPs were found to be "compliant" with the provisions of the SGP. These were submitted by the following Member States under the preventive arm – Germany, Estonia, Luxembourg, Slovakia and the Netherlands. Of these, three Member States (Germany, the Netherlands and Luxembourg) were above their MTO.

([11]) Being under a macroeconomic adjustment programme, Greece was not obliged to submit a plan, as the programme already provides for close fiscal monitoring.

([12]) See footnote ([108]).

Table I.2.1: **Overview of individual Commission Opinions on the DBPs - Member States currently under the preventive arm of the SGP**

Member States	Overall compliance of the DBP with the SGP		Progress in implementing the fiscal-structural recommended in the 2016 CSRs
	Overall conclusion based on the Commission 2016 autumn forecast	Compliance with the preventive arm requirements in 2016-2017	
BE*	Risk of non-compliance	2016: risk of a significant deviation from the adjustment path towards the MTO; *prima facie* non-compliance with the transitional debt rule; 2017: risk of some deviation from the adjustment path towards the MTO in 2017, but risk of a significant deviation over 2016-2017 together; *prima facie* non-compliance with the debt reduction benchmark.	No progress
DE	Compliant	2016: MTO overachieved; compliance with the debt reduction benchmark; 2017: MTO overachieved; compliance with the debt reduction benchmark	Limited progress
EE	Compliant	2016: MTO overachieved; 2017: no deviation from the adjustment path towards the MTO.	n.a.
IE	Broadly compliant	2016: risk of some deviation from the adjustment path towards the MTO; compliance with the transitional debt rule; 2017: risk of some deviation from the adjustment path towards the MTO; compliance with the transitional debt rule.	Some progress
IT*	Risk of non-compliance	2016: risk of some deviation from the adjustment path towards the MTO; without the full allowance of 0.75% of GDP granted under the structural and investment clauses, there would be a risk of a significant deviation from the adjustment path towards the MTO; *prima facie* non-compliance with the debt reduction benchmark; 2017: risk of a significant deviation from the adjustment path towards the MTO; *prima facie* non-compliance with the debt reduction benchmark.	Some progress
CY	Risk of non-compliance	2016: MTO overachieved; compliance with the transitional debt rule; 2017: risk of a significant deviation from the adjustment path towards the MTO; compliance with the transitional debt rule.	Some progress
LT**	Risk of non-compliance	2016: no deviation from the adjustment path towards the MTO; 2017: risk of a significant deviation from the adjustment path towards the MTO based on no-policy-change DBP.	n.a.
LV	Broadly compliant	2016: risk of some deviation from the adjustment path towards the MTO; 2017: no deviation from the adjustment path towards the MTO in 2017, but risk of a small deviation over 2016-2017 together;	Limited progress
LU	Compliant	2016: MTO overachieved; 2017: MTO overachieved.	Limited progress
MT	Broadly compliant	2016: no deviation from the adjustment path towards the MTO; compliance with the debt reduction benchmark; 2017: risk of some deviation from the adjustment path towards the MTO.	No progress

(Continued on the next page)

Table (continued)

NL	Compliant	2016: MTO achieved; compliance with the transitional debt rule; 2017: MTO overachieved; compliance with the debt reduction benchmark.	No progress
AT* **	Broadly compliant	2016: no deviation from the adjustment path towards the MTO; compliance with the transitional debt rule; 2017: risk of some deviation from the adjustment path towards the MTO	Limited progress
SK	Compliant	2016: risk of some deviation from the adjustment path towards the MTO; 2017: no deviation from the adjustment path towards the MTO	Some progress
SI	Risk of non-compliance	2016: risk of some deviation from the adjustment path towards the MTO; compliance with the transitional debt rule; 2017: risk of a significant deviation from the adjustment path towards the MTO; compliance with the transitional debt rule.	Limited progress
FI** **	Risk of non-compliance	2016: risk of some deviation from the adjustment path towards the MTO; 2017: risk of a significant deviation from the adjustment path towards the MTO	Some progress

Source: Commission services.
* On 18 May 2016, the Commission issued a report under Article 126(3) of the TFEU, as the Member State did not make sufficient progress towards compliance with the debt rule in 2015. The report concluded that, after the assessment of all relevant factors, the debt criterion should be considered as complied with. A new report will be issued by the Commission shortly.
** DBP submitted by a caretaker government on a no-policy-change basis.
*** This conclusion is reached once the current estimate of the budgetary impact in 2016 of the exceptional inflow of refugees and security measures (from which Austria can still benefit in 2017 in order to ensure a treatment equal to Member States which are further away from their MTO) is deducted from the requirement.
**** On 18 May 2016, the Commission issued a report under Article 126(3) of the TFEU, as Finland's general government debt exceeded 60% of GDP in 2015. The report concluded that, after the assessment of all relevant factors, the debt criterion should be considered as complied with.

The Commission considered that the planned fiscal effort in the DBPs submitted by the remaining Member States fell short of what would be required by the SGP, or risk doing so. As a result, the Commission invited the authorities of the remaining thirteen countries to take the necessary measures within their national budgetary processes in order to ensure that the 2016 budgets would be "compliant" with the SGP.

In further detail, the DBPs of five countries were found to be "broadly compliant" with the SGP. This concerned- France- currently under the corrective arm of the SGP – and Ireland, Malta, Latvia and Austria- under the preventive arm. In the case of France, under EDP, the Commission 2016 autumn forecast projects that the headline deficit will be slightly below the Treaty reference value of 3% of GDP in 2017, although there is a significant shortfall in fiscal effort compared to the recommended level and the correction would not be durable in 2018 on the basis of unchanged policies. For the remaining Member States, all under the preventive arm, the Commission's forecast for 2017 projects some deviation from the MTO or the adjustment path towards it, but the shortfall relative to the requirement would not represent a significant deviation from the recommended adjustment. These Member States were also assessed to comply with the debt rule, where applicable.

Finally, the DBPs of eight countries were found to be "at risk of non-compliance" with the rules of the SGP. This was the case of Spain and Portugal – under the corrective arm of the SGP – as well as of Belgium, Italy, Cyprus, Lithuania, Slovenia and Finland – under the preventive arm. In the case of Spain, while acknowledging the no-policy-change nature of the projections, the Commission's forecast for 2017 projects that neither the intermediate headline deficit target, nor the recommended fiscal effort will be achieved. In the case of Portugal, which is currently under the

Table I.2.2: **Overview of individual Commission opinions on the DBPs - member States currently under the corrective arm of the SGP**

	Overall compliance of the DBP with the SGP		
Member States	**Overall conclusion based on the Commission 2016 autumn forecast**	**Overall conclusion based on the Commission 2016 autumn forecast**	**Progress in implementing the fiscal-structural recommended in the 2016 CSRs**
ES*	Risk of non-compliance	2016: intermediate headline target met, fiscal effort not delivered; 2017: intermediate headline target not met: fiscal effort not delivered based on no-policy-change DBP.	Limited progress
FR	Broadly compliant	2016: intermediate headline target met, fiscal effort not delivered; 2017: headline deficit projected just below 3% of GDP; fiscal effort not delivered.	Limited progress
PT**	Risk of non-compliance	2016: expected timely and durable correction of the excessive deficit, fiscal effort delivered. 2017: risk of a significant deviation from the adjustment path towards the MTO; *prima facie* non-compliance with the transitional debt rule.	Limited progress

Source: Commission services.
* DBP submitted by a caretaker government on a no-policy-change basis.
** Portugal is currently under the corrective arm of the DGP, but could move to the preventive arm as from 2017 if a timely and sustainable correction were achieved.

corrective arm and could become subject to the preventive arm from 2017 if a timely and sustainable correction of the excessive deficit is achieved, the Commission's forecast for 2017 projects a significant deviation from the required adjustment path towards the MTO, and non-compliance with the debt reduction benchmark. Similarly for the DBPs of Belgium, Italy, Cyprus, Lithuania, Slovenia and Finland, the Commission's forecast for 2017 projects a significant deviation from the MTO or the required adjustment path towards it.

Tables I.2.1 and I.2.2 provide overviews of individual Commission Opinions on the DBPs of Member States currently under the preventive and corrective arm of the SGP respectively.

ANNEX 1

Overview of EDP steps and Country-Specific fiscal Recommendations

Table I.A1.1: **Overview EDP steps - Euro area Member States**

Steps in EDP procedure	Treaty Art.	Member State																		
		IE	FR	ES	LV	MT	LT	BE	DE	IT	NL	AT	PT	SI	SK	CY	FI	MT
Starting phase																		
Commission adopts EDP-report = start of the procedure	126(3)	18.02.2009	18.02.2009	18.02.2009	18.02.2009	13.05.2009	13.05.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	07.10.2009	12.05.2010	12.05.2010	21.06.2013
Economic and Financial Committee adopts opinion	126(4)	27.02.2009	27.02.2009	27.02.2009	27.02.2009	29.05.2009	29.05.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.10.2009	27.05.2010	27.05.2010	21.06.2013
Commission adopts:																		
opinion on existence of excessive deficit	126(5)																	
recommendation for Council decision on existence of excessive deficit	126(6)	24.03.2009	24.03.2009	24.03.2009	02.07.2009	24.06.2009	24.06.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	11.11.2009	15.06.2010	15.06.2010	29.05.2013
recommendation for Council recommendation to end this situation	126(7)																	
Council adopts:																		
decision on existence of excessive deficit	126(6)	27.04.2009	27.04.2009	27.04.2009	07.07.2009	07.07.2009	07.07.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	02.12.2009	13.07.2010	13.07.2010	21.06.2013
recommendation to end this situation	126(7)																	
deadline for correction of excessive deficit		***2013***	***2012***	***2012***	***2012***	***2010***	***2011***	***2012***	***2013***	***2012***	***2013***	***2013***	***2013***	***2013***	***2013***	***2012***	***2011***	***2014***
Follow-up																		
Commission adopts communication on action taken					27.01.2010			15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	15.06.2010	27.01.2011	27.01.2011	15.11.2013
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	11.11.2009	11.11.2009	11.11.2009		27.01.2010	27.01.2010				29.05.2013		27.09.2012					
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	02.12.2009	02.12.2009	02.12.2009		16.02.2010	16.02.2010				21.06.2013		09.10.2012					
new deadline for correction of excessive deficit		***2014***	***2013***	***2013***		***2011***	***2012***				***2014***		***2014***					
Commission adopts communication on action taken		15.06.2010	15.06.2010	15.06.2010		06.01.2011	21.09.2010	11.01.2012			15.11.2013					11.01.2012		
Commission adopts recommendation for Council decision establishing inadequate action	126(8)							29.05.2013										
Council adopts decision establishing inadequate action	126(8)							21.06.2013										
Commission adopts recommendation for a Council decision to give notice	126(9)							29.05.2013										
Council adopts decision to give notice	126(9)							21.06.2013										
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	03.12.2010	29.05.2013	06.07.2012									29.05.2013	29.05.2013		07.05.2013		
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)	07.12.2010	21.06.2013	10.07.2012									21.06.2013	21.06.2013		16.05.2013		
new deadline for correction of excessive deficit		***2015***	***2015***	***2014***				***2013***					***2015***	***2015***		***2016***		
Commission adopts communication on action taken		24.08.2011	15.11.2013	14.11.2012				15.11.2013						15.11.2013		06.09.2013*		
Commission adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)		27.02.2015	29.05.2013														
Council adopts recommendation for NEW Council recommendation to end situation of excessive deficit	126(7)		10.03.2015	21.06.2013														
new deadline for correction of excessive deficit			***2017***	***2016***														
Commission adopts communication on action taken			01.07.2015	15.11.2013														
Commission adopts recommendation for Council decision establishing inadequate action	126(8)			07.07.2016									07.07.2016					
Council adopts decision establishing inadequate action	126(8)			12.07.2016									12.07.2016					
Commission adopts recommendation for Council implementing decision imposing a fine for failure to take effective action	126(8)			27.07.2016									27.07.2016					
Commission adopts recommendation for Council decision to give notice	126(9)			27.07.2016									27.07.2016					
Council adopts decision to give notice	126(9)			08.08.2016									08.08.2016					
new deadline for correction of excessive deficit				***2018***									***2016***					
Council adopts implementing decision on imposing a fine for failure to take effective action	126(8)			08.08.2016									08.08.2016					
Commission adopts communication on action taken				16.11.2016									16.11.2016					
Commission adopts proposal for Council opinion on Economic Partnership Programme													16.11.2016					
Abrogation																		
Commission adopts recommendation for Council decision abrogating existence of excessive deficit	126(12)	18.05.2016			29.05.2013	14.11.2012	29.05.2013	02.06.2014	30.05.2012	29.05.2013	02.06.2014	02.06.2014		18.05.2016	02.06.2014	18.05.2016	29.06.2011	12.05.2015
Council adopts decision abrogating existence of excessive deficit	126(12)	17.06.2016			21.06.2013	04.12.2012	21.06.2013	20.06.2014	22.06.2012	21.06.2013	20.06.2014	20.06.2014		17.06.2016	20.06.2014	17.06.2016	12.07.2011	19.06.2015

Source: Commission services.

Table I.A1.2: **Overview EDP steps - Non-euro area Member States**

Steps in EDP procedure	Treaty Art.	Member State							
		HU	UK	PL	RO	CZ	BG	DK	HR
Starting phase									
Commission adopts EDP-report = start of the procedure	126(3)	12.05.2004	11.06.2008	13.05.2009	13.05.2009	07.10.2009	12.05.2010	12.05.2010	15.11.2013
Economic and Financial Committee adopts opinion	126(4)	24.05.2004	25.06.2008	29.05.2009	29.05.2009	27.10.2009	27.05.2010	27.05.2010	29.11.2013
Commission adopts:									
opinion on existence of excessive deficit	126(5)								
recommendation for Council decision on existence of excessive deficit	126(6)	24.06.2004	02.07.2008	24.06.2009	24.06.2009	11.11.2009	06.07.2010	15.06.2010	10.12.2013
recommendation for Council recommendation to end this situation	126(7)								
Council adopts:									
decision on existence of excessive deficit	126(6)								
recommendation to end this situation	126(7)	05.07.2004	08.07.2008	07.07.2009	07.07.2009	02.12.2009	13.07.2010	13.07.2010	21.01.2014
deadline for correction of excessive deficit		***2008***	***fin. year 2009/10***	***2012***	***2011***	***2013***	***2011***	***2013***	***2016***
Follow-up									
Commission adopts communication on action taken				03.02.2010		15.06.2010	27.01.2011	27.01.2011	02.06.2014
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	22.12.2004	24.03.2009						
Council adopts decision establishing inadequate action	126(8)	18.01.2005	27.04.2009						
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	16.02.2005	24.03.2009		08.02.2010				
Council adopts NEW recommendation to end excessive deficit situation	126(7)	08.03.2005	27.04.2009		16.02.2010				
new deadline for correction of excessive deficit		***2008***	***fin. year 2013/14***		***2012***				
Commission adopts communication on action taken		13.07.2005		11.01.2012	21.09.2010				
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	20.10.2005							
Council adopts decision establishing inadequate action	126(8)	08.11.2005							
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	26.09.2006	11.11.2009						
Council adopts NEW recommendation to end excessive deficit situation	126(7)	10.10.2006	02.12.2009						
new deadline for correction of excessive deficit		***2009***	***fin. year 2014/15***						
Commission adopts communication on action taken		13.06.2007	06.07.2010						
Commission adopts recommendations for Council decision establishing inadequate action	126(8)		12.05.2015						
Council adopts decision establishing inadequate action	126(8)		19.06.2015						
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	24.06.2009	12.05.2015	29.05.2013					
Council adopts NEW recommendation to end excessive deficit situation	126(7)	07.07.2009	19.06.2015	21.06.2013					
deadline for taking effective action		07.01.2010							
new deadline for correction of excessive deficit		***2011***	***fin. year 2016/17***	***2014***					
Commission adopts communication on action taken		27.01.2010	16.11.2015						
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	11.01.2012		15.11.2013					
Council adopts decision establishing inadequate action	126(8)	24.01.2012		10.12.2013					
Commission adopts recommendation for NEW Council recommendation to end excessive deficit situation	126(7)	06.03.2012		15.11.2013					
Council adopts NEW recommendation to end excessive deficit situation	126(7)	13.03.2012		10.12.2013					
new deadline for correction of excessive deficit		***2012***		***2015***					
Commission adopts communication on action taken		30.05.2012		02.06.2014					
Abrogation									
Commission adopts recommendation for Council decision abrogating existence of excessive deficit	126(12)	29.05.2013		12.05.2015	29.05.2013	02.06.2014	30.05.2012	02.06.2014	
Council adopts decision abrogating existence of excessive deficit	126(12)	21.06.2013		19.06.2015	21.06.2013	20.06.2014	22.06.2012	20.06.2014	

Source: Commission services.

Table I.A1.3: **Overview EDP steps - Greece**

Steps in EDP procedure	Treaty Art.	Greece
Starting phase		
Commission adopts EDP-report = start of the procedure	126(3)	18.02.2009
Economic and Financial Committee adopts opinion	126(4)	27.02.2009
Commission adopts:		
opinion on existence of excessive deficit	126(5)	
recommendation for Council decision on existence of excessive deficit	126(6)	24.03.2009
recommendation for Council recommendation to end this situation	126(7)	
Council adopts:		
decision on existence of excessive deficit	126(6)	27.04.2009
recommendation to end this situation	126(7)	
deadline for correction of excessive deficit		***2010***
Follow-up		
Commission adopts recommendations for Council decision establishing inadequate action	126(8)	11.11.2009
Council adopts decision establishing inadequate action	126(8)	02.12.2009
Commission adopts Council recommendation for decision to give notice	126(9)	03.02.2010
Council decision to give notice	126(9)	16.02.2010
new deadline for correction of the excessive deficit		***2012***
Commission adopts communication on action taken		09.03.2010
Council adopts conclusions thereon		16.03.2010
Commission adopts recommendation for NEW Council decision to give notice	126(9)	04.05.2010
Council decision to give notice	126(9)	10.05.2010
new deadline for correction of the excessive deficit		***2014***
Follow-up - 1st review		
Commission adopts communication on action taken		19.08.2010
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	19.08.2010
Council decision amending the Council decision to give notice	126(9)	07.09.2010
Follow-up - 2nd review		
Commission adopts communication on action taken		09.12.2010
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	09.12.2010
Council decision amending the Council decision to give notice	126(9)	20.12.2010
Follow-up - 3rd review		
Commission adopts communication on action taken		24.02.2011
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	24.02.2011
Council decision amending the Council decision to give notice	126(9)	07.03.2011
Follow-up - 4th review		
Commission adopts communication on action taken		01.07.2011
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	05.07.2011
Council decision amending the Council decision to give notice	126(9)	12.07.2011
Follow-up - 5th review		
Commission adopts communication on action taken		26.10.2011
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	26.10.2011
Council decision amending the Council decision to give notice	126(9)	08.11.2011
Follow-up - Second Adjustment Programme		
Commission adopts communication on action taken		09.03.2012
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	09.03.2012
Council decision amending the Council decision to give notice	126(9)	13.03.2012
Follow-up - Second Adjustment Programme		
Commission adopts communication on action taken		30.11.2012
Commission adopts recommendation for Council decision amending the Council decision to give notice	126(9)	30.11.2012
Council decision amending the Council decision to give notice	126(9)	04.12.2012
new deadline for correction of the excessive deficit		***2016***
Follow-up - Third Adjustment Programme		
Council adopts decision to give notice	126(9)	20.08.2015

Source: Commission services.

Table I.A1.4: **Overview of Council Country-Specific Recommendations relating to fiscal policy**

Situation in spring as far as fiscal surveillance is concerned						
	Applicable provisions of the SGP (Spring 2016)	**Other relevant information**	**CSR on fiscal adjustment**	**CSR on fiscal framework**	**CSR on taxation**	**CSR on pensions and health-care**
BE	• Preventive arm • Transition period debt rule	• MTO: 0.75% in 2016 and 0% in 2017 • Debt > 60%	**Achieve an annual fiscal adjustment** of at least 0,6 % of GDP towards the medium-term budgetary objective in 2016 and in 2017. Use windfall gains to accelerate the reduction of the general government debt ratio.	Agree on an enforceable distribution of fiscal targets among all government levels.	**Simplify the tax system and remove distortive tax expenditures**.	
BG	Preventive arm	• MTO: -1% • Debt < 60%	**Achieve an annual fiscal adjustment** of 0,5 % of GDP towards the medium-term budgetary objective in 2016 and in 2017.		**Further improve tax collection and take measures to reduce the extent of the informal economy, including undeclared work.**	
CZ	Preventive arm	• MTO: -1% (overachieved in 2016 and 2017) • Debt < 60%	**Respect the medium-term budgetary objective in 2016 and achieve an annual fiscal adjustment** of 0,25 % of GDP towards the medium-term budgetary objective in 2017.			
DK	Preventive arm	• MTO: -0.5% (at MTO in 2016)	**Avoid deviating from the medium-term budgetary objective in 2016.**			
DE	• Preventive arm • Debt rule	• MTO: -0.5% • (overachieved in 2016 and 2017) • Debt > 60%	**Achieve a sustained upward trend in public investment**, especially in infrastructure, education, research and innovation, while respecting the medium term objective.	Improve the design of federal fiscal relations with a view to increasing public investment, especially at municipal level.	**Reduce the high tax wedge for low wage earners** and facilitate the transition from mini-jobs to standard employment. **Reduce inefficiencies in the tax system**, in particular by reviewing corporate taxation and the local trade tax, modernise the tax administration and review the regulatory framework for venture capital.	
EE	Preventive arm	• MTO: 0% (overachieved in 2016) • Debt < 60%				
IE	• Preventive arm • Transition period debt rule	• MTO: 0% • Debt > 60%	Following the correction of the excessive deficit, **achieve an annual fiscal adjustment** of 0,6 % of GDP towards the medium-term budgetary objective in 2016 and in 2017. Use windfall gains from strong economic and financial conditions, as well as from asset sales, to accelerate debt reduction.		**Reduce vulnerability to economic fluctuations and shocks, inter alia, by broadening the tax base**.	Enhance the quality of expenditure, particularly by increasing cost-effectiveness of healthcare and by prioritising government capital expenditure in R & D and in public infrastructure, in particular transport, water services and housing.
EL	To avoid duplication with measures set out in the Economic Adjustment Programme, there are no additional recommendations for Greece.					
ES	Corrective arm	EDP deadline: 2018	**Ensure a durable correction of the excessive deficit**, in accordance with the relevant decisions or recommendations under the excessive deficit procedure, by taking the necessary structural measures and by using all windfall gains for deficit and debt reduction.	**Implement at all government levels the tools set out in the fiscal framework law**. Enhance control mechanisms for public procurement and coordination of procurement policies across government levels.		
FR	• Corrective arm	• EDP deadline: 2017	**Ensure a durable correction of the excessive deficit by 2017** by taking the required structural measures and by using all windfall gains for deficit and debt reduction.	**Specify the expenditure cuts** planned for the coming years and step up efforts to increase the amount of savings generated by the spending reviews, including on local government spending, by the end of 2016. **Reinforce independent public policy evaluations** in order to identify efficiency gains across all sub-sectors of general government.	**Take action to reduce the taxes on production and the corporate income statutory rate while broadening the tax base on consumption**, in particular as regards VAT. Remove inefficient tax expenditures, remove taxes that are yielding little or no revenue and adopt the withholding personal income tax reform by the end of 2016.	
HR	• Preventive arm(Corrective arm in 2016) • Debt rule	• MTO:-1.75% • Debt>60%	**Ensure a durable correction of the excessive deficit by 2016**. Thereafter, achieve an annual fiscal adjustment of at least 0,6 % of GDP in 2017. Use any windfall gains to accelerate the reduction of the general government debt ratio. Reinforce the framework for public debt management. **Adopt and start implementing a debt management strategy for 2016-2018**.	By September 2016, reinforce numerical fiscal rules and strengthen the independence and the mandate of the Fiscal Policy Commission. By the end of 2016, **improve budgetary planning and strengthen the multi-annual budgetary framework**. By the end of 2016, **start reducing fragmentation and improving the functional distribution of competencies in public administration** to improve efficiency and reduce territorial disparities in the delivery of public services. In consultation with social partners, harmonise the wage-setting frameworks across the public administration and public services. Advance the divestment process of state assets and reinforce the monitoring of state-owned enterprises' performance and boards' accountability, including by advancing the listing of shares of state-owned companies.	By the end of 2016, **start a reform of recurrent taxation of immovable property**. **Significantly reduce parafiscal charges. Remove unjustified regulatory restrictions** hampering access to and the practice of regulated professions. **Reduce the administrative burden on businesses.**	By the end of 2016, **take measures to discourage early retirement, accelerate the transition to the higher statutory retirement age, and align pension provisions for specific categories with the rules of the general scheme**.

(Continued on the next page)

Table (continued)

IT	• Preventive arm • Debt rule	• MTO: 0% • Debt >60%	**In 2016, limit the temporary deviation from the required 0,5 % of GDP adjustment towards the medium-term budgetary objective** to the amount of 0,75 % of GDP allowed for investments and the implementation of structural reforms, subject to the condition of resuming the adjustment path towards the medium-term budgetary objective in 2017. **Achieve an annual fiscal adjustment of 0,6 % or more of GDP towards the medium-term budgetary objective in 2017**	Finalise the reform of the budgetary process in the course of 2016 and ensure that the spending review is an integral part of it. Ensure the timely implementation of the privatisation programme and use the windfall gains to accelerate the reduction of the general government debt ratio. **Implement the reform of the public administration** by adopting and implementing all necessary legislative decrees, in particular those reforming publicly-owned enterprises, local public services and the management of human resources. Step up the fight against corruption including by revising the statute of limitations by the end of 2016. **Reduce the length of civil justice proceedings** by enforcing reforms and through effective case-management	**Shift the tax burden from productive factors onto consumption and property**. Reduce the number and scope of tax expenditures and complete the reform of the cadastral system by mid-2017. **Take measures to improve tax compliance**, including through electronic invoicing and payments.	
CY	• Preventive arm • Transition period debt rule	• MTO: 0% • Debt >60%	**Following the correction of the excessive deficit, respect the medium-term budgetary objective** in 2016 and in 2017. By the end of 2016, **adopt a binding mechanism containing the growth rate of the compensation of public employees**.	By the end of 2016, **adopt the horizontal reform of the public administration and the law on the governance of state-owned entities**, and implement the reform of local governments. By the end of 2016, adopt the secondary legislation to complete the new budgetary framework.		Adopt legislation for a hospital reform and advance with the planned implementation of universal health care coverage
LV	• Preventive arm	• MTO: -1% • Debt < 60%	**Ensure that the deviation from the adjustment path towards the medium-term budgetary objective in 2016 and 2017 is limited** to the allowance linked to the systemic pension reform and the major structural reform in the healthcare sector.		**Reduce the tax wedge for low-income earners** by exploiting a growth-friendly tax shift towards environmental and property taxes and improving tax compliance.	**Improve the accessibility, quality and cost-effectiveness of the healthcare system.**
LT	• Preventive arm	• MTO: -1% (overachieved in 2016) • Debt < 60%	**Ensure that the deviation from the medium-term budgetary objective is limited to the allowance linked to the systemic pension reform in 2016 and in 2017**.		Reduce the tax burden on low-income earners by shifting the tax burden to other sources less detrimental to growth and improve tax compliance, in particular in the area of VAT.	**Improve the performance of the healthcare system** by strengthening outpatient care, disease prevention and health promotion.
LU	• Preventive arm	• MTO: 0.5% (overachieved in 2016 and 2017) • Debt < 60%				**Ensure the long-term sustainability of public pensions** by increasing the effective retirement age, by limiting early retirement and increasing incentives to work longer, and by aligning the statutory retirement age to changes in life expectancy.
HU	• Preventive arm • Debt rule	• MTO: -1.7% in 2016 and -1.5% in 2017 • Debt > 60%	In view of the high risk of a significant deviation, **achieve an annual fiscal adjustment of 0,3 % of GDP towards the medium-term budgetary objective in 2016 and of 0,6 % of GDP in 2017**, unless the medium-term budgetary objective is respected with a lower effort, by taking the necessary structural measures.	**Strengthen transparency and competition in public procurement** through e-procurement, increased publication of tenders and further improvement of the anti-corruption framework. **Improve the regulatory environment in the services sector and in the retail sector** by addressing restrictive regulations and ensuring predictability.	**Further reduce sector-specific taxes and reduce the tax wedge for low-income earners**.	
MT	• Preventive arm • Debt rule	• MTO: 0% • Debt>60%	In view of the high risk of a significant deviation, **achieve an annual fiscal adjustment of 0,6 % of GDP towards the medium-term budgetary objective in 2016 and in 2017**, by taking the necessary structural measures. Step up measures to **ensure the long-term sustainability of public finances**.			
NL	• Preventive arm • Transition period debt rule	• MTO:-0.5% (overachieved in 2016) • Debt>60%	**Limit the deviation from the medium-term budgetary objective in 2016 and achieve an annual fiscal adjustment of 0,6 % of GDP in 2017**.	Prioritise public expenditure towards supporting more investment in research and development.	Take measures to reduce the remaining distortions in the housing market and the debt bias for households, in particular by **decreasing mortgage interest tax deductibility**.	**Take measures to make the second pillar of the pension system more transparent, inter-generationally fairer and more resilient to shocks**.
AT	• Preventive arm • Transition period debt rule	• MTO:-0.5% (overachieved in 2016) • Debt>60%	**Ensure that the deviation from the medium-term budgetary objective in 2016 and in 2017 is limited to the allowance linked to the budgetary impact of the exceptional inflow of refugees in 2015, and to that effect achieve an annual fiscal adjustment of 0,3 % of GDP in 2017** unless the medium-term budgetary objective is respected with a lower effort.	Simplify, rationalise and streamline fiscal relations and responsibilities across the various layers of government.		**Ensure the sustainability of the healthcare system**, and of the pension system by linking the statutory pension age to life expectancy.
PL	• Preventive arm	• MTO:-1% • Debt <60%	**Achieve an annual fiscal adjustment of 0,5 % of GDP towards the medium-term budgetary objective in 2016 and in 2017**.		Strengthen the fiscal framework, including by establishing an independent fiscal council. Improve tax collection by ensuring better VAT compliance, and limit the extensive use of reduced VAT rates.	**Ensure the sustainability and adequacy of the pension system and increase participation in the labour market,** by starting to reform the preferential pension arrangements, removing obstacles to more permanent types of employment and improving the labour market-relevance of education and training.

(Continued on the next page)

Table (continued)

PT	• Preventive arm (Corrective arm in 2016) • Transition period debt rule in 2017	• MTO:-0.5% in 2016 and 0.3 in 2017 • Debt >60%	**Ensure a durable correction of the excessive deficit,** in accordance with the relevant decisions or recommendations under the excessive deficit procedure, by taking the necessary structural measures and by using all windfall gains for deficit and debt reduction. Thereafter, achieve an annual fiscal adjustment of at least 0,6 % of GDP.	**Conduct, by February 2017, a comprehensive expenditure review and strengthen expenditure control, cost effectiveness and adequate budgeting** at all levels of public administration. By the end of 2016, refocus ongoing restructuring plans of state-owned enterprises. **Increase transparency and efficiency in public procurement** as regards public-private partnerships and concessions. By the end of 2016, **improve and accelerate administrative and licensing procedures, accelerate tax litigations and reduce regulatory barriers,** especially in business services. Incentivise cooperation between universities and the business sector		**Ensure the long-term sustainability of the health sector,** without compromising access to primary healthcare. **Reduce the reliance of the pension system on budgetary transfers**
RO	• Preventive arm	• MTO:-1% (overachieved in 2016) • Debt >60%	**Limit the deviation from the medium-term budgetary objective in 2016 and achieve an annual fiscal adjustment of 0,5 % of GDP in 2017** unless the medium-term budgetary objective is respected with a lower effort. Ensure that legislative initiatives do not undermine legal certainty and do not put at risk financial stability. If necessary, adopt measures that mitigate such risks.	Strengthen the independence and transparency of human resources management in the public administration. **Simplify administrative procedures for business and the public. Strengthen corporate governance of state-owned enterprises.**	**Ensure the application of the fiscal framework and strengthen further tax compliance and collection.**	**Curb informal payments in the healthcare system and increase the availability of outpatient care.**
SI	• Preventive arm • Transition period of the debt rule	• MTO:0.0% in 2016 and 0.3 in 2017 • Debt >60%	Following the correction of the excessive deficit, **achieve an annual fiscal adjustment of 0,6 % of GDP towards the medium-term budgetary objective in 2016 and in 2017.** Set a medium-term budgetary objective that respects the requirements of the Stability and Growth Pact.	Strengthen the fiscal framework by appointing an independent fiscal council and amending the Public Finance Act. **Take measures to modernise public administration** and reduce the administrative burden on business. **Improve the governance and the performance of state-owned enterprises.**		**Complete and implement the reform of the long-term care and healthcare systems**, making them more cost-efficient to ensure long-term sustainability of accessible and quality care. By the end of 2017, adopt the necessary measures to ensure the long-term sustainability and adequacy of the pension system.
SK	• Preventive arm	• MTO:-0.5% • Debt <60%	**Achieve an annual fiscal adjustment of 0,25 % of GDP towards the medium-term budgetary objective in 2016 and of 0,5 % of GDP in 2017.**	**Consolidate governance**, reinforce the shift from price only to quality-based competition and improve the prosecution of illicit practices in public procurement**. Improve the transparency, quality and effectiveness of human resources management in public administration,** in particular by adopting a new civil service act, and the effectiveness of the justice system.	**Take measures to increase tax compliance.**	Improve the cost-effectiveness of the healthcare system.
FI	• Preventive arm	• MTO:-0.5% • Debt <60%	**Achieve an annual fiscal adjustment of at least 0,5 % of GDP towards the medium-term budgetary objective in 2016 and 0,6 % in 2017.** Use any windfall gains to accelerate the reduction of the general government debt ratio.			**Ensure timely adoption and implementation of the administrative reform** with a view to better cost-effectiveness of social and healthcare services.
SE	• Preventive arm	• MTO:-1% (overachieved in 2016 and in 2017) • Debt<60%	**Address the rise in household debt** by adjusting fiscal incentives, in particular by **gradually limiting the tax deductibility of mortgage interest payments or by increasing recurrent property taxes.** Ensure that the macro-prudential authority has the legal mandate to implement measures to safeguard financial stability in a timely manner.		**Foster investment in housing and improve the efficiency of the housing market,** including by introducing more flexibility in setting rental prices and by revising the design of the capital gains tax to facilitate more housing transactions.	
UK	• Preventive arm • Transition period of the debt rule in 2016 fiscal year	• MTO:-0.8% • Debt >60%	**Endeavour to correct the excessive deficit in a durable manner by 2016-17.** Following the correction of the excessive deficit, achieve a fiscal adjustment of 0,6 % of GDP in 2017-18 towards the minimum medium-term budgetary objective.			

Source: Commission services.

Part II

Recent development in fiscal surveillance

INTRODUCTION

In the course of 2016, the Commission further refined aspects of its toolkit for fiscal surveillance and enhanced its analysis of some dimensions of fiscal policy. This part presents three aspects. First, the way the no-policy-change ("NPC") assumption is implemented by the Commission is detailed in Chapter II.1. Second, Chapter II.2. provides an analytical snapshot on the efficiency and performance of public expenditure. Finally, in December 2016, the ECOFIN Council endorsed an agreement aimed at improving the predictability and transparency of the Stability and Growth Pact. Chapter II.3. presents the essence of the agreement.

The economic forecasts produced by the Commission, are crucial for fiscal surveillance and are made under a NPC assumption. The reliance on this assumption is a longstanding practice and a deliberate choice, driven by the requirements of the Stability and Growth Pact (SGP). Assessing compliance with SGP requirements requires that the Commission be in a position to evaluate deficit developments if no further policy action is taken and to gauge the fiscal effort undertaken by the Member State, in a time- and cross-country consistent manner.

The purpose of Chapter II.1. is to define forecasting under the NPC assumption and to present a set of principles that shed further light on what is, and what is not, compatible with this assumption. In so doing, it aims at enabling a time- and cross-country consistent interpretation of the NPC assumption to real-life cases, which will always require judgement. The chapter also clarifies under which conditions government actions should be recognised as "fiscal policy measures" and which possible effects of these measures are retained in the Commission's quantification of their impact. This Chapter has been inspired by the collective experience of Commission staff dealing with many different cases that have arisen since 2008, when a first description what the NPC assumption entails was published. ([13])

Another area in which the Commission has refined its analysis is the quality of public expenditure. Chapter II.2. provides a one-off analysis of the efficiency and performance of public expenditure. ([14]) The approach is fairly broad, exploiting mostly macroeconomic indicators. It provides first indications of expenditure quality, but it is not suited for direct utilization in the surveillance context.

As widely accepted in the economic literature, the impact of fiscal policy does not just depend on the sign and size of the budget balance, but also on the quality of government expenditure. In this respect, the design of public finances should be growth-friendly; it should support job creation and, where necessary, ensure social fairness. Chapter II.2. provides a one-off snapshot of the efficiency and performance of public expenditure across Member States and for different functions: education, health, R&D, general public services, public order and safety, and infrastructure. The analysis, based on an efficiency frontier approach, allows for the classification of Member States according to their relative performance.

The analysis on the quality of public expenditure provides country and sector specific indication on the efficiency and performance of public expenditure. Overall, the indicators suggest that no country is situated in either the high-performance/high-efficiency group or the low-performance/low-efficiency group consistently across each expenditure function. Still, broad tendencies can be observed with some Member States situated in one of these groups in various expenditure areas. However, the analysis is meant to provide first insights based on available quantitative evidence and highlight potential bottlenecks. At the same time, one should refrain from drawing strong conclusions on the basis of this assessment, which only represents a first step to trigger an informed policy discussion. The results reported should rather be considered as evidence complementary to sector-specific, micro-based evidence.

Finally Chapter II.3. presents the main features of the agreement reached with the ECOFIN council to improve transparency and predictability of the Stability and Growth Pact.

([13]) See European Commission (2008).

([14]) This analysis is based on the approach and data used in Barrios and Schächter (2008).

1. THE NO-POLICY CHANGE ASSUMPTION IN THE COMMISSION'S FORECAST

The European economic forecasts produced by the Commission are crucial for fiscal surveillance ([15]) and Commission assessment in general. The forecasts are published three times a year for all Member States and include detailed projections for the public finances, made under a no-policy-change (NPC) assumption. The reliance on this assumption is not only a longstanding practice but also a deliberate choice, essentially driven by the requirements of the fiscal surveillance framework. The latter builds significantly on forecasts made under the NPC assumption as well as on the identification and quantification of fiscal policy measures, including one-off measures for both the preventive and the corrective arm. ([16])

The purpose of this part is to present how the Commission implements the NPC assumption, including a definition (see Section II.1.1.) and a set of principles that are compatible with it (Section II.1.2.). In so doing, it goes much further than the earlier contribution about the NPC assumption in the 2008 Report on Public Finances in EMU. ([17]) The guidance provided therein –on how to extrapolate past revenue and expenditure trends, by exploiting links to underlying tax bases (for revenues) and relying, in general, on simple rules of thumb (for many expenditure categories)– remains valid and is not repeated here. The present part takes a broader approach and presents ten annotated principles on how to implement the NPC assumption, with some stylised examples. These principles have been inspired by the collective experience of Commission staff dealing with many different cases that have arisen in the decade or so since the earlier guidance was published. A further extension compared to the existing guidance on the NPC assumption is the discussion on the identification of fiscal policy measures and their different effects, given their enhanced importance in fiscal surveillance flowing from the provisions in the Six-Pack.

While this contribution serves to clarify what is, and what is not, compatible with the NPC assumption, there will always be room for interpretation and judgement to deal with borderline cases. The need for interpretation arises in all stages of the forecasting process, such as the choice of extrapolation method or the proxy chosen for the underlying tax base, the working assumptions to deal with e.g. structural breaks, the decision on whether the available information about a government action can be regarded as sufficient to treat it as a "fiscal policy measure" in the forecast, the judgement about the assumptions underlying the official quantification of a measure, etc.

1.1. THE NPC FORECAST: A THREE-STEP PROCESS

Conceptually, a forecast under the NPC assumption (or "NPC forecast" for short) can be regarded as a three-step process: trend, baseline and measures. First, for each item of the government budget, the "*trend*" should be established, i.e. the path of each item consistent with past policy orientations, without any further government interventions. As explained below, this is typically a relatively mechanical exercise. Second, in some cases where simple trend extrapolation would not be meaningful (e.g. because of structural breaks in the time series – see below) an adjustment may be needed to turn this "mechanical" trend into a so-called "*baseline*", notably by adopting very specific working assumptions. The determination of the baseline is a crucial step in the forecast process, because it is the starting point for considering the impact of measures. Indeed, in the third and final step, for each item possible "*fiscal policy measures*" should be identified and their estimated impact added to the baseline. The definition of a fiscal policy measure used here –and explained in further detail below– is *an intervention to change past policy orientations, (i) which is specified in sufficient detail, (ii) has been adopted or at least credibly announced, and (iii) has a direct incremental budgetary impact*.

([15]) See European Commission (2016c), the Vademecum of the SGP edition 2016, Box 1.5 on p. 36.

([16]) A presentation of the treatment of one-off measures can be found in Chapter II.3, pp.52-66 of European Commission (2015c).

([17]) See European Commission (2008), Chapter II.3. pp. 109-114.

Clearly, this three-step approach is a simplification. In actual practice several iterations will be needed until the full effect of all fiscal policy measures on both the economy and the public finances is captured in a consistent manner in the final forecast (see also Principles 9 and 10 below). Furthermore, a clear separation into trend, baseline and measure is not always straightforward, especially for many expenditure items and for non-tax revenue. Still, thinking about the NPC forecast in terms of these three steps helps to (i) understand that making NPC forecasts necessarily requires judgement, (ii) ensure transparency when working assumptions are made and (iii) avoid double-counting when measures are identified and quantified.

Taking the three-step approach as a starting point, a NPC forecast can be defined as follows: it *extrapolates past revenue and expenditure trends and relationships in a way that is consistent with past policy orientations, and includes all measures that imply a change to these past policy orientations on the condition that they are sufficiently detailed as well as adopted or at least credibly announced. This may also include the adoption of a limited number of working assumptions, especially to deal with possible structural breaks.*

1.2. TEN METHODOLOGICAL PRINCIPLES

Starting from the above definition, this section puts forward ten principles that shed further light on what is, and what is not, compatible with the NPC assumption as implemented by the Commission. The aim of these principles is to make the definition of a NPC forecast more operational and to help decide how to treat specific cases or transactions in a NPC forecast setting. Although it is a simplification, the presentation allocates the principles to the three steps of the NPC forecast: the first two relate to determining the trend, while the next two allow moving from the trend to the baseline. Next come five principles about fiscal policy measures, while a final principle concerns the internal consistency of the forecast.

1.2.1. Principles relating to the determination of the trend (step 1 of the NPC forecast process)

***Principle 1 (overarching)**: A NPC forecast is always consistent with past policy orientations, unless there is a sufficiently detailed and credibly announced measure producing a change therein. Therefore, it should as a rule refrain from making assumptions entailing a change in policy orientations or concerning a choice between different policy actions open to the government.*

A NPC forecast is always consistent with past policy orientations, unless there is a sufficiently detailed and credibly announced measure producing a change therein. In other words, a NPC forecast should, as a rule, not include assumptions entailing a change in policy orientations nor assumptions concerning a choice between different policy actions open to the government. A change in policy orientation can only be included if it is the result of a sufficiently specified and credibly announced measure (see also Principle 5 below), known at the cut-off date of the forecast. Indexation arrangements, which vary substantially between Member States, offer useful illustrations of this principle. For instance, when there is a standing practice to adjust tax brackets to a price index (e.g. to avoid fiscal drag), a NPC forecast incorporates the continuation of this practice, whether the forthcoming adjustments have been legislated or announced or not, because it is the current policy orientation. By contrast, when there is no such standing practice, the NPC forecast should not include any adjustment of tax brackets, unless there is an explicit measure specifying the timing and size of the adjustment (for a more detailed discussion of different indexation arrangements, see Box II.1.1). Obviously, there are likely to be more measures changing the policy orientation in the first year covered by the forecast and fewer in later years.

A NPC forecast is not the same as a "most likely" forecast, nor does it have to correspond to a neutral fiscal stance. The effect of government actions that have not yet been officially announced and/or specified in sufficient detail should not be taken into account, even though such actions may be very likely. In other words, the NPC forecast does not include a fiscal

policy reaction function, but instead shows the size of the policy action still to be specified and announced in order to reach the budgetary targets; it does not say anything about the likelihood of reaching those targets. Moreover, it should be clear that the extrapolation of revenue and expenditure trends does not imply that the NPC forecast is identical to a forecast in which the structural (primary) balance remains constant. Indeed, the extrapolation of past policy orientations or of revenue and expenditure trends and relationships may imply a trend change in the (primary) structural balance in the NPC forecast. This can for instance arise when certain expenditure items, such as health care or pensions, grow faster than potential GDP.

A NPC forecast should also be clearly distinguished from a forecast made "under current legislation". The latter would incorporate the impact of all existing legal acts that have been formally adopted from the entry into force until the expiration date. However, the starting point for a NPC forecast is constant policy orientations, which is broader. For instance, if a legal act has a formal expiration date but there is a standing practice or at least a credible announcement to prolong its formal validity or to replace it with similar provisions, the NPC forecast assumes that similar provisions will be in place, because to do otherwise would imply assuming a change in policy orientations. Likewise, if a specific measure at the cut-off date still lacks a formally required legal step (such as the adoption of a draft law in parliament) but this has in the past been taken *quasi* automatically, the NPC forecast assumes that this will happen (see also Principle 5 below).

***Principle 2 (extrapolating trends and relationships)**: A NPC forecast starts with extrapolating past revenue and expenditure trends and relationships, while having due regard to the recent dynamics of the variable under consideration.*

A NPC forecast starts with extrapolating past revenue and expenditure trends and relationships. On the one hand, for revenue and expenditure items that have a well-established link with some other aggregate (e.g. tax components linked to their respective tax bases, or unemployment/pension benefits linked to the number of unemployed/pensioners), the NPC forecast would fully exploit these (stable) relationships between budgetary variables and the macroeconomic environment, which essentially ensures that the forecast is internally consistent (see also Principle 10). On the other hand, for revenue and expenditure items that are not clearly correlated to another variable (such as non-tax revenue and many expenditure items) establishing the trend in the NPC forecast boils down to an extrapolation of past behaviour using a simple rule of thumb, such as keeping a constant ratio-to-GDP or applying the average growth rate over an appropriate reference period. ([18])

However, the recent dynamics of the variable under consideration should be well understood before any of these correlations or extrapolation methods can be applied. Correlations that have been relatively stable in the past may become less reliable as a forecasting tool in a changing economic environment or as a result of recent policy measures. For instance, during a period of persistent high economic growth there may be a strong correlation between the gross operating surplus of the corporate sector and corporate tax revenue. But this correlation may break down –at least temporarily– after a recession (during which companies may have sustained considerable losses) if companies have the possibility to deduct previous losses from their current taxable profits. Likewise, rules of thumb that used to perform well may become less useful when the economic environment changes or as a result of policy measures. When making in-year forecasts, the available monthly or quarterly indicators –taking into account possible seasonal patterns and cash-accrual adjustments– may also point to a short-term deviation from an established long-term trend, for instance if a specific tax elasticity is cycle-dependent. In some of these cases, the application of specific working assumptions as foreseen in Principle 3 would offer a solution.

([18]) See also the earlier contribution on the NPC assumption, European Commission (2008), pp. 109-114.

Box II.1.1: **The NPC assumption and indexation arrangements of tax brackets, social benefits and government wages**

In most countries, income tax brackets are frequently adjusted to price developments to avoid that inflation drives taxpayers into higher tax brackets, i.e. to avoid «fiscal drag». However, the frequency, predictability and legal basis for these adjustments vary widely. The prevailing practices can be grouped in three categories:

- **Automatic indexation**. The tax legislation itself foresees a system of adjustment of tax brackets in line with price developments, i.e. indexation is mostly an administrative exercise based on pre-existing laws and does not require new legislation.

- ***Quasi*-automatic indexation**. Instead of pre-existing legislation prescribing indexation, there is a standing practice of annually adjusting the tax brackets to price developments in a (rather) predictable manner, e.g. through the annual budget law.

- **Irregular indexation**. The timing and size of the adjustment of tax brackets to inflation cannot be predicted. In some cases, when an adjustment is carried out, it may reflect more (or less) than a «normal» adjustment to price developments since the previous adjustment, and it may also be part of a larger package of tax policy measures. The practice of irregular indexation may also best describe the situation of countries that formally have an automatic indexation arrangement which has been suspended repeatedly or for an undetermined period of time, or of countries that used to have quasi-automatic indexation but de facto stopped implementing this practice at some point. Also in these cases, the forecaster cannot predict when and/or to what extent indexation would resume.

For the categories of automatic and quasi-automatic indexation, the NPC forecast should, in line with Principle 1, include an indexation along the same lines, i.e. a continuation of the past (predictable) policy orientations, unless the government has meanwhile announced a credible and detailed plan to change or end this practice. Continued indexation constitutes the baseline. In the specific case of *quasi*-automatic indexation, it is not required that the new legislation governing this adjustment (such as the new budget law) has already been adopted or even announced; ([1]) the formal adoption or announcement of this legislation would also not be considered as a fiscal policy measure, since it does not change the existing policy orientation (see also Principles 5 and 8).

In the case of irregular indexation the NPC forecast assumes that no adjustment will take place, unless a sufficiently specified adjustment (with details about timing and size) has been credibly announced by the authorities. The period of «frozen» tax scales should be considered as the past policy orientation to be extrapolated under the NPC assumption, i.e. it constitutes the baseline. A possible decision to implement indexation, or a decision to resume it after a period of suspension, would mark a change therein. If it is credibly announced and specified in sufficient detail, it would constitute a fiscal policy measure. Any other practice would require that the forecaster make explicit assumptions on the timing and the size of the adjustment, which would violate Principle 1.

When a NPC forecast has to be made for social benefits or public wages, the policy orientation to be extrapolated (i.e. the baseline) normally embodies some kind of indexation. ([2]) In most countries the price adjustment of social benefits and public wages, which aims at preserving beneficiaries' purchasing power, is usually laid down in an agreement or in legislation negotiated with the social partners, often with a fixed end-date. When a NPC forecast has to be made beyond this end-date, the policy orientation to be extrapolated (i.e. the baseline) would normally also embody some kind of indexation, for instance by assuming that the provisions of the current system remain in place. A credible and sufficiently detailed

([1]) See the discussion above about the difference between a NPC forecast and a forecast «under current legislation».
([2]) This paragraph deals strictly speaking with price indexation arrangements. However, it is valid more broadly: also changes to social benefits and public wages that go above (or below) «normal» indexation can be treated in this way, i.e. the baseline should assume an extension of past orientations based on past agreements, mechanisms and trends.

(Continued on the next page)

Box (continued)

announcement to change the past policy orientation would be reason to change this baseline and would be considered as a fiscal policy measure. For the cases of irregular indexation of social benefits or public wages, which are likely to occur less frequently than for tax brackets, the baseline would normally also include some degree of indexation. This is because it seems more difficult for the government to keep social benefits and public wages unchanged (for a long time) than to freeze tax brackets.

1.2.2. Principles that move from the trend to the baseline (step 2 of the NPC forecast process)

***Principle 3 (working assumptions)**: Working assumptions can be used, parsimoniously, to complement trend projections and establish the NPC baseline, in particular if (i) specific multi-year patterns observed in the past are deemed likely to recur, or (ii) structural breaks make the use of extrapolations (of trends and relationships) meaningless. Working assumptions should always be made explicit and should not introduce outspoken policy orientations.*

When the trends and relationships meant in the previous principle break down because of a (likely) structural break, a working assumption can be used to establish the baseline. A structural break can happen either in the concerned time series itself (i.e. sudden trend reversal) or in the policy orientations (e.g. after elections). For example, when a sudden recession follows a long period of high economic growth, a mechanical extrapolation may lead to absurd projections and/or different extrapolation techniques may point to a very wide range of possible forecasts. In such cases, the NPC forecast will require an important degree of judgement, which should be made explicit in the form of a working assumption.

Working assumptions should be used parsimoniously, should always be made explicit and should not introduce outspoken policy orientations. Great care should be taken to avoid that working assumptions are used to move the NPC forecast into the direction of a "most likely" policy forecast (see the discussion above under Principle 1), by assuming the implementation of government actions that are not (yet) sufficiently specified and credibly announced at the cut-off date of the forecast (see also Principle 5 below). Following the same logic, good working assumptions in the case of (likely) structural breaks would typically have to be as much as possible "policy neutral", i.e. they would not introduce an outspoken policy orientation, which normally requires active government intervention. An example is when general elections are scheduled to take place before the end of the forecast horizon. It may be difficult in this case to simply assume a continuation of the current policy orientations, in particular if the current policy stance is quite outspoken (restrictive or expansionary) and/or contested by the opposition parties. Assuming the continuation of these policies would *de facto* imply assuming a particular outcome of the elections. Therefore, until the outcome of the elections is known and the to-be-formed government has credibly announced its policy intentions, it seems preferable to make a working assumption and forecast a "neutral" policy stance for the period after the elections.

A working assumption can also be used to project specific multi-year patterns in certain revenue or expenditure categories that have been observed in the past and are deemed likely to recur. Such patterns occur for instance in the form of (local) electoral investment cycles, a time-varying rate of absorption of EU funds or cycle-dependent tax elasticities. If a reasonable case can be made that these patterns will persist (even if they are not yet, or not fully, evident in the latest observations), an explicit working assumption to that effect can be made.

***Principle 4 (budgetary rules)**: As a rule, the respect of budgetary rules and targets should not be assumed in the NPC forecast, unless there is a rock-solid implementation track-record and the enforcement does not require the government to make major choices in policy orientation. If the NPC forecast does assume respect of a particular rule or target, this should take the form of a working assumption.*

As a rule, the respect of budgetary rules and targets should *not* be assumed in the NPC forecast. Budgetary rules and targets (henceforth, "rules" for short) come in many shapes and guises, with different enforcement mechanisms. Some may be very specific (e.g. limited to a specific expenditure category), while others may be very generic (e.g. setting a cap on total government expenditure). The enforcement mechanism may be automatic (e.g. blocking any further expenditure in a certain category when the concerned budget line is exhausted) or, on the contrary, require explicit political consent for any remedial action to be taken. Overall, the large majority of existing budgetary rules and multi-annual targets should be regarded as insufficiently "strong" to justify their inclusion in the baseline of the forecast. ([19])

Assuming the respect of a particular rule in the NPC baseline (which would take the form of a working assumption) requires that two conditions are met simultaneously, one concerning the track record of the rule and the other concerning the specificity of remedial government action. First, the rule should have a solid design and proven track record. This requires not only that the rule was respected in the past, but also that its enforcement mechanism has shown to be effective when meeting the rule was a challenge, for instance during bad economic times or when meeting the rule required tough action. Second, the policy response to a risk of breaching the rule should be broadly pre-defined instead of still requiring the government to make major choices in policy orientation. This means that the specific actions that will be set in motion to avoid a possible breach have been fixed ex-ante and that the government is bound by them or credibly committed to them. Since the NPC forecast should not include assumptions concerning a choice between different policy actions (Principle 1), respect of the rule cannot be included in the forecast until the government has decided on the details of the corrective action necessary to respect the rule. As long as this has not happened, the NPC forecast should show a breach of the rule, even if this may not be the most likely outturn. ([20])

In the exceptional cases where the respect of a budgetary rule can be included in the NPC baseline, any remedial action taken to comply with it cannot be considered as a fiscal policy measure as defined here, namely an intervention that changes past policy orientations so that it has a direct incremental budgetary impact compared to the baseline of the forecast. Therefore, if the baseline already assumes the implementation of a certain policy response (by virtue of the working assumption that the rule will be respected), the intervention can no longer be seen as a change in policy orientation compared to the baseline (see also Principle 8).

1.2.3. Principles concerning fiscal policy measures (step 3 of the NPC forecast process)

***Principle 5 (fiscal policy measures)**: Only government actions that are specified in sufficient detail and adopted or at least credibly announced can be included in the NPC forecast. Such an action should also be identified as a "fiscal policy measure" as defined here if it changes past policy orientations, i.e. if it has a direct incremental budgetary impact compared to the NPC baseline.*

The definition of fiscal policy measures presented above highlights three requirements that need to be met simultaneously: (i) the policy action is specified in sufficient detail; (ii) it has been adopted or at least credibly announced; and

([19]) Triggered by recent legislative developments in the area of fiscal surveillance (six-pack, Fiscal Compact and two-pack), the number of fiscal rules has been increasing in the EU, as well as their strength (see for instance the Commission's database on numerical fiscal rules, available at http://ec.europa.eu/economy_finance/db_indicators/fiscal_governance/fiscal_rules/index_en.htm). Many of these new or revamped rules have entered into force only recently, so that an assessment of their effectiveness cannot yet be undertaken.

([20]) See the discussion about the difference between a NPC forecast and a "most likely" forecast under Principle 1.

(iii) it has a direct incremental budgetary impact compared to the NPC baseline because it changes the past policy orientation. Government initiatives that do not meet all of these requirements should not be considered as "fiscal policy measures". Each of these three assessments, which may require a fair amount of judgement, is discussed in turn.

To gauge whether a government action can be considered as being "specified in sufficient detail", information should be available along the following four dimensions:

- **The responsibility for, and the operational details of, the implementation**. It should be clear which line ministry or other government entity is responsible for the follow-up and implementation of the government action. The main operational details of how it will bring about its expected budgetary impact should also be known. If substantial policy choices still need to be made in further secondary legislation, the action should be considered as insufficiently specified.

- **The statistical recording**. It should be possible to attribute the impact of the government action to one of the main ESA categories of revenue or expenditure. For instance, when a government announces that it will introduce a tax cut of a certain magnitude at a given point in time, but it is still unclear in which ESA category the impact will fall (indirect taxes, household income taxes or corporate income taxes), the measure has clearly not yet been specified in sufficient detail. Including this tax cut in the forecast would require making assumptions concerning a specific policy choice still to be made by the government, which would not be in line with Principle 1. The need for a solid ex ante statistical attribution is not absolute, however. Two important exceptions deserve mentioning:

  – **Transactions for which the statistical recording is complex and not straightforward, even to specialists**. In some cases, the difficulty of making a statistical attribution does not result from a lack of specification, but from the complexity of the case and even statistical authorities with detailed information may not be able to make an unambiguous attribution quickly. If so, it is sufficient that one can make a reasonable assumption about this recording, pending a final ruling by the statistical authorities.

  – **Subject to certain conditions, changes in the funding or budgetary appropriations of (semi-)autonomous government entities**. Government decisions to cut the funding or budgetary appropriations to specific entities of government (line ministries, local authorities, government agencies etc.) may leave some autonomy to the affected entities to implement this cut. ([21]) As a result, it may not be immediately clear which ESA expenditure category(-ies) will be affected. However, if the government action (i) can be considered as credible, because of for instance a strong enforcement mechanism or a solid track record, and (ii) necessarily results one-for-one in a reduction of expenditure because the alternatives of raising revenue or creating deficits are not available, it can also be considered as a "fiscal policy measure". Under these conditions, a simple technical assumption about the affected ESA expenditure category(-ies) can be made so as to include the action in the NPC forecast. This exception means that, for instance, a cut in government transfers to local governments cannot be included in the NPC forecast if the local entities have the option to respond, even if only partially, with increasing local taxes or running higher deficits. In such cases the impact of the measure can be included in the forecast only after local governments have specified their response to the reduction in transfers.

- **The expected budgetary impact**. If the impact of the government action can be quantified with a certain degree of precision, this would clearly point in the direction of a sufficiently detailed measure. However, even for otherwise sufficiently-specified measures there could be considerable uncertainty about the likely budgetary impact, for instance because it depends on assumptions about the behavioural response of economic agents, such as their take-up of a tax amnesty. If the impact is

([21]) This paragraph emphasises the case of spending cuts, but in principle it is valid also for spending increases.

subject to extreme uncertainty, the preferred option is to apply a 50% haircut to the targeted size put forward by the national authorities, or even to not include it at all. ([22])

- **The time of impact**. In principle, the time of the entry into force or implementation of the government action should be known and not subject to further policy choice, which would again run counter to Principle 1. For instance, a VAT increase which may enter into force at a yet undetermined point in the future should not be included. That said, if the uncertainty surrounding the timing of an otherwise well-specified government action is exogenous, i.e. not under the control of the government, the NPC forecast can make an explicit technical assumption about its timing and include or exclude it accordingly. An example would be the impact of an international treaty that requires the ratification by all concerned countries.

To assess whether a government action can be considered as "adopted or at least credibly announced", the following considerations should be borne in mind. ([23])

- **Only publicly announced measures count**. This announcement can take the form of a press statement, a public session in Parliament, information on the government's website, publication in the official journal, etc.

- **Fully-adopted measures may still have credibility issues**. The least ambiguous case is obviously when the government action has been "adopted" in the sense that it has gone successfully through the final step of the decision-making process and is fully ready to enter into force/be implemented. ([24]) Even then, however, there may still be credibility issues, for instance due to a lack of resources or political support to implement the action, possible escape clauses or conditions foreseen in the legislation, and/or a lack of secondary legislation necessary to proceed with implementation. ([25])

- **Formal adoption is not always necessary: a government action that has been "credibly announced" can also be regarded as a "fiscal policy measure"**. What this means in practice depends on the context but government approval seems to be a minimum requirement: as long as there is no consensus within the government, proposals for policy action should not be considered as credible (white papers and reports from expert commissions for instance should therefore not be included in the NPC forecast). For measures that require adoption by parliament, government approval may be sufficient if the government has a stable majority in parliament. By contrast, government actions for which parliamentary approval is (still) highly uncertain should as a rule not be included in the NPC forecast.

- **Measures planned for the outer years of the forecast are typically subject to a larger degree of uncertainty concerning their actual implementation, although this of itself should not necessarily prevent them from being included in the NPC forecast**. The default assumption is that government actions satisfying the criteria of Principle 5 will be implemented. That said, increased implementation risks, for instance of measures to underpin targeted future expenditure restraint, can be dealt with by including a more conservative quantification of the budgetary impact.

Finally, government actions that satisfy the above two criteria should only be considered as "fiscal policy measures" if they also have a direct incremental budgetary impact compared

([22]) Note in this connection also that national authorities' estimates may be made against a very different baseline (see also Principle 8 on this).

([23]) It should be noted that the forecasts for countries subject to a financial assistance programme are made under a somewhat different framework: strong conditionality and a detailed Memorandum of Understanding (MoU) imply that the measures required by the MoU can be considered as meeting the criteria of Principle 5 as soon as there is agreement on the MoU.

([24]) For a piece of legislation, this would imply that it has been voted by the Parliament; for a government decree, that it has been formally approved by government; for a ministerial order, that it has been formally issued by the ministry, etc.

([25]) In these cases, one may also need to re-assess whether the criteria above about "specified in sufficient detail" are met.

to the NPC baseline projection. First, the impact must be "direct", which means that measures that are taken with the prime aim of affecting another part of the economy and have only an indirect impact on the public finances, even if it is large, should not be considered as "fiscal policy measures" but as "structural reform measures". For instance, a government may introduce new environmental standards for industrial corporations, which could affect corporate profits and hence have a budgetary impact (e.g. via corporate tax revenue). However, the possible link between corporate profits and environmental standards is an indirect one. It depends almost entirely on the reaction of the corporate sector to the new standards and stricter standards do not necessarily imply a drop in corporate tax revenue. The measure would therefore not be considered as a fiscal policy measure. Only if their budgetary impact is direct, should structural reform measures also be considered as "fiscal policy measures". This could for instance happen when the government sets up a new agency to monitor and enforce the new environmental standards: if this requires the attribution of additional resources (staff and equipment), there is a direct budgetary impact which would be considered as a fiscal (as well as an environmental) policy measure. Second, the impact has to be "incremental", which means that, if a government action does no more than confirm past policy orientations, it will not imply any difference to the NPC baseline projection and therefore should not be identified as a "fiscal policy measure" (see also Principle 8 on this). In fact, government "initiatives" often aim at merely carrying over current policies – so that the policy orientations do not change – or at better implementing current procedures – which constitute "fiscal policy measures" as defined here only if there is sufficient evidence that the NPC baseline will indeed change. Such initiatives can occur on the expenditure side of the budget, aiming for instance at stronger cost-control in healthcare or at enhanced means-testing for social benefits, but also on the revenue side, for instance to fight tax fraud, which is usually a well-identified source of income in the budget: initiatives that are presented as "new" may often only replace previous ones and should therefore not be regarded as fiscal policy measures changing the policy orientation.

