

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, ⁽¹¹⁾ 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

⁽¹¹⁾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
<p>What can make fiscal stimulus necessary</p> <ul style="list-style-type: none"> • 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 	<p>What can make fiscal consolidation necessary</p> <ul style="list-style-type: none"> • 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
<p>What can make fiscal stimulus possible and effective</p> <ul style="list-style-type: none"> • 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 	<p>What can make fiscal consolidation more effective</p> <ul style="list-style-type: none"> • 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

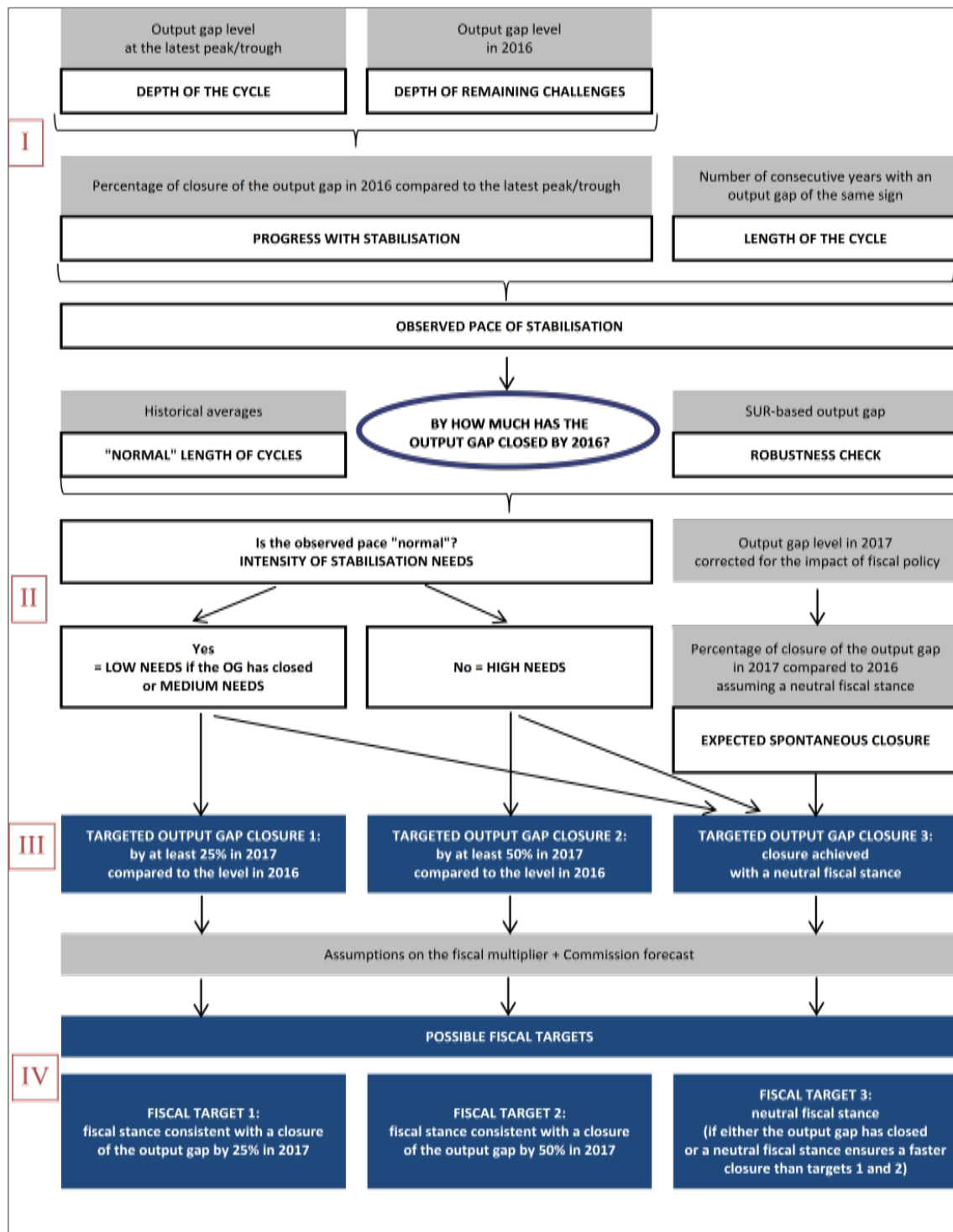
Strengths and weaknesses of the output gap

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

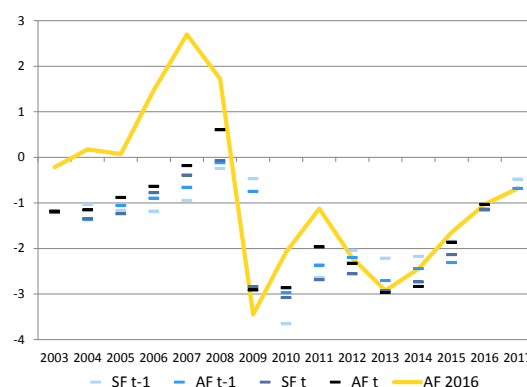
Source: Commission services.

