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Evaluating Fiscal Policy A Rule of Thumb

Nicolas Carnot



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European Commission

Directorate-General for Economic and Financial Affairs

Evaluating Fiscal Policy

A Rule of Thumb

Nicolas Carnot

Abstract

This paper introduces a simple rule for appraising the economic soundness of fiscal policies. It connects fiscal policy to a long-run debt objective, taken as an anchor, while arbitraging symmetrically between this debt objective and output stabilisation. The rule offers a benchmark to assess the evolution of primary expenditure, net of the impact of discretionary revenue measures, taken as a proper operational target for annual fiscal policy. The properties and implications of this rule of thumb are analysed drawing on qualitative arguments and retrospective simulations.

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1. INTRODUCTION

This paper presents a rule of thumb for evaluating fiscal policies in Economic and Monetary Union (EMU) against some of their fundamental objectives. The proposed rule of thumb focuses exclusively on the macroeconomic aspects of fiscal policy, leaving aside allocative and redistributive issues. Fiscal sustainability and economic stabilisation are taken as the two main objectives. Given entrenched deficit biases and the risks that national fiscal distress pose for financial stability, the motivation for fiscal rules in EMU traditionally focuses on fiscal discipline (European Commission, 2013a). At the same time, fiscal policy matters for the business cycle too, in fact potentially more so in a monetary union as a possible cushion against asymmetric shocks (see e.g. Calmfors, 2003).

The rule under study puts at its centre a balancing act between the requirements of fiscal discipline and economic stabilisation, seen as two aspects of macroeconomic stability. Fiscal discipline is anchored in a long-run objective of gradually achieving a moderate level of public indebtedness. Economic stabilisation is broadly understood as output stabilisation. Both objectives enter into the rule. In some situations, the two objectives point in the direction of a similar response, but in circumstances of conflicting objectives, the rule suggests an intermediary path weighing both concerns (National Institute of Economic Research, 2008 and Kanda, 2011).

As another key feature, the "target" of the rule is the evolution of primary public expenditure adjusted for the impact of discretionary revenue measures. The popularity of expenditure rules stems from their focus on what the budgetary authorities effectively control (Ayuso i Casals, 2012). This favours effectiveness and accountability when monitoring fiscal developments. Adjusting on top for new tax measures prevents the possibility of circumventing the rule through the tax side and ensures that the rule does not convey an implicit judgement on the size of the public sector¹. With these characteristics, the operational target of the rule, dubbed the underlying fiscal effort, is akin to notions already familiar in the EU framework. Their key attraction is to offer a good reflection of underlying fiscal policy actions, better so than traditional indicators such as cyclicallyadjusted balances (European Commission, 2013b).

In a nutshell, the essence of the rule of thumb is to connect the long-run objective of public debt control to a measure of fiscal effort closely connected to annual budgetary decisions, while taking into account in a transparent manner the possible short-run trade-offs with output stabilisation. We argue that the rule of thumb offers a parsimonious approach, adopts a broad view of fiscal soundness, and focuses on the achievement of an appropriate policy stance while containing an in-built debt regulation mechanism.

The properties and implications of this rule are further analysed in the paper through retrospective simulations over the past decade across EMU countries. While specific conclusions are country and period-dependent, the overall emerging picture is one of insufficient fiscal consolidation in moderate to good times. By contrast however, fiscal tightening has significantly overshot the benchmark given by the rule in the recent consolidation period, particularly so in several countries of the euro area 'periphery'. Yet, based on latest forecast available at the time of this paper (spring 2014), forecast further consolidation efforts are set to remain over the mark in several countries, but could fall short in some others.

Overall, the examined rule of thumb has a heuristic flavour². In some respects, it is comparable to the Taylor rule in monetary policy analysis. The analogy spreads to the functional form and spirit of the approach, with the details of the parameterisation likewise open to discussion. Practically, this simple rule can be understood as a rough and ready benchmark for appraising the fiscal stance in a wide array of circumstances. As a Taylor rule, it can be viewed in either normative or positive terms. In the first instance, it sets a target, or at least suggests a default starting point, for conducting budgets in a sensible manner. In the latter case, it defines a standard against which the fiscal stance may be characterised. The rule of thumb thus offers a simple benchmark for appraising the orientation of fiscal policies in a consistent manner.

¹ Spending growth in excess of potential resources is accepted to the extent that it is financed by new taxes. ² Heuristic rules can be defined as simple rules of thumb relying on readily accessible information and offering robust strategies across a

broad variety of situations.

Under the EU policy framework, fiscal discussions focus on assessing compliance with rules of fiscal discipline rooted in the Maastricht Treaty and enshrined the Stability and Growth Pact (SGP). There is a difference of perspective with the rule of thumb. The SGP rules aim primarily at avoiding 'gross errors' of fiscal indiscipline carrying large spillovers. Accordingly they embody a 'proscribing' approach, the chief purpose of which is to prevent potentially harmful behaviours, while limiting the degree of intrusion on national fiscal policies. The rule of thumb is of a 'prescribing' nature, in that it suggests a course thought to be generally sensible. In this sense, the rule of thumb cannot be seen as a ready-made alternative to the current system.

The remainder of the paper goes as follows. The next section introduces the rule of thumb and its components. Section 3 dwells further on its interpretation. Section 4 presents some illustrative empirical analysis. Section 5 offers concluding remarks.

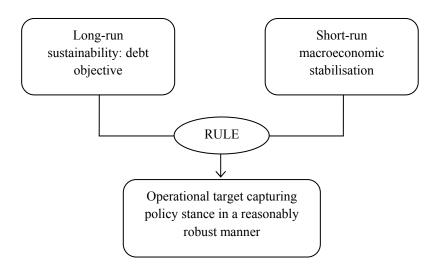
2. DESIGNING A BENCHMARK RULE OF THUMB

2.1 BASIC SPECIFICATION

The proposed benchmark rule encompasses three basic ideas (Figure 1):

- i) A long-term sustainability constraint.
- ii) A recognition of the short-term macroeconomic impact of fiscal policy.
- iii) An operational target that is acknowledged to be a robust description of the underlying fiscal policy stance. One aspect is limiting (not eliminating) reliance on hard to measures variables, in particular potential output levels.

Figure 1. Essential components of the rule



A fiscal rule of thumb bagging together these essential features is:

(1)
$$\hat{U}_t = \frac{1}{4} \cdot (P_t + S_t)$$

where \hat{U} is the targeted underlying fiscal effort, P the primary gap and S the score on macroeconomic conditions. As explained in what follows, P reflects the distance to a path containing debt at moderate levels, while S summarises the views on the business cycle. U captures the dynamics of primary expenditure, adjusted for tax measures, against trend growth.

In terms of semantics, a clear distinction has to be made between:

i) The actual underlying fiscal effort U, measured as explained thereafter, which is the policy effectively followed.

ii) The underlying fiscal effort prescribed by the rule of thumb (\hat{U}) , which is the outcome of equation (1), given the values of P and S.

The policy rule (1) sets the suggested value of U, taken as the operational target of fiscal policy, as a function of P and S. The arithmetic properties of rule (1) are apparent. Fiscal policy gets tighter as the sustainability challenge increases (P rises) and as the state of the economy improves (S rises). Symmetric arbitraging between sustainability and output stabilisation is the essence of the rule.

Before exploring further the interpretation of the rule of thumb in section 3, the remainder of section 2 defines in more detail its three key components P, S and U.

2.2 THE PRIMARY GAP

As a starting point, we assume that the sustainability constraint takes the form of a long-run debt objective. Specifically, we assume that in highly indebted economies, the policy rule attempts to steer back general government debt towards a long-run anchor value of 60% of GDP. This can be spread out over quite a long period of time, depending on the initial position and other developments in the economy. In low or moderately indebted economies where the current debt ratio is below 60% of GDP, the sustainability objective is taken to equate stabilisation of the debt at its current ratio. That is, in economies where the debt ratio exceeds 60% of GDP, fiscal policy would be brought to a path that on average would be conducive to returning the debt ratio towards 60%, while in economies where the debt ratio is below 60% of GDP, policies would be set on a path that on average would be conducive to stabilising debt to GDP at its current ratio.

This choice of approach can be fairly criticised. Obviously, selecting a specific number for an upper objective of the debt to GDP ratio contains a degree of arbitrariness³. More fundamentally, there is no agreed theory of the optimal debt level and attempting to return high debt towards a fixed target is not necessarily ideal policy. It can be argued, in particular, that the optimal debt path instead resembles a 'random walk', implying no systematic correction of past slippages (Schmitt-Grohé and Uribe, 2004).

Still, important real-world features militate in favour of adopting a firm anchor that includes some target-reverting properties. First, when spread over a sufficiently long time span, a gradual return towards moderate debt levels remains broadly consistent with optimal tax smoothing. Second, high debt levels are empirically associated with risks of lower growth, intergenerational equity issues, and threats of reaching fiscal limits. Indeed, recent events suggest that credibly safe debt levels may be lower than previously thought in advanced economies, especially in a monetary union (International Monetary Fund, 2013). Together, these considerations suggest that the gradual achievement of a moderate level of debt may indeed be a sensible principle for a robust fiscal strategy.

Another possible criticism of our approach is that the debt levels now reached in several EMU countries just make it unrealistic to expect a return to moderate debt levels through any conventional fiscal adjustment, even if spread over a long period of time (Pâris and Wyplosz, 2014). Essentially this view assumes that some form of default has to happen. It may or may not be correct, and this paper does not attempt to address this point. The conclusion, however, is in a sense irrelevant to our purpose. If debt is taken to be unsustainable, no fiscal rule whatsoever can help or be credible. A discussion on fiscal rules and their relative merits unavoidably has to assume that public debts have a chance of being honoured in full (if only thanks to respecting the rule). If that is not the case, a form of default has to happen, but following that, fiscal rules can be implemented on the 'post-default debt', and it is still worth discussing them.

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³ The rule of thumb can easily be adapted to a different number if that is preferred. A value of 60% is a bit higher than what used to be considered reasonably moderate public indebtedness before the crisis but it is also far below the realities of the post-crisis environment in many countries. The 60% ratio is the reference value in (the Protocol of) the Maastricht Treaty, and is used in the specification of the 'debt rule' in the EU fiscal framework. It could be argued, however, that strictly speaking a ratio below 60% (e.g. 50%) should be picked as a long-run objective, if one considers the reference value as a ceiling, as it is in principle.

