

# **Designing a Rainy Day Fund to Work within the EU Fiscal Rules**

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# Designing a Rainy Day Fund to Work within the EU Fiscal Rules

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## Abstract

This paper examines the role of countercyclical “Rainy Day Funds”. We explore how such funds can be used (i) to address procyclical bias in measurements of the cycle, which underpin the EU fiscal rules; and (ii) to enhance the scope for fiscal stimulus in future downturns while also making it more desirable to set aside savings in good times. Drawing on existing mechanisms, we outline an approach that could integrate such a fund with little need for major changes to the current EU fiscal framework.

Keywords: Business cycles, Fiscal policy, Fiscal Rules, Rainy Day Fund, Budget stabilization funds

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## 1. Introduction

The EU is finally experiencing a robust recovery. With this, many Member States are beginning to see their structural budget position rapidly improve. While welcome, these budgetary improvements bring new challenges. This is especially true for small, open economies whose revenue bases are particularly volatile and for whom the fiscal rules – as currently designed – may not be sufficient to achieve sustainable fiscal policy.

There are two key problems for small open economies in the existing EU fiscal framework. First, known issues of procyclicality in the methodology underpinning cyclical calculations for the rules could mean that transient revenues may not be recognised as such in cyclical upswings. This leaves small, open economies untethered in a sense. The risk being that cyclical or temporary revenues translate into long-lasting expenditure increases when deficit bias manifests in good times (Manasse, 1996; Tornell and Lane, 1999). Such increases – should they ultimately prove unsustainable – would leave Member States' public finances exposed in the event of a future downturn. Second, pre-funding fiscal stimulus to manage future downturns or saving more in good times to address overheating may not be adequately facilitated in the existing framework. Such stimulus or saving can be desirable from a policy perspective (particularly when monetary policy is confronted with the zero lower bound or for small countries where asymmetric shocks under a common monetary policy are important).

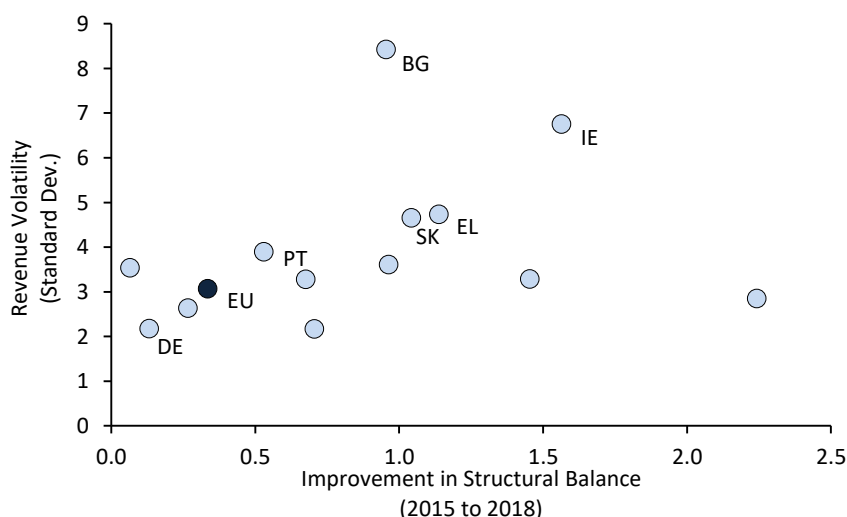
One option to hive off potentially transient revenue sources in an upturn, while facilitating a stimulus in a downturn, is a Rainy Day Fund (RDF). There are few examples of RDFs internationally that operate in a truly countercyclical manner. Yet an RDF could play a useful role in running a more countercyclical fiscal policy. In particular, it could correct for how the methodologies underpinning the fiscal rules currently work and calibrate them to operate in a less procyclical manner. In order for such a fund to work, it would need a slight rethink of how the fiscal rules treat these types of structures. Indeed, the current framework treats desirable countercyclical behaviour as potentially being in breach of the fiscal rules, hence binding the hands of policymakers. We propose a mechanism for an RDF that would work within the existing EU fiscal rules framework.

## 2. Motivation for an RDF

### Recovering Fiscal Positions and Volatile Revenues

A notable feature of the recovery in the fiscal position in recent times is that those economies that tend to have more volatile revenue bases have tended to show larger improvements. Figure 1 highlights this, with countries such as Ireland, Slovakia and Portugal that have traditionally had more volatile revenue growth showing relatively strong improvements in their structural balances. This contrasts with the more moderate improvements at the aggregate EU level and in traditionally more stable countries such as Germany.

**Figure 1. Revenue Volatility and Structural Balance Improvements**



*Note:* We restrict our sample to only show those Member States whose structural balances are set to improve over the period 2015–2018. The Structural Balance rule is based on European Commission estimates (Autumn 2017) produced using the commonly agreed methodology. Revenue is defined here as current general government revenue and we measure volatility in terms of the standard deviation of annual percentage changes over the period 2002–2017.

### Risks of Procyclical Bias

The recovery in public finances in countries with volatile revenue bases is happening quickly. Many of these Member States will soon see themselves in a position where a key metric of the fiscal rules – the Medium-Term (budgetary) Objective (MTO) – is met. Meeting the MTO means that a Member State will see its deficit (adjusted for the cycle and for one-offs) at or exceeding a level deemed appropriate. However, reaching the MTO does not guarantee that a smooth road lies ahead and there are risks that things could still go wrong.