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

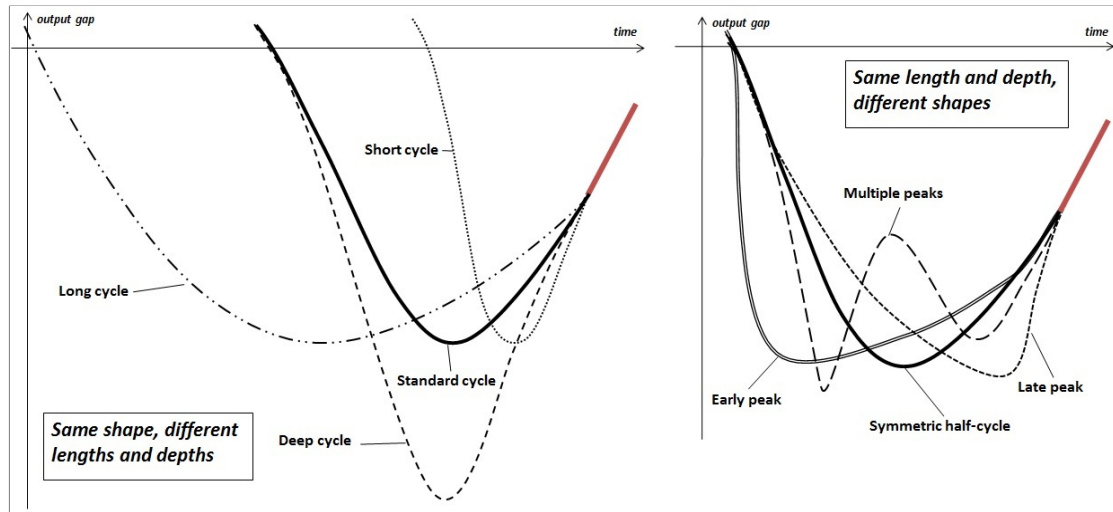
As the level and change of the output gap do not provide sufficient information to describe the cyclical conditions, the depth and length of the cycle also need to be taken into account. Empirical analyses of fiscal policies usually measure the cyclical conditions by the output gap, either in level or 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



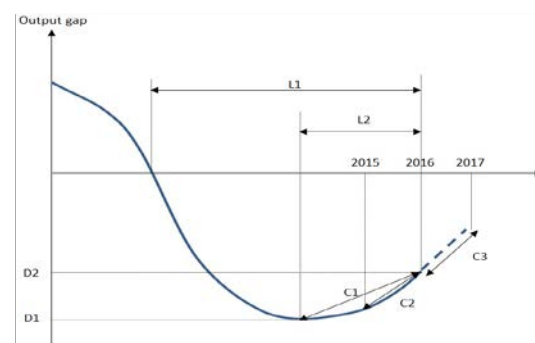
Source: Commission services.

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.

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.

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

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.

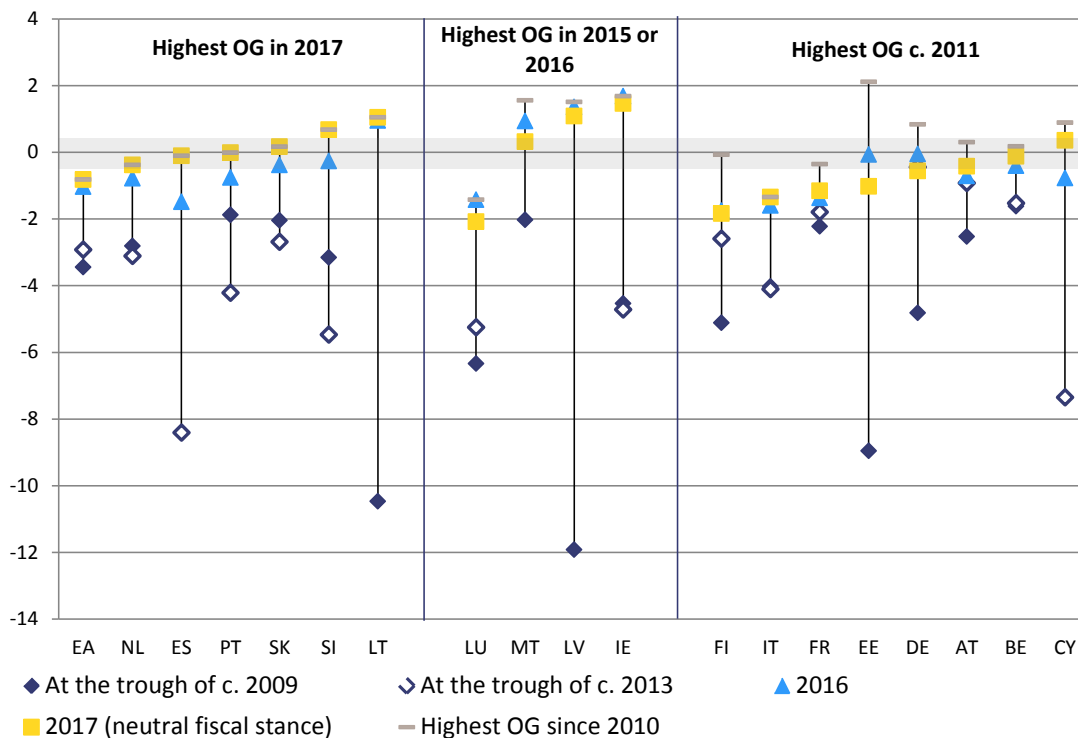
Graph IV.1.5 shows that euro area Member States have experienced more or less pronounced single or double-dip recessions since 2009: both depths and lengths have differed across countries. Member States started from very different levels at the trough, as can be seen by the lowest ends of the bars, indicating 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.