***Principle 6 (measures by convention)**: While fiscal policy measures are usually thought of as "autonomous" or "discretionary" interventions by the government, this is not necessarily the case. One-off measures (including those based on an exceptional event) and revenues mandated by law (RMLs) as meant in the SGP are by convention also considered as "fiscal policy measures".*

While fiscal policy measures are usually thought of as "autonomous" or "discretionary" interventions by the government, this is not necessarily the case. Whenever a government action satisfies the criteria of Principle 5, it should be seen as a "fiscal policy measure", whether the action reflects a purely discretionary choice or external circumstances forcing the government's hand. For instance, when a court rules that a particular excise duty law is illegal, the government may be forced to stop collecting it. This change in tax policy orientations should be marked as a fiscal policy measure even if it was not a voluntary choice by the government. ([26])

Following this logic, all transactions that are considered as one-off measures in the sense of the Stability and Growth Pact are to be regarded as fiscal policy measures. One-offs have a special status in the fiscal surveillance framework, as they are used in the calculation of the structural balance. ([27]) An important subcategory of one-offs consists of transactions with a very short-term impact that have been initiated in direct response to an exceptional event. ([28]) In view of the explicit condition that these transactions can only be regarded as "one-off" if they are the direct result of an event that is not under the control of the government, one could debate if such transactions should be regarded as "fiscal policy measures". However, in view of the argumentation above, and to avoid any doubt on

([26]) With this in mind, this paper explicitly avoids the stylised expression "discretionary measures", preferring the broader concept of "fiscal policy measures".

([27]) See the dedicated section on one-offs in European Commission (2015c), Chapter II.3.

([28]) For this purpose, exceptional events are defined as "specific occurrences that can be regarded as being beyond the control of the government, with an often sudden impact on revenue/expenditure or assets/liabilities of the general government or the country, that is temporary by nature and exceeds normal economic fluctuations", see European Commission (2015c), p. 54.

the nature of these transactions, all one-offs are by convention considered as fiscal policy measures.

All government actions that are marked as "revenue changes mandated by law" (RMLs) as meant in the Stability and Growth Pact are also by convention treated as "fiscal policy measures". RMLs are mentioned, but not defined, in the legislation underpinning the preventive arm, which treats them separately from "ordinary" revenue measures. They refer to "situations in which Member States have revenue sources that are linked by law to certain expenditure items, so that, when expenditure increases, revenue automatically also increases to fund the higher expenditure". ([29]) An example is the automatic increase in the pension contribution rate if a certain pension expenditure threshold is breached. Also taking into account the limited number of cases reported so far, ([30]) the following definition is put forward: a RML as meant in the SGP is *a change in a specific tax or contribution rate which is –in principle– triggered automatically (i.e. through a specific piece of pre-existing legislation) by a change in a well-specified and clearly linked expenditure category with the intention of ensuring sufficient financing for this expenditure category*. When a RML is considered to be sufficiently credible to be included in the NPC forecast (see Principle 7 for the criteria for doing so), it also –by convention– qualifies as a fiscal policy measure, regardless of the degree of discretion the government has in the matter. ([31])

By contrast, changes in budgetary variables due to inherent volatility or to statistical reclassifications should not be regarded as resulting from "fiscal policy measures". Revenue or expenditure fluctuations reflecting their inherent correlation with other, intrinsically fluctuating economic variables (such as GDP, inflation, interest or exchange rates, etc.) or social variables (unemployment, specific age groups of the population) are to be considered as part of the baseline of the NPC forecast. For instance, shortfalls/windfalls in government tax revenue compared to what would be indicated by standard elasticities (and which are not related to changes in the tax legislation) should not be classified as "fiscal policy measures", even if they are very large; ([32]) they belong to the baseline. Likewise, changes in government non-tax revenue should not be regarded as fiscal policy measures if they reflect inherent volatility (e.g. volatility in underlying profits driving changes in dividends from state-owned enterprises) rather than an explicit government intervention. Finally, changes to revenue or expenditure aggregates resulting from statistical reclassifications should also feed into the baseline of a NPC forecast and not be considered as fiscal policy measures.

Principle 7 (conditional measures): *Conditional measures can be taken into account in the NPC forecast if the "condition" is sufficiently operational and if the "measure" meets the requirements of Principle 5.*

Budget laws often include government initiatives the execution of which depends on a condition. These can generally be grouped into two broad categories: (i) policy actions (such as an increase in certain tax rates) aiming to respect a relatively broad budgetary target or rule, triggered "automatically" (i.e. by an existing piece of legislation) when reaching a pre-defined threshold for e.g. the deficit or an expenditure aggregate, ([33]) and (ii) changes in specific parameters of the tax and benefit system triggered "automatically" when reaching a pre-defined threshold in a certain variable such as a specific government expenditure item, commodity prices, inflation, or the exchange rate (e.g. a change in excise duties on fuel for

([29]) European Commission (2016c), p. 29.
([30]) At the time of writing, only Germany, the Netherlands, Romania and Finland have reported RMLs.
([31]) While the SGP only mentions them in the context of the preventive arm, RMLs are treated by the Commission in the same way for each Member State, whether it is subject to the preventive or corrective arm of the Pact.
([32]) In particular for smaller Member States, this could result from exceptionally large transactions by dominant corporations. In such cases the source of the fluctuation is clearly not a fiscal policy measure since it results from fluctuations in the underlying tax base and does not correspond to a change in the orientation of tax policy.
([33]) Note that the national budget terminology may be misleading. Many countries build into their budget some kind of "reserves", "(contingency) provisions" or "buffers", which may give the impression that there is scope for a better budgetary outturn than the headline deficit target suggests. In actual practice, however, this "scope" is more often than not fully used up during the execution of the budget, for expenditure that is for some reason unbudgeted/unforeseen. If so, these features of the national budget basically reflect limitations in budgetary planning capacity and do not fit into the definition of "conditional measures".

which the timing and/or magnitude is determined, by law, by the evolution of oil prices).

When such an initiative marks a change in policy orientations, it should be considered as a "fiscal policy measure" changing the baseline of the forecast, provided that two requirements are simultaneously met:

- **The "condition" is sufficiently operational**. The normal requirement of a sufficiently detailed specification not only applies to the measure itself, but also to the condition triggering its implementation. Specifically, this requires that the government should be able to monitor the (non-)fulfilment of the condition "in real time" in a manner that can be publicly verified. Conditions whereby government actions depend on the fulfilment of a target for the structural balance, for instance, would generally not be considered as sufficiently operational for the measure to be included in a NPC forecast, given the difficulties to estimate the structural balance in real time. By contrast, a condition that depends on the evolution of government expenditure in accrual terms can considered as sufficiently operational if the country has an accounting system that enables to monitor accrual expenditure in real time (or, for practical purposes, on a monthly basis). In other words, when judging this first condition, some country differentiation should be allowed to take into account differences in government accounting systems and data availability.

- **The "measure" itself meets the requirements of Principle 5**. In particular, special attention should be given to possible credibility issues and to whether it is already adopted and operational or not. Actions that still require major policy choices can obviously not be included in the NPC forecast. For instance, a "rule" stating that "contribution rates will be increased, unless certain expenditure categories are cut" in case of slippages in health care expenditure, cannot be included in the NPC forecast because it leaves open whether the corrective action will come from the revenue or the expenditure side (see also Principles 1 and 4).

This category includes the specific case of "revenues mandated by law" (RMLs) discussed above under Principle 6. Although the SGP only mentions revenue *increases* mandated by law, RMLs could be seen as covering both revenue increases and decreases, but in practice there may need to be an asymmetric treatment. It is conceivable that a RML has a proven track-record of having been implemented consistently for increases in the concerned tax or contribution rate but not for decreases. If so, it would be appropriate to include it in the NPC forecast only if the rule points to an increase, but not if it points to a decrease.

It stands to reason that the macroeconomic and budgetary parts of the forecast should be consistent in this matter. If the two requirements above are met, the forecast should show both the fulfilment of the underlying condition and the impact of the measure, and *vice versa* (see also Principle 10). This implies that, for instance, the impact of an increase in excise duties that is conditional upon the evolution of oil prices, should only be included in the forecast if the oil price assumptions of the forecast imply that the condition for the measure is fulfilled.

***Principle 8 (measure versus baseline)**: Fiscal policy measures are identified (and quantified) compared to the NPC baseline. What is considered to be in the baseline of the NPC forecast, cannot be regarded as a fiscal policy measure, and vice versa; this is needed to avoid double-counting. Logically, the identification (and quantification) of fiscal policy measures mirror the same amount of judgement as used for the construction of the baseline.*

In the context of the NPC forecast, the concept of fiscal policy measures mirrors that of the baseline. As already mentioned under Principle 5, a fiscal policy measure can be seen as a deviation from the NPC baseline. In other words, measures are necessarily identified and quantified relative to an established baseline. The implication is that what is in the baseline should not, by any means, be classified as a fiscal policy measure, and vice versa. To do otherwise would lead to a double-counting of budgetary impacts.

That said, the NPC baseline at any given point in time is necessarily the result of past measures. For instance, when a tax reform is introduced, it is a measure. Once the new steady state has been reached (i.e. the reform no longer has an incremental impact on future years), the measure has become part of the new baseline (see also below). Over successive forecast rounds, the NPC forecast for every revenue/expenditure item in a given year will be continually updated/refined, because of an updated macroeconomic scenario, possible new measures and updated estimates of the impact of old measures. As mentioned before, a clear separation between baseline and measure is unfortunately not always straightforward, especially for non-tax revenue and for many elements of government expenditure. Investment is a case in point: a given investment baseline would arguably only be altered because of a new project of significant size or a new, well-specified investment programme embodying a major change in previous policy orientations (in either direction).

If a government action is considered as a "fiscal policy measure" as per the preceding principles, the next question is how it impacts the NPC forecast and when a new steady state will be reached. There are three different possibilities for the quantification of "simple" measures:

- **The measure may only have a temporary impact**. Assuming that the measure is fully reversed after one year, the incremental impact occurs with a positive sign in the first year and with a negative in the second year (or vice versa). Afterwards the concerned revenue/expenditure item returns to its original level and its trend growth resumes its unchanged medium-term pace.

- **The measure may have a permanent impact on the level of the concerned revenue/expenditure item, but without (significantly) affecting its medium-term growth rate**. In this case, an incremental impact would be recorded until the new steady state is reached, after which normal trend growth resumes starting from a different level. An example is a government decision to permanently increase all old-age pensions by a certain monetary amount, as a one-time adjustment.

- **The measure may affect the growth rate of the concerned revenue/expenditure item**, for instance by introducing a new indexation mechanism that has a clear impact on its dynamics. An example is a pension reform that replaces the old system of adjusting pensions to inflation only with a new system of adjusting pensions in line with overall wage developments. This measure has effectively changed the trend growth of pensions, as wage developments –at least in the medium term– are likely to exceed pure price developments. The measure should be identified (and quantified) only in the first year; the impact on further years should be included in the new baseline of the NPC forecast and should not be regarded as a fiscal policy measure anymore.

Measures can also be repeated or be part of a reform package which is gradually implemented over a longer period of time. In such cases, there is a cumulative incremental impact and a new steady state will only be reached after several years, which may even be beyond the forecast horizon. Typical examples would be a gradual increase in a certain expenditure item over a number of years (for instance successive increases in the health or welfare budget over a government's term in office) after which the previous trend growth resumes, or a sequence of parametric changes to the tax/benefit system producing a gradually increasing/decreasing budgetary impact over several years. Each successive annual increase in expenditure or parametric change to the tax/benefit system would have to be marked as a measure. ([34])

The complementarity between baseline and fiscal policy measures implies that any

([34]) Disentangling the impact of the parametric changes and other factors influencing taxes and benefits can be problematic, in particular for slow-moving parametric reforms to the benefit system, such as a pension reform entailing yearly increases in the retirement age over a protracted period of time. In assessing the impact of this measure over time, a distinction should be made between the impact of the measure itself and the slow-moving cohort effect, which belongs to the baseline. If the impact of the measure proper cannot be measured in isolation, it is not possible to quantify the continued impact of such fiscal policy measure (beyond the first few years).

quantification of measures is always a *relative* indicator of fiscal effort compared to a baseline. This is because, depending on the assumptions behind the baseline, the NPC baseline itself may not be policy-neutral. In other words, the quantification of measures can only be correctly interpreted in conjunction with information on the content of the baseline. For that reason, a quantification of the measures included in the forecast should not be used to compare the fiscal effort across countries. By contrast, the change in the structural balance can be compared across countries and over time because it does not depend on the baseline.

***Principle 9 (quantification of measures)**: The quantification of a fiscal policy measure includes only (i) its so-called static and micro-level behavioural effects (i.e. possible second-round effects are not included) and (ii) its effect on the main ESA category that is directly affected, unless there is also a purely mechanistic, automatic impact on (an)other ESA category(-ies) on the same side of the government budget. That said, the NPC forecast reflects the full effects of all fiscal policy measures on the economy and on the public finances.*

Fiscal policy measures can potentially affect the public finances through a variety of channels and thus have different kinds of effects. It is useful to distinguish the following three steps/effects: ([35])

- **The static effect of the measure**. This is the immediate fiscal effect on the ESA category that is directly influenced by the measure before considering any behavioural responses from economic agents. ([36]) The static impact of a measure should normally be relatively easy to estimate once the baseline is established. For the example of a VAT increase for a specific category of commodities, it can be estimated by multiplying the size of the tax base by the increase in the VAT rate.

- **The micro-level behavioural effects of the measure**. These are the direct behavioural effects of economic agents responding to the measure, including possible micro-level behavioural effects in closely-related areas, provided they are small in relation to the whole economy. These effects concern the particular area of taxation or spending directly affected by the measure, as well as closely-related areas. Using the same example of a VAT increase for a specific category of commodities, this would include possible shifts in consumption from the commodities directly affected to others (i.e. the substitution effect). The combination of the static and micro-level behavioural effects forms the so-called *"first-round" effects*. In the above example of the VAT increase, the first-round effect is likely to be smaller than the static effect of the measure.

- **The macro-level behavioural effects, or "second-round" effects**. ([37]) These are the possible indirect, wider effects of a measure on the public finances that stem from its macroeconomic impact and work through the overall size and composition of economic activity, employment and the general price level. Clearly, only large (packages of) measures, such as an across-the-board change in the VAT rate(s), will generate this kind of effects.

By convention, the Commission reports only the first-round effects in its quantification of fiscal policy measures. The possible second-round effects are typically not included, although occasionally they can be mentioned separately. This approach ensures a maximum correspondence between the reported measures and their impact on the structural balance, a key variable in the Stability and Growth Pact, which, by definition, excludes any cyclical –and by extension, second-round– effect. For instance, an increase in income taxes with a first-round impact of 1% of GDP will typically have an overall impact of less than 1% of GDP on the headline government balance given second-round effects. However, assuming that the response of the government balance to the revised

([35]) This presentation builds extensively on section 3 of UK Office for Budget Responsibility (2014).

([36]) See below for the case of measures that directly affect more than one ESA category.

([37]) The terms "first-round" and "second-round" effects are the preferred ones in this paper, over other frequently-used terminology, such as "gross" versus "net" impact or "ex ante" versus "ex post" effects of measures.

macroeconomic scenario is in line with standard elasticities –which in most cases is a reasonable assumption *ex ante*– and that medium-term potential growth remains broadly unchanged, the cyclical component of the government balance should fully capture the second-round effects associated with the tax increase. This in turn implies that the structural balance will also improve by 1% of GDP.

Regardless of this convention, the NPC forecast aims at reflecting the full effect of all measures (i.e. including their second-round impact) on all variables. This requires an iterative forecasting process (see also Principle 10). It also implies that, once the NPC forecast has been finalised, the implicit NPC baseline cannot be revealed by simply subtracting the estimated (first-round) impact of the measures from the final forecast.

By convention the Commission also only reports the budgetary impact on the main ESA category that is directly affected by the measure. In most cases, only one ESA category is directly affected by any given measure. However, in the case of (packages of) measures affecting several expenditure categories or major reshuffles in government revenues (such as a tax shift), several ESA categories might be directly affected. Nonetheless, it should be carefully considered whether the impact of a measure on an ESA category can be qualified as a *direct* impact or not. For example, the budgetary cost of a general increase in public sector wages is likely to be partly offset by higher revenue from personal income taxes and/or social contributions but these offsets must be considered as indirect effects, since there was no measure that directly affected the definition of the tax base or the tax rate. ([38])

"Linked" effects occur when a measure targeted at one specific ESA category has a purely mechanical and automatic impact on another ESA category and (by convention) are treated as part of the first-round impact of a measure if they act on the same side of the budget. A typical example is a change in social contributions rates, which in some countries alters the tax base for personal income tax mechanically and automatically, i.e. every euro spent less in social contributions adds directly and fully to the personal income tax base. However, it is difficult to draw the line between such "linked"-direct and indirect effects. To be counted as part of a measure's first-round effect, the convention is that two conditions should be fulfilled. First, the impact should be purely mechanical and not require any further assumptions or working hypotheses. If, for instance, in the example above, employers have the possibility to lower gross salaries in response to the measure, the impact on personal income tax revenue would no longer be purely mechanical, but rather depend on the forecaster's assumptions regarding the response of wages. Second, the "linked" effect should work on the same side of the government budget. Keeping a strict separation between measures that operate on the revenue side and those that operate on the expenditure side is in line with the fiscal surveillance framework, which treats measures on either side of the budget very differently. ([39]) Moreover, if the aim is to pick up such "linked" effects consistently (which is not straightforward), it is better to strictly limit them. Finally, as mentioned above, regardless of this convention, the NPC forecast aims at including all effects of all measures on all variables.

1.2.4. Principle ensuring the internal consistency of the forecast

***Principle 10 (macro-fiscal consistency)**: The NPC assumption should not only be reflected in the public finance part of the forecast but also in the macroeconomic part, in the sense that the latter should be fully consistent with the policy orientation embodied in the former. This implies that the macroeconomic forecast can deviate, sometimes significantly, from the "most likely" outcome or from the "consensus"*

([38]) When presenting a measure, it is not unusual for governments to report its "netted" impact (either by deducting the second-round effect or by deducting some indirect effects the measure may have on other revenue or expenditure categories) because they consider that part of the cost of the measure is thus "recouped". This practice differs from the convention adopted by the Commission for the quantification of the budgetary impact of policy measures.

([39]) Not keeping a strict separation between both sides of the budget would notably risk leading to blurred signals or double counting in the implementation of the expenditure benchmark or the bottom-up calculation of fiscal effort under the EDP. This convention implies that, for instance, possible changes in means-tested social benefits that might flow rather mechanically from changes in social contributions or income taxes, would be included in a NPC forecast as a second-round effect of the measure.

forecast, especially when the government is likely to implement an outspoken fiscal policy stance but has not yet specified the underlying measures.

Although predominantly associated with the fiscal forecast, the NPC assumption should also be reflected in the macroeconomic part of the forecast. In particular, the macroeconomic forecast should be fully consistent with the policy orientations embodied in the fiscal forecast. ([40]) This may sound obvious but there may be the temptation, for fiscal and macro NPC forecasters alike, to move in the direction of the "most likely" outcome, by assuming the implementation of an outspoken fiscal policy stance when corresponding government actions have not yet been specified in sufficient detail or credibly announced, and this might then be reflected in the forecasts of key macroeconomic variables such as GDP, employment or general price level. As highlighted under Principle 1, a NPC forecast is not the same as a "most likely" or "consensus" forecast.

The Commission's long-standing tradition of elaborating forecasts under the NPC assumption, which is driven by the needs of the fiscal surveillance framework, comes at a certain cost. First, the use of the NPC assumption potentially implies a bias to the deficit and GDP growth forecasts for years t+1 (in the winter and spring forecasts) and t+2 (in the autumn forecast) as for these years there is typically no (draft) budget. This bias can work in both directions, depending on whether the budget is likely to be more expansionary/restrictive than forecast under the NPC assumption. Second, when other private or institutional forecasters adopt less strict assumptions concerning the public finances, the comparison with the Commission's forecasts will be flawed.

1.3. CONCLUSIONS

The Commission has a long tradition of making forecasts under the no-policy change assumption, which play a key role in fiscal surveillance assessments and decisions. The definitions and principles presented in this chapter aim at explaining the Commission's approach to making NPC forecasts and are used by the Commission as a guide to dealing with specific cases.

As highlighted in the introduction, making NPC forecasts along these lines requires a good deal of judgement. Indeed, the application of the different principles to a particular case could well offer conflicting signals. If so, Principle 1, which stresses the need for consistency with past policy orientations, is to be regarded as the overarching principle. This principle highlights that NPC forecasts are not the same as "most likely" forecasts. It also implies that the objective of the Commission's NPC forecasts is not to score high on standard indicators of forecast "accuracy" but to show the size of the policy action that is still to be specified and credibly announced in order to reach the budgetary targets. The NPC forecasts do not say anything about the likelihood of actually reaching those targets.

Fiscal surveillance under the SGP does not only rely on budgetary forecasts under the no-policy change assumption as such, but also on the identification and quantification of measures that goes with it. By regarding the NPC forecast as a three-step process (trend, baseline, measures), this chapter has highlighted that the concept of fiscal policy measures mirrors that of the baseline, something to bear in mind whenever comparisons of the impact of a measure are made. Also, this chapter has clarified (i) under which conditions government actions should be recognised as "fiscal policy measures" and (ii) which possible effects of these measures are retained in the Commission's quantification of their impact.

([40]) In addition, internal consistency between the macroeconomic and budgetary parts of the forecast is key to several of the previous principles, such as Principle 2 (about applying relationships and correlations), Principle 7 (conditional measures) and Principle 9 (on the different effects that fiscal policy measures may have).

2. INSIGHTS ON THE QUALITY OF PUBLIC EXPENDITURE

2.1. INTRODUCTION: EFFICIENCY AND PERFORMANCE

Improving the quality of public expenditure has critical benefits for the growth outlook in the medium and long term. Improving the quality of public finances should improve allocative efficiency and thereby structurally alter growth outcomes, leading to a higher potential growth path. This corresponds to an improvement in one critical function of fiscal policy: the provision of public goods.

The quality of public expenditure is highly relevant in a context of limited fiscal space. A given budgetary composition of public finances can lead to different outcomes depending on the efficiency of public expenditure. For a given level of expenditure, higher efficiency means that fiscal policy can achieve better outcomes, thus improving welfare and potential growth. Improving efficiency can also mean that the same outcomes are achieved with a lower level of expenditure, freeing up additional resources.

This chapter provides an attempt to quantify the performance and efficiency of public expenditure. It assesses both the performance and efficiency of public expenditure in the areas of education, health care, public R&D, general public services, public order and safety and infrastructure. The assessment of performance and of efficiency moves beyond the use of composite indicators by focusing on a set of indicators.

As an important caveat, the comprehensive approach used in the note remains mainly statistical and macroeconomic. It represents a useful piece of evidence-based analysis, apt to tease a wider policy discussion. Nonetheless, no firm policy conclusion could be mechanically derived from this investigation. This would require an in-depth analysis focussing on more specific expenditure areas and/or specific countries taking into account additional aspects and evidence.

2.2. THE APPROACH AND ITS IMPLEMENTATION

The methodology

This chapter investigates the quality of public expenditure with respect to the efficiency and performance of public expenditure in selected areas. The overall effectiveness of a government in reaching its ultimate objectives depends simultaneously on the composition of spending across different areas as well as the performance and on the efficiency of public expenditure in each area. Performance in this chapter captures the quality of spending from the angle of growth-friendliness only. ([41]) It is assessed on the basis of output indicators. Efficiency designates the optimal use of resources allocated to produce a certain output. It is measured by the ratio of the output to the input used in the provision of the output. Public expenditure is considered efficient, if, given the available technologies, the input allocated to the provision of public goods or services produces the highest output performance compared to other Member States; or inversely, if a given level of output performance was produced with the least possible resources. As this definition makes clear, the degree of efficiency goes beyond measuring output performance. Public expenditure can turn out to be efficient in a country with a relatively low level of output while devoting very little input to it. Or inversely, public spending can turn out to be inefficient in a country with a relatively high level of output if the provision of the output is very costly.

This chapter does not dive into other dimensions of the quality of public expenditure, such as its composition. Past work on the quality of public finances provides a more comprehensive assessment. European Commission (2012b) reviews trends in public expenditure, in particular in light of the financial and economic crisis. It also discussed possible reform actions to achieve more growth-friendly and efficient expenditure, also in the context of the European Semester. The efficiency of public expenditure is briefly discussed. Barrios and Schächter (2008) develop a multi-dimensional approach to the quality of

([41]) The term of performance is used here as a synonym for effectiveness, which is also commonly used in some of the literature.

public finances. It brings together different dimensions such as size of government, the sustainability of public finances, the composition and efficiency of public expenditure, revenue systems and fiscal governance. Earlier work on efficiency and effectiveness of public spending carried out by the Commission includes Mandl et al. (2008), St. Aubyn et al. (2009) on tertiary education, and Cincera et al. (2008) on R&D.

The analysis examines efficiency of public spending in the areas in the areas of education, health, infrastructure, general public services, public order and safety as well as public R&D. These areas mostly overlap with the indicators identified in Barrios and Schächter (2008), henceforth B&S dataset. For each of these areas, output indicators are compared to the input for each Member State and then a comparison is made across Member States. See Box II.2.1 and Annex 1 on more technical details on the implementation and data sources for the analysis.

Caveats

Measuring the efficiency of public spending faces a number of difficulties as regards the timely availability of data as well as the measurement of both input and output variables.

Input in this note is mostly measured as public expenditure on a given function of government as share of in GDP. In some cases it may be more relevant and for international comparisons more appropriate to measure input as expenditure per capita or beneficiary (student, patient etc.) rather than as share of GDP. The choice was motivated by the (lack of) availability of data.

The inherent difficulty in measuring the output of public spending lies in the fact that in many cases they do not yield directly tangible results; therefore, one has to choose indicators which are considered to be relatively strongly influenced by public spending and less so by external, so-called environmental factors. In several cases, the indicators used reflect the outcome, rather than the output strictly speaking, which cannot be measured directly.

Finally, this assessment follows a purely statistical approach which makes the best use of exploiting an existing large database of quantitative indicators. The approach maintains the macroeconomic perspective of the previous assessment and is meant to give a broad picture of public expenditure performance and efficiency in various areas. This has the merit of highlighting shortcomings in some expenditure areas or in some Member States and thereby triggering follow-up discussions / in-depth analysis. At the same time, one should refrain from drawing strong conclusions on the basis of this assessment: the conclusions result from the indicators included in the assessment and should not be interpreted as authoritative argument to assess the overall performance or efficiency of countries. Concrete policy recommendations should be based on in-depth analysis focussing on specific expenditure areas and / or specific countries taking into account more specific aspects which had to be abstracted from in this general assessment.

2.3. RESULTS

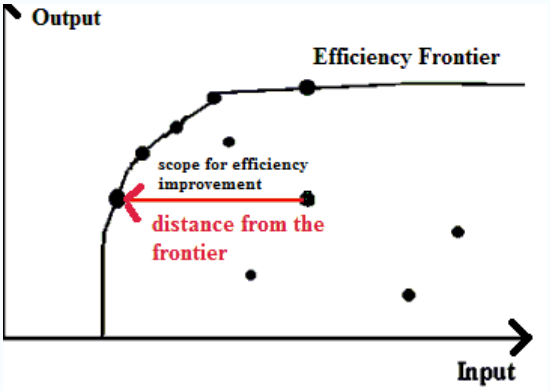
Results are presented by function, with particular emphasis on education for sake of illustration. We proceed as follows: first, for every function and for each output indicator, the efficiency frontier of Member States is derived. Second, on the basis of the efficiency scores (i.e. the distance of a Member State from the efficiency frontier) countries are classified into quartiles. The same is done on the basis of the value of the output indicators. Finally, in order to draw more aggregate conclusions, the results stemming from different indicators based on the situation of Member States in the performance/efficiency distribution are summarised according to the majority of indicators in the function. Specifically, a Member State (MS) will be considered relatively high (low) performer if on the basis of the majority of output indicators it falls in the quartiles above (below) the median. Similarly, a MS will be considered relatively efficient (relatively inefficient) if, according to the majority of indicators, its efficiency score falls into the quartiles above (below) the median of the distribution of the EU countries. This is meaningful as in most cases the distribution of Member States by indicators is reasonably closely correlated. We discuss explicitly when this is not the case.

Box II.2.1: **Methodology of analysis and data sources**

Efficiency in this chapter is assessed based on a non-parametric efficiency measure. The approach used is the Data Envelope Analysis (DEA), which captures efficiency in relative terms, i.e. compared to other observations. This choice is motivated by the relatively broad definition of the government functions as well as the lack of explicit prices for both input and output. ([1])

The comparison of efficiency across Member States allows us to draw an efficiency frontier and to assess the position of Member States relative to this frontier for every expenditure area. The methodology used here is based on a concept of relative efficiency in the sense that the frontier is determined by the combination of coordinates of the most efficient countries. The frontier is concave in line with the assumption of diminishing marginal productivity. Efficient countries are situated in the graph along the frontier; inefficient ones are represented by dots underneath the frontier (see Graph II.2.a).

Graph II.2.a: **Data envelope analysis: determining the efficiency frontier**



Source: Commission services.

The degree of efficiency of individual countries is captured by the efficiency score, calculated relative to peers as the distance between a country point and the efficiency frontier from an input-oriented perspective; i.e. it measures the amount by which input could be reduced to produce the same level of output. ([2]) Efficient countries have scores of one, inefficient countries have scores between zero and less than one. Graph II.2.a illustrates this concept. Performance is measured along the vertical axis in the graph while the degree of efficiency is measured by the proximity of data points to the efficiency frontier.

([1]) For more details on the DEA, see e.g. Aigner *et al*. (1977); Charnes *et al.* (1978); Banker *et al*. (1984); Boussofiane *et al*. (1991); Yong –Bae and Choonjoo (2010). The approach is non-parametric as it does not require any assumption either of the functional form relating inputs to outputs or of the data distribution. Besides, this approach allows the use for different units of measurement and it does not impose any limit on the number of inputs and outputs to be considered. Alternative approaches (e.g. the stochastic frontier, least squares econometric production models, total factor productivity indices) would rely on more parametric assumptions and / or would aim at capturing absolute efficiency by estimating an unobserved production function.

([2]) The input-oriented assessment was preferred over an output-oriented one as governments have arguably more direct control over public expenditure allocated to a given category than to the output.

(Continued on the next page)

Box (continued)

The input is measured by the expenditure on the given function. Data is primarily based on COFOG, ([3]) but also other data sources are used if available. Output in different expenditure functions is captured using the most appropriate indicators available in the B&S dataset. The performance indicators reflect, in many cases, relatively stable, structural performance patterns and are thus likely to have been influenced by past input over a longer time horizon. Therefore input variables were calculated, where available, as the average expenditure on the category over the past ten years. ([4]) Keeping a more disaggregated approach than for the composite indicator, some expenditure functions are assessed on the basis of multiple output variables. Tables II.A1.1 and II.A1.2 in Annex II.1 list all input and output variables used in the analysis.

([3]) The Classification of the functions of government, abbreviated as COFOG, is a standard classifying the purposes of government activities. It was developed in its current version in 1999 by the Organisation for Economic Co-operation and Development and published by the United Nations Statistical Division.

([4]) Checking the results with input variables calculated as the expenditure of the last year and average expenditure over the last five years only confirmed the robustness of our results.

2.3.1. Education

The efficiency of education is assessed on the basis of public and private expenditure on education and several output indicators. The ten-year-average of public and private expenditure on education as a share of GDP is used as input variable. ([42]) Four different output indicators are considered: the PISA scores, youth educational attainment, quality of educational system ([43]) and early school leavers. The use of total (i.e. the sum of public and private) education spending as input variable was preferred to public spending for two reasons: first, the output indicators measure the performance of the entire education system in a given country, without distinguishing between public / private education. Therefore, performance is influenced by both public and private input. Second, the share of private education differs significantly across Member States. Hence ignoring private input may distort the cross-country comparison of efficiency. This being said, this approach blurs the picture regarding the performance and efficiency of the public vs the private systems.

The efficiency frontier is defined by Member States with different levels of educational outputs. Graph II.2.1 below presents the performance of Member States in each output indicator and the efficiency frontier drawn on the basis of the situation of each Member State in the input / output plane. The efficiency frontier is determined by CZ, IE and FI, which show the best relationship between output and input. Panel a of the graph illustrates well the difference between performance and efficiency: e.g. EE is among the best-performing MS according to the PISA score, however, FI achieves a very similar PISA score with about 30% less expenditure. Similarly, CZ is not among the best-performing MS as regards the PISA score, however given its low spending on education, it turns out to be on the efficiency frontier.

Based on the dimensions of performance and efficiency, the panel of the PISA score also illustrates the clusters of countries according to their performance and efficiency. Given the input-oriented measurement used for the efficiency score in this chapter, high-spending countries tend to be inefficient, unless they stand out with their performance as well. This approach was chosen, because governments presumably have a more direct control over expenditure than over performance levels. Similar clusters can be drawn on the basis of each output indicator, as illustrated in Graph II.2.1 b), c) and d).

The efficiency and performance of Member States can differ significantly across output indicators. A more formal distribution of Member States along the efficiency and performance

([42]) The input variable for the PISA score was total spending on primary and secondary education given that PISA measures the quality of primary and secondary education only.

([43]) This indicator is the result of an Executive Opinion Survey conducted by the Word Economic Forum. The respondents were asked to answer to the question on how well the education system in their country met the needs of a competitive economy.

Table II.2.1: **Efficiency and performance in the education sector - detailed table**

	Youth educational attainment		Early school leavers		Quality of educational system		PISA	
	Efficiency score	Performance	Efficiency score	Performance	Efficiency score	Performance	Efficiency score	Performance
AT	2	2	3	2	3	2	3	2
BE	4	3	4	3	3	1	3	1
BG	1	3	1	4	1	4	2	4
CY	2	1	3	2	2	1	4	4
CZ	1	1	1	1	2	3	1	2
DE	3	4	2	3	1	1	1	1
DK	4	4	4	2	4	2	4	2
EE	4	3	4	3	4	2	4	1
EL	1	2	1	3	1	4	1	4
ES	2	4	2	4	3	4	1	3
FI	4	2	4	3	1	1	1	1
FR	3	2	4	2	3	2	3	2
HR	1	1	1	1	2	4	4	4
HU	2	3	2	3	3	4	2	3
IE	1	1	2	2	1	1	1	1
IT	2	3	2	4	3	3	2	3
LT	2	1	3	1	4	3	4	3
LU	2	4	1	1	1	2	1	3
LV	3	2	3	2	4	3	4	2
MT	3	4	2	4	2	1		4
NL	4	4	3	3	2	1	2	1
PL	3	1	3	1	4	4	2	1
PT	3	4	3	4	2	3	3	3
RO	1	3	1	4	1	3	2	4
SE	4	2	4	2	4	2	3	4
SI	3	2	2	1	4	3	4	2
SK	1	1	1	2	2	4	2	4
UK	4	3	4	4	3	2	3	2

Source: Eurostat, OECD, WEF, Commission services.
Note: The table shows the situation of countries in the efficiency distribution and the distribution of the outpout variable based on each output indicator used. 1: most efficient / highest performance quartile; 2: above the median quartile; 3: below the median; 4: least efficient / lowest performance quartile.

dimensions is displayed in Table II.2.1 for each output indicator.

As it turns out, the performance in youth educational attainment and in the ratio of early school leavers are strongly correlated among themselves, but relatively loosely correlated with the two other indicators, namely the quality of the educational system and the PISA scores. This implies that in some cases the first two indicators suggest a different picture from the latter two. Thus, BE, DE, EE, NL and UK are shown to perform relatively well (upper two quartiles) based on the overall quality index and the PISA score, while performing relatively poorly (lower two quartiles) based on the youth educational attainment and the rate of early school leavers. By contrast, SK and HR perform relatively well in the youth educational attainment and the rate of early school leavers while performing rather poorly according to the overall quality index and the PISA scores.

Efficiency and performance can be summarised across a range of indicators across Member States. The efficiency-performance matrix (Table II.2.2) summarises the situation of Member States in the efficiency – performance dimensions across different output indicators.

Table II.2.2: **Efficiency and performance in the education sector: summary matrix***

		EFFICIENCY	
		LOW	*HIGH*
PERFORMANCE	*LOW*	pt	bg el es hu it ro
	HIGH	at dk fr lv pl se si	cz ie

Source: Eurostat, OECD, WEF, Commission services. Note: Low (high) efficiency is shown for a MS which falls in the least efficient or the below median quartiles (above median and highest efficient quartiles) of the efficiency distribution according to the majority of output indicators. Similarly, low (high) performance is shown for MS falling in the lowest performance or the below median quartiles (above median and best performer quartiles) of the performance distribution according to the majority of output indicators. * The efficiency distribution does not allow expressing a clear view for CY, FI, MT and NL. Similarly, the performance distribution across the different output indicators is indeterminate for BE, DE, EE, HR, LT, LU, SK and UK.

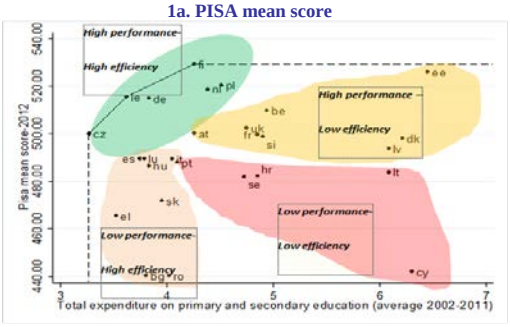
The matrix suggests, that based on the majority of indicators, education in IE and CZ is relatively well-performing and relatively efficient. By contrast, education in PT performs poorly relative to its peers and the system is also relatively inefficient. Other countries are scattered between groups of high performance / low efficiency or high efficiency / low performance. The former includes countries with relatively large shares of expenditure devoted to education; the latter includes countries which devote relatively little funds to education and therefore their low performance is found to be relatively efficient. At the same time, due to the inconclusiveness across indicators, a number of countries could not be clearly allocated to the quadrants of the matrix.

2.3.2. Health

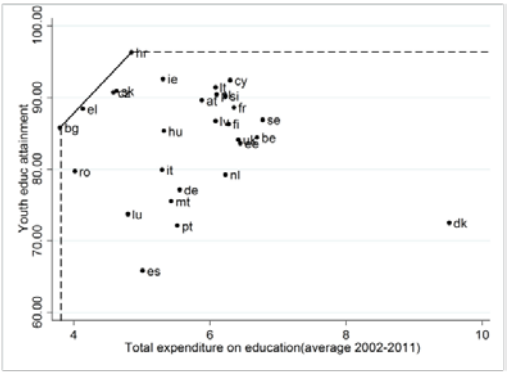
Efficiency and effectiveness in the health-care sector can be assessed based on a number of input and output variables. Efficiency in the health-care sector is assessed on the basis of the ten-year average of per capita total (public and private) current expenditure including capital investment on health care, in real values and

Graph II.2.1: **Education: Efficiency score across indicators**

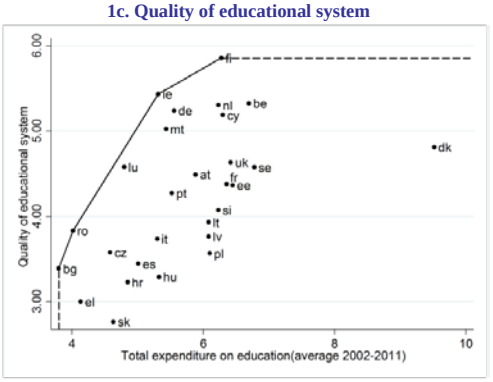
1a. PISA mean score



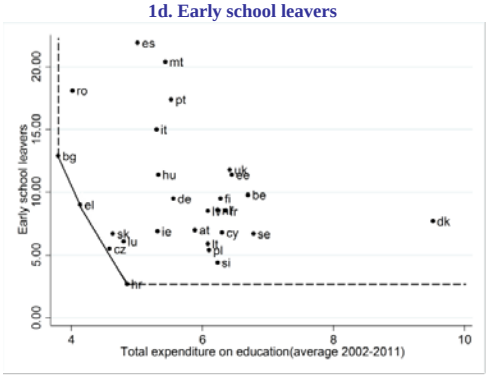
1b. Youth educational attainment



1c. Quality of educational system



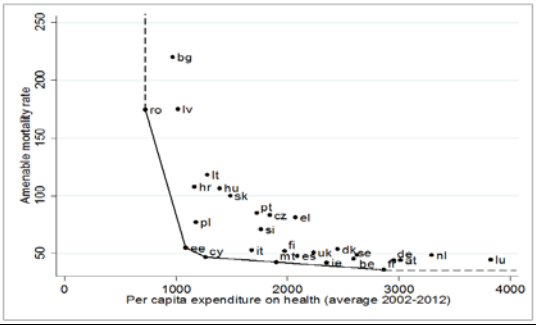
1d. Early school leavers



Source: Dealogic Projectware database and own calculations.
Note: Total expenditure on education shown as % of GDP.

expressed as purchasing power parities ([44]) as input and four output variables: amenable mortality rate, ([45]) infant mortality rate, life expectancy at birth and life expectancy at 65. In-depth studies of health care usually consider amenable mortality as a marker that highlights the performance of a health care system. However, the exact estimation of amenable mortality rates remains challenging, as there are different definitions of which diseases can be considered as amenable. That is why other output indicators of the B&S database were also included in the assessment as control variables. A more detailed assessment of efficiency in health expenditure in the EU can be found in Medeiros and Schwierz (2015). A profound analysis of challenges of health systems and which policies can be used to address country-specific inefficiencies is available in the Commission services (DG ECFIN) - Economic Policy Committee's "Joint Report on Health Care and Long-term Care Systems and Fiscal Sustainability". ([46])

Graph II.2.2: **Efficiency of health expenditures based on amenable mortality**



Source: Eurostat, Commission services.

Based on amenable mortality, performance appears relatively closely linked to the expenditure. The worst-performing MS (i.e. with the highest rate of amenable mortality) tend to be those with the lowest per-capita health-care spending and vice versa, best-performing countries also tend to spend more on the sector (see Graph II.2.2). Nevertheless, there is some variance in the efficiency of the health-care system across countries: especially across MS spending between 1000 and 2000 euros per capita, there is a relatively large dispersion in performance. At the same time, the dispersion in the performance of high-spending countries is relatively concentrated. The efficiency-performance matrix on the basis of the amenable mortality rate shows CY, ES, FR, IE, IT and MT in the high-performance / high-efficiency group relative to other MS (see Table II.2.3). At the other end of the spectrum, CZ, DK, EL, PT, SI and SK appear to perform worse than their peers and at a lower degree of efficiency than other MS in the area of health care.

The efficiency and performance in the health sector using other output variables suggests the robustness of these results. CY, ES, FR, IE, IT and MT are confirmed in the high-performance / high-efficiency category, as shown in the overview Table II.2.3. However, the situation of some countries cannot be clearly allocated due to contradictions across output indicators, similar to the case of education.

2.3.3. Other sectors

Public R&D

Assessing the efficiency and performance of R&D spending reveals good practice MS, but it is difficult to disentangle private and public drivers. Efficiency of R&D is measured taking as input variable the total average expenditure between 2006 and 2013 (share of GDP ([47])); the output variables considered are: number of patent applications, technological readiness and the quality of scientific research institutions. Once more, the sum of public and private expenditure was preferred to public R&D expenditures as the output of R&D can also be influenced by private input. While this choice is hence restricted by data availability, the use of both public and private input and output variables does not allow differentiating between the efficiency of R&D in the two sectors. In the field of R&D, based on our indicators, IE, HU, NL and UK are situated in the high-performance / high-efficiency group; see

([44]) For this aim per capita health-care specific purchasing power parities are used.
([45]) Amenable mortality is defined as deaths from a collection of diseases, such as diabetes and appendicitis, that are potentially preventable given effective and timely health care. The lower the amenable mortality, the better the performance.
([46]) http://ec.europa.eu/economy_finance/publications/eeip/ip037_en.htm.
([47]) This choice is mainly guided by the data at disposal. A further improvement could be achieved by considering the total expenditure in per capita terms.

Table II.2.3: **Efficiency and performance summarised across a range of indicators**

	Education	Health	R&D	General public services*	Public order and safety**	Infrastructure
AT	HL	HL	HL	HL	HH	HL
BE	n.a.	HL	HL	HL	HH	HL
BG	LH	LH	LH	LH	LL	LL
CY	n.a.	HH	LH	n.a.	LL	LH
CZ	HH	LL	LL	LH	LL	LL
DE	n.a.	HL	HL	HH	HH	HH
DK	LH	LL	HL	HH	n.a.	HH
EE	n.a.	LH	HL	HH	LL	LL
EL	LH	LL	LH	LL	LH	LH
ES	LH	HH	LL	LL	HL	HH
FI	n.a.	HL	HL	HH	HH	HH
FR	LH	HH	HL	n.a.	HH	HH
HR	n.a.	LH	LH	LL	HL	LL
HU	LH	LH	HH	LL	LL	LL
IE	HH	HH	HH	HH	LH	HL
IT	LH	HH	LL	LL	LL	HH
LT	n.a.	LH	LH	LH	LH	LH
LU	n.a.	HL	HL	HH	HH	HL
LV	HL	LH	LH	LH	HL	LL
MT	n.a.	HH	LH	LL	HH	LH
NL	n.a.	HL	HH	HH	HL	HH
PL	HL	LH	LH	LL	LL	LL
PT	LL	LL	LL	LL	LL	HH
RO	LH	LH	LH	n.a.	LL	LL
SE	HL	HL	HL	HH	HH	HL
SI	HL	LL	LL	LL	LH	LH
SK	n.a.	LL	LH	n.a.	LL	LL
UK	n.a.	HL	HH	HH	HL	HH

Source: See Annex II.1.
Note: Low (high) efficiency is shown for a MS which falls in the least efficient or the below median quartiles (above median and highest efficient quartiles) of the efficiency distribution according to the majority of output indicators. Similarly, low (high) performance is shown for MS falling in the lowest performance or the below median quartiles (above median and best performer quartiles) of the performance distribution according to the majority of output indicators. The first letter indicates performance, the second letter indicates efficiency. Colour coding: green (high performance, high efficiency), yellow (high performance, low efficiency), orange (low performance, high efficiency), red (low performance, low efficiency).
* CY, FR, RO and SK had to be eliminated from this table due to missing indicators.
** DK had to be eliminated from this table due to missing indicators.

Table II.2.3. At the other end of the spectrum, CZ, ES, IT, PT and SI are found to be relatively poorly performing and at a low degree of efficiency relative to other MS.

General public services

In the area of general public services, the analysis suggests a strong polarisation between MS, with many displaying either high performance and efficiency or low performance and efficiency. The efficiency of general public services is assessed based on the ten-year-average public spending (share of GDP ([48])) on general public services as input variable and the output

([48]) This choice is mainly guided by the data at disposal. A further improvement could be represented by considering the total expenditure in per capita terms.

variables: government effectiveness, corruption perception index and e-government index. On the basis of the considered indicators, most countries fall in either the high-performance / high-efficiency group (DE, DK, EE, FI, IE, LU, NL, SE, UK) or the low-performance / low-efficiency group (EL, ES, HR, HU, IT, MT, PL, PT and SI) (see Table II.2.3).

Public order and safety

The methodology also allows indicating the efficiency and performance of public order and safety. The efficiency of public order and safety services is assessed on the basis of the average expenditure on public order and safety between 2006 and 2013 (share of GDP ([49])) as input variable and the output variables are: crimes reported by police, persons killed or injured in road traffic accidents, reliability of police services. In the area of general public services, AT, BE, DE, FI, FR, LU, MT and SE exhibit relatively high-performance and a relatively high degree of -efficiency. By contrast, BG, CY, CZ, EE, HU, IT, PL, PT, RO and SK fall in the low-performance / low-efficiency quadrant (see Table II.2.3).

Infrastructure

Data on infrastructure spending and the quality of infrastructure allow measuring the efficiency of infrastructure spending, but results should be treated with extra caution given base effects. Efficiency of infrastructure will be assessed here on the basis of the average expenditure on transport and communication between 2006 and 2013 (share of GDP ([50])) as input variable and the overall infrastructure index as output variable. The choice of the output variable was motivated by it being the only output variable in the B&S dataset capturing the quality of the services with the other variables in the B&S dataset were capturing more the stock of infrastructure which is not directly related to the spending of the past years. However, the results highlight methodological issues: Most MS with low performance scores have acceded to the EU in 2015 or later, which likely correlates to low initial levels of capital stocks. This might be the reason low quality of infrastructure rather than inefficient spending. The efficiency-performance summary matrix (Table II.2.3) puts DE, FI, NL, PT and UK into the high-performance / high-efficiency group in this field.

([49]) This choice is mainly guided by the data at disposal. A further improvement could be represented by considering the total expenditure in per capita terms.

([50]) This choice is mainly guided by the data at disposal. A further improvement could be represented by considering the total expenditure in per capita terms.

2.4. CONCLUSION

The analysis in the chapter provides a first indication on the efficiency and performance of public expenditure at the level of countries and specific functions of government. Based on an efficiency frontier approach, the analysis allows classifying Member States according to their performance and the degree of efficiency relative to other Member, giving guidance on where room for improvements appears to be sizeable. Overall, the indicators suggest that no country is situated in either the high-performance/high-efficiency group or the low-performance/low-efficiency group consistently across each expenditure function. Still, broad tendencies can be observed with some Member States situated in one of these groups in various expenditure areas. Other Member States show variable degrees of performance/efficiency across functions.

Methodological caveats and limitations should be borne in mind to avoid drawing too firm conclusions. It should be stressed that the assessment of the quality of spending composition, the performance and efficiency of individual spending follows a purely statistical approach exploiting an existing database of quantitative indicators, of macroeconomic nature mostly. It is meant to provide first insights based on available quantitative evidence and highlight potential bottlenecks. At the same time, one should refrain from drawing strong conclusions on the basis of this assessment, which only represents a first step to trigger an informed policy discussion.

Concrete policy recommendations should be based on in-depth analysis focussing on specific expenditure areas. Additional aspects, which are specific to expenditure areas and/or Member States and cannot be reflected in this general assessment, need to be taken into consideration. The results reported here should thus be considered as evidence complementary to sector-specific, micro-based evidence.

3. IMPROVING THE TRANSPARENCY AND PREDICTABILITY OF THE SGP

The Stability and Growth Pact (SGP) has undergone a number of reforms in the last decade, to strengthen the economic underpinning of the EU's fiscal rules and their adaptability to changing economic conditions. The reforms have allowed for a better understanding and monitoring of Member States' fiscal policy actions. However, there is a widespread perception that the fiscal rules have become too complex and too numerous and that they face a range of implementation difficulties in relation to the measurement and robustness of key surveillance indicators.

In that context, the Commission has, together with the Member States, explored ways to increase the transparency and predictability of the SGP rules and reduce their complexity while remaining within the existing legal framework, in line with the Commission Communication of 21 October 2015 on "Steps towards Completing Economic and Monetary Union" ([51]) and the conclusions of the informal ECOFIN meeting of 22-23 April 2016.

As a result of the subsequent discussion that has taken place in the Economic and Financial Committee of the Council, it has been agreed to reduce the overall number of indicators used when assessing compliance with the SGP.

This agreement is expressed in the form of two opinions of the Economic and Financial Committee, endorsed by the ECOFIN Council on 6 December 2016. ([52]) The next edition of the Vade mecum on the SGP will contain all relevant details.

The essence of the agreement

Currently, two different sets of budgetary indicators are used to assess Member States' compliance with each of the two arms of the SGP. The achieved agreement essentially consists in introducing the preventive arm's expenditure benchmark ([53]) in the corrective arm of the SGP. At the same time, it clarifies the working of the preventive arm in certain aspects.

Corrective arm

In the corrective arm, the expenditure benchmark will in future be used as the operational indicator for determining compliance with a Member State's recommendation under the Excessive Deficit Procedure (EDP).

When a Member State receives a recommendation under the EDP, the Commission is required to assess whether the Member State in question has taken effective action to address the Council recommendation. ([54])

The order of logical and procedural steps for assessing effective action is commonly designated as the "EDP decision tree". ([55]) These steps, following the agreement, will be as follows:

- Firstly, the headline deficit and the underlying change in the structural balance are considered. If the Member State concerned is compliant with the headline deficit target and the underlying improvement in the structural balance, the procedure is held in abeyance.

According to the agreement, this step will remain unchanged from the current EDP decision tree.

- Secondly, in case of non-fulfilment of either the headline or structural deficit targets, certain indicators of fiscal effort are used to determine whether the Member State concerned has taken effective action.

([51]) COM(2015) 600 final, available at: https://ec.europa.eu/transparency/regdoc/rep/1/2015/EN/1-2015-600-EN-F1-1.PDF

([52]) The press release is available at: http://www.consilium.europa.eu/en/meetings/ecofin/2016/12/st15206_en16_pdf/. The opinions are available at: http://data.consilium.europa.eu/doc/document/ST-14813-2016-INIT/en/pdf and http://data.consilium.europa.eu/doc/document/ST-14814-2016-INIT/en/pdf

([53]) To recall, the expenditure benchmark sets an upper limit to the growth rate of government expenditure, unless the excess growth is funded by revenue-increasing fiscal policy measures. It excludes interest payments, cyclical unemployment spending and co-financing of EU programmes, while investment expenditure is smoothened. For details, see European Commission (2012a), pp. 70-74, and European Commission (2016c), pp 48-53.

([54]) Articles 3 and 5 of Council Regulation (EC) No 1467/97.

([55]) See European Commission (2014a), pp. 28-40.

The agreement stipulates that a single indicator of fiscal effort will replace the two indicators which are currently used, namely the adjusted change in the structural balance and the bottom-up approach. The single indicator used will be the expenditure benchmark, which is currently in use in the preventive arm of the SGP. The expenditure benchmark becomes therefore the cornerstone of the careful analysis. ([56]) However, contrary to the preventive arm, the expenditure benchmark in the corrective arm will not be derived from the structural balance requirement in a conventional manner through the so-called "convergence margin" but will instead be an integral part of the "EDP scenario". ([57]) Furthermore, as it is currently the case, other considerations could be taken into account as part of the careful analysis, to complement the information provided by the expenditure benchmark, such as the possible impact of unforeseen inflation developments.

Preventive arm

In the preventive arm, Member States are required to attain their medium-term budgetary objectives (MTOs) over the horizon of their stability and convergence programmes. ([58]) Progress towards the MTO is assessed annually by the Commission and the Council. Such progress is gauged within an overall assessment, which is based on (the change in) the structural balance and the expenditure benchmark.

The agreement does not change the use of the two indicators as a basis for the overall assessment but introduces the following changes and clarifications:

- For Member States that have not yet attained their MTOs, the adjustment requirements, which currently are set out by the Council only in terms of change in the structural balance, will be formulated ex ante also in terms of the expenditure benchmark. The expenditure benchmark will continue to be derived from the structural balance requirement in a conventional manner through the convergence margin.

- When assessing compliance with the expenditure benchmark, the impact of one-off measures will be systemically corrected for in the context of the overall assessment: in particular, one-off expenditure measures will be systematically removed from the expenditure aggregate; similarly, any one-off revenue measures will be systematically removed from the amount of discretionary revenue measures.

- The agreement recognises the more predictable and measurable nature of the expenditure benchmark as a rule. On the other hand, it acknowledges that the structural balance may better reflect "structural shifts" in potential output growth.

The benefits

By establishing the use of the expenditure benchmark under both the preventive and corrective arms, the agreement will increase the overall consistency of the SGP.

In addition, the assessment of compliance with Council recommendations under the EDP will become more predictable and transparent. The expenditure benchmark has the benefit of being easier to measure than the structural balance, as it is based on observable variables once the benchmark is set ex ante. The expenditure benchmark also is directly connected to the evolution of non-cyclical expenditure, a policy lever which is directly under the control of government. Furthermore, the expenditure benchmark has the merit of being easier to communicate, both with the general public and with policy makers, as it essentially translates into an expenditure ceiling.

The operation of the preventive arm will also be improved, notably through the improved treatment of one-off measures and the ex-ante setting out of requirements in terms of the expenditure benchmark. Finally, it has been agreed that further efforts will be made to develop transparency on the sides of both the Commission and the Member States.

([56]) This implies that future EDP recommendations will be formulated also in terms of the expenditure benchmark.
([57]) Specifically, the expenditure benchmark will be the maximum allowable growth rate of government expenditure (net of any possible discretionary revenue measures) consistent with meeting the targets for the headline deficit and the change in the structural balance.
([58]) Articles 5 and 9 of Regulation 1466/97 Council Regulation (EC) No 1466/97.

ANNEX 1
Variables used in Chapter II.2.

Table II.A1.1: **List of the variables used for QPE Analysis**

	Variable used for the computation of the QPF indicator		Variables used for the efficiency analysis
DIMENSIONS	DESCRIPTION	ORIGINAL DATA SOURCE	
COMPOSITION EXPENDITURE	Public investment (%GDP)	AMECO	
	Public investment (% primary expenditure)	AMECO	
	Public Investment / Public Consumption ratio	AMECO	
	Productive expenditure % GDP (Sum of Public spending on transportation, R&D, education and health)	EUROSTAT	
	Productive expenditure % primary expenditure (Sum of Public spending on transportation, R&D, education and health)	EUROSTAT	
EDUCATION	PISA total score	OECD	x
	Educational attainment	EUROSTAT	x
	Youth educational attainment	EUROSTAT	x
	Early school leavers	EUROSTAT	x
	Quality of the educational system	WEF	x
HEALTH	Life expectancy at birth	EUROSTAT	
	Life expectancy at 65	EUROSTAT	
	Health adjusted life expectancy - females	EUROSTAT	
	Health adjusted life expectancy - males	EUROSTAT	
	Infant mortality	EUROSTAT	
	Amenable mortality rates	EUROSTAT	x
R&D	Patents granted to residents	WIPO	
	Patent applications	EUROSTAT	x
	Triadic patent applications	EUROSTAT	
	Technological Readiness	WEF	x
	R&D innovation index	WEF	
	Quality of scientific research institutions	WEF	x
	Tertiary graduates per inhabitants	EUROSTAT	
	Quality of math and science education	WEF	
PUBLIC INFRASTRU-CTURE	Length of motorways	EUROSTAT & CIA	
	Length of railways		
	Fixed line and mobile phone subscribers	WORLD BANK	
	internet users per inhabitants	WORLD BANK.	
	Quality of electricity supply	WEF	
	Overall infrastructure index	WEF	x
PUBLIC ORDER & SAFETY	Persons convicted	EUROPEAN SOURCEBOOK OF CRIME AND CRIMINAL JUSTICE	
	Crime reported by police	EUROSTAT	x
	Business cost of crime	WEF	
	Judicial independence	WEF	
	Organised crime	WEF	
	Reliability of police services	WEF	x
	Security property rights	WEF	
	Persons killed or injured in road traffic accidents	UNECE	x
GENERAL PUBLIC SERVICES	Irregular payments and bribes	WEF	
	Corruption perception index	TRANSPARENCY INTERNATIONAL	x
	Favouritism in decisions of government officials	WEF	
	Public trust of politicians	WEF	
	Diversion of public funds	WEF	
	Burden of government regulations	WEF	
	Wastefulness of public spending index	WEF	
	Government Effectiveness - Estimate	WORLD BANK	x
	E-government index	UNPACS	x

Source: Commission services.

Table II.A1.2: **List of sources**

Category	Source
Education expenditure by sources and level of education	OECD
R&D expenditures	OECD
Public order	Eurostat
General public services	Eurostat
Infrastructure	Eurostat
Per capita expenditure on health care	Eurostat and Commission services

Source: Commission services.

Part III

Government investment in the EU: Evolution and challenges

INTRODUCTION

Investment is currently at the top of the economic policy agenda in the EU. Investment spending dramatically fell since the onset of the economic crisis and is still well below its pre-crisis levels. This subdued performance is a major source of concern as it can hamper the economic recovery and job creation over the short term as well as potential growth and competitiveness over the longer term. In this context, Part III provides an in-depth analysis of government investment trends in the EU and their implications for the economy.

The evidence presented in this part shows that the decline in government investment is not a recent phenomenon with gross fixed capital formation on a declining trend in all advanced economies since the 1970s. There are, however, substantial differences across countries and new Member States show a different pattern in this regard. As was the case during previous periods of fiscal consolidation, public investment recently showed a steep decline. However, recovery in the recent crisis has been remarkably slower and public investment is, today, still below its pre-crisis levels. Such low investment can have large implications on the economic performance of the EU, both in the short-term (via the demand side) and in the long-term (through the supply side). Such consequences are extensively discussed in this Part. First it is examined whether the decline in government investment reflects an optimising behaviour by the government sector, by considering whether the durability or the quality of capital has improved. Similarly it is discussed whether core infrastructure has reached its saturation point or government spending has been shifted towards other categories of (non-physical) capital accumulation.

These findings allow drawing a number of conclusions. First, the evidence points to an investment gap in the government sector in the EU, that is, its current level is insufficient. Set against that, Member States should ensure adequate levels of high-quality public capital stocks to ensure balanced short- and long-term economic growth at a time that recovery is slow. Recent initiatives at EU level contribute to maximising the impact of public finances. With its focus on leveraging private funds in economically viable and sustainable investment projects, the Investment Plan for Europe contributes to tackle the investment gap accumulated during the crisis years. The combination of the European Structural and Investment Funds and of the European Fund for Strategic Investments is particularly promising in providing new innovative financial instruments which maximise the economic impact of every public euro invested.

Second, this part shows that the potential to frame investment spending in such a way that it provides short-term stimulus while, at the same time, boosting potential growth in the long-term (the so-called double dividend) is less large than commonly believed. In some cases it may not be possible to simultaneously attain a demand- and supply-side boost via increased government investment. Then, each budgetary instrument should be targeted towards enhancing the side of the economy (supply or demand) where there is more need. Depending on the Member State and on its efficiency in mobilising large infrastructure investments some spending categories, like for example maintenance of existing assets, may be better suited for generating an immediate flow of funds into the economy. Instead, government investment can be better placed to exert a long-term leverage on the potential performance of the economy; investment strategies should then be designed so as not to jeopardise this supply-side effect.

In this respect, a number of principles that underpin sound government investment processes are identified. In particular, investment projects should be part of comprehensive investment strategies across sectors and government levels and projects should be thoroughly designed, selected, evaluated and financed, taking due account of overall fiscal space.

1. THE RELEVANCE OF PUBLIC INVESTMENTS

1.1. INTRODUCTION

It is generally acknowledged that adequate levels of investment are crucial for achieving balanced economic growth. First, as a component of aggregate demand, an increase in capital spending will help to boost economic growth in the short term which can have a stabilising or destabilising impact depending on the cyclical position. At the same time, and differently from other elements of aggregate demand, effective investment can also increase the productive capacity of the economy and hence lead to an increase in long-run growth prospects. This is frequently referred to as the double dividend effect of investment spending: short- as well as long-term benefits.

Both the private and the government sector engage in capital spending, with the latter accounting for around one-fifth of total investment undertaken by Member States over the last two decades. The relationship between public and private investment has been extensively explored by the literature.

The rationale for public sector involvement in investment activities often hinges upon its complementarity to private inputs in productive activities. By way of providing necessary infrastructure and critical inputs, the public sector leverages private investment and contributes to private production, thus boosting economic activity both in the short and the long term. This is all the more important in periods of economic slack, when increased government investment can partly offset falling private demand.

The vast fiscal multipliers' literature finds that short-term multipliers are higher for public investment as opposed to other types of government spending. The positive short-term impact on growth of public funds spent on investment is found to be larger than that of other types of spending. However, from a theoretical perspective, there are also arguments that suggest effects in the opposite direction (see Box III.1.1).