A key criticism of the EU Commonly Agreed Methodology is that the output gap estimation method is prone to a degree of procyclicality. This was particularly evident in the pre-financial crisis period from 2006–2008.<sup>2</sup> The fact that it does “a particularly poor job in the upswing phase of business cycles” is a shortcoming acknowledged by its architects (McMorrow *et al.*, 2015, p.6). The authors also note that revisions to the output gap estimates produced under the EU methodology for the pre-crisis period were roughly five times greater than those of the post-crisis period (2009–2014). They characterise this as “a particularly humbling statistic given that one of the EU's primary motivations in 2002 for moving away from the HP filter to the PF [Production Function] approach was the expectation of reduced levels of procyclicality (especially in the upswing stage of cycles) which were expected to result from alleviating the risk of end-point biases...” (McMorrow *et al.*, 2015, p.20).

This procyclicality is partially explained by a systematic optimistic bias in the output gap methodology (McMorrow *et al.*, 2015), but also due to how investment is treated in the boom phase (Borio *et al.*, 2014). Known systematic bias relates to the problem of end-point bias. This can, with some filters, result in estimates that are highly biased at the ends of the sample (the only periods that really matter for assessments made under the fiscal rules).<sup>3</sup> This occurs in a fashion that is typically procyclical (i.e., the smoothed series tends to be close to the observed data at the beginning and end of the estimation sample). In addition, the EU Commonly Agreed Methodology currently uses the level of the actual net capital stock to determine the capital contribution to potential output. However, identifying capital linked to sustainable levels of output may be complicated by significant measurement issues (OECD, 2001); by the openness of capital to international flows (Fratzscher and Bussiere, 2004; Obstfeld, 1985); and by unsustainable developments, such as asset price bubbles in the housing sector. The latter can distort capital contributions to potential output by boosting capital levels, thus inflating potential output as measured, even

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<sup>2</sup> For a wider context, see Borio *et al.*, (2014); Heimberger and Kapeller (2017); and Kuusi (2017). In terms of the failure to incorporate open economy considerations, see Darvas and Simon (2015).

<sup>3</sup> This issue can be accentuated if the forecasts that are filtered are themselves biased or procyclical.

though the actual effects on an economy's potential might better be considered unsustainable over the long term.

Though efforts are underway to alleviate problems of procyclicality, the issue is highly challenging and remains unresolved. It is important to stress that it is not just the EU Commonly Agreed Methodology that is subject to procyclical bias. Methods used by the IMF and by the OECD as well as statistical filters in general are prone to similar issues. As such, policymakers should be alert to the risk of future upswings masking deteriorating underlying fiscal positions as happened prior to the last crisis. This concern should be all the more pertinent, given that the current methodology forms a central part of the current EU framework of fiscal rules.

### **How Procyclical Bias Feeds into the Fiscal Rules**

Both pillars of the current EU fiscal rules are heavily reliant on cyclical measurement underpinned by the EU Commonly Agreed Methodology. The two pillars are (i) a structural deficit target referred to as the MTO; and (ii) a spending rule known as the Expenditure Benchmark. The structural balance is defined as the cyclically-adjusted general government balance net of one-off and other temporary measures. This cyclical component is the product of the output gap and the estimated semi-elasticity of the budget balance to the output gap. The output gap is estimated using the Commission's production function method.<sup>4</sup> Similarly, a limit for real spending growth under the Expenditure Benchmark is defined with reference to a medium-term (ten-year average of potential real GDP growth) Reference Rate. The use of ten-year averaging mitigates procyclicality to a degree, but not sufficiently as we show. This is estimated using the same methodology (European Commission, 2018).

If procyclicality is in fact still a problem inherent to estimates of potential output and the output gap, then the fiscal rules may allow governments to once again pursue unsustainable fiscal policies. Specifically, the fiscal framework would permit expenditure growth net of discretionary revenue