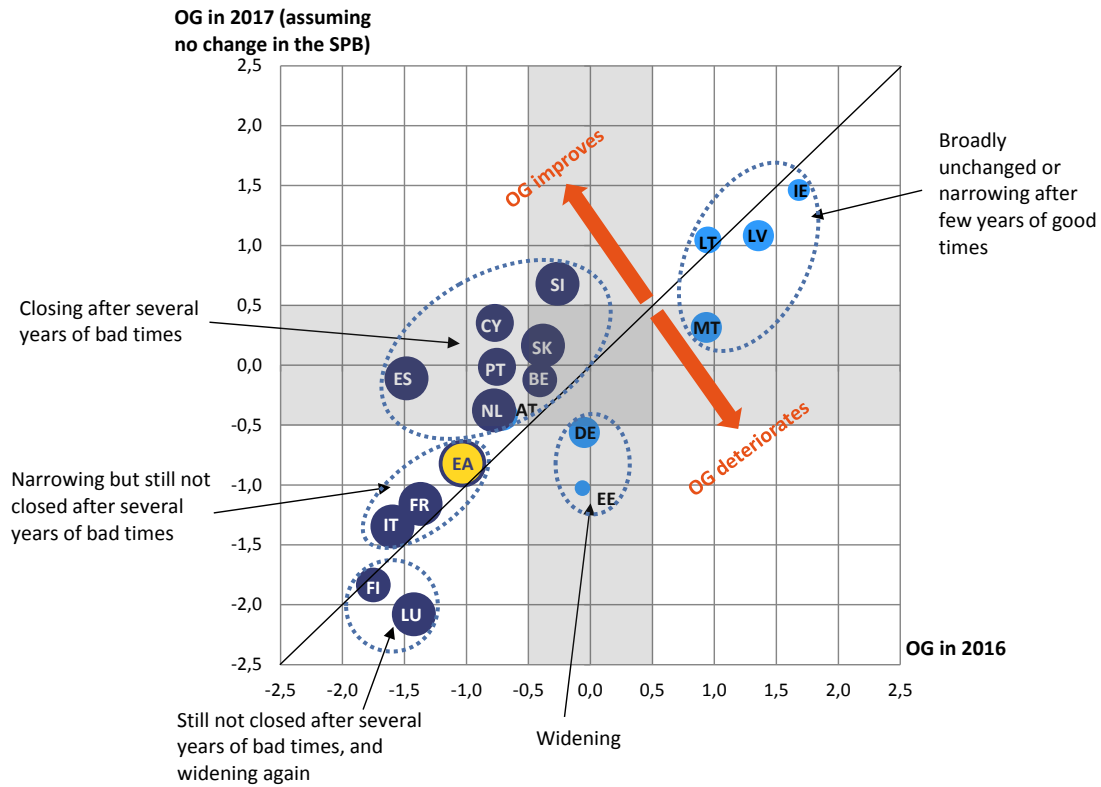
Four groups of countries can be identified on this basis:

- 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.

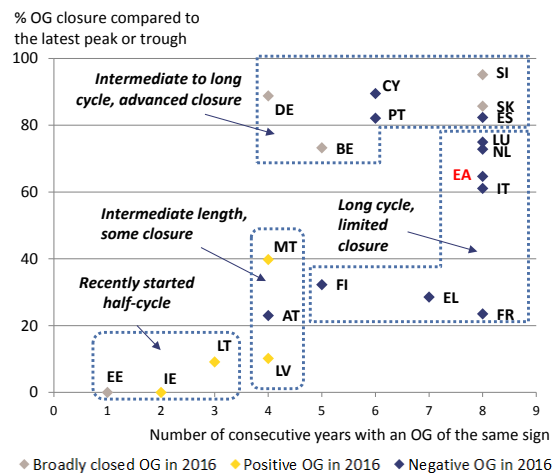
Note: For 2017, the output gap is recalculated assuming no change in the structural primary balance to correct for the impact of fiscal policy. The size of the bubbles indicates the number of consecutive years with an output gap of the same sign (pale blue: one to four, dark blue: five to eight), as 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.

⁽¹²¹⁾For a more detailed presentation, see J. Lendvai et al. (2015).

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



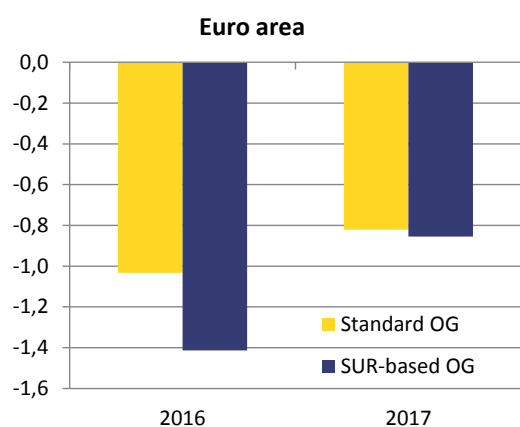
Source: Commission services.

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

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.