To operationalize these ideas, let's recall that on a steady-state path with a stable debt to GDP ratio, the primary balance matches the growth-adjusted debt service. Reducing debt towards a lower value therefore requires achieving a higher primary balance. The *primary balance norm* consistent with this objective is:

(2)
$$PB_{t}^{n} = \rho.D_{t-1} + \mu.(D_{t-1} - D^{*})$$

where PB_{t}^{n} is the primary balance norm, D_{t} and D^{*} are respectively the current debt ratio and its long-run objective value (60%), ρ is the long-run interest rate-growth differential and μ the speed of returning towards the long-run debt objective. In the case of low indebted economies ($D_{t-1} < D^{*}$), the second term is dropped and the primary balance norm simplifies to the debt stabilising primary balance, consistent with the approach set above.

Regarding parameters, we set $\rho = 0.5\%$, close to the empirical mean across advanced economies (0.7%; see Escolano *et alii*, 2011)⁴, and $\mu = 5\%$, implying an annual reduction of 5% of the excess debt over the objective value, as in the debt rule of the current EU framework. While these look like acceptable values, other choices could also be made and one can easily tweak the parameters in favour of alternatives.

The *primary gap* (P) is measured as the difference between the primary balance norm and the lagged primary balance (PB_{t-1}):

$$(3) P_t = PB_t^n - PB_{t-1}$$

The primary gap summarises the challenge faced by the country from the viewpoint of long-run sustainability⁵. It is possible for the primary gap to be negative: this happens when the debt ratio would be expected to fall more than required by the norm under the assumption that current primary balances are maintained.

The deep anchor of the framework is an objective for the debt ratio, but the primary gap translates this in terms of flows by gauging the distance between the actual primary deficit and the norm that would be consistent with achieving the debt objective. Hence the debt criterion inspires the definition of the sustainability gap, but does not apply as such. It serves to define the gap from a sustainable path, which is one input, but not the only one, entering the rule of thumb.

A practical twist that we suggest, and use in our empirical work (section 4), is to restrict within reasonable bounds the amount of the annual fiscal effort prescribed by the rule of thumb. To this end, we restrict the range of values of the primary gap entering rule (1) to the [-4%; 4%] range (rounding to +/-4% if above or below). To anticipate, given the parameterisation of the rule of thumb and the typical variations of economic conditions, this would generally limit the fiscal effort within a [-1½%; 1½%] range, except under very unusual circumstances. These boundaries are a bit arbitrary, but they are likely to be more convincing than not bounding. In any event, they are only pragmatic limitations to the annual effort, not to cumulated changes over several years.

One questionable aspect of the primary gap is its reliance on headline values of the primary balance, as opposed to values adjusted for the cycle, making the primary gap sensitive to cyclical conditions. This feature has to be borne in mind when interpreting the primary gap. Besides, it could be seen as problematic for the rule, as it may unduly call for fiscal adjustments to fix apparent sustainability problems that in reality reflect business cycle conditions, and vice versa. However, while this issue cannot be denied, we don't see it as a major problem given the precise way our rule is formulated. The primary gap is one input of rule (1), but macroeconomic conditions feature symmetrically as the other input, which mitigates in practice the above risk of using a misleading signal. Moreover, we see the alternative of using a primary gap adjusted for the cycle as less appealing. That is because it would necessarily give critical importance to a notion akin to the *level* of the output gap, which experience

⁴ In practice interest rate-growth differentials vary across time and countries. Moreover, actual variations in borrowing costs and growth may be important factors weighing on the trade-off between fiscal sustainability and output stabilisation (see also annex 1). Taking a fixed value of the differential in a fiscal rule allows setting fiscal requirements in terms of primary balances. In EMU, this approach would be consistent with the existence of insurance mechanisms over sovereign borrowing costs.

⁵ Leaving aside the debt reduction term, the terminology 'primary gap' is similar to Blanchard (1990). It is a primitive indicator based on current observed values. See below discussion on the possibilities of adjusting the primary gap for the cycle and future liabilities.

suggests using cautiously (as elaborated further below; to be clear, we do not suggest dispensing with output gap levels, but we are wary of giving them a core role).

In fact, that the primary gap relies on observed headline numbers can also be viewed as an advantage. This is where one gives a strong anchor to our framework, and it is an asset that it be based only on observable variables that cannot be disputed. All in all, the rule of thumb (1) may not be perfect but it is unlikely to deliver an inappropriate guidance. By contrast primary gaps attributed to the cycle in real time may ex post turn out to be structural in nature.

Finally, one feature that we considered for our framework, yet eventually left aside, was the inclusion of a partial pre-financing of the expected future costs stemming from ageing pressures. In the current EU framework such a term enters the calculation of the medium-term objective. However, adding it to the primary balance norm defined in equation (2) also raises issues. One is just adding a bit of complexity. More significantly, projected ageing costs are unobservable variables, the estimation of which relies on a number of assumptions, a minus for anchoring the framework. In addition, despite the remarkable work steered by the Commission in this area over years (European Commission, 2012), one could still raise questions about the cross-country comparability of ageing projections (e.g. where low costs reflect an implausible fall in benefits). Finally, empirical tests show that including such a pre-financing term tends to tighten the prescriptions given by rule (1) to an extent that we judged inappropriate for a few countries. In most situations it would already be quite enough pre-financing policy to reduce excessive current debt at a 5% pace, without precluding structural reforms tackling the root causes of ageing pressures. Nevertheless, it would be quite straightforward to add an element of pre-financing of ageing costs if one wishes to.

2.3 THE STATE OF THE ECONOMY

The rule of thumb (1) takes as second dimension the *state of the economy* (S). For practical purposes in rule (1) we let the score of economic conditions S_t generally fall within a range of [-2, 2]. A null score corresponds to average cyclical conditions, a positive score to a positive outlook, and vice versa⁶. We do not exclude the possibility of scoring outside the [-2; 2] range in highly unusual circumstances⁷.

Capturing broad economic conditions in a single indicator is exposed to testing robustness problems. In principle, the output gap is the natural starting point. However, the experience is that the output gap can at times be an insufficient or misleading guide of macroeconomic conditions, whatever approach is followed to evaluate it. For example, output gaps focused on traditional business cycles may imperfectly capture growing financial imbalances which, when eventually recognised, lead to a major re-assessment of productive capacity. Also significant are the issues raised by the 'real time' uncertainty exposure to revisions of output gaps, particularly in level terms, despite possible improvements of methodologies to reduce the risk of large revisions.

In the empirical work of this paper (see section 4), we rely on an ameliorated output gap approach with a composite indicator giving equal weights to the output gap and the change in the output gap. This method can be charged with an over-reliance on output gap estimates, the use of which we have just criticised. Our defence is two-fold: first, for the mere practical purpose of illustrating the rule across a panel of 18 EMU countries in this paper, we need a reasonably simple systematic method. Second, using a combination of the level and change in the output gap is likely to be a significant improvement over using the output gap level only. Reasons are that the change in the output gap is typically less revised than the level, and that mixing the two signals is conducive to a more balanced assessment of the economy at turning points (when the boom morphs into a downturn or when recoveries take hold).

⁶ As a technical quirk to simplify the expression of rule (1), we do not pick the simpler range [-1;1].

⁷ To illustrate, in our empirical simulations, this happens for the majority of countries in the year 2009, and for Cyprus and Greece in a couple of other years.

This said, this empirical approach remains a rather rough shortcut. More elaborated composite indicators of cyclical conditions could in principle be used in order to valuate S_t . Nonetheless, any mechanical method is likely to remain second best, as compared with tailor-made judgement of specific circumstances.

Therefore, an arguably preferable alternative to mechanical methods for setting S_t would be relying on a form of expert judgment, based on the whole 'art and science' of the forecasting profession (Carnot *et al.*, 2011). Indeed, faced with a similar challenge, central banks have come to acknowledge, explicitly or tacitly, that tying their monetary policy decisions to a single gauge of the economy is hardly viable (Bank of England, 2014). The same holds for responsive fiscal policy. In a policy setting however, it would be critical that independent expertise delivers such judgmental assessments.

It is in any event granted that summarising the state of economic conditions on a single scoring scale implies a major simplification of complex realities. In addition, real-time assessments of cyclical conditions might be favourably biased (in the sense of delivering scores that would average negatively), even when relying on independent expertise. Tackling this possible bias would have implications for the precise parameterisation of the rule. Still, disclosing the views on the economic environment in a pedagogical manner has important benefits for improving the understanding and legitimacy of fiscal policies. In our view, relying on a transparent approach is preferable to the alternative of being unclear on whether and how the broad outlook is taken into account when analysing or setting fiscal policy⁸.

2.4 OPERATIONAL TARGET: THE UNDERLYING FISCAL EFFORT

The underlying fiscal effort (U) sums two components (box 1):

- On the expenditure side, the difference between the growth of primary spending and a smooth notion of trend growth.
- On the revenue side, the impact of discretionary revenue measures. This is the incremental impact of new revenue measures in the year under consideration.

This notion is related to the cyclically-adjusted deficit, or more precisely the change thereof. But it differs by being a more action-based measure, and one less exposed to potential output measurement uncertainties (see European Commission, 2013b, and a partial precursor in Levy and Ouvrard, 2004).

A key advantage of this measure is to convincingly reflect, in a synthetic and cross-country consistent manner, the underlying fiscal actions, as opposed to endogenous developments. Indeed, the popularity of expenditure rules stems from their focus on what the budgetary authorities effectively control. This favours effectiveness and accountability when monitoring fiscal developments. Adjusting on top for new tax measures prevents the possibility of circumventing the rule through the tax side and ensures that the rule does not convey an implicit judgement on the size of the public sector. Spending growth in excess of potential resources is accepted to the extent that it is financed by new taxes.

By contrast, traditional cyclically-adjusted indicators are well-established in surveillance and policy discussions (Larch and Turrini, 2009; Mourre *et al.*, 2013). But they ill-capture the actual orientation of fiscal policy when economies are exposed to shocks driving fiscal elasticities away from their mean value, as is routine. And they are exposed to major revisions as potential output estimates get reworked. To be fair, the underlying fiscal effort is not devoid of evaluation problems either, notably regarding the estimation of the yield of revenue measures.

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⁸ One slightly tricky issue is assessing the outlook while factoring in the likely impact of fiscal policy (as given by the policy rule). The assessment should in this sense solve a 'fixed point problem'. There is no major technical obstacle for doing this with sound expertise. One limitation is that the composition of fiscal policy may not be known, or at least not in full, when performing the assessment. This introduces a bit of fog but should generally not prevent a robust grasp of the outlook including the endogenous response of fiscal policy.