From a fiscal policy perspective, public investment strategies have to serve different priorities over the short- and long-term horizons. Investment strategies have to be designed taking into account short- and long-term aims at the same time. The different aspects specific to each of the long- and the short-term policy angle are sketched out in the remaining of this section.

1.2. THE SUPPLY- VERSUS THE DEMAND-SIDE POLICY ANGLE: PUBLIC INVESTMENT AND GROWTH IN THE LITERATURE

1.2.1. The supply-side policy angle

From a supply-side standpoint, the crucial policy issue is to ensure that the government sector supplies an adequate level of public capital stock into the aggregate production function. That is, governments should aim at sustaining the long-term investment trend that maximises its growth-returns.

The empirical evidence on the contribution of public capital increases to long-term growth is very heterogeneous: estimates of the output elasticity of public capital lie within a large range of values, with the most recent studies halving those of the earlier works of Aschauer (1989), Munnell (1990) or Otto and Voss (1994). ([59]) Analysing a sample of several hundreds of estimates collected from studies for the 1983-2008 period, Bom and Ligthart (2013) find that the average output elasticity of public capital is not large but positive and statistically significant although the original estimates vary widely. ([60])

Three different sources of heterogeneity across studies can be identified. ([61])

([59]) Most of the empirical studies follow a production-function approach: public capital stock is typically included as an additional input factor with respect to which output elasticity is then estimated.

([60]) They find a short-run output elasticity of public capital supplied at the central government level of 0.083. This estimate increases to 0.122 in the long run. The average output elasticity of public capital amounts to 0.106.

([61]) An additional source of heterogeneity in the results found by literature stems from the consideration of financing adjustments. Gemmell et al. (2016) find that the choice of financing instruments very much determines the long-run effects on output from increases in public investment. More specifically Leeper et al. (2010) find that government investment is most expansionary when non-distorting transfers are reduced to compensate for the increase in

Box III.1.1: **The impact of government investment spending on economic growth**

Governments have several instruments at their disposal when they decide on the orientation of their fiscal policies. Not all of them are equally effective in terms of their short- and long-term growth impact. It is a commonly held view that government investments are, with some qualifications, the most efficient instrument.

An increase in public investment impacts the economy in two different ways. First, in the short term it increases aggregate demand through the short-term multiplier, similar to other government spending. Second, there is also a supply-side effect of public investment as the productive capacity of the economy increases with a higher public capital stock.

Macroeconomic (DSGE) models find that investment has the highest short-term multiplier – which is usually found to be larger than 1 in crisis (see for instance Coenen et al, 2012; Leeper et al, 2011, and Roeger and in't Veld, 2010 as reported in Table IV.1.4 in Section IV.1.2). Empirically, VAR models yield similar results pointing to government investment multipliers of around 1.3 (see, among many, European Commission, 2012a). ([1])

The size of the short-term multiplier can vary with the state of the economy: the higher the degree of economic slack, the larger the short-term multiplier. The short-term multiplier of investment is also found to be larger when monetary policy takes an accommodative stance. Otherwise, public capital spending can cause interest rates to rise and crowd out private investment.

Over time, the long term impact of public investment is very much determined by its efficiency. Ultimately, public investment only translates into increases to productive capital stocks to the extent that it is efficient. Analysing different empirical estimates, Bom and Ligthart (2013) find that for every 1% increase in the public capital stock, long run output increases by 0.12% on average. This value is found to be 0.17% on average if the increase of capital stock is concentrated on core infrastructure, with other variables influencing the elasticity, like the authority that undertakes the investment and whether investments are well targeted (see also Brons et al. (2014)).

([1]) The 2012 Public Finance Report on EMU: http://ec.europa.eu/economy_finance/publications/european_economy/2012/pdf/ee-2012-4.pdf

The efficiency of government investment

A first source of heterogeneity in the results found in the literature is related to the efficiency of public investment. Public capital spending only enters the aggregate production function of the economy to the extent that it is productive. However standard public capital stock estimation methods typically assume that whatever governments spend in investment is exactly equal to the increment of the capital stock. In other words, they assume that public sector investment is always efficient.

Pritchett (1999) first argued that the cost of public investment is typically larger than the increment to the value of public capital stock, since not all investment spending can be considered efficient or even productive. The importance of properly taking into account the efficiency of public investment was subsequently taken up by another strand of the literature, which is comprised of several studies focusing on the impact of efficiency-adjusted public capital stocks (Gupta et al, 2014; Dabla-Norris et al, 2012; Agénor, 2012).

In this same vein, Bom and Ligthart (2013) find that results also vary depending on the layer of government that undertakes public investment. They find that the output elasticity of public capital provided by local governments is almost double that of the output elasticity of public capital provided by the central government. According to the authors, this result could reflect the ability of

public expenditure, while is least expansionary – in fact, can be contractionary – when income tax rates are raised instead.

local governments to better target public investment to the most productive alternatives.

Non-linearities in the returns of infrastructure spending

One area of particular attention in the last few years is government infrastructure investment, for which the literature suggests significant non-linearities in its effect on output growth. In particular the effect of infrastructure investments seems to depend on the characteristics of the capital stock already in place. Fernald (1999) and Agénor (2013) suggest that returns to infrastructure investment are probably quite low in both very early stages – before some sort of critical mass in the existing stock of public capital is reached –and beyond the so-called saturation point– once the basic networks required to articulate a territory are already completed. In between those two stages however, returns to infrastructure investment seem to be quite high.

Maintenance of the existing infrastructure stock has received much less attention by the literature, as opposed to the effects of additional public investment spending. According to Romp and de Haan (2005) policymakers face a perverse incentive in this regard. Given that new public investment projects are more visible, they are politically more rewarding than spending on infrastructure maintenance. Therefore, additions to the stock of public assets are frequently prioritised over maintaining the existing stock, even without sound economic grounds that justify it. ([62])

The definition of economically-relevant public capital

The broadness of the definition of public capital constitutes another controversial issue in the literature. Some authors argue that the ESA-breakdown between capital and current spending does not necessarily provide the appropriate benchmark to differentiate between "productive" (or growth-enhancing) and "non-productive" expenditure. They put emphasis on the functional breakdown of expenditure rather than on the national accounts decomposition (Gemmell et al. (2016)).

In this vein, public expenditure in research, development and innovation, ([63]) education or, to a lesser extent, health is usually associated with higher long-term growth (Blankenau and Simpson, 2004; Conte et al., 2009; Afonso and Tovar Jalles, 2013; Gemmell et al, 2016). Conversely, those who adopt a narrower approach focus on so-called core infrastructure –usually understood as roads, railways, airports, and utilities, such as sewerage and water facilities– arguing that is potentially more productive than other types of public capital (Agénor, 2007; de la Fuente, 2010; Bom and Ligthart, 2013).

The actual growth-return of government investment will differ depending on the interplay of these different factors (the efficiency of public investment, the existing capital stock and the balance between potentially productive spending categories, among others). Thus, governments' optimal long-term investment levels should be adjusted accordingly.

Finally, the literature also finds that population ageing can have an impact on the provision of public investment (see Jager and Schmidt, 2016). Long-lasting public goods (such as clean environment or a sufficient stock of public infrastructure) present an intergenerational tension: current generations pay for them but only future ones will reap (most of) the benefits. If generations are selfish this results in under-provision of publicly supplied goods. Ageing can aggravate this problem since a greater proportion of the total population might expect a low individual return from investment in durable public goods. At the same time, other studies argue that rising longevity can increase the demand for long-lasting public goods since more working-age people expect to live long enough to take advantage of the investments undertaken. In this respect, Gonzalez-

([62]) Political economy considerations are also embedded in the study by Cadot et al. (2006) who explicitly model the political processes driving infrastructure investment allocation across regions in France. They find evidence that *"roads and railways are not built to reduce traffic jams: they are built to get politicians re-elected"*. More recently Gupta et al (2015) find that the rate of growth of public investment is influenced by electoral cycles, being highest between 21 and 25 months before elections and decelerating thereafter in favour of more visible current spending or tax cuts.

([63]) One of the main changes brought by ESA 2010 is the fact that R&D spending is now recorded as investment. This also applies to the government sector.

Eiras and Niepelt (2012) find that the effect of ageing on public investment is ambiguous, and overall depends on the evolution of retirement age.

1.2.2. The demand-side policy angle

When the main purpose of investment strategies is to foster economic recovery, the crucial policy issue is how to design them in such a way that the short-term demand stimulus is maximised without compromising their long-term leverage. In fact, government investment plans launched during crisis periods frequently have an inherent tension between these two temporal dimensions: countercyclical investment strategies have to be implemented quickly, which often implies that the decision on the allocation of the funds is determined by the speed in committing them. In these cases, certain types of infrastructure projects typically associated with long authorisation processes are ruled out. The length of the procedures invalidates them as effective short-term stimulus instruments, regardless of their potential for increasing the long-term performance of the economy.

Alleviating this possible trade-off requires choosing the right investment mix and having in place appropriate fiscal governance arrangements (OECD (2011)). Both are frequently intertwined, so that good investment management processes typically result in better-designed investment strategies.

1.3. A READING OF THE EVIDENCE APPLIED TO THE EU CONTEXT

All in all, while public investment seems to make an overall positive contribution to economic growth, the magnitude of this effect varies depending on several factors. The monetary environment and the efficiency of public investment are examples thereof. Another tentative conclusion that can be extracted from the literature is that infrastructure provision does not seem to hold the key to rapid productivity growth in advanced economies where infrastructure needs are already adequately served.

Turning to the EU, the current economic context can be characterised by three features, which together have led to calls for intensifying public investment efforts. A feeble recovery – with low inflation, investment spending being withheld across institutional sectors and considerable stabilisation needs across countries– is coupled with historically low interest rates and availability of fiscal space in some Member States. All these tend to emphasise the importance of additional government investment.

At the same time, government investment efforts are needed to maintain the quality of the services provided by the existing public capital stock and complete cross-border projects in network sectors. Member States may be close to their saturation point in terms of "traditional" or "core" infrastructure stocks, as discussed in Section III.1.1. However that conclusion is less straightforward when a broader definition of public investment is considered. For instance, one that includes knowledge and digital infrastructure (particularly broadband networks), capital spending required to help achieve long-term policy objectives (such as those related to climate change and environmental quality) or when public spending in human capital is also considered. Furthermore, the completion of some projects specific to the EU agenda, like trans-national network projects, would require increased investment across Member States.

The following sections provide an in-depth discussion, specific to the European context. Chapter III.2. provides a thorough statistical characterization of government investment as well as a detailed description of its more recent trends. The evidence suggests that government investment is both weak and at historically low levels. Chapter III.3. considers the short- and long-term challenges faced by Member States in the current situation. From a supply-side perspective, the discussion examines whether the downsizing of public investment responds to an optimising behaviour by the government sector. Conversely, the demand-side discussion focuses on how to maximise the double short- and long-term dividend of public investment.

2. A STATISTICAL AND ECONOMIC DESCRIPTION OF PUBLIC INVESTMENT

2.1. STATISTICAL DEFINITION

The concept of "investment" has been fundamental in macroeconomic statistics since the inception of national accounting in the mid-twentieth century. Although its precise composition has evolved over time in successive international statistical standards, ([64]) reflecting the evolution of the economy and measurement improvements, the basic definition has remained stable around the idea of products which contribute to the process of production in the future. The concept of investment is closely linked in national accounts –as in broad economic theory– with the concept of production, saving, and with its financial implications. It forms part of the integrated national accounts system, where a strong emphasis is placed on consistency.

The latest European national accounts standards (ESA 2010 ([65])) formally deal with the definition and composition of non-financial investment ([66]) –termed "Gross Capital Formation"– in paragraphs 3.122–3.157. They are based closely on the worldwide standards (2008 SNA), thereby ensuring comparability between countries' data. Gross Capital Formation comprises three elements – Gross Fixed Capital Formation (GFCF; covering both tangible and intangible assets), inventories (stocks), and valuables (for example paintings and sculptures).

The focus of analysis of investment is commonly on GFCF, rather than on inventories and valuables (the latter are very small in most economies, where measured). It should however be noted that there is a link between GFCF and inventories which arises from the emphasis in the national accounts system on the application of the accrual principle – flows should be recorded when "economic value is created, transformed, or extinguished…" (ESA 2010 para 1.101). Not only does this provide a conceptual basis for the overall recording of assets which provide benefits in "future periods", but it also ensures that production is recorded continuously in the period(s) in which it takes place.

It is common that large investment goods are constructed over long periods which straddle successive "accounting periods" (quarters and, in some cases, years). The accrual principle leads to a recording of production of such goods even in periods before they are fully completed. This "unfinished" capital formation may either be recorded directly as GFCF (where there is a contract of sale agreed in advance with a buyer, or it is capital for own use) or as inventories, known as "work in progress". Where recording as inventories takes place, the eventual completion of the goods leads to a reduction in inventories and recording of GFCF of the buyer, as the work in progress becomes part of a finished asset. Such work-in-progress raises significant measurement challenges, and often requires the use of business accounting data and estimations based on surveys to resolve. ([67])

National accounts are a complete and consistent system to measure both flows (transactions) and stocks (balance sheets). This is particularly relevant for investment, as GFCF represents the transaction flow which creates stocks of fixed assets. Stocks of capital assets –which are valued in current prices– evolve over time according to transactions (GFCF), price changes (revaluations) and other flows (for example, depreciation and the destruction of fixed assets in natural disasters). When analysing investment, it is important to be aware of both stock and flow issues.

Focusing on GFCF, there are two principal issues to consider – the definition and composition of GFCF, on the one hand, and its allocation to the investing sector of the economy, on the other hand.

([64]) For example, the 1953 System of National Accounts confined capital formation to "tangible" assets, whereas as explained below successive Systems have broadened the coverage to intangible assets.

([65]) http://ec.europa.eu/eurostat/documents/3859598/5925693/KS-02-13-269-EN.PDF/44cd9d01-bc64-40e5-bd40-d17df0c69334

([66]) It is important to acknowledge that the ESA uses the term "investment" in the area of financial accounts, and notably in the context of equity and "investment funds". This is a separate aspect from Gross Capital Formation, and should not be confused with it.

([67]) This is undoubtedly why many statistical offices do not publish separate data for work in progress in the national accounts, but rather include it with other inventories. However it is sometimes possible to obtain data for work in progress from business statistics sources.

Definition and composition of GFCF

With regard to the definition of GFCF, ESA 2010 paragraph 3.124 explains that it represents the acquisitions, less disposals, of fixed assets during a given period. It is important to stress that the measure is net of disposals of fixed assets – this means that existing fixed assets sold between domestic actors have no significant overall impact on aggregate GFCF of the economy, ([68]) but cross-border transactions can do so. One can also underline that GFCF only measures transactions – as described above, it does not include price changes in assets held (revaluations).

- The "Gross" term in GFCF means that it is measured before the deduction of consumption of fixed capital (the national accounts term for depreciation); see below for a further explanation of this.

- "Fixed assets" are defined as "produced assets used in production for more than one year". The "produced" term is intended to exclude land and mineral resources, which are recorded elsewhere in the national accounts. The "used in production" term makes a clear link to what is considered as production in national accounts. This is most visible in the case of unpaid household services, for example cooking, cleaning and childcare – these are not considered to be part of production in national accounts, and therefore the goods which are used to deliver them (cars, washing machines, etc.) are not considered to be fixed assets, and therefore do not form part of GFCF. Given the analytical interest in these goods, termed "consumer durables", which clearly last for longer than one year and represent large discrete purchases for households, separate data are usually compiled and published on them.

Given this general definition, there are a number of borderline cases where an expenditure may or may not be recorded as GFCF. One important one is that only major improvements to a fixed asset (for exampling replacing the roof of a house or the engine of a car) are considered as GFCF. Ongoing ("ordinary") maintenance costs are, by contrast, recorded as current expenditure and are not separately distinguished in statistical publications from other forms of current expenditure.

The composition of GFCF (often known as the "capital boundary") has expanded over the years in international statistical standards, towards the inclusion of certain "intangible" assets. SNA 1993 introduced the capitalisation of computer software, mineral exploration and entertainment, literary and artistic originals. The SNA 2008 introduced the capitalisation of Research and Development. These changes were not made lightly, and were heavily debated when the standards were updated, both on conceptual and practical grounds. In some cases there were existing so-called "satellite accounts", additional statistical collections outside the core national accounts system, which served as experimental approaches to develop concepts and data sources, and thereby increased the potential acceptance of the approaches. ([69]) Additional guidance was developed where necessary (for example Eurostat's Manual on measuring Research and Development).

There are ongoing developments in the wider research community on the measurement of other forms of "intangible capital", for example with respect to human capital, social capital, environmental capital and entrepreneurial capital. Productivity and environmental analysts have a particular interest in obtaining such information, and have therefore taken the lead in making estimates and pressing for the official statistics community to implement regular data compilation. But there is not yet a worldwide agreement on the definitions of these issues, and the ability to produce widely accepted estimates of sufficient quality are important if they are to be integrated directly into the national accounts system.

([68]) Except for transaction costs, which are capitalised as part of the recorded capital formation.

([69]) A good example of this is the system for research and development accounts. These have been compiled by many countries, based on data collection elaborated in the so-called "Frascati Manual", which originated in 1963, and has been updated many times since then. This degree of practical data collection, based on harmonised concepts, proved to be an important basis for arguing that capitalisation in the national accounts would be practically achievable and could benefit from an existing extended backwards time series.

The capitalisation of some of these aspects (notably human capital) would also have a major impact on key indicators of the national accounts such as GDP or capital stocks. Therefore at present the exploration of these issues is conducted in satellite accounts by official statisticians and more broadly by academic researchers. For example, in the area of human capital, an international group under the Conference of European Statisticians has been developing a Guide on Measuring Human Capital. ([70]) This sets out the main measurement issues faced –including lifetime income and cost-based measures– and elaborates both human capital and education and training satellite accounts, with examples.

It is also important to mention that there is a strong link between the capitalisation of intangible assets and the globalisation of business models. Capitalisation of R&D –and more broadly its associated "intellectual property"– has exposed the national accounts to the flexibility with which multi-national enterprises can move these types of assets across borders and exploit the returns from them in global production processes. Both of these issues raise measurement challenges for statisticians. This would be further compounded if there is further extension of capitalisation to other enterprise resources such as marketing, design and "entrepreneurial capital".

As described above, GFCF is measured gross of Consumption of Fixed Capital (COFC), which represents the depreciation of capital stocks over time due to normal wear and tear and obsolescence. Data on COFC are nevertheless published in the national accounts and may be used to derive "net" indicators which deduct COFC (for example, net national income). In practice it is important to understand that COFC data are model-based, relying on long time series of GFCF data and appropriate assumptions on asset lives and depreciation functions (known as perpetual inventory methods) ([71]). Similar techniques are also used to estimate capital stocks when such data are not available from primary data sources.

Given that depreciation is treated as a cost for businesses when they report their profit and loss, there is sometimes confusion on the recording in national accounts. It is important to clarify that the measure which impacts on the net lending/net borrowing (i.e. the deficit measure, for example of general government) is GFCF, not COFC. It can be seen that net lending/net borrowing is also a measure of the financing requirement generated by economic activity, and the financing requirement for investment in national accounts arises at the time of investment and not over the period of the use of the asset. Hence only GFCF is directly relevant for the level of the government deficit or surplus.

Allocation of GFCF to the investing sector of the economy

The allocation of GFCF is determined by the classification of the unit making the investment. National accounts use two different kinds of unit – institutional units (which are then aggregated to sectors such as non-financial corporations, general government, households) and kind of activity units (which are then aggregated into industrial branches). Data can then be compiled for both breakdowns, depending on user needs, based on the basic sources available.

With specific regard to government investment, the GFCF recorded for general government depends on the classification of units and in some cases specific transactions. For example, there are detailed statistical criteria for identifying if a public corporation should be classified in the general government sector, notably in relation to whether or not is acting as a "market producer", and also in relation to where assets associated with a public-private partnership (PPP) should be classified. ([72])

Construction projects under PPP contracts create liabilities or debt for a government, as they have to be financed. However, the financing

([70]) See http://unstats.un.org/unsd/nationalaccount/gcItemMHC.asp for the draft under consultation.

([71]) For a good national example of the approach and issues faced, Statistics Netherlands - Department of National Accounts (1998).

([72]) See the recent guidance issued jointly by Eurostat and the European PPP Expertise Centre http://www.eib.org/epec/resources/publications/epec_eurostat_guide_ppp.

can be recorded either on or off government balance sheet, that is, either with or without a direct impact on government debt. In case the asset is recorded on government balance sheet, the entire expenditure is recorded for government during the period of construction. This has a negative impact on government deficit or surplus and the government debt will be increased by the same amount. In case the asset is recorded off government balance sheet, the impact on government deficit will be limited to the regular service fees paid to the partner, which are spread over the long-term contract and no debt impact will be recorded. Further information on the rules in this area may also be found in Eurostat Manual on Government deficit and Debt ([73]) (MGDD).

More broadly, there is a strong interest user in data for the so-called *"public sector"*. In national accounts, this is defined as the general government sector plus corporations controlled by the general government (i.e. public corporations). But in practice such data are rarely compiled and disseminated by European statistical offices as they require detailed company-level data and the focus of national fiscal monitoring is usually on the general government sector (in line with the European-level focus).

With regard to data on investment by industry, these are commonly compiled according to the European statistical classification for industries (NACE Rev.2 ([74])). There is no public/private split in this classification (although one branch relates to the public administration), and the data rely on detailed data from statistical units that are as homogenous as possible in their production. Those industries where the public sector can be expected to play a major role –for example health, education and social services– also include data for private providers.

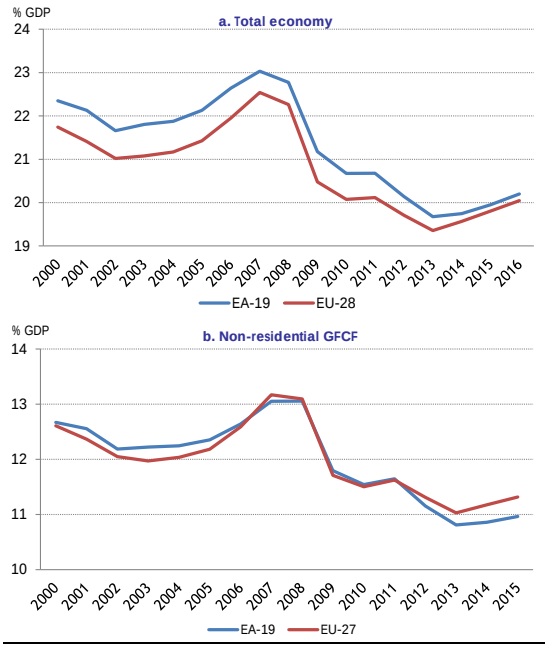
([73]) Eurostat (2016).
([74]) See http://ec.europa.eu/eurostat/web/nace-rev2.

2.2. GOVERNMENT INVESTMENT ON PHYSICAL CAPITAL: THE CRISIS AND THE LONG-TERM TREND

2.2.1. Public investment since the crisis

Investment in the EU has been persistently weak since the onset of the crisis and its rebound momentum does not appear to take hold. Total investment as a share of GDP plummeted from around 23% in 2007 to 19% in 2013 and is still well below its pre-crisis level both in the EU and the euro area (see Graph III.2.1a). It is currently expected to approach 20% of GDP by the end of 2016. Part of the observed decline in total investment could reflect the unwinding of imbalances in certain euro area countries, which were mainly connected to excess investment in the housing sector. However, non-residential investment is also considerably low in both the euro area and the EU (see Graph III.2.1b). ([75])

Graph III.2.1: **Total GFCF (% GDP)**



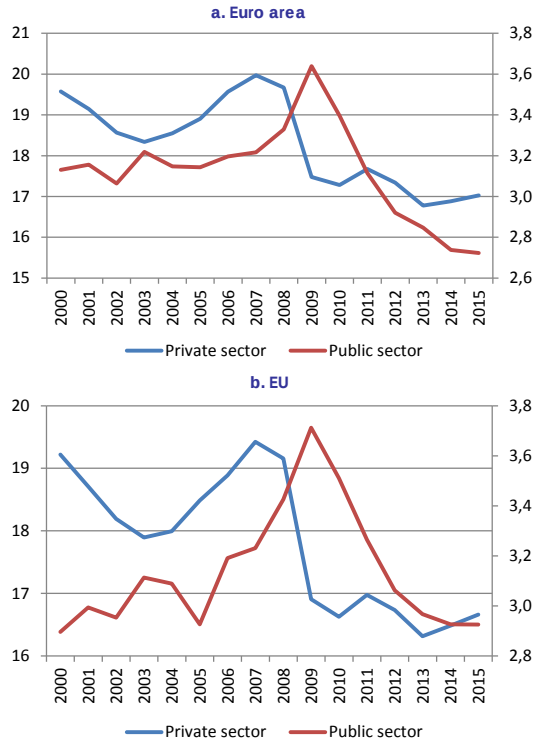
Source: Commission services.

A sectoral perspective to these trends reveals that both private and public GFCF levels are low (see Graph III.2.2). Investment by households

([75]) GFCF data by types of goods is not available for HR. Therefore the EU average for Graph III.2.1b contains only 27 Member States.

and corporations fell from roughly 20% of GDP at its 2007 peak to around 16% in 2013. It has modestly started to recover in the last two years but remains subdued compared to the previous decade. Government investment picked up in 2009 and 2010, in a coordinated attempt to support demand and partly offset the decline in private activity. ([76]) Subsequently, the increase in government budget deficit and debt levels led to fiscal tightening in a wide number of Member States.

Graph III.2.2: **Private and government GFCF (% GDP)**

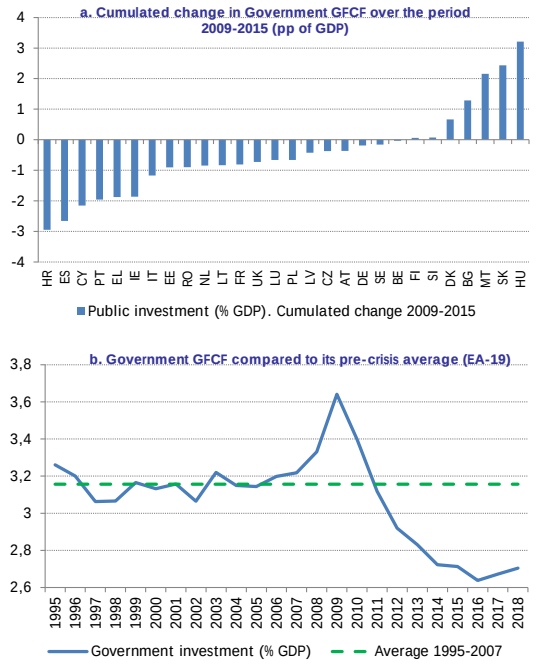


Source: Commission services.

Fiscal consolidation episodes are typically accompanied by a decline in public investment, and the last one was no exception in this regard. ([77]) In fact, the contribution of public investment compression to fiscal adjustment was particularly large over the last few years, especially in some fiscally stressed Member States. Cumulated cuts in government investment over the period 2009-2015 reached 2% of GDP or more in six Member States (HR, ES, CY, PT, EL and IE), while only seven managed to increase or maintain their government investment share in GDP over this same period (FI, SI, DK, BG, MT, SK and HU). As a result of that, euro area government investment in 2015 was 1 pp of GDP lower than its 2009 level of 3.6% of GDP, as well as noticeably below its pre-crisis average of around 3.2% of GDP. This shows that the existence of an investment gap in the government sector is a concrete possibility.

While private sector investment as a share of GDP remains very low, it started to slowly recover in 2013. Conversely, investment by the public sector remains on a slight decline on aggregate. Graph III.2.3 shows that government investment flows remain well below pre-crisis average. In most Member States total investment rates have not yet recovered their pre-crisis levels (see Graph III.A1.1 in Annex III.1).

Graph III.2.3: **Government GFCF (% GDP)**



Source: Commission services.

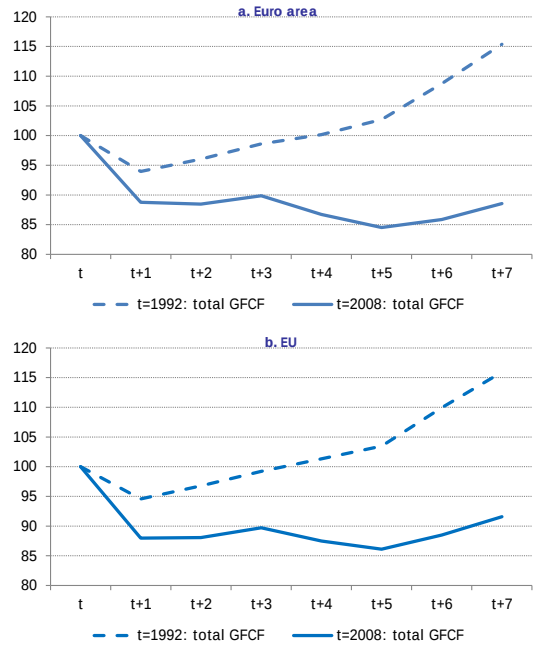
The most prominent feature of the current state of investment in the EU is probably not related to its actual level though, but to its trend. Investment is not only low; its growth performance

([76]) See the Presidency Conclusions of the Brussels European Council (11 and 12 December 2008): http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/104692.pdf.
([77]) See European Commission (2014a).

is particularly feeble and has been so for some time already.

This becomes quite evident when current investment growth is compared to historical precedents. Graphs III.2.4a and III.2.4b display present dynamics together with those that prevailed after the 1992 crisis. While this comparison needs to be considered with caution, it can illustrate the restraints bearing on the ongoing investment recovery, if only because the 1992 crisis also hit amidst a tight fiscal environment. In fact, in the years following the 1990-91 supply-side shock ([78]) and the 1992 currency crisis, fiscal policies were restricted both according to the criteria stated by the Maastricht Treaty and due to the levels of deficit inherited from the past. Despite that, total investment recovered rather fast and after seven years, it had considerably exceeded the pre-crisis level. Conversely, total investment has been stalled for several years now and remains well below its 2008 volume.

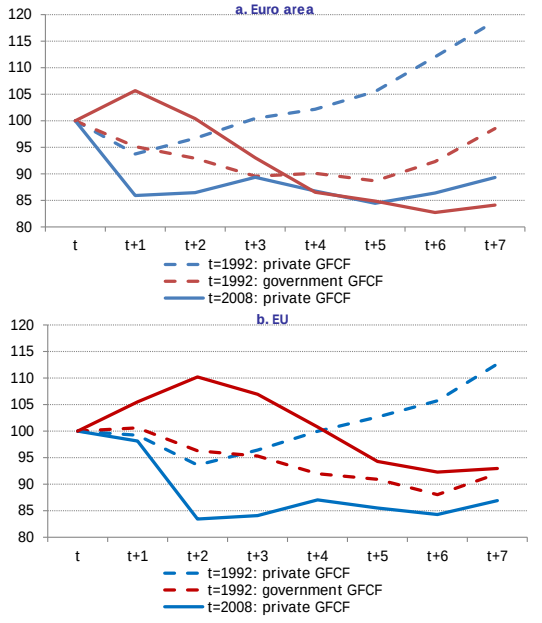
Graph III.2.4: **Investment recovery in perspective. Total GFCF at constant prices at the 1992 or 2008 peak = 100**



Source: Commission services.

Looking separately at the evolution of private and government GFCF in the two episodes provides further insights (see Graph III.2.5). Two main differences between these crisis periods stand out. First, fiscal policy played no stabilising role immediately after the crisis hit in 1992, while it did so in the last crisis episode. Despite this the fall in total investment was, since the onset of the crisis, much more acute now than two-and-a-half decades ago. Second, lagging private investment mostly explains the weaker performance of total GFCF in the current crisis. Seven years into the 1992 episode, government investment in the euro area had recovered more than it has now, but had not yet reached its pre-crisis levels either. On the contrary, private investment had outperformed its 1992 volume by 20%. Compared to that, the volume of private investment is today between 10 and 15% smaller than in 2008, in the euro area and the EU respectively.

Graph III.2.5: **Investment recovery in perspective: private and government investment. Private and government GFCF at constant prices at the 1992 or 2008 peak=100**



Source: Commission services.

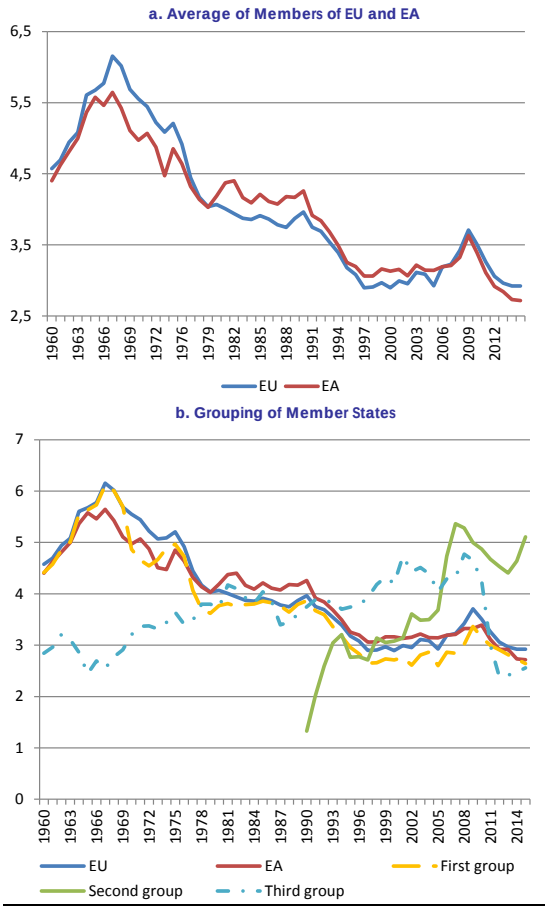
2.2.2. Public investment over the long term

The decline in public investment is not a recent phenomenon however: government GFCF has been on a declining trend since the 1970s. Its share of EU GDP has fallen from around 6% at the beginning of the 1970s to less than 3% in 2015, as

([78]) The supply-side shock was connected to the increase in oil prices due to the first Gulf War crisis.

shown in Graph III.2.6. Similarly, government GFCF as a share of euro area GDP has roughly halved in the last five decades. At the same time, the contribution of the government sector to the GFCF of the total EU economy has declined from over 25% by the mid-1960s to around 15% in 2015 (from 22% to 14% in the euro area). ([79]) Note that the euro area did not exist before 1999. Therefore, what is named in the text euro area for the sake of simplicity, is simply an average of values relating to the Member States that today are in the euro area.

Graph III.2.6: **Government GFCF (% GDP) 1960-2015**



Source: Commission services.

This seemingly structural decline at the EU level masks substantial differences across countries, which can be grouped into three categories. DE, FR, UK, IT, AT, BE, FI, DK, NL, SE and LU conform the first group of Member States. The second group is comprised of SI, SK, CZ, CY, MT, BG, RO, PL, EE, LT, LV, HU and HR. Finally, PT, IE, ES and EL constitute the third group.

The decline in public investment has been particularly sharp in the first group of countries over the long term. This was specifically the case for the UK, IT, AT and SE, where government GFCF as a share of GDP is now less than half that at the beginning of the 1970s. In the case of DE, government GFCF is now 1 pp of GDP smaller than at the beginning of the 1990s. The decline is considerably less pronounced on the contrary in FR or FI where government investment has more closely kept pace with the growing economy.

Conversely, public investment in the second and third group of Member States was trending up rather than down before the crisis. Reductions in government investment accounted for a very large share of the fiscal consolidation implemented by the countries in the third group as of 2010, which explains the very pronounced decline in more recent years. In turn, public investment has markedly increased in the second group of Member States over the last two decades, again as a share of GDP, rising from under 2% at the beginning of the 1990s to almost 5% on average in 2015. EU funds have a crucial role in explaining government investment dynamics after the crisis in the several of these Member States, as argued in Box III.2.1. Graph III.A1.2 in Annex III.1 provides a more detailed picture of the evolution of government GFCF by Member State.

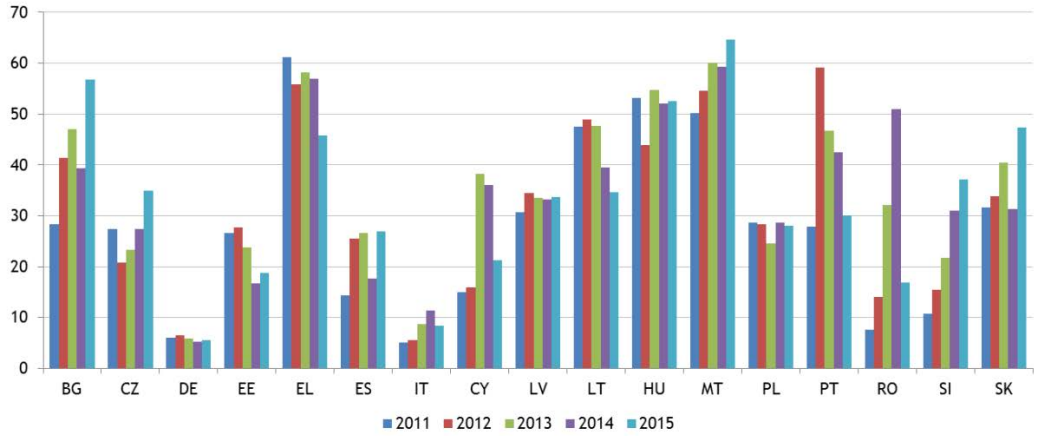
([79]) See Graph III.A1.3 in Annex III.1. Note that the euro area only exists since 2000. Any reference to the euro area before that year is just a convenient way of regrouping data to provide with an average.

Box III.2.1: The role of EU funds in public investments

EU structural and cohesion funds typically finance investment in physical infrastructure and human development and are therefore designed to permanently increase countries' productive potential. Albeit the yearly cross-border flows operated through the EU budget are overall fairly small (estimated at around a quarter of a percentage point of the EU's GDP each year ([1]), these transfers are playing an increasingly important macroeconomic role in many of the so-called new Member States. Most notably, there are six of them (the three Baltic States, Bulgaria, Hungary and Poland), which have received more than 3% of GNI net contribution from the common budget on average between the 2007-20014 period. ([2])

The bulk of EU funds are investment grants, which implies that their role in supporting government investments is very prominent. According to available data, typically EU-funded investments constitute a large part of total government investments in new Member States, Greece, Spain, Ireland and Portugal which have a share of EU-funded investment over total government investment above 20% (see Graph III.2.a below) and hovering at around the 45-55% range over recent years. ([3])

Graph III.2.a: **Share of total government GFCF financed by EU funds**



Source: ECB, AMECO, Eurostat.
Note: Member States for which data are not available (IE, FR, HR, FI) or shares are below 1% (BE, DK, LU, NL, AT, SE, UK) are not included in the graph above

Two additional factors suggest that the true importance of EU funds in public development projects is even larger than implied by the above graphs. First, the national co-financing, which is obligatorily earmarked to supplement EU money, could on average add 8-10 pp to the investment ratios. Second, there are a number of EU co-financed actions in the field of public services (e.g. communal transport modernisation schemes), which are carried out by publicly-owned companies classified outside of the general government sector. Albeit these undertakings are recorded as private investments in national accounts based on the statistical rules, their true nature is very similar to public investments.

However the evidence suggests that a substitution effect might be taking place between nationally-financed and EU-financed government investment. Graph III.2.b below shows that total government investment as a share of GDP falls within a relatively narrow range of between 3.5 and 4.5 % of GDP for the

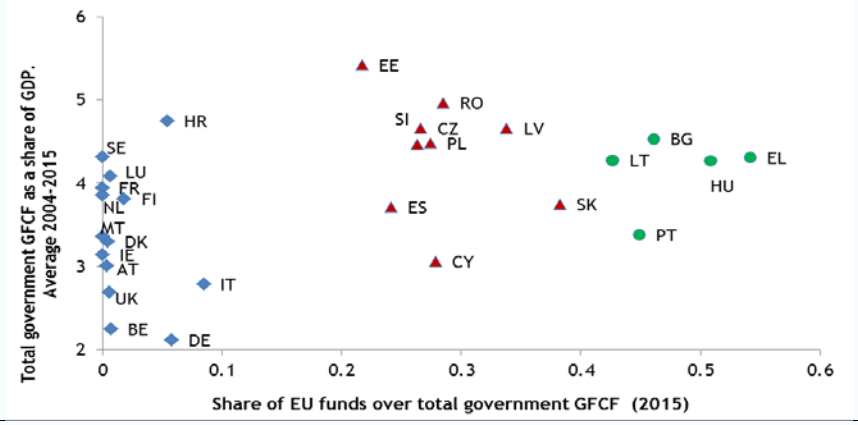
([1]) D'Apice (2015).
([2]) This is based on the operational balances as calculated in the Commission's yearly Financial reports.
([3]) If non-accrual data are used, EU funds have become the single most important source for the public investments in largest beneficiary Member States, amounting to around 60-65% in certain periods for some countries: see European Commission (2013).

(Continued on the next page)

Box (continued)

majority of Member States. This is regardless of the very different shares of EU-financed government investment across countries. As an example, FI, ES and SK all have very similar government investment to GDP ratios, despite the fact that the amount of EU funds these three countries receive differs considerably. This is confirmed by the fact that the correlation between total government investment corrected for EU funds and EU funds is negative and significant (-0.3). This picture has remained broadly stable in the last decade and did not change during the crisis years.

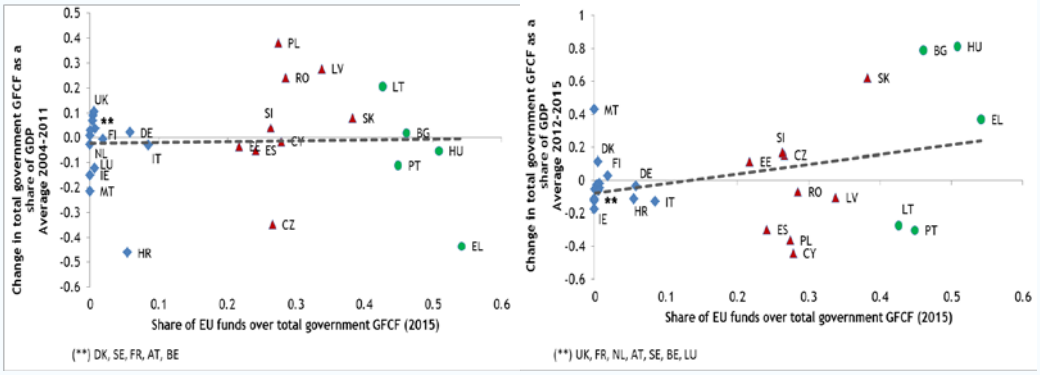
Graph III.2.b: **Share of total government GFKF financed by EU funds (average 2004-2015)**



Source: ECB, AMECO, Eurostat.

Having said that, the importance of EU funds in supporting government investment in several Member States has likely been crucial during the recent crisis, where a very different pattern in government investments has emerged depending on the share of EU-funded investments . As shown in Graph III.2.c below, before the crisis there was no relationship between the change in government investment and the share of it that was financed by EU funds. However, this relationship became positive during the crisis, meaning that government GFCF proved more resilient in those Member States where EU-funded investment constitutes a large part of total government investment. This positive relationship becomes even stronger when crisis-hit countries (such as PT, ES, CY or EL, which being large beneficiaries of EU funds had to implement severe spending cuts at the height of the crisis) are controlled for.

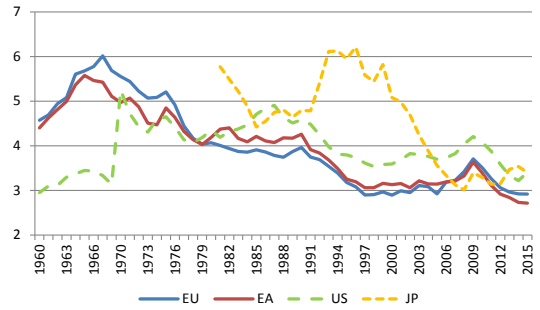
Graph III.2.c: **Resilience of total government GFCF as a share of GDP versus EU funds in the crisis**



Source: ECB, AMECO, Eurostat.

The trend decline in public investment is not exclusively European. Both Japan and the US have also experienced a noticeable decline in government investment over the past decades: in Japan the level of public investment has also halved like in the "core EU" while in the US the decline is somewhat less severe (see Graph III.2.7). It is interesting to note that US public investment started to exceed that of the EU at the beginning of the 1980s. Since then, the wedge has widened decade after decade: it averaged around 0.3 pp of GDP per year in the 1980s while it is almost 0.7 pp of GDP per year now in the 2010s.

Graph III.2.7: **Government GFCF / EU vs US and Japan (% GDP) 1960-2015**



Source: Commission services.

3. TRENDS IN GOVERNMENT INVESTMENTS: THE GAP

The long-term decline in public investment described above constitutes a double source of concern. First, as a component of aggregate demand, the feebleness of investment coincides with outlook slow recovery and evidences slack in the economy. Second, a recovery with persistently depressed investment can have long-term consequences through lower potential output.

In this respect, there is a short- and a long-term challenge facing European economies. The cyclical lethargy has to be addressed by promoting an increase in aggregate demand. Furthermore it should be avoided that crisis legacies, such as low investment, are left unaddressed and eventually become structural. Different initiatives at the EU level try to address these issues (see Box III.3.1).

It is now widely claimed that, amidst a context of historically low government borrowing costs, fiscal policy has an important role to play in stimulating both aggregate demand and long-term potential growth. ([80]) The remainder of this section discusses this double role of public investment. It first discusses the long-term implications of currently low investment levels. In addition, it provides several insights into different factors that may influence its effectiveness as a tool for short-term stimulus.

3.1. THE SUPPLY-SIDE PERSPECTIVE

The long-term relevance of public investment hinges upon its impact on public capital stocks and the latter's role in the aggregate production function. Being productive, government investment should increase the public capital stock. This appears in the aggregate production function of the economy and thus determines its long run ability of producing goods and services.

Therefore, from a supply-side perspective it should be assessed whether the decline in government investment is resulting in under-provision of publicly-supplied inputs. Or rather, if it results from the optimising behaviour of governments, which are now able to provide growth-maximising levels of high-quality public capital stocks with lower investment spending overall. In this vein judging whether, or to what extent, lower investment levels would constitute a drag on the long-term performance of the economy is not straightforward. Three different hypotheses are discussed in this respect.

First, the trend of actual accumulation of public capital stock may differ from the one of public investment. A decoupling between the trends observed in the flow and the stock variable may have occurred if, for instance, the average amount of public assets' depreciation has decreased over time. In addition, government investment may have become more efficient, so that similar increases in public capital stocks may be achieved with lower investment spending on aggregate. At the same time, certain infrastructure services are now provided by the private sector in many advanced economies. The actual capital accumulation hypothesis is explored in Subsection III.3.1.1. below, checking the evolution of public and total capital stocks.

In addition, the EU may be close to its saturation point when it comes to the provision of "core" infrastructure services. Infrastructure spending constitutes a large share of government investment spending and capital stock. If a considerable number of Member States has reached or is close to reaching their saturation point in terms of infrastructure coverage, lower investment levels may be needed on aggregate to support adequate levels of publicly provided infrastructure services. The saturation point hypothesis is discussed in Subsection III.3.1.2.

Finally, capital formation alone could underestimate economically relevant public investment. In fact, physical capital accumulation is just one of the many dimensions of public investment, understood in broad economic terms.

([80]) It should be noted that other types of "productive" government spending can also have a role in fostering growth in the short and the long term. See Subsection III.3.1.3.

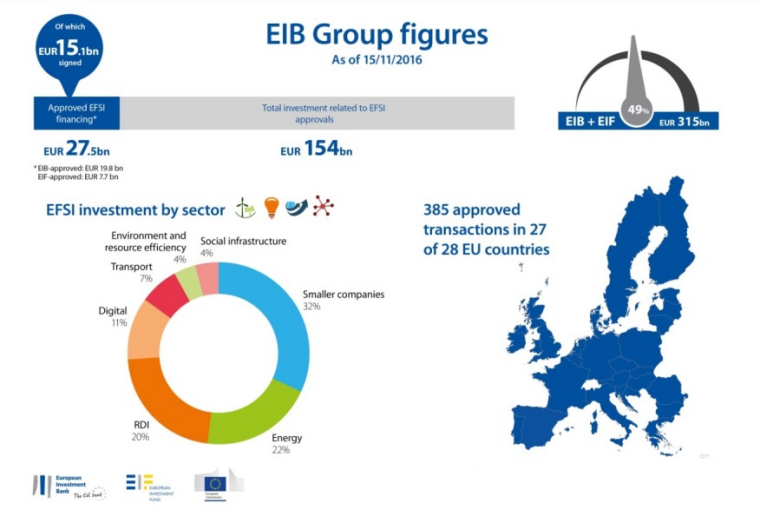
Box III.3.1: The Investment Plan for Europe

Jobs, growth and investment are one of the Juncker Commission's 10 key priorities. The Investment Plan for Europe was presented on 26 November 2014 ([1]) and initiated a concerted and targeted action to stimulate financing for investment together with the European Investment Bank (EIB) and the European Investment Fund (EIF) –the EIB Group–, as part of the virtuous triangle of structural reforms, responsible fiscal policies and investment. The purpose is threefold: making sure that scarce public resources are used to mobilise private investment to target market failures in an efficient manner by crowding-in private capital, ensuring that investments reach the real economy and improving the investment environment in Europe.

More specifically, the Investment Plan for Europe is composed of three mutually reinforcing pillars. First, the **European Fund for Strategic Investments** (EFSI), which is in place since July 2015 ([2]), was established for an initial period of three years and with the aim of mobilising at least EUR 315 billion in investments in sectors of strategic importance for the EU, while endeavouring to maximise private sector contributions.

The projects approved by the EIB Group by November 2016 for coverage under the EFSI are expected to mobilise EUR 154 billion in total investments across 27 Member States and to support some 377,000 SMEs, thereby contributing to Europe's future job creation including youth employment, growth and competitiveness. The market absorption has been particularly quick under the Small and Medium-sized Enterprises (SME) window where the EFSI is delivering well beyond expectations. The EFSI has also been successful in attracting other investors, with over 80% of expected investment so far coming from other private and public investors.

Graph III.3.a: **EFSI results (Graphs as of November 2016)**



Source: http://www.eib.org/efsi/

Given the success of the EFSI, the Commission proposed on 14 September 2016 ([3]) to extend its duration, raising its investment target to at least EUR 500 billion until end-2020. The proposal also introduces some enhancements taking into account the lessons learnt in the first year of the EFSI. In particular, the Commission suggests to further strengthening additionality and transparency and to improve the EFSI's

([1]) COM(2014) 903 final.
([2]) Regulation (EU) 2015/1017.
([3]) COM(2016) 597 final.

(Continued on the next page)

Box (continued)

focus on the EU's political priorities as regards climate change, in line with the strong commitments made at the COP21. Another important objective of the proposal is to reinforce the take-up of the EFSI in less-developed regions and transition regions as well as a continued focus on supporting SMEs.

Second, the Investment Plan has helped to step up technical assistance for project promoters and transparency on investment opportunities in Europe. The **European Investment Advisory Hub** (EIAH) ([4]), a joint initiative of the Commission and the EIB, delivers 360-degree technical assistance and advisory service and has already dealt with more than 270 requests. Whilst this is a promising start, steps are being undertaken to bring the advisory services closer to the final beneficiaries and increase EIAH services in specific areas with unmet needs (including cross-border projects). The **European Investment Project Portal** (EIPP) ([5]), an online platform bringing together European project promoters and investors from the EU and beyond, was launched on 1 June 2016 and is increasing the visibility and the financing opportunities for investment projects across Europe. It already contains over 130 investment projects.

Finally, the third pillar of the Investment Plan is an ambitious approach to **remove bottlenecks, provide greater regulatory predictability, and reinforce the Single Market**. This can only be achieved through complementary national and EU actions. As part of the Commission's efforts to improve Europe's investment environment, the Commission has tabled a number of initiatives to help support investment and facilitate the financing of the real economy. ([6]) In addition, the Energy Union, the Capital Markets Union, the Single Market and the Digital Single Market Strategies, and the Circular Economy package all contain specific measures that will remove concrete obstacles and further improve the environment for investment, if fully implemented. Member States also need to implement the necessary reforms to remove obstacles to investment identified in the context of the European Semester. The Council, upon proposal of the Commission, has already issued a number of Country-Specific Recommendations for reforms in the area of investment. These reforms are a necessary condition to sustain and increase investment levels in Member States.

The comprehensive efforts initiated with the Investment Plan are already delivering concrete results, despite the fact that macroeconomic effects of larger investment projects cannot be immediate. The positive momentum generated by the Investment Plan should be maintained and efforts need to be continued to bring investment back to its long-term sustainable trend.

([4]) http://www.eib.org/eiah/
([5]) https://ec.europa.eu/priorities/european-investment-project-portal-eipp_en
([6]) Such as the lowering of capital charges for insurance and reinsurance companies as regards infrastructure investments and the adoption of practical guidance on the application of State aid rules in the context of public funding of infrastructure.

Other spending categories –often classified as current expenditure by ESA2010– are also important ways of accumulating capital in modern economies. A possible rebalancing of overall spending towards prioritising these other long-term relevant categories could also have led to lower ESA2010-investment spending. The growth-friendly spending hypothesis is explored in Subsection III.3.1.3.

3.1.1. The actual capital accumulation hypothesis

Over time, public capital stocks could have become more durable. The productive capacity of capital stocks (and thus, their estimated value) hinges upon the value of depreciation incurred since initial investments were made. Fixed assets erode with age but they do so according to different patterns, depending on the type of asset and the type of industry they are used in. In this respect, the asset mix held by the government sector has gradually changed, with intellectual property products making for a rising share in total governments' assets. Similarly, the type of

activities where governments' assets are put in use has also evolved over time. If, as a result of those changes, less of each period's investment is dedicated to restoring the productive capacity of the existing capital stock (i.e. to making up for depreciation charges), the trend in public capital stock could somewhat differ from the trend in public investment.

In addition, the government sector may have become a more efficient investor over time. In other words, it may be getting more increases in public capital stock for each unit of investment spending. Several institutions shape the management of investment processes, throughout the phases of planning, allocation and approval of projects. Improvements in these institutions have the potential of significantly enhancing the efficiency and productivity of public investment. Different initiatives have been put in place in the EU ([81]) over the last years, so the efficiency of investment processes may have evolved over time. However, it is also likely to have changed slowly reflecting the fact that structural reforms to improve these processes usually take time to implement. Any such increased efficiency is however difficult to capture in the data, since public capital stocks are typically estimated using the perpetual inventory method (see below).

This calls for checking the evolution of net public capital stocks across Member States. It is net capital levels that enter the production function of the economy, so they are central to the supply-side discussion. While the value of public investment is obviously a main determinant of its evolution, other factors may also influence it, such as the two outlined above.

Unfortunately public capital stocks are challenging to estimate. Most available estimates rely on the application of the Perpetual Inventory Method (PIM) ([82]), which involves accumulating past capital formation and deducting the value of assets that have reached the end of their service lives and the value of accumulated consumption of fixed capital. The latter is obtained using a depreciation function that can adopt different forms. PIM results considerably vary depending on the different assumptions underlying the calculations. This way of estimating public capital stocks does not allow for discussing the possible impact of increased investment efficiency. This is so because, by construction, the PIM method typically assumes that every unit of government investment spending is translated into an increase in the value of public capital stocks. Conversely, changes to depreciation profiles are reflected on the evolution of perpetual inventory estimates of public capital stocks.

Estimates provided by two different sources are presented here. On the one hand, the IMF investment and capital stock dataset, which covers the period 1960-2013 and twenty-three Member States. On the other hand, own calculations based on AMECO and Eurostat national accounts data, which cover the period 1970-2015 and twenty eight Member States. ([83]) While the two datasets use the PIM methodological approach to estimate capital stocks owned by the government sector, the details of the application of such methodology vary considerably. ([84]) First, the assumptions

([81]) See for example the new EU procurement and concession rules. https://ec.europa.eu/growth/single-market/public-procurement/rules-implementation_en

([82]) Capital stocks can also be estimated by survey methods or "balance of fixed assets" methods. These are used however much less frequently. See the OECD (2001) for further details.

([83]) General government sector GFCF, consumption of fixed capital and GFCF deflator are taken from AMECO. Balance sheet data for the general government sector are taken from Eurostat national accounts. For some Member States data are available only since 1995 (BG, CY, CZ, EE, HU, LT, LV, MT, RO, SI and SK).

([84]) For a detailed explanation of the methodology used by the IMF see Annex to IMF (2015.
Regarding our own calculations, the anchor level for capital stock in 2010 is taken from Eurostat balance sheet data for general government sector net total fixed assets for all countries except BG, CY, ES, HR, IE, LT, LV, MT, RO and SK. For the latter countries the 2010 capital stock for the general government is determined by applying the share of cumulated deflated general government GFCF values in total cumulated GFCF to total net capital stock in 2010 from AMECO. Capital stock series for the years before and after 2010 are generated using a simplified PIM by adding general government GFCF volume series and subtracting general government consumption of fixed capital volume series. Finally, volume series for general government GFCF and consumption of fixed capital are

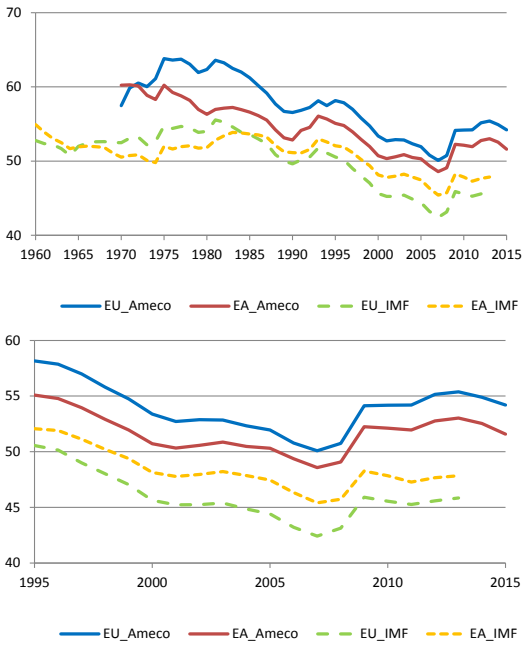
regarding the starting capital stock are different. Second and most importantly, the mortality and depreciation functions underlying the two calculations are also different.

The picture provided by these two sets of data is somewhat different, but one feature stands out: net public capital stock in the EU and the euro area is on a long-term declining trend. The public capital-to-output ratio has been continuously decreasing since the 1970s (see Graph III.3.1), meaning that the rate at which the EU has consumed its public capital stock has consistently outpaced the rate at which it was replaced or increased. According to both sets of estimates, the public capital-to-output ratio declined quite abruptly since the 1990s and reached a trough in 2009. Since then it has mildly recovered, at first possibly as a result of the decline in GDP, but current levels are still around 10 pp of GDP lower than those prevailing at the beginning of the 1990s. (See Graph III.A1.4 in Annex III.1 for a more detailed picture of the evolution of public capital stocks by Member State).

At the same time, European public capital-to-output ratios are lower than that of other advanced economies. Graph III.3.2 shows that, compared to Japan and the US, public capital stocks seem overall low in the EU and the euro area. This is the case according to the IMF dataset as well as to data from Ameco, Eurostat and the Bureau of Economic Analysis (for the US).

It should however be taken into account that the provision of certain infrastructure services has been privatised in many advanced economies, partly out of efficiency reasons. The private sector plays an increasingly important role in the provision of infrastructure in many European (and other advanced) economies.

Graph III.3.1: **Public capital stocks (% GDP). IMF* and AMECO****



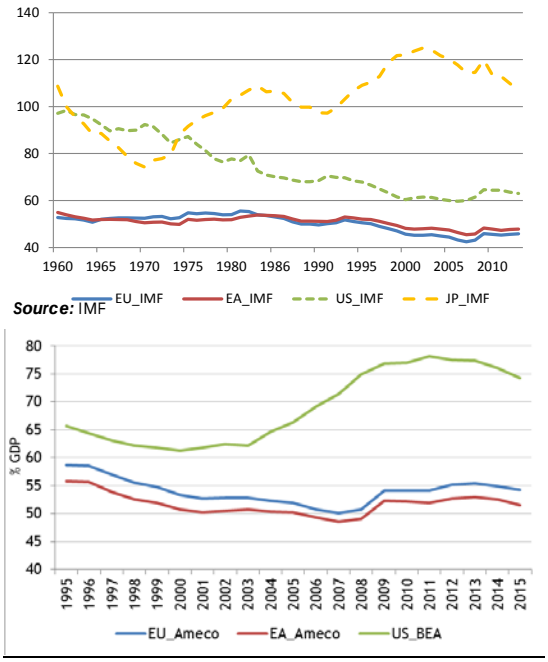
Source: Commission services and IMF.
* Expressed as % GDP in 2005 international dollars. MT, LV, HU, SI and CY are missing from euro area and/or EU averages.
** Expressed as % GDP in 2005 euros.

The emergence of alternative ways to finance infrastructure investment, such as public private partnerships (PPPs), has shifted parts of capital expenditure from the government to the private sector.

As shown in Graph III.3.3a investment in PPPs, though volatile, has substantially increased in the two decades before the Great Recession (see Box III.3.2). Graph III.A1.5 in Annex III.1 shows the evolution of PPPs by Member State. They now play a particularly substantial role in certain sectors such as transport infrastructure investments. Still, having started from near-zero level, the magnitude of PPPs remains very limited compared to overall government GFCF (see Graph III.3.3b) and is very far from offsetting the latter's decline over the last years.

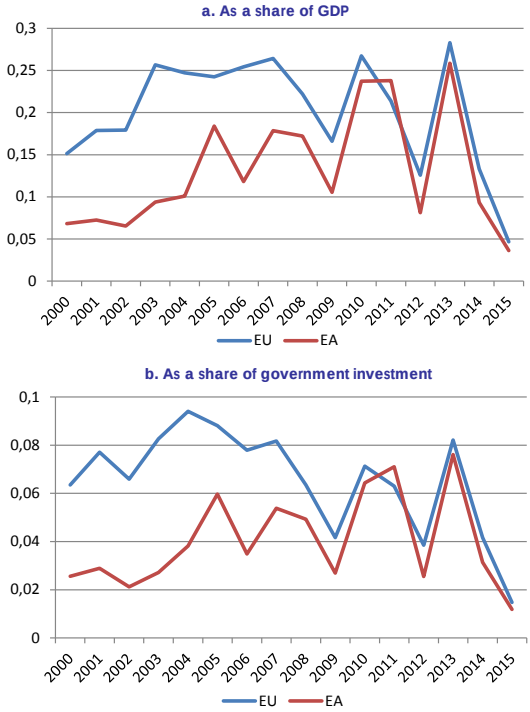
generated by applying total GFCF deflator to AMECO general government GFCF and consumption for fixed capital in current prices.

Graph III.3.2: **Public stocks (% GDP). Comparison to Japan and the US**



Source: Commission services and BEA.

Graph III.3.3: **Public-Private partnerships**



Source: Dealogic Projectware database and own calculations.

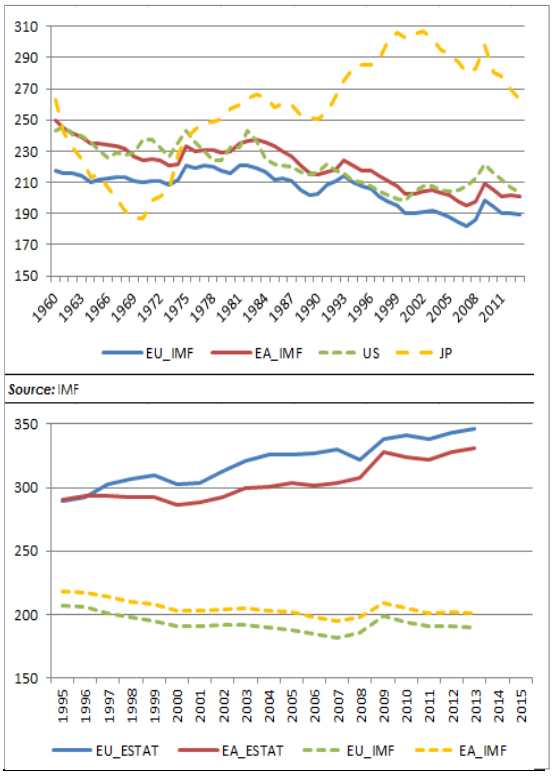
The above picture should be complemented with an analysis of total capital stocks trends. Note that in many countries public enterprises undertake investment activities, which are recorded as investment of the enterprise sector in national accounts statistics. Furthermore, the government sector can stimulate total investment in the economy in other ways rather than investing itself, such as granting subsidies or tax expenditures that incentivise investment by the private sector (see Box III.3.3 below).