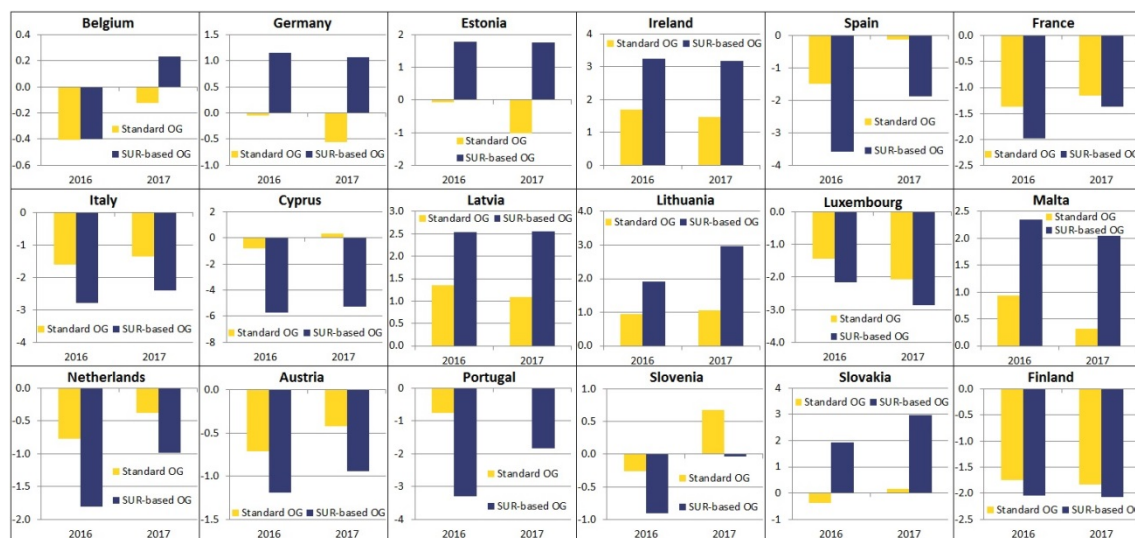
The intensity of stabilisation needs depends on whether the output gap is closing at a "normal" pace. It may not be the case if the cycle has been particularly long or deep. This assessment therefore implies forming views on the length of a "normal" cycle and what is a "normal" pace of closure for the 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								
	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		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.

⁽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.

- For *length*, the thresholds are derived from the assumption that a cycle is not expected to last

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.

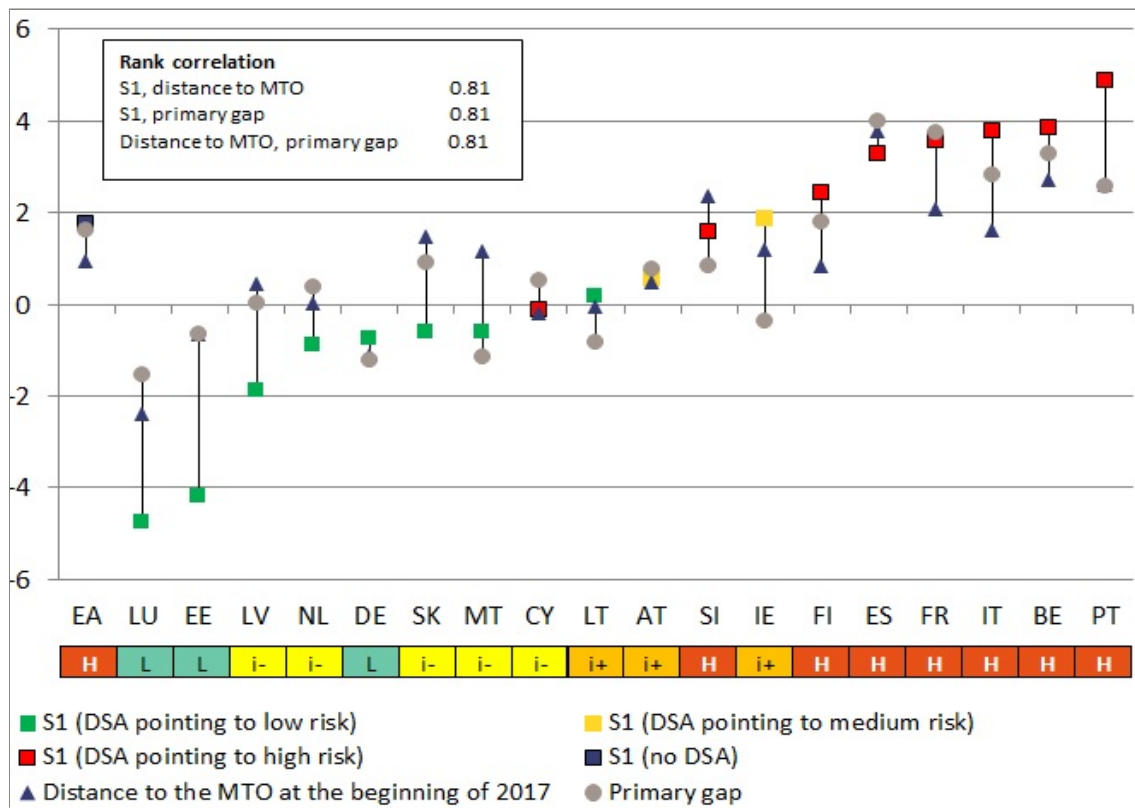
1.3.2. Comparative overview of assessments of sustainability needs

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 intertemporal 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.

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.

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.

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).