Estimates of one off operations are also a challenging point (in this case, just as for structural balances). These however can and need to be mitigated by sound expertise and transparency of the assessments.

Overall, by being more directly connected with policy decisions, the underlying fiscal effort overcomes the problems associated with cyclically-adjusted balances when taken as an operational target for running annual policies. At the same time, the underlying fiscal effort is encompassing enough to be quite tightly connected with overall fiscal outcomes in the medium-term, or at least, to supply a roughly right measure of the actual direction of fiscal policy.

BOX 1-THE UNDERLYING FISCAL EFFORT

The underlying fiscal effort (U) is:

(4)
$$U_t = DRM_t + \gamma_z \cdot (z_t - g_t^*)$$

with DRM discretionary revenue measures, z and g^* respectively general government primary expenditure growth and GDP trend growth (see below), and γ_z the share of public expenditure in GDP.

On the revenue side, new measures are the part that is decided by the budget authorities. This contrasts with endogenous revenue developments linked to the cycle and other macroeconomic changes. Typically these produce large fluctuations in revenue elasticities in the short term – making the conventional cyclical balance approach an ill-suited indicator of discretionary fiscal decisions – but they tend to cancel out over the medium to long-run. Within a fairly general understanding of the notion there are some conventions involved in the precise definition of new measures. And good evaluations of the yields of revenue measures require good data sets and solid expertise. These are not always readily available everywhere, but they arguably could and should be, not just to back a fiscal rule but primarily to properly devise the measures in the first place. The burgeoning expertise in independent fiscal councils might help in this regard⁹.

On the *expenditure side*, aggregate spending growth arguably remains the best measure of policy choices. As mentioned before, we exclude interest payments as not being under the direct control of the budget authorities. We could consider other exclusions – unemployment benefits is the item that springs to mind – but we would be wary of going farther in this direction, for fear of losing sight of the needed simplicity and encompassing nature of our rule. Spending rise must be benchmarked against trend growth since what matters is evolution against the average expansion of national resources¹⁰.

For defining *trend growth* (g^*), we suggest not over-relying on traditional potential growth estimates, given their uncertainty but also exposure to large revisions. While there is no uncontroversial choice on this matter, it is important in our view to emphasise both simplicity and a relatively high degree of time-smoothness of the metric. Our preferred approach is to use a centred 10-year average of *actual* and forecast GDP growth¹¹. By requiring as input a medium-term scenario, this method in turn re-introduces a dose of uncertainty and leaves a role for potential output evaluations in the framework, to the extent that they influence projections of actual growth. The dependence is considerably less strong however, as the information set for performing projections can be much wider. All in all, this kind of trend-based approach arguably offers an acceptable balance between timeliness and robustness.

Finally, an important practical twist is netting out the so called *one off transactions* from the above variables, both on the revenue and expenditure side. This is just as is currently done in EU surveillance for calculating

⁹ To be encompassing, revenue measures should include tax measures but also some evaluation of 'non-tax revenue measures'. The latter can only be conventional. A simple and unproblematic choice is to evaluate it by the actual change in the non-tax revenues ratio to GDP.

 $^{^{10}}$ It is what matters from the perspective of sustainability but also for the macroeconomy: a negative U can be interpreted as an expansionary fiscal stance and vice versa. These are the familiar properties of structural balances, but without the endemic endogenity issues of the latter.

¹¹ For year t, we assess trend growth as the average of growth over the past five years (t-5 to t-1), estimated current growth (t) and projected growth over the subsequent four years (t+1 to t+4). Another option could be a purely backward measure of growth (see Brender, 2011), which as a plus would only rely on direct observables, but that is likely to be too much 'behind the curve'.

structural balances (in the jargon, structural balances differ from cyclically-adjusted balances because of one-offs). There is no universal definition of one-off measures, and there are disputable borderline cases. Experience has however been gathered in EU surveillance, and the current body of doctrine is a sensible start.

3. INTERPRETING THE RULE OF THUMB

3.1 BASIC FEATURES

To recall, the rule of thumb is:

(1)
$$\hat{U}_t = \frac{1}{4} \cdot (P_t + S_t)$$

Rule (1) puts at the centre a balancing act between the twin requirements of fiscal discipline and short-run stabilisation within a monetary union. Containing public indebtedness is the standard motivation of EMU fiscal rules against a backdrop of entrenched deficit biases and threats of fiscal distress for the single currency. However, fiscal policy matters for the business cycle and in fact acquires greater importance in a monetary union for cushioning asymmetric shocks. Rule (1) suggests transparent and symmetric arbitraging between sustainability and output stabilisation.

This aspect of the benchmark rule bears a superficial resemblance to the Taylor rule in monetary policy analysis (Taylor, 1993). The analogy spreads to the functional form, which evidences a simple arbitrage between sustainability and stabilisation, and the spirit of the approach, where the rule may serve as a rough benchmark to assess the policy stance. The analogy cannot be carried too far. Monetary policy benefits from relatively well-defined inflation stabilising. Fiscal objectives are broader.

Another key feature is the choice of operational target. At the frequency of annual budgets, the rule focuses on delivering an adequate direction and size of the fiscal effort, not achieving given levels of balances or debts. Moreover, the fiscal effort is measured in a way that allows holding to account policy makers on what they effectively control, i.e. spending envelopes and new tax measures. The rule of thumb therefore gives weight to controllability of the instrument while enshrining a debt correction mechanism over time through the feedback of the primary gap in the rule (a related idea was proposed by Debrun *et al.*, 2008).

In summary, the rule of thumb ties the annual fiscal effort to a long-run debt objective, taken as anchor of the system, while arbitraging with macroeconomic stabilisation in the short term.

3.2 UNDERLYING MODEL AND CALIBRATION

Although the primary justification for the policy rule (1) is pragmatic, it may also be given a more theoretical flavour in the context of an inter-temporal model of the choices faced by the authorities. This can also shed light on the calibration of the rule. In such a model (see in particular Kanda, 2011), the authorities are assumed to care about both sustainability and stabilisation but these objectives may be conflicting, in particular if closing the sustainability gap implies dampening domestic demand in an environment of low resource utilisation. Annex 1 summarises the underlying model and possible assumptions for its calibration.

While this kind of formalisation is relatively *ad hoc*, it is nevertheless suggestive of the factors that can lead to the adoption of a rule such as embodied in equation (1). In such a setting, the optimal fiscal stance reflects the preferences of the authorities regarding the twin objectives as well as other assumptions on the economy, notably the size of the fiscal multiplier, the interest rate growth rate differential, and the ability of the economy to return to equilibrium on its own. In principle, the parameters of rule (1) could vary as these circumstances evolve. For example, one could sophisticate the formulation of the rule by using convex (instead of linear) functions of *P* and

S in order to err towards a neutral stance in 'moderate situations' (P and S low), while requiring more forceful action against large (economic and/or sustainability) shocks.

The deliberate choice of an unsophisticated rule in (1) reflects a strong premium on simplicity. In general, simplicity has to be valued when designing rules for mutual understanding. A single rule can at best offer a reasonable guidepost across most situations, but it cannot cover all contingencies however subtle it is. Parsimony is best once all essential features, the three that we emphasised in Figure 1, are in place.

As for the precise choice of parameter (coefficient of $\frac{1}{4}$), this rests primarily on empirical common sense. We picked a value that seemed to be leading to reasonable outcomes across most possible situations. However, this need not be the ideal choice. Besides, while the symmetry of the formula is an intrinsic property, the equality of coefficients on the debt and stabilisation objectives is more presentational than substantial, as it reflects the choice of normalisation of the S indicator. A sensitivity test with alternative parameterisation of the stabilisation coefficient is presented in Annex 3.

3.3 EXAMPLES AND DISCUSSION

Some basic examples of the course prescribed by the rule of thumb are given in Table 1. Where there is neither long-run sustainability challenge nor particular fiscal space (P = 0), fiscal policy is expected to be neutral on average albeit responsive to economic conditions. Rule (1) indeed suggests a modicum of countercyclical action on top of the automatic stabilisers, which can reach $\frac{1}{2}$ % of GDP under large variations in resource utilisation 12.

Table 1. Underlying fiscal effort suggested by rule of thumb as a function of the primary gap and the score on the state of the economy (in %GDP)

		Primary gap (P)				
		-4	-2	0	+2	+4
	-2	-1,5	-1,0	-0,5	0	+0,5
Economic	-1	-1,25	-0,75	-0,25	+0,25	+0,75
conditions (S)	0	-1,0	-0,5	0,0	+0,5	+1,0
(2)	+1	-0,75	-0,25	+0,25	+0,75	+1,25
	+2	-0,5	0,0	+0,5	+1,0	+1,5

A well-taken criticism could be that this smacks of fiscal fine-tuning. And 'fiscal activism' faces well-known challenges of recognition and implementation lags as well as locked-in effects. Yet, there are also valuable arguments for preserving some macroeconomic role for fiscal policy at least in some circumstances (Wren-Lewis, 2000). If that is accepted, any rule attempting to formalise this possible role in a systematic manner is likely to raise some problems. In particular, one natural alternative would be prescribing a perfectly neutral stance (U = 0) under moderate cyclical conditions (say up to absolute values of 1 for S), and stronger fiscal reaction above that threshold. The key difficulty of a non-linear approach of this kind, however, lies in choosing

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¹² In our approach, automatic stabilisers are naturally defined as the difference between the underlying fiscal effort and the change in the headline balance. Importantly, given empirically large fluctuations in tax and spending elasticities, automatic stabilisers defined in this manner can be somewhat larger than as usually estimated. This implies that the stabilising properties of rule (1) may be larger than meets the eye at first.

the proper threshold(s) and in putting a lot of pressure - and inherent public controversy - on identifying whether the threshold is reached or not. On balance, it looks to us preferable to go for a 'smooth and continuous attitude' as a general guiding rule¹³.

In the typical case where the economy faces a long-run sustainability challenge (P positive), fiscal policy is geared towards tightening on average, although it still weighs cyclical conditions. For example, where the primary gap is evaluated at 2% of GDP, the suggested fiscal stance ranges within [0; +1%] around a central annual effort of $\frac{1}{2}\%$ of GDP. This also shows that as the primary gap gets larger, the room for conducting fiscal easing in the event of downturn gets thinner and in fact, once P > 2, the rule never allows discretionary easing and suggests moderate consolidation even in a downturn.