In this respect, the picture provided by the IMF and Eurostat estimates for the evolution of the total capital stock differs considerably. Graph III.3.4 show that this is not only concerning the levels of the total capital-to-output ratio – which is 3:1 according to Eurostat and just over 2:1 according to the IMF– but also regarding its trend.

Eurostat data points to increasing levels of total capital stocks, while the IMF points to a slight overall decline. (See Graphs III.A1.6 and III.A1.7 in Annex III.1. for a more detailed picture of the evolution of total capital stocks by Member State).

All in all, long-decreasing government investment is resulting in ebbing levels of public capital-to-output ratios. In the last four decades public investment as a share of GDP has been insufficient to make up for consumption of fixed capital by the general government. More recently, this trend was reversed in 2012 and 2013, possibly driven by GDP developments, but a slight decline in the public capital-to-output ratio was observed again in 2014 and 2015. The long-term decline in public capital stocks is not being offset by increased private sector involvement in the provision of infrastructure services.

Graph III.3.4: **Total economy capital stock trends (% GDP). IMF and Eurostat**



Source: Commission services.

Moreover, the public capital-to-output ratio in the EU is lower than in other advanced economies. At the same time, total capital stock trends seem to have been more resilient over the past decades. According to the golden rule of capital accumulation (Phelps, (1961)), the optimal capital-to-output ratio increases when total factor productivity and population growth (or employment) declines. The latter two features closely characterise developments in the EU over the past decades. Thus, optimal capital-to-output ratios are now probably higher than they were before. Compared to that however, capital ratios have substantially declined, which could further uggest underinvestment in the EU and the euro area as a whole. ([85])

([85]) Note that population ageing can also have an impact in this regard, as discussed in Subsection III.1.2.1.

Box III.3.2: Public Private Partnerships in the EU

Public-Private Partnerships are one of the tools used by public authorities for the provision of public assets and services. International institutions and market players use different definitions of PPPs. ESA 2010 ([1]) for example, defines them as follows: «*public-private partnerships (PPPs) are complex, long-term contracts between two units, one of which is normally a corporation (or a group of corporations, private or public) called the operator or partner, and the other normally a government unit called the grantor. PPPs involve a significant capital expenditure to create or renovate fixed assets by the corporation, which then operates and manages the assets to produce and deliver services either to the government unit or to the general public on behalf of the public unit.*» According to the OECD, PPPs are characterised by the fact that the private operator is in charge of both building and operating the infrastructure and that, at least for the contractual period, the private operator is also the owner of the assets.

Examples of assets built and operated within a PPP framework include ports and highways as well as, more recently, schools, prisons and hospitals. Several varieties of PPP exist. In a typical PPP model –the so-called DBFO model– the following four main tasks are all contracted out to the private operator: i) design (D); ii) building (B); iii) finance (F); and, iv) operation (O) of the asset or infrastructure (say, a highway). Other models include design-build-operate (DBO), build-operate-transfer (BOT) and build-lease-operate-transfer (BLOT). At the very least, however, in a PPP the private operator is responsible for building and operating the asset. The private operator can retain the ownership of the asset after the contract expires or transfer it to the public partner (as in the BOT and BLOT schemes, for example).

While a lot of progress has been recently made to ensure PPPs are correctly recorded in national accounts, a number of issues still undermine the availability of project level data on PPPs, complicating their analysis. First of all, there exists no uniform PPP structure across Member States and data sources on PPPs reflect this lack of homogeneity. Second, while the EU legislation foresees the publication in the Official Journal of all public procurement notices, a similar prescription does not exist for concessions (with the exclusion of work concessions). This means that to date, there exists no comprehensive EU database on concessions and PPPs. ([2]) Eurostat publishes since 2015 information on contingent liabilities, including liabilities ([3]) related to PPPs recorded off-balance sheet of government, but this information is published in aggregated form and covers only a subset of all PPP projects.

The main source of project level data used for the analysis in this section is the Dealogic Projectware database, due to its extensive geographic and time coverage and long-time series. The EIB European PPP Expertise Centre (EPEC), and the Infrastructure Journal have also been consulted to ensure data consistency. The Dealogic database covers project financing which may include projects that cannot be considered PPPs according to the national accounts definition provided above. For this reason a manual refinement of the data has been conducted in the attempt of limiting the dataset only to PPPs. Given the caveats presented above however the Graphs shown in this section should therefore be considered as indicative.

The PPP projects reported above are those that had reached financial close by the time of the data extraction, i.e. it includes all projects for which project financing documentation has been signed. The recorded value of the projects equals the amount of known funding requirement at this stage (i.e. the sum of equity and debt). As an indication of the relative magnitude of PPPs in Member States, the ratio of their value to government gross fixed capital formation has been used. However, it is to be noted that this ratio should not be interpreted as an actual share per year, since PPP values represent the total capital expenditure and financing costs of the projects which actually take place over a varying number of years. ([4])

([1]) http://ec.europa.eu/eurostat/documents/3859598/5925693/KS-02-13-269-EN.pdf.
([2]) The situation is likely to change following the transposition of Directive 2014/23 on concessions, where an obligation is introduced to publish in the Official Journal the contract notices for all types of concessions.
([3]) http://ec.europa.eu/eurostat/web/government-finance-statistics/contingent-liabilities.
([4]) For a more detailed treatment of PPPs in the EU, see also the European Commission, forthcoming.

Box III.3.3: Tax incentives for investment

In addition to direct public investment, governments may stimulate private investment through subsidies or loans or, increasingly, by the means of tax incentives. Tax incentives often take the form of relief from corporate taxation through, for example, reduced rates, deductions, allowances, or deferrals. Some incentives, such as preferential treatment of highly-skilled expatriates, function through the personal income tax system.

The budgetary costs of tax incentives for investment, in the form of foregone revenue, are difficult to quantify. Such quantification ideally needs to consider behavioural responses, interactions with other tax bases and other methodological issues. ([1]) Typically, forgone revenues mainly come from three sources; first, the forgone revenue that otherwise would have been collected from the activities undertaken; second, the forgone revenue from projects that would have been undertaken even if the investor did not receive any tax incentives; and, third, lost revenue from investors and activities that improperly claim incentives. At the same time, the benefits of such incentives may be even more difficult to assess, as the level of investment depends on a wide variety of inter-dependent factors. A widely-used tax incentive to encourage investment across Member States is depreciation. Depreciation allows taxpayers to recover the costs of certain investments through an annual allowance for the deterioration of the investment. Depreciation applies to most types of tangible property (except land) as well as certain intangible property such as patents and copyrights.

Table III.3.a presents a number of tax incentives for investment commonly used in Member States: incentives for R&D investment (columns 1-4), incentives that aim to stimulate investment in certain regions or sectors (column 5) and incentives aimed at stimulating SME activity (column 6). Each of these categories is discussed in more detail below.

Table III.3.a: **Tax incentives for investment in the EU**

	Types					
	R&D				For Economic zones, Sectors	For SME's
	Tax credits	Tax allowances/Tax reserves	Accelerated depreciation	Patent Boxes		
MS						
BE	X	X	X	X	X	X
BG	X		X		X	
CZ	X	X			X	
DK	X	X	X		X	
DE					X	
EE						X
IE	X				X	X
EL		X		X	X	
ES	X			X	X	X
FR	X			X	X	X
HR		X				
IT	X		X	X	X	
CY		X		X	X	
LV		X			X	X
LT		X	X		X	X
LU				X		X
HU		X		X	X	X
MT	X			X	X	
NL	X	X		X	X	X
AT	X					
PL	X	X			X	X
PT	X			X		
RO		X	X			
SI		X	X		X	
SK	X					
FI		X	X		X	
SE						
UK	X	X	X	X	X	X

Source: Commission services and CPB (2014).

([1]) OECD Member States mainly apply three methods to estimate the costs or value of tax expenditures, i.e. (i) the revenue forgone method, (ii) the revenue gain method and (iii) the outlay equivalence method (see OECD (2010)).

(Continued on the next page)

Box (continued)

Incentives for investment in R&D

As shown in Table III.3.a, R&D tax incentives take a variety of forms such as advantageous tax treatment of innovation inputs (R&D expenditures), as well as preferential treatment of R&D outputs (incomes from licensing or asset disposal attributable to R&D or patents). Usually R&D tax expenditures take the form of direct tax credits, tax allowances or accelerated depreciation while R&D outputs take the form of patent or investment boxes. Several Member States have introduced so-called «patent box regimes» that reduce the rate of corporate tax levied on the income derived from patents and, in some cases, from other forms of intellectual property.

It should be noted that there are risks and unintended consequences associated with tax incentives for R&D. For instance, such incentives can incentivise the re-labelling of «standard» expenditure as R&D outlays in order to benefit from the more generous fiscal treatment (Hall and Van Reenen, 2000). Secondly, there is a concrete risk that, if the supply of highly skilled workers is rigid, fiscal incentives will result in higher wages for researchers rather than in larger volumes of R&D (Goolsbee, 1999). Thirdly, by providing an implicit subsidy, tax incentives might promote projects with low productivity that potentially would not have been viable otherwise, or might not generate the expected social return. Finally, such tax reliefs might affect the dynamics of firms' growth by favouring incumbents rather than new entrants and thus slowing down the reallocation of resources across firms within industries (Bravo-Biosca et al., 2012).

Location and sector-specific tax incentives

Some Member States offer reduced corporate tax rates to encourage investment in specific, often economically-distressed, regions. Column 5 of Table III.3.a shows Member States which grant tax relief to companies solely on the basis of their location, (often) independently of their economic activity. Column 5 also shows which Member States grant tax incentives to companies investing in specific sectors. For instance, many Member States provide a specific corporate tax regime for the shipping sector («tonnage tax») under which the taxable income is determined based on the volume transported (tonnage of vessels) rather than the income generated.

Although these special tax regimes might be justified as a way to address regional or other market imperfections, they are not necessarily always efficient from a general economic perspective. In fact, a large literature on tax competition emphasises that governments tend to underestimate the revenue losses associated with a lowering of taxes (Buettner, 2014). In addition, this type of special tax regimes for specific sectors may sometimes be contrary to EU rules –like for example State Aid rules or the Code of Conduct for Business taxation–, ([2]) which might put at risk their stability over time.

SMEs-specific tax incentives

A large number of Member States grant small and medium-sized enterprises (SMEs) reduced corporate income tax rates or special tax regimes. The aim is to address SMEs' difficulties in accessing finance in the form of term debt and equity, asymmetric information about the investment environment abroad, absence of large economies of scale or lack of resources to optimise their tax burden. However, preferential tax treatment for SMEs may hinder the smooth functioning of the single market and deviate from internationally accepted tax rules. Moreover, special tax rules for SMEs may also conflict with other objectives. For example, they may discourage companies from growing or may render the tax system more complex.

([2]) See http://ec.europa.eu/taxation_customs/business/company-tax/harmful-tax-competition_en.

3.1.2. The saturation point hypothesis

Findings in the empirical literature support the existence of a saturation effect in infrastructure investment. There seems to be a threshold for infrastructure provision beyond which further additions to the infrastructure network deliver ever-lower returns in terms of economic growth. Theoretically, when marginal returns to infrastructure investment start diminishing, spending in those types of projects by optimising governments should recede accordingly.

The observed decline in government investment spending could be related to the fact that several Member States may have already reached their core infrastructure saturation point. If this were the case, adequate levels of publicly provided infrastructure services at the EU level would now be sustained with overall lower investment spending. This calls for checking the evolution of physical measures of public capital and perceived infrastructure quality.

At first, available data may suggest that the EU as a whole may well have reached its saturation point when it comes to access to core infrastructure services, although this does not hold across all sectors. As shown in Table III.3.1, traditional infrastructure services – such as the supply of electricity, non-solid fuel, sanitation facilities and water sources – are effectively available to the entire EU population. Even when other types of infrastructure services are considered, such as internet access, coverage is quasi-universal particularly when it comes to enterprises. The total transport network density is also very high, the EU having one of the densest inland transport networks in the world. ([86]) Despite impressive growth rates in certain regions of the so-called "new" Member States, road and railway network densities remained overall stable in the pre-crisis decade, probably reflecting the fact that, on average, they were already high.

Nevertheless, there appear to be indications of certain underinvestment in road and rail infrastructure in certain Member States. The comparison of actual trends with model-predicted investment rates for each Member State and each year, points to underinvestment in road infrastructure and maintenance in many euro area Member States during the post-crisis period, as well as the UK. Regarding rail infrastructure spending, a similar comparison suggests underinvestment in several euro area Member States along with SE, CZ or PL. ([87])

Considerable further efforts will be required to meet several priorities in the EU infrastructure agenda, including the deepening of the internal market and the transition to a low carbon economy. One important aspect in this regard is the construction of cross-border infrastructures where incentives to invest by national authorities are lower given the lack of internalisation of transnational spill-overs.

In particular, the cost of providing with the necessary EU infrastructure development to match the demand for transport has been estimated at over EUR 1.5 trillion for the period 2010-2030, of which the completion of the TEN-T network would require about EUR 550 billion until 2020. ([88]) In energy, the Commission estimates that in the period 2016-2020, close to EUR 200 billion are needed for power grid investments. ([89]) On top of these, the transition to a low carbon economy requires additional investment in network sectors, in particular new technologies and types of infrastructures which support decarbonisation. Compared to past investment trends, meeting these needs will require a considerably intensification of total investment in the EU. ([90])

([86]) See European Commission (2015e).

([87]) Overinvestment and underinvestment correspond to the difference between the observed total investment rate and a model predicted rate, which accounts for sectoral and macroeconomic factors. See Brons et al. (2014).
([88]) See European Commission (2011).
([89]) See European Commission (2014b).
([90]) See European Commission, forthcoming.

Table III.3.1: **Access to core infrastructure services (percentage of population and change)**

	Access to electricity		Access to non-solid fuel		Improved sanitation facilities		Improved water source		Internet access			
									Households		Enterprises	
Country	Actual	Change (2012-1990)	2012 coverage	Change (2012-1990)	2012 coverage	Change (2012-1990)	2012 coverage	Change (2012-1990)	2015 coverage	Change (2015-2006)	2012 coverage	Change (2009-2004)
AT	*100*	0	*100*	0	*100*	0	*100*	0	*82*	30	*97*	3
BE	*100*	0	*100*	0	*100*	0	*100*	0	*82*	28	*97*	1
BG	*100*	0	*89*	19	*100*	0	*86*	1	*59*	42	*83*	21
CY	*100*	4	*100*	0	*100*	0	*100*	0	*71*	34	*89*	7
CZ	*100*	0	*100*	16	*100*	0	*99*	0	*79*	50	*95*	5
DE	*100*	0	*100*	0	*100*	0	*99*	0	*90*	23	*95*	1
DK	*100*	0	*100*	0	*100*	0	*100*	0	*92*	13	*98*	1
EE	*100*	0	*88*	16	*100*	1	*97*	0	*88*	43	*96*	6
EL	*100*	0	*100*	0	*100*	2	*99*	7	*68*	45	*93*	6
ES	*100*	0	*100*	0	*100*	0	*100*	0	*79*	41	*95*	8
FI	*100*	0	*100*	0	*100*	0	*98*	1	*90*	25	*99*	2
FR	*100*	0	*100*	0	*100*	0	*99*	0	*83*	42	*95*	95
HR	*100*	0	*92*	18	*99*	1	*97*	0	*77*	77	*97*	97
HU	*100*	0	*89*	19	*100*	4	*98*	0	*76*	44	*86*	8
IE	*100*	0	*100*	0	*98*	1	*90*	1	*85*	35	*96*	4
IT	*100*	0	*100*	0	*100*	0	*100*	0	*75*	35	*94*	7
LT	*100*	0	*100*	0	*96*	9	*91*	8	*68*	33	*94*	13
LU	*100*	0	*100*	0	*100*	0	*98*	0	*97*	27	*96*	6
LV	*100*	0	*94*	16	*99*	1	*87*		*76*	34	*88*	14
MT	*100*	0	*100*	0	*100*	0	*100*	0	*82*	29	*92*	92
NL	*100*	0	*100*	0	*100*	0	*98*	-1	*96*	16	*99*	11
PL	*100*	0	*100*	0	*98*	4	*96*		*76*	40	*93*	8
PT	*100*	0	*100*	0	*100*	4	*100*	7	*70*	35	*92*	15
RO	*100*	0	*79*	16	*99*	25	*78*	8	*68*	54	*67*	15
SE	*100*	0	*100*	0	*100*	0	*99*	0	*91*	14	*96*	0
SI	*100*	0	*96*	18	*100*	0	*99*	0	*78*	24	*97*	4
SK	*100*	0	*100*	17	*100*	0	*99*	0	*79*	52	*96*	25
UK	*100*	0	*100*	0	*100*	0	*99*	0	*91*	28	*93*	3
Euro area	*100*	0	*100*	1	*100*	0	*99*	0	*83*	32	*95*	5
EU	*100*	0	*99*	3	*100*	2	*98*	1	*83*	34	*93*	5

Source: Eurostat, WDI and own calculations.
Note: Changes are calculated over the longest period available for each variable. In particular, over the period 2012-1990 in the case of the first four services; 2015-2006 for households' internet access and 2009-2004 for enterprises' internet access.

At the same time, the perceived quality of existing infrastructure stocks has declined in most Member States in the last decade. While survey data ([91]) shows that the perception of infrastructure quality is declining in the large majority of Member States, three different trends can be identified (see Graph III.3.5). For a first group of countries, which includes DE and FR, this declining trend has been ongoing for a decade. Conversely, the perceived quality of infrastructure stocks considerably increased in a second group of Member States before the crisis, but started decreasing noticeably thereafter. ES, IE, IT and PT are among the countries in this second group.

Finally, in just a handful of countries the perceived overall quality of infrastructure has remained stable or increased steadily according to survey data (BG, NL, PL and SK).

The decline in perceived quality concerns all categories of core infrastructure. As shown in Table III.3.2, survey data point to a decrease in the perceived quality of roads, railways, air transport and ports infrastructure. This is also the case for electricity generation capacity. The perceived quality of infrastructure has most sharply deteriorated in ten Member States, where it has contracted by more than 10% since their respective peaks (DE, DK, FR, IT and SE among these ten countries).

([91]) World Economic Forum (2015), "Executive Opinion Survey of the Global Competitiveness Index".

Table III.3.2: **Change in infrastructure quality perception since peak (%)**

Country	Overall infrastructure	Roads	Railroad	Air transport	Ports	Electricity supply
AT	-8,4	-4,8	-4,6	-13,8	-19,8	-2,7
BE	-8,9	-14,2	-12,9	-6,2	-2,3	-7,8
BG	0,0	0,0	-0,2	-6,2	-6,6	0,0
CY	-16,5	-13,6	n.a.	-15,0	-15,8	-11,3
CZ	-12,5	0,0	-1,2	-10,9	-22,8	-1,9
DE	-11,4	-12,8	-12,1	-11,3	-14,1	-7,1
DK	-10,5	-12,9	-15,8	-13,6	-10,2	-3,1
EE	-8,8	0,0	0,0	-28,4	-1,4	-3,6
EL	-5,5	-1,0	-1,7	-7,5	-2,7	-1,5
ES	-5,0	-2,6	-0,5	-2,5	-2,9	-2,5
FI	-5,1	-5,2	-1,6	-5,9	-1,4	-2,4
FR	-9,7	-9,5	-11,1	-10,1	-12,3	-4,5
HR	-11,9	-0,9	-22,8	-9,0	-1,0	-1,1
HU	-5,3	-0,5	0,0	-11,9	-16,7	-2,9
IE	-5,7	-2,1	-2,2	0,0	0,0	-1,3
IT	-14,7	0,0	-6,5	-4,3	-3,4	-0,2
LT	-3,5	-6,0	-5,8	-10,6	-6,6	-2,2
LU	-9,0	-5,6	-2,4	-8,3	-15,2	-0,9
LV	-3,2	-3,7	-3,6	-3,9	-0,8	0,0
MT	-15,9	-7,7	n.a.	-14,0	-9,3	-12,4
NL	0,0	0,0	-0,7	-2,8	-0,6	-2,3
PL	0,0	0,0	0,0	0,0	0,0	0,0
PT	-7,4	-3,5	-5,6	-2,3	-2,1	-4,6
RO	-4,7	-0,1	-3,5	-12,1	0,0	-0,9
SE	-13,3	-6,2	-21,6	-10,5	-8,6	-3,9
SI	-10,2	-8,4	-8,4	-9,2	-6,2	-4,1
SK	0,0	0,0	-1,4	-4,4	-29,3	-1,7
UK	-5,6	-10,3	-4,6	-8,8	-2,9	-1,6

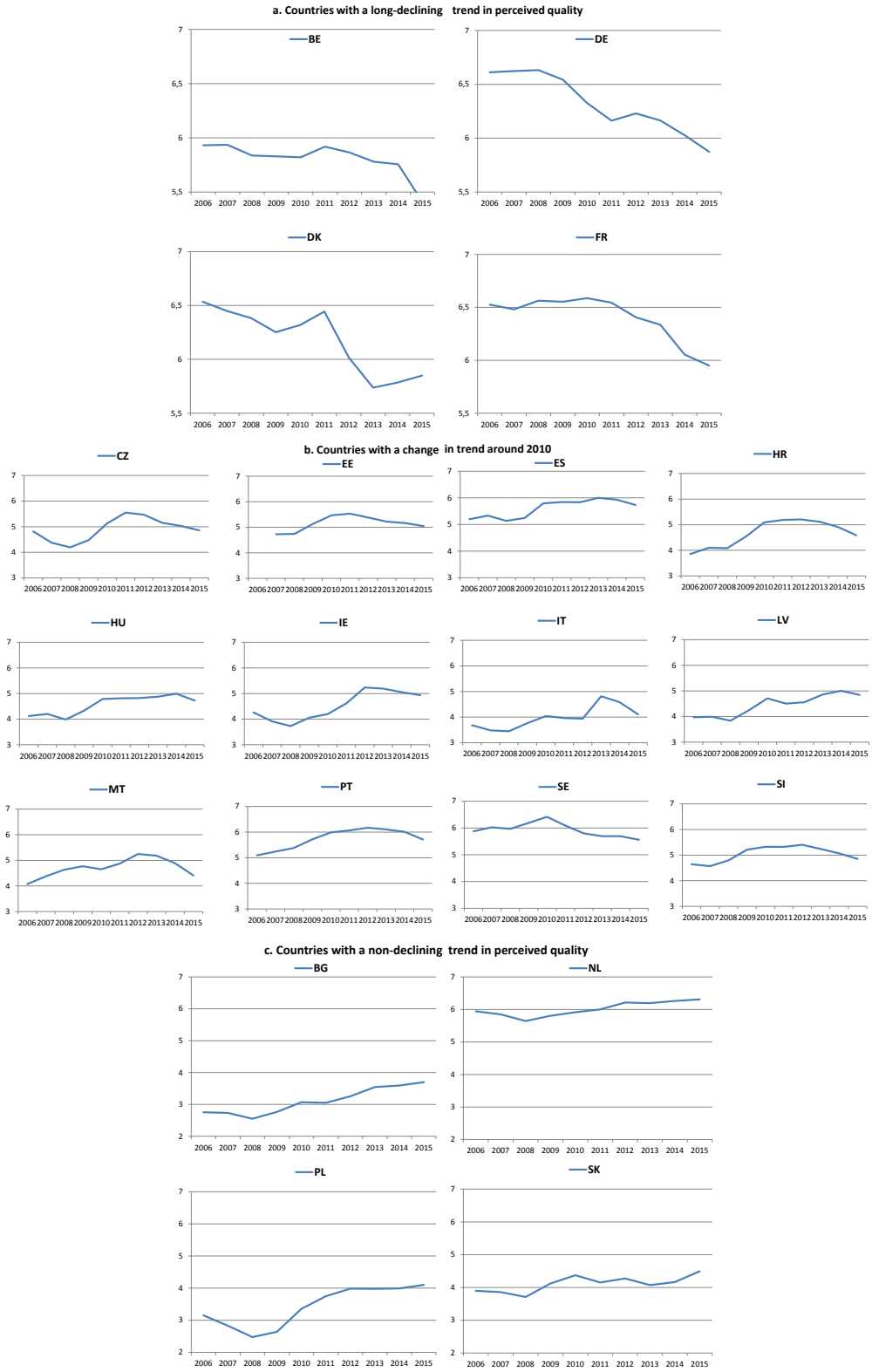
Source: World Economic Forum (see also Brons et al. (2014)).

Adequate levels of maintenance spending are crucial to keep the existing infrastructure stock in good working conditions. As explained in Chapter III.2., only major improvements to a fixed asset are considered gross fixed capital formation (GFCF).

Ongoing maintenance costs are, by contrast, recorded as current expenditure and are typically distinguished by two features. First, they should be undertaken periodically in order to be able to utilize assets over their expected service period. Second, they maintain the fixed asset in good working order or restore it to its previous condition in the event of a breakdown. That is, if maintenance activities are neglected the expected service life of the fixed asset may be drastically shortened.

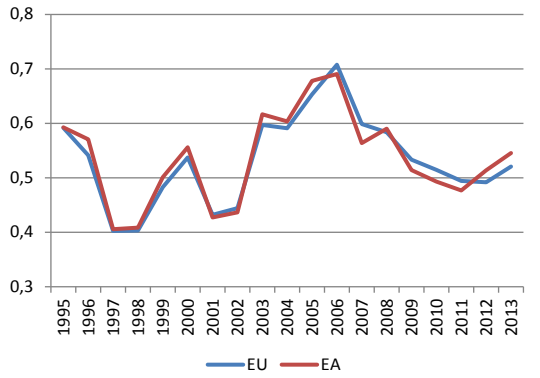
Lower maintenance spending may be resulting in a downgrading of the perceived quality of overall infrastructure across the EU. Maintenance spending as a share of GDP has considerably contracted in both the EU and the euro area since the year 2005. While it has more recently started picking up again, its level remains considerably lower than it was a decade ago (see Graph III.3.6).

Graph III.3.5: **Evolution of the perception of overall infrastructure quality**



Source: Commission services.

Graph III.3.6: **Road and rail infrastructure maintenance spending (%GDP)**



Source: Commission services.

To sum up, the decline in government investment does not seem related to the fact that infrastructure stocks are already at their saturation point. Although the picture varies considerably across Member States, the EU as a whole does not seem to have reached its saturation point. Contrary to that, the evidence suggests that necessary major improvements in the existing public capital stock (investment spending) are probably being neglected. This is coupled with a substantial decline in ordinary maintenance activities (current spending).

Thus, continuously depressed investment levels can put the quality of infrastructure stocks at risk, hampering the actual productive value of the existing stock and its long-run service to the economy. Furthermore, meeting several priorities in the EU infrastructure agenda will require substantial investment efforts in the coming years.

3.1.3. The growth-friendly spending hypothesis

Productive government spending, understood as that affecting private sector productivity, is not restricted to gross fixed capital formation. Besides the accumulation of physical capital, skills and experience embodied in the labour force represent also a form of (human) capital. Thus, government spending categories not classified as investment by ESA2010 should also be taken into account when assessing the long-run impact of public expenditure. ([92])

Government spending education is usually associated with positive growth effects in the long run. Empirical studies typically identify government spending on education, together with infrastructure spending, as productive inputs impacting the production function. Results are more mixed when it comes to health spending. Some empirical studies find it can generate a favourable effect on growth (Afonso and Tovar, 2013) while others do not find evidence supporting that (Gemmell et al, 2016). Other spending categories, which mainly impact citizens' welfare, are usually found to have no impact on growth in the long term. ([93])

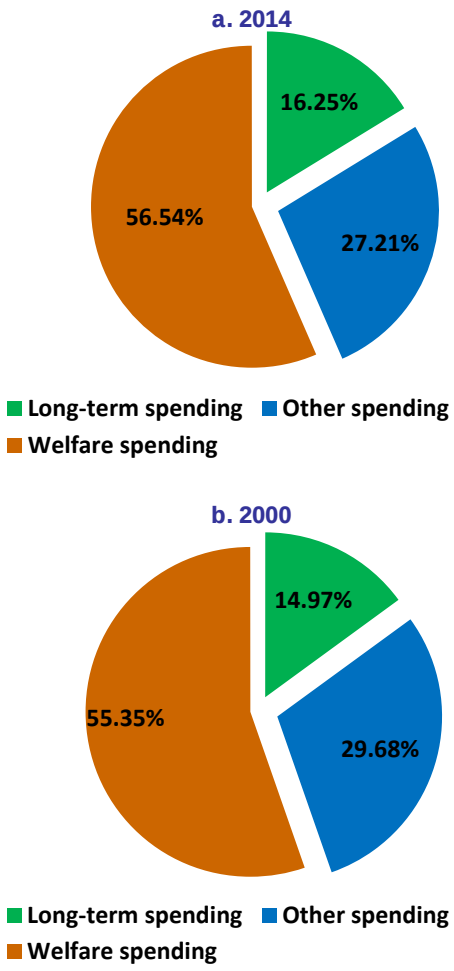
Following the literature on the composition of government expenditure, three different types of spending categories can be roughly identified: spending for the long run, welfare spending and other spending. The first category bundles together spending on education, R&D, environment protection and transport and communication. Thus it tries to encompass productive categories of government expenditure. "Welfare spending" consists of spending on social protection and health. Finally "Other spending" comprises the remaining of total spending which mainly covers general public services, defence and public order and safety. ([94])

Spending for the long run represents around one-sixth of total government expenditure in both the EU and the euro area. Conversely, "welfare spending" represents more than half of total government expenditure as shown in Graph III.3.7 below. These shares have remained broadly stable throughout the last years. Graphs for the EU are very similar to those of the euro area both in 2014 and 2000.

([92]) See Felice (2016).
([93]) See for instance Blankenau and Simpson (2004), Agénor (2006), Agénor (2008) and Agénor (2013).
([94]) More precisely in terms of COFOG classification: "Spending for the long run" includes categories GF09, GF05, GF0405, GF0406 and the sum of GF0105, GF0204, GF0305, GF0408, GF0505, GF0605, GF0705, GF0805, GF0907 and GF1008 (which are grouped together as R&D expenditure). "Welfare spending" includes categories GF10, GF0601, GF0602 and GF07. Finally, "Other spending" consists of the remaining COFOG categories.

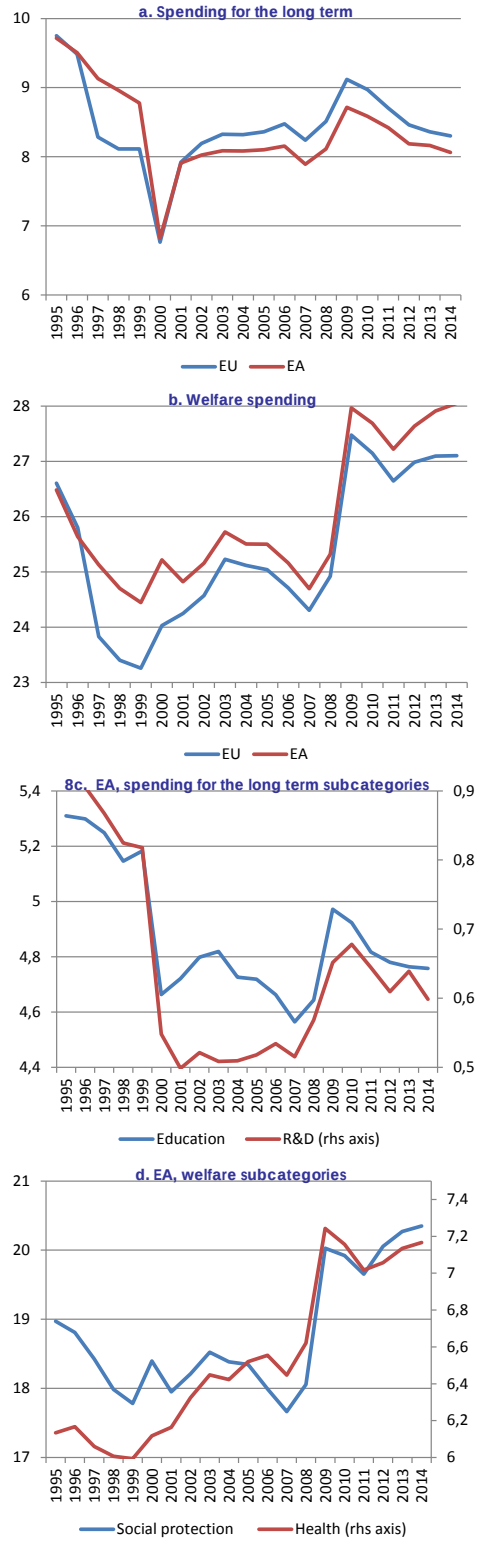
The crisis led to cuts in both welfare and long-term spending as a share of GDP. However, while the former started to increase already in 2012, mostly related to unemployment benefits, spending for the long term is still on a declining path. This is both in the EU and the euro area, which display very similar patterns. Focusing more specifically on the evolution of the different spending subcategories in the euro area, Graph III.3.8 shows that both education and R&D spending have decreased by around 0.5 pp of GDP since 2010. Contrary to that both components of welfare spending –social protection and health– are steadily increasing.

Graph III.3.7: **Composition of government spending in the euro area (% of total government spending)**



Source: Commission staff calculations based on Eurostat.

Graph III.3.8: **Evolution of expenditure categories (% GDP)**



Source: Eurostat.

Thus, the contraction in physical capital investment is coupled with a reduction in the accumulation of human capital by the government sector. The possible long-term consequences of the decline in government investment, far from being (partly) offset by an increase in other productive government spending, are aggravated by their contraction too.

Altogether, the discussion of the three hypotheses above suggests that there is a government investment gap in the EU, also when considering a broader definition of investment. Its current low level appears insufficient to supply adequate, high-quality levels of public capital stocks (both physical and human) into the aggregate production function. Increasing government investment in the current context would not only provide with beneficial long-run effects, but would also have the merit of providing short-term demand stimulus. The following section discusses how to adequately design investment strategies so that this desirable double dividend is not jeopardised.

3.2. THE DEMAND-SIDE PERSPECTIVE

While it is argued that the positive demand impact of government spending is highest when it takes the form of capital expenditure, ([95]) providing precise policy guidance requires a more in-depth look at the different elements that constitute government investment. Depending on the type of asset public investment flows into, it will unevenly affect the demand for different industries using different technologies. ([96]) As an illustration, the purchase of transport equipment, the construction of civil engineering works and the purchase of trees cultivated for products yielded year after year (like vineyards) are all considered government gross fixed capital formation (GFCF). Not all of them however are necessarily equally well suited for achieving a demand- and supply-side expansion.

The demand-side discussion in this section is structured around three main parts: the first one explains the tension that can arise between the short- and the long-term benefits of government investment; the second one takes a detailed look at the different types of assets government investment can flow into and broadly characterises the short- and long-term growth leverage inherent to each of them; finally, it analyses the countercyclical public investment strategies implemented by several Member States in 2009 and 2010 and tries to extract some policy lessons.

3.2.1. The trade-off between the short- and long-term dividend of public investment

Generally, investment strategies launched to stimulate the national economy in the short term have to be implemented quickly and be as intensive as possible in locally available inputs. This means that investment projects which involve a long time lag between budgetary allocation and spending of the funds are side-lined in favour of projects that create more immediate flow of funds into the real economy. ([97]) A similar logic applies to investment projects that mostly rely on imported technology and equipment; these are put aside in favour of others which create greater demand for national products and services, including labour. This is typically so even if the latter are not necessarily most productive for the long term.

Large infrastructure projects, for instance, usually involve long administrative procedures. These imply that government funds are actually spent only sometime after the investment decisions are taken. Table III.3.3 below shows the average duration for a typical transport infrastructure project in nine selected Member States. ([98]) While there are considerable differences across Member States, in very few cases is the average duration of the procedures less than two years. This gives an indication of the modest short-term leverage that large infrastructure projects can exert over aggregate demand, if investment decisions are taken

([95]) See Part III of European Commission (2012a).
([96]) See Felice (2016).

([97]) Projects that take longer can nevertheless also improve agent's expectations about future growth prospects and end up impacting aggregate demand in the short term too.
([98]) A comparative study by the Commission on the investment environment for infrastructure projects presents the average duration for a typical infrastructure project in nine selected Member States. It ranges from a total of two to 15 years, depending on the country. The study also identifies barriers in regulatory and administrative processes that impact the planning and implementation of core infrastructure projects. It also delivers recommendations on how to address these barriers. European Commission (2016d).

simultaneously to the moment when the countercyclical policy should start operating. Increased government GFCF can instead be allocated into other type of assets which are faster to disburse and thus have a higher leverage over national demand.

Thus, from a policy perspective, it is interesting to examine the type of investment assets that can, at the same time, maximise the short-term stimulus impact and boost long-run potential output. In other words, identifying which specific type of investment yields the highest impact multiplier and at the same time the highest output elasticity would allow issuing policy recommendations as regards where government flows should be placed into.

Table III.3.3: **Average duration for a typical transport infrastructure project in nine selected Member States**

Country	Average duration of permitting (years)	Other considerations
AT	15	From early planning to construction, according to project promoters
CZ	3-4	Complex infrastructure projects can take up to 12 years
DE	2	
HU	1-4	
IT	10	Average duration of projects worth ≥ 50 mn €
NL	6	
PL	3-4	Road projects, 1.5 years; railway projects, 2.5 years; other projects up to 3 years
RO	2-5	
UK	2	Excluding the pre-application period, which can take up to 4.5 years

Source: European Commission (2016d).

3.2.2. General government investment by asset type: description and recent trends.

Assessing government investment by asset type is a far from easy task. Unfortunately, data on GFCF by type of asset is scattered and only few Member States have it publicly available. The limited availability of these data implies a lack of empirical studies that estimate the specific short-term multipliers (or long-run output elasticities) of the different types of assets purchased by the government sector. Rather, the estimates provided by the literature are aggregate ones, weighted-averages of the (unknown) asset-type disaggregated ones.

ESA2010 classifies government fixed assets in three main categories: **construction; machinery, equipment and weapons systems, and intellectual property products. ([99])**

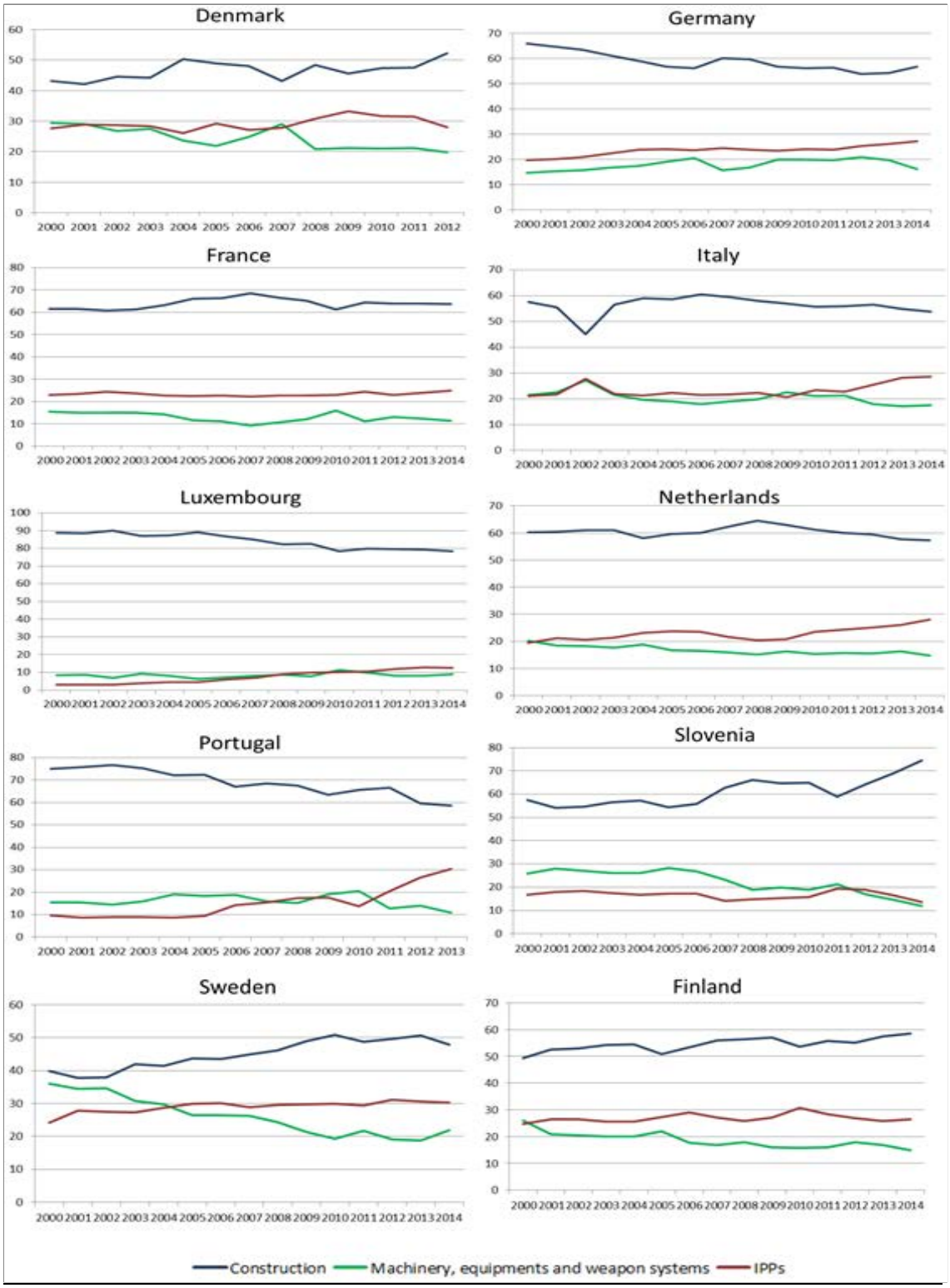
- GFCF in construction includes three types of assets: dwellings – residential buildings intended for non-transient occupancy; buildings other than dwellings – which include public monuments, warehouse and industrial buildings, commercial, educational and health buildings among others; and other structures – such as highways, streets, roads, subways, communication and power lines, pipelines, harbours or dams.

- It turn, GFCF in machinery, equipment and weapons systems includes four different subcategories: transport equipment – like motor vehicles, trailers and semi-trailers; ICT equipment – such as electronic equipment and computers; other machinery and equipment – like optical products or furniture; and weapons systems – which include warships, submarines, tanks or certain ballistic missiles.

- Finally, intellectual property products include also several subcategories. Research and development (R&D) is among the most prominent ones. It consists of the value of expenditure on creative work undertaken on a systematic basis in order to increase the stock of knowledge. The value is estimated by convention as the sum of the costs including those of unsuccessful research and development.

([99]) ESA2010 also distinguishes a fourth category, cultivated biological resources, which include livestock and trees that yield repeat products. The share of cultivated biological resources is insignificant across most Member States.

Graph III.3.9: **Government GFCF by asset type (share over total government GFCF in %)**



Source: Member States' Ministries.

The balance between the short- and long-term impacts over output of each of these assets is very different. Focusing on construction assets, the short-term demand impact of an equivalent amount of investment actually spent into any of the three types of construction assets could be considered as comparable. The time that elapses between the investment decision and the beginning of the works is however usually shorter when it comes to dwellings than civil engineering construction works. ([100]) At the same time, it can be sensibly assumed that other structures generally constitute the most productive construction asset for long-term growth, followed by buildings other than dwellings and finally dwellings. In this same vein, ICT equipment or R&D could be reasonably considered to rank amongst the most productive asset types while weapons systems or cultivated biological products could be considered to rank lower.

Construction constitutes the bulk of government investment across the Member States analysed. ([101]) As shown in Graph III.3.9, construction typically represents between 50% and 60% of total government investment. Across Member States the remaining GFCF, once construction is excluded, is roughly evenly distributed between machinery, equipment and weapons systems on the one hand, and intellectual property products (IPPs) on the other hand.

These shares have remained relatively stable over the last 15 years. Still some interesting patterns can be discerned. Graph III.3.9 shows that there has been a tendency across countries to adjust the share of construction up or down to reach the 50% - 60% of GDP range. This implies that in some countries construction assets have lost predominance in the investment mix chosen by the government sector (PT, DE and LU), while they have gained prevalence in others (DK, SE and FI). It is also worth noting that the share of IPPs is now bigger than that of machinery, equipment and weapons systems in all ten Member States, while this was not the case in the early 2000s. It has particularly increased in PT, IT, NL and DE.

3.2.3. Lessons from the 2009 crisis

Zooming in on the evolution of these main types of assets during the years 2009-2010 is of particular interest. By the end of 2008 Member States agreed to increase government investment in a coordinated manner with the objective of stimulating demand in the short-term. Thus, carefully examining the assets into which government investment actually flowed can provide further information on possible constraints Member States face when choosing their investment mix for short-term stimulus. In turn, this can illustrate whether possible trade-offs between the short- and long-term dimensions of investment are alleviated or rather accentuated across Member States.

The majority of Member States chose to boost construction assets to stimulate demand in 2009-2010. This was the case in DE, DK, IT, LU, PT and FI. The left panel of Graph III.3.10 shows that the increase in investment in the remaining four countries was mostly funnelled into machinery, equipment and weapons systems (SE, FR, NL and SI). Data availability allows one further level of disaggregation for four out of the ten Member States considered (FR, IT, NL and FI).

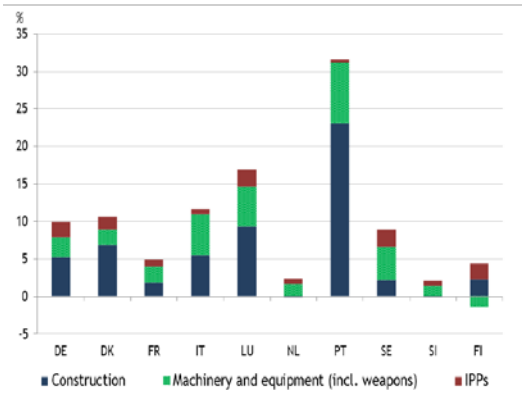
The specific asset absorbing the bulk of the stimulus differed considerably across countries. Crucially, its short- and long-term impact can be expected to have differed accordingly. The low panel in Graph III.3.10 shows that, while three out of these four Member States concentrated their investment efforts in construction projects, the details of each strategy varied considerably. In this same vein, the distribution of the investment boost across the components of machinery, equipment and weapons systems was also quite diverse.

([100]) In this respect, the Italian Ministry of Finance analysed the timing need to complete an infrastructure investment project in the government sector. The study shows that the planning phase of a typical infrastructure project undertaken by the government sector takes, on average, up to two and a half years. Only after that time has elapsed are the selected companies attributed the execution of the project and thus, government funds start flowing into the economy. For investment projects worth 100 million € or more, the planning phase can prolong up to 5 years. For further details see Italian Ministry of Finance - DPS – UVER (2011), "Rapporto sui tempi di attuazione delle opere pubbliche", available at: http://www.dps.tesoro.it/uver/uver_tempi_attuazione.asp#documenti

([101]) Ten Member States are analysed, a choice driven by data availability. In particular, these Member States are DK, DE, FR, IT, LU, NL, PT, SI, SE and FI.

In simplified terms, three different strategies can be identified: the first one consisted in intensifying the construction of buildings and the purchase of weapons systems; the second one focused on civil engineering works and ICT equipment. The third one is a combination of the other two, with increased investment in buildings and ICT equipment. It is also interesting to note that a trade-off seemed to have emerged across construction asset types: three out of the four Member States cut on certain types of construction investment while increasing others, resulting in a certain rebalancing of their investment priorities within construction.

Graph III.3.10: **Contributions to the total increase in government GFCF in 2009-2010**



		FR	IT	NL	FI
Construction	Dwellings	-6	25	-5	-4
	Non-residential buildings	98	16	-49	82
	Other structures	-57	6	43	-1
Machinery, equipment and weapons systems	Transport equipment	8	-3	7	-4
	ICT equipment	7	6	65	41
	Weapons systems	29	44	0	-86
IPPs	R&D	26	4	24	36
	Computer software	-7	2	15	36
Total		*100*	*100*	*100*	*100*

Source: Member States' Ministries.

- **France and Italy followed the first strategy, investing mainly in buildings and weapons systems.** Again in overly simplified terms, French authorities decided to build more warehouses, schools and hospitals, besides purchasing weapons systems. At the same time, they sharply cut on civil engineering works. Italy's investment efforts concentrated mainly on purchasing weapons systems, followed by the building of dwellings. The other two construction asset types contributed less to the increase in investment, particularly civil engineering works.

- **Conversely, the Netherlands opted for boosting investment in ICT equipment.** At the same time, civil engineering works were intensified while government investment in the other two types of construction assets decreased.

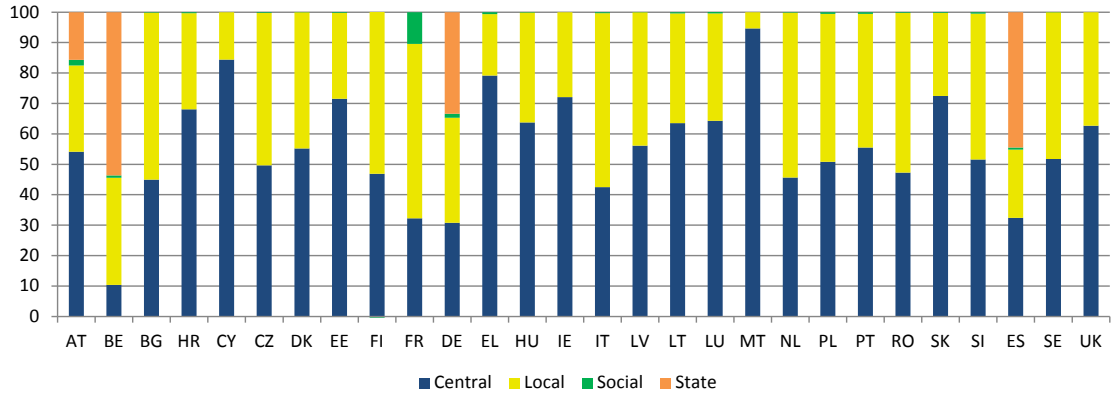
- **Finland increased construction in non-residential buildings, along with ICT equipment.** Investment in weapons systems contracted sharply on the contrary. R&D also contributed to the increase in government investment in Finland and France, but had a more muted involvement in the other two Member States. ([102])

All in all, the strategy followed by the Netherlands seems to be the one that mostly capitalised on the double dividend of government investment. It entailed a balanced mix between hard and soft investment, which –besides providing short-term stimulus– can be reasonably assumed to have exploited its long-term potential boost of the economy.

The 2009 crisis seems to confirm that investment strategies launched during a recession are likely to give rise to a tension between the challenge of supporting growth in the short and the long term. Investment in buildings (both residential and non-residential) tended to be prioritised over investment in "other structures" (i.e. infrastructure projects). This was probably related to the length of the procedures associated to the latter which, in practice, often invalidates them as effective short-term stimulus instruments, regardless of their potential for increasing the long-term performance of the economy. Furthermore, the choices of investment assets described above could also be connected to the productive structure of each Member State. It is interesting to note that, according to the SIPRI

([102]) When government investment was slashed thereafter, cuts across these Member States concentrated mainly on non-residential buildings, other structures and weapons systems.

Graph III.3.11: **Share of the four subsectors of the general government in total government investment (average 2013-2014)**



Source: Eurostat.

Arms Industry Database, ([103]) Italy and France are substantially represented in the top 100 arms-producing and military services companies in the world (excluding China). Conversely, Finland and the Netherlands are not represented. On the other hand the share of the ICT sector in the total GDP of Finland and the Netherlands is larger than that of France and especially Italy.

One possible explanation of the choices above merits careful attention: the quality of government investment processes. While there are certainly multiple reasons behind these different strategies, it has been argued that the choice of investment priorities is at least partly determined by the quality of the governance system for public investment. Morozumi and Veiga (2016) examine the role of institutions in the public spending-growth nexus and find that under the right institutions public capital spending does promote growth. ([104]) That is, government investment processes can determine the choice of investment priorities which, ultimately, influence its short- and long-term impact.

This is all the more so given that a large share of government investment is undertaken by sub-national governments. Sub-national governments carry out around two-thirds of total government investment on average both in the EU and the euro area (see Graph III.3.11). This raises coordination challenges across the different levels of government which interests need to be aligned.

The short- versus long-term tension can be alleviated if national investment strategies try to prioritise and accelerate "shovel-ready" infrastructure projects for short-term fiscal stimulus. That is, projects which are well advanced in planning and ready to be launched. However, not all countries are able to mobilise enough of this kind of projects over a short period of time. In their absence, and when speed in committing funds is crucial, micro-scale short-term investment projects are often prioritised, even when they are not necessarily the most appropriate over the long term.

This shows that it is very important to have adequate resources and processes for reaching the double dividend of public investment. Rapid, efficient and transparent implementation of investment funding is crucial. This can help alleviate possible tensions between the short- and long-term dimensions of government investment. Some principles that can help ensure the quality of investment processes are identified in Box III.3.4.

([103]) The Stockholm International Peace Research Institute (SIPRI) collects data relative to military operations. They can be found at the website https://www.sipri.org/
([104]) OECD (2011).

Box III.3.4: **Principles underlying sound public investment processes**

Some principles can be identified to help public authorities preserve or restore the quality of publicly financed projects. These principles should ensure that public authorities select projects that fulfil their objectives at the lowest possible actualised cost.

Principle 1: projects should correspond to clearly identified objectives. Public funding for economic infrastructures (such as transport, environment, energy, and broadband) should be justified by market failures and/or set favourable framework conditions for private investment. Public funding for social infrastructures (like education or health) should primarily ensure that collectively defined needs are fulfilled. These needs are very diverse and encompass, for instance, sovereign functions of the State, or collective equity considerations.

Examples of questions to be answered under principle 1:

** What public objective is concerned?*

** Which specific contribution to the public objective is this particular project supposed to bring? What could be its quantified effect?*

Principle 2: projects should be part of comprehensive investment strategies across sectors and government levels. Social impact and economic return should be planned taking into account all possible economic and social interplays in order to ensure that long-term benefits outweigh costs. The aim is to avoid the risk of under/oversized projects in the same sector or market as well as to avoid adverse effects. The latter could, for instance, correspond to projects aiming at opening up landlocked regions with high speed trains or new road infrastructures, which could ultimately result in emptying these regions.

Furthermore governance of public investment is typically fragmented given that around two-thirds of investment is undertaken by sub-national governments. This raises important challenges in terms of coordination between central and local governments, which different interests need to be aligned. In addition the capacities to design and implement investment strategies must be strong across all levels of government, including at the sub-national level. This also applies to good practices in budgeting, public procurement and regulatory quality which should be robust and consistent across all levels of government. ([1])

Examples of questions to be answered under principle 2:

** Why is public funding justified versus a normative / regulatory public role overseeing private funding? Are there alternative ways to reach the objective (tax expenditures etc.)? Could the same objective be achieved by expenditure at a lower cost? Does the expected economic and financial return of the project compensate the possible distortion brought by the financing instrument (tax increase for instance)?*

** Is the envisaged project adequately calibrated? What is the break-even point for which the total value of the project (upfront investment and cash-flows) is positive? Are there any possible adverse effects to the project?*

** Which governance is established to ensure coordination across government levels in the design and implementation phases of the project?*

Principle 3: projects should be adequately financed, taking due account of overall fiscal space. During the planning phase, Member States should determine the availability of sufficient fiscal space for new funding so that the fiscal rules stemming from the Stability and Growth Pact and from their own national fiscal frameworks are respected. Member States overachieving their fiscal targets as per the Stability and Growth Pact may use this supplementary levy to finance new projects. In case of lack of fiscal space, Member States can make available fiscal space by reallocating outlays, cutting current expenditure or raising taxes.

([1]) See Recommendation of the Council on Effective Public Investment Across Levels of Government (OECD, 2014).

(Continued on the next page)

Box (continued)

Examples of questions to be answered under principle 3:

** How can fiscal space be freed to fund new investment projects?*

Principle 4: projects should be thoroughly designed, selected and evaluated. This is all the more important when it comes to infrastructure as it involves sizeable amounts of funds to be disbursed over long periods of time. Transparent and optimal allocation of public funding across investment projects requires detailed ex-ante planning. This implies undertaking detailed diagnosis and cost/benefit analysis as well as setting adequate quantified objectives. These should feed the risk assessment of each project. Dedicated governance and transparent processes for the selection of the most valuable projects should be established to prioritize investments. Once a project has been fully implemented, ex-post evaluation should be undertaken. This one should include details on the output, on all measurable outcomes and real costs. These micro evaluations can subsequently enhance the quality of the planning of future projects with observed benchmarks. Selection, planning and evaluation governance and processes should be held as independently as possible in order to avoid interest group captures, which ultimately lead to inefficient public infrastructure.

Examples of questions to be answered under principle 4:

** Is the project selected in a transparent manner, through a competitive procedure? Are the technical and financial criteria adequately taken into account in the selection process? Are long term maintenance costs underestimated - should a financial buffer be secured?*

** Are governance mechanisms and capabilities available throughout the different steps of planning, selection and ex-post evaluation of the project?*

** How is the governance mechanism held accountable?*

Principle 5: projects should be carefully executed and monitored. An efficient implementation of publicly-funded investment projects requires long-term funding, live monitoring and effective day-by-day management. The achievements versus the planned roadmap and cost should be constantly monitored with quantified indicators so that potential major slippages in time and cost can be corrected, or at least controlled. Effective project management requires one identified leader for the project, a team trained with adequate skills and a dedicated decision-making process that are in place before the implementation phase starts.

Examples of questions to be answered under principle 5:

** Is there access to the resources and skills required to successfully implement and monitor the implementation of this project?*

** At which pace are the intermediary levels of the performance objectives of the project being achieved (in terms of output, cost and gains)?*

Principle 6: projects should benefit from diversified sources of financing. In order to secure long-term financing, reduce costs and mitigate associated risks, public authorities should use diversified financial levies. The opportunity to finance the project through Public-Private Partnerships or Special Purpose Entities should be carefully assessed. Involving private actors and financing institutions in government investment projects can be a way to strengthen the capacity of government at different levels and bring expertise to projects through better ex-ante assessment, improved analysis of the market and credit risks, and achieving economies of scale and cost-effectiveness.

Examples of questions to be answered under principle 6:

**Are all the possible financing instruments for the project being considered?*

** Is there sufficient financial expertise involved in the project?*

3.3. CONCLUSIONS

The evidence points to a government investment gap in the EU. Public investment has been hovering at low levels for a long time already. This is resulting in ebbing levels of public capital stocks, the quality of which is perceived to be decreasing. At the same time, government investment in human capital is also declining across the EU. These features tend to depict a discouraging picture for the EU economy in the long-term.

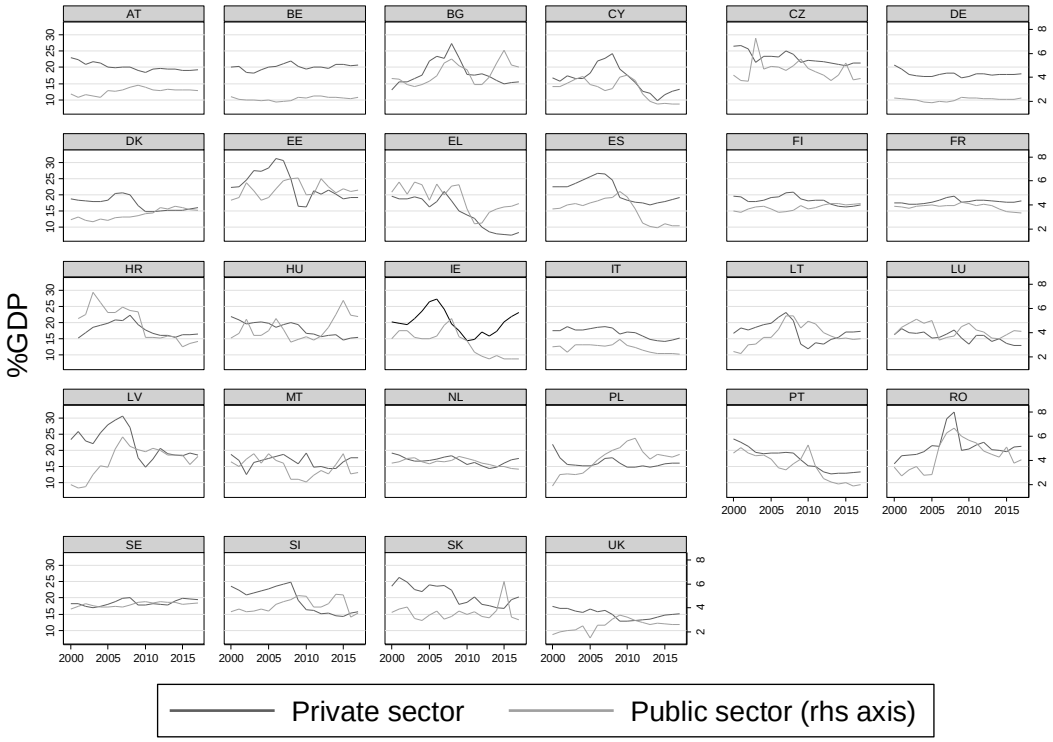
This suggests that government investment efforts should be intensified. Member States need to design investment strategies that provide adequate levels of high-quality public capital stocks (understood in a broad sense) over the long-term. On top of ensuring growth-maximising levels of public capital stocks, increased levels of government investment can also provide a short-term stimulus to the European economy at a time when the recovery momentum does not appear to take hold. However, recent experience shows that pursuing the short-term demand leverage of government investment can come at the expense of its long-term performance.

Maximising the double short- and long-term dividend of government investment requires carefully-designed investment strategies. There is no silver bullet to achieve sustained economic growth. However, good practices tend to deliver good results, so implementing adequate investment management processes is crucial to extract the maximum demand- and supply-side expansion out of public investment efforts.

In some cases, the demand and supply effect may not be simultaneously attainable via increased government investment. This could happen when permitting procedures for investing in the most productive type of assets take too long. It can also be the case if, given the productive structure of the economy, ensuring an increase in national demand requires the purchase of less productive assets. In these cases, countercyclical fiscal policy should leverage on other types of budgetary instruments, better-suited for generating an immediate flow of funds into the economy like for example maintenance of government assets. By so doing, government investment strategies can instead focus on maximising their long-term impact on the potential performance of the economy.