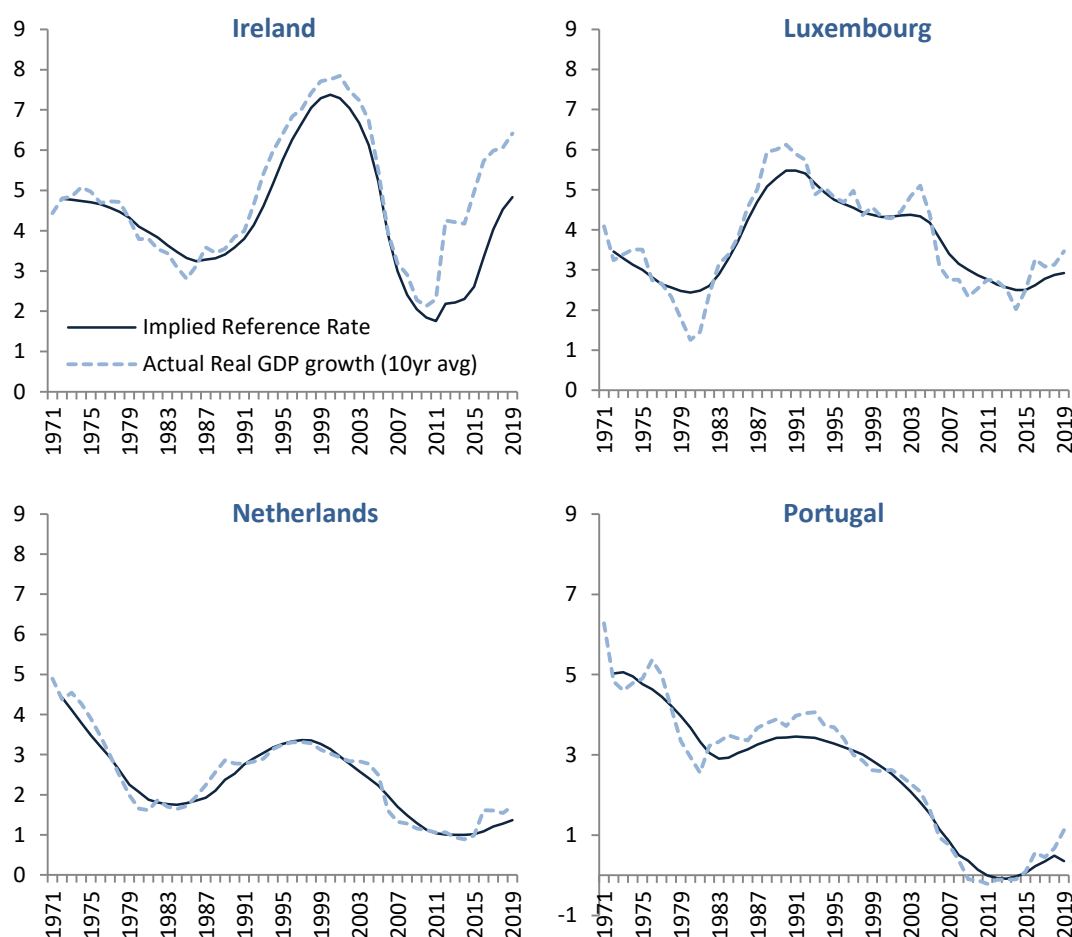
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<sup>4</sup> The method was endorsed by the ECOFIN Council on 12 July 2002, which allows the identification of the different components of potential output. All methodological improvements are agreed by the Member States and discussed in a dedicated forum, the Output Gap Working Group (OGWG) within the EU's Economic Policy Committee.

measures that would be boosted during the upswing phase of a cycle in a procyclical fashion.

**Figure 2: Procyclicalities of Allowed Growth Rates under the Fiscal Rules**

% change year-on-year



Sources: European Commission (Autumn 2017 estimates); own workings.

Note: Data show the implied Reference Rates based on ten-year averages of the estimated potential output growth rates, which are derived using the commonly agreed methodology.

Procyclicality is a major design flaw in measurements underpinning the fiscal rules. This is evident from an analysis of the allowed real spending growth rates that would have applied historically under the fiscal rules.<sup>5</sup> Figure 2 shows the implied allowed growth rates for a selection of small open economies in the EU: Ireland, Luxembourg, Portugal and the Netherlands.<sup>6</sup>

<sup>5</sup> The implied allowed real growth rate here refers to the Reference Rate or ten-year average of potential output growth rates as applied under the Expenditure Benchmark.

<sup>6</sup> Technically, there were no Reference Rates (i.e., allowed growth rates for real expenditure growth under the Expenditure Benchmark) applicable for earlier periods prior to the introduction of the Expenditure Benchmark. It is also worth noting that these estimates are on an *ex-post* basis and so incorporate actual outturns as opposed to forecasts as well as revisions to the historical data. The end-point bias problem common to statistical filters

What is apparent in each case is that the allowed growth rates evolve in a manner that fails to smooth through cyclical developments. Instead, they closely follow the ten-year average for actual real GDP growth rates rather than getting at a more meaningful approximation of “sustainable” growth rates.

Taking Ireland as an example, we can see the procyclical pattern is especially pronounced. The allowed growth rates climb from a low of close to 3 per cent prior to the 1990s to more than double that (7.3 per cent) by 1999, before descending again to rates closer to 2 per cent. More recently, these appear to be rising again, with rates closer to 5 per cent visible for the latest period. This path for “sustainable” growth rates allowed under the fiscal rules can also be seen to trace the path of the 10 year average for actual real GDP growth very closely.

A further concern is that the Expenditure Benchmark may no longer bind once a Member State’s MTO is exceeded. The Expenditure Benchmark could represent a useful tool for governments to plan future fiscal policy, despite its tendency to exhibit procyclical bias. One advantage is that it offers a relatively tangible means of estimating the available scope for budgetary measures once forecasts of inflation and estimates of potential output growth are estimated. It is arguably less vulnerable to measurement issues compared to the structural balance, given that it takes a ten-year average of potential output estimates.<sup>7</sup> However, as noted in the current rulebook for the EU fiscal rules framework (European Commission, 2018, p.53), “Member States that have exceeded their MTO do not need to be assessed for compliance with the expenditure benchmark, as long as the MTO is maintained.” Although the European Commission and other bodies monitoring compliance with the fiscal rules might be aware of these issues

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would typically mean that procyclical bias would be a more pronounced problem in real-time than is shown here.

<sup>7</sup> Even with the use of ten-year averaging, the Expenditure Benchmark is still problematic. As noted by the Irish Fiscal Advisory Council (2015), the estimates of potential growth for Ireland underpinning the Expenditure Benchmark (the Reference Rates) are quite volatile and subject to regular revision. Whereas the ten-year averages used to set allowed spending growth rates were previously set for three years at a time, the move to annual updating of the Reference Rates more recently ensures a full pass-through of any procyclicality in measurement to allowed growth rates of expenditure each year. Furthermore, the averaging over a ten-year period may offer a misleading reassurance that procyclicality is overcome. Procyclicality bias can affect all estimates through the filtering process, both historical and forecast, not just the current or most recent years.



and may still assess the spending rule post-achievement of the MTO, the enforcement procedures are likely to be significantly weakened once the structural balance exceeds its MTO level. In effect, the only role for the Expenditure Benchmark in these circumstances is as a secondary check that the MTO will not be jeopardised in the short term and as an operational device to help assess if windfalls may have caused the MTO to be exceeded.<sup>8</sup> Both have a fairly weak or subordinate role relative to the MTO.