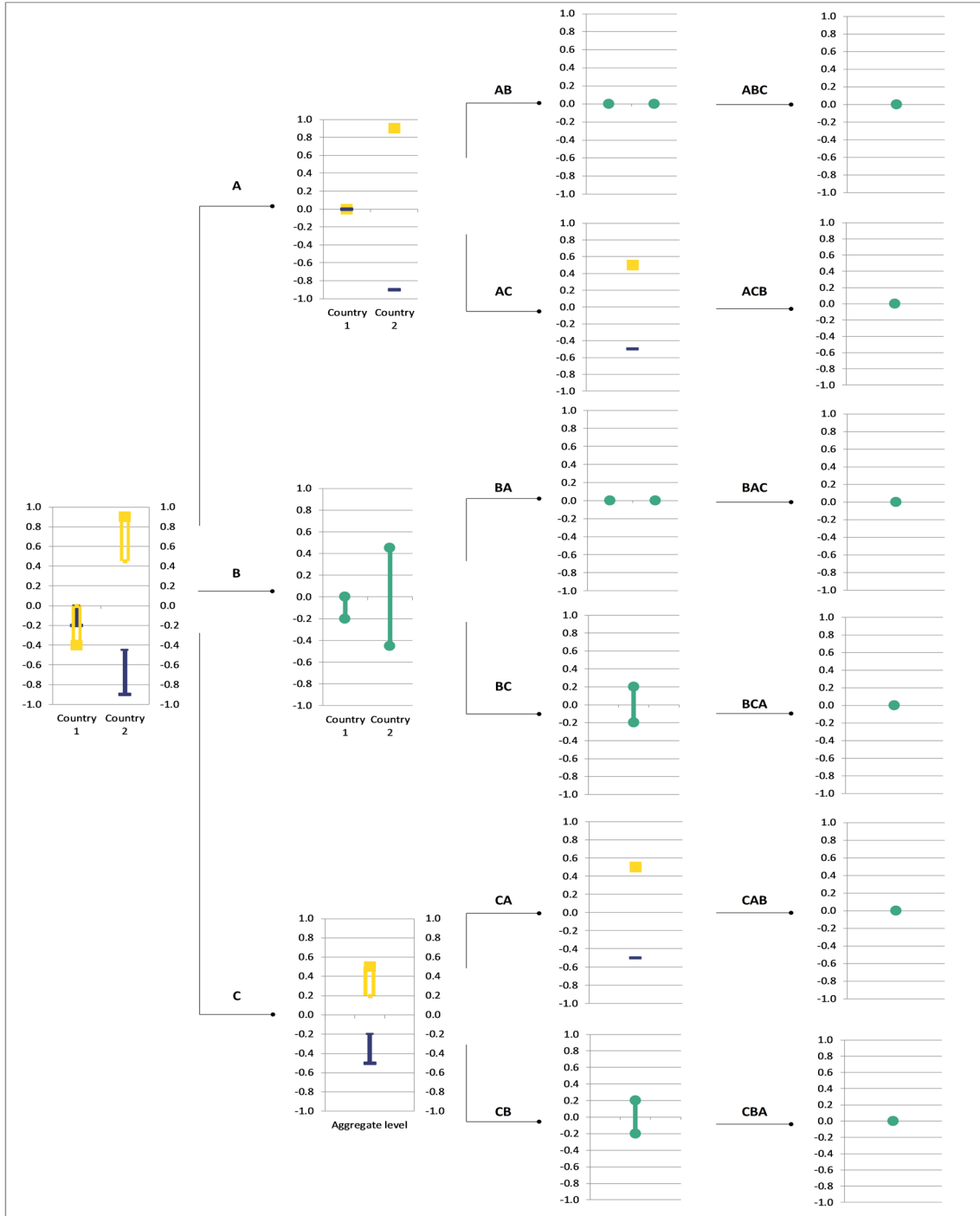
Each of the three steps allows putting more focus on particularly critical situations.

- **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.

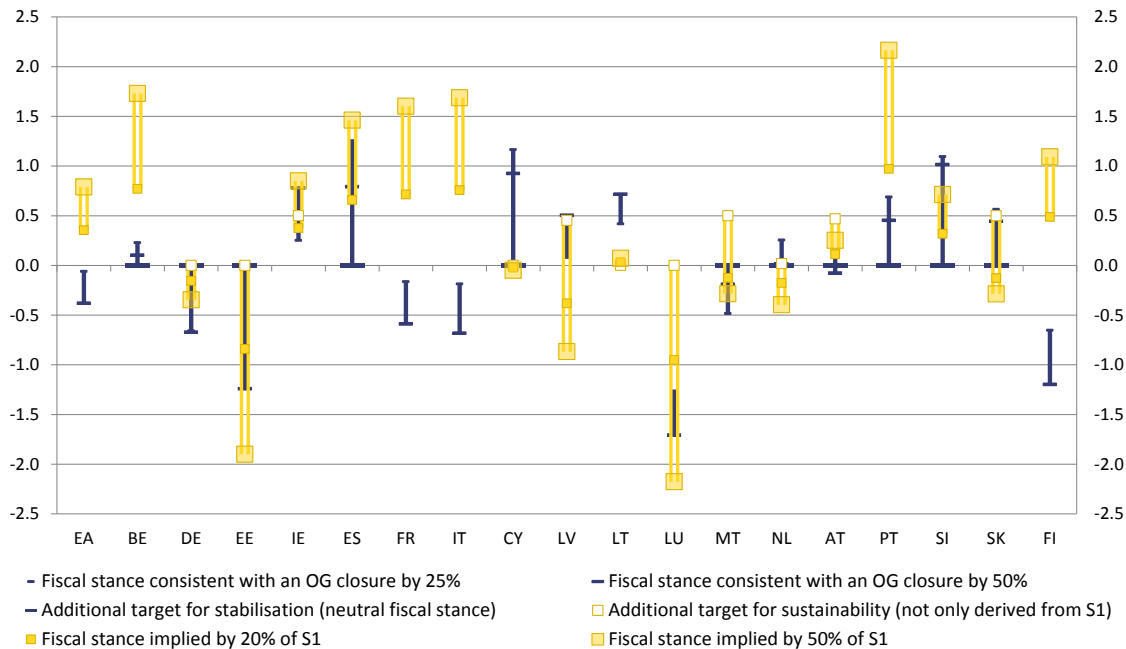
Graph IV.2.1: The three steps of aggregation



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

⁽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.

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⁾

⁽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: $\min [\max (\text{distance to MTO}, 0), \max (0.5, 20\% \text{ of S1})]$.

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).