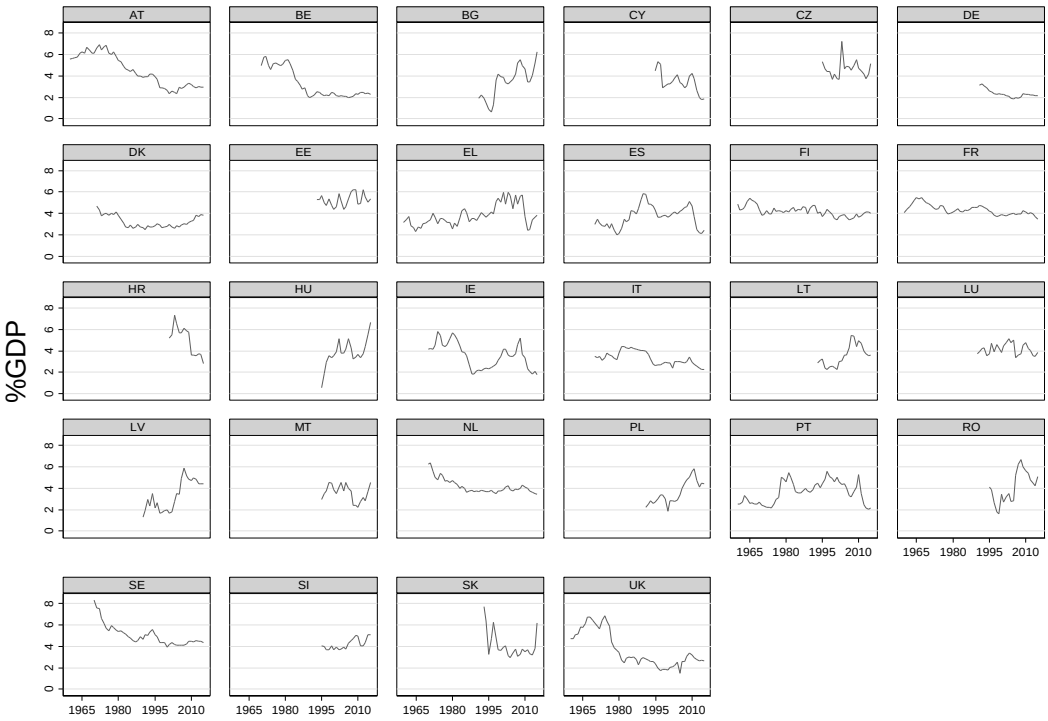
ANNEX 1
Additional graphs

Graph III.A1.1: **Private GFCF and government sector GFCF. EU Member States (% GDP)**



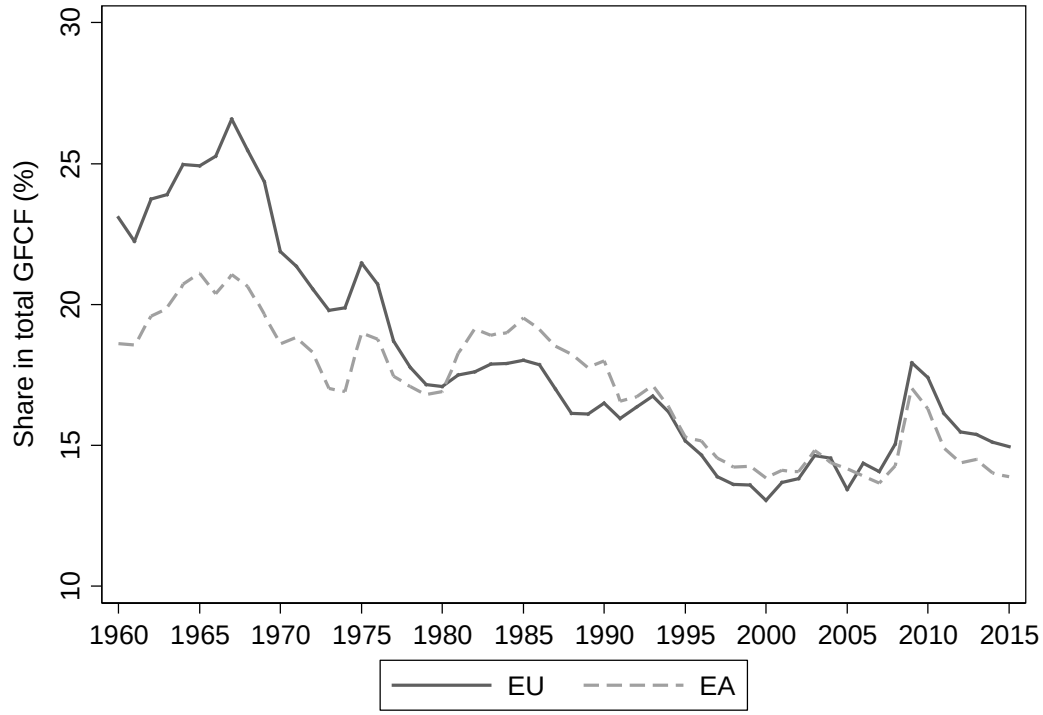
Source: Ameco.

Graph III.A1.2: **Government GFCF by Member States (% GDP)**



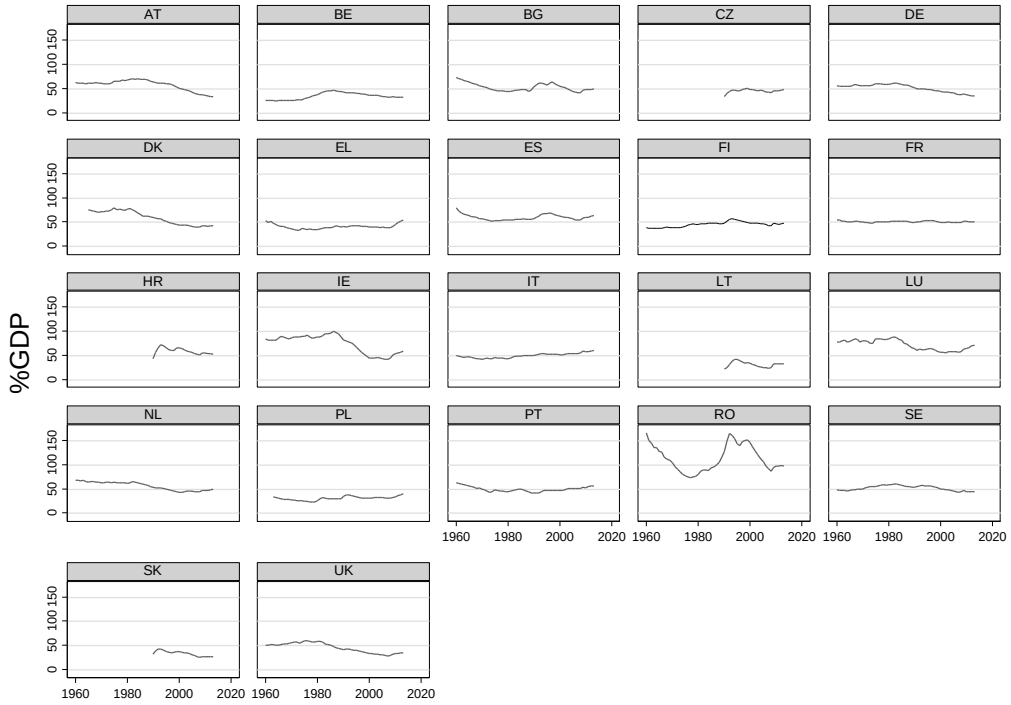
Source: Ameco.

Graph III.A1.3: **Contribution of the government sector to GFCF of the total economy**



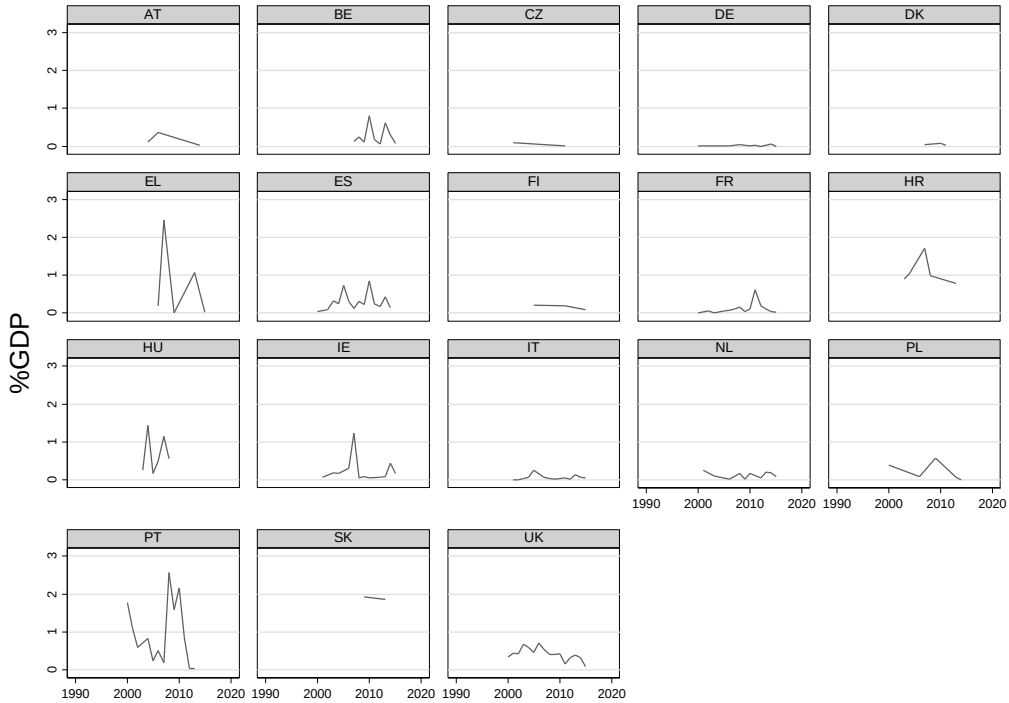
Source: Ameco.

Graph III.A1.4: **Public capital stocks by Member State (% GDP). IMF database**



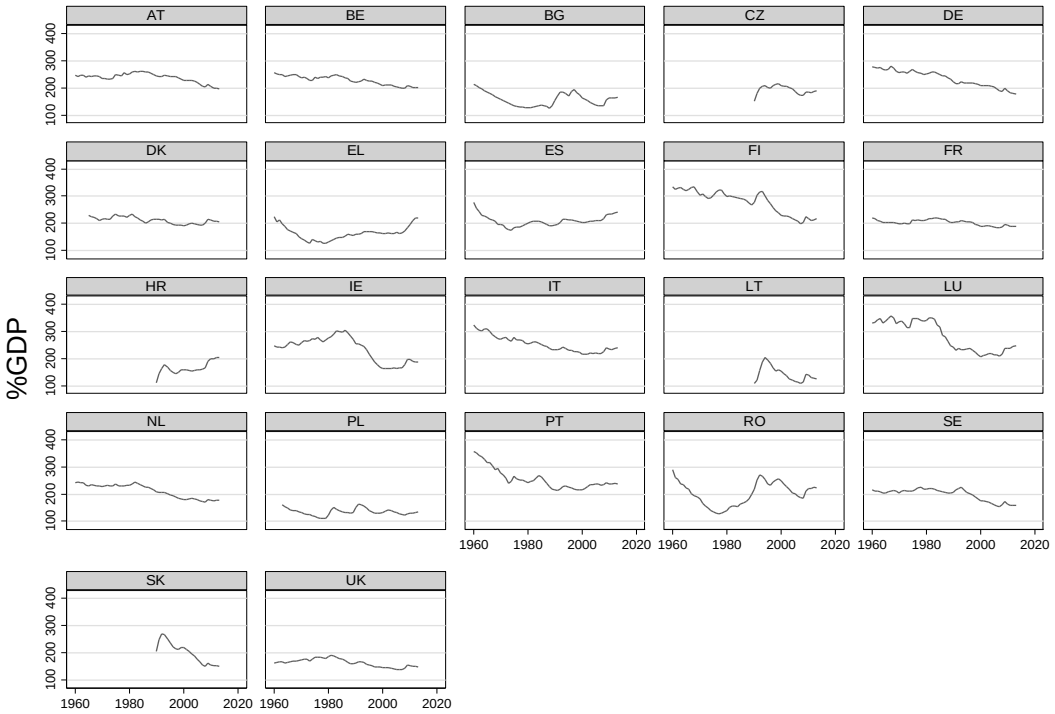
Source: Commission services on the basis of IMF data.

Graph III.A1.5: **PPPs by Member State (% GDP)**



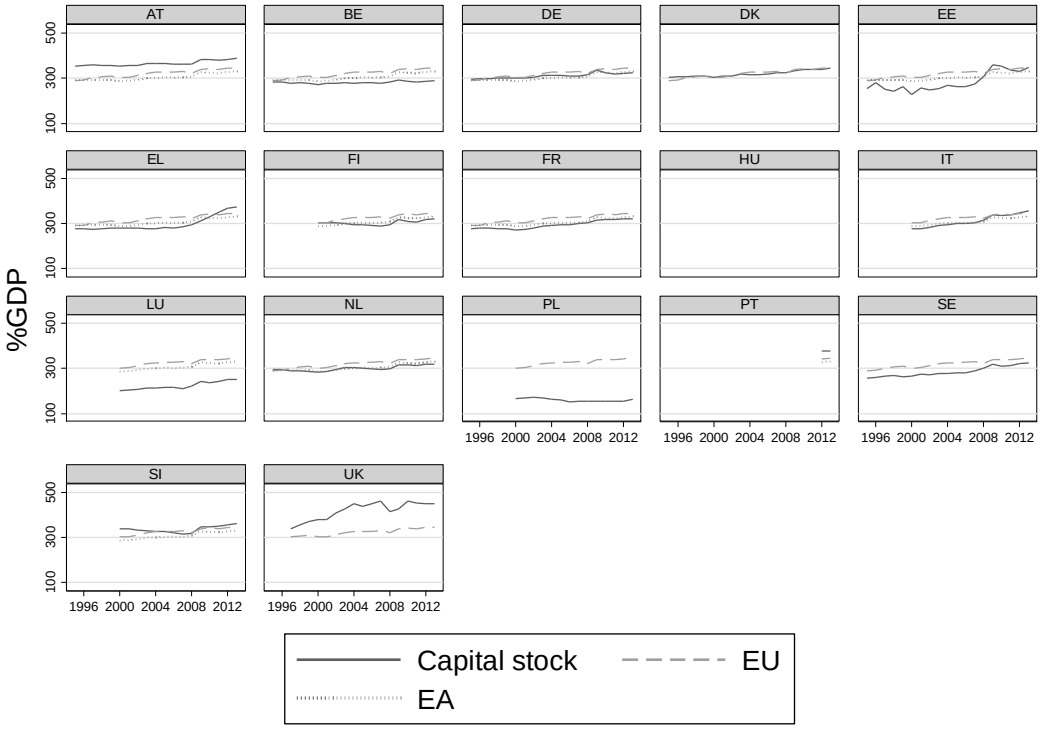
Source: Commission services.

Graph III.A1.6: **Total economy capital stock by Member State (% GDP). IMF database**



Source: Commission services on the basis of IMF data.

Graph III.A1.7: **Total economy capital stock by Member State (% GDP). Eurostat**



Source: Eurostat.

Part IV

The fiscal stance in the euro area: Methodological issues

INTRODUCTION

Fiscal policy is generally expected to contribute to stabilising the economy, subject to a budget constraint. Stabilising economic activity means ensuring that output remains close to its potential level. This role is constrained by the need to keep public finances sustainable. In particular, governments need to avoid that repetitive budget deficits add up to such a high level of debt that interest payments weigh on public expenditure or that debt snowballs out of control. This is a long standing view in policy making, and is most clearly expressed by the NIER. ([105]) When the NIER forms an opinion on an appropriate stance for fiscal policy, the focus is on the trade-off between stabilisation and general government net lending in relation to the surplus target. ([106])

The fiscal stance is usually understood as the orientation given to fiscal policy by governments' discretionary decisions on taxes and expenditures, notably with a view to their contribution to the economy. A restrictive fiscal stance implies that additional revenues outweigh additional expenditure: such consolidation generally aims to strengthen the sustainability of public finances. An expansionary fiscal stance implies the opposite, providing stimulus to support economic growth.

The euro area aggregate fiscal stance has been an issue of increasing importance since its introduction in the Two Pack. With increased attention, the literature on the fiscal stance is rapidly developing. ([107]) At the political level, the Five Presidents' Report on Completing Europe's Economic and Monetary Union already considered, in June 2015, that the discussion on the euro area fiscal stance was essential to reinforce the collective responsibility of euro area Member States. In the letter of intent accompanying his 2016 State of the Union address, President Juncker announced the intention of the Commission to advocate a positive fiscal stance for the euro area, in support of the monetary policy of the European Central Bank. In this context, the Commission adopted a Communication on 16 November 2016, in line with the spirit of policy coordination of the Treaty and the Two Pack (see Box IV.1 below). ([108])

The Communication expresses the view that a fiscal expansion of up to 0.5% of GDP at the level of the euro area as a whole is desirable for 2017 in the present circumstances. This pragmatic target is chosen in view of the current economic conditions. Fiscal policy is given more prominence than usual, given the exceptionality of the economic environment relating to four factors. First, as often observed following financial crises, the euro area has experienced a more protracted period of slow recovery than is normally the case after other kinds of crises. ([109]) This is characterised by unusually high long-term unemployment and low investment, with a corresponding low level of internal demand and inflation. Second, in the current situation, there are large outstanding risks which call for support to stabilisation based on internal demand. Third, monetary policy is facing constraints as interest rates have reached the zero lower bound and unconventional measures have been intensively used. Moreover, despite low credit costs, credit demand remains subdued. Fourth, although they are stabilising or receding, government debt ratios still stand at high levels in a number of Member States, suggesting a need to preserve the sustainability of public finances, especially in view of the budgetary challenges related to ageing populations.

The Communication also stresses that the current configuration of the fiscal stance across

([105]) The National Institute of Economic Research is a government agency accountable to the Swedish Ministry of Finance and prepares analyses and forecasts of the Swedish and international economy. See NIER (2008).

([106]) For a theoretical underpinning of this trade-off, which elicits the implied country preferences over balancing the conflicting objectives of fiscal consolidation and reduction of economic slack, see Kanda (2011). The existence of this trade-off is also the cornerstone of Carnot (2013).

([107]) See in particular European Commission (2016a), European Central Bank (2016), K. Bankowski and M. Ferdinandusse (forthcoming), E. Ademmer et al. (2016), A. Bénassy-Quéré (2016) and F. Giavazzi (2016).

([108]) The Communication "Towards a positive fiscal stance for the euro area" (COM(2016) 727) and its annex are available at https://ec.europa.eu/info/publications/2017-european-semester-communication-fiscal-stance_en. The autumn 2016 package also includes the 2017 Annual Growth Survey, a Recommendation for a Council Recommendation on the economic policy of the euro area and assessments of the euro area Member States' Draft Budgetary Plans for 2017. All these documents are available at http://europa.eu/rapid/press-release_MEMO-16-3711_en.htm.

([109]) The literature consistently shows that recoveries are more sluggish after financial crises than after crises of a different nature, see for instance C. Reinhart and K. Rogoff (2008).

Member States is clearly not the most appropriate. National fiscal stances do not match the very different situations of Member States in terms of fiscal space or sustainability needs, on the one hand, and needs for economic stabilisation, on the other hand. Member States with higher sustainability needs, that is, no fiscal space, seem to privilege stabilisation needs. By contrast, Member States with fiscal space do not use it to address the stabilisation needs of the euro area.

The final aspect touched upon by the Communication is the necessity of a better composition of public finances in the euro area. In particular, more space could be given to government investments. This aspect is discussed in Part III of the present report.

The choice of an appropriate fiscal stance involves political judgement and requires technical background; this part of the report discusses the methodological issues related to the assessment of the fiscal stance. The dual question of the appropriate fiscal stance for the euro area and its appropriate composition raises a number of preliminary issues. To answer them, the chapters provide analytical food for thought by raising methodological questions, listing possible solutions and highlighting their strengths and weaknesses. The various criteria and measurements put forward are applied to the euro area Member States, based on the Commission's autumn 2016 economic forecast.

Importantly, this discussion takes place without prejudice to the legal framework of the Stability and Growth Pact (SGP). This part does not discuss the practical implications of the fiscal rules in individual Member States, as this is clearly beyond its methodological and analytical scope. However, in practice, in the conduct of fiscal policy, the needs identified in the analysis can only be addressed within the boundaries set by the EU fiscal framework, as recalled by the Communication. In this context, Member States are expected to continue to apply the Stability and Growth Pact, with the economic reading that the rules foresee, including taking account of the challenges and priorities of the euro area as a whole.

The general definition of an appropriate fiscal stance has to take into account stabilisation and sustainability needs. As discussed below, sometimes, the existence of trade-offs between these two dimensions can require a balancing act between the need to provide direct support to the economy while not ignoring the sustainability of public finances in the medium run. However, it is possible that, in some instances, the two dimensions point in the same direction and one single fiscal stance satisfies both needs.

In the present report, stabilisation needs and sustainability needs define possible ranges for the fiscal stance. This part studies first how to proceed in defining such needs (Chapter IV.1.) and, second, what to consider in order to make an appropriate choice between them, both at the Member State level and at the aggregate level (Chapter IV.2.). However the part does not provide a complete map determining the optimal fiscal stance as a function of the economic situation. In fact, the choice remains open to discretion and decisions on preferences, which can only be provided by the political authorities.

Defining an appropriate fiscal stance starts with clear views on economic stabilisation needs. Chapter IV.1. describes how stabilisation and sustainability needs can be quantified. To determine stabilisation needs, it presents an elaborate analysis, which describes the cyclical situation looking at the length and depth of the recent cycle and by how much the output gap has closed, instead of just looking at the output gap in the current year and its expected evolution in 2017. This allows the definition of targets in terms of closure of the output gap and the calculation of the fiscal targets consistent with them. The robustness of this analysis is checked against a measure of the cycle based on long-term unemployment indicators.

To determine sustainability needs, Chapter IV.1. bases itself mainly on the Commission's traditional S1 indicator. This indicator of medium-term sustainability is built on the reference value of 60% of GDP for the general government debt ratio, in light of the costs of an ageing society. ([110]) Other indicators, including the

([110]) The S1 indicator, here considered under the 2016 scenario, measures the cumulated change in the structural primary balance needed from 2017 to 2021 in order to bring general government debt to 60% of GDP in 2031.

Commission's debt sustainability analysis, ([111]) are examined, to make the analysis of sustainability needs more thorough and more robust.

The balancing act between stabilisation and sustainability needs, when necessary, is based on certain non-exhaustive criteria. Stabilisation concerns may prevail over sustainability needs in certain circumstances, and the other way round in other circumstances. Chapter IV.2. shows that the following elements have to be taken into account when deciding on the appropriate balance between stabilisation and sustainability.

- **First, certain nonlinear negative effects may have to be avoided** ("cliff effects" in the text), such as the risk of adverse developments with long-lasting effects on potential growth or on the social fabric, on the stabilisation side, and the risks of Member States losing market access, on the sustainability side.

- **Second, fiscal stimulus can, in a situation of constrained monetary policy, be in a better position than usual to stabilise the economy**, as multipliers are expected to be large, especially if the deleveraging needs of the private sector are high. As regards sustainability, well-designed structural reforms can usefully complement fiscal adjustment to reduce debt.

- **Third, consolidation may damage a fragile economic recovery, while the benefits of fiscal stimulus in terms of stabilisation need to be assessed against the costs in terms of increased risks to sustainability**. Moreover, in a situation in which interest on government bonds is very low and the snowball effect is favourable, the cost of delaying adjustment is expected to be relatively small.

Overall, the current situation tends to favour the importance of stabilisation needs. This reflects the absence of immediate risks to fiscal sustainability for the euro area as a whole, coupled with protracted low performance and high risks on the macroeconomic side. This highlights the differences between normal times and the current situation. In a different situation the case for favouring sustainability could be made when the economy is booming or when monetary policy is not stretched and can by itself stabilise the economy. Table IV.1 lists the main criteria which may justify discretionary fiscal intervention to stabilise the economy (assuming the case of a need for fiscal stimulus) or consolidation to improve the sustainability of public finances. It also summarises factors which make stabilisation possible and effective, and factors which can reinforce the effectiveness of fiscal consolidation.

In the present context, taking into account country specificities allows for choosing an appropriate aggregate fiscal stance, which also addresses sustainability needs. The importance attributed to stabilisation and sustainability needs has to reflect country-specific situations and may thus differ across Member States. In particular, it is possible to give more weight to stabilisation where sustainability needs are relatively low, while at the same giving more weight to sustainability in Member States where sustainability needs are high. Differentiated national fiscal stances may thus contribute to an appropriate fiscal stance at the euro area level, addressing both stabilisation and sustainability concerns at the same time.

The way national fiscal policies interact is relevant for the fiscal stance at an aggregate level. Chapter IV.2. also discusses aggregation issues, i.e. how to bring together the situation in 19 individual euro area Member States to form a view on the euro area as a whole. This is a particularly relevant exercise, as one of the most crucial questions regarding the euro area fiscal stance is how to aggregate information at the euro area level.

In particular, the chapter underlines the importance of considering aggregation issues for the determination of the aggregate fiscal stance and its impact on the euro area economy. First, the determination of the appropriate fiscal stance at the aggregate euro area level –or, to put it differently, the desired aggregate fiscal impulse for the entire euro area, based on the assessment of stabilisation and sustainability needs– needs to reflect ex ante the existence of spillover and

([111]) The S1 indicator and the debt sustainability analysis are developed in European Commission (2016e).

Table IV.1: **Main criteria for the sustainability-stabilisation trade-off**

Economic stabilisation	Sustainability of public finances
What can make fiscal stimulus necessary	***What can make fiscal consolidation necessary***
• Long and severe economic crisis • Persistently high unemployment with increased risk of poverty • Very low inflation • Risk of persistently low potential growth • Other tools not sufficient: Stabilisation not entirely achievable through monetary policy and automatic fiscal stabilisers	• Compliance with fiscal rules • High debt ratios • High risks to fiscal sustainability in the medium-term • Imminent risk of fiscal stress • Risk of governments losing access to financial markets for debt refinancing • Risk of contagion across Member States • High interest expenditure • High cost of delaying fiscal adjustment
What can make fiscal stimulus possible and effective	***What can make fiscal consolidation more effective***
• Available fiscal space • High fiscal multipliers • Large spillovers across Member States • Benefits from fiscal stimulus larger than the cost of delaying fiscal adjustment • Focus on investment and growth-enhancing measures • No risk of overheating in the Member States where stimulus is implemented	• Accompanying structural reforms • Focus on growth-friendly consolidation

Source: Commission services.

contagion effects in a monetary union. This analysis shows that, depending on the weight attributed to the stabilisation and sustainability objectives, a wide variety of fiscal stances can be targeted, within a range that is robust across methodological options. Second, the chapter integrates these effects in the analysis when simulating the likely impact of the desired fiscal impulse on the economy, depending on its geographical and budgetary composition. This shows the usefulness of a fully-fledged model to investigate the optimal composition of the aggregate fiscal stance.

Box IV.1: The legal basis for the assessment of the euro area fiscal stance

Commission proposals for Council recommendations to the euro area are based on Articles 121(2) and 136 of the Treaty, which give the Council discretion for addressing recommendations. Article 121 states that economic policies have to be regarded as a matter of common concern and provides a basis for «*broad guidelines of the economic policies of the Member States and of the Union*», while Article 136 gives a specific basis for policy guidelines for the euro area Member States.

Guidelines for the euro area as a whole are also in line with the spirit of increased policy coordination behind the Two-Pack reform. According to the Two-Pack, *«the Eurogroup should discuss the budgetary situation and prospects for the euro area as a whole»* (Regulation 473/2013, Recital 23, Article 7.4). The Council, in its euro area recommendation adopted in March 2016, explicitly invited the Eurogroup to *«review the fiscal stance in the context of … the draft budgetary plans»* for 2017.

The respective legal references read as follows:

Article 121(2):

«The Council shall, on a recommendation from the Commission, formulate a draft for the broad guidelines of the economic policies of the Member States and of the Union, and shall report its findings to the European Council.

The European Council shall, acting on the basis of the report from the Council, discuss a conclusion on the broad guidelines of the economic policies of the Member States and of the Union.

On the basis of this conclusion, the Council shall adopt a recommendation setting out these broad guidelines. The Council shall inform the European Parliament of its recommendation.»

Article 136:

«1. In order to ensure the proper functioning of economic and monetary union, and in accordance with the relevant provisions of the Treaties, the Council shall, in accordance with the relevant procedure from among those referred to in Articles 121 and 126, with the exception of the procedure set out in Article 126(14), adopt measures specific to those Member States whose currency is the euro:

(a) to strengthen the coordination and surveillance of their budgetary discipline;

(b) to set out economic policy guidelines for them, while ensuring that they are compatible with those adopted for the whole of the Union and are kept under surveillance.

2. For those measures set out in paragraph 1, only members of the Council representing Member States whose currency is the euro shall take part in the vote.»

Regulation 473/2013

Recital 23.«Also, based on an overall assessment of the draft budgetary plans by the Commission, the Eurogroup should discuss the budgetary situation and prospects for the euro area as a whole.»

Article 7.4. «The Commission shall make an overall assessment of the budgetary situation and prospects in the euro area as a whole, on the basis of the national budgetary prospects and their interaction across the area, relying on the most recent economic forecasts of the Commission services. The overall assessment shall include sensitivity analyses that provide an indication of the risks to public finance sustainability in the event of adverse economic, financial or budgetary developments. It shall also, as appropriate, outline measures to reinforce the coordination of budgetary and macroeconomic policy at the euro area level. […].»

1. ASSESSING STABILISATION AND SUSTAINABILITY NEEDS

As explained in the introduction, the debate on the fiscal stance addresses two normative questions: what is an appropriate fiscal stance for the euro area and what is its appropriate geographical composition? The first question, namely whether a certain fiscal stance is appropriate for the euro area, regards the aggregate level. It relates to the current economic needs of the euro area as a whole and to the strengths and limitations of available macroeconomic policies. The second question, on the geographical composition, regards the national level, and more precisely the optimal combination of national fiscal stances to achieve a given aggregate fiscal stance for the euro area as a whole.

Before these two questions can be answered, a number of preliminary issues must be considered. Discussing *the appropriateness of the fiscal stance* implies that the fiscal stance is assessed against certain criteria that need to be defined. Should fiscal policy be given one or several objectives, and which ones? The current slow and fragile recovery, coupled with high debt levels, suggests that the focus should be on both macroeconomic stabilisation and the sustainability of public finances. As these objectives may not point in the same direction, what should their relative weights be and how can trade-offs be dealt with? Taking another step back, what impact can fiscal policy actually have on stabilisation and sustainability, and how can specific targets be quantified in this regard? This, in turn, leads to the issue of how to assess stabilisation and sustainability needs, and ultimately how to measure the current conditions and with what indicators. *The geographical breakdown of the aggregate fiscal stance* raises another set of issues. Criteria have to be defined to assess whether a certain composition is optimal, in a way that reflects considerations both at the country level and at the euro area level. It also implies dealing with the aggregation and the rebalancing of national fiscal stances across Member States that are not identical in terms of their cyclical positions, budgetary situations and economic characteristics. It finally requires identifying the most meaningful way to aggregate country-specific needs into euro-area-wide needs, paying due attention to interactions across Member States.

The aim of Chapters IV.1. and IV.2. is to present a comprehensive discussion of the methodological issues raised by the analysis of the fiscal stance in the euro area and some proposals to contribute to this discussion. The chapters provide food for thought, by raising questions, listing possible solutions and highlighting their strengths and weaknesses, rather than firm answers. They present a possible methodology and cover all the steps of this analysis, starting from positive analysis and moving back to the core questions mentioned above in the following order:

1. How can we describe the current position of euro area Member States in the economic cycle and the risks to the sustainability of their public finances, in order to form views on their stabilisation and sustainability needs?
2. On the basis of stabilisation and sustainability needs in a given Member State, what criteria can be envisaged to translate these needs into targets for fiscal policy?
3. How can stabilisation and sustainability objectives be balanced to derive a desired fiscal stance?
4. Is there a way to aggregate the needs of individual Member States at the euro area level and define a desired fiscal stance for the euro area as a whole?
5. Assuming that a desired aggregate fiscal stance can be defined, what are the possible options to coordinate national fiscal stances in order to achieve it?

The first two questions are addressed in this chapter and the following three in Chapter IV.2.

The current chapter focuses on methodological issues related to the measurement and assessment of stabilisation and sustainability needs, to answer questions 1 and 2 above. Starting with stabilisation, it answers question 1 by extracting from the output gap all the information relative to the cyclical position. ([112]) On top of the information provided by the level of, and the change in, the output gap, three specific elements

([112]) The output gap measures the gap between potential and actual output, thus giving an estimate of whether the economy is booming or lagging behind compared to its trend.

are considered: the depth of the cycle, its length and the pace of closure of the output gap. To answer question 2, these elements are assessed against the benchmark of a "normal" economic cycle, to shed light on whether active stabilisation policy may be needed and to what extent. These criteria are also computed on the basis of a measurement of the output gap using the structural, longer-term unemployment rate. ([113]) This allows quantifying targets of different degrees of ambition in terms of the desired closure of the output gap. These targets can then be translated into the necessary fiscal impulses, resulting in a range of targets for fiscal policy.

A similar approach is developed for sustainability needs. The first step (answering question 1) is to form clear views on the existing risks to fiscal sustainability. This assessment is mainly based on the Commission's S1 indicator (which provides a measure of medium-term risks to the sustainability of public finances), complemented by information obtained from other indicators. ([114]) Higher risks suggest that more fiscal consolidation is needed to preserve the sustainability of public finances. By contrast, low risks and sound fiscal positions imply that some fiscal leeway is available. To answer question 2, quantified targets can be defined to address sustainability needs. As in the case of stabilisation needs, more or less ambitious objectives are envisaged, thus presenting the fiscal targets in the form of a range.

It is important to stress that the aim is to highlight methodological challenges and explore solutions. The various criteria and measurements put forward are applied to the euro area Member States, ([115]) based on the Commission's autumn economic forecast, mainly for illustrative purposes.

The issues related to aggregation are discussed in depth in the next chapter. In this chapter, aggregate euro area indicators are reported in the graphs and discussed in the text along with those of the Member States, without further questioning at this stage. Clearly, the analysis at the euro area level does raise specific issues related to aggregation, and spillovers across Member States imply that the countries cannot be considered only in isolation. These issues are addressed in Chapter IV.2.

Similarly, Chapter IV.2. discusses the balancing of the stabilisation and sustainability needs, while in this chapter, they are assessed separately. The fiscal targets suggested by stabilisation needs disregard the implications that such targets may have in terms of sustainability, and vice versa. The separation in the analysis at this stage also means that the fiscal targets on either side are not meant to be taken as conclusions for the fiscal stance. For instance, a protracted and deep cycle may lead to the assessment that stabilisation needs are high, but this does not automatically justify stronger fiscal stabilisation in the end. The discussion on the fiscal stance itself can only start when the two types of needs are considered together.

The rest of this chapter is organised as follows. The first two sections discuss stabilisation, starting with a presentation of the approach used to assess the extent and intensity of stabilisation needs (Section IV.1.1.). Section IV.1.2. quantifies the derived targets for fiscal policy. Section IV.1.3. discusses sustainability risks and Section IV.1.4. quantifies the fiscal targets to address sustainability needs. Section IV.1.5. concludes.

1.1. MEASURING STABILISATION NEEDS: A DYNAMIC APPROACH

1.1.1. A roadmap to assess stabilisation needs

Graph IV.1.1 presents the methodological steps to assess stabilisation needs in this section and next. The *pale grey cells* indicate inputs coming from historical data or from the Commission forecast, the *white bordered cells* indicate the concepts developed in the analysis, and the *dark blue cells* indicate the outcome, i.e. the targets in terms of stabilisation and what this means for fiscal policy.

The analysis answers sequentially four questions. These are indicated in the roadmap by the red numbers on the left-hand side. I) How much progress has been made with stabilisation in

([113]) See Subsection IV.1.1.4.
([114]) These are the Commission's debt sustainability analysis, the distance to the medium-term budgetary objective and the primary gap.
([115]) With the exception of Greece, as it is subject to a programme and not all the necessary numbers are available.

the current cycle? II) Is this in line with a "normal" economic cycle? III) What stabilisation could be targeted? IV) What fiscal stance is consistent with this stabilisation target?

The roadmap reads as follows. To assess stabilisation needs in the coming year (here 2017), the central question –indeed located at the centre of the roadmap– is to what extent the output gap has closed by the end of the current year (here 2016).

- To answer question I, the closure is measured by the two indicators at the top, namely the level of the output gap in 2016 (which indicates the depth of remaining challenges in terms of stabilisation) relative to its level at the latest peak or trough (which indicates the depth of the current economic cycle). The closure achieved by 2016 corresponds to the progress that has already been made with regard to stabilisation. Combined with the length of the cycle, as measured by the number of consecutive years with a positive or negative output gap, this progress over time indicates the pace of stabilisation up to the current year.

- Question II is answered with a comparison of the average length of past business cycles, which tells whether the measured pace can be considered as normal by historical standards. For the sake of robustness, this assessment also takes into account the information provided by the output gap based on the structural unemployment rate (SUR).

- As regards question III, a preliminary question is by how much the output gap is expected to close spontaneously in the coming year, i.e. in the absence of any government intervention. ([116]) The projected spontaneous closure, and the corresponding neutral fiscal stance is, in all cases, a default option for fiscal policy. It is particularly the case if the output gap has already closed, as the Member State has low stabilisation needs – so that one expects that no fiscal intervention is warranted to stabilise the economy. If the output gap has not closed but its evolution so far is found to have been in line with standard dynamics, the country is assessed to have medium stabilisation needs and targeting a standard closure of the output gap in the coming year, e.g. by 25%, is sufficient. Reaching this stabilisation target requires discretionary fiscal intervention if the expected spontaneous closure is lower than 25%. Finally, when the observed pace of closure falls short of what would be expected in a "normal" cycle, stabilisation needs are high and a more ambitious closure in the coming year, e.g. by 50%, can be envisaged. Again, attaining such a target requires some fiscal impulse if the expected spontaneous momentum in the economy is not sufficient.

- Finally, to answer question IV, the targets in terms of output gap closure are transformed into fiscal targets by means of calculations, using an assumed value for the fiscal multiplier and the developments expected in the Commission forecast.

1.1.2. The indicator of cyclical conditions: the output gap

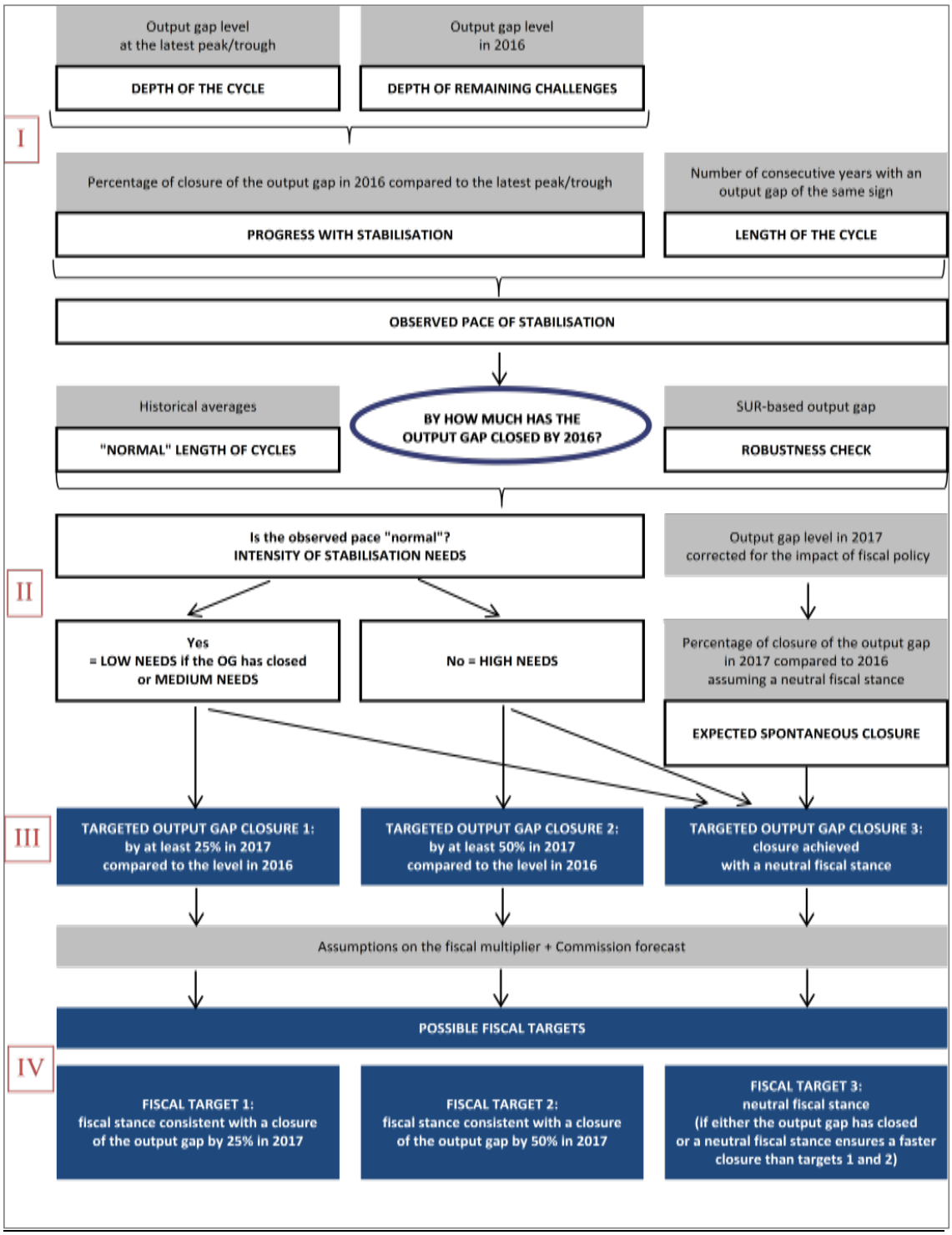
Strengths and weaknesses of the output gap

Assessing stabilisation needs means first identifying the position in the economic cycle, for which the output gap is the natural candidate. It measures the gap between potential and actual output, thus giving an estimate of whether the economy is booming or lagging behind compared to its potential. It is widely used by national and international institutions to disentangle GDP growth into the trend and the cycle, although with different methodologies to estimate potential output. For fiscal surveillance in the EU, a commonly agreed methodology based on a production function is used, as developed within the Economic Policy Committee's Output Gaps Working Group. ([117])

([116]) Such spontaneous closure of the output gap is implicit in existing forecasts. Indeed, it can be computed from the forecast closure in output gap by correcting it with a factor that represents the impact of fiscal policy on growth. This factor is computed as the product between the relevant fiscal multiplier and the fiscal stance. The spontaneous output gap closure is therefore computed "at neutral fiscal stance".

([117]) See K. Havik et al. (2014).

Graph IV.1.1: **Assessing stabilisation needs: a roadmap for the methodological steps**



Source: Commission services.

Other methodologies, for instance based on a purely statistical approach, also exist. ([118])

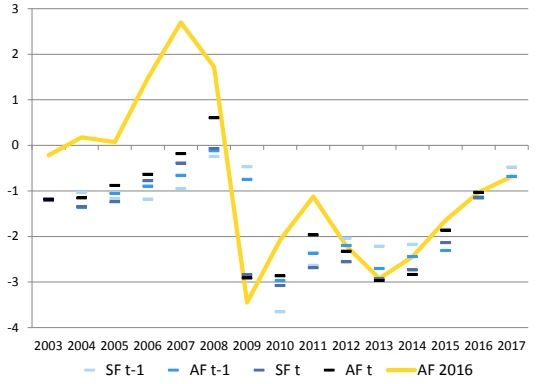
Table IV.1.1: **Persistence of low inflation in the euro area**

	Number of consecutive months with	
	Overall HICP inflation < 0.5% y-o-y	HICP excl. energy and unprocessed food < 1% y-o-y
BE	0	0
DE	21	0
EE	0	0
IE	23	8
EL	46	0
ES	35	36
FR	22	24
IT	31	28
CY	24	42
LV	14	0
LT	0	0
LU	24	0
MT	0	0
NL	5	5
AT	0	0
PT	0	44
SI	26	26
SK	33	35
FI	20	0
EA	26	28

Source: Commission services.
Note: The shaded areas indicate periods longer than 20 months. Last observation: August 2016.

Despite its widespread use, there are known challenges related to the measurement of the output gap, especially in real time. The output gap is based on non-observables as it requires an estimate of potential growth, which makes it generally sensitive to the methodology used. Moreover, estimating the output gap in real time is subject to an additional source of measurement error, namely that –irrespective of the metrics used– it is fundamentally difficult to assess the position in the economic cycle and the dynamics without the benefit of hindsight. This often results in successive revisions, including in some cases substantial revisions several years after the period considered. This real-time bias can be shown by comparing the output gap forecasts for the current and following years with the outcome, over several vintages of Commission forecasts (see Graph IV.1.2). It is particularly striking that, in the years that preceded the crisis, the output gap was estimated at negative levels (underperformance of the economy), whereas the current estimates point to a clearly positive output gap in 2006-08 (over-performance).

Graph IV.1.2: **Output gap projections over different vintages of Commission forecasts, euro area (% of GDP)**



Source: Commission's spring and autumn forecasts, spring 2003 to autumn 2016.

A specific challenge to the measurement of the output gap in the current circumstances may be very low inflation. As already shown in Graph I.1.2, the euro area as a whole is undergoing a period of very low inflation as measured by the Harmonised Consumer Price Index, which is surprisingly on the low side. This is the case in a majority of euro area Member States, as shown in Table IV.1.1.

Real wage rigidity may imply an underestimation of the size of the output gap in countries that have recorded an increase in unemployment. The estimate of the output gap relies, in part, on the estimate of the NAWRU. The latter is estimated on the basis of a Phillips curve, i.e. the negative relation between the change in wage inflation and cyclical unemployment. Wages react to unemployment if unemployment is cyclical. In a situation in which prices do not change or even decrease, and in which nominal wages are downward rigid –for reasons that are not related to labour market institutions– while unemployment increases, it is possible that the estimate wrongly considers a part of the observed unemployment as structural, while it is in fact cyclical. This would imply that, in certain countries, the level of the output gap is in reality somewhat lower than estimated.

([118]) Among many, see C. Bouthevillain et al. (2001).

This calls for prudence in interpreting real-time estimates of the output gap. For example, an output gap within a range of -0.5% to 0.5% of GDP can be considered as broadly closed, given the wide margin of error. Moreover, to avoid misleading signals, it is preferable to cross-check them against additional indicators to underpin the assessment of cyclical conditions.

A preliminary step: calculating the output gap without fiscal policy

To assess future developments, the projected evolution of the output gap needs to be corrected for the impact of fiscal policy. The change in the output gap depends on multiple factors, including not only the external environment, monetary and financial conditions and the own dynamics of private demand, but also fiscal policy, as part of domestic demand and via the operation of fiscal multipliers. To estimate what would be the expected change in the output gap irrespective of fiscal intervention, one solution is to calculate the output gap that would result from a neutral fiscal stance. In this chapter, a neutral fiscal stance corresponds to the structural primary balance (SPB) remaining unchanged. ([119]) Assuming a neutral fiscal stance therefore means that the impact of the expected change in the SPB on the output gap needs to be removed. To do so, ideally, different multipliers should be applied to the corresponding budgetary items. As a first rough estimate, it seems reasonable to assume a balanced composition on the revenue and expenditure sides. ([120])

1.1.3. Analysing output gap dynamics in light of the depth and length of the cycle

This subsection explores how to extract information on the cycle from the output gap in order to answer question I from the roadmap. The cyclical position can be described in various ways. As indicated in the roadmap, while the level and change of the output gap matter, the most important question is how long and deep the cycle has been. Stabilisation needs are higher if the cycle is particularly deep and/or long, as this means that the output gap is closing at a slower pace than usual. This subsection discusses possible indicators and graphical presentations to measure this from different angles, focusing either on the dynamics over the whole cycle, the recent dynamics or the progress made, before a general discussion in Subsection IV.1.1.5.

Defining indicators to measure the shape of the cycle

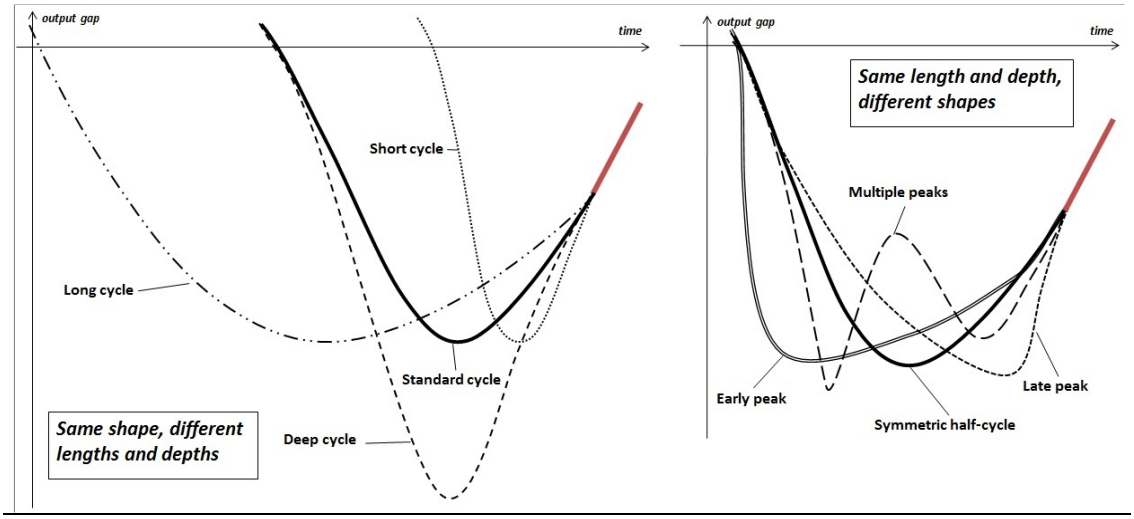
As the level and change of the output gap do not provide sufficient information to describe the cyclical conditions, the depth and length of the cycle also need to be taken into account. Empirical analyses of fiscal policies usually measure the cyclical conditions by the output gap, either in level or in change, at best by a combination of both. However neither is sufficiently meaningful on its own and, even taken together, they provide only a partial picture. A given level and change of the output gap can take place within cycles of different lengths, depths and shapes, as shown in Graph IV.1.3. The curve can be narrow or broad, steep or flat, and, depending on when the peak or trough is reached within the half-cycle, the curve may also be skewed. In economic terms, a given widening of the output gap from e.g. -1% of GDP to 2% of GDP does not have the same meaning if it is the continuation of a rapid deterioration initiated in the previous year after several years in positive territory, a sudden deterioration after two or three years of slightly negative output gaps, or a new widening after several years of narrowing without closing.

The shape of the cycle can be described by three sets of indicators. These include measurements of length, depth and pace of closure. As regards the two measurements of length, the first one is the number of consecutive years with an output gap of the same sign, as shown by L1 on Graph IV.1.4. It indicates for how long output has not been in line with potential. The other one is the number of years since the latest peak or trough, indicated by L2 on the graph. When L2 is close to L1, this means that the peak or trough was reached early in the half-cycle. However, as half-cycles are not always symmetric, this does not imply that the

([119]) The SPB is the budget balance corrected for the cycle, net of one-offs and other temporary measures, and excluding interest expenditure. See Subsection IV.1.2.3. below for a discussion of possible metrics for the fiscal stance.

([120]) Technically, the output gap expected for the coming year in the Commission forecast is corrected by the expected change in the SPB multiplied by an assumed uniform fiscal multiplier of 0.8. This calculation is naturally subject to the usual caveats regarding the general uncertainty surrounding the multipliers and the lagged impact of fiscal policy.

Graph IV.1.3: **Various possible shapes of the half-cycle for a given level and a given change in the output gap**



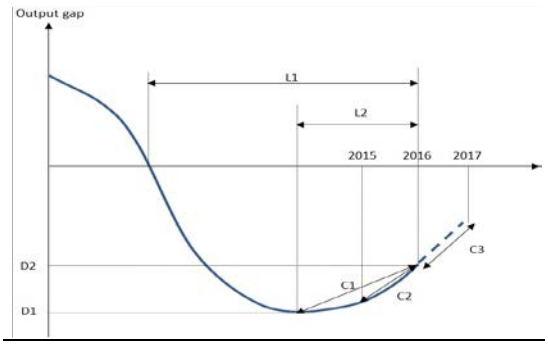
Source: Commission services.
Note: While all the half-cycles on this graph share the same level and change in the output gap in the last year (shown in red), they are different in terms of length and depth (lhs) and shape, including the location of the peak (rhs).

subsequent closure is equally fast, so that the peak or trough is not necessarily located halfway through. The second set of measurements regards the depth of the cycle. It is measured at two spots: at the peak or trough (D1) and at the expected level for the current year (D2, here for 2016). This indicates the amplitude of stabilisation challenges that the economy has faced. Finally, the pace of closure gives an indication of the slope of the curve. The average annual closure since the peak or trough (C1) depends on how small D2 is compared to D1, and on how long it has taken to reduce the output gap from D1 to D2 (which is measured by L2). If closure has been slow, this is signalled by a low level of C1. Conversely, a high C1 indicates a steep slope. The second closure indicator is C2, which measures the closure over the current year, here in 2016 with respect to 2015. The last measurement, C3, is the closure expected for 2017 assuming a neutral fiscal stance.

Complementary graphical tools to analyse cyclical conditions

The following three graphs each show some of the indicators. As described in Table IV.1.2, they provide complementary information on the cycle. Graph IV.1.5 covers a number of indicators and therefore requires a detailed presentation, while Graph IV.1.6 focuses on the current and expected level of the output gap, and Graph IV.1.7 on the pace of its closure. These last two graphs also indicate the length of the half-cycle. A limit to these graphs is that they do not indicate whether the output gap has been steadily narrowing or widening over time.

Graph IV.1.4: **Indicators describing the shape of the half-cycle**



Source: Commission services.

Table IV.1.2: **Links between indicators and graphs**

	Graph IV.1.5	Graph IV.1.6	Graph IV.1.7
L1		x	x
L2	x		
D1	x		
D2	x	x	(x)
C1	x		x
C2			
C3	x	x	

Source: Commission services.
Note: A cross indicates that the indicator is shown on the graph.

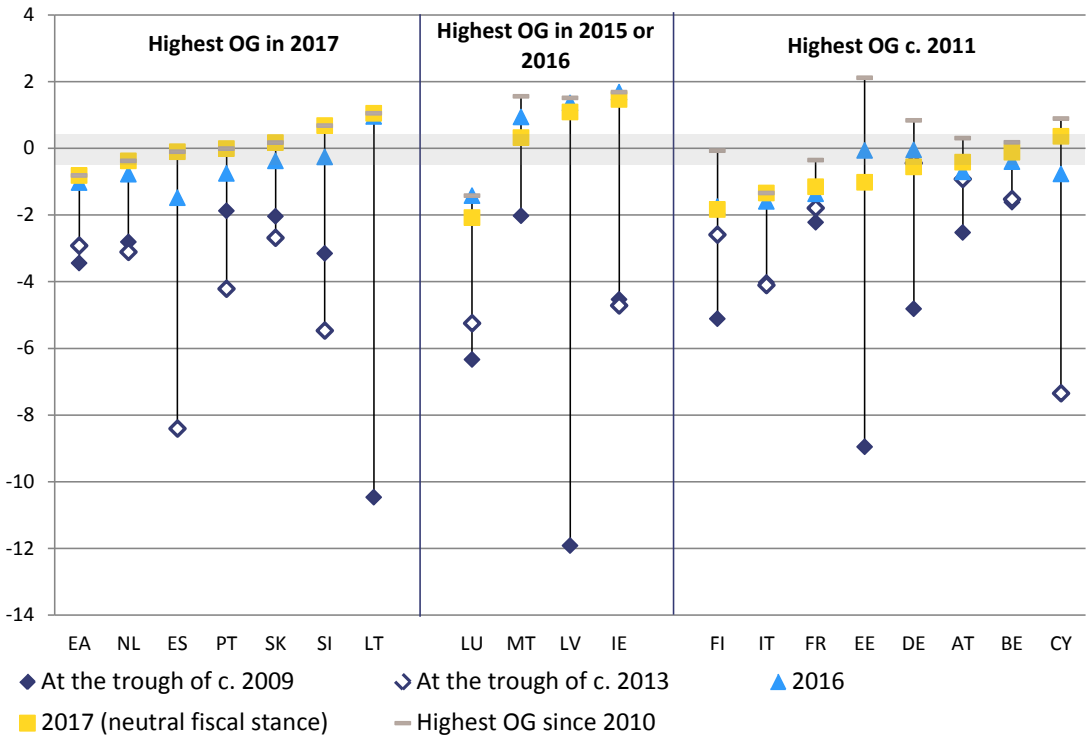
To start with a comparative overview highlighting the main turning points and the current dynamics, Graph IV.1.5 summarises the evolution of the output gap since 2009 in one bar per Member State. In terms of the indicators presented above, this graph provides information – directly or indirectly– on L2, D1, D2, C1 and C3, as well as on the number of peaks or troughs in the cycle. The euro area as a whole, which appears on the left hand side of the graph, experienced a first trough in 2009 (blue diamond). After some improvement, cyclical conditions deteriorated again until a second trough was reached in 2013 (white diamond). More recently, the euro area has reduced its output gap to a large extent. A neutral fiscal stance in 2017 would bring the output gap to the point indicated by the yellow square, not far from the level at which it could be considered broadly closed (this is shown by the shaded area, i.e. output gaps of 0.5% of GDP to 0.5% of GDP). This would be a narrower output gap than in 2016 (blue triangle), and in fact the narrowest since 2010 (as indicated by the horizontal grey line). For the purpose of this graph we refer to countries that are experiencing the smallest negative output gaps or the largest positive output gaps in a particular year as experiencing their “highest” output gap.

Graph IV.1.5 shows that euro area Member States have experienced more or less pronounced single or double-dip recessions since 2009: both depths and lengths have differed across countries. Member States started from very different levels at the trough, as can be seen by the lowest ends of the bars, indicating more or less severe crises. Moreover, while a majority of euro area Member States experienced a more or less marked double-dip recession, with two troughs circa both 2009 and 2013, some had only one trough, located around either 2009 or 2013. This implies that countries have not had equally long periods of time to recover since their latest trough.

The evolution of the output gap since the crisis shows a variety of trajectories among euro area Member States, ranging from a lengthy and unstable period of recovery to good economic times. Like the euro area as a whole, in a neutral fiscal stance scenario several Member States (grouped at the left of Graph IV.1.5) would be at their highest output gap level in 2017. Depending on the countries, the output gap would be only closed or at a significantly positive level. This suggests the continuation of a long improvement in cyclical conditions, although in most cases not a steady one, as shown by the double-dip recessions. In four other Member States (grouped in the middle of the graph), the output gap would edge down in 2017 after peaking in 2015 or 2016, indicating either some closure (in countries where the output gap has already turned positive) or a new widening (where it is still negative). For a third group of countries (right part of the chart), the output gap stood at its highest level a few years earlier, in most cases in 2011, before a new deterioration in economic conditions and, in most cases, a new improvement again.

To assess the length of the cycle more accurately, Graph IV.1.6 combines the expected evolution (in level) in the short term with the number of consecutive years with an output gap of the same sign. In terms of indicators, it shows L1, D2 and C3. Graph IV.1.6 plots the level of the output gap in 2017 (again assuming a neutral fiscal stance) against that of 2016, thus focusing on current dynamics. If a Member State is located above the 45° line, it means that its output gap is expected to be "higher" in 2017 than in 2016. As in the previous graph, the shaded areas indicate, for each year, levels at which the output gap is considered to be broadly closed. In addition, the chart uses bubbles, the size of which indicates the number of consecutive years with an output gap of the same sign, as measured in 2016 (L1). The countries in pale blue have had the same sign for up to four years in a row, those in dark blue for at least five years. On this basis, the current situation of Member States can be put into perspective with their situation over recent years, thus identifying several groups of countries, as described on the graph. For the euro area as a whole and for a majority of Member States, the output gap has been significantly negative for at least five years and would at most broadly close in 2017 if the fiscal stance were neutral. By contrast, four of the Member States in which the output gap closed less than four years ago have had a positive output gap, while the output gap is slightly negative and widening in the last two Member States.

Graph IV.1.5: **Evolution of the output gap since 2009 (% of GDP)**



Source: Commission services.
Note: The Member States are sorted by year of highest output gap, then by increasing level of the output gap in 2017. For 2017, the output gap is recalculated assuming no change in the structural primary balance to correct for the impact of fiscal policy. The shaded area indicates broadly closed output gaps (of between 0.5% and 0.5% of GDP). Troughs in ca. 2009 (resp. ca. 2013) are only shown where applicable.

Graph IV.1.7 focuses on the pace and percentage of closure of the output gap in 2016 compared to the latest trough or peak. The vertical axis of Graph IV.1.7 indicates the closure in percentage (as the C1 indicator, but not divided by the number of years). The horizontal axis shows the length of the cycle (L1). While the level of the output gap (D2) is not shown in this chart, its sign is indicated by a colour code – yellow for positive, grey for broadly closed and blue for negative. Overall, and in line with intuition, the longer an output gap has been of the same sign, the more it closes. In particular, for the euro area as a whole, the output gap has closed by two thirds since the latest trough, after eight years of negative output gaps.

Four groups of countries can be identified on this basis:

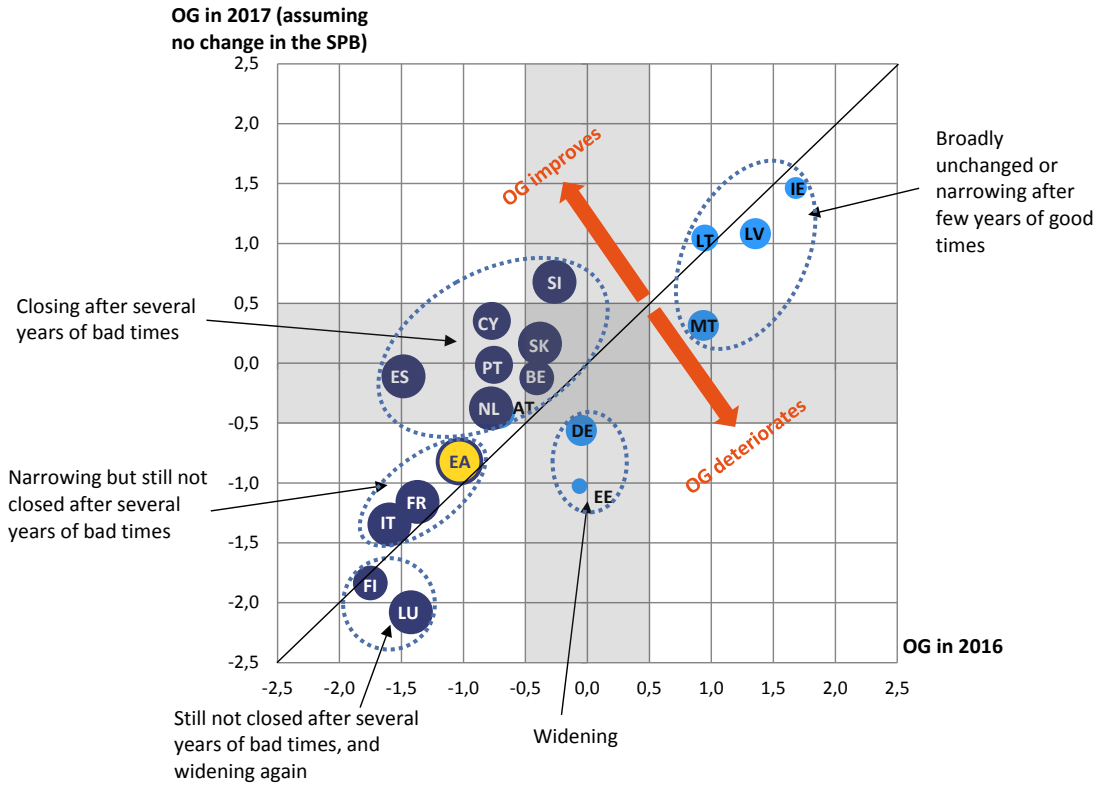
- Member States with an output gap of the same sign for one to three years in a row: this indicates that the Member State entered its current half-cycle relatively recently. In this sense, it is not surprising that the output gap is still widening or that the closure is still limited.

- Member States with an output gap that has had the same sign for four years and that has closed by up to 40% since the last peak or trough.

- Member States where the output gap has narrowed by at most 75% since the trough, although it has been in negative territory for five to eight years. This includes the euro area as a whole.

- Member States where the output gap has closed (or largely closed, by more than 80%) after several years with a negative sign.

Graph IV.1.6: **Output gap level in 2016-2017 and length of the half-cycle**

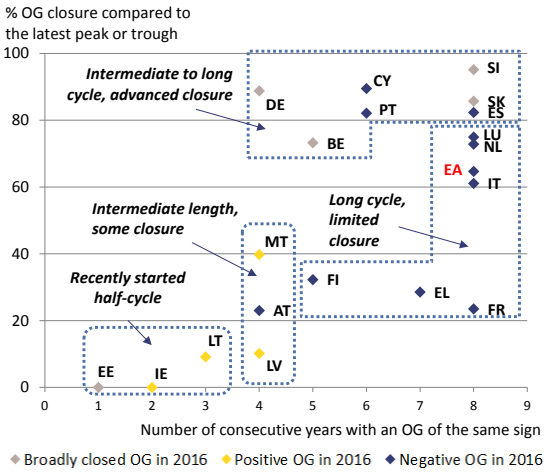


Source: Commission services.
Note: For 2017, the output gap is recalculated assuming no change in the structural primary balance to correct for the impact of fiscal policy. The size of the bubbles indicates the number of consecutive years with an output gap of the same sign (pale blue: one to four, dark blue: five to eight), as measured in 2016. The shaded areas indicate levels at which the output gap is considered to be broadly closed, given measurement uncertainty.