Given the well-recognised volatility of measurement of the structural balance in smaller, more open Member States, the European Commission has repeatedly pointed to the Expenditure Benchmark as being the better indicator for fiscal policy surveillance purposes under the *SGP*. That being the case, this paper focuses on how the application of the Expenditure Benchmark could be adjusted to make allowance for use of a RDF.

#### **Asymmetric Shocks, the Zero Lower Bound and Fiscal Stimulus**

The idea that the rules might not provide enough scope for a countercyclical policy is worth considering in a monetary policy context. In particular, a countercyclical fund such as an RDF might have a greater role to play in small countries in a monetary union where asymmetric shocks matter more. It could also prove more important in a post-crisis environment that is characterised by a secular decline in interest rates with associated monetary policy levers relatively more constrained.

The scope of monetary policy has been a central issue during the crisis period. In order to mitigate severe demand shortfalls and associated deflation, a number of central banks introduced substantial monetary easing. Nominal interest rates reached historically low levels and were effectively lowered to levels close to zero. This reduction in interest rates to the so-called Zero Lower Bound (ZLB) poses challenges as regards the effectiveness of standard monetary policy (Krugman, 2009; Woodford, 2011;

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<sup>8</sup> As noted in the Vade Mecum (European Commission, 2018, pp.52–53), “Articles 6(3) (for stability programmes) and Article 10(3) (for convergence programmes) further provide that “The deviation of expenditure developments shall not be considered significant if the Member State concerned has overachieved the medium-term budgetary objective, taking into account the possibility of significant revenue windfalls and the budgetary plans laid out in the [stability][convergence] programme do not jeopardise that objective over the programme period.”

Merola, 2012; and Bernanke, 2017), and also non-standard policies (e.g., Blinder *et al.*, 2017; or Krugman, 2009).

The role of fiscal policy as a policy lever also gains more importance in monetary unions where asymmetric shocks still exist (especially for small economies).<sup>9</sup> Though some convergence has been observed over time, a monetary union can mean that remaining heterogeneity leaves the union vulnerable to asymmetric shocks that impact on members differently. This was evident in the pre-crisis period, where external (e.g., current account) and financial imbalances were more pronounced in countries such as Greece, Ireland, Portugal and Spain for example.

Evidence suggests that a countercyclical fiscal stimulus may be more effective in providing stimulus to the economy in periods when the ZLB is binding. Evidence of the potential effectiveness of fiscal policy in this context is provided in Merola (2012) and Christiano *et al.* (2011). The findings suggest that, where the interest rate set by the central bank is not a unique factor determining the cost of credit for borrowers and where the ZLB is binding, the conventional government spending multiplier is slightly larger than one. Results also show that multipliers are larger in economies where the costs to output associated with the ZLB prove more severe (i.e., in the economies with financial frictions).

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<sup>9</sup> See Christiano *et al.*, (2011), Erceg and Lindé (2009), and Woodford (2011) for a more detailed analysis.

### 3. The International Experience with RDFs

The international experience with RDFs thus far is fairly limited, and a clear template for how a countercyclical fund might operate has not emerged. As such, a clear definition of an RDF is not available. Our proposal advocates a very specific type of RDF – one that operates in a truly countercyclical manner; fixing procyclical bias in the fiscal rules and operating more as a stabilisation fund than, say, a contingency/shock fund. However, drawing on the international experiences to date, it would seem that there are certain prerequisites that might be generalised to the type of fund we envisage if it were to operate efficiently.

- First, the purpose of the Fund should be clearly stated and its effectiveness regularly assessed. A large number of Sovereign Wealth Funds exist internationally, which might serve as a countercyclical or Rainy Day Fund, yet this specific function may not be recognised in the legislation governing its operation. A Fund's effectiveness should also be subject to regular review in such a way that policymakers can ensure adherence to its objectives regardless of changes in management, legislation and political and economic cycles.
- Second, contribution and withdrawal conditions should be clearly specified. In terms of contributions, it is widely accepted that funding conditions of RDFs should be linked to some measure of volatility, be it economic activity or revenue.<sup>10</sup> This requires regular and well-founded research identifying the volatile areas of the tax system (Bailey *et al.*, 2014). Choosing the right indicator on which to base this link presents challenges.<sup>11</sup> In terms of withdrawal conditions, these should also be objective, measurable and clearly stated in advance.

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<sup>10</sup> Joyce (2001) notes that there should be reasons to be concerned in cases where the budget environment is unstable, but there are little or no reserves in the RDF.

<sup>11</sup> Credit rating agencies across the US, for example, typically favour states whose RDF designs align with the economic cycle, by depositing revenue into the fund in good times and spending that revenue during bad times as a means to help cover budget shortfalls (Pew Charitable Trusts, 2017b).

- Third, the size of the fund should be adequate for its stated purposes.<sup>12</sup> In cases where it serves as a countercyclical tool, adequate consideration should be given to the state's experience with volatility in economic activity or revenue sources. In particular, the size of the fund should reflect the expected size and duration of a typical downturn; and any expected budgetary shortfalls associated with this.<sup>13</sup> A potentially informative approach is to consider the optimal level of the fund, i.e., the percentage of reserves over expenditure, needed to avoid a deteriorating budget deficit.