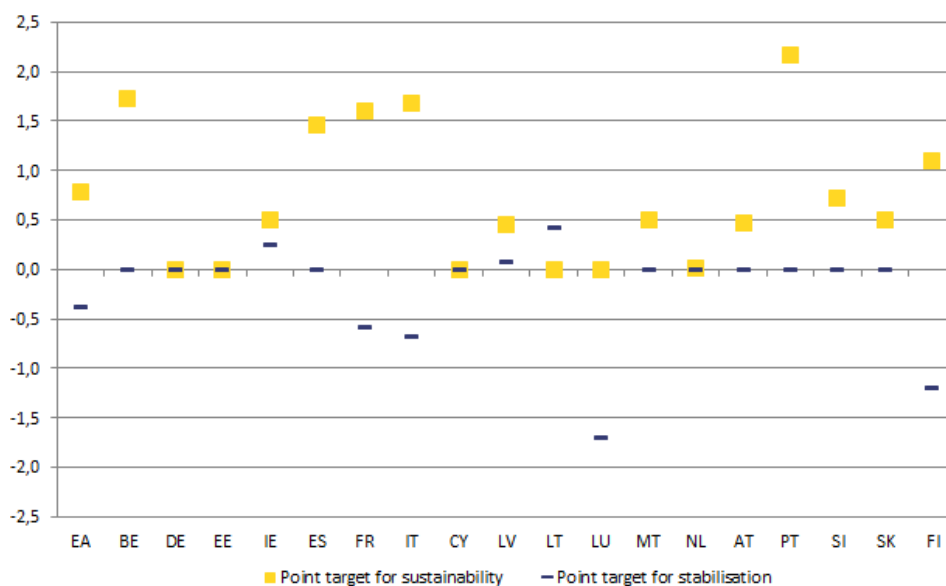
Table IV.2.2: Point targets for sustainability

	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⁾

⁽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).

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.

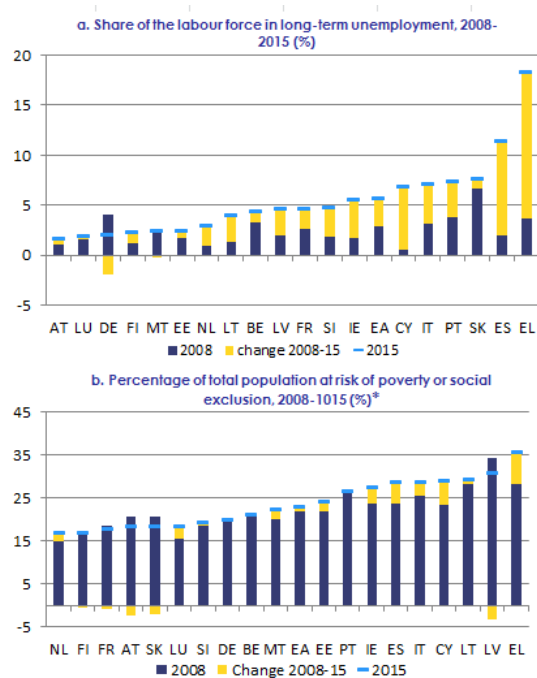
The second cliff effect regards the persistence of high long-term unemployment. Persistent high unemployment not only is an indication of unfavourable economic conditions but also has social consequences. When the same individuals remain unemployed over an extended period of time, this tends to result 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

⁽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.

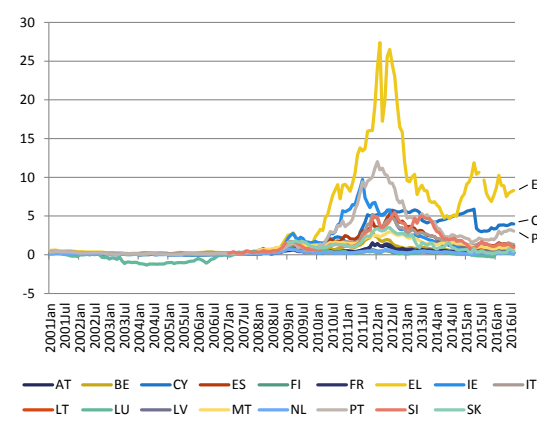
* Latest observation for IE: 2014.

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.

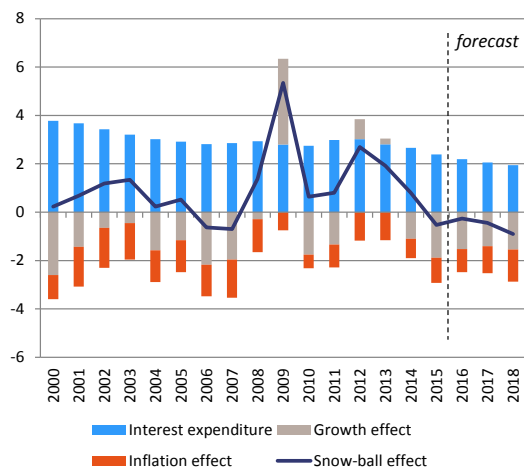
In the current situation, the likely higher effectiveness of fiscal impulse coupled with a relatively low cost of delaying consolidation points in the direction of favouring stabilisation in the short term. Even if it remains necessary to reduce sustainability risks for the medium term, short-term sustainability 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.