1.1.4. A robustness check: the output gap based on structural unemployment

To test its robustness, the analysis based on the standard output gap is checked against another indicator, namely the output gap based on the structural unemployment rate (SUR). ([121]) The SUR-based output gap gives additional information on stabilisation challenges and can complement the standard output gap to form clearer views on the intensity of stabilisation needs. While the output gap calculated following the EU's commonly agreed methodology uses the NAWRU, this approach replaces the NAWRU by the SUR. The SUR is the part of the NAWRU that can be explained by institutional factors and, as such, it captures dynamics of a lower frequency. This makes it more stable than the NAWRU itself.

Graph IV.1.7: **Output gap closure in 2016 compared to the latest peak or trough and length of the half-cycle**



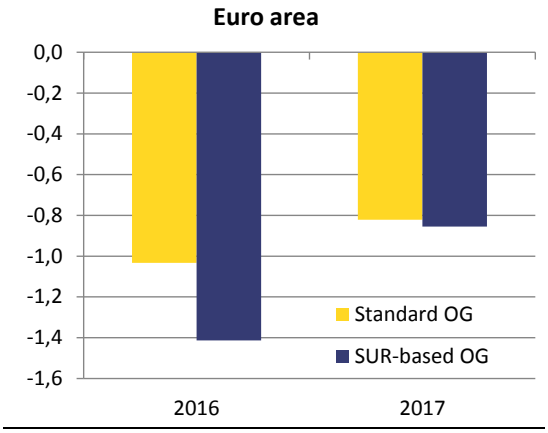
Source: Commission services.
Note: The x-axis indicates the number of consecutive years with an output gap of the same sign, as measured in 2016.

([121]) For a more detailed presentation, see J. Lendvai et al. (2015).

As a result, the SUR-based output gap can be expected to be less subject to changes across vintages than the standard output gap. ([122])

The output gaps using the SUR and the NAWRU are, however, not entirely comparable due to two differences. First, SUR estimates can only be calculated as of 1985, due to data availability, while NAWRU estimates go back to 1965 for some countries. This means that the period over which the trend for potential growth is calculated is not the same, with possible implications for recent and current output gap estimates. Second, the latest SUR estimates do not incorporate as recent information as the NAWRU and, in particular, when calculating the output gap for 2015-17, it is assumed that the SUR remains at its level of 2015.

Graph IV.1.8: **a. Standard output gap and output gap based on the structural unemployment rate, euro area aggregate**



Source: Commission services.
Note: For 2017, the output gap is recalculated assuming no change in the structural primary balance to correct for the impact of fiscal policy.

While the SUR-based output gap broadly corroborates the signal of the standard output gap for the euro area as a whole and for a majority of Member States, it is at odds with it in one third of the cases. For the euro area aggregate, the message is consistent across the two indicators, especially in view of the measurement uncertainty and data constraints: the level and expected change in 2016-2017 are comparable (Graph IV.1.8a). At the country level, the signal of the standard output gap is broadly confirmed for 12 Member States (Graph IV.1.8b). For these, the SUR-based output gap is of the same sign as the standard output gap, although it stands at a different level, with large differences in some cases. In the six other Member States, however, the SUR-based methodology points to an output gap of the opposite sign in 2016, 2017 or both. This applies in both directions, namely some Member States are found to have a positive output gap rather than a negative one, and vice versa.

1.1.5. Assessing the intensity of stabilisation needs

Size of needs vs. intensity of needs

Turning to question II as indicated in the roadmap, this subsection moves from a graphical to a more systematic and quantified description of the cycle, which is necessary to assess not only the size but also the intensity of stabilisation needs. It is necessary to make a distinction between the *size* of stabilisation needs – which is measured by the current level of the output gap, i.e. D2, and described in the roadmap as the depth of remaining challenges– and the *intensity* of these needs. The output gap may be large but still point to needs of a low intensity if a new cycle has just started. Conversely, a limited output gap can suggest a certain need for stabilisation if it has not closed for many years.

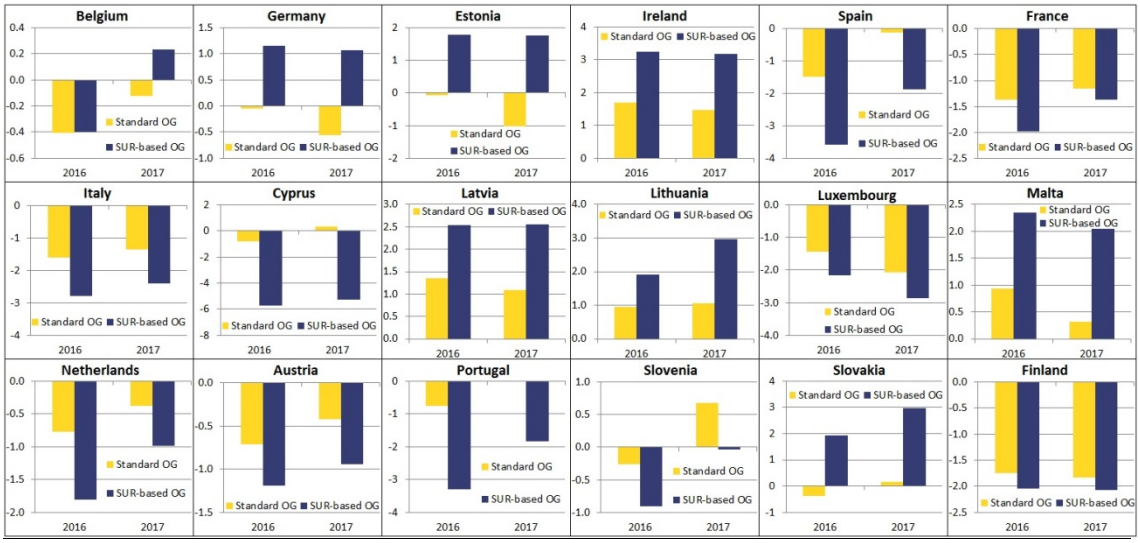
The intensity of stabilisation needs depends on whether the output gap is closing at a "normal" pace. It may not be the case if the cycle has been particularly long or deep. This assessment therefore implies forming views on the length of a "normal" cycle and what is a "normal" pace of closure for the output gap.

What is a "normal" cycle?

The literature usually finds that the average length of a business cycle is between six and nine years and, in the euro area, cycles have on average lasted close to eight years. According to the United States National Bureau of Economic

([122]) The NAWRU methodology is being modified to use additional long-run information, specifically the SUR from the year T+10 calculations, to anchor the short- and medium-term NAWRU estimates. This will result in methodological improvements, essentially less pro-cyclical NAWRU estimates. In addition, by making this change, greater recognition is being given to the efforts of the Member States to implement structural reforms in their respective labour markets.

Graph IV.1.8: **b. Standard output gap and output gap based on the structural unemployment rate, euro area Member States**



Source: Commission services.
Note: For 2017, the output gap is recalculated assuming no change in the structural primary balance to correct for the impact of fiscal policy. The size of the bubbles indicates the number of consecutive years with an output gap of the same sign (pale blue: one to four, dark blue: five to eight), as measured in 2016. The shaded areas indicate levels at which the output gap is considered to be broadly closed, given measurement uncertainty.

Research (NBER), the average length of US business cycles between 1945 and 2009 was approximately 69 months, i.e. slightly less than six years. ([123]) By comparison, the average length over a longer period, from 1854 to 2009, was around 56 months, i.e. less than five years. The Euro Area Business Cycle Dating Committee of the Centre for Economic Policy Research found that there were five complete cyclical episodes (peak-to-peak) in the euro area between the third quarter of 1974 and the third quarter of 2011, and five complete cyclical episodes (trough-to-trough) between the first quarter of 1975 and the first quarter of 2013. ([124]) Overall, the average cycle length in the euro area has been seven and a half years. ([125])

Assuming that, up to eight years, the length of a cycle can be considered normal implies that the output gap could be expected to complete a half-cycle every four years. As a result, if the output gap is estimated to have had the same sign for at least five years in a row, this could suggest that the economy is taking longer than it normally should to get back to its potential level. This would argue in favour of more pressing stabilisation needs. A caveat is that this assumes that the output gap is symmetric over the cycle, while experience shows that this is not always the case. ([126])

The length of the cycle is not the only criterion to assess "normality"; its depth and the pace at which the output gap widens and closes also need to be considered. Higher stabilisation needs can result from a particularly large level of output gap in absolute terms, irrespective of the length of the cycle. The intensity of stabilisation needs can also be assessed against the pace of closure, which combines the change in the output gap and the period of time over which it has taken place.

([123]) See http://www.nber.org/cycles.html.
([124]) See http://cepr.org/content/euro-area-business-cycle-dating-committee.
([125]) While the average length is not explicitly reflected in the Commission's output gap methodology, a set of output gap closure rules aims at ensuring that the gap closes over the medium term.
([126]) See for instance S. Potter (1999). Asymmetries may be caused by the existence of exceptionally large negative shocks (such as slow recoveries that occur following financial sector crises) while no positive shocks of an equivalent size are observed.

Table IV.1.3: **Heat map of the intensity of stabilisation needs**

	LENGTH (IN 2016)				DEPTH				PACE OF CLOSURE				CONCLUSION	
	L1		L2		D1		D2		C1		C2			
	Number of consecutive years with same sign		Number of years since latest peak/trough*		Level at latest peak/trough*		Level in 2016		Annual percentage of closure between latest peak/trough and 2016*		Percentage of closure 2015-2016		Intensity of needs	
	Standard	SUR	Standard	SUR	Standard	SUR	Standard	SUR	Standard	SUR	Standard	SUR		
EA-19	8	8	3	3	-2,9	-3,2	-1,0	-0,7	22	26	37	34	high	Negative output gap
LU	8	8	4	4	-5,2	-6,2	-1,4	-2,4	18	15	25	15	high	
NL	8	8	3	3	-3,1	-3,6	-0,8	-1,6	25	19	36	23	high	
PT	6	9	3	4	-4,2	-7,2	-0,8	-2,5	27	16	49	31	high	
CY	6	8	3	3	-7,3	-10,3	-0,8	-4,5	30	19	79	38	high	
ES	8	8	3	3	-8,4	-10,1	-1,5	-3,3	27	22	63	45	high	
IT	8	8	3	2	-4,1	-4,8	-1,6	-2,7	20	22	38	25	high	
FR	8	8	2	2	-1,8	-2,1	-1,4	-1,9	12	6	7	7	high	
FI	5	8	2	2	-2,6	-2,7	-1,8	-2,0	16	14	27	25	high	
AT	4	5	1	1	-0,9	-1,4	-0,7	-1,3	23	9	23	9	medium	
SI	8	8	3	3	-5,5	-6,2	-0,3	-0,9	32	28	83	57	medium	
BE	5	5	3	3	-1,5	-1,1	-0,4	-0,2	24	29	-22	-101	medium	
SK	8	2	3		-2,7		-0,4	2,6	29		63	-88	low	Broadly closed OG
DE	4	6					0,0	1,8			80	-29	low	
EE	1	5		2		2,9	-0,1	1,3		27	105	41	low	
LT	3	3	2		1,0		0,9	1,6	5		-21	-86	medium	Positive output gap
IE	2	2					1,7	2,4			-24	-72	medium	
MT	4	4	1	1	1,6	2,3	0,9	1,9	40	19	40	19	medium	
LV	4	4	1		1,5		1,4	2,1	10		10	-12	medium	

Source: Commission services.
Note: The columns labelled "Standard" use the standard output gap, those labelled "SUR" the SUR-based output gap. Green cells indicate situations consistent with historical averages, suggesting low stabilisation needs. Yellow (blue) cells indicate borderline situations, translating into medium-intensity stabilisation needs, when the output gap is positive (negative). Orange (dark blue) cells point to levels that depart from historical average cycles and suggest high-intensity stabilisation needs, when the output gap is positive (negative). The thresholds are as follows: L1: 1-3 years (low), 4 years (medium), 5 years or more (high). L2: 1 year (low), 2 years (medium), 3 years or more (high). D1 and D2: high intensity if the output gap is lower than R10 or higher than R90, medium intensity if it is between R10 and R40 or R60 and R90, low intensity if it is between R40 and R60, where Rx refers to a weighted average of the xth percentile in the distribution of output gaps over 1988-2012 in the country considered and in the euro area. C1 and C2: low intensity if the closure exceeds 50%, medium if it is of 25% to 50%, high if the output gap closes by less than 25% or widens (negative closure). The intensity shown in the last column on the right summarises the intensity suggested by the various indicators, distinguishing between positive, broadly closed and negative output gaps in 2016.

A heat map of the intensity of stabilisation needs

The indicators describing the shape of the cycle are put together in a heat map from which the intensity of stabilisation needs is derived. The indicators L1, L2, D1, D2, C1 and C2 defined in Section I.1.3. are reported for all Member States and the euro area, as measured by both the standard output gap and the SUR-based output gap, for robustness (Table IV.1.3). ([127])

Indicators relative to peaks or troughs are only relevant if the output gap has already peaked or bottomed out and not closed yet. While it is useful to put the current dynamics in the perspective of the ongoing half-cycle, information on what happened before the output gap last closed is not directly meaningful for the analysis. As a result, no values are reported for L2, D1 and C1 for Member States in which the output gap is expected to be broadly closed or still widening following a change of sign.

Setting thresholds

For each indicator, thresholds delimit what is considered to be within historical standards, beyond standards, and intermediate cases. The values of each indicator are grouped into five categories shown by colours in Table IV.1.3 and described in more technical terms in the notes underneath the table. The green cells indicate numbers that are consistent with historical values, the orange or dark blue cells outline numbers that do not match past averages and the yellow or blue cells denote intermediate levels. The difference between yellow or orange cells on the one hand, and blue or dark blue cells on the other hand, is that the warm colours refer to positive output gaps in 2016 and the cold colours to negative output gaps.

- For *length*, the thresholds are derived from the assumption that a cycle is not expected to last

([127]) C3 is used at a later stage, in Subsection IV. 1.2.1., which discusses possible targets for the closure of the output gap.

more than eight years. If, for the sake of simplicity, the cycle is assumed to be fully symmetric, this suggests that a half-cycle should normally not exceed four years (L1) and that the output gap should normally close within two years after peaking or bottoming out (L2).

- As regards *depth*, the level of the output gap is assessed against the distribution of past output gaps until 2012, as more recent output gaps might still be revised. Since, for some Member States, the series are short and affected by crisis years, weighted averages comprising the distributions of domestic output gaps and euro area output gaps are used. Values are considered "normal" when they are close to the median.

- Finally, the thresholds for the annual *pace of closure* build on the idea of half-cycles lasting four years. The minimum pace of closure is derived from the case when the peak or trough is located at the beginning of the half-cycle, as a closure in four years then corresponds to an annual closure by 25%. Conversely, a closure by at least 50% ensures rapid stabilisation in two years at most. These thresholds are, like the other thresholds used in the analysis, naturally arbitrary to some extent.

Interpreting the heat map

The assessment of intensity makes an explicit distinction between positive and negative levels of the output gap. Not only do output gaps of different signs point to stabilisation needs in opposite directions, but the implications of positive and negative output gaps are also asymmetric. In particular, the case of large positive output gaps is not fully symmetric with respect to large negative output gaps. There are both economic reasons and political economy reasons for this. Very bad economic times can have a persistent adverse impact on the economy, for instance via persistent high unemployment affecting the income and employability of the population concerned, or via reduced investment affecting future growth. They also deteriorate the headline government balance, as a result of automatic stabilisers. In terms of political economy as well, governments have stronger incentives to support the economy in bad times than to mitigate growth in good times.

A country cannot be found to have stabilisation needs of high intensity on the basis of only one indicator. The output gap can provide nuanced signals depending on whether it is considered in level or in change, and over one or several years. To conclude on high needs, it takes several indicators consistently flagging values above thresholds. For instance, the euro area as a whole has experienced a long period of eight years of negative output gaps (L1), with the latest trough being particularly deep (D1). Three years after the trough (L2), the output gap has closed at a slow pace (C1) and recent developments only point to limited acceleration (C2), leaving the output gap in clear negative territory in 2016 (D2). This leads to the conclusion that the intensity of its stabilisation needs is high. By contrast, if only one indicator pointed to unusually long, deep or slow developments, this would signal that cyclical developments deserve closer scrutiny, which would rather fit in the category of medium–intensity needs.

Overall, the intensity of stabilisation needs in the euro area as a whole is found to be high, but with differences in intensity and direction across Member States. The last column of Table IV.1.3 groups Member States into four categories. First, the analysis suggests that the intensity of needs in approximately half of the Member States is high, as the cycle has been both long and deep, and closure has remained limited in view of the number of years. For all these countries, the output gap has been negative. Second, in other Member States with a negative output gap, the needs appear to be less intense, as the cycle has been less marked in terms of length and/or depth, or the output gap is not far from closing. In a third group of countries, there is no evidence of a need for stabilisation, as the output gap is likely to be broadly closed. Finally, in the Member States that have a positive output gap, the half-cycle is still relatively recent and the output gap does not point to overheating. This suggests stabilisation needs of a medium intensity. No Member State with a positive output gap is currently found to need strong stabilisation.

Robustness check

The robustness check using the SUR-based output gap confirms, in most cases, the signals of the standard output gap, although with contradictory information regarding some Member States. Some differences in level can be observed, reflecting differences in methodology and assumptions. For most countries, this does not entail a significantly different diagnosis but only a shift to one category below or above for one or two indicators out of six. The most conflicting signals are concentrated on those Member States whose output gaps are likely to be broadly closed in 2016. There are several explanations for this. One is that while both estimates report the same general trend, differences in level imply the output gap closes or changes sign one or two years earlier or later, depending on the methodology. This is why one approach may still point to a long cycle (which may close in the following year) while the other may indicate that a new half-cycle has already started. Another explanation is related to data availability and the constraints for the forecast horizon. The SUR-based output gap uses SUR estimates up to 2015 and then maintains the SUR at that level until 2017. As a result, it does not incorporate as recent information as the NAWRU.

Conclusion on the assessment of stabilisation needs

Overall, the output gap is a useful but imperfect indicator, which can only be used with prudence in real time and should be cross-checked against more encompassing information. This section has presented a possible approach combining six indicators and the output gap based on both the NAWRU and the SUR. This should in turn be complemented by additional indicators and alternative methodologies if necessary. It is essential to keep in mind that real-time estimates of the output gap are likely to be revised, and that alternative indicators may partially contradict the output gap and also refute each other. However, beyond measurement errors, the various indicators may also simply reflect a multifaceted reality. Not all economic variables react at the same pace to changes in cyclical conditions and, for example, some components of business sentiment may rapidly improve while unemployment declines with a lag. Ideally, assessing the position in the cycle should therefore be based on in-depth analysis of the economy that cross-checks data from various perspectives. Within the framework of this report, such additional considerations on economic conditions are taken into account when stabilisation and sustainability needs are weighed against each other (see Chapter IV.2.).

1.2. TRANSLATING STABILISATION NEEDS INTO FISCAL TARGETS

After assessing the intensity of stabilisation needs, the next step of the analysis is to derive stabilisation targets in terms of closure of the output gap (question III on the roadmap) and, finally, translate these stabilisation targets into fiscal targets (question IV). This raises four crucial methodological issues which are addressed in this section: defining objectives in terms of stabilisation, quantifying them, choosing an indicator to measure the fiscal stance and dealing with fiscal multipliers.

1.2.1. What policy objective for stabilisation?

Defining a stabilisation objective implies a certain conception of the role of fiscal policy. Two approaches are possible. According to the first one, stabilisation is defined from the point of view of the *target*, as aiming for a certain desired closure of the output gap compared to its current level. From this perspective, if the output gap is not expected to close sufficiently rapidly compared to what is deemed appropriate, this may require some support from fiscal policy to accelerate the closure. Conversely, it also means that fiscal policy can to some extent afford to work against the closure if, ceteris paribus, the dynamics of the economy would lead to a faster closure than targeted. According to the second approach, stabilisation is understood from the point of view of the stabilising *function* of fiscal policy. In a strong reading of this function, fiscal policy would always be expected to seek to reduce the output gap pro-actively beyond its spontaneous closure. In a weaker reading, fiscal policy would simply not be supposed to prevent the output gap from closing, even if the expected closure were quite rapid.

The role of fiscal policy may depend on the economic context and on the intensity of

stabilisation needs. Abundant and consensual literature has shown that fiscal fine-tuning is not optimal, in particular because of measurement uncertainty in real time and implementation lags. This is why, in normal times, a neutral fiscal stance is the default option: automatic budgetary stabilisers are the preferred instrument to absorb country-specific shocks, while fiscal impulse beyond automatic stabilisers should be limited to situations in which this is justified. By contrast, a situation of high stabilisation needs due to a long and/or deep cycle arguably provides a case at least for avoiding pro-cyclicality, and, in certain cases, also for countercyclical discretionary fiscal policy.

It may be preferable to use stabilisation targets which combine these considerations. The stabilisation target, defined as a minimum closure of the output gap compared to the level of the previous year, can be more or less ambitious. The associated fiscal target is the fiscal stance that is consistent with the chosen closure. Should the scenario of a neutral fiscal stance result in a faster closure, the fiscal target would be a neutral fiscal stance (as measured by C3).

1.2.2. Illustrative quantified objectives for stabilisation

For illustrative purposes, we consider here several quantitative targets which represent various degrees of ambition for fiscal policy.

- Member States with a broadly closed output gap do not need to stabilise their economy and could target, by default, a neutral fiscal stance.

- A low objective could be a closure of the output gap by 25%, corresponding to a linear reduction over a standard half-cycle of four years in case the peak or trough is immediately reached in the first year. In other terms, if the output gap closes by less than 25% per year on average, it will not close within four years. This target could be suitable for those Member States whose intensity of stabilisation needs is considered to be medium.

- A high objective could be a closure by 50%, suggesting that if the output gap narrows again by the same amount in the following year, it will close after two years. This objective would be more appropriate for Member States with stabilisation needs of a high intensity.

- If a faster closure can be achieved with a neutral fiscal stance, this becomes the target.

Overall, the default fiscal target is in all cases a neutral fiscal stance, unless this is not sufficient to achieve the desired closure.

1.2.3. Practical considerations: measuring the fiscal stance and dealing with fiscal multipliers

Deriving fiscal targets from stabilisation targets

The fiscal stance that is consistent with a given targeted closure of the output gap is calculated on the basis of the Commission economic forecast with the formula below. It is equal to the expected fiscal stance in the baseline scenario, minus the difference between the targeted change in the output gap and the change in the output gap expected in the baseline, divided by the fiscal multiplier μ. If the targeted closure is the same as in the baseline, the fiscal stance needs to be as expected in the baseline. If a different closure is chosen, the fiscal stance needs to be adjusted accordingly, by dividing the difference in targets by the fiscal multiplier to account for the multiplier effect.

$$FS^{*} = FS^{baseline} - (\Delta OG^{*} - \Delta OG^{baseline})/\mu.$$

To make this formula operational, it is necessary to choose among potential metrics for the fiscal stance and to decide on the level of the multiplier.

What metrics for the fiscal stance?

Three indicators using top-down or bottom-up approaches are available to measure the fiscal stance. Three measures are currently used by the Commission: the change in the structural balance, the change in the structural primary balance (SPB) and the discretionary fiscal effort (DFE). ([128])

The structural balance, especially excluding interest payments, is a convenient indicator although with certain drawbacks. Several factors

([128]) See Carnot and de Castro (2015) and European Commission (2013).

explain why the change in the structural balance, and even more so the change in the SPB, are the preferred metrics in terms of user-friendliness. First, they are simple to calculate and interpret. The structural balance corrects the budget balance for the mechanical impact of the economic cycle and for one-offs and temporary measures, and the SPB also corrects it for interest payments, which are, to a large extent, inherited from past policies. Second, being top-down indicators, the structural balance and SPB do not require detailed information on permanent discretionary measures. Third, the SPB has additional benefits over the structural balance, as it facilitates calculations using the fiscal multiplier and direct comparison with the S1 indicator. At the same time, the structural balance and the SPB share two drawbacks. First, they are difficult to estimate in real time as they rely on the output gap. However, what matters from a fiscal stance perspective is not the level but the change, for which measurement errors are smaller. Second, they can be considerably distorted by revenue windfalls or shortfalls when the response of government revenues to economic growth is not in line with standard elasticities.

By contrast, the DFE is generally expected to give a more accurate description of discretionary fiscal policy decisions, but with certain constraints related to information availability. The DFE combines a bottom-up approach on the revenue side with a top-down approach on the expenditure side. On the revenue side, it identifies discretionary revenue measures (net of one-offs and other temporary measures) and adds up their budgetary impact. On the expenditure side, total government expenditure is corrected for one-offs and items that are not directly under the control of government –namely interest expenditure and the non-discretionary part of unemployment expenditure– and the resulting discretionary expenditure is assessed against its trend, as measured by a smoothed estimate of potential GDP growth. As a result, the DFE is considered to provide a more accurate picture of the fiscal effort actually implemented by governments, especially as it is not likely to be affected by revenue shortfalls or windfalls. On the downside, in practice it requires quantified and other ex-ante information on revenue measures, an operation which is often very much model-dependent. Moreover, potential GDP growth, which is used to calculate the benchmark growth rate for expenditure, remains non-observable.

For the purpose of this chapter, the fiscal stance is measured by the change in SPB. This is helpful for methodological reasons, as it ensures consistency with the S1 indicator. ([129])

What fiscal multiplier(s)?

The value of the fiscal multiplier depends on a very large set of factors and varies widely. Fiscal multipliers are used to measure how fiscal policy affects GDP in a given country. They depend on numerous factors, including structural features of the economy such as the openness of the economy, the size of government and the progressivity of taxes; the economic situation, e.g. the position in the cycle and whether monetary policy is expected to react to fiscal impulse or facing constraints; the share of credit- or liquidity-constrained households; the fiscal variable considered, and therefore the composition of fiscal policies in terms of revenue and expenditure measures; the time horizon; the temporary or permanent nature of fiscal measures, and whether they are indeed perceived as such in the economy; and the time it takes for expectations to adjust. For instance the various multipliers used in the Commission's QUEST model in the case of temporary shocks range from 0 to 1.1 (Table IV.1.4).

It is only possible to apply relevant multipliers to the extent that information is available, otherwise a standard assumption needs to be made. In particular, multipliers specific to certain categories of measures can be applied when the composition of fiscal policies is already known. When the composition of measures and other criteria are not known, the usual practice is to use a neutral multiplier assuming a balanced composition. A multiplier of 0.8 can be considered to be a reasonable assumption in a situation in which there is a high share of financially constrained households and with monetary policy at the zero lower bound.

([129]) The aim here is not to describe as accurately as possible the fiscal effort to assess compliance with fiscal rules, but to discuss the methodology and in particular to compare the stabilisation and sustainability targets. For this, a common unit of measurement is needed and it has to be consistent with the S1 indicator.

Table IV.1.4: **Fiscal multipliers in QUEST for temporary shocks (one-year fiscal stimulus)**

	Low share of constrained households (30%)	High share of constrained households (60%)	High share of constrained households and zero lower bound
Government investment	0,9	0,9	1,1
Government purchases	0,8	0,8	1,0
General transfers	0,2	0,4	0,5
Transfers targetted to credit-constrained households	-	0,7	0,9
Transfers targetted to liquidity-constrained households	0,7	0,7	0,9
Labour tax	0,2	0,4	0,6
Consumption tax	0,4	0,5	0,7
Property tax	0,0	0,1	0,2
Corporate income tax	0,0	0,0	0,0

Source: Commission services.
Note: The table shows the first-year impact on EU GDP (as percentage difference from the baseline) for a temporary one-year fiscal stimulus of 1% of baseline GDP.

However, there is a high degree of uncertainty surrounding the estimation of multipliers. This was shown in European Commission (2012a) ([130]) and in many other publications. At the current juncture it seems warranted to perform some sensitivity analysis, with a particular interest in larger multipliers.

The numerical values of the ranges of fiscal targets derived from stabilisation needs are presented in the next chapter. Section IV.2.1. presents, in Graph IV.2.2, the ranges for the fiscal targets derived from stabilisation needs for all Member States using a multiplier of 0.8. The numerical values are reported in the annex. In addition, Table IV.2.6 in Section IV.2.4. presents the outcome of the sensitivity analysis.

1.3. MEASURING SUSTAINABILITY NEEDS: ASSESSING RISKS

This section and the next section move to issues related to sustainability needs and how to translate these needs into targets. Following the same structure as used for the discussion on stabilisation needs and targets in Sections IV.1.1. and IV.1.2., this section deals with the measurement of needs and Section IV.1.4. discusses how to translate these needs into fiscal targets. There is some consensus that the existing indicators, while they may have some weaknesses, give a comprehensive picture of sustainability challenges, which leaves the assessment of sustainability needs more clearly signposted than the case of stabilisation needs. Moreover, being already expressed in fiscal terms, indicators of risks to sustainability can be more easily translated into fiscal targets than cyclical indicators. As a result, the last steps of the analysis are detailed in Section IV.1.2.

1.3.1. Pros and cons of the S1 indicator against other measurements of risks to sustainability

The assessment of sustainability needs starts by describing the current situation. The difference with the stabilisation side is that the analysis is more forward- than backward-looking. The issue is to estimate the risks to fiscal sustainability. The backward-looking dimension, i.e. how debt was built up, matters mainly to the extent that the composition of debt (in particular in terms of maturity, currency and nationality of debt holders) can affect these risks.

Of the three sustainability indicators used by the Commission, the S1 indicator is the most relevant to underpin the analysis of the fiscal stance over the short to medium term. The Commission calculates three sustainability indicators named S0, S1 and S2 which focus on the short, medium and long term, respectively, thus giving an encompassing view of risks to sustainability (see Box IV.1.1). The S1 indicator considers the cumulated change in the structural primary balance needed from 2017 to 2021 in order to bring general government debt to 60% of

([130]) See European Commission (2012a), Chapter III.2., p. 113-137.

GDP by 2031. ([131]) ([132]) It is an established indicator of sustainability, with strengths especially in terms of consistency across Member States, coverage (as it includes future expenditure related to population ageing), availability and relevance of the time horizon. The S0 and S2 indicators also provide interesting information but are less directly useful for this analysis. ([133])

While the S1 indicator provides a good basis for the analysis, it has some limitations and needs to be complemented by other indicators. In view of the methodological weaknesses of the S1 indicator raised in Box IV.1.1, it is useful to cross-check its signals with alternative metrics. Its robustness is therefore tested against other indicators, both quantitative and qualitative: Commission's debt sustainability analysis (DSA), the distance to the budgetary medium-term objective (MTO) and the primary gap. All have their strengths and weaknesses.

([131]) The S1 indicator is here considered under the 2016 scenario, whereby the structural primary balance is held constant at its last outturn value (for 2016), rather than at its last forecast value as assumed in the standard S1.

([132]) The multiplier used to calculate the S1 indicator implies that fiscal consolidation is needed to reduce the debt ratio. Under certain assumptions, however, the debt-to-GDP ratio could be reduced in the short term with a fiscal expansion (see European Commission (2012a), Chapter III.3.).

([133]) The S0 indicator is particularly informative because, in addition to purely fiscal risks, it also takes into account risks of a non-fiscal origin, which played an important role in the recent crisis. Indeed, risks of fiscal stress not only stem from budgetary imbalances but also from macroeconomic and financial imbalances, as measured by variables which include private sector credit flow, the current account, households' savings and the net international investment position (see the breakdown of the S0 indicator into fiscal and financial-competitiveness sub-indicators in the Commission's Fiscal Sustainability Report referred to in Box IV.1.1). The inclusion of macro-financial variables in the fiscal surveillance framework is relevant, insofar as the build-up of macroeconomic imbalances has proven in the past to play a major role in generating fiscal risks, through the realisation of implicit liabilities (on the inter-linkages between private and public debt, see also IMF (2016)). While the S0 indicator is useful as an early detection indicator of risks of fiscal stress, it is relevant over the very short term (the upcoming year), which is shorter than the horizon needed for the analysis of the fiscal stance. By contrast, the S2 indicator takes a long-term perspective, showing the full impact of the future expenditure related to population ageing. This indicator is particularly useful to help detecting which Member States need to reform their pension and/or healthcare and long-term care systems further. The issue of such reforms, however important, is nonetheless less directly relevant for the analysis of the fiscal stance.

– ***The Commission's DSA*** provides a qualitative assessment of medium-term fiscal sustainability challenges, based on debt projection results under different scenarios and stress tests, as described in Box IV.1.1. It is therefore more comprehensive than indicators using only a baseline scenario, but the absence of a quantified conclusion implies that it cannot be used on its own to provide a numerical target. Moreover, it is not available for the euro area as a whole. ([134])

– ***The distance of the structural balance to the MTO*** has the advantage of being a formal element of the EU's budgetary surveillance framework. It indicates what progress a Member State should make, if any, before achieving a sound fiscal position that ensures debt sustainability. Its main drawback is that, like the S1 indicator, it depends on real-time estimates of the output gap. In addition, as the MTO is defined in a way that allows the full operation of automatic stabilisers, it includes an element of stabilisation and is hence not a pure indicator of sustainability needs.

– ***The primary gap*** is defined as the distance between the current primary balance and the primary balance consistent with a reduction of the excess of debt over 60% of GDP at a yearly pace of 5%, or, for countries with debt below 60%, the primary balance that would stabilise debt at its current level. ([135]) The advantage of the primary gap is that it relies on a simple calculation based mainly on observables. A drawback is that it does not incorporate the projected additional costs related to population ageing.

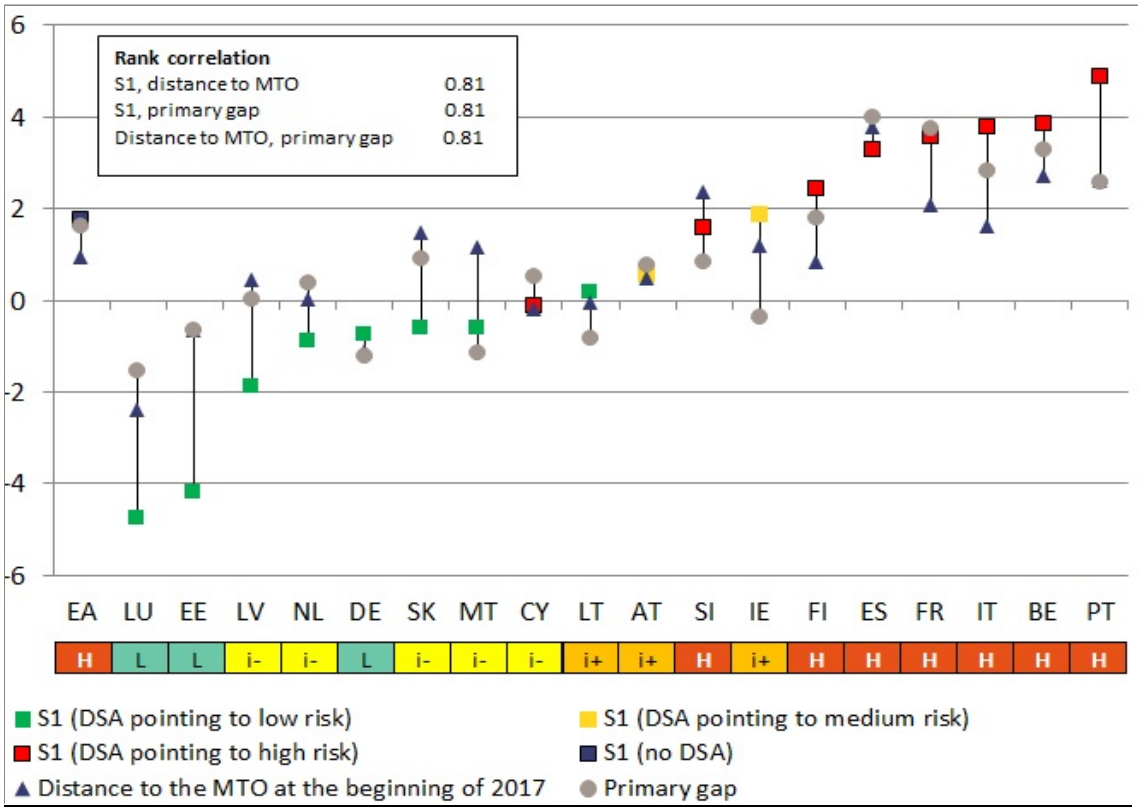
1.3.2. Comparative overview of assessments of sustainability needs

The alternative indicators of sustainability are found to provide consistent messages for high-risk countries, but somewhat less so for the others. The S1 indicator, the distance to the MTO and the primary gap are shown in Graph IV.1.9, along with the conclusion from the DSA by means of a colour code: the markers showing the level of

([134]) The IMF and the ECB produce similar analyses, see IMF (2013), and ECB (2012).

([135]) See Carnot (2014).

Graph IV.1.9: **Sustainability needs: sustainability risk indicators (% of GDP) and intensity of sustainability needs**



Source: Commission services.
Note: The chart shows the euro area on the left, followed by Member States ranked by increasing level of S1. There is no DSA for the euro area as a whole. S1 is expressed in terms of structural primary balance, the distance to the MTO in terms of structural balance, and the primary gap in terms of primary balance. A negative distance to the MTO means that the Member State is above its MTO. For Slovenia, the graph shows the distance to the minimum benchmark.
The line below the country labels indicates the intensity of sustainability needs derived from the various indicators. "H" stands for "high intensity" (Member States for which all indicators point to high sustainability risks), "i+" ("i-") stands for "intermediate case with a positive (negative) value of S1", respectively (Member States for which the S1 indicator is positive but low (negative), respectively, and at least one indicator points to sustainability risks), and "L" stands for "low intensity" (all indicators pointing to low sustainability risks).

the S1 indicator are coloured in red if the DSA points to high risk, yellow if it points to medium risk, and green if the risk is assessed to be low. For the euro area as a whole, the three numerical indicators stand very close to each other. Overall, the S1 indicator has a high rank correlation with the two other numerical indicators and matches well with the outcome of the DSA assessment. For those Member States in which S1 is positive and large, the other indicators consistently signal high risks to sustainability as well. Only in the case of low or negative values of S1 can conflicting messages be identified across indicators, in particular for Member States that are not at their MTO or for which the DSA assessment points to high risk.

As a result, the S1 indicator combined with the DSA outcome appears to be a reliable indicator of high sustainability risks. The robustness check suggests that it is relatively safe to use positive values of S1 if they are matched by an assessment of high risk according to the DSA. For low and negative values of S1, however, it is preferable to remain cautious and cross-check the information with other indicators.

Overall, the analysis leads to four levels of intensity of sustainability needs. The Member States with high needs (denoted "H" on Graph IV.1.9) clearly face medium-term risks to sustainability. At the other end, the Member States with low needs ("L") are those for which all sustainability indicators point to low risk. The two intermediate categories group Member States for

Box IV.1.1: **The European Commission's framework to assess fiscal sustainability**

The fiscal sustainability challenges faced by Member States are evaluated by the Commission based on three fiscal sustainability indicators with different time horizons, along with debt sustainability analysis (DSA). These are developed in the annual Fiscal Sustainability Report ([1]) and the latest assessment is reported in Table IV.1.a.

- **Short-term challenges are evaluated on the basis of the composite S0 indicator**, which captures risks over the coming year stemming from both the fiscal and the macro-financial sides of the economy. It uses a set of 25 variables, including most of the variables used in the scoreboard for surveillance in the context of the Macroeconomic Imbalances Procedure. ([2]) The main benefit of this approach is that it does not only consider purely fiscal factors but also the risks that may arise from non-fiscal factors such as financial and competitiveness variables, thus recognising the role of structural weaknesses in triggering fiscal stress.

- **Medium-term challenges are captured through the joint use of the S1 indicator and DSA**. The S1 indicator measures a fiscal gap, namely the additional fiscal adjustment, in terms of a cumulated improvement in the structural primary balance (SPB) over 5 years, required to reach a 60% general government debt-to-GDP ratio by 2031. ([3]) It takes into account future additional expenditure arising from an ageing population. ([4]) The strength of the S1 indicator is to provide a synthetic and easy-to-read metric at a relevant horizon for policy-making purposes. Since 2015, the Commission has complemented this indicator with a thorough DSA which incorporates information on the debt structure and contingent liabilities, and performs stress tests for public debt dynamics under a wide set of alternative scenarios and sensitivity tests. It classifies Member States as being at low, medium or high risk in the medium term. It also checks whether the assumed fiscal balance is realistic in view of past developments.

- **Long-term challenges are identified using the S2 indicator**. Like S1, the S2 indicator includes the financing of additional expenditure related to population ageing and measures a fiscal gap. The differences with S1 are the infinite time horizon and the scenario under consideration, which aims to stabilise the debt-to-GDP ratio without any specific requirement as to its level. In fact, the adjustment implied by S2 may lead to debt stabilising at relatively high levels, thus this indicator has to be taken with caution for high-debt countries. To account for the uncertainty surrounding any long-term projection exercise, calculations are made under alternative scenarios. ([5])

Overall, this framework provides a useful overview of fiscal sustainability challenges, although the assumptions can significantly affect the results. It is consistent across countries, based on a set of explicit and transparent criteria and enables the identification of the scale, nature and timing of the challenges. At the same time, the outcome is sensitive to the assumptions used: the current level of the SPB depends on real-time estimates of the output gap, the simulations rely on a mechanical multiplier effect, and the long-term simulations incorporate the expected impact of structural reforms, the effect of which will only materialise with a delay. The quantitative results and ensuing risk assessments should therefore be interpreted with caution and giving due account to country-specific contexts.

([1]) See European Commission (2016e).
([2]) See http://ec.europa.eu/economy_finance/economic_governance/macroeconomic_imbalance_procedure/scoreboard/
([3]) This horizon is regularly extended.
([4]) See European Commission (2015a).
([5]) For additional simulations under a lower total factor productivity growth, see European Commission (2016b).

(Continued on the next page)

Box (continued)

Table IV.1.a: **Summary heat map of risks to fiscal sustainability**

	SHORT-TERM risk category based on S0	MEDIUM-TERM			LONG-TERM risk category based on S2
		Risk category based on the DSA	Risk category based on S1	Overall MEDIUM-TERM risk category	
BE	LOW	HIGH	HIGH	HIGH	MEDIUM
DE	LOW	LOW	LOW	LOW	MEDIUM
EE	LOW	LOW	LOW	LOW	LOW
IE	LOW	MEDIUM	MEDIUM	MEDIUM	LOW
ES	LOW	HIGH	HIGH	HIGH	LOW
FR	LOW	HIGH	HIGH	HIGH	LOW
IT	LOW	HIGH	HIGH	HIGH	LOW
CY	LOW	HIGH	HIGH	HIGH	LOW
LV	LOW	LOW	LOW	LOW	LOW
LT	LOW	LOW	MEDIUM	MEDIUM	MEDIUM
LU	LOW	LOW	LOW	LOW	MEDIUM
MT	LOW	LOW	LOW	LOW	MEDIUM
NL	LOW	LOW	LOW	LOW	MEDIUM
AT	LOW	MEDIUM	MEDIUM	MEDIUM	MEDIUM
PT	LOW	HIGH	HIGH	HIGH	LOW
SI	LOW	HIGH	MEDIUM	HIGH	HIGH
SK	LOW	LOW	LOW	LOW	MEDIUM
FI	LOW	HIGH	HIGH	HIGH	MEDIUM

Source: Commission services

which the indicators give mixed signals and the S1 indicator is positive but low ("i+") or negative ("i-").

1.4. TRANSLATING SUSTAINABILITY NEEDS INTO FISCAL TARGETS

1.4.1. What policy objective for sustainability?

The purpose of this subsection is to discuss the implications of sustainability risks for fiscal policy objectives. This raises two questions: when is fiscal intervention needed to address sustainability needs? And what do more or less ambitious targets mean?

Whether there is a need for fiscal intervention depends on the sign of the S1 indicator: positive values indicate a need to consolidate, while negative values only point to leeway for expansion if needed. A positive value of the S1 indicator means that there is a current need to improve the fiscal position because of *existing* risks to sustainability. Action is justified by the fact that there are economic benefits from ensuring more sustainable debt dynamics. In addition, sustainability refers to the government's inter-temporal budgetary constraint: more than a deliberate policy objective, ensuring sustainable public finances reflects a constraint. A negative value of S1 (if confirmed by other sustainability indicators), by contrast, means that some leeway is available for possible fiscal expansion *if needed* – from a sustainability perspective, there are no economic grounds to increase the debt ratio to 60% (which is not a target but an upper limit), only room for manoeuvre to do so if justified for instance for stabilisation purposes.

The modulation of the fiscal targets also depends on the sign of S1. The S1 indicator provides, by definition, quantified information on the adjustment needed to bring the government debt-to-GDP ratio to 60% by 2031. While this final target cannot be modified, the pace of adjustment towards it may be modulated to reflect more or less frontloaded consolidation in the coming year, when S1 has a positive value. A negative S1, by contrast, would imply some scope for fiscal expansion if needed. In this case, it is necessary to scrutinise the information from all sustainability indicators. If some point to some risks to sustainability (intermediate category "i-"), some consolidation remains necessary. If all indicators point to low risk (category "L"), implementing part of S1 rather than all of it means keeping a fiscal buffer, which is more prudent than using all the available room for manoeuvre.

1.4.2. Illustrative quantified objectives for sustainability

Three targets could be considered for illustration.

- A low target of 20% of the value of S1 would correspond to a linear adjustment over the five years covered by the S1 indicator.

- A more ambitious target would envisage frontloading the implementation, with 50% of the total adjustment implemented in the first year. While 50% of the value of the S1 indicator could provide a close guess, the technically more accurate approach is to use an alternative version of the S1 indicator, with the adjustment calculated over a period of two years. In that case, the 50% target corresponds to a linear annual adjustment of this alternative gap.

- Finally, in the countries that do not have a need to consolidate (category "L"), a neutral fiscal stance would be the default target in terms of sustainability. The use that could be made of the fiscal leeway would be driven by stabilisation needs.

Section IV.2.1. in the next chapter presents in Graph IV.2.2 the ranges for the fiscal targets derived from sustainability needs and indicates numerical values for the point targets (Tables IV.2.1 and IV.2.2). The numerical values for the ranges and the point targets are also in the annex.

1.5. CONCLUSION

This chapter has covered the first part of the analysis of the fiscal stance. It started with an observation of current conditions and challenges, assessing them against relevant criteria, setting possible targets in terms of economic stabilisation and fiscal sustainability, and translating them into fiscal targets. This approach raises numerous methodological issues for which possible innovative solutions for a thorough, consistent analysis have been suggested, highlighting their merits and limits. This naturally leaves the door open for further discussion. At this stage of the analysis, for each country, two ranges of fiscal targets are available, indicating separate fiscal policy targets to address stabilisation and sustainability needs. This is what serves as a basis for the remainder of the analysis, keeping in mind the caveats flagged in this chapter.

The next chapter moves from the country level to the aggregate level. It discusses various ways to weigh stabilisation and sustainability needs and to aggregate country needs at the euro area level. It also addresses issues related to the aggregation of national fiscal stances and to the geographical and budgetary composition of the euro area fiscal stance.

2. AGGREGATION AND COMPOSITION ISSUES

This chapter deals with the issues faced in assessing the fiscal stance when moving from the Member State to the aggregate euro area level. It underlines the methodological challenges and lists possible approaches, comparing their respective strengths and weaknesses. As different approaches lead to different outcomes, this chapter also discusses which approaches seem more relevant, depending on the context.

The specific aim of this chapter is to derive a point estimate of the fiscal stance that would address the needs of the euro area as a whole. This is the benchmark against which one could later assess whether the aggregate fiscal stance – obtained as an aggregation of national fiscal policies– is appropriate.

This chapter finally discusses issues related to the composition of the aggregate fiscal stance. This includes both its geographical composition – how national fiscal stances form the aggregate fiscal stance – and its budgetary composition – what budgetary items are used for discretionary intervention.

The starting assumption is the set of country-specific ranges of fiscal targets addressing either stabilisation or sustainability needs, as identified in Chapter IV.1. In Chapter IV.1. the needs on the stabilisation and sustainability sides were assessed separately, the fiscal targets were expressed as possible ranges and the analysis remained at the country level, without discussing aggregation issues.

To estimate a point target for the euro area, three steps are needed.

- **Step A chooses one point target within each range of targets**. This is a crucial step to make the analysis operational. It is based on a thorough analysis of each Member State's situation and depends on the objective, the intensity of stabilisation and sustainability needs and the dynamics in the economy irrespective of fiscal policy.

- **Step B puts together stabilisation and sustainability targets**. This is, politically, the main step, as it involves discussing the relative importance of the objectives and, if necessary, finding solutions to deal with trade-offs.

- **Step C aggregates country-specific variables at the euro area level**. The main challenge with this step is how to summarise information at the aggregate level in a way that incorporates information on spillovers, contagion and non-linearities.

Each step raises methodological issues, and the order of the steps also matters. This chapter first discusses the issues raised by each of the three steps separately, although anticipating the possibility of processing them in any order (for instance, the chapter presents solutions to perform Step B on ranges or on point targets, depending on whether this is done before or after Step A). Thereafter the chapter discusses to what extent the sequence in which the steps are applied matters. The order can be first Step A, then Step B and finally Step C, but any other order is also possible. Each sequence shows the aggregation from a specific angle, so that there is no optimal option. This discussion includes numerical examples of fiscal stances obtained under the various sequences of steps.

From a methodological perspective, the two most challenging issues with aggregation are the impact that fiscal policy in one Member State has on other Member States and the presence of non-linearities. The fact that fiscal decisions in one Member State have an indirect impact on the situation of other Member States is the main economic justification for analysing fiscal policies from a euro area perspective. From a stabilisation perspective, the impact on growth in other Member States is via spillover effects (e.g. positive spillovers in the case of a fiscal stimulus). From a sustainability perspective, the impact on other Member States consists of contagion effects on interest rates (e.g. in the case of a risk of sovereign default). These effects can operate via market channels or confidence effects. In economic circumstances that depart from normal situations, this issue is reinforced by a risk of possible non-linear developments. Such cliff effects can be, on the stabilisation side, situations in which, for instance, persistent sub-investment ends up having a sizeable impact on potential growth, long-term unemployment translates into permanent poverty

for part of the population, or persistent low inflation results in a de-anchoring of expectations. On the sustainability side, this could refer to a substantial adverse snowball effect leading to explosive debt dynamics, possibly entailing more or less severe sovereign default and the impossibility of refinancing.

These effects are difficult to identify, measure and factor in. Although crucial for the analysis, spillovers have thus far not been included in the measurement of the fiscal stance, because of the methodological difficulties that they raise. This is a clear weakness that needs to be addressed, as spillover effects imply that the euro area as a whole may be different from the sum of its parts taken in isolation. Similarly, there is no easy way to deal with non-linearities, especially when these have an impact on other Member States. If a Member State is close to a critical situation, this may be offset by other Member States in the aggregate numbers and go unnoticed, but still there may be significant adverse implications for the euro area if the cliff effect materialises. This suggests that looking only at aggregate numbers might lead to overlooking risks. Once again, this deserves closer attention.

This chapter presents possible ways to incorporate spillovers, contagion risks and cliff effects in the analysis. It does so at two different stages of the analysis: first in the construction of the desirable fiscal impulse, ([136]) i.e. when aggregating the needs or the targets; and second, when it presents the effects of different compositions of the aggregate fiscal impulse. Concerning the first stage, the chapter suggests a possible solution to reflect spillover effects when aggregating stabilisation needs, namely by taking into account the weight of intra-EU trade, as this is one of the main channels of transmission. As regards the contagion of sustainability risks, the analysis considers polar cases of positive and negative contagion as benchmarks against which the actual economic and institutional situation is compared. Finally, it takes into account the proximity of cliff effects as an important factor to weigh stabilisation needs against sustainability needs, and it also uses risk indicators as a means to aggregate Member States in a non-linear way. Concerning the second stage, the Commission's QUEST model is used to analyse the full impact of spillovers under the assumption that a certain euro area fiscal shock is chosen (as discussed in Section IV.2.5).

Each of the three steps allows putting more focus on particularly critical situations.

- **Under Step A, stronger needs imply more ambitious targets (see Section IV.2.1.)**. This is the case on the stabilisation side if cyclical conditions are abnormal and on the sustainability side if sustainability is at high risk.

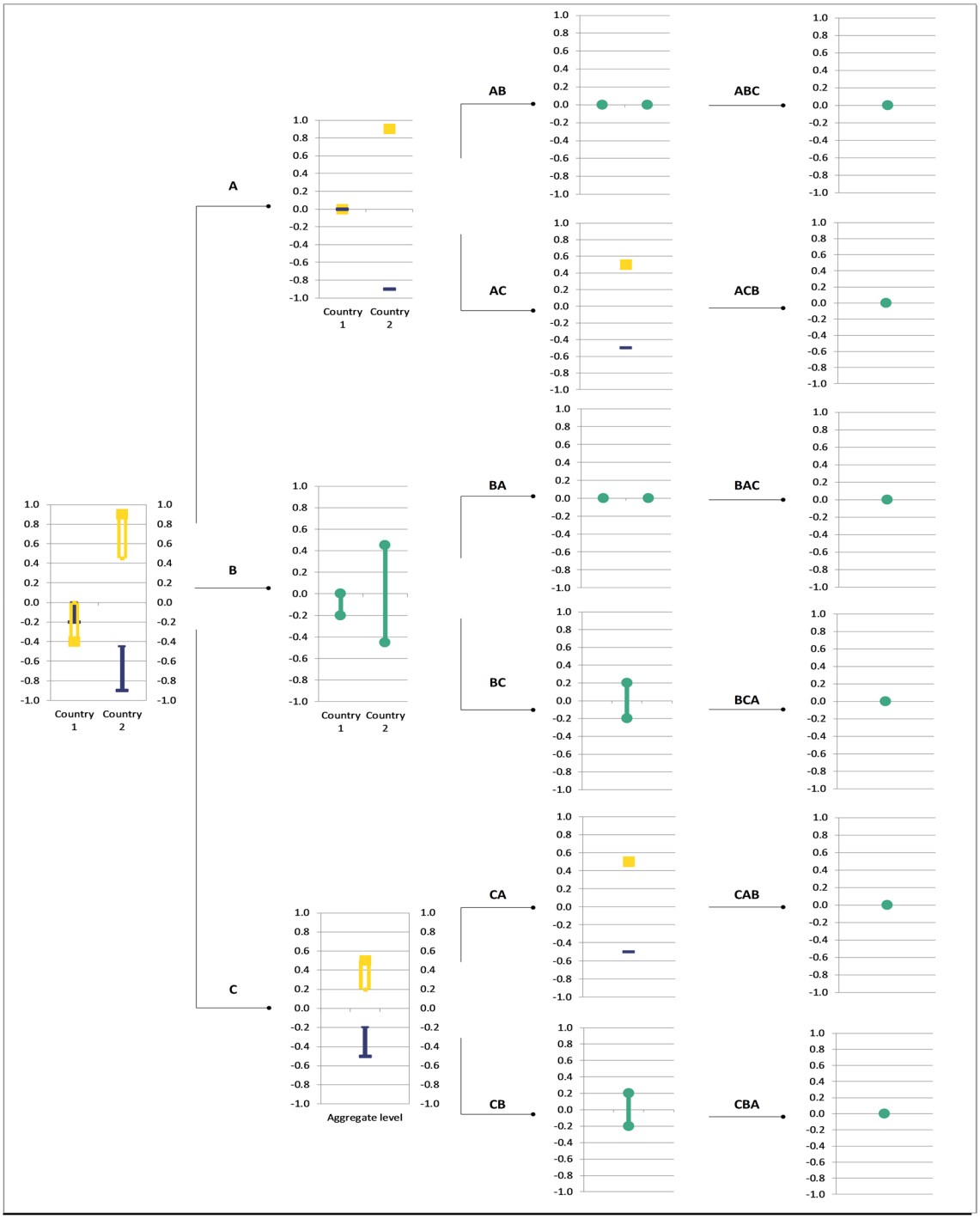
- **Under Step B, one objective may prevail over the other, if they give conflicting messages, on the basis of three non-exhaustive criteria (see Section IV.2.2.)**: (1) if the economy is close to a cliff effect; (2) if fiscal policy is in a better position than other macroeconomic policies to address the issue; and (3) if the negative side effects on the other objective are limited compared to the benefits with regard to the chosen objective.

- **Under Step C, specific weights can be used to bring crucial Member States to the fore (see Section IV.2.3.)**. Weighting Member States by their economic size (i.e. by GDP) is standard but not ideal, as it tends to mask risks and does not reflect spillover and contagion effects nor non-linearities. Instead, assigning Member States weights that reflect the importance of their needs and their potential impact on other Member States is a possible solution to avoid losing this information in the aggregation.

As an additional consideration, the relevant aggregation level can switch from national to euro area-wide depending on the economic situation, which also affects the efficiency of fiscal impulse. On the stabilisation side, higher multipliers and the constraints faced by monetary policy suggest that aggregated fiscal impulse may be more needed and more efficient than in normal times. On the sustainability side, while recent policies and changes to the institutional framework

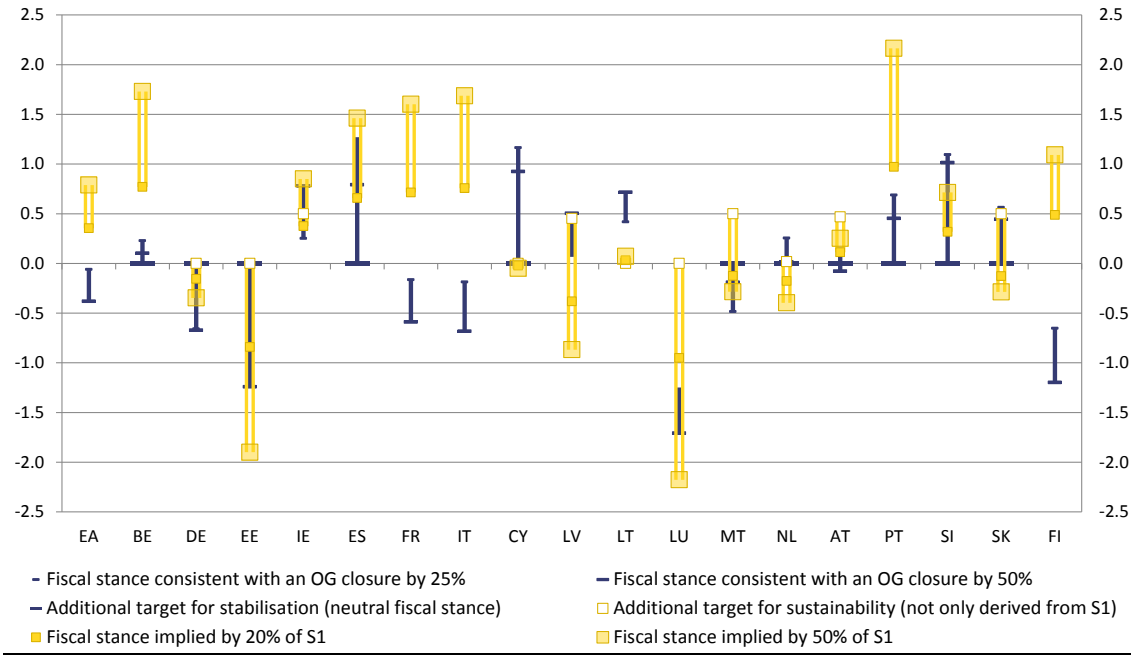
([136]) The desired fiscal impulse, or shock, is understood here as the desired fiscal stance. It can be expansionary, restrictive or neutral (no impulse), depending on the situation.

Graph IV.2.1: **The three steps of aggregation**



Source: Commission services.
Note: The yellow squares indicate targets derived from sustainability needs, the blue horizontal lines targets derived from stabilisation needs, and the green circles the targets combining both objectives. As this is only for illustration, this graph shows aggregation steps for a two-country area, and the ranges are fictitious. Steps A, B and C do the following: Step A: choosing one point target within a range, Step B: combining stabilisation and sustainability into one target (in the restricted sense as defined in Section IV.2.2.), Step C: aggregating variables across Member States. In the graph, the six different sequences lead to the same aggregated fiscal stance, although this is not necessarily the case.

Graph IV.2.2: **Ranges of fiscal targets derived from stabilisation and sustainability needs**



Source: Commission services.
Note: Fiscal stance measured as the change in the SPB. Additional target for stabilisation: a neutral fiscal stance if the output gap is broadly closed in 2016 or if a neutral fiscal stance implies a faster output gap closure than targeted. Additional target for sustainability: either a neutral fiscal stance if the S1 indicator is negative and all the other indicators point to low risk, or, if S1 is low or negative but other indicators point to some risk, benchmark consolidation by 0.5% of GDP or the distance to the MTO if lower than 0.5%.

have significantly reduced the contagion risk, ([137]) high sustainability risks in some Member States call for further consolidation, both for the benefit of the Member States themselves and to preserve confidence in the rest of the euro area.

Overall, aggregation entails a loss of information that can only partially be avoided. While the presented methodological options can be envisaged to convey some of the information in the aggregate numbers, it also appears useful to keep in parallel explicit information on tensions across Member States and between policy objectives.

The remainder of this chapter is structured as follows. The first three sections discuss the issues raised by each of the three steps and present ways to deal with them. Section IV.2.1. deals with choosing point targets within the ranges (Step A), Section IV.2.2. with ways to combine and weigh up the stabilisation and sustainability targets (Step B) and Section IV.2.3. with the aggregation of needs across Member States (Step C). Section IV.2.4. discusses the implications of the order in which the steps are processed. Section IV.2.5. discusses the impact of the geographical composition of the aggregate impulse –i.e. across Member States– and its budgetary composition. Section IV.2.6. concludes.

2.1. STEP A: CHOOSING POINT TARGETS WITHIN THE RANGES

As the three steps can be processed in any order, this section envisages ways to deal with Step A before or after the two other steps. The three steps can be performed following six possible sequences, as presented in Graph IV.2.1. Applying Step A before or after aggregating Member States (Step C) does not change the nature of the analysis. In both cases, single target points are chosen separately for stabilisation and sustainability purposes within the existing

([137]) These include, in particular, enhanced fiscal and macroeconomic surveillance, the establishment of the European Stability Mechanism, the banking union and monetary policy decisions, including quantitative easing and the introduction of Outright Monetary Transactions (OMT).

respective ranges. This is done on the basis of either national or aggregated numbers. The two points will then be compared in order to determine the preferred fiscal stance. By contrast, whether one deals with Step A before or after combining the stabilisation and sustainability objectives (Step B) changes the available information; this section therefore treats these two cases separately.

Dealing with Step A on the basis of separate ranges for stabilisation and sustainability (i.e. before Step B)

The choice of a point target within objective-specific ranges directly derives from the analysis developed in Chapter IV.1. Chapter IV.1. provided ranges for possible stabilisation and sustainability targets, which are summarised in Graph IV.2.2. The numerical values are reported in the annex. The choice of a precise target within a range depends on several indicators for stabilisation and sustainability, as discussed in that chapter. ([138]) It also reflects the developments in the economy in the absence of discretionary fiscal intervention. ([139]) When needs are assessed to be low, no active intervention from fiscal policy is needed and a neutral fiscal stance is the default option. When the economy needs stabilisation and, in the absence of fiscal intervention, the output gap closes faster than targeted, it is preferable to let the output gap close.

Regarding stabilisation, the chosen target varies with the needs for stabilisation as follows (see Table IV.2.1 for numerical values):

- As described in Subsection IV.1.2.2., the default target is a neutral fiscal stance, unless the spontaneous momentum in the economy implies that a neutral fiscal stance is not sufficient to close the output gap by 25% or 50% when deemed necessary.

- A closure of at least 25% (50%) is targeted when the intensity of stabilisation needs, as identified in the heat map of the previous chapter, is medium (high).