With these prerequisites in mind, we assess Rainy Day Funds in the international context in more detail.

### **United States Experience**

Across the United States, 48 out of the 50 states now have Rainy Day Funds.<sup>14</sup> These are widely supportive of the Balanced Budget Requirements that apply in all states – other than Vermont – whereby constraints on the fiscal discipline are set in order to prevent states from experiencing budget deficits. Relatedly, the restrictions to issue debt at a state level limit their borrowing capability. In a context of strong pressure to build buffers for downturns, an RDF can help the US states achieve this goal by fostering a countercyclical fiscal policy.

In general, the US states offer interesting lessons to learn both in terms of successful examples on the design of the fund, and also concerning inefficiencies that may have arisen especially in the light of the financial crisis.

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<sup>12</sup> Cornia and Nelson (2003) consider how to determine the optimal size of an RDF. They propose using the concept of Value at Risk which is commonly used in the risk-management industry and literature. A probability distribution function can inform the likelihood of certain-sized deficits occurring. With this in mind, from looking at the probability distribution function, one could say with a certain degree of confidence that an RDF of quantity X would be large enough to cover a deficit for that year. One complication that is not addressed in the paper is that an RDF is not simply to be used for one year. Government balances from one year to the next tend to be correlated (deficits tend to be followed by further deficits and vice versa), hence an RDF needs to consider not just a probability distribution function for deficits in one year, but for a series of consecutive years.

<sup>13</sup> The Great Recession underlined how funds set aside for budget shortfalls may be insufficient for tail risks like the financial crisis. Recognising this, some governments have reconsidered the size of funds they set aside to allow for such events.

<sup>14</sup> The only states without an RDF in 2017 in the United States were Colorado and Illinois.

Figure 3 summarises the various features of RDF designs in the US. The majority of states have defined deposit and withdrawal conditions. These are somewhat automatic in nature and are based on rules defined in state law (and not made solely by appropriation or on an ad-hoc basis). Research suggests that the fiscal balance tends to be higher in states where RDFs are based on strict rules relative to states where softer conditions are in place (Sobel and Randall, 1996; Wagner and Elder, 2005; Wagner, 2004).<sup>15</sup>

In some cases, contribution conditions can be based on the difference between actual and projected revenue (also known as the forecast-error approach). Another very common practice in several states is to link the fund's deposits to the state's year-end surplus. As shown, only 40 per cent of the states tie their RDF to any kind of volatility measure. Virginia, for instance, uses a deposit formula that includes historical and current revenue growth and volatility during the six previous budget years in sales, and individual and corporate income taxes. It is also worth noting that some of these states have revenues which track natural resource prices, which are very volatile in nature. This may pose problems in measuring the level of volatility that may affect the functioning of the fund. Despite the literature assigning a lot of importance to explicitly linking volatility to deposit and withdrawal conditions, only two-fifths of states have some direct link to revenue or economic growth.

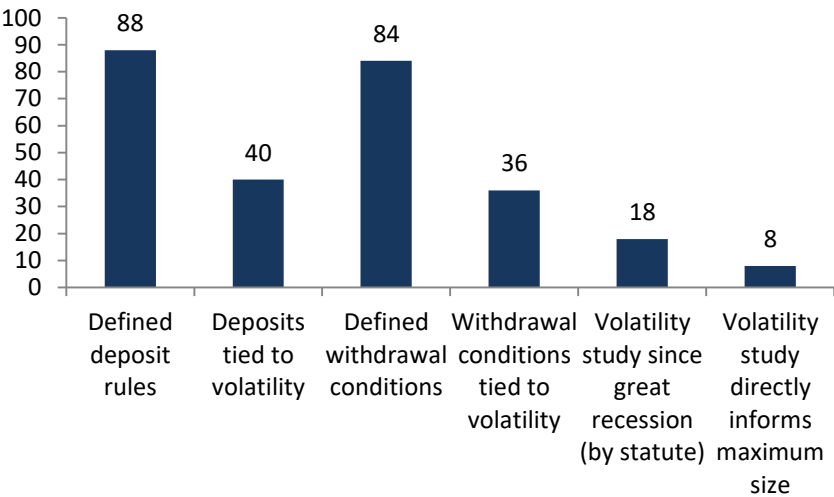
Nevada offers an important lesson for policymakers on the importance for RDFs to be tied to the economic cycle. During the early 2000s, when revenue was soaring in Nevada, policymakers did not build up reserves given that they did not deem the gaming and tourism industries as highly vulnerable to changes in the cycle. However, with the advent of the crisis, American travellers decreased their activity and revenues dropped in Nevada. In this context, its RDF did not offset the underlying large expenditure cuts and tax increases (Pew Charitable Trusts, 2017b).

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<sup>15</sup> Knight and Levinson (1999) found from a panel analysis over 1984-1997 that total balances in the US are higher in states where the fund has strict deposit and withdrawal rules (and not a maximum size) than in those States where the funds run based on legislative discretion. Wagner (2003) also found evidence that states' total balances improve when withdrawals from RDFs are legislated by supermajority rules. Wagner (2004) noted that the states with the strictest withdrawal conditions –i.e., those that allow withdrawals solely in recession periods– tend to save significantly more than states that can access funds through appropriation.