In general, the rule of thumb arbitrages between restoring sustainability and the state of the economy. When the primary gap is positive and the economy is deemed to be in good times, this implies no trade off and the two influences in the rule of thumb add on each other. If the primary gap is positive but there is low resource utilisation, the rule of thumb suggests some trading off between the two objectives. The opposite choices occur when the economy is on an overachieving path in terms of sustainability (*P* is negative). In that configuration, the rule of thumb edges towards fiscal easing on average but takes into consideration the state of resource utilisation, so the sign and size of the suggested policy depends on the precise values of the primary gap and the score of economic conditions.

However, in a situation of negative primary gaps¹⁴, one may not feel fully comfortable with the symmetric approach of the basic rule of thumb. In particular, one may not agree that, assuming neutral economic conditions, fiscal policy has to be loosened for the sake of avoiding that the debt ratio falls below target. This property stems from the fact that the basic rule of thumb treats the objective of debt sustainability in a symmetric manner, while one could consider that debt moderation is inherently an asymmetric objective.

Arguments in favour of a symmetric approach to (moderate) public debt would include preserving a certain level of public investment, which could benefit future generations and for that reason can be financed by current borrowing. Another consideration stems from the need to supply private agents with a significant pool of a liquid and quasi-risk free asset. This can be essential for large parts of the financial industry, including banks, pension funds and insurers. Each of these two arguments may suffice on their own to justify a symmetric approach to debt. Yet, these are not unquestionable arguments either, and they are unlikely to be universally accepted.

If one were to prefer preserving some asymmetry in the approach to the public debt objective, a possible alternative to the basic rule of thumb would consist of neutralising the influence of the primary gap once the latter turns negative. In other words, in this modified version of the rule of thumb, only the economic conditions would appear in equation (1) as soon as the primary gap P is negative. In most empirical simulations in this paper we report the outcome of this modified version of the rule along with the basic one. This illustrates the implications of treating the debt objective in a symmetric versus asymmetric manner. One limitation of the modified approach, it emerges, is to remove the possibility of using available fiscal space in downturns to support the economy¹⁵.

fluctuations in tax and spending elasticities, maintaining a constant structural balance implicitly entails significant counter-actions of these fluctuations if one wishes to stay on target on an annual basis.

 $^{^{13}}$ There are complementary arguments. One is that a neutral fiscal stance cannot be equated with no-policy decisions. For example, growth in public expenditure does not naturally coincide with trend GDP growth, if only because some parts of spending such as entitlements are typically characterised by a higher 'autonomous' growth. For this and other practical reasons, annual budgets do necessarily contain a degree of active fiscal measures and decisions, whether they aggregate to a neutral overall impulse or not. This means that shooting for a moderately positive or negative value of U does not obviously imply more fiscal activism than shooting for a null value. Another point to remark is that given our choice of operational target (U), rule (1) could in quite a number of practical situations require less fiscal activism than alternative rules that are usually considered as non-interventionist, in particular a fixed structural balance target. That is because given endogenous

¹⁴ A situation that is not the most frequent at the current juncture, but was pretty common pre-crisis and could become more so as economies recover.

¹⁵ In principle it would be possible to write down yet an alternative version of the rule of thumb that in turn also caters for this limitation. Hence, in this refined alternative version, one at the same time does not require fiscal easing in neutral times for the sake of not over-

Overall, this discussion shows that the course suggested by the rule of thumb may be contentious under certain conditions. For example, there are circumstances where the rule of thumb would call for policy tightening despite a weak economy and *vice versa*. There is also room for judgement in choosing the precise parameterisation. Nevertheless, the rule of thumb arguably offers a fairly robust guideline in general, and at minimum a useful starting point for laying out a balanced discussion of the fiscal stance. The robustness and limitations also has to be judged in the light of empirical simulations (section 4).

3.4 PROSCRIBING AND PRESCRIBING RULES

In general policy rules can be of two kinds. Proscribing rules preclude a range of actions without being prescriptive within the collection of accepted courses. Prescribing rules offer guidance in favour of a specific course.

Current legal rules enshrined in EU law belong to the first category. They prohibit national fiscal behaviours believed to be harmful for other parties, without encroaching further on sovereign choices. Put differently, EU fiscal rules work asymmetrically: they set minimum requirements aimed at fiscal discipline, which countries are free to 'overachieve' by running tighter policies. This characteristic is not always understood, perhaps because countries often find it hard to simply achieve the minimum (hence, the minimum is perceived as a 'target'). One implication, however, is that there is no metric to assess the policies exceeding the legal requirements.

By contrast the rule of thumb above suggests a specific course of action against which actual fiscal policies can be benchmarked. The rule can be used either normatively or positively. In the first instance, it sets a target for conducting budgets in a generally sensible manner. In the latter case, it defines a standard for characterising the fiscal stance. In consequence the rule of thumb is symmetric. Deviations can run both ways, although in a normative use they would be expected to be small and average out over time. Policies can be assessed from a broader perspective than meeting minimum requirements.

A further notable implication of the symmetric (and linear) nature of the benchmark rule is facilitating the joint assessment of individual and aggregate policies, a domain where the prudential approach faces problems.

3.5 RULES AND FISCAL POLICY COORDINATION

Fiscal policy coordination is a contentious issue. The current EMU setting features an 'own house in order' approach preventing negative cross-border externalities from fiscal profligacy. Coordination sceptics believe that an appropriate overall stance generally emerges from the decentralised conduct of sound fiscal policies while *ad hoc* coordination can still be engineered in unusual circumstances, with no need for permanent organisation¹⁶. On the other hand, proponents of active coordination call for more systematic assessments of potentially relevant cross-border spillovers, not just those arising from imprudent fiscal behaviours (Darvas and Vihriälä, 2013). Moreover, the aggregate fiscal policy determines jointly with the monetary policy of the ECB the *policy mix* of the zone, the consideration of which is relevant to depict the policy response to common shocks. Even if there is substitutability of euro area fiscal and monetary policy with respect to demand management, there can still be a value-added of 'soft coordination' in the sense of exchanging information and running predictable policies, and there may be gains from coordinating the response to supply shocks (Buti *et al.*, 2001).

In practice, modest steps towards coordination are being taken in EU surveillance. The recent two-pack legislation includes, in conjunction with common budgetary timelines and *ex ante* peer examination of budgets, a discussion of the overall stance in the Eurogroup, the first of which took place in November 2013. It is unclear,

achieving the debt target, and allows using additional fiscal space when available to mitigate downturns. This increasing sophistication would however depart further from the simplicity valued in the rule of thumb approach.

¹⁶ Indeed, a recent feature of the revised Stability and Growth Pact – the 'general crisis clause' – precisely offers flexibility to bend the rules in the exceptional situation of a severe downturn in the zone as a whole.

however, whether the focus of this discussion is on enforcing prudential rules at national level, or shaping a common policy and a consistent distribution thereof, as the 'pro-coordination' view maintains.

Against this backdrop the benchmark rule introduced by this paper presents some attractive properties. That is because it lends itself more naturally to coordination than prohibitive rules. The underlying insight lies in the symmetric nature of the benchmark rule, as well as its quasi-linear form. These properties imply that the areawide stance resulting from the conduct of the benchmark rule at national level would also broadly conform to the benchmark rule (Box 2 elaborates formally).

Box 2 – Rule-based coordination with the benchmark rule

Let's write the benchmark rule for each country *i* as:

(1*i*)
$$U_{it} = \frac{1}{4} \cdot (P_{it} + S_{it})$$

The aggregate stance (U^a) can be evaluated as a weighted average of national policies, with γ_i the weight of country i in the area GDP:

(5)
$$U_t^a = \sum_i \gamma_i U_{it}$$

Assuming (1i) holds for all i, substituting (1i) into (5), and noting that the average primary gap and economic conditions can be proxied as weighted average of the country indicators, it follows that:

(6)
$$U_t^a = \frac{1}{4} \cdot (P_t^a + S_t^a)$$

In other words, adherence to the benchmark rule in individual countries implies fulfilment of the benchmark rule at the aggregate level.

Put differently, rule-based coordination emerges spontaneously from the decentralised application of the benchmark rule. This stands in contrast with the existing prudential rules. In an analytical perspective, the same rule of thumb can be used to assess jointly country-specific and overall fiscal developments. From a normative angle, decentralised respect of the rule implies aggregate respect, a case of a rule-based coordination.

There are a few qualifications. One issue is that the inputs to the benchmark rule (P, S) might not be fully linear, given that we restrict the values of P entering the rule to [-4; 4] and the possible non-linarities in evaluating S. These features introduce (generally marginal) non-linearities in the aggregation. Another question relates to the application of a homogenous parameterisation of the rule of thumb across countries and in the aggregate while in theory, parameters should vary with country characteristics (annex 1).

Even then, with these caveats in mind the basic specification of the benchmark rule would remain a good starting point for a joint examination of the national and overall stances within EMU, and an assessment of their mutual consistency.

3.6 RULE OF THUMB AND EU RULES

Under the provisions of the Maastricht Treaty and the Stability and Growth Pact (SGP), practical policy discussions of fiscal developments in EMU revolve around assessing compliance with legally-enshrined rules enshrining fiscal discipline. There is a difference of perspective with the rule of thumb. The SGP rules aim primarily at avoiding 'gross errors' of fiscal indiscipline carrying large spillovers. Accordingly they embody a 'proscribing' approach, the chief purpose of which is to prevent potentially harmful behaviours, while limiting the degree of intrusion on national fiscal policies. The rule of thumb is of a 'prescribing' nature, in that it suggests

a course thought to be generally sensible. In this sense, the rule of thumb cannot be seen as a ready-made alternative to the current system. It is nevertheless natural to ask whether there are common points or differences between the two approaches in the details of the design. As background, box 3 summarises the existing rules.

Box 3 -Summary of current EU fiscal rules

A comprehensive presentation of EU fiscal rules is found in the European Commission's *Vademecum* (European Commission, 2013a). The Stability and Growth Pact (SGP) distinguishes a corrective arm (the Excessive deficit procedure, EDP) and a preventive arm (the medium-term objective, MTO). The sanction mechanism is stronger in the former, though it has been strengthened recently also in the latter.

The corrective arm requires avoiding deficits beyond 3% of GDP and bringing them back under this bar within a given deadline (by default, one year). To reduce risks of procyclicality and better hold countries to account, recommendations under the corrective arm have a dual nature, combining headline and structural targets. Countries are considered to have delivered on their commitments if they meet either of the two. Several further specifications and correctives describe conditions for possibly extending deadlines, cater for the measurement problems of structural balances, include elements of 'bottom-up' analyses, and give space to unusual circumstances.