- When a neutral fiscal stance implies that the output gap closes faster than the minimum targeted closure, the fiscal target is a neutral fiscal stance. This reflects the policy choice that the Member State should not prevent its output gap from closing "too" rapidly.

- When the output gap is expected to be broadly closed in the current year, there is no specific target in terms of output gap closure for the next year and the fiscal target is a neutral fiscal stance. ([140])

On the sustainability side, the targets corresponding to the four categories are as follows (see Table IV.2.2 for numerical values):

- No consolidation is needed and the target is a neutral fiscal stance when low risks are consistently signalled by all indicators.

- Some consolidation is needed for the Member States in the two categories of intermediate risk. Both categories are defined by some of the indicators pointing to some risk, the difference being that the S1 indicator is either positive or negative. In particular, in case the MTO has not yet been achieved, consolidation at a benchmark pace of 0.5% of GDP (or by 20% of the S1 indicator, if this is larger) can be envisaged as a target. ([141]) If the distance to the MTO is lower than 0.5% of GDP and 20% of S1, this distance (if positive) is used as the target. ([142])

([138]) The indicators include, on the stabilisation side, the output gap based on the NAWRU and the structural unemployment rate, and on the sustainability side, the Commission's S1 indicator and debt sustainability analysis, the distance to the medium-term budgetary objective and the primary gap.

([139]) This is computed as the change in the output gap assuming that the fiscal stance is neutral.

([140]) The expected evolution of the output gap if the fiscal stance is neutral is therefore not taken into account in that case, unless this would imply an extraordinarily large widening that would need to be contained.

([141]) Such a pace reflects a long-established benchmark within the EU fiscal framework. The matrix of requirements under the preventive arm of the Stability and Growth Pact includes a modulation of consolidation depending on cyclical conditions, thus incorporating an element of economic stabilisation. Using a fixed benchmark means that the focus is only on sustainability needs, which is the intention in Part IV for the sake of analysis.

([142]) Formally, the following formula is used to calculate the target: *min [max (distance to MTO, 0), max (0.5, 20% of S1)]*.

Table IV.2.1: **Point targets for stabilisation**

	Intensity of stabilisation needs	Point target	
		OG closure (%)	Change in SPB (% of GDP)
EA-19	**high**	**50**	**-0,4**
ES	high	93*	0
FR	high	50	-0,6
IT	high	50	-0,7
CY	high	146*	0
LU	high	50	-1,7
NL	high	51*	0
PT	high	98*	0
FI	high	50	-1,2
BE	medium	70*	0
AT	medium	41*	0
SI	medium	356*	0
DE	low		0
EE	low		0
SK	low		0
IE	medium	25	0,3
LV	medium	25	0,1
LT	medium	25	0,4
MT	medium	66*	0

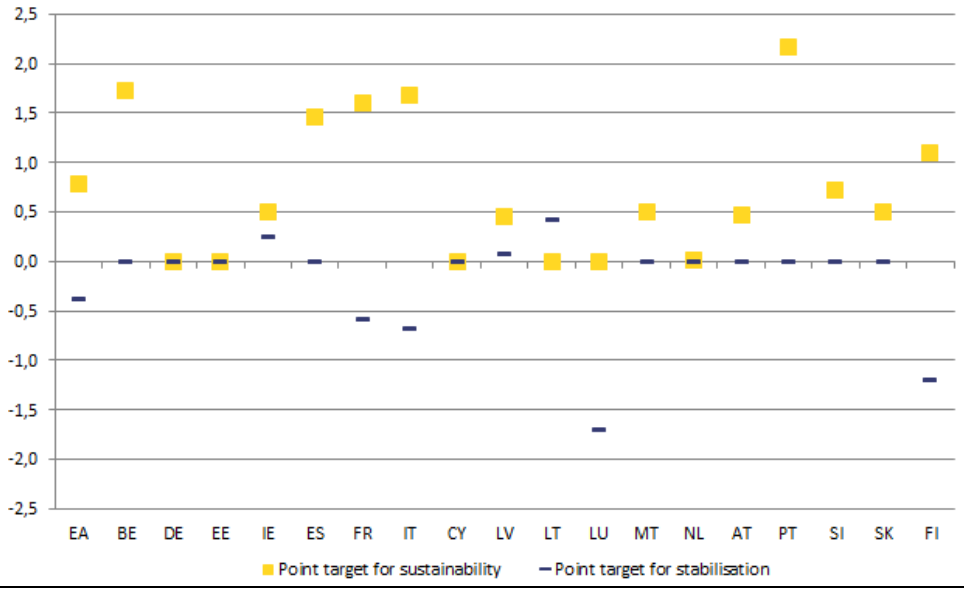
Source: Commission services.
Note: The cells in dark or pale blue denote Member States with a negative output gap in 2016, while the yellow cells contain Member States with a positive output gap. The green cells refer to Member States that are expected to have a broadly closed output gap in 2016 and for which there is therefore no specific target in terms of output gap closure for 2017, implying that the fiscal target is a neutral fiscal stance.
The numbers followed by an asterisk are not targets as such, but indicate the output gap closure consistent with a neutral fiscal stance when this closure is faster than 25% (if the intensity of stabilisation needs is medium) or 50% (if it is high).

Table IV.2.2: **Point targets for sustainability**

	Intensity of sustainability needs	Point target	
		% of S1 or 0.5% of GDP benchmark	Change in SPB (% of GDP)
LU	low	0	0
EE	low	0	0
DE	low	0	0
LV	intermediate -	dist. to MTO	0,5
NL	intermediate -	dist. to MTO	0,0
SK	intermediate -	benchmark	0,5
MT	intermediate -	benchmark	0,5
CY	intermediate -	dist. to MTO	0
LT	intermediate +	dist. to MTO	0
AT	intermediate +	dist. to MTO	0,5
IE	intermediate +	benchmark	0,5
SI	high	50	**0,7**
FI	high	50	**1,1**
ES	high	50	**1,5**
FR	high	50	**1,6**
IT	high	50	**1,7**
BE	high	50	**1,7**
PT	high	50	**2,2**
EA-19	**high**	**50**	**0,8**

Source: Commission services.
Note: "Intermediate –" stands for "Intermediate negative" and "Intermediate +" stands for "Intermediate positive", reflecting the sign of the S1 indicator. In these two categories, the benchmark consolidation of 0.5% of GDP (or by 20% of S1 if this is higher) is replaced by the distance to the MTO if it is lower (including when it appears as 0.5% in the table, due to rounding). The 50% target uses an alternative scenario of the S1 indicator assuming consolidation over two years instead of five.

Graph IV.2.3: **Step A: Point targets for stabilisation and sustainability (change in the SPB as % of GDP)**



Source: Commission services.

- A target consolidation by 50% of the S1 indicator is chosen for Member States with high risks to sustainability.

Graph IV.2.3 summarises the point targets chosen for both stabilisation and sustainability objectives as computed separately (outcome of Step A). In the graph, the yellow squares indicate the sustainability targets and the dark blue lines indicate the stabilisation targets. These point targets will then be used to decide between the stabilisation needs and the sustainability needs (Step B) and for the aggregation (Step C) in case Step A was applied at the level of Member States.

Dealing with Step A after merging stabilisation and sustainability targets (i.e. after Step B)

When Step A comes after Step B, the fiscal target is in principle the middle of the range. Step B constructs a range of fiscal targets which combine stabilisation and sustainability needs, as explained in further details in Section IV.2.2. below. For the sake of brevity, this is named the range of "acceptable" fiscal stances, in the sense that these stances allow addressing the needs in the economy. Having Step B early in the aggregation process generally implies that much of the information on tensions between sustainability and stabilisation is lost. This makes it then more difficult to decide on a point target within the merged range, not knowing to what extent each objective is addressed. Therefore, after Step B is completed, the default solution for Step A is to take the middle of the range.

2.2. STEP B: PUTTING STABILISATION AND SUSTAINABILITY NEEDS TOGETHER

This subsection discusses issues and possible solutions to putting together the two types of needs. Forming views about what the economy needs in terms of stabilisation, on the one hand, and sustainability, on the other hand, is not sufficient to tell what fiscal policy should aim for. To define a single target for the fiscal stance, it is necessary to weigh one side against the other, i.e. to choose whether both objectives should be treated on an equal footing or one objective prevails. It should be kept in mind, throughout this section, that the aim is not to discuss the size of the needs, but only to decide whether one objective should be given more consideration than the other in case the two needs require conflicting fiscal policies, which is not necessarily the case in all circumstances.

Economically and technically, putting the two sides together is different when the targets are ranges or points. When the corresponding targets are still expressed in the form of ranges (i.e. if Step B comes before Step A), Step B consists in merging the two ranges into one. This defines the range of "acceptable" fiscal stances within which one fiscal stance will subsequently be chosen. The question is whether acceptable fiscal stances should be restricted to those that accommodate both the stabilisation and the sustainability objective, or if the range should be broader and also include the possibility to address one objective at the expense of the other. When the targets are already expressed as point targets (i.e. if Step B comes after Step A), the question is whether to treat sustainability and stabilisation targets on an equal footing or to attribute a higher weight to one of them.

Weighing sustainability and stabilisation needs requires further economic analysis to set policy priorities when the two needs require incompatible policies. If needs are compatible and equally important, this is a straightforward case and a simple average of the targets seems to be a good solution. In other cases, however, the choice is less straightforward. If, for instance, the cyclical conditions call for some expansion, while sustainability risks point to a need for some consolidation, criteria based on thorough economic analysis are needed to decide whether the weight should be fully on stabilisation, fully on sustainability or shared between the two objectives.

At least three criteria need to be taken into consideration in this regard: the risk of non-linear developments, the degree of efficiency of fiscal policy and the side effects across objectives. First, more emphasis may be put on sustainability or stabilisation needs if the Member State is close to a so-called cliff effect which would entail major adverse implications for the euro area. Second, the efficiency of fiscal policy in addressing stabilisation or sustainability needs may depend on the economic situation. Third, in case of a conflict between the objectives, addressing one at the expense of the other may produce more or less large side effects on the other objective. These three questions are covered below.

2.2.1. First criterion – Cliff effects: four cases under scrutiny

In economic circumstances that depart from normal situations, there is a risk of non-linear developments known as cliff effects. While this chapter cannot provide a comprehensive analysis of all potential cliff effects, it focuses on four cases that illustrate possible non-linearities in the recent or current situation. ([143]) On the stabilisation side, it considers two cases: the risk of a de-anchoring of inflation expectations, and social concerns related to the level of long-term unemployment. On the sustainability side, it measures tensions on government bond markets and assesses risks of fiscal stress in the short term.

Cliff effects on the stabilisation side

The first cliff effect under consideration, on the stabilisation side, is *the de-anchoring of inflation expectations*. While the European Central Bank's objective of price stability is defined over the medium term, an extended deviation from the inflation target might raise concerns about risks to the price stability target. Should such a de-anchoring become more likely, this could make a case for fiscal policy supporting convergence towards the inflation target. As an indicator of a possible cliff, we use the number of consecutive months in which inflation has been significantly lower than the ECB's target of slightly below 2%. In the past two years, euro area HICP inflation has been lower than 0.5%, year-on-year. While this is partly explained by low oil prices, core inflation ([144]) has also been relatively low, not exceeding 1% year-on-year in the euro area in the past 28 months. This might erode the so far well-anchored belief that inflation will necessarily return to its objective over the medium term. Recent evidence shows that, in the current environment of low inflation, zero lower bound and economic uncertainty, long-term inflation expectations tend to be more sensitive to short-term expectations and actual HICP inflation, which can be interpreted as some sign of de-anchoring. ([145])

De-anchoring is a risk that concerns the aggregate euro area. When analysing the risk of de-anchoring of inflation expectations, it should be kept in mind that this risk is relevant, for policy purposes, only at the aggregate level in a monetary union. The ECB's objective of price stability and policy action are defined for the euro area as a whole, not for individual Member States.

The interpretation of a prolonged period of low inflation in individual Member States is more complex. While the majority of euro area Member States ([146]) are undergoing a period of prolonged HICP low growth, the current low levels of inflation reflect different realities across Member States. In some countries, lowering relative prices over an extended period is a means to regain competitiveness. The role of fiscal policy in that case should take into account the risk of offsetting competitiveness gains.

The second cliff effect regards *the persistence of high long-term unemployment*. Persistent high unemployment not only is an indication of unfavourable economic conditions but also has social consequences. When the same individuals remain unemployed over an extended period of time, this tends to result in skills depreciation, deteriorated employability and increased poverty – which, in turn, undermines future growth. The total unemployment rate is in this respect not sufficiently telling, as it includes short-term unemployment, which to some degree is not problematic as it is only frictional. By contrast, focusing on the share of the labour force that is affected by long-term unemployment gives more specific insight on the risk that a share of the population gets trapped in structural unemployment and poverty.

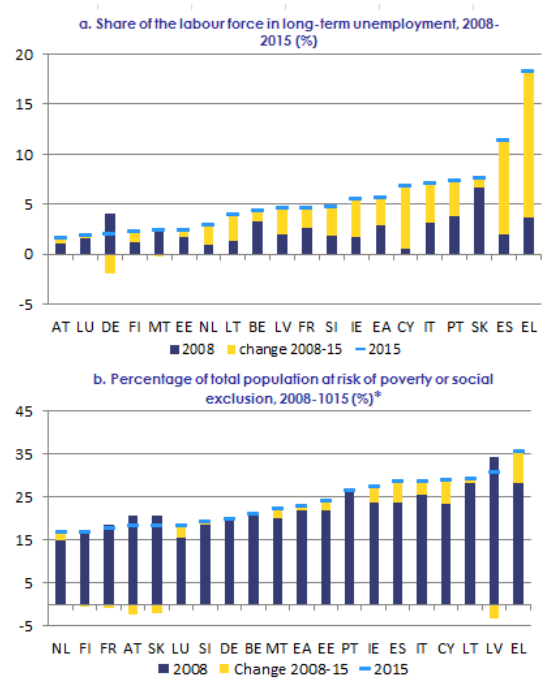
Graph IV.2.4a shows that, in most Member States, long-term unemployment affected a larger share of the population in 2015 than prior to the crisis. In the euro area as a whole, 2.9% of the labour force was in long-term unemployment in 2008. After peaking at 6.2% in 2014, this ratio still stood at 5.7% in 2015, nearly double its level in 2008. In half of the Member States, there have been similar or larger increases in long-term unemployment, especially when compared with relatively low levels in 2008. Conversely, in six countries, long-term unemployment has remained limited or even

([143]) Exogenous risks to the economic outlook and/or to sustainability that do not directly originate from the Member State under consideration, but are e.g. related to global economic developments, could also be considered.
([144]) Excluding energy and unprocessed food prices.
([145]) T. Łyziak and M. Paloviita (2016).

([146]) See Table IV.1.1 in Chapter IV.1.

declined. Overall, the fact that long-term unemployment is still well above pre-crisis levels in a large share of Member States suggests that there is a risk of hysteresis in deteriorated social conditions for part of the population in these countries. At the same time, the share of the population at risk of poverty or social exclusion in the euro area still stood in 2015 at 23.0%, 1.3 percentage points above its pre-crisis level (Graph IV.2.4b). This risk affects the populations in the same Member States as those with high long-term unemployment. ([147])

Graph IV.2.4: **Long-term unemployment and risk of poverty in the euro area**

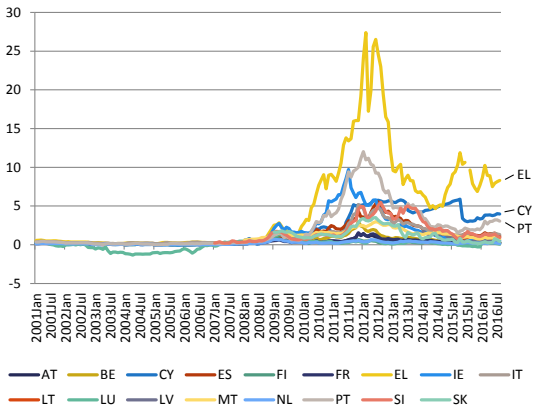


Source: Commission services.
* Latest observation for IE: 2014.

Cliff effects on the sustainability side

The third cliff effect regards *tensions on government bond markets.* Tensions in euro area Member States are traditionally measured by the government bond yield spreads relative to Germany. ([148]) As shown in Graph IV.2.5, following heightened tensions between 2010 and 2014, yields have in most cases converged back to the vicinity of the level of Germany. The three exceptions are Greece, Cyprus and Portugal, for which noticeable differences are still observed, indicating that markets identify higher risks in these countries.

Graph IV.2.5: **Sovereign bond yield spreads with respect to Germany (%)**



Source: ECB. Latest observation: August 2016.

Finally, we look at *imminent risks of fiscal stress* as measured by the S0 indicator. As shown on the heat map of sustainability risks, ([149]) the S0 indicator does not currently detect imminent risks in euro area Member States. Although, at a more disaggregated level, some indicators point to certain fragilities, these are not sufficiently marked to be reflected in the overall S0 indicator reported in European Commission (2016e).

Overall, information on the proximity to a cliff effect puts more weight on the corresponding objective. Where persistent low inflation is coupled with persistently high long-term unemployment, this may suggest that the economy particularly needs stabilisation, which could be at least partly provided by fiscal policy. On the sustainability side, in the Member States that are not facing higher risk premia, the absence of strong warnings of upcoming fiscal stress could support the reading that stabilisation is a more critical issue than sustainability. These factors are in general not uniformly shared among euro area Member States. Therefore, the weight attributed to each objective is likely to differ across countries.

([147]) See "The share of persons at risk of poverty or social exclusion in the EU back to its pre-crisis level", Eurostat press release, 17 October 2016, http://ec.europa.eu/eurostat/documents/2995521/7695750/3-17102016-BP-EN.pdf

([148]) This is because the German bund is considered to be the safest asset in the euro area.

([149]) See Box IV.1.1 in Chapter IV.1.

This may also change over time. It will be the case, for instance, if there are signs that inflation is picking up or that unemployment declines, or if financial markets appear increasingly nervous with regard to sovereign debt in certain countries.

2.2.2. Second criterion – The efficiency of fiscal policy

The second criterion that can guide the relative priority to attribute to stabilisation and sustainability needs regards the efficiency with which fiscal policy can address them. Two arguments need to be scrutinised in this regard. First, to what extent is discretionary fiscal policy generally an efficient policy tool to tackle the identified needs? Second, in the specific current context, is fiscal policy likely to be more capable than usual of achieving these objectives?

On the sustainability side, some measures can complement consolidation to strengthen medium-term sustainability. If risks to sustainability come mainly from future ageing costs, credible reforms of the pension and health-care systems can improve future debt dynamics, thus improving confidence and reducing risk premia. This would reduce the necessity of acting via an improved primary balance.

On the stabilisation side, if problems are not of a purely cyclical nature, structural reforms could prove more efficient or are at least needed as a complement. In particular, unemployment can also be fought with reforms on the labour market and in education and professional training systems, and with improved competitiveness. In the same vein, making the general regulatory or legal framework more efficient can, in certain cases, facilitate private sector investment.

As a general rule, discretionary fiscal impulse is effective to stabilise the economy under specific conditions. The impact of fiscal shocks on GDP depends on the fiscal multiplier. As shown in Subsection IV.1.2.3., the size of the fiscal multipliers depends on many factors, the most relevant of which being i) the budgetary composition of the fiscal shock, ii) the absence or not of financial constraints for economic agents, iii) the existence of sustainability risks, iv) the international economic environment and the degree of openness of the economy and, most important, v) the stance of monetary policy. These factors have to be assessed in order to decide whether it is worth supporting growth via fiscal impulse. Second, as discussed in Subsection IV.1.2.1., it has to be taken into account that fiscal fine-tuning is in principle not optimal to stabilise the economy, in particular because of implementation lags.

In the current conditions, fiscal impulse is likely to be more needed and more efficient to stabilise the economy than in normal times. As noted above and explained in Box IV.2.1, in normal times the role of fiscal policy in stabilising the economy is expected to be limited to asymmetric shocks and ensured by the operation of automatic stabilisers. In case of a severe crisis and with interest rates at the zero lower bound (ZLB), however, the situation is different for three reasons. First, automatic stabilisers alone may not provide a sufficient response to large country-specific shocks. Second, monetary policy faces constraints which may affect its ability to fully address symmetric shocks, also related to the still high indebtedness of the private sector. Third, fiscal multipliers are expected to be larger at the ZLB, especially if, in addition, the share of financially constrained households is high.

Box IV.2.1: **The policy mix in the euro area in normal times and with very low or negative interest rates**

The policy mix in the euro area combines a centralised monetary policy and decentralised national fiscal policies. The monetary policy implemented by the ECB is focused on achieving euro area price stability, and therefore only able to react to shocks that affect the euro area as a whole. Given the very limited size of the EU budget, the stabilisation role in case of country-specific shocks is mainly ensured by national fiscal policies.

In normal times, automatic fiscal stabilisers should be sufficient for fiscal policy to cushion country-specific shocks. In this regard, the SGP aims at ensuring that the budgets of Member States are in a position which allows automatic stabilisers to play freely. More specifically, being at the MTO under the preventive arm ensures a sufficient buffer for automatic stabilisers to operate fully without breaking the 3% of GDP reference value for the nominal deficit.

As regards the interaction between monetary and fiscal policies in normal times, economic models usually expect that fiscal interventions such as temporary stimuli, which put upward pressure on inflation, normally trigger a tightening of monetary policy, thus weakening the expansionary impact on output. Conversely, the contractionary impact of fiscal consolidations in the short term can potentially be dampened by some simultaneous monetary expansion.

By contrast, if nominal interest rates are at the zero lower bound (ZLB) or, more generally, very low or negative, standard monetary policy has limited scope to stabilise the economy, as interest rates cannot react to shocks. In that case, fiscal policy is in a better position to play the stabilisation role; moreover, its effect is reinforced, compared to normal times, by the absence of monetary tightening providing de facto monetary accommodation. In the case of a fiscal stimulus, the absence of monetary tightening implies that higher inflation reduces real interest rates, thus supporting demand and amplifying the expansionary impact. The fiscal multipliers can therefore be significantly larger at the ZLB than in normal times, as generally found in dynamic stochastic general equilibrium (DSGE) models.

In this sense, the current context of very low or negative interest rates argues in favour of a more active role for fiscal policies. This is, however, mitigated by the fact that despite the current level of rates, monetary policy is not ineffective, as shown by the non-standard measures implemented by the ECB.

2.2.3. Third criterion – Side effects across objectives

The last criterion is a cost/benefit analysis as it regards the extent of the adverse implications of addressing one objective at the expense of the other. Whether the side effects are worse in one direction or the other is time- and country-specific. On the one hand, fiscal stimulus may affect fiscal buffers or even put sustainability at risk. On the other hand, fiscal consolidation may hinder the economic recovery. There is no clear-cut ex ante solution to this trade-off, as it depends on the specific conditions in the Member State or the euro area at a given time. As a rule, discretionary action is more advisable in the direction of the most critical need and if the benefits outweigh the side effects on the other need. In some cases, however, it is analytically difficult to decide between benefits and costs, and the solution to mitigate the two or lean in one direction is up to the political level.

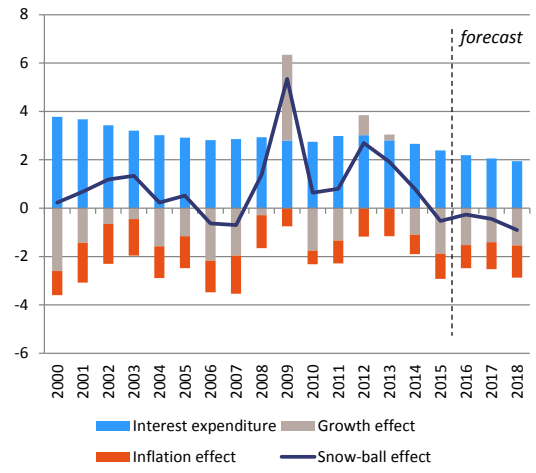
In the current situation, the likely higher effectiveness of fiscal impulse coupled with a relatively low cost of delaying consolidation points in the direction of favouring stabilisation in the short term. Even if it remains necessary to reduce sustainability risks for the medium term, short-term sustainability risks are currently relatively low for the euro area, which is reflected in the low interest rates requested for most government bonds.

Interests paid on new government debt are at very low levels in the euro area and the snowball effect has turned favourable. ([150])

([150]) The snowball effect is the combined effect of interest rate and nominal GDP growth developments on the debt-to-

Since the announcement of the Outright Monetary Transactions by the ECB, the interest rates paid by governments of euro area Member States have rapidly decreased. Currently, nominal interest rates are very low in the euro area, which provides for null or negative real long-term interest rates. This reflects the reduced risk attached by investors to the bonds of euro area Member States. In this context, the current slow recovery has been sufficient to bring the snowball effect into negative territory, i.e. contributing to reducing the debt-to-GDP ratio.

Graph IV.2.6: **The snowball effect in the euro area**



Source: Commission services.

A favourable snowball effect is expected to last a couple of more years at least. The Commission projects, in its autumn 2016 economic forecast, a negative snowball effect – i.e. a snowball effect that reduces the debt ratio – for two more years (Graph IV.2.6). The combined effect of interest rates on government bonds in the euro area, which are expected to remain low in real terms under the current monetary policy regime, and of real potential growth above 1%, would tend to drive the debt ratio down. This gives the euro area some breathing space and provides an argument to favour stabilisation over sustainability.

GDP ratio. Higher interest rates tend to increase the debt-to-GDP ratio because they increase the interest paid by the government, while GDP growth tends to reduce the debt-to-GDP ratio, via the denominator effect.

Delaying adjustment is not too costly if interest paid on government debt is low and projected to remain low. When the interest rate paid on new debt is very low, the cost of rolling debt over may become very small. This reduces both the value of the S1 indicator and the costs of delaying the adjustment.

Overall, the balance of risks and the likely impact indicate what relative importance to give to stabilisation and sustainability. If the risks to stabilisation prevail –including in terms of price developments, social considerations and risks to future growth– then the fiscal stance should put more focus on this objective. This holds even more in situations in which fiscal policy is in a better position than usual to stabilise the economy. Conversely, in case of signs of heightened tensions on financial markets, there is a need to send a clear message that reining in debt is a priority. In indecisive cases, there is a possibility to attribute balanced weights to the two objectives.

Beyond economic analysis, setting priorities remains a political choice. However refined the analysis can get to give the most accurate possible estimates of stabilisation and sustainability needs, choosing weights for objectives means setting priorities among policy decisions. This ultimately involves a political choice on which this chapter cannot be conclusive.

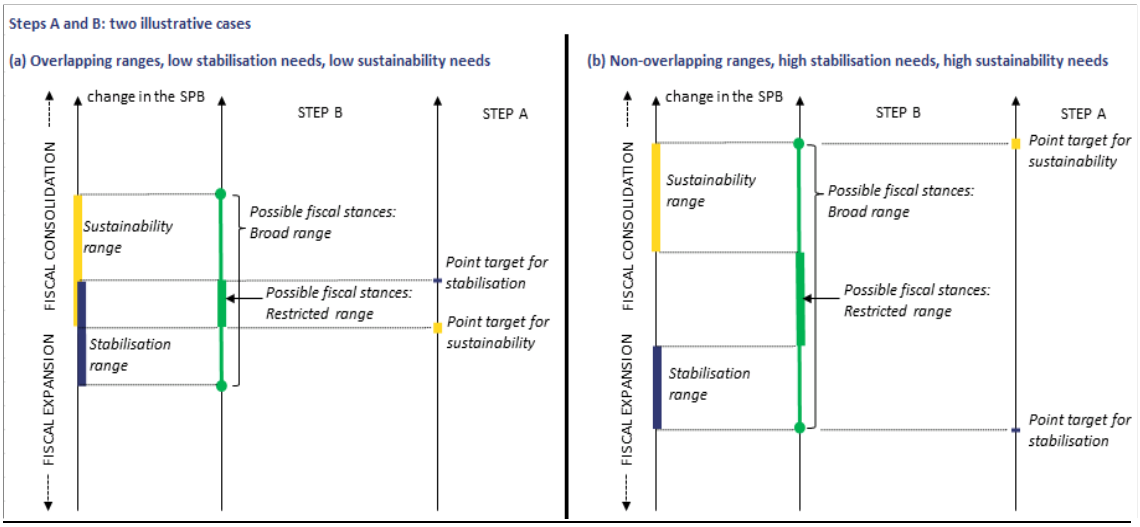
2.2.4. Weighing stabilisation and sustainability needs before or after Steps A and C

The way to proceed depends on the order in which the three steps are applied. Are the targets still presented as ranges or have point targets already been defined (i.e. before or after Step A)? Is the analysis done at the Member State or aggregate level (i.e. before or after Step C)?

Step B before or after Step A

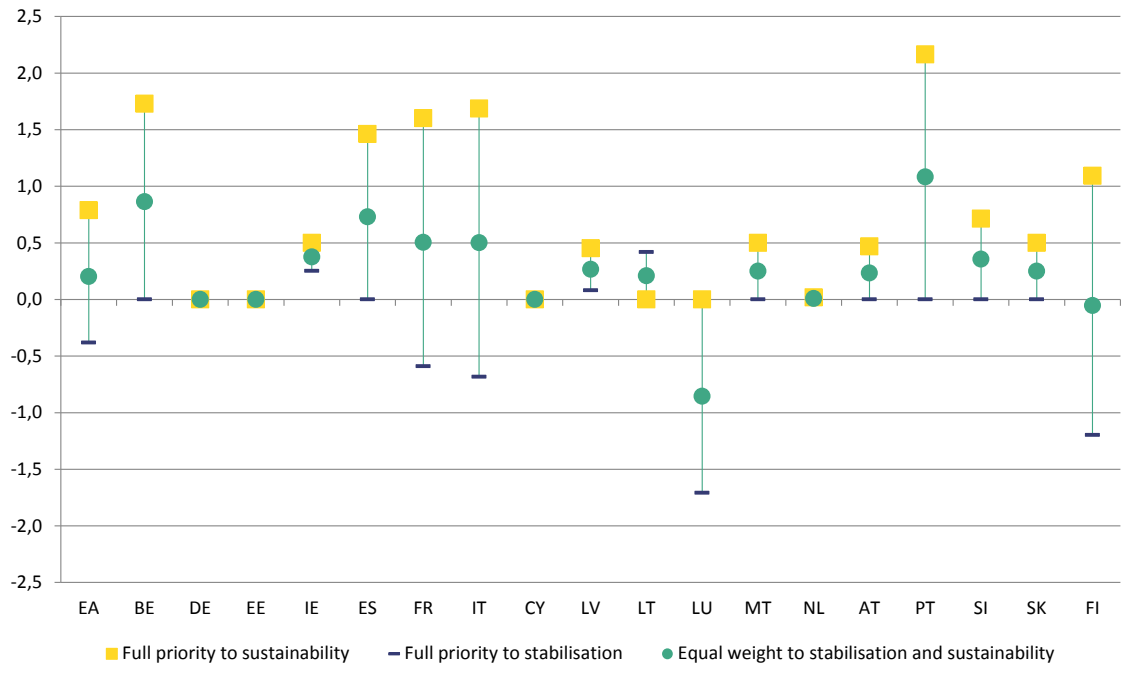
Step B after Step A: When the targets for sustainability and stabilisation, respectively, are expressed in the form of points, combining sustainability and stabilisation is conveniently done by taking a weighted average of the two points. As shown in Graph IV.2.8, one of the objectives can get full priority, or they can both get an equal weight, with intermediate values reflecting different trade-offs.

Graph IV.2.7: **Step A and B: two illustrative cases**



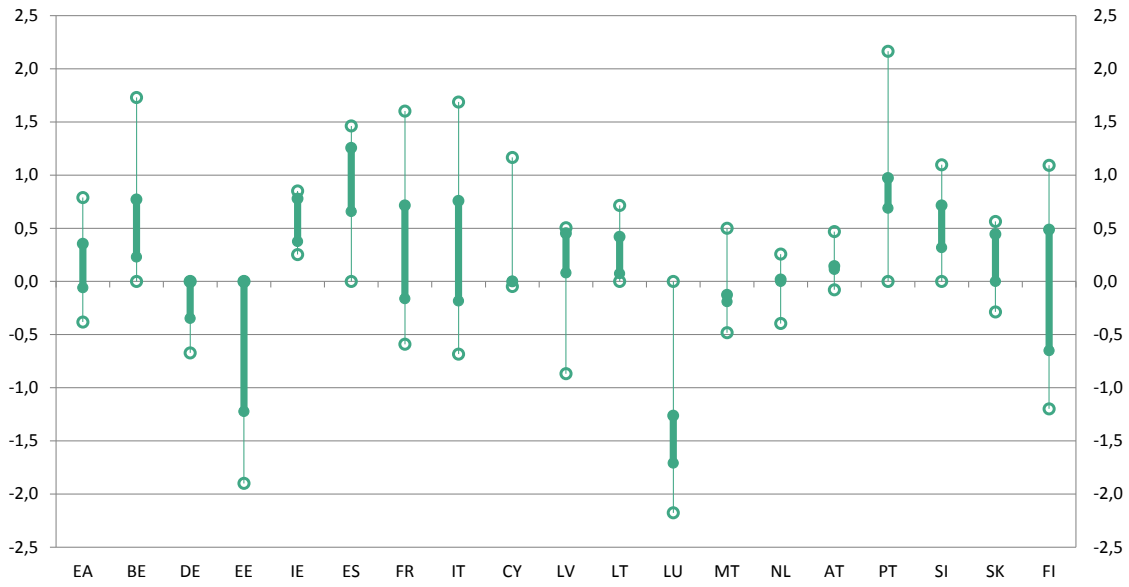
Source: Commission services.
Note: This graph shows two cases, (a) and (b), to illustrate the implementation of Steps A and B in a given country. For each case, the axis on the left shows illustrative stabilisation and sustainability ranges as if they had been obtained as a result of the analysis presented in Chapter IV.1. On this basis, either Step B (axis in the middle) or Step A (axis on the right) are applied as a first step.

Graph IV.2.8: **Step A followed by Step B: Point targets for the fiscal stance (change in the SPB as % of GDP)**



Source: Commission services.

Graph IV.2.9: **Step B before Step A: Ranges for the fiscal stance (change in the SPB as % of GDP)**



Source: Commission services.
Note: Step B can be done in two ways, defining either restricted or broad ranges. The thick lines indicate restrictive ranges (within which the fiscal stance accommodates both stabilisation and sustainability needs) while the thin lines indicate broad ranges (within which the fiscal stance addresses one objective at the expense of the other).

Step B before Step A: When the targets for sustainability and stabilisation are expressed in the form of ranges, combining sustainability and stabilisation means merging the two ranges into one range. This can be done in several ways. This part considers two of them, namely a restricted and a broad manner, as shown in Graph IV.2.7.

- If the intention is to restrict possible fiscal stances to levels that accommodate both needs at the same time, the merged range depends on whether the two ranges overlap or not. If they do, the merged range is the intersection of the two. If they do not, it is the space between them. The resulting *restricted ranges* in both cases are shown by thick lines for all Member States on Graph IV.2.9.

- By contrast, the *broad ranges* include the full range of targets. These give the possibility to react to pressing needs implying that addressing only one objective at the expense of the other is an option. The broad ranges are shown by thin lines on Graph IV.2.9.

- In theory, any range within the broad range is possible. For instance, one could consider a *semi-restricted range* that would include the restricted range defined above and either the fiscal stances that address only stabilisation needs or those that address only sustainability needs. Alternatively, one could also decide that the range of possible fiscal stances is equal to the stabilisation range or to the sustainability range as such.

When applying Steps A and B in a given country, different situations are possible, as the stabilisation and sustainability ranges may overlap or not, and the needs may be low or strong on either side. Among the numerous possible situations, Graph IV.2.7 shows two illustrative cases.

- **Case (a) in Graph IV.2.7 is the most straightforward.** There is a range of fiscal stances that are included in both the stabilisation and the sustainability ranges, and the needs are assessed to be low on both sides, therefore any point within that restricted range appropriately addresses both objectives. In such a situation, there is no need to consider the fiscal stances that are only in the broad range, i.e. which only address one objective at the expense of the other.

- **Case (b) does not have a natural solution and requires economic and political judgement.** As the stabilisation and sustainability ranges do not overlap, there is no fiscal stance that can address both objectives in a sufficient manner, especially as needs on both sides are assessed to be high. In that case, the restricted range, which indicates the shortest distance to both ranges and thus mitigates the tension between the two objectives, is a balanced solution but not satisfactory from the point of view of either objective. It is therefore legitimate to consider also the broad range of possible fiscal stances. ([151]) As an extreme solution, one objective can be given full priority if it is found to prevail, and the corresponding point target can be chosen.

The case in which only Steps A and B are made is interesting because it is the one that applies to aggregate euro area data. While there is much discussion on the opportunity to use aggregate euro area data for looking at fiscal policy, this is a relevant case, as the Two Pack, reflecting Articles 121 and 126 of the Treaty, provides the basis for the coordination of economic policy. This makes the use of aggregate data a natural possibility for analysing the aggregate fiscal stance.

Step B before or after Step C

Step B before Step C: As risks differ across Member States, the priorities assigned to each objective may vary as well across countries. This reflects differences in terms of cyclical conditions, labour market conditions, budgetary positions and debt dynamics, and the fact that transmission channels of monetary policy do not operate in an identical way across countries. Deciding about priorities (Step B) by Member State before aggregating (Step C) allows such considerations to be taken into account.

Step B after Step C: In that case, priority is given to what is assessed to be the most critical need for the euro area as a whole. This may be different from the weight that would be obtained as a weighted average of weights attributed to stabilisation and sustainability at the country level.

([151]) In such a situation, choosing between the restricted and the broad range crucially depends on the cost/benefit analysis of side effects across objectives. The restricted range is the best pick if the side effects of disregarding one objective are so unacceptable from an economic and/or political point of view that this cannot be envisaged.

2.3. STEP C: AGGREGATING COUNTRY-SPECIFIC INFORMATION AT THE EURO AREA LEVEL

The third operation that is needed to come to a single desired fiscal stance for the euro area is to aggregate information from the country level. This can be done at the end of the process, to aggregate country-specific fiscal targets obtained after going through Steps A and B. It can also occur earlier, to aggregate ranges or objective-specific point targets, or even at the very beginning, to base the analysis directly on euro area-wide data. This last case is not dealt with under Step C (as it does not start with country-specific ranges) but discussed separately in Section IV.2.4.

Aggregating country-specific variables requires careful thinking, because it has to reflect the economic and institutional reality. While being politically logical and coherent with the unified framework of EMU, aggregating information from 19 euro area Member States into one number implies a loss of information regarding potentially large differences across countries. Part of this information can be retained, depending on the weighting used in the aggregation calculation. The weight that is attributed to each Member State can, first, reflect its economic size. This is the standard approach, and this is also how most euro area variables, such as the euro area output gap, are usually calculated. But different weights could also be used, in particular to reflect the size of the risks that Member States face –to give more importance to these risks– or the impact that national fiscal decisions may have on the rest of the euro area. Giving a higher weight to a Member State means giving it more importance, and this needs to be in line with the reality of the euro area, both in terms of economic developments and institutional environment.

It is essential to analyse how Member States interact and which is the relevant level for each issue under consideration. While some developments are clearly relevant at the euro area level, others have first and foremost a national dimension. In particular:

- **Some shocks may be symmetric or asymmetric.** For instance, external shocks do not necessarily hit Member States to the same extent, as some countries can be more strongly exposed than others to shocks in certain sectors or certain parts of the world.

- **Some issues are, by nature, common to the euro area, while others are the individual responsibility of Member States.** In particular, the ECB's mandate of maintaining price stability is defined at the aggregate level. Similarly, exchange rate developments have a euro area-wide impact. By contrast, fiscal policy decisions are the responsibility of individual sovereign Member States.

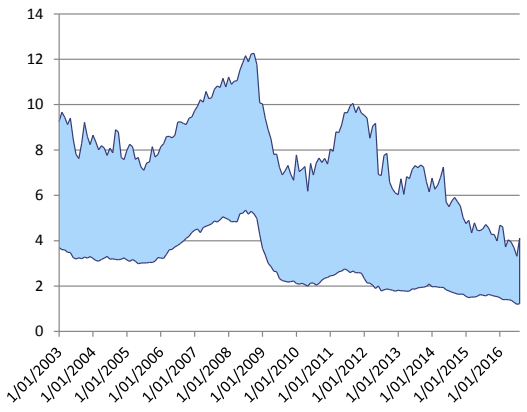
- **Spillover effects and contagion risks constitute intermediate cases which deserve specific attention.** These regard the impact that developments in one country can have on other countries, in a positive or negative manner. For instance, trade links across countries imply that a shock in one Member State will spill over to other Member States. Similarly, if the risk of sovereign default increases in one Member State, this may undermine confidence on financial markets and fuel, by contagion, tensions regarding other Member States' debts.

The relevant level and approach may not be the same for stabilisation and sustainability considerations, and this may change over time. Since the onset of EMU, euro area economies have been through very different phases, in terms of growth, inflation, sovereign risks and institutional framework. This has implications for the relative importance of the national and the euro area dimensions, as discussed more in detail in the following subsections.

2.3.1. To what extent is stabilisation a euro area-wide issue?

Stabilisation becomes a common issue when monetary policy reaches its limits. As explained in Box IV.2.1, in normal times, the policy mix in the euro area is clearly defined: monetary policy is in charge of dealing with symmetric shocks, while national fiscal policies cushion asymmetric shocks. In exceptional conditions combining a deep and extended crisis, very low inflation, interest rates at the ZLB and a high level of uncertainty, the conditions for the policy mix are modified. Monetary policy then needs support from other macroeconomic policies to deal with stabilisation.

Graph IV.2.10: **Credit costs for non-financial corporations**



Source: Commission services calculations based on European Central Bank and Bloomberg data.
Note: This chart shows the minimum and maximum values in the ten largest economies in the euro area except Ireland.

In particular, the low credit growth despite low credit costs suggests that some support to demand may be needed. The transmission mechanism of monetary policy to credit costs in the euro area is broadly intact, as can be seen from the low levels on Graph IV.2.10. In a context of very accommodative monetary policy, firms do not generally seem to suffer from a lack of liquidity or too restrictive financing conditions. Instead, the problem seems to lie rather on the demand side. Surveys such as the Bank Lending Survey (BLS) and the Survey on the Access to Finance of Enterprises (SAFE) also suggest that it is not credit supply that is holding back credit growth, but rather low credit demand in the face of ongoing private sector deleveraging and low investment. While structural reforms may well be necessary in this regard, this may also require some temporary support to domestic demand.

There may be a need, in the current context, for national fiscal policies of certain Member States to play a role in stabilising the economy of the euro area as a whole. While this support can be provided, where possible, by some fiscal expansion, it is important to stress that this can also be achieved in a budgetary neutral manner. The composition of budgets is thus a crucial issue

that is discussed in Section IV.2.5. The analysis of potential spillovers is an additional reason for regarding the aggregate level. As coordinated fiscal impulse in several Member States tends to have a larger cumulated impact than isolated impulse, ([152]) there could be a case for limiting consolidation to what is urgently necessary where sustainability needs are high, and implementing coordinated expansion where possible.

2.3.2. The aggregation of stabilisation targets in the presence of non-linearities and spillovers

One of the main challenges when analysing simultaneous stabilisation in several countries is to reflect two important factors: non-linearities and spillovers. In the context of stabilisation, spillovers mainly operate via market channels, essentially through trade links. They might also include a confidence component, for instance affecting business sentiment. They are, however, difficult to identify and measure, as shown in the literature on estimates of spillovers (see Box IV.2.2). In economic circumstances that depart from normal situations, the analysis is further complicated by a risk of possible non-linear developments, as discussed in Subsection IV.2.2.1.

Aggregating stabilisation and sustainability targets into a single fiscal policy shock creates an additional difficulty as it summarises information on several countries in one number. If some Member States need fiscal expansion while others need a restrictive stance, this may show in the aggregate numbers as a balanced situation requiring a neutral fiscal stance. The interplay of spillovers from expansionary and restrictive national fiscal stances may, however, lead to a different outcome for the euro area than the one that would result from a neutral stance in all countries. As regards cliff effects, if a Member State is close to a critical situation, this may be offset in the aggregate numbers by the situation of other Member States and go unnoticed. Still, there may be significant implications for the euro area if the risk materialises and the situation actually becomes critical for that Member State. This suggests that looking only at aggregate numbers might lead to overlooking the impact of the geographical distribution of needs and risks of cliff effects. The methodological challenge is to find a way to keep some of this information.

The analysis of the impact of the aggregate fiscal shock has to take into account many factors related to the size of multipliers and of spillovers in several countries and ideally requires using a fully-fledged model. Although crucial for the analysis, spillovers have thus far not been explicitly included in the discussion of the fiscal stance, precisely because of the methodological difficulties that they raise. This is a relevant and necessary step, as spillover effects imply that the euro area as a whole may differ from the sum of its parts considered in isolation. To address this issue, Section IV.2.5. presents some simulations using the Commission's QUEST model to discuss the impact of various fiscal stances.

In this section, potential spillovers are proxied by incorporating the share of intra-EU imports in the country weights. The aim of this section, which participates in the construction of the desired fiscal stance, is to highlight issues related to the aggregation of country-specific needs rather than the full impact of fiscal shocks. In this regard, it does not have recourse to model-based simulations but discusses the rationale for various weighted averages. In addition to a standard weighted average using GDP, we use an alternative weighted average based on GDP multiplied by the share of imports from the EU in the Member State's total imports. The weight thus reflects both the size of the economy and the extent to which domestic measures are likely to affect other Member States via trade, which is considered to be the main channel for spillover effects across countries. This is, however, only a rough, ex ante estimate of how spillover effects could modify the aggregate impact, especially as it does not distinguish what type of fiscal measures would be implemented, and only data on the share of intra-EU trade, not intra-euro trade, are available. ([153]) The weights reported in Table IV.2.3 show that taking trade into account modifies the weights to a limited extent, by up to two percentage points.

([152]) See Box IV.2.2.

([153]) Alternatively, GDP could be multiplied by both the share of intra-EU imports and a parameter which would depend on its economic situation. Capital flows could also be considered.

Box IV.2.2: **The size of fiscal spillovers in the euro area**

This box presents a review of the economic literature on fiscal spillovers in the euro area. Certain policy shocks generate cross-border spillovers, that is, they are transmitted to another country through a variety of channels. Cross-border spillovers can follow different types of shocks and may require a coordinated response among the countries involved. Fiscal policy shocks in EMU are one area of particular attention in this respect: the existence of fiscal spillovers justifies, first, the need for fiscal rules in the euro area and, furthermore, the need to consider the fiscal stance at the aggregate level.

The literature distinguishes three main types of transmission channels of fiscal policy shocks: the trade channel, the financial channel – which constitute the «traditional» transmission channels – and other «non-traditional» channels, which include confidence effects and institutional interlinkages. Regarding the trade channel, any demand boost caused by fiscal stimulus in a country will partly leak out to other countries via increased demand for imported goods (see for instance, In't Veld, J. (2016) and Elekdag and Muir, 2014). Similarly, fiscal shocks may cause changes to prices on certain asset markets, which can then be transmitted to asset prices in other economies. In the case of the euro area, a «euro bias» has been observed with regard to trade and financial flows, which makes these two channels particularly powerful. Finally, concerning the «non-traditional» channels, changes in consumer and business sentiment in one country can spill over to other countries. By the same token, sharing common institutions and policy frameworks can facilitate the transmission of fiscal policy shocks.

The spillover effects can be measured in level or by the spillover ratio, i.e. the ratio of the foreign GDP effect of a certain shock over the GDP effect in the shock-originating country. The shock-originating country under consideration in the literature is often a bloc of Member States that comprises Germany and other so-called 'core' euro area countries (Austria, Finland and the Netherlands in some studies; others also include France, while others just focus on Germany). Regarding the specific magnitude of fiscal spillovers in the euro area, the empirical literature provides a relatively wide range of estimates which vary between negative values to around 0.3%.

Several factors related to economic conditions and structural characteristics of the economy can help explain the heterogeneity of the above estimates. First, the size of the spillover effect is crucially determined by the response of monetary policy (see Bénassy-Quéré (2006), Elekdag and Muir (2014), In't Veld (2013), Blanchard, Ercerg and Lindé (2016) and Goujard (2013)). Higher domestic demand resulting from a fiscal stimulus can put upward pressure on inflation. In normal times, the monetary stance is expected to tighten following the surge in prices, which increases real interest rates and either mitigates the positive spillover effect or even supresses it altogether (Cwik andWieland (2011)). By contrast, when monetary policy faces constraints (for instance at the zero lower bound) and nominal policy rates are kept unchanged, real interest rates are reduced, which further boosts domestic demand in the region. In this context, spillover effects are stronger when inflation is particularly responsive, i.e. when nominal rigidities are limited (Blanchard, Ercerg and Lindé (2016)). Moreover, the characteristics of the «shock-originating» country (or bloc of countries) also have an important role in determining the magnitude of the fiscal spillovers. Usually, large and open economies are expected to have larger spillover effects on other Member States.

Finally, the size of the fiscal spillovers also depends on the budgetary composition of fiscal shocks and whether they are isolated or coordinated. Larger spillover effects are associated with an intensification of government spending on the most productive categories such as public investment, as opposed to other categories of government expenditure. Similarly, spillover effects are found to be higher when the import-content of increased government spending is high (see Corsetti, Meier and Mueller (2010) and Blanchard, Ercerg and Lindé (2016)). Finally, coordinated fiscal impulse in several Member States tends to have a larger cumulated impact than isolated impulse (see European Central Bank (2014)).

Similarly, this chapter uses an additional aggregation with specific weights to make non-linearities more visible when building the desired fiscal target. Given the relevance of contagion effects, as illustrated by the recent crisis, it may be important to take into account individual

Member State risks in the construction of the desired aggregate fiscal stance. This chapter suggests to aggregate sustainability needs by giving more weight to countries at high risk, to avoid the information on these risks becoming too diluted in the aggregate numbers. By doing so, the aggregation approximates non-linear developments in economic variables through assigning non-proportional weights in the calculations. Technically, in the aggregation that is meant to reflect the risk of cliff effects, Member States are weighted by an indicator of the risk of cliff effects, namely the length of the cycle measured by L1 as defined in Chapter IV.1. Alternatively, other indicators of risk with more abrupt thresholds could be used. In the extreme case of imminent risk of a cliff effect in a Member State, that Member State could be given a weight of 1 against 0 for all the others.

Table IV.2.3: **Weights reflecting intra-EU trade**

	Share in euro area GDP (2016)	Share of imports from the EU in total imports	Share in GDP adjusted for trade	Difference with/without trade
BE	3.9%	63.6%	3.9%	0.0%
DE	29.2%	65.6%	30.0%	0.8%
EE	0.2%	81.8%	0.3%	0.1%
IE	2.5%	64.9%	2.5%	0.0%
EL	1.6%	50.0%	1.3%	-0.4%
ES	10.4%	60.6%	9.9%	-0.5%
FR	20.7%	68.2%	22.2%	1.4%
IT	15.5%	58.8%	14.3%	-1.2%
CY	0.2%	74.1%	0.2%	0.0%
LV	0.2%	79.8%	0.3%	0.1%
LT	0.4%	66.6%	0.4%	0.0%
LU	0.5%	74.8%	0.6%	0.1%
MT	0.1%	64.7%	0.1%	0.0%
NL	6.4%	45.9%	4.6%	-1.8%
AT	3.3%	76.8%	3.9%	0.7%
PT	1.7%	75.3%	2.0%	0.3%
SI	0.4%	69.5%	0.4%	0.0%
SK	0.8%	77.9%	0.9%	0.2%
FI	2.0%	71.7%	2.2%	0.2%

Source: Commission services.

2.3.3. Under what conditions is it meaningful to aggregate sustainability risks, and how?

Aggregating sustainability risks raises a conceptual issue: is the sum of low risks and high risks necessarily medium risk? The S1 indicator can take positive or negative values, which could suggest that the two cases are symmetric and can be mechanically added up. As already discussed in Chapter IV.1., this is not so simple, as positive values indicate high risks and therefore an existing need to consolidate, while negative values only point to low risks and, as a result, available leeway for potential expansion if needed. At the Member State level, this double interpretation is not a problem, as S1 is either positive or negative at any one time. It may become an issue when positive and negative values in several countries need to be aggregated.

The aggregation of sustainability needs depends on whether and how debt itself is aggregated. Two theoretical polar cases can be envisaged.

- **A situation of strictly national debts, as foreseen by the Treaty**. In that case, low or high risk in one country would exclusively stem from the situation in that country and have no impact on the other countries. As a result, there could not be such a thing as aggregate sustainability needs, but only a juxtaposition of national needs, as risk in a specific country could only be addressed by domestic policy.

- **Full debt mutualisation, whereby debts of all countries would be pooled together and subject to the same interest rate conditions**. In that case, the sum of positive and negative sustainability indicators would accurately measure risks for the aggregated debt.

The euro area constitutes, in practice, an intermediate case, as developments in one Member State may have implications for the whole euro area. Although the sustainability of public finances is the responsibility of Member States, the reality of the euro area is not as in the first polar case. Sizeable negative contagion effects across Member States were observed at the height of the sovereign debt crisis in 2011: not only were there considerable tensions on the Member States found to stand at high risk, but falling confidence threatened to also expand to a large share of the euro area via rapid contagion effects. On the other hand, the euro area is not the same as the second polar case either, as risks are not mutualised but only subject to contagion.

As a result, it is relevant to discuss sustainability risks at the aggregate level, although not as a plain average of all national risks. The risk of contagion makes it necessary to discuss the implications of national sustainability conditions for the whole euro area (unlike in the

first polar case). At the same time, the aggregated risk should reflect contagion, which works in one direction (unlike mutualisation which is symmetric, as in the second polar case). This implies giving more weight to the Member States from which contagion may originate.

The situation in the euro area prior to the crisis may be read as a case of positive contagion of low risks. In the early years of EMU, financial markets hardly discriminated among sovereign bonds of the various euro area Member States. This can be seen by the very low spreads shown in Graph IV.2.5. All the euro area Member States benefitted from increased confidence, with the positive reputation of "virtuous" Member States spreading to the whole euro area and resulting in relatively low bond yields across the board.

Overall, the perception of risk at the aggregate level seems to depend on the level of tension on financial markets, with possible under- or overreaction. When country risks are generally assessed to be low, as in the early years of EMU, the euro area perspective prevails. While this may entail an underestimation of actual risks in some Member States, the sovereign bond market is considered to be virtually unified and the bonds from the various Member States are largely taken as interchangeable, although there is no institutional common pool. By contrast, periods of heightened tensions move the focus to individual Member States along with high negative contagion risks.

2.3.4. The aggregation on the sustainability side with or without market pressure

The aggregation method needs to take into account contagion and tensions on financial markets, to reflect under- or overreaction to risks. Indicators of sustainability risks using model-based projections and sensitivity checks are very useful to get information on plausible debt dynamics. Experience shows, however, that actual government decisions to improve sustainability are not only derived from economic analysis and fiscal rules, but also from pressure on financial markets. The absence of pressure tends to feed the deficit bias, while strong tensions tend to accelerate consolidation. While the consolidation implemented under pressure from financial markets may come too late and too abruptly, heightened tensions on sovereign bonds constitute a clear risk of a cliff effect that governments need to take into account.

We take contagion into account in an innovative way. We represent the situations in which aggregate sustainability risks and targets would be the lowest and the highest. The reality of the euro area lies in between, possibly closer to one or the other depending on the period considered.

The first benchmark simulates a situation in which all Member States benefit from low financing conditions. It portrays a situation similar to the conditions in the early years of EMU. This consists in calculating what values the S1 indicator would take in a scenario in which all Member States would face the same implicit interest rate conditions as Germany. To reinforce the assumption of favourable financing conditions, it is assumed that the convergence to a nominal long-term interest rate of 5% is slower than in the standard S1 scenario, thus limiting the increase in the implicit interest rate to a level of 3% in 2030. The aggregate indicator for the euro area as a whole is, as is the case of the standard S1 indicator, calculated as an average of national values weighted by GDP.

Under this "scenario", we find that a cumulated consolidation of 1.1% of GDP would be needed for the euro area as a whole over the period 2017-2021. This is 0.7 percentage points lower than the standard S1 (according to the 2016 scenario), of which 0.2 percentage points are due to the alignment with the German rates and 0.5 percentage points to a slower convergence to 5%. Despite the very favourable assumptions on interest rates, this is still a positive value: in addition to savings on interest expenditure, some fiscal consolidation would still be needed to bring debt to 60% of GDP. This consolidation would amount to 0.2% of GDP per year if implemented in a linear way, or 0.5% per year if frontloaded.

The second benchmark reflects a situation of very high tensions on sovereign bond markets. It assumes that market pressure on some Member States is such that it entails a serious risk of a cliff effect, and the perception of risk for the euro area is affected by the negative contagion effects. In this context, the euro area aggregate only reflects the situation in the countries at highest risk, as

identified by high spreads. This would point to much higher consolidation, by 1.7% of GDP in 2017.

Table IV.2.4: **Alternative weights to aggregate sustainability risks**

	Debt-to-GDP ratio	Share of debt in total euro area level	Government bond yield spreads against Germany	Focus on highest spreads
BE	107	4,6%	0,4	
DE	68	21,8%	-	
EE	9	0,0%	n.a.	
IE	75	2,0%	0,7	
EL	182	3,2%	8,6	5,0
ES	99	11,3%	1,4	0,5
FR	96	21,8%	0,4	
IT	133	22,6%	1,3	0,5
CY	107	0,2%	3,8	1,0
LV	40	0,1%	0,5	
LT	41	0,2%	1,0	0,5
LU	23	0,1%	0,2	
MT	62	0,1%	0,9	
NL	63	4,4%	0,2	
AT	84	3,0%	0,3	
PT	130	2,4%	2,9	1,0
SI	80	0,3%	1,2	0,5
SK	53	0,4%	0,4	
FI	65	1,4%	0,3	

Source: Commission serevices, ECB and Bloombereg.
Note: Debt in 2016. Average of spreads from January to August 2016. In the last column, the chosen weights are a possible illustration of non-linear weighting.

As contagion risks have recently been significantly reduced and confidence has strengthened, the relevant aggregate measure is likely to be located in between. This is the result of credibly implemented structural reforms, changes in the supranational governance framework ([154]) and the highly expansionary monetary policy stance of the European Central Bank. A less radical aggregation than the second benchmark could therefore use less discriminating weights, for instance by using debt ratios or the share of each Member State in total government debt as weights to calculate the average. These weights are reported in Table IV.2.4.

2.3.5. Aggregating Member States before or after Steps B and C

The way to perform Step C depends on whether it occurs before or after the two other steps.

- **Step C before or after Step A:** If Step C comes after Step A, i.e. if point targets have already been defined (either as separate targets for stabilisation and sustainability, or as single targets for the fiscal stance), the aggregation consists in calculating a weighted average of the country-specific point targets. When, by contrast, the information to be aggregated is still in the form of ranges (Step C before Step A), this is done by aggregating on the one hand the low ends of the ranges, and on the other hand the high ends. These two points define the range at the aggregate level.

- **Step C before or after Step B:** Dealing separately with stabilisation and sustainability (before Step B) allows using different weights for both sides – for instance, weighting stabilisation targets to reflect potential spillovers, and weighting sustainability targets in a way that reflects risks. By contrast, if the aggregation regards fiscal stances that already combine the two objectives (after Step B), the most relevant common weighting is by GDP.

2.3.6. Conclusion on aggregation across countries

The standard way to aggregate variables at the euro area level is to weight them by GDP. This means that the weight of each Member State is its economic size. Averages weighted by GDP however result in losing much information on differences among countries and how they interact.

This section has suggested alternative solutions to maintain some information on non-linearities, spillovers and contagion.

- **To avoid diluting the information on higher risks in some Member States**, the idea is to weight countries not by GDP but by an indicator of risk. This can be the length of the cycle for stabilisation, and the debt ratio for sustainability. For more critical cases that are close to a cliff effect, more abrupt thresholds can be envisaged to reflect non-linearities, for instance by giving much higher or full weight to Member States with very large spreads or, for the stabilisation side, in an exceptionally severe recession.

- **To reflect the existence of spillovers with respect to stabilisation,** the aggregation can

([154]) In particular, enhanced fiscal and macroeconomic surveillance, the establishment of the European Stability Mechanism, and the Banking Union.

take into account the extent to which developments in a Member State are likely to affect other Member States via the trade channel. Spillovers are likely to be higher not only if the country is large, but also if it mainly imports goods from other Member States. This is estimated by multiplying GDP by the share of imports coming from the EU.

- **To take contagion into account on the sustainability side,** two calculations simulate the most favourable and most unfavourable situations. In the first case, all Member States benefit from very low interest rates, as a result of positive contagion from the safest country. In the second case, the euro area as a whole is affected by negative contagion from Member States at a very high risk.

Each aggregation method brings information from a certain angle. The way aggregation is done on the stabilisation and sustainability sides does not have to be the same, and some approaches may be more or less relevant depending on the economic and institutional context and the level of risk.

2.4. EURO AREA FISCAL STANCES OBTAINED WITH THE VARIOUS AGGREGATIONS

This section analyses the impact of the order in which the three steps presented in the previous sections are processed. Each step implies a decision on what information to keep and what to lose. When this involves choosing the lowest or highest target within a range, or giving one objective or certain Member States a higher weight, it introduces non-linearities in the treatment of numbers. As a result, there is no certainty that Steps A, B and C performed in any order will conclude on the same desired fiscal stance for the euro area. For instance, because of non-linearities, the point target that is chosen at the aggregate level for an objective may not be the same as the average of the point targets chosen at the Member State level. ([155])

In addition to the aggregation of country-specific targets, this section also presents the fiscal stance derived from the analysis directly conducted at the euro area level. The outcome of the former approach ("bottom-up") is discussed in the first subsection, while the following subsection compares it with the analysis at the euro area level.

2.4.1. Bottom-up: from Member States to the aggregate level

The bottom-up approach to construct the desired euro area fiscal stance consists in starting from the determination of needs at the Member State level and moving up to the euro area level. The aggregation is done along the three steps shown in the three first sections of this chapter. This subsection finalises the analysis by indicating what point estimates for the euro area fiscal stance would result from the calculations.

Interpretation of the six possible sequences

As shown in Graph IV.2.1, this can be done in six different orders. All consist of gradually synthesising information, thereby losing some of it, but not in the same order. Each order therefore conveys information from a particular angle, none of them being right or wrong per se.

- **ABC describes a purely bottom-up approach whereby the desirable fiscal stance for the euro area is the average of desirable national fiscal stances.** It starts by determining desirable national fiscal stances based on each Member State's needs, then aggregates these stances across countries. While it accurately describes the needs of individual Member States taken in isolation, it fails to incorporate possible spillover or contagion effects.

- **ACB includes room for judgement and is better suited to give more importance to certain Member States, in particular to take into account spillovers and contagion effects.** It starts by determining point targets for stabilisation and sustainability in each Member State separately, as in the previous sequence, but then aggregates the targets by objective at

([155]) For example, the point target for stabilisation chosen directly at the aggregate level (obtained by applying first Step C –here using GDP for the weighting– then Step A) is the low end of the aggregate stabilisation range and is equal to -0.5. By contrast, the average of the country-specific point targets for stabilisation (obtained by applying first Step A then Step C– also using GDP for the weighting) is -0.3.

the euro area level and only weighs stabilisation against sustainability at the aggregate level. The fact that it can use different weighted averages when computing aggregate fiscal targets derived from stabilisation and sustainability needs allows giving more weight to certain Member States – those in which needs are more pressing or whose fiscal decisions are likely to have a larger impact on the rest of the euro area, through spillover or contagion effects. The euro area perspective is reinforced by the policy decision between stabilisation and sustainability as a last step. This sequence is presented as a numerical example in Box IV.2.3.

- **BAC is a pragmatic approach which is more suited in normal times than in cases of critical tensions between objectives.** In the BAC sequence, first a range of "acceptable" fiscal stances in each Member State is built. ([156]) As explained at the end of Section IV.2.1., much of the information on tensions between sustainability and stabilisation is lost after Step B. Moreover, when the sustainability and stabilisation ranges do not overlap, the acceptable range may contain points that are not included in any of the ranges but located *between* the ranges. Given that, Step A takes by default the midpoints of the acceptable ranges and, to conclude, Step C aggregates them across the entire euro area. By doing so, it provides a pragmatic solution to deal with tensions among objectives –it ends up choosing a point in the middle of the acceptable range, even if this point is, in some cases, neither in the stabilisation range nor in the sustainability range– but this leaves little room for economic analysis. Economic analysis is used only in Step B, leading to choosing ranges of possible fiscal targets that either address both objectives (if they are deemed equally pressing) or address one at the expense of the other (if one is assessed to prevail over the other).