In terms of withdrawal conditions, Virginia provides a good example. The fund in Virginia is restricted so as to prevent the balance from being withdrawn all at once. In particular, the RDF cannot be used to close the deficit for the year entirely, but can only be used to address half of the expected deficit. Although the majority of the states count on defined withdrawal conditions (Figure 3), many withdrew the entirety of their RDF in 2007, just before the economic crisis hit (Pew Charitable Trusts, 2017a). Conversely, other states have never made an RDF withdrawal. Reasons for the latter include onerous repayment conditions and a lack of clarity of purpose of the fund. A minority of the states have withdrawal conditions that seem vague and unclear, or rely on guidelines with no empirical underpinning.

**Figure 3: Features of Rainy Day Funds in the United States**  
Percentage of US Funds with Specified Features



Source: Pew Charitable Trusts (2017c).

The size of the fund is often complex to determine. Before the Great Recession, the general rule of thumb for RDF caps was set at 5 per cent of expenditure. However, the crisis made some states re-evaluate the overall caps or target balances of the RDFs since these may have been far too small to cope with extended revenue shortfalls. In fact, many states have re-set these caps or target balances to 10 per cent of overall revenue or more after the crisis (Pew Charitable Trusts, 2015). A best practice adopted by some states is to produce a regular revenue volatility study and use the findings to inform the optimal size of the RDF. For example, Minnesota analyses its

revenue volatility each budget cycle adjusts the rainy day cap based on the findings of the analysis.

### European Experience

Very few European countries currently operate what might be described as RDFs. However, such funds are being considered more as the cycle improves and as a means of limiting the damage caused by future downturns.<sup>16</sup> A number of European countries address their long-term objectives through countercyclical reserve funds that can take the form of Sovereign Wealth Funds (government-owned investment vehicles which manage a diversified portfolio of domestic and international financial assets).<sup>17</sup>

Norway, for example, has the largest Sovereign Wealth Fund in Europe.<sup>18</sup> It was set up in 1990 with two related objectives. The first objective was to give the government room for manoeuvre in fiscal policy should oil prices drop or should the economy contract. The country's strong dependency on oil exports made the need for such a buffer paramount, especially considering that these exports are highly volatile. The second objective relates to managing the financial challenges of an ageing population and an expected decrease in petroleum-related revenues.<sup>19</sup> The Fund – which is fully integrated in the annual budget – aims to safeguard and build financial wealth for future generations when oil reserves are likely to be exhausted.<sup>20</sup> The state's net cash flow from petroleum activities is transferred in full to

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<sup>16</sup> A number of European countries, however, count on Contingency Funds. These differ from RDFs in that they operate on an in-year basis, i.e. the funds are set aside in the annual budget in order to cover unexpected in-year expenses. Spain and the UK are examples of countries operating such funds.

<sup>17</sup> These funds can be classified according to at least two criteria: (i) the sources of sovereign wealth, and (ii) their policy objectives. There are different categories of Sovereign Wealth Funds, depending on their main objective. Rainy Day Funds, Saving Funds, Reserve Investment Corporation Funds, Development Funds, and Pension Reserve Funds are some of them (IMF, 2007).

<sup>18</sup> The Norwegian Sovereign Wealth Fund comprises two entirely separate funds: the Government Pension Fund Global (a sovereign fund where Norway's petroleum revenue is deposited) and the Government Pension Fund Norway (a "closed fund" which does not receive any new funding). The text will only refer to the Government Pension Fund Global.

<sup>19</sup> No formal political decision has been made concerning its usage to address future pension costs, however.

<sup>20</sup> The Fund is managed by Norges Bank Investment Management (NBIM) on behalf of the Ministry of Finance. The ministry determines the Fund's investment strategy. This strategy is based on advice from NBIM and discussions in Parliament. The management mandate defines the investment universe and the fund's strategic reference index.

the Fund, in addition to the investment returns from the Fund itself. The use of petroleum revenues (i.e. the withdrawal from the Fund) fully covers the non-oil budget deficit. In formulating fiscal policy, petroleum revenue spending is, however, measured by the structural, non-oil budget deficit.

The guidelines underpinning the Norwegian Sovereign Wealth Fund stipulate a gradual and sustainable use of petroleum revenues over time in line with the Fund's expected real rate of return (estimated at 3 per cent). In any given year, the use of petroleum revenues can deviate from that 3 per cent to help stabilise economic activity, support high capacity utilisation and employment. In the event of large fluctuations in the Fund's value, the implications for the use of petroleum revenues shall be phased in over several years, as stated in the Norwegian *Budget 2018*.

Finland also operates a fund with long-term and countercyclical purposes, although smaller in size and specifically designed with pension-related purposes. In particular, the Finnish State Pension Fund was established in 1990 as a tool for tackling future pension costs and balancing pension expenditure. Contributions into the Fund consist of pension insurance premiums (paid by employers and workers covered by the state pension system), returns on investments and other payments.

The Finnish Fund, which only invests accumulated assets, operates in a countercyclical manner. In fact, the return generated by the pension fund acts as a buffer for the government's staff pension liabilities. The Fund transfers an amount equivalent to 40 per cent of the of the annual pension expenditure to the government budget, with the remaining reserves staying in the Fund. In terms of the Fund's size, it is dependent upon the long-term forecasts of pension dynamics.

For example, current projections indicate that Finnish pension expenditure should peak in the mid-2030s and that the long-term budget deficit should possibly settle at over 3 per cent of GDP as of 2034. In order to tackle this, the Fund's officials reinforce the importance of trying to increase the Fund to its target size before the cost pressures due to retirement and demography become excessively high. The targeted year for meeting the objective is affected by: (i) the current funding ratio, i.e. the ratio of pension



assets to pension liabilities (19 per cent in 2015), (ii) the predicted net premium income, i.e. the pension premium income less the amount transferred to the state, and (iii) the expected return on investments. Based on this, the government set an objective of achieving a 25 per cent funding ratio by the end of 2033.