Along with the 'deficit aspect' of the corrective arm, the more recent 'debt rule' starts from the insight, shared with this paper, that debt should be the focus of sustainability. Broadly speaking, the debt rule requires countries where the debt ratio is above 60% to reduce it towards that value at an annual pace of 5%. The operationalization has generated several sub-rules in order to cater for cyclical corrections, forward-looking behaviours, an extended list of relevant factors and 'transition rules' for countries out of an excessive deficit.

The preventive arm focuses on structural balances by requiring achievements of the MTOs. The MTOs are calculated as the most binding of three constraints: one, the 'minimum benchmark', provides a buffer towards the 3% limit in normal cycles. The second is a bar of a 1% structural deficit for euro area and ERM2 countries (outside EU law, the bar has been lowered to 0,5% by the Fiscal Compact). The third is the 'economic' and most interesting part of the MTO: it requires a structural deficit in relation to the level of debt and ageing pressures.

Member States are expected to converge towards their MTO at a benchmark rate of 0,5% of GDP per year, with some discretion to modulate that effort depending on economic conditions and sustainability risks. A complementary notion, the expenditure benchmark (which is conceptually related to the underlying fiscal effort), is used to judge the pace of assessment. The preventive arm also includes a 'structural reform clause' that enables temporary suspension of the MTO or the adjustment path thereto, on condition of major reforms fostering long-run sustainability.

In some respects, the EU framework and the rule of thumb bear similar features. In particular, the primary balance norm defined in equation (2) has more than a flavour of the debt rule. The revised preventive arm of the SGP relies on the expenditure benchmark alongside the structural balance, a notion closely related to the underlying fiscal effort, and acknowledges that convergence towards the MTOs should be differentiated according to the sustainability and economic conditions criteria. These features are nevertheless specified in a more straightforward manner with the rule of thumb, as they are its very starting point.

In terms of differences (see Table 2), one characteristic of the current EU fiscal framework is its sophistication (Barnes et alii, 2012; International Monetary Fund, 2014)¹⁷. Several rules apply, each with a degree of detail,

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¹⁷ The reasons for the growing complexity are well understood: one is the incremental nature of changes over the past twenty years, another, the lack of trust pushing towards a complete specification of the fiscal contract. But at heart, the complexity is best seen as a veil covering

catering for a wide range of situations and risks. The rule of thumb relies on a parsimonious approach with a single rule encompassing few features deemed essential. Broadly speaking however, both sets of rules are geared towards achieving moderate levels of indebtedness while avoiding pro-cyclical policies. One significant difference already emphasised is the prescribing nature of the rule of thumb, as opposed to the proscribing inspiration of current rules¹⁸.

Table 2. The EU rules and the rule of thumb. Elements of comparison

EU rules	Benchmark rule of thumb
Several rules	Single rule
'Prohibiting' approach aimed at preventing 'gross errors' and harmful spillovers	'Prescribing' approach suggesting a benchmark for generally sensible policies
Focus on discipline with provisions for avoiding procyclical policies	Arbitrage between debt objective and output stabilisation
Annual targets pertaining to fiscal outcomes (balances, structural balances, debt)	Annual target setting an underlying fiscal effort linked to the debt anchor

The choice of operational target is an important feature of a rule. The EU rules focus on fiscal 'outcomes' (headline or structural balances), though it also relies on more 'action-based' notions in important details. The rule of thumb takes a 'directional approach' and assumes that fiscal policy is evaluated by focusing on what policy-makers effectively control when implementing annual budgets. This is best captured by a notion akin to the underlying fiscal effort, despite the need to further progress on some aspects of evaluation (such as the yield of tax measures)¹⁹²⁰.

At the same time, the rule of thumb contains an in-built regulating mechanism of public indebtedness. While the choice of the operational target gives weight to controllability, the fiscal effort is firmly linked to actual public debt through the primary gap. Past deviations from the expected path of public indebtedness, whether they stem from policy deviations or endogenous developments, find their way in the fiscal effort recommended in the current period through induced changes in the inputs of the rule, in particular the primary gap. In that sense the rule of thumb amounts to a debt brake mechanism.

differences of views on the proper conduct of fiscal policies in a monetary union. A 'streamlined' system is unlikely to emerge without more consensus.

¹⁸ An important issue, which would deserve separate treatment going well beyond the boundaries of this predominantly analytical paper, is the extent to which the 'positive' approach embodied by the rule of thumb could be enforced, in analogy with the current set of rules, given well-known difficulties such as deciding on admissible margins of deviations and differentiating 'gross errors' in fiscal policy from acceptable departures from a desirable stance.

¹⁹ The argument is that neither headline nor structural deficits constitute a suitable policy target for annual budgets. Except in unusual situations, nominal deficits are better left accommodating economic fluctuations. Structural deficits are in principle an improvement but are weakened by large measurement problems, especially in level terms, but to some extent also in first differences.

Some observers might argue that the rule of thumb is 'too sophisticated' for policy-makers, as compared with the more traditional notions of nominal and cyclically-adjusted balances. It can be argued that the opposite would be nearer the truth. Nominal balances are genuinely simple but clumsy when used as annual targets. Cyclically-adjusted balances have become more familiar to policy-makers over the years but they remain an abstract notion. By contrast the underlying fiscal effort precisely measures what policy-makers decide on when they vote on budgets. Budgets authorise spending envelopes and enact new tax legislation. The underlying fiscal effort says that fiscal expansion (resp. consolidation) starts when the evolution of spending goes beyond the room offered by trend growth and the yield of new revenue measures. That is arguably simple enough.

In a nutshell, the key characteristic of the rule of thumb is to connect a measure of fiscal effort closely connected to annual budgetary decisions to the long-run objective of public debt control, while taking into account in a transparent manner the possible short-run trade-offs with output stabilisation.

4. EMPIRICAL ANALYSIS

The recent conduct of fiscal policies in EMU can be revisited in the light of the above rule of thumb. This enables a better understanding of the practical implications of the proposed rule. Data and methods are recapitulated in section 4.1. The experience over the past decade of Germany and Spain, two countries often taken up in the fiscal debate, is then examined, as well as the recent consolidation episode across the zone (section 4.2). Section 4.3 contains words of caution on the simulations and mentions possible extensions. Further simulation results for all countries and the euro area are presented in Annexes 2-3.

4.1 DATA AND METHODS

The data used in the empirical analysis is extracted from the European Commission's AMECO database, including data on GDP, potential GDP and the public finances. The AMECO data underlying the Commission's spring 2014 forecast is used. Discretionary revenue measures are taken in AMECO from 2011 onwards, and from the Output gap working group reporting before that year (Princen *et al.*, 2013). The latter sample starts in the early 2000s for most countries (Greece and Luxembourg are not available). All in all, we have data that allows computing actual and prescribed underlying fiscal effort over the past decade (2004-2014, with 2014 a forecast) across the 18 countries that are part of EMU in 2014.

Based on these data, primary gaps P_t are computed at each country-period by combining equations (2) and (3) above:

$$P_{t} = PB_{t}^{n} - PB_{t-1} = \rho.D_{t-1} + \mu.(D_{t-1} - D^{*}) - PB_{t-1}$$

where to recall, PB_t is the primary balance, PB_t^n the primary balance norm, D_t and D^* are the current gross general government debt ratio to GDP and its long-run objective value (60%). One-off and other temporary measures as given by AMECO are removed from the primary balance in these calculations. As for parameters, $\rho = 0.5\%$ and $\mu = 5\%$. In order to restrict the annual fiscal effort within reasonable bounds, values of the primary gap falling outside the range [-4;+4] percent of GDP are rounded (to +/-4 percent) in the simulations, as explained before.

The state of the economy S_t for each country-period is generated by the following systematic procedure. First, the difference between the output gap and its centred average is divided by its standard deviation. This gives a 'normalised' output gap, which generally falls (but not always) between [-2; +2]. Second, the same operation is repeated for the series of the change in the output gap. These 'normalisations' of both the level and change in the output gap are performed over a suitably long period (1980-2013 or the largest available time span in AMECO for potential output) in order to avoid being over-influenced by the recent crisis period. Third, the composite indicator S_t is computed as the simple average of the normalised output gap level and the normalised change in the output gap. This yields a composite indicator generally within [-2; +2] but which can fall outside this band in unusual circumstances. This method of evaluating the economic outlook is a shortcut allowing us to study the rule of thumb across our panel. It is not seen as a substitute for the more detailed conjectural analysis that could be warranted in each practical case.

The prescribed underlying fiscal effort results from equation (1):

$$\hat{U}_t = \frac{1}{4} \cdot (P_t + S_t)$$

The benchmark given by the rule is compared to the actual underlying fiscal effort (U), calculated for each country-period using equation (4):

$$U_t = DRM_t + \gamma_z \cdot (z_t - g_t^*)$$

where DRM_t is the incremental impact of discretionary revenue measures in year t, z and g^* are respectively general government primary expenditure growth and GDP trend growth, and γ_z is the share of public expenditure in GDP. Trend growth for year t is defined as the average of growth over the past five years (t-5) to t-1, estimated current growth (t) and projected growth over the subsequent four years (t+1) to (t+4). One-off transactions are removed on both the revenue and expenditure sides.

4.2 RETROSPECTIVE SIMULATIONS

Over the past decade, Germany has conducted a budgetary policy that, on average over the period, does not differ much from the suggestions of the rule of thumb, although there are significant ups and downs when looked at year after year. This is visible in the fact that the observed underlying fiscal effort has tended to oscillate around the benchmark given by the rule of thumb (Figure 2, centre-right chart).

More specifically, Germany's fiscal policy since 2004 can be divided in three episodes. First, in the pre-financial crisis years (2004-07), Germany conducted a rather prudent budget policy, with an actual average fiscal effort of about ½ percent of GDP per year broadly in line with the rule of thumb. Against the backdrop of growingly more positive economic conditions (Figure 2, centre-left chart), this allowed Germany to move into primary surpluses and eliminate its initial sustainability gap. Indeed, by the beginning of the financial crisis, the primary gap had turned significantly negative (Figure 2, top charts; as noted above, we report two simulations of the rule of thumb: the basic one and an alternative where the debt objective is taken to be asymmetric and negative primary gaps are turned to zero).