- **BCA is useful to discuss what are, for a given preferred aggregate euro area fiscal stance, the geographical compositions which are politically feasible.** As in the previous sequence, in BCA, first, ranges of acceptable national fiscal stances (B) are built. The maxima and minima of these ranges are then aggregated across Member States, thus defining a range of possible fiscal stances for the euro area as a whole (C). Finally a point is chosen within that range (A). By default, this is the midpoint of the range. Restricted ranges, both at the national and aggregate levels, can provide useful references for politically feasible fiscal stances in normal times, because they are constituted by fiscal targets that represent compromises between the ranges expressing sustainability and stabilisation targets. ([157]) In periods of more critical needs, using broad ranges, and choosing point targets towards the ends of the ranges rather than midpoints, enables envisaging more ambitious targets.

- **CAB is more relevant in the case of a fiscal union with centralised decisions and room for judgement.** This sequence starts by building ranges for stabilisation and sustainability which are aggregated across Member States (C) thus taking a euro area perspective. ([158]) To do so, the country weightings used on the stabilisation and sustainability sides may differ, depending on the focus chosen. On the basis of these ranges, point targets for the aggregate euro area can be derived for stabilisation and sustainability needs, respectively, in a separate fashion (A). Finally, a point target for the euro area fiscal stance can be chosen by weighting the sustainability versus the stabilisation target points (B). As in the case of ACB, there is room for judgement regarding what weights to use to aggregate the stabilisation and sustainability ranges, and whether to favour stabilisation or sustainability as a last step.

([156]) As explained in Section IV.2.2., in Step B, one builds ranges for the fiscal stance in each Member State, based on the sustainability and stabilisation ranges. For the sake of brevity, the fiscal stances in this range are called "acceptable" because they address the needs identified in the economy. Step B can result in two ranges, namely a restricted range or a broad range, as shown in Graphs IV.2.7 and IV.2.9.

([157]) The ranges of "acceptable" fiscal stances exclude, in their restricted definition, the fiscal stances that would only address one need at the expense of the other. They thus constitute a range of possible fiscal stances that would either address both needs at the same time or mitigate the tension between the two, depending on whether the stabilisation and sustainability ranges overlap or not (see Subsection IV.2.2.4., paragraph "Step B before Step A").

([158]) As explained in Subsection IV.2.3.5., this is done by aggregating, on the one hand, the low ends and, on the other hand, the high ends of the ranges for each objective. This operation allows building ranges of stabilisation and sustainability targets at the aggregate euro area level.

- **CBA is also relevant in the framework of a fiscal union, with a pragmatic rather than judgement-based outcome.** As in the sequences BAC and BCA, starting by merging the ranges implies that the midpoint becomes the default target.

Fiscal stances derived from the various sequences

The following paragraphs present the outcome obtained with the different aggregation sequences assuming that the fiscal multiplier is 0.8 and the desired closure of the output gap is 25% or 50%. The results obtained with all the sequences are consistent with an expansion of 0.3% to 0.5% of GDP. Given the uncertainty surrounding these assumptions and the arbitrariness of the targets, Section IV.2.4. presents a sensitivity analysis using different fiscal multipliers and desired output gap closures.

Table IV.2.5: **Targeted fiscal stances for the euro area (change in the SPB as % of GDP - fiscal multiplier of 0.8)**

	Full weight on stabilisation	Equal weight for stabilisation and sustainability	Full weight on sustainability
Analysis based on country data			
ABC	-0,3	-0,2	0,9
ACB	-0,5	-0.1 to 0.7	1,7
BAC	-0,5	0,2	1,0
BCA	-0,5	0,2	1,0
CAB	-0,5	0.2 to 0.6	1,7
CBA	-0,5	0,2	1,0
Analysis directly based on euro area data			
AB	-0,4	0,2	0,8
BA	-0,4	0.1 or 0.2	0,8

Source: Commission services.
Note: The top of the table shows the fiscal stances derived from the aggregation of country-specific needs. The bottom of the table shows the fiscal stances derived from the analysis of needs directly at the aggregate euro area level.
For the three sequences in which Step B comes before Step A (namely BAC, BCA and CBA), only one number is reported in the central column, as the differences between the targets obtained on the basis of restricted or broad ranges are not visible at the first decimal.

To cover all the possible cases, the calculations reported in Table IV.2.5 have considered all the possible ways to aggregate information. This means that all six sequences are shown and that all the envisaged weights have been considered. These include weighting by GDP, GDP with import shares, length of the cycle, debt ratio, debt level or spreads, as well as using the most favourable and most unfavourable scenarios for contagion effects. For Step B, both restricted and broad ranges are applied. The numbers reported in the central column of Table IV.2.5 (trade-off between stabilisation and sustainability) thus take into account the various weightings possible under Step C and the use of either restricted or broad ranges under Step B, while the numbers in the left and right columns are the most expansionary and most restrictive fiscal stances that the analysis leads to. This includes the possibility, under Step B, to attribute the full weight to one objective, or to take the lowest or highest values of the ranges rather than the midpoints.

The fiscal stances that reflect a trade-off between stabilisation and sustainability considerations (middle column) range from moderate expansion (by 0.2% of GDP) to consolidation by 0.7% of GDP. As shown in Table IV.2.5, the most expansionary stance in that column is obtained when the euro area fiscal stance is calculated as an average of point targets for national fiscal stances, i.e. with the sequence ABC. The sequences that apply Step B before Step A, i.e. which start by merging objective-specific targets into ranges for the fiscal stance (BAC, BCA and CBA) give equal weight to sustainability and stabilisation and lead to moderate consolidation in the range of 0.2% of GDP. ([159]) Finally, as expected, the sequences that leave the most room for modulation and judgement (namely ACB and CAB) can lead to quite different fiscal stances depending on the choices made.

Assuming that fiscal policy can focus on one objective, results in a broader range of possible fiscal stances (left and right columns). The most expansionary targets for the fiscal stance are obtained when the stabilisation objective prevails where there is fiscal space. In particular, focusing on the lowest end of the ranges, which involves choosing the fastest closure of negative output gaps and using fiscal space ([160]) wherever available, leads to a targeted fiscal expansion of 0.5% of GDP. Conversely, focusing on sustainability needs suggests restrictive fiscal stances, especially under the extreme "cliff" scenario of contagion from high-risk Member States to the whole euro area (1.7% of GDP).

([159]) The differences between targets obtained on the basis of restricted or broad ranges are not visible at the first decimal. This reflects the fact that the ranges are broadly symmetric at the aggregate level, as can be seen from Graph IV.2.9.
([160]) As measured by the S1 indicator.

Box IV.2.3: Deriving the desired fiscal stance according to the sequence ACB

This box shows, as an illustration, the details of the three steps followed under the sequence ACB, leading to the numbers reported in Table IV.2.5 (second row). This sequence adopts a bottom-up approach, in the sense that it starts by defining two point targets for each Member State (one for stabilisation and one for sustainability) based on country-specific needs (A), and only then aggregates these targets at the euro area level (C). The weighing of stabilisation against sustainability (B) is, however, done from a euro area perspective at the end of the process, i.e. between the two aggregated targets, rather than at the country level. To reflect information on critical country-specific risks in the aggregate numbers, other weightings than GDP are used for Step C, thus giving more weight to the corresponding Member States. Similarly, different weights can be used to indicate possible spillover or contagion effects. This would not be possible with the sequence ABC, in which country-specific targets are weighted by GDP. For completeness, this box presents the various outcomes obtained with all the possible weights.

First step – A: choosing country-specific point targets for stabilisation and sustainability. This choice is based on the analysis of stabilisation and sustainability needs at the Member State level, as described in Chapter IV.1. The resulting numerical point targets for stabilisation and sustainability are reported in Tables IV.2.1 and IV.2.2, respectively, and shown together in Graph IV.2.3.

Second step – C: calculating point targets for stabilisation and sustainability at the euro area level. This consists in aggregating, on the one hand, the country-specific point targets for stabilisation and, on the other hand, those for sustainability. To do so, different weightings can be used: (1) the standard weighting by GDP, (2) weights reflecting country-specific risks (such as the length of the half-cycle for stabilisation – as measured by L1 and reported in Table IV.1.3 in Chapter IV.1.– and the debt-to-GDP ratio for sustainability) or (3) weights giving more prominence to the Member States in which fiscal policy decisions are likely to result in larger spillover or contagion effects for other Member States (i.e. GDP weighted by the share of intra-EU imports in total imports for stabilisation spillovers, and the share in total euro area debt or spreads, for contagion on the sustainability side). On the sustainability side, this also includes the two scenarios reflecting the most unfavourable case (contagion from the Member States with the highest spreads) and the most favourable case (low interest rates for all Member States). The corresponding weights (except L1) are reported in Tables IV.2.3 and IV.2.4 for stabilisation and sustainability, respectively, and result in the aggregate point targets shown in Table IV.2.a.

Table IV.2.a: **Aggregate point targets for stabilisation and sustainability obtained after the sequence AC using different weights**

STABILISATION	
Weights used for the weighted average	Aggregate target
(1) Weights reflecting the size of the economy	
GDP	-0.3
(2) Weights reflecting country-specific risks	
Length of the half-cycle	-0.5
(3) Weights reflecting possible spillover effects	
GDP weighted by trade	-0.3

SUSTAINABILITY	
Weights used for the weighted average	Aggregate target
(1) Weights reflecting the size of the economy	
GDP	0.9
(2) Weights reflecting country-specific risks	
Debt-to-GDP ratio	1.1
(3) Weights reflecting possible contagion effects	
Share of debt in total euro area level	1.1
Spreads vis-à-vis German bonds	1.3
Spreads (focus on highest spreads)	1.7
Low interest rate scenario	0.2

Source: Commission services

Third step – B: weighing stabilisation relative to sustainability to choose a desired fiscal stance for the euro area. This step implies choosing a point between the aggregate target for stabilisation and the aggregate target for sustainability. As the aggregation under Step C uses three different possible weights for stabilisation and six for sustainability, each of the 18 possible pairs of point targets is considered. For each pair, three values are taken into account, namely those obtained with a full weight on stabilisation, an equal weight for both objectives and a full weight on sustainability. Finally, the numbers indicated in Table IV.2.5 correspond to the most expansionary fiscal stance obtained with a full weight on stabilisation (-0.5, left column), the most expansionary and most restrictive stances obtained as midpoints for each of the 18 pairs of targets (-0.1 to 0.7, middle column) and the most restrictive fiscal stance obtained with a full weight on sustainability (1.7, right column).

Putting the full policy weight on the stabilisation objective of closing the aggregate euro area output gap by 50% is consistent with an expansion of 0.3% to 0.5% of GDP. This outcome –which is the target advocated in the Commission's Communication "Towards a positive fiscal stance for the euro area" of 16 November 2016– is consistently obtained with all the sequences. This does not preclude a geographical configuration of fiscal policy that takes into account sustainability needs where necessary.

2.4.2. Starting directly at the euro area level

As an alternative to the bottom-up approach, the euro area can be directly considered as an entity. Instead of aggregating country needs, the euro area can be thought of as a single economy whose needs are directly assessed at the aggregate level. This is a reasonable assumption, to the extent that there is a single monetary policy and that economic links across Member States are strong. However, it has limitations in the sense that fiscal policies and sovereign debts are national, and regarding monetary policy, transmission channels do not operate in an identical way across Member States.

To assess the needs of the euro area, stabilisation and sustainability needs are calculated directly on the basis of euro area-wide indicators, including S1, the change in SPB and the output gap. Technically, this means that the preliminary step is to aggregate all country variables. The standard method is to weight them by GDP. This is how available aggregate euro area variables are constructed and these are the variables that have been used for the graphs and tables in Chapter IV.1. and in this chapter so far. ([161])

When dealing directly with euro area indicators, only two sequences are possible, namely AB and BA. Both sequences start with the ranges of targets derived from stabilisation and sustainability needs, respectively based on the analysis of the output gap (see Sections IV.1.1. and IV.1.2.) and sustainability indicators (see Sections IV.1.3. and IV.1.4.) at the euro area level. The sequence AB means that, first, point targets are chosen for stabilisation and sustainability (A), respectively, and then a choice is made between the two (B). The sequence BA starts by building a range of possible fiscal stances, based on the stabilisation and sustainability ranges (B), and then chooses a point within that range (A). The first step of both sequences is shown in Graph IV.2.8.

While a midpoint between accelerating the closure of the output gap and frontloading consolidation would suggest a broadly neutral fiscal stance, it would take some expansion to close the output gap by 50%. According to Step A, on the one hand, high stabilisation needs resulting from a long and deep cycle call for a rapid closure of the output gap by 50%. This would require an expansion by 0.4% of GDP assuming a multiplier of 0.8, as reported in Table IV.2.5. On the other hand, high sustainability needs as measured by the S1 indicator would require frontloaded consolidation (by 0.8% of GDP). Under Step B, these two points, -0.4% and 0.8%, define the broad range for the fiscal stance, while the restricted range minimising the distance to the stabilisation and sustainability ranges indicates fiscal stances of -0.1% to 0.4% of GDP.

Both sequences, AB and BA, suggest that supporting the closure of the euro area output gap by 50% requires an expansion of around 0.4% of GDP. The size of the expansion needed depends on the fiscal multiplier, as discussed in the next subsection.

While this outcome is broadly comparable to the one obtained with the bottom-up analysis, it masks specific risks and thus the broader ranges. Aggregating country-specific information according to the economic size implies that high risks at the Member State level are not properly taken into account. By contrast, using specific weights reflecting risks for stabilisation and sustainability can make high risks and tensions between objectives more prominent. This way, the

([161]) Alternatively, specific weights reflecting stabilisation and sustainability considerations could be used. For instance, national output gaps could be aggregated using weights reflecting the length of the cycle or on GDP incorporating a trade factor, and country-specific values of the S1 indicator could be weighted by e.g. the debt ratio or in line with the two benchmarks discussed in Subsection IV.2.3.4.

aggregate numbers get closer to the information obtained with the bottom-up approach. ([162])

2.4.3. Sensitivity analysis: impact of a higher fiscal multiplier

The stabilisation achieved with a given fiscal impulse depends on the assumptions regarding the fiscal multiplier. As discussed in Chapter IV.1., the analysis developed in this part assumes a multiplier of 0.8, which in the current context is a fairly conservative assumption. It reflects the assumption that the composition of the fiscal impulse is mixed, based on items associated with low multiplier effects (tax cuts, increases in non-targeted social transfers) and high multiplier effects (increases in public investment or in government consumption). Should the fiscal impulse focus more on budgetary variables associated with a large impact on growth, such as public investment, the multiplier would rather amount to 1. ([163]) However, fiscal multipliers are not observable and their measurement is subject to large uncertainties Some studies assume even higher multipliers, reflecting situations in which the demand shock has a sizeable inflationary impact and the fall in real interest rates results in a crowding-in effect. ([164]) Conversely, other studies, depending on a less growth-friendly composition of the fiscal impulse and on a different assessment of the deleveraging process in the private sector, indicate that a lower multiplier, of e.g. 0.5, could be used.

The desired output gap closure could also be different. This report presents the case for a desired closure of the current output gap by 50%. More ambitious closures of the output gap could also be considered, for example by 100%.

Table IV.2.6 reports the amount of fiscal impulse consistent with three different desired output gap closures for various sizes of fiscal multipliers. A well-designed composition of the budgetary stimulus implies that the amount of fiscal impulse can be halved compared to the impulse necessary when the composition is suboptimal. While the numbers reported in the table are directly based on euro area aggregates for simplicity, similar calculations can also apply at the individual Member State level.

Assuming an optimally growth-friendly composition of fiscal measures, the euro area output gap could close in one year with an expansion of 0.7 to 0.8% of GDP. While this is in principle an objective that could be desirable, this scenario goes beyond the more reasonable stabilisation targets envisaged in this part and, as noted in the Communication, such a stance may be imprudent, since it may fuel undesirable overheating in some Member States and, even more importantly, it would be at odds with the goal of preserving the sustainability of public finances.

Table IV.2.6: **Sensitivity analysis: fiscal stances consistent with various multipliers and stabilisation targets**

Fiscal multiplier	Fiscal stance consistent with a closure of the output gap by		
	25%	50%	100%
0,5	0,0	-0,5	-1,5
0,8	-0,1	-0,4	-1,0
1	-0,1	-0,3	-0,8
1,2	-0,1	-0,3	-0,7

Source: Commission services.
Note: Fiscal stances expressed as change in the SPB as percentage points of GDP, derived from the analysis based on euro area numbers.

2.5. THE COMPOSITION OF THE EURO AREA FISCAL STANCE

This section moves on from the discussion of how to choose an aggregate euro area fiscal impulse to discussing the likely impact of such an aggregate fiscal impulse on the euro area economy and on individual Member States. This is done using the Commission's QUEST model, in order to take into account the simultaneous effects within and across Member States. The impact very much depends on the composition of the aggregate fiscal stance, both in geographical and budgetary terms. On this basis, this section discusses criteria to assess which composition of national fiscal stances is preferable to obtain a desired aggregate stance. This highlights differences between the

([162]) Depending on the weights, the targeted fiscal stance ranges from -0.5% to 1.9% of GDP.
([163]) See Box III.1.1 in Part III of this report. This is the assumption underlying the Commission Communication of 16 November 2016. It emphasises the need for a growth-friendly composition of the fiscal impulse, which should stimulate public investment.
([164]) See for instance J. In 't Veld (2016). The higher multiplier may also take account of the spillover effects, which may be larger when the economy is at the zero lower bound and which are not directly taken into account in the quantification presentation in this part.

bottom-up approach – whereby the euro area fiscal stance results from national fiscal stances that are derived from domestic needs – and the top-down approach – whereby national fiscal stances are determined so as to form a desired aggregate stance.

2.5.1. One aggregate fiscal stance, many possible compositions

A given aggregate fiscal stance can be the result of different national fiscal stances. The aggregate fiscal stance is a synthetic summary of fiscal decisions at the national level. It does not provide information about its geographical composition – the fiscal stances in the various Member States – nor its budgetary composition – the choice of specific revenue and expenditure items.

Going back to the national level is necessary, as this is the level at which fiscal policies are actually implemented in the euro area. The only form of fiscal policy existing at the euro area level is coordination. There is not a euro area budget comparable to national budgets in size and scope. ([165]) Moreover, there is neither a euro area debt instrument nor a single fiscal policymaker at the aggregate level nor any form of fiscal euro area capacity. Instead, fiscal policies in the euro area are first and foremost a national matter. They are the responsibility of sovereign Member States, although framed by the common rules of the Stability and Growth Pact.

National fiscal policies are, however, not isolated from each other. Fiscal policy in one Member State can have implications for other Member States, in particular via trade, financial markets and confidence effects, as discussed in Box IV.2.2. Due to spillover effects and differences in multipliers across Member States, different geographical and budgetary compositions do not have the same economic implications. The economic impact of a certain fiscal stance very much depends on the budgetary situation and the macroeconomic characteristics of each Member State as well as the budgetary composition of fiscal measures.

In addition to the size of fiscal impulse, the economic impact of an aggregate fiscal stance can considerably vary depending on the multiplier and spillover effects that it entails. Numerous factors come into play regarding the size of these effects.

- **The size of the fiscal multiplier depends on the budgetary composition of fiscal measures and on the budgetary and macroeconomic situation of the country.** Different multipliers are associated with the various budgetary items, and this also changes with the conditions in the economy. ([166]) In particular, multipliers tend to be larger when unemployment is high and a large share of households is financially constrained, and when monetary policy cannot react as it would in normal times. Moreover, the different national budgetary situations imply that fiscal impulse by a certain amount in one country is not the same as fiscal impulse of the same amount in another country. As countries do not have the same budgetary room for manoeuvre, stimulus in a country with high sustainability risks may be perceived as additional risk by financial markets and feed tensions, with possible cliff effects and negative contagion effects on other Member States, while this would not be the case in a country with sustainable public finances. ([167])

- **Spillover effects depend on several additional factors mainly related to structural features of the economy.** These include the relative sizes of the economies, trade elasticities, the degree of openness and the geographical specialisation, which can all affect the extent to which fiscal shocks in some Member States affect other Member States (see Box IV.2.2). For instance, a given fiscal impulse in a Member State that mostly trades within the euro area is likely have a higher

([165]) The EU budget has a very limited size, it is mainly designed for structural matters in a multiannual framework, and it is used for the whole EU and not specifically for the euro area.

([166]) See Subsection IV.1.2.3., for a discussion of fiscal multipliers.

([167]) For instance, under specific conditions including a highly non-linear convex relationship between debt levels and CDS spreads, the absence of fiscal consolidation in highly indebted countries can have a stronger negative impact on growth than consolidation. Higher expectations of sovereign default would increase sovereign spreads, which would spill over to higher borrowing costs for the private sector and result in large negative demand effects. See Roeger and in 't Veld (2013).

impact on overall euro area demand than the same impulse implemented in a Member State whose trade links are mainly outside the euro area. Moreover, spillover effects are found to be larger when several Member States implement simultaneous fiscal consolidation or expansion.

Overall, the aggregation of national fiscal stances is more complex than a mechanical sum of deficits and surpluses. It requires an economic model to reflect the differences in contexts, fiscal positions and policy measures, as reflected in different fiscal multipliers, and to take into account the spillover effects across countries.

2.5.2. How can national fiscal stances add up to an assumed desired aggregate fiscal stance?

A desired euro area fiscal stance can be achieved with many different combinations of national fiscal stances, but many of these possibilities are not optimal. This may be because the national fiscal stances do not match the needs of the Member States in which they are implemented, or because they do not lead to an optimal combination of spillover effects. In addition, a given geographical composition may itself be the result of different budgetary compositions, some of which may be preferable to others in view of stabilisation and sustainability objectives.

Two criteria are useful when choosing a combination of national fiscal stances. The first criterion is whether the chosen composition –both in geographical and composition terms– meets the needs of the euro area as a whole. This includes the question of whether the use of spillover effects is optimal. The second criterion concerns the relation of the chosen geographical composition with the stabilisation and sustainability needs of individual Member States – for instance, where the national fiscal stances stand with respect to the ranges identified under Step B, as discussed in the previous sections of this chapter.

This section discusses four possible geographical and budgetary compositions against these two criteria. We use the Commission's QUEST model to measure the impact of the different compositions in terms of stabilisation and sustainability both at the Member State and aggregate levels, as described in Box IV.2.4. Some cases are top down, in that they model different ways to coordinate national fiscal stances into the desired aggregate stance. The last case is bottom up, in that the analysis does not start from a coordinated configuration of fiscal stances but from a nationally-chosen configuration. The cases are as follows:

- The baseline against which other compositions –the three scenarios– will be assessed. This baseline assumes that a certain desired aggregate fiscal stance is implemented in a uniform manner in all Member States. ([168])

- Cases *i*) and *ii*), are top-down. Unlike the baseline, both *i*) and *ii*) assume that the national fiscal stances are differentiated to take into account country-specific needs, the difference between the two being that this is done with two different budgetary compositions.

- Finally, case *iii*) indicates, for comparison, national fiscal stances that would result from a bottom-up approach: the national fiscal stances are directly derived from stabilisation and sustainability needs in individual Member States, and the stance at the euro area level is the result of their aggregation as in the sequence ABC (see Section IV.2.3.).

To keep the simulations simple and easily comparable, the exercise applies to the fiscal stances of only two Member States within the euro area, denoted A and B. Country B is assumed to be larger than country A. It is also assumed that, on the basis of individual needs –i.e. without consideration for spillover effects across countries– the fiscal target for country B would point to the same fiscal stance as in the baseline, while country A would be found to need more consolidation than in the baseline. This implies that a bottom-up approach disregarding spillover effects would lead to an aggregate fiscal stance that would be more restrictive than the desired aggregate stance in the baseline.

([168]) Note that a different baseline could have been chosen. In this sense, the baseline could be treated as a case by itself. Given that a configuration of national targets which is uniform can only be done centrally, this is a top-down case.

Country B is supposed to have enough fiscal space to implement a positive fiscal shock of the same amount as the negative fiscal shock in country A. As a result, if country A implements more consolidation than in the baseline but country B offsets it with more expansion, the aggregate fiscal stance is unchanged compare to the baseline. ([169])

In the baseline every Member State implements the same uniform fiscal stance, identical to the desired aggregate fiscal stance, including in terms of budgetary composition. While this composition ensures consistency with the desired aggregate fiscal stance and thus meets the first criterion defined above, it is not likely that all Member States have identical needs and the composition therefore performs poorly on the second criterion.

The two following cases (*i* and *ii*) assume coordinated fiscal stances and combine differentiated national fiscal stances that also sum up to the desired aggregate fiscal stance. In line with the top-down approach, the euro area perspective prevails and spillover effects are explicitly taken into account. Country A is expected to consolidate more than in the baseline, not only in view of its own sustainability risks but also to avoid contagion risks. To make up for it, country B implements more fiscal expansion than in the baseline, by the same amount as the consolidation in country A. While this expansion is not needed at the domestic level, it is needed at the euro area level and, unlike country A, country B is assumed to have leeway to implement it without putting sustainability at risk.

In case *i*) (Scenario 2 in Box IV.2.4), the budgetary composition of the coordinated fiscal stances is growth-friendly. In this case, it is assumed that country B chooses for its positive fiscal shock a budgetary composition based on high-multiplier items, like investment, while A chooses for its retrenchment a budgetary composition made of items with small fiscal multipliers. By maximising the positive spillovers from country B and minimising the negative spillovers from country A, this composition brings about an optimal outcome in terms of both aggregate stabilisation and sustainability objectives. In country A, the negative domestic shock has a restrictive impact but the spillovers from the positive shock in country B both reinforce the debt reduction and mitigate the contractionary impact of consolidation. In country B, the increase in the debt ratio remains limited. The very large multiplier associated with the increase in public investment, however, implies a sizeable boost in real GDP growth in an economy where this was not deemed necessary.

In case *ii*) (Scenario 3 in Box IV.2.4), the budgetary composition is such that the outcome is worse than the baseline. This time, the budgetary composition of the two fiscal shocks is reversed. Therefore, the negative spillovers from the consolidation in country A outweigh the positive spillovers from the stimulus in country B, so that the euro area is worse off regarding both real GDP growth and debt dynamics. In country B, public finances deteriorate markedly while the positive impact on GDP is limited. In country A, the severe recessionary impact reduces the effectiveness of consolidation.

The case of national fiscal stances directly derived from country-specific needs (case *iii*) is reflected in Scenario 1 of Box IV.2.4. While this composition matches the specific objectives of each Member State (the second criterion defined above), it does not necessarily add up to the desired aggregate stance (first criterion). In addition, this configuration does not internalise the spillovers and may thus lead to a suboptimal outcome for the euro area. In the example considered here, it leads to a more restrictive aggregate fiscal stance than in the baseline, with a limited decline in the debt ratio compared to the baseline, but also slightly reduced GDP growth. Compared to the case of coordinated fiscal stances with an optimal budgetary composition (case *i*), country A is worse off, as it does not benefit from the positive spillover effects from the positive shock in country B.

Overall, choosing the composition that is optimal for the euro area may, as a general

([169]) To allow comparison across scenarios, and without considering whether this is a realistic size, the amount of fiscal impulse (either positive or negative) compared to the baseline is normalised at 1% of the GDP of country B, which, given differences in country sizes, is tantamount to 1.85% of the GDP of country A. Different amounts could also be considered, as what matters for this analysis is the sign and combination of effects more than their absolute size.

Box IV.2.4: **Model simulations of four compositions for the fiscal stance in the euro area**

This box describes the composition and impact of four illustrative fiscal stances –a baseline and three scenarios– in the euro area, using the Commission's QUEST model. The first composition (the baseline against which the three scenarios are assessed) corresponds to the uniform implementation of a given fiscal stance in each Member State. The first scenario assumes more fiscal consolidation in country A than in the baseline, and fiscal stances in line with the baseline in all the other Member States. The second scenario combines more fiscal consolidation in country A with more fiscal expansion by the same amount in country B, implying that the aggregate fiscal stance remains as in the baseline. The last scenario considers fiscal shocks of the same amount as in Scenario 2, but with a less growth-friendly budgetary composition. Given the relative sizes of fiscal multipliers and spillover effects, the stimulus in country B in Scenario 2 results in higher GDP growth for the euro area as a whole, despite consolidation in country A. By contrast, Scenario 3 leads to a more restrictive impact and higher debt than isolated consolidation in country A, due to the unfavourable budgetary composition.

With the exception of the geographical and budgetary composition of the fiscal stance, the three scenarios share common assumptions. The size of the fiscal shocks in both countries, is normalised at 1% of the GDP of country B – what matters is that the amount is the same in both countries, and different amounts would simply lead to proportional outcomes. The fiscal shocks last 10 years and are followed by a gradual return to the baseline. In the other euro area Member States, the fiscal stance is in line with the baseline. Monetary policy is constrained by the zero lower bound: interest rates are kept unchanged for two years then gradually return to a normal Taylor rule setting. The scenarios are compared against a baseline in which an identical fiscal stance is uniformly implemented in all countries.

The three scenarios are as follows. Scenario 1 assumes isolated fiscal consolidation in country A. It consists in an increase in consumption tax by 1.85% of the GDP of country A, in line with the normalisation at 1% of GDP of country B. Scenario 2 assumes the same shock in country A as in Scenario 1 but combines it with fiscal stimulus in country B, in the form of an increase in public investment, also by 1% of GDP of country B. In scenario 3, the consolidation in country A is implemented as a cut in public investment, while the stimulus in country B consists in a cut of personal income tax.

Graph IV.3.b shows the cumulative change in real GDP growth, government debt and budget balance compared to the baseline.

- Isolated consolidation in country A (Scenario 1) has a contractionary impact in this country and, to a marginal extent, in the rest of the euro area. The budget balance of country A improves, thus reducing the debt-to-GDP ratio, while deficit and debt ratios in other Member States remain largely unaffected.

- Under Scenario 2, the increase in public investment in country B not only boosts domestic growth but also generates positive spillovers for growth in the rest of the euro area. This is in particular visible in country A, where, compared to Scenario 1, the spillover effects partly offset the restrictive impact of consolidation and the deficit- and debt-to-GDP ratios decline somewhat more markedly. At the aggregate level, the debt ratio in the area as a whole declines marginally faster than under Scenario 1 in the first years, thanks to higher growth and in spite of the increase in the debt ratio of country B.

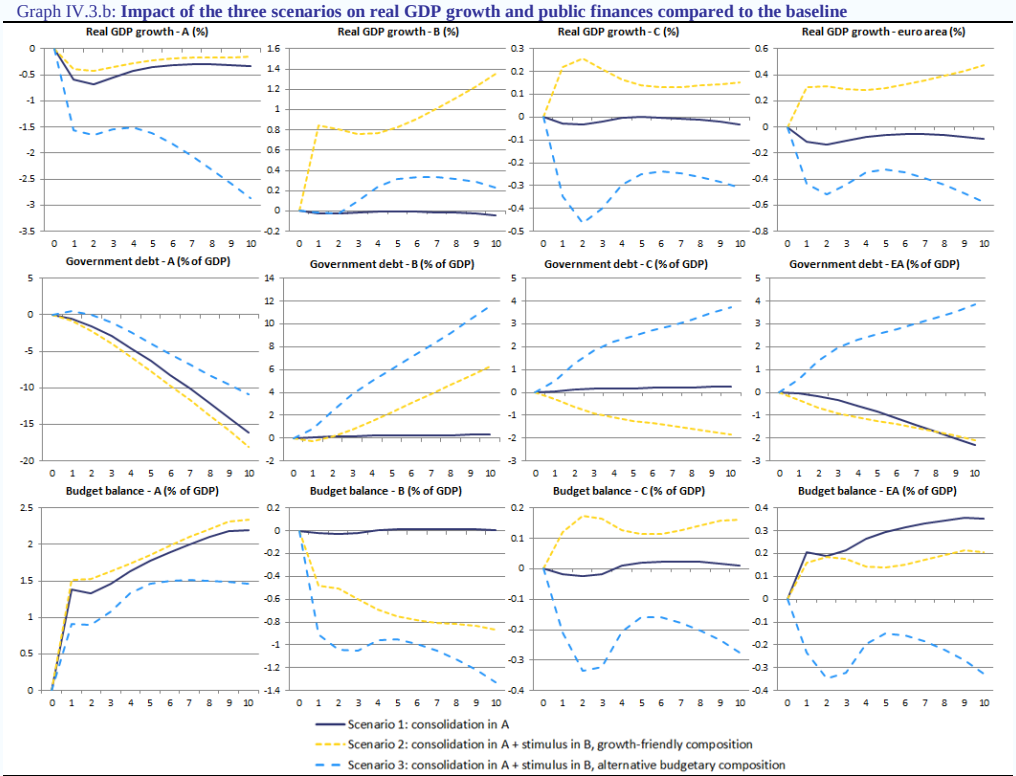
- By contrast, under Scenario 3, the reduction in public investment in country A has a larger restrictive impact on domestic growth than the consolidation envisaged in the other scenarios. This also negatively spills over to growth in the other Member States. At the same time, in country B, the cut in personal income tax only has a limited expansionary impact. This is not sufficient to offset the negative spillovers from country A at the aggregate level, and growth in the euro area is, despite the stimulus in country B, lower than under Scenario 1. The impact on the debt ratio is also the least favourable of the three scenarios in all countries.

(Continued on the next page)

Box (continued)

Overall, these simulations show the importance of the budgetary composition of fiscal policies, not only in the domestic economy but also in view of the spillover effects that this may have. Public investment is the budgetary item that is expected to have the largest multiplier effect, resulting also in larger spillovers, while the multipliers associated with consumption taxes and personal income taxes are relatively low. This is why, under Scenario 2, the growth-friendly budgetary composition of the fiscal stance implies that the positive spillover effects from the stimulus in country B dominate the negative spillovers from the consolidation in country A, while it is the opposite in Scenario 3.

Graph IV.3.b: **Impact of the three scenarios on real GDP growth and public finances compared to the baseline**



Source: Commission services.
Note: Baseline: neutral fiscal stances in all Member States. Scenario 1: increase in consumption tax in country A by 1.85% of GDP of country A. Scenario 2: same as Scenario 1 plus increase in public investment in country B by 1% of GDP of country B. Scenario 3: cut in public investment in country A by 1.85% of GDP and cut in personal income tax in country B by 1% of GDP.

rule, not reflect what is optimal at the Member State level. In terms of political economy, accepting a top-down approach is only possible under two strong conditions: if there is mutual trust that all the Member States actually implement the fiscal stance that is assigned to them, and if all believe that what is beneficial to the euro area as a whole is ultimately also beneficial to individual Member States, not least in terms of the viability of the euro area.

2.6. CONCLUSION

This chapter has shown the importance of the method used to estimate an appropriate fiscal stance for the euro area. The different sequences that are used to construct the desired aggregate fiscal stance do not capture the information from the same angle. In particular, while some only reflect the stabilisation and sustainability needs of individual Member States, others take a more comprehensive approach, incorporating the analysis of spillovers and/or contagion effects.

The most important decisions to be taken in choosing the desired fiscal shock, especially at Member States level, are to weigh stabilisation against sustainability and to internalise spillover and contagion effects. In general, these decisions largely depend on factors that are country-specific and need to be analysed.

As a result, it is important to develop a thorough analysis at the Member State level and not only at the aggregate level. As shown in Section IV.2.4., using risk-specific weights, rather than GDP, to aggregate variables at the euro area level broadly enables replicating the outcome of the bottom-up approach, whereby the desired fiscal stance for the euro area is derived from the desired national fiscal stances. These specific weights are, however, themselves derived from the analysis at the country level, so that even an analysis performed at the euro area level requires information on the situation in individual Member States.

This raises the question of how far to go with aggregation. Aggregation is useful to discuss the overall situation in the euro area, but it entails a loss of information. It is also useful to keep some information on tensions across Member States and between policy objectives, especially when considering the geographical composition of the euro area fiscal stance.

The appropriate geographical configuration of a positive aggregate fiscal stance may, at the same time, enhance stabilisation and sustainability. In cases where those Member States that have no sustainability needs target stabilisation while those with high sustainability needs target sustainability, it is possible for fiscal policy to aim at enhancing both stabilisation and sustainability needs at an aggregate level. This relies in particular on the reduction of the risk of cliff effects and the related contagion effects, while making the best use of spillovers.

Once the appropriate aggregate fiscal stance has been chosen, assessing the relevant composition of national fiscal stances to implement it requires an economic model. Discussing a possible rebalancing of the geographical configuration, for instance asking one Member State to consolidate more and another one to expand more compared to a certain baseline, does not necessarily imply that the impacts of national fiscal stances will offset each other. The aggregate picture may change, even if the aggregate fiscal stance looks identical, because different budgetary compositions and geographical configurations imply a different combination of multiplier effects and spillover effects.

Relevant policy messages on the optimal composition of the fiscal stance in the euro area need to go beyond messages on the size of consolidation or stimulus at the Member State level. The budgetary composition matters at least as much as the geographical composition, despite identical national fiscal stances in terms of size of impulse. This has two implications. The first implication is that normative statements should in principle cover both the direction and the budgetary composition of fiscal policies to ensure that the implemented policies actually have the intended impact. The second implication is that, when risks to sustainability make fiscal expansion impossible, a more growth-friendly composition can potentially improve growth prospects in a budgetary neutral way.

The possible normative messages, however, need to remain within the legal boundaries of the SGP. In particular, Member States with deficits in excess of the 3% of GDP reference value must correct them as required, and Member States under the preventive arm need to progress towards, or remain at, their medium-term budgetary objectives. An additional limitation to normative messages is that the budgetary composition of national fiscal policies is the responsibility of sovereign Member States.

ANNEX 1

Numerical values for the stabilisation and sustainability targets

Table IV.A1.1: **Stabilisation and sustainability targets**

	STABILISATION				SUSTAINABILITY			
	Fiscal stance consistent with an OG closure by		Additional target for stabilisation (neutral fiscal stance)	Point target for stabilisation	Fiscal stance implied by		Additional target for sustainability (not only derived from S1)	Point target for sustainability
	25%	50%			20% of S1	50% of S1*		
BE	0,2	0,1	0	0	0,8	1,7		1,7
DE	-0,7	-0,7	0	0	-0,2	-0,3	0	0
EE	-1,2	-1,2	0	0	-0,8	-1,9	0	0
IE	0,3	0,8		0,3	0,4	0,9	0,5	0,5
ES	1,3	0,8	0	0	0,7	1,5		1,5
FR	-0,2	-0,6		-0,6	0,7	1,6		1,6
IT	-0,2	-0,7		-0,7	0,8	1,7		1,7
CY	1,2	0,9	0	0	0,0	0,0	0	0
LV	0,1	0,5		0,1	-0,4	-0,9	0,5	0,5
LT	0,4	0,7		0,4	0,0	0,1	0	0,0
LU	-1,3	-1,7		-1,7	-1,0	-2,2	0	0,0
MT	-0,5	-0,2	0	0	-0,1	-0,3	0,5	0,5
NL	0,3	0,0	0	0	-0,2	-0,4	0,0	0,0
AT	0,1	-0,1	0	0	0,1	0,3	0,5	0,5
PT	0,7	0,5	0	0	1,0	2,2		2,2
SI	1,1	1,0	0	0	0,3	0,7		0,7
SK	0,6	0,4	0	0	-0,1	-0,3	0,5	0,5
FI	-0,7	-1,2		-1,2	0,5	1,1		1,1
EA-19	-0,1	-0,4		-0,4	0,4	0,8		0,8

Source: Commission services.

Note: This table presents the fiscal targets derived from both stabilisation and sustainability needs, following the analysis developed in Chapter IV.1. (see Sections IV.1.2. and IV. 1.4.), and the point targets for each objective as chosen in Step A of Chapter IV.2. (Section 2.1.). These numbers provide the basis for all the calculations made in Chapter IV.2. The different possible weights used to aggregate country numbers at the euro area level are presented in Tables IV.1.3 (column "L1" using the standard output gap), IV.2.5 and IV.2.6, and the outcomes of the two benchmark scenarios for sustainability are presented in Subsection IV.2.3.4.

Part V

Resources

1. ABBREVIATIONS AND SYMBOLS USED

Member States

BE	Belgium
BG	Bulgaria
HR	Croatia
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
EI	Ireland
EL	Greece
ES	Spain
FR	France
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	The Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia

FI	Finland
SE	Sweden
UK	United Kingdom
EA	Euro area
EU	European Union
EU-28	European Union, 28 Member States
EA-19	Euro Area, 19 Member States

Other

AMECO	Macro-economic database of the European Commission
AWG	Ageing Working Group
CAB	Cyclically Adjusted Budget Balance
CAPB	Cyclically-adjusted primary balance
COFOG	Classification of the functions of government
COM	Commission
CSR	Country-Specific Recommendations
DBP	Draft Budgetary Plan
DFE	Discretionary Fiscal Effort
DG ECFIN	Directorate-General Economic and Financial Affairs
DRM	Discretionary Revenue Measures
EC	European Commission
ECB	European Central Bank
ECOFIN	Economic and Financial Affairs Council configuration
EDP	Excessive Deficit Procedure
EERP	European Economic Recovery Plan
EFC	Economic and Financial Committee
EFSF	European Financial Stability Facility
EMU	Economic and Monetary Union

EPC	Economic Policy Committee
ESA	European System of National and Regional Accounts
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
HICP	Harmonized Index of Consumer Prices
IMF	International Monetary Fund
MLSA	Minimum Linear Structural Adjustment
MTBF	Medium-Term Budgetary Framework
MTO	Medium-Term budgetary Objective
NCPI	National Consumption Price Index
NAWRU	Non-accelerating Wage Rate of Unemployment
OECD	Organisation of Economic Co-operation and Development
OG	Output Gap
OGWG	Output Gap Working Group
PFR	Public Finance Report
Pp	Percentage Points
R&D	Research and development
ROG	Representative output gap
SB	Structural Balance
SCPs	Stability and Convergence Programmes
SDP	Significant Deviation Procedure
SGP	Stability and Growth Pact
SPB	Structural primary balance
SUR	Structural Unemployment Rate
TSCG	Treaty on Stability Coordination and Governance
TFEU	Treaty on the Functioning of European Union (TFEU)

2. GLOSSARY

Asset management company: Public or private body aiming at restructuring, recovering or disposing of nonperforming assets.

Automatic stabilisers: Features of the tax and spending regime which react automatically to the economic cycle and reduce its fluctuations. As a result, the budget balance in percent of GDP tends to improve in years of high growth, and deteriorate during economic slowdowns.

Budget balance: The balance between total public expenditure and revenue in a specific year, with a positive balance indicating a surplus and a negative balance indicating a deficit. For the monitoring of Member State budgetary positions, the EU uses general government aggregates. See also structural budget balance, primary budget balance, and primary structural balance.

Budgetary rules: Rules and procedures through which policy-makers decide on the size and the allocation of public expenditure as well as on its financing through taxation and borrowing.

Budgetary sensitivity The variation in the budget balance in percentage of GDP brought about by a change in the output gap. In the EU, it is estimated to be 0.5 on average.

Close-to-balance: requirement A requirement contained in the 'old' Stability and Growth Pact, according to which Member States should, over the medium term, achieve an overall budget balance close to balance or in surplus; was replaced by country-specific medium-term budgetary objectives in the 2005 reform of the Stability and Growth Pact.

Code of Conduct: Policy document endorsed by the ECOFIN Council of 11 October 2005 setting down the specifications on the implementation of the Stability and Growth Pact and the format and content of the stability and convergence programmes.

COFOG (Classification of the Functions of Government) A statistical nomenclature used to break down general government expenditure into its different functions including general public services, defence, public order and safety, economic affairs, environmental protection, housing and community amenities, health, recreation, culture and religion, education and social protection.

Convergence programmes: Medium-term budgetary and monetary strategies presented by Member States that have not yet adopted the euro. They are updated annually, according to the provisions of the Stability and Growth Pact. Prior to the third phase of EMU, convergence programmes were issued on a voluntary basis and used by the Commission in its assessment of the progress made in preparing for the euro. See also stability programmes.

Crowding-out effects: Offsetting effects on output due to changes in interest rates and exchange rates triggered by a loosening or tightening of fiscal policy.

Cyclical component of budget balance: That part of the change in the budget balance that follows automatically from the cyclical conditions of the economy, due to the reaction of public revenue and expenditure to changes in the output gap. See automatic stabilisers, tax smoothing and structural budget balance.

Cyclically-adjusted budget balance: See structural budget balance.

Demand and supply shocks: Disturbances that affect the economy on the demand side (e.g. changes in private consumption or exports) or on the supply side (e.g. changes in commodity prices or technological innovations). They can impact on the economy either on a temporary or permanent basis.

Direct fiscal costs (gross, net) of a financial crisis: The direct gross costs are the fiscal outlays in support of the financial sector that increase the level of public debt. They encompass, for example, recapitalisation, purchase of troubled bank assets, pay-out to depositors, liquidity support, payment when guarantees are called and subsidies. The direct net costs are the direct gross cost net of recovery payments, such as through the sale of acquired assets or returns on assets. Thus, the net direct fiscal costs reflect the permanent increase in public debt.

Direct taxes: Taxes that are levied directly on personal or corporate incomes and property.

Discretionary fiscal effort: indicator that measures the fiscal effort made by governments. It is composed by the sum of the estimated values of the discretionary revenue measures and the difference between the growth rate of an appropriate expenditure aggregate in real terms and average potential GDP growth.

Discretionary fiscal policy: Change in the budget balance and in its components under the control of government. It is usually measured as the residual of the change in the balance after the exclusion of the budgetary impact of automatic stabilisers. See also fiscal stance.

Economic and Financial Committee (EFC): Formerly the Monetary Committee, the EFC is a Committee of the Council of the European Union set up by Article 114 of the. Its main task is to prepare and discuss (ECOFIN) Council decisions with regard to economic and financial matters.

Economic Policy Committee (EPC): Group of senior government officials whose main task is to prepare discussions of the (ECOFIN) Council on structural policies. It plays an important role in the preparation of the Broad Economic Policy Guidelines, and it is active on policies related to labour markets, methods to calculate cyclically-adjusted budget balances and ageing populations.

Effective tax rate: The ratio of broad categories of tax revenue (labour income, capital income, consumption) to their respective tax bases.

Effectiveness: The same concept as efficiency except that it links input to outcomes rather than outputs.

Efficiency: Can be defined in several ways, either as the ratio of outputs to inputs or as the distance to a production possibility frontier (see also Free Disposable Hull analysis, Data Envelope analysis, stochastic frontier analysis). Cost efficiency measures the link between monetary inputs (funds) and outputs; technical efficiency measures the link between technical inputs and outputs. Output efficiency indicates by how much the output can be increased for a given input; input efficiency indicates by how much the input can be reduced for a given input.

ESA2010/ESA95 / ESA79: European accounting standards for the reporting of economic data by the Member States to the EU. As of 2000, ESA95 has replaced the earlier ESA79 standard with regard to the comparison and analysis of national public finance data. ESA2010 standards entered into force in 2014 and changed the treatment of R&D expenditures into investments.

European semester: New governance architecture approved by the Member States in September 2010. It means that the EU and the euro zone will coordinate ex ante their budgetary and economic policies, in line with both the Stability and Growth Pact and the Europe 2020 strategy. Based on previous discussions on Commission's Annual Growth Survey, each summer, the European Council and the Council of ministers will provide policy advice before Member States finalise their draft budgets.

Excessive Deficit Procedure (EDP): A procedure according to which the Commission and the Council monitor the development of national budget balances and public debt in order to assess and/or correct the risk of an excessive deficit in each Member State. Its application has been further clarified in the Stability and Growth Pact. See also stability programmes and Stability and Growth Pact.

Expenditure rules: A subset of fiscal rules that target (a subset of) public expenditure.

Fiscal consolidation: An improvement in the budget balance through measures of discretionary fiscal policy, either specified by the amount of the improvement or the period over which the improvement continues.

Fiscal decentralisation: The transfer of authority and responsibility for public functions from the central government to intermediate and local governments or to the market.

Fiscal governance: Comprises all rules, regulations and procedures that impact on how the budget and its components are being prepared. The terms fiscal governance and fiscal frameworks are used interchangeably in the report.

Fiscal impulse: The estimated effect of fiscal policy on GDP. It is not a model-free measure and it is usually calculated by simulating an econometric model. The estimates presented in the present report are obtained by using the Commission services' QUEST model. See also fiscal stance.

Fiscal rule: A permanent constraint on fiscal policy, expressed in terms of a summary indicator of fiscal performance, such as the government budget deficit, borrowing, debt, or a major component thereof. See also budgetary rule, expenditure rules.

Fiscal stance: A measure of the effect of discretionary fiscal policy. In this report, it is defined as the change in the structural primary budget balance relative to the preceding period. When the change is positive (negative) the fiscal stance is said to be expansionary (restrictive).

General government: As used by the EU in its process of budgetary surveillance under the Stability and Growth Pact and the excessive deficit procedure, the general government sector covers national government, regional and local government, as well as social security funds. Public enterprises are excluded, as are transfers to and from the EU Budget.

Government budget constraint: A basic condition applying to the public finances, according to which total public expenditure in any one year must be financed by taxation, government borrowing, or changes in the monetary base. In the context of EMU, the ability of governments to finance spending through money issuance is prohibited. See also stock-flow adjustment, sustainability.

Government contingent liabilities: Obligations for the government that are subject to the realization of specific uncertain and discrete future events. For instance, the guarantees granted by governments to the debt of private corporations bonds issued by enterprise are contingent liabilities, since the government obligation to pay depend on the non-ability of the original debtor to honour its own obligations.

Government implicit liabilities: Government obligations that are very likely to arise in the future in spite of the absence of backing contracts or law. The government may have a potential future obligation as a result of legitimate expectations generated by past practice or as a result of the pressure by interest groups. Most implicit liabilities are contingent, i.e., depend upon the occurrence of uncertain future events.

Growth accounting: A technique based on a production function approach where total GDP (or national income) growth is decomposed into the various production factors and a non-explained part which is the total factor productivity change, also often termed the Solow residual.

Indirect taxation: Taxes that are levied during the production stage, and not on the income and property arising from economic production processes. Prominent examples of indirect taxation are the value added tax (VAT), excise duties, import levies, energy and other environmental taxes.

Interest burden: General government interest payments on public debt as a share of GDP.

Maastricht reference values for public debt and deficits: Respectively, a 60 % general government debt-to-GDP ratio and a 3 % general government deficit-to-GDP ratio. These thresholds are defined in a protocol to the Maastricht Treaty on European Union. See also Excessive Deficit Procedure.

Maturity structure of public debt: The profile of total debt in terms of when it is due to be paid back. Interest rate changes affect the budget balance directly to the extent that the general government sector has debt with a relatively short maturity structure. Long maturities reduce the sensitivity of the budget balance to changes in the prevailing interest rate. See also public debt.

Medium-term budgetary objective (MTO): According to the reformed Stability and Growth Pact, stability programmes and convergence programmes present a medium-term objective for the budgetary position. It is country-specific to take into account the diversity of economic and budgetary positions and developments as well as of fiscal risks to the sustainability of public finances, and is defined in structural terms (see structural balance).

Minimum benchmarks: The lowest value of the structural budget balance that provides a safety margin against the risk of breaching the Maastricht reference value for the deficit during normal cyclical fluctuations. The minimum benchmarks are estimated by the European Commission. They do not cater for other risks such as unexpected budgetary developments and interest rate shocks. They are a lower bound for the 'medium-term budgetary objectives (MTO).

NAIRU: Non-Accelerating Inflation Rate of Unemployment.

NAWRU: Non-Accelerating Wage Rate of Unemployment.

One-off and temporary measures: Government transactions having a transitory budgetary effect that does not lead to a sustained change in the budgetary position. See also structural balance.

Output gap: The difference between actual output and estimated potential output at any particular point in time. See also cyclical component of budget balance.

Policy-mix: The overall stance of fiscal and monetary policy. The policy-mix may consist of various combinations of expansionary and restrictive policies, with a given fiscal stance being either supported or offset by monetary policy.

Potential GDP: The level of real GDP in a given year that is consistent with a stable rate of inflation. If actual output rises above its potential level, then constraints on capacity begin to bind and inflationary pressures build; if output falls below potential, then resources are lying idle and inflationary pressures abate. See also production function method and output gap.

Primary budget balance: The budget balance net of interest payments on general government debt.

Primary structural budget balance: The structural budget balance net of interest payments.

Pro-cyclical fiscal policy: A fiscal stance which amplifies the economic cycle by increasing the structural primary deficit during an economic upturn, or by decreasing it in a downturn. A neutral fiscal policy keeps the cyclically-adjusted budget balance unchanged over the economic cycle but lets the automatic stabilisers work. See also tax-smoothing.

Production function approach: A method to estimate the level of potential output of an economy based on available labour inputs, the capital stock and their level of efficiency. Potential output is used to estimate the output gap, a key input in the estimation of cyclical component of the budget.

Public debt: Consolidated gross debt for the general government sector. It includes the total nominal value of all debt owed by public institutions in the Member State, except that part of the debt which is owed to other public institutions in the same Member State.

Public investment: The component of total public expenditure through which governments increase and improve the stock of capital employed in the production of the goods and services they provide.

Public-private partnerships (PPP): Agreements that transfer investment projects to the private sector that traditionally have been executed or financed by the public sector. To qualify as a PPP, the project should concern a public function, involve the general government as the principal purchaser, be financed from non-public sources and engage a corporation outside the general government as the principal operator that provides significant inputs in the design and conception of the project and bears a relevant amount of the risk.

Sensitivity analysis: An econometric or statistical simulation designed to test the robustness of an estimated economic relationship or projection, given various changes in the underlying assumptions.

Significant divergence: A sizeable excess of the budget balance over the targets laid out in the stability or convergence programmes, that triggers the Early warning procedure of the Stability and Growth Pact.

Size of the public sector: Typically measured as the ratio of public expenditure to nominal GDP.

"Snow-ball" effect: The self-reinforcing effect of public debt accumulation or de-cumulation arising

from a positive or negative differential between the interest rate paid on public debt and the growth rate of the national economy. See also government budget constraint.

Social security contributions (SSC): Mandatory contributions paid by employers and employees to a social insurance scheme to cover for pension, health care and other welfare provisions.

Sovereign bond spread: The difference between risk premiums imposed by financial markets on sovereign bonds for different states. Higher risk premiums can largely stem from (i) the debt service ratio, also reflecting the countries' ability to raise their taxes for a given level of GDP, (ii) the fiscal track record, (iii) expected future deficits, and (iv) the degree of risk aversion.

Stability and Growth Pact (SGP): Approved in 1997 and reformed in 2005 and 2011, the SGP clarifies the provisions of the Maastricht Treaty regarding the surveillance of Member State budgetary policies and the monitoring of budget deficits during the third phase of EMU. The SGP consists of two Council Regulations setting out legally binding provisions to be followed by the European Institutions and the Member States and two Resolutions of the European Council in Amsterdam (June 1997). See also Excessive Deficit Procedure.

Stability programmes: Medium-term budgetary strategies presented by those Member States that have already adopted the euro. They are updated annually, according to the provisions of the Stability and Growth Pact. See also Convergence programmes.

Stock-flow adjustment: The stock-flow adjustment (also known as the debt-deficit adjustment) ensures consistency between the net borrowing (flow) and the variation in the stock of gross debt. It includes the accumulation of financial assets, changes in the value of debt denominated in foreign currency, and remaining statistical adjustments.

Structural budget balance: The actual budget balance net of the cyclical component and one-off and other temporary measures. The structural balance gives a measure of the underlying trend in the budget balance. See also primary structural budget balance.

Sustainability: A combination of budget deficits and debt that ensure that the latter does not grow without bound. While conceptually intuitive, an agreed operational definition of sustainability has proven difficult to achieve.

Tax elasticity: A parameter measuring the relative change in tax revenues with respect to a relative change in GDP. The tax elasticity is an input to the budgetary sensitivity.

3. REFERENCES

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4. USEFUL INTERNET LINKS

European Union

European Commission	ec.europa.eu
Directorate-General for Economic and Financial Affairs	ec.europa.eu/economy_finance/index_en.htm
Eurostat	epp.eurostat.ec.europa.eu
European Council	consilium.europa.eu
European Parliament	www.europarl.europa.eu

Economics and Finance Ministries

Belgium	www.treasury.fgov.be/interthes	Ministère des Finances - Ministerie van Financen
Bulgaria	www.minfin.bg	Ministry of Finance
Croatia	www.mfin.hr	Ministry of Finance
Czech Republic	www.mfcr.cz	Ministry of Finance
Denmark	www.fm.dk	Ministry of Finance
Germany	www.bundesfinanzministerium.de	Bundesministerium der Finanzen
Estonia	www.fin.ee	Ministry of Finance
Ireland	www.irlgov.ie/finance	Department of Finance
Greece	www.mnec.gr/en/	Ministry of Economy and Finance
Spain	www.mineco.es/	Ministerio de Economía y Hacienda
France	www.finances.gouv.fr	Ministère Économie, Finances et l'Industrie
Italy	www.tesoro.it	Ministero dell'Economia e delle Finanze
Cyprus	www.mof.gov.cy	Ministry of Finance
Latvia	www.fm.gov.lv	Ministry of Finance
Lithuania	www.finmin.lt	Ministry of Finance

Luxembourg	www.etat.lu/FI	Ministère des Finances
Hungary	www.p-m.hu	Ministry of Finance
Malta	finance.gov.mt	Ministry of Finance and Economic Affairs
Netherlands	www.minfin.nl	Ministerie van Financien
Austria	www.bmf.gv.at	Bundesministerium für Finanzen
Poland	www.mofnet.gov.pl	Ministry of Finance
Portugal	www.min-financas.pt	Ministério das Finanças
Romania	www.mfinante.ro	Ministry of Finance
Slovenia	www.gov.si/mf	Ministry of Finance
Slovak Republic	www.finance.gov.sk	Ministry of Finance
Finland	www.vn.fi/vm	Ministry of Finance
Sweden	finans.regeringen.se	Finansdepartementet
United Kingdom	www.hm-treasury.gov.uk	Her Majesty's Treasury

Independent Fiscal Institutions

Belgium	http://www.plan.be/	Federaal Planbureau/Bureau Fédéral du Plan (Belgian Federal Planning Bureau)
	http://www.docufin.fgov.be/intersalgfr/hrfcsf/onzedienst/onzedienst.htm	Hoge Raad van Financiën/Conseil Supérieur des Finances (Belgian High Council of Finance)
Bulgaria		
Croatia	http://www.mfin.hr/en/fiscal-policy-committee	Odbor za fiskalnu politiku (Croatian Fiscal Policy Committee)
Czech Republic		
Denmark	http://www.dors.dk/	De Økonomiske Råd (Danish Economic Councils)
Germany	http://www.stabilitaetsrat.de/DE/Beirat/Beirat_node.html	Unabhängiger Beirat des Stabilitätsrates (German Independent Fiscal Advisory Council to the Stability Council)

Estonia	http://www.eelarvenoukogu.ee/en	Eelarvenõukogu (Estonian Fiscal Council)
Ireland	http://www.fiscalcouncil.ie/	Irish Fiscal Advisory Council (IFAC)
Greece	http://www.pbo.gr/	Greek Parliamentary Budget Office
Spain	http://www.airef.es/	Autoridad Independiente de Responsabilidad Fiscal (AIReF)
France	http://www.hcfp.fr/	Haut Conseil des Finances Publiques (French High Council of Public Finance)
Italy	http://www.parlamento.it/1122	Ufficio Parlamentare di Bilancio (Italian Parliamentary Budget Office)
Cyprus		Fiscal Council of Cyprus
Latvia		Fiskālās disciplīnas padome (Latvian Fiscal Discipline Council)
Lithuania		Lietuvos Respublikos Valstybes Kontrole (National Audit Office of Lithuania)
Luxembourg		National Statistical Office (STATEC, Luxembourg)
		Conseil National des Finances Publiques (CNPF, Luxembourg)
Hungary	http://www.parlament.hu/kt/tagok.htm	Költségvetési Tanács (Hungarian Fiscal Council)
Malta		
Netherlands		Raad van State (Dutch Council of State)
	www.cpb.nl	Centraal Planbureau (Netherlands Bureau for Economic Policy Analysis)
Austria	http://www.fiskalrat.at/	Fiskalrat (Austrian Fiscal Advisory Council)

	http://www.wifo.ac.at/	Österreichisches Institut für Wirtschaftforschung (WIFO - Austrian Institute for Economic Research)
Poland		
Portugal	http://www.cfp.pt/	Conselho das Finanças Publicas (Portuguese Public Finance Council)
Romania	http://www.consiliulfiscal.ro/	Consiliul Fiscal (Romanian Fiscal Council)
Slovenia	http://www.umar.gov.si/	Urad RS Slovenije za makroekonomske analize in razvoj (Slovenian Institute of Macroeconomic Analysis and Development -IMAD)
Slovak Republic	http://www.rozpoctovarada.sk/	Rada pre rozpočtovú zodpovednosť (Slovak Council for Fiscal Responsibility)
Finland		Valtiontalouden Tarkastusvirasto (Finnish National Audit Office)
Sweden	http://www.finanspolitiskaradet.com/	Finanspolitiska Rådet (Swedish Fiscal Policy Council)
United Kingdom	http://budgetresponsibility.org.uk/	Office for Budget Responsibility (OBR)

Central banks

European Union	www.ecb.int	European Central Bank
Belgium	www.nbb.be	Banque Nationale de Belgique / Nationale Bank van België
Bulgaria	www.bnb.bg	Bulgarian National Bank
Croatia	www.hnb.hr	Croatian National Bank

Czech Republic	www.cnb.cz	Czech National Bank
Denmark	www.nationalbanken.dk	Danmarks Nationalbank
Germany	www.bundesbank.de	Deutsche Bundesbank
Estonia	www.eestipank.info	Eesti Pank
Ireland	www.centralbank.ie	Central Bank of Ireland
Greece	www.bankofgreece.gr	Bank of Greece
Spain	www.bde.es	Banco de España
France	www.banque-france.fr	Banque de France
Italy	www.bancaditalia.it	Banca d'Italia
Cyprus	www.centralbank.gov.cy	Central Bank of Cyprus
Latvia	www.bank.lv	Bank of Latvia
Lithuania	www.lb.lt	Lietuvos Bankas
Luxembourg	www.bcl.lu	Banque Centrale du Luxembourg
Hungary	www.mnb.hu	National Bank of Hungary
Malta	www.centralbankmalta.com	Central Bank of Malta
Netherlands	www.dnb.nl	De Nederlandsche Bank
Austria	www.oenb.at	Oestereichische Nationalbank
Poland	www.nbp.pl	Narodowy Bank Polski
Portugal	www.bportugal.pt	Banco de Portugal
Romania	www.bnro.ro	National Bank of Romania
Slovenia	www.bsi.si	Bank of Slovenia
Slovak Republic	www.nbs.sk	National Bank of Slovakia
Finland	www.bof.fi	Suomen Pankki
Sweden	www.riksbank.com	Sveriges Riksbank
United Kingdom	www.bankofengland.co.uk	Bank of England

EU fiscal surveillance framework

Stability and Growth Pact:

http://ec.europa.eu/economy_finance/economic_governance/sgp/index_en.htm

Draft Budgetary Plans:

http://ec.europa.eu/economy_finance/economic_governance/sgp/budgetary_plans/index_en.htm

Excessive deficit procedure:

http://ec.europa.eu/economy_finance/economic_governance/sgp/corrective_arm/index_en.htm

Stability and convergence programmes:

http://ec.europa.eu/economy_finance/economic_governance/sgp/convergence/index_en.htm

Sustainability of public finances:

http://ec.europa.eu/economy_finance/articles/eu_economic_situation/article15994_en.htm

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  (the main reports, e.g. Economic Forecasts)
- http://ec.europa.eu/economy_finance/publications/occasional_paper/index_en.htm
  (the Occasional Papers)
- http://ec.europa.eu/economy_finance/publications/qr_euro_area/index_en.htm
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