It is also worth considering the Estonian case, where a Stabilisation Reserve Fund was established at the end of 1997 with an initial size of €45.2 million. The aim of this Fund is to strengthen fiscal and economic stability by providing reserves to be used as a result of unforeseen revenues shortfalls and emergency situations, as well as to support structural reforms (OECD, 2011b).<sup>21</sup> This countercyclical Fund is financed via transfers from the state budget, including profits from the Bank of Estonia, sales of state assets, and overall budget surpluses or from other reserve funds (IMF, 2009).<sup>22</sup> The return of the Fund is measured against a benchmark – derived from the interest rate of AA- to AAA-rated Eurozone government bonds and short-term deposits –, such that, with 95 per cent probability, the return of the benchmark is at least 0 per cent (in order to prevent assets from losing nominal value) during the next twelve months.<sup>23</sup> The Fund accumulated reserves during upswings such as the 2000s. It ran these down during 2008–2009 to finance the large fiscal gap.

Lastly, the possibility of a European RDF has been brought to the fore, given the impact of the recent financial crisis. The European Stability Mechanism and the IMF, among others, have explored possible RDFs where Member States would contribute to the fund in good times and withdraw reserves in downturns.<sup>24</sup> This poses challenges in terms of risk-sharing, and may require

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<sup>21</sup> The assets of the Fund were not allowed to be invested in domestic securities, and rather must be invested abroad (OECD, 2011).

<sup>22</sup> In 2009, the law established that the Fund could be used to address a financial crisis. It also allowed to speed up the Parliamentary decision processes during the crisis, and included various minor technical amendments which may ease crisis management by the state.

<sup>23</sup> The Estonian Parliament is responsible of deciding when to deploy the Fund, which can be only used for: (i) reducing economic risks; (ii) preventing or mitigating socio-economic crises; (iii) solving or preventing an emergency situation (e.g., state of emergency or state of war); or (iv) solving or preventing financial crisis “that may cause difficulties related to liquidity or solvency for financial institutions or significant disruptions in the payment and settlement systems”.

<sup>24</sup> The head of the IMF, Christine Lagarde, noted that the construction of a Euro Area RDF would help cushion member states in economic downturns (Lagarde, 2018). The European

improvements in governance. In this context, meaningful discussions are underway at EU level to explore a way in which such funds could work in tandem with the fiscal rules.<sup>25</sup>

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Commission has also mentioned the usage of RDFs as an option to foster economic stability. In particular, the proposals include a fund that can accumulate reserves from Member States on a regular basis and withdrawals would be carried out on a pre-defined basis (European Commission, 2017).

<sup>25</sup> See section 4.2 of the Five Presidents Report (Juncker *et al.*, 2015) and the Commission Roadmap for Deepening EMU of 6 December 2017.

## 4. Designing a Rainy Day Fund to Work in the Current EU Fiscal Framework

The existing EU fiscal rules may not operate in a sufficiently countercyclical manner and they provide an unfavourable treatment of national RDFs, which can help in this regard. To address this, we propose relatively modest adjustments to how RDFs are treated by the fiscal rules.

The changes we propose would not require more extensive and undesirable changes to Maastricht definitions of government deficits or debt proposed elsewhere. For example, a separate set of proposals are offered by Balassone *et al.* (2007), who note that a change in the definition of the “Maastricht deficit” may be needed to accommodate the use of an RDF within the fiscal rules. This would see contributions to the RDF recorded as expenditure but withdrawals treated as revenue so that contributions would increase the deficit in good times and withdrawals would improve the budget balance in bad times. However, we would see this approach as having undesirable consequences. In particular, it would make the recording of deficits less transparent (introducing large timing differences between actual expenditure and recorded expenditure).

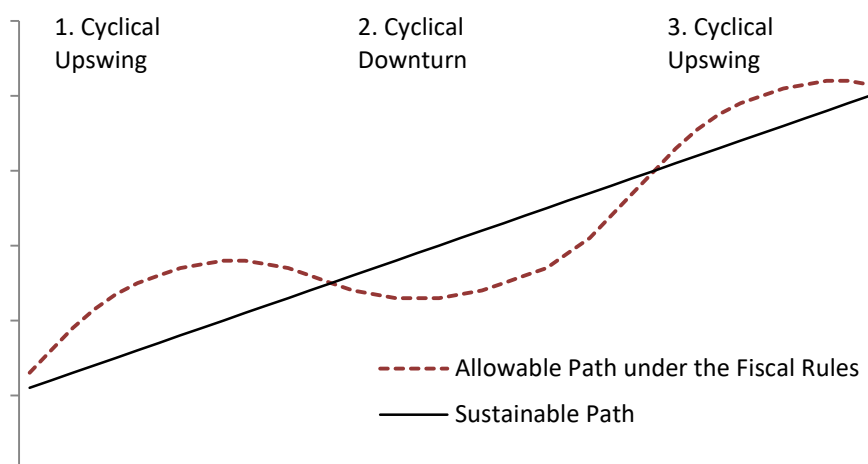
### 4.1 The Role of an RDF

One role of an RDF might be to smooth the economic cycle through budgetary policy. That is to provide temporary support in times of economic difficulty and to remove some of the heat from the economy in a boom by setting aside revenues for future downturns.