Second, with the outbreak of the financial crisis in 2008-09, the economy moved into a sharp recession while policy turned largely expansionary. The fiscal stimulus reached about 2% of GDP in 2009, in fact going beyond the suggestion of the rule thumb, at least as parameterised. This is more so the case when the rule of thumb does not give weight to the objective of reducing extra fiscal space (the dotted line of the alternative rule of thumb suggests less fiscal easing in 2008-09 than the fully symmetric rule of thumb).

The third phase from 2010 onwards features an improving though still uneven economy along with significant fiscal tightening (of a cumulated 2% of GDP) concentrated on a couple of years (2011-12). Over 2010-13 as a whole fiscal consolidation went slightly beyond the suggestion of the rule of thumb. Regarding the latest years, two points can be noted: first, fiscal consolidation came to a halt since 2013. Second, this is broadly in line with the benchmark, although the basic rule of thumb would suggest mild fiscal easing.

The bottom-left chart in Figure 2 provides additional information on the comparison between the underlying fiscal effort and the more commonly used change in the structural balance. This illustrates that while both indicators are conceptually related and both attempt to capture discretionary fiscal policy, they differ significantly in practice at an annual frequency (they are closer on average over a cycle, as would be expected). In the case of Germany, the change in the structural balance suggests (rather implausibly) that no stimulus was delivered in 2008-09, although a lagged easing would have taken place in 2010 (Figure 2, left-low chart). It also indicates a bigger degree of active fiscal retrenchment in 2011-2013 than took place according to the underlying fiscal effort. A breakdown of the gap between the two indicators shows that the largest factor stems from gyrations in tax elasticities (European Commission, 2013b).

In the bottom-right chart of Figure 2, a fictitious change in the structural balance as implicitly recommended by the rule of thumb is represented²¹. This has limited interest in itself, but helps convert the benchmark given by the rule of thumb into a recommendation for the structural balance, which is often the prominent metric in policy debate. The outcome is not always intuitive (for example, the suggestion of a tightening in 2009), but that is more in our view a reflection of the problems associated with the structural balance itself than with the rule of thumb.

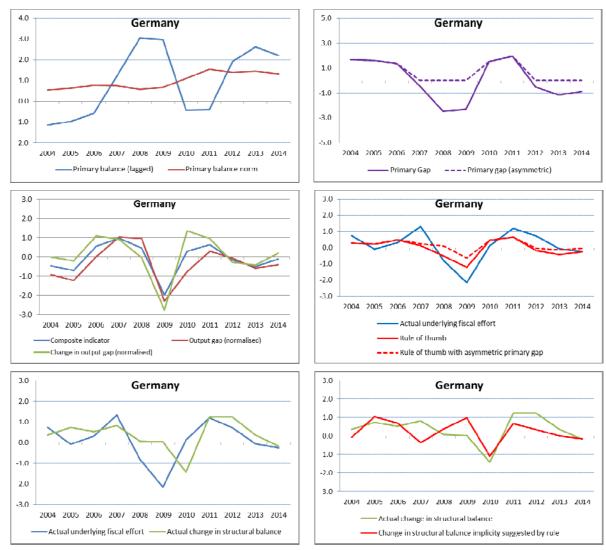


Figure 2. Germany: The rule of thumb and its components

Source: AMECO data, own calculations. The primary balances are net of one off transactions

The story for Spain (Figure 3) can also be divided in the same three time periods but is quite different. In the precrisis years characterised by an unusual boom driven by real-estate, Spain effectively loosened somewhat fiscal policy. This is reflected in an average underlying fiscal effort of close to -1% of GDP per year over 2004-2007. It is notable, however, that this development remains ill-captured by the traditional structural balance, which even with hindsight suggests that policy was tightened in these years. For this period, the rule of thumb suggests that policy would preferably have been tighter than it actually was, although how much tighter depends on

²¹ This is constructed by adding to the actual change in the structural balance the difference between the recommended underlying fiscal effort and the actual underlying fiscal effort.

whether the basic rule of thumb or the asymmetric alternative is used (the dotted line versus the plain line of the rule of thumb in the centre-left chart). Indeed, Spain experienced in these years primary surpluses and a low and rapidly falling public debt. By how far fiscal policy should have been tighter at the time therefore depends on whether one takes a benign view of having a rapidly falling debt (the asymmetric approach to the debt objective), or whether one considers it useful to maintain a sufficiently large pool of sovereign debt, thereby adopting a symmetric approach to the debt objective. Spain's pre-crisis history provides a clear illustration of this dilemma.

The situation dramatically changed in the late 2000s as the Spanish economy rapidly went from boom to bust and public debt exploded both as a result of falling activity and supporting measures, notably to the financial sector. In the early years of the crisis (2008-2009), Spain massively cushioned the downturn through discretionary expansion. The degree of support provided (of the order of $3\frac{1}{2}$ - $4\frac{1}{6}$ of GDP in 2008-09) went well beyond the prescription of the benchmark rule²². This may have been helpful to stabilise the economy but, given also the banking support, sizeably raised Spain's long-term sustainability challenge.

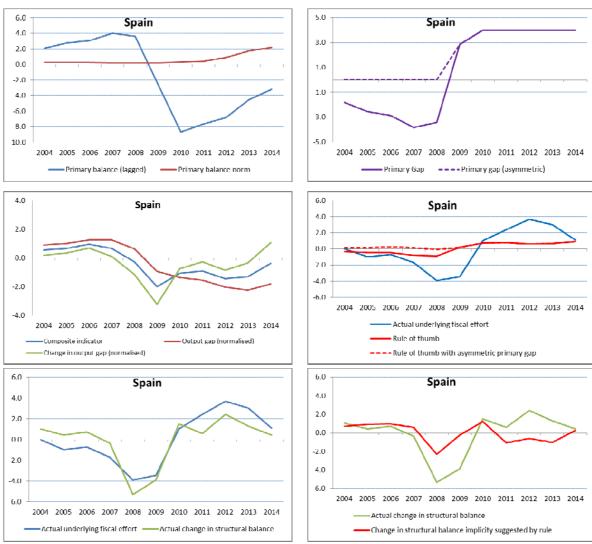


Figure 3. Spain: The rule of thumb and its components

Source: AMECO data, own calculations. The primary balances are net of one off transactions.

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²² Support to the financial sector is typically netted out of the underlying fiscal effort, and the structural balances, as it enters one-off operations.

Under strong market pressure Spain embarked on fiscal adjustment by 2010, and more decisively so in subsequent years. The scope of tightening practiced over 2012-13 in particular appears unusually large (above 3 percent of GDP in each of three years), at least according to the metric of the underlying fiscal effort. Major revenue shortfalls beyond average tax elasticities against a backdrop of external rebalancing explain the difference with the strong but less severe consolidation pattern captured by the change in the structural balance. Over this period, the rule of thumb would have called for a sustained but more moderate pace of retrenchment averaging ³/₄ percent of GDP per year in terms of the underlying fiscal effort (expressed in terms of the change in the structural balance, this recommendation would have been (wrongly) perceived as implying fiscal expansion, a renewed illustration of the massive effects of revenue shortfalls as compared with the standard assumption of a unitary tax elasticity over these years). By this year (2014) however, fiscal consolidation is forecast to have turned to being broadly in line with the rule.

We now turn to the recent consolidation episode across the euro area. Sustained fiscal consolidation occurred over 2011-13 in the euro area. This is the common perception based on traditional indicators such as structural balances. The analysis based on the rule of thumb both confirms and brings nuances to this analysis in the following ways (Figure 4; to simplify the charts only the basic rule of thumb is presented; changes when using the modified version with an asymmetric debt objective can be seen in Annex 2).

First, fiscal consolidation indeed occurred at a very high pace in some euro area countries, mostly located in the so called 'periphery', which have generally been benefiting from an adjustment programme or been under significant market pressure (Ireland, Greece, Cyprus, Portugal, Slovenia and Slovakia). In these countries, just like in Spain, the fiscal stance as measured by the underlying fiscal effort has largely exceeded the conventional change in the structural balance, and also exceeded somewhat the prescription from the benchmark rule, in spite of large sustainability gaps.

Year 2011

8.0

6.0

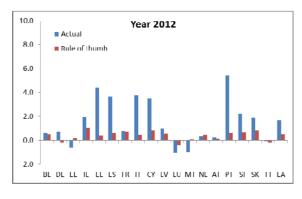
4.0

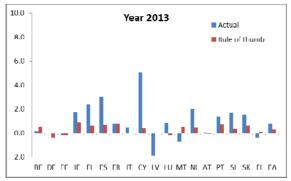
2.0

0.0

BE DE EE IE EL ES FR IT CY LV LU MT NL AT PT SI SK FI EA

Figure 4. Underlying fiscal effort: Actual/forecast versus rule of thumb





Year 2014

8.0 - Rule of thumb

6.0

4.0 - 2.0

BE DE EE IE EL ES FR II CY LV LU MI NL AI PI SI SK H EA

Source: AMECO data, own calculations

Second, the conclusions are more diverse in other parts of the euro area. As in Germany, fiscal consolidation has tended to exceed the prescription of the rule of thumb in the Netherlands on average over 2011-2013, a conclusion that would also hold for Italy (where the effort was especially strong in 2012). In France fiscal adjustment has taken place broadly in line with the rule of thumb, while in a few countries, such as Belgium, it seems to have rather undershot on average.

Third, based on the latest available Commission forecast (spring 2014), the story appears to be changing again, although that is based on uncertain forecasts. For the incoming year (2014), the rule of thumb suggests that the majority of euro area countries, which still face significant debt challenges, should continue to consolidate moderately as they move into less bad economic times. But while planned consolidation efforts are set to remain over the mark in several vulnerable countries, they could fall short of the prescribed effort in some others.

For the euro area taken as a whole, the rule of thumb would have suggested following a moderately lower pace of fiscal retrenchment than actually took place since 2011, though it would still have recommended consolidation averaging around ½ percent of GDP per year. The linear properties of the rule of thumb emphasised earlier (section 3.4) allow to identify the main contributing countries to the gap between the actual fiscal path of the zone and the path suggested by the rule (Figure 5; as these are contributions to the euro area aggregate, contributions from the large countries are naturally the bigger ones). This indicates that excessive tightening as compared with the rule of thumb came from several quarters, but more so quantitatively from 'vulnerable countries' such as Italy or Spain than from 'safer sovereigns' including Germany.

2.00 Euro area 1.50 1.00 0.50 0.00 -0.50 2012 2011 2013 2014 Contribution of Germany Contribution of France Contribution of Italy Contribution of Spain Gap actual vs prescribed fiscal effort

Figure 5. Euro area: difference between actual and prescribed underlying fiscal effort and main country contributions to this difference

Source: AMECO data, own calculations.