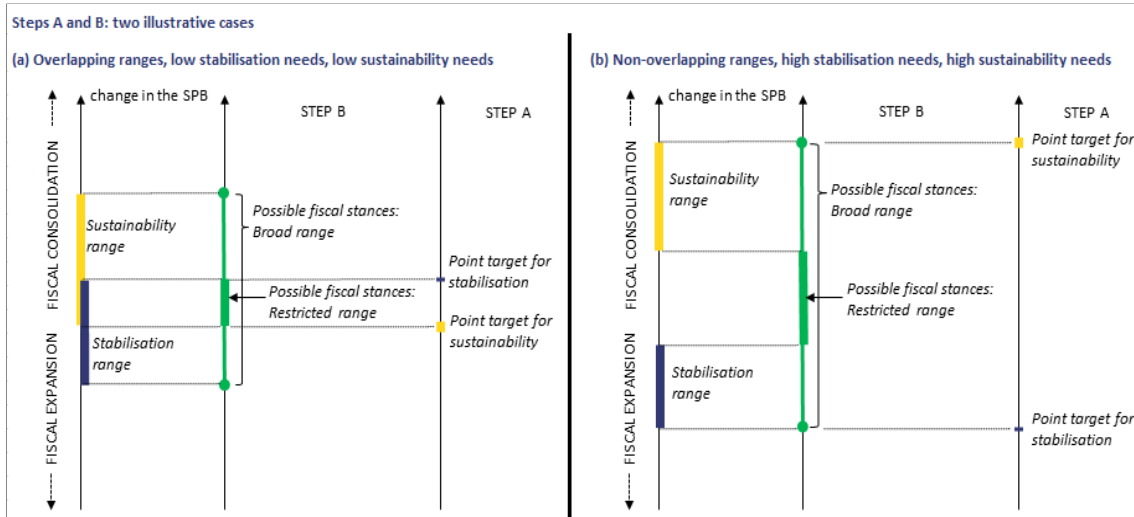
2.2.4. Weighing stabilisation and sustainability needs before or after Steps A and C

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.

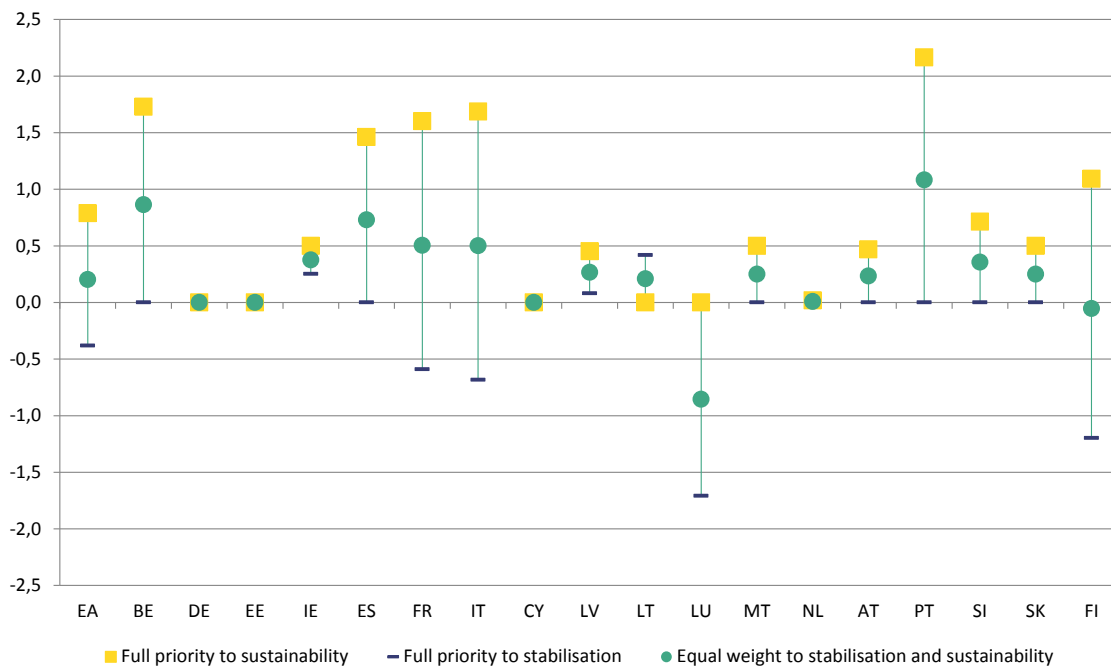
Graph IV.2.7: Step A and B: two illustrative cases



Source: Commission services.

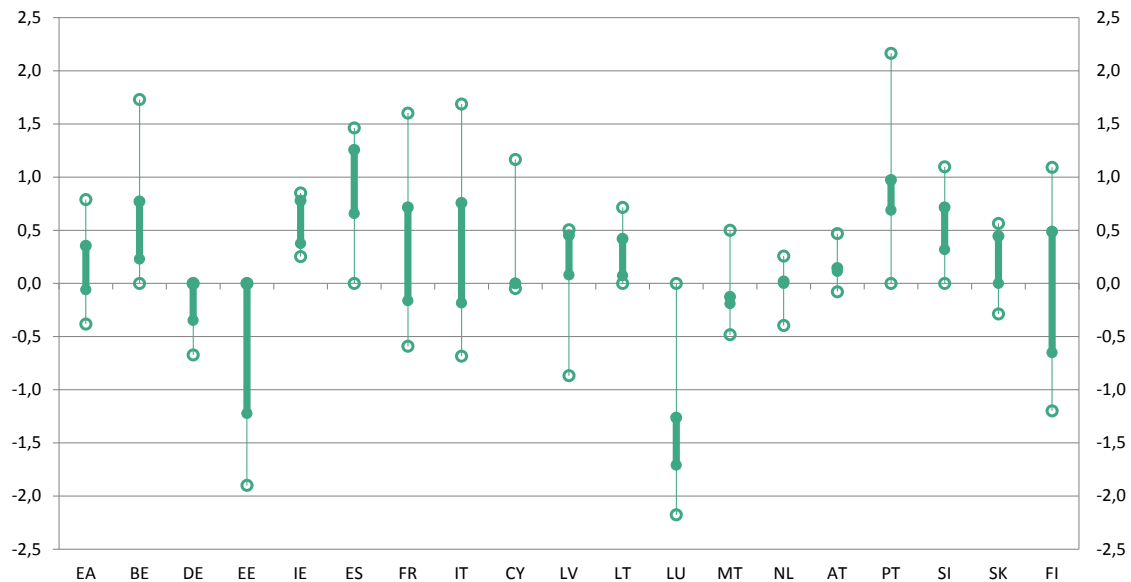
Note: This graph shows two cases, (a) and (b), to illustrate the implementation of Steps A and B in a given country. For each case, the axis on the left shows illustrative stabilisation and sustainability ranges as if they had been obtained as a result of the analysis presented in Chapter IV.1. On this 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.