4.3 CAVEATS AND POSSIBLE EXTENSIONS

The above simulations, if they permit a more empirically-based judgement of the properties of the rule of thumb, do present some limitations. First, they are conducted with the benefit of hindsight, which is of particular relevance for the assessments of the state of the economy as well as of trend growth that feeds into the measure of discretionary fiscal effort. This gives an inherent informational advantage as compared with the perceptions of the economy in real time. A complementary exercise would be performing 'real time' simulations that would indicate the prescriptions of the rule of thumb based only on the data available at decision time. Still, the outcomes of ex post simulations remain suggestive of the differences brought by the rule of thumb in comparison with actual policies, or with alternative rules.

Second, the simulations are 'static' in the sense that for a given year, the rule of thumb is evaluated taking as fixed the economic and public finances legacy of the previous years. A more ambitious approach would consist in 'dynamic simulations' whereby, starting from initial conditions in the first year of the sample, one would calculate in a recursive manner the full hypothetical fiscal and economic path resulting from a consistent application of the rule of thumb. This could be insightful as it might for example show that continued efforts at consolidating the public finances before the financial crisis of the late 2000s would have built up added fiscal room to mitigate the subsequent downturn. Yet, performing dynamic simulations would also require making tricky assumptions notably on the immediate and cumulated effects of fiscal actions on the economy. While a possible interesting avenue for further work, this paper focuses on simple static simulations only.

Finally, to a significant extent, the conclusions of these simulations are parameter-sensitive. One would get a broader range of assessments by running the rule of thumb with different sensitivities to the primary gap or economic conditions, or by measuring these inputs differently. Robust conclusions should hold across a reasonable range of assumptions (see Annex 3 for alternative assumptions on the stabilisation coefficient). We also have highlighted the possible role of the symmetric or asymmetric nature of the debt objective. But even if one doesn't agree on the precise parameterisation, one of the strengths of the rule of the thumb is to force a transparent identification of the judgments underpinning fiscal prescriptions.

5. CONCLUSION

The rule of thumb offers a benchmark for appraising fiscal policies in a simple and consistent manner. It encompasses the requirements of fiscal discipline in the form of a long-run debt constraint, acknowledgement of the stabilising-effects of fiscal policy, and an operational annual target effectively reflecting underlying policy choices. Some important details of the specification and the parameterisation can be debated though, as illustrated in our discussion and alternative versions of the rule.

Within the EU the fiscal policy discussion centres on compliance vis-à-vis legally-enshrined rules of fiscal discipline. The legitimacy of this approach has in a sense been confirmed by the recent crisis, which exposed the lethal risks of fiscal distress for the integrity of the single currency. Accordingly the SGP rules aim primarily at avoiding 'gross errors' of fiscal indiscipline carrying large spillovers. The rule of thumb takes a different slant by suggesting 'positively' a course thought to be generally sensible. In this sense, the rule of thumb cannot be seen as a ready-made alternative to the current system.

From a pedagogical perspective, one benefit is to offer a filter for appraising policies based on well-defined objectives. Financial markets, for example, can take an oscillating view of fiscal soundness, at times urging both fiscal adjustment and preserving growth. A transparent benchmark referred to consistently over time can help mitigate this kind of 'double bind'. Empirical simulations suggest that it indeed sheds insightful light on aspects of fiscal choices over time. Using some form of rule of thumb as introduced in this paper may help evaluating the consistency of fiscal strategies. Arguably, it encompasses in a parsimonious manner the essential viewpoints on the conduct of rule-based fiscal policies.

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ANNEX 1: MODELLING THE SUSTAINABILITY STABILISATION TRADE OFF

A policy rule akin to the rule of thumb presented in the main text may be derived from an inter-temporal model of the choices made by authorities caring about both output stabilisation and the sustainability constraint. Such a model is presented in particular in Kanda (2011). We present here a simplified version of this approach.

The setting assumes that the authorities' problem is choosing a fiscal path that minimises a loss function:

$$\Sigma_t \beta^t . (\alpha S_t^2 + \gamma P_t^2)$$

where α and γ are the weights placed by the authorities respectively on stabilising the economy and closing the primary gap, and β is the authorities' rate of time preference. The quadratic nature of the loss function intends to capture non-linear aversion of the authorities *vis* \dot{a} *vis* large shocks.

Resource utilisation is assumed to be spontaneously mean-reverting as a result of non-fiscal factors as well as to respond to the fiscal stance:

$$S_t = \lambda S_{t-1} - m_t U_t$$

where λ is an autoregressive parameter capturing the endogenous evolution of economic conditions and m_t is the (short-term) fiscal multiplier.

The primary gap evolves in response to the fiscal effort and economic conditions:

$$P_t = (1+\rho_t)P_{t-1} - U_t - \epsilon \cdot (S_t - S_{t-1})$$

where ρ_t is the interest rate growth differential and ϵ is the budget sensitivity. In the normal case where the interest rate exceeds the growth rate (ρ_t positive), taking no action to restore sustainability (U_t =0) increases the primary gap, implying the need for stronger action in the future. In addition, because we do not correct the primary gap for the cycle, its evolution also depends on the responsiveness of the public finances to the cycle as captured by ϵ .

The optimization problem consists in choosing the path of U_t (and P_t and S_t) minimising the loss function subject to the equations governing the evolutions of P_t and S_t . For simplification one can first assume that the values of the fiscal multiplier and the interest growth differential are constant parameters ($m_t = m$ and $\rho_t = \rho$).

Under these assumptions the first order conditions allow to derive a relation between the fiscal effort in each period and the lagged primary gap and economic conditions:

$$U_t = A.S_{t-1} + B.P_{t-1}$$

where
$$A = \alpha \lambda m / \lceil \alpha m^2 + \gamma (1 - \epsilon m) \rceil$$
 and $B = (1 + \rho) \gamma (1 - \epsilon m) / \lceil \alpha m^2 + \gamma (1 - \epsilon m) \rceil$.

This shows that the fiscal reaction function to economic conditions and primary gaps through the aggregate coefficients A and B reflects the fiscal multiplier, the sensitivity of the budget to economic developments, the interest rate growth differential, the speed of adjustment of the economy via non-fiscal means and the preference of the authorities. Some of these parameters might in fact be time-varying themselves (in which case the analytical solution cannot be derived). For example, an increase in the interest rate growth differential would tend to increase the weight given to the primary gap, all else equal.

For an illustrative calibration, we can take a unit value of the multiplier (m=1), a value a bit higher than the "precrisis" consensus but that we see as more middle of the road) and use a budget sensitivity of $\epsilon=0.5$, a choice close to the averages used in EMU context. We assume as Kanda (2011) that non fiscal shocks are half absorbed

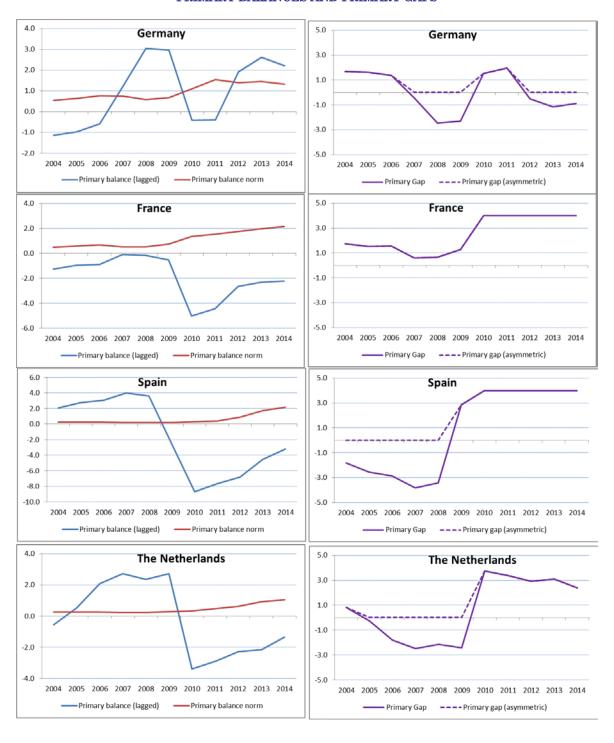
in each period $(\lambda=0.5)$. We take a positive but relatively low value of the interest rate growth differential $(\rho=0.5\%)$, consistent with our definition of the primary gap. Finally, for parameterising the preferences of the authorities an empirical approach would be to pick parameters that offer the best mapping to observed behaviours, but this would assume that the authorities have actually behaved optimally. Instead, we assume here that both objectives are given equal weights (i.e. $\alpha=\gamma$; note that only the ratio of the two matters in the expressions of A and B), but that is admittedly rather arbitrary.

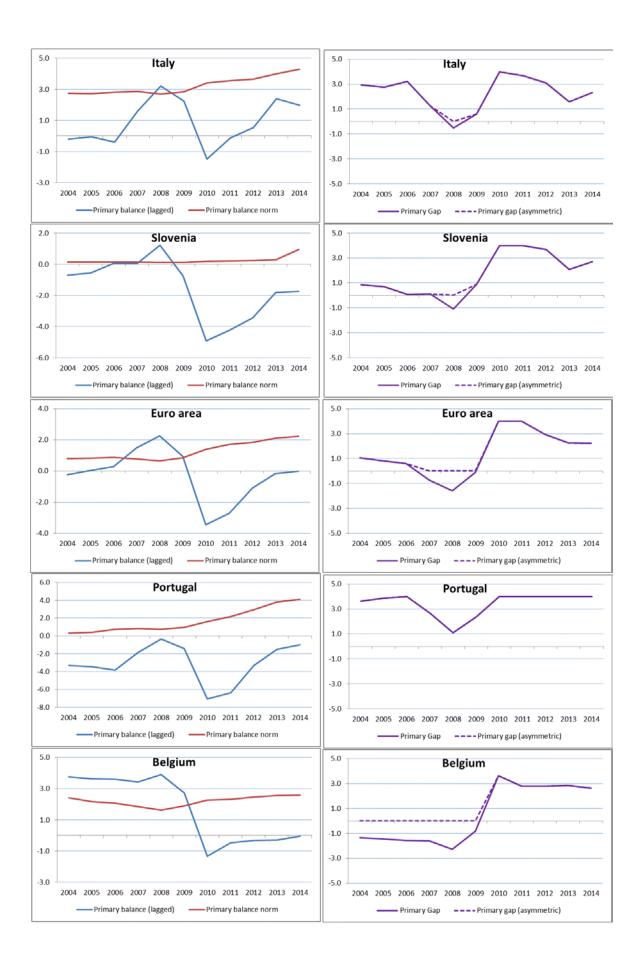
These (simple) calibration choices lead to $A = B \approx 1/3$, implying that the fiscal effort responds with equal force to the primary gaps and economic conditions, and attempting to correct a third of the existing imbalances at each period of time. The 1/3 coefficient is slightly higher than the suggested one in our rule of thumb (1/4). A possible way to rationalise this would be to introduce a preference for smoothing out fiscal actions over time, hence lower coefficients in the fiscal reaction function.