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:

⁽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.

- **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.

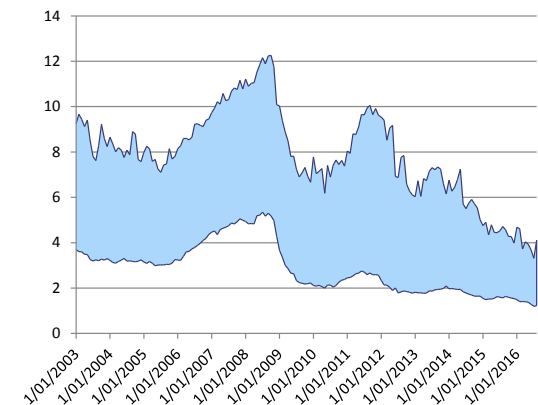
The relevant level and approach may not be the same for stabilisation and sustainability considerations, and this may change over time. Since the onset of EMU, euro area economies have been through very different phases, in terms of growth, inflation, sovereign risks and institutional framework. This 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 suppresses it altogether (Cwik and Wieland (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 services, ECB and Bloomberg.

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⁾

⁽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-

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

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**

⁽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.

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.

⁽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		SUSTAINABILITY	
Weights used for the weighted average	Aggregate target	Weights used for the weighted average	Aggregate target
(1) Weights reflecting the size of the economy		(1) Weights reflecting the size of the economy	
GDP	-0,3	GDP	0,9
(2) Weights reflecting country-specific risks		(2) Weights reflecting country-specific risks	
Length of the half-cycle	-0,5	Debt-to-GDP ratio	1,1
(3) Weights reflecting possible spillover effects		(3) Weights reflecting possible contagion effects	
GDP weighted by trade	-0,3	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

⁽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.

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

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.

⁽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.

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 to have a higher

⁽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.

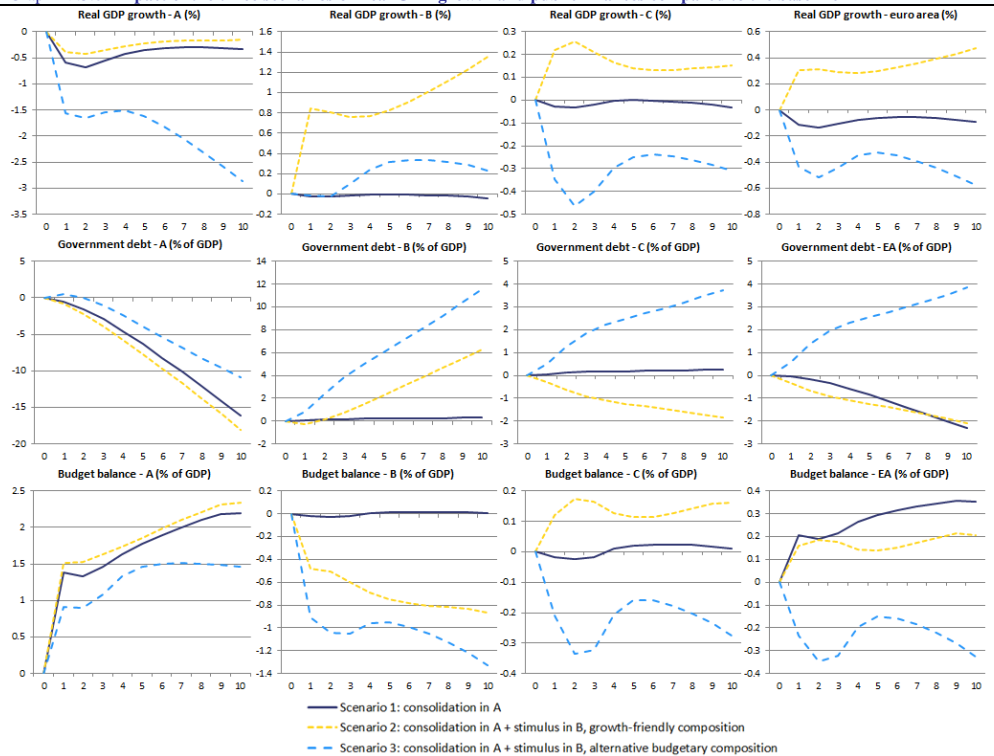
- Isolated consolidation in country A (Scenario 1) has a contractionary impact in this country and, to a marginal extent, in the rest of the euro area. The budget balance of country A improves, thus reducing the debt-to-GDP ratio, while deficit and debt ratios in other Member States remain largely unaffected.
- 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.