In any event, we see such calibration exercise as primarily suggestive, with the choices made in the rule of thumb above all of a pragmatic nature (i.e., they do appear to deliver sensible guidance to the trained practitioner). In the same vein, because we put an important premium on simplicity, we adopt fixed weights in our preferred specification of the rule of thumb, although the modelling confirms the insight that changing conditions (such as on the fiscal multiplier or the interest rate growth differential) can influence the optimal fiscal path.

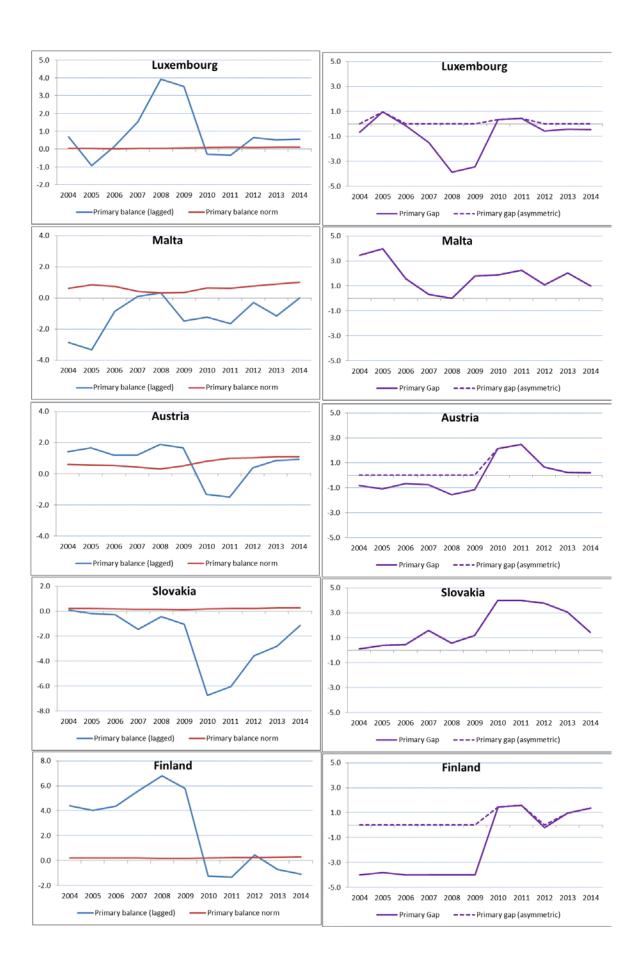
ANNEX 2: FULL SIMULATIONS OUTCOMES

PRIMARY BALANCES AND PRIMARY GAPS

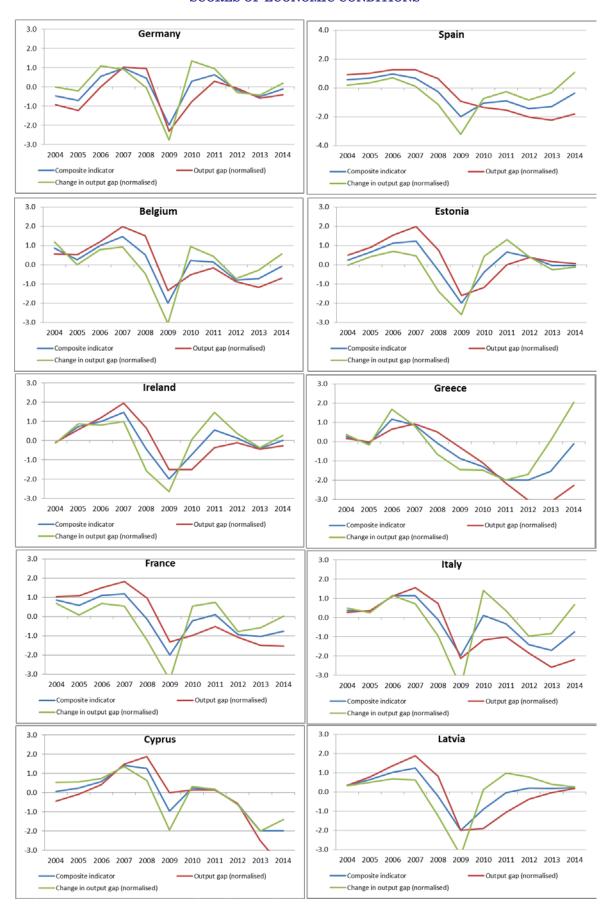






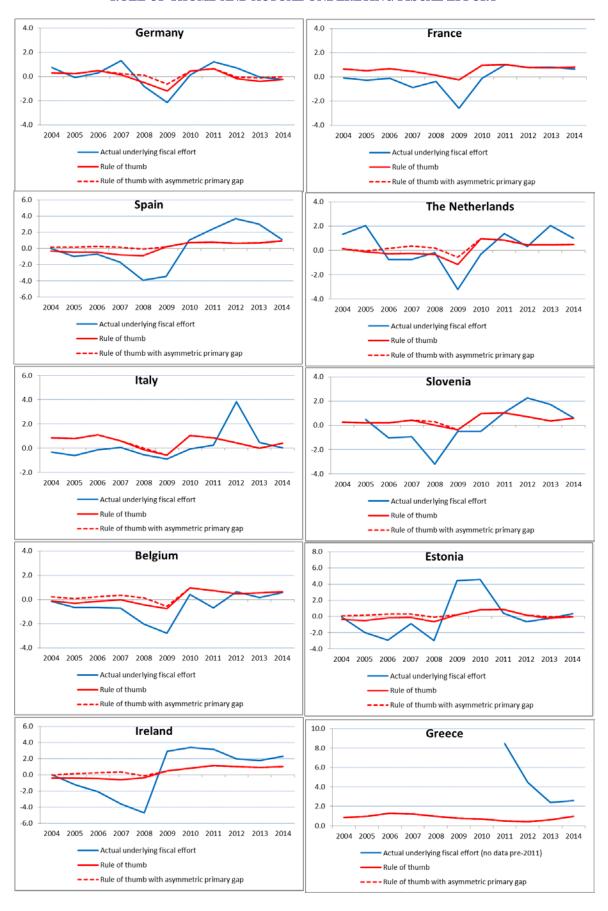


SCORES OF ECONOMIC CONDITIONS





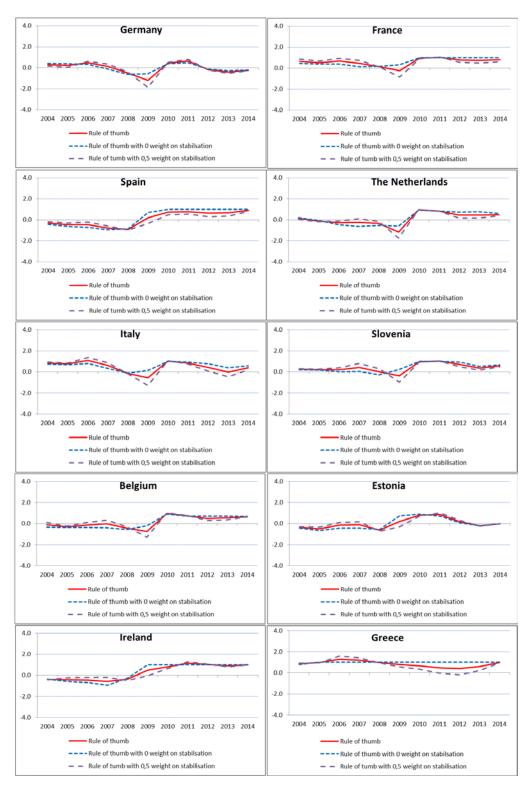
RULE OF THUMB AND ACTUAL UNDERLYING FISCAL EFFORT

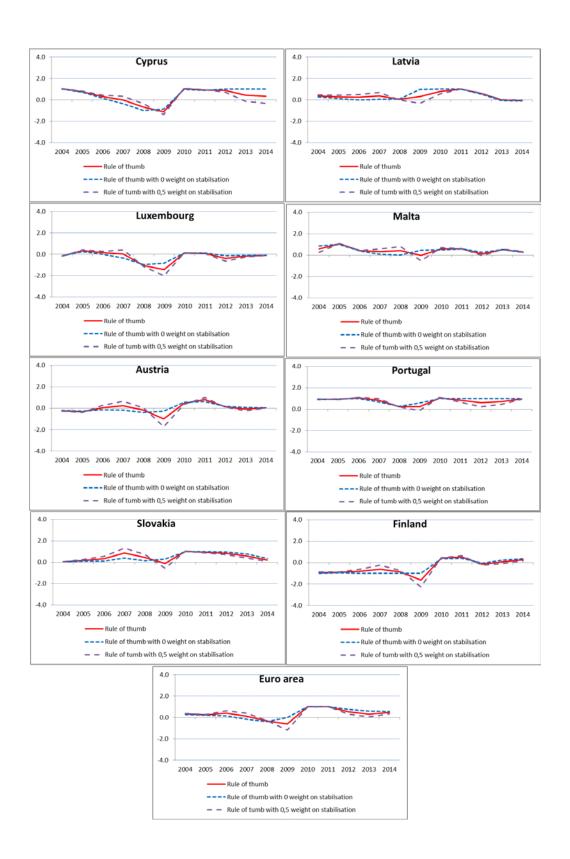




ANNEX 3: SENSITIVITY OF SIMULATIONS TO STABILISATION COEFFICIENT

This annex reports the outcome of a sensitivity test of the simulations by varying the coefficient on economic conditions in the rule of thumb. While the basic rule of thumb assumes a coefficient of ½, alternative simulations assuming coefficients of 0 and ½ are simulated here. The ¼ coefficient on the primary gap is kept as well as all other assumptions (hence values of the primary gaps and scores on economic conditions are unchanged from annex 2). For simplicity only the fully symmetric rule of thumb is used here.





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