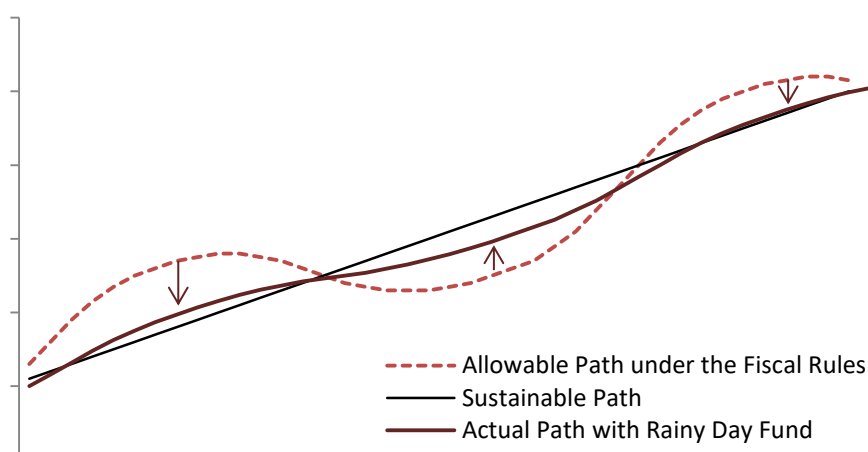
Figure 4 illustrates what a countercyclical RDF would be designed to achieve. We show the example of an allowed path for government spending under the fiscal rules where this allowed path is biased upwards in cyclical upswings and downwards in cyclical downturns (i.e., the problem of procyclicality). Faced with this problem, we would see something like that shown in Panel A. Compared to the unobserved “sustainable path”, which follows a stable growth path, allowed spending growth is much greater in the first period (the cyclical upswing); it is much lower in the second period (the cyclical downturn); and it is much higher again in the third period (the subsequent cyclical upswing following a recovery).

**Figure 4: Government Spending During the Cycle**  
Illustrative levels of expenditure

**A. Allowed Spending Path and a “Sustainable” Spending Path**



**B. The Role of the RDF in Correcting Towards the Sustainable Path**



The allowed path for government spending under the fiscal rules that we depict is undesirable from a number of perspectives. First, from a demand-management perspective, the path for actual government spending – if it follows the fiscal rules exactly – might imply a fiscal policy that accentuates rather than dampens the economic cycle. Second, it could leave the public finances vulnerable to forced austerity in downturns, which could lead to wider sustainability concerns. Third, it introduces a level of volatility in spending that is undesirable from an efficiency perspective. Fourth, and more importantly, it goes against the very core of what the Preventive Arm of the *Stability and Growth Pact* tries to achieve, which is expenditure growth in line with potential GDP over the economic cycle.

Next, we consider the role of the RDF in mitigating any procyclical bias (illustrated in Panel B of Figure 4). In the first cyclical upswing, contributions are made to the RDF so as to bring actual spending more closely in line with the sustainable path. This counteracts the tendency of the rules to allow higher-than-sustainable spending growth during a cyclical upswing given a procyclical bias in the methodology for calculating potential output underpinning the fiscal rules. This is only the case if contributions to the RDF displace allowed expenditure increases (i.e., leading to foregone expenditure increases), rather than occurring on top of the allowed increases. During the subsequent downturn, the RDF savings accumulated in the first cyclical upswing are then used to push spending higher than the allowed levels under the fiscal rules, which – again, due to procyclicality – are lower than the sustainable levels. In the final cyclical upswing, contributions are again made to the RDF to help dampen the effects of this procyclicality.

Specifically, given the shortcomings of the methods underpinning the fiscal rules, we envisage that an RDF should aim to address the following two objectives:

- 1) **Reference Rate Correction (i.e., correcting the allowed growth rates for real spending under the fiscal rules).** We want some mechanism that prevents excessive expenditure growth or tax cuts when Reference Rates are inaccurately measured as being very high and – correspondingly – that allows for faster expenditure growth when these are too low. For this mechanism to work, it would need to somehow adjust allowed expenditure growth – in effect correcting the Reference Rate mismeasurement. This adjustment would be symmetric: during downturns the RDF would allow spending growth higher than suggested by the Reference Rate; whereas during upturns it would entail spending growth lower than the Reference Rate so as to deal with procyclicality.
- 2) **Withdrawals without Breaches.** A means of withdrawing RDF funds set aside in good times, which does not lead to breaches of the fiscal rules in bad times.

## 4.2 Deficiencies in Existing Flexibilities

Given the merits of an RDF in the presence of procyclical bias, a question worth asking is whether there are existing mechanisms in the fiscal rules that can allow for such a fund to operate.

A number of flexibilities exist that could be considered, but these have many shortcomings. These include the possibility of classifying expenditure funded by RDF withdrawals as one-off, relying on the unusual event clause, or using flexibilities offered by the investment and structural reform clauses.<sup>26</sup>

However, these flexibilities are not designed for mechanisms such as a well-specified RDF, and these mechanisms would likely constrain the operation of the RDF particularly in terms of withdrawals. For the flexibilities to apply, specific conditions determined by the European Commission would have to be met. This conditionality would result in much uncertainty over whether withdrawals would meet the relevant criteria. The uncertainty over an item's classification could render the RDF a non-runner from the start if policymakers are unsure of their ability to use any funds contributed at a later point in time. The size of the fund required could also be an issue.

The first existing flexibility, which we assess should not be relied upon, is the standard one-off classification. There are relatively strict arrangements around what can be classified as a one-off in the EU framework.<sup>27</sup> For example, for an item to obtain one-off classification:

- its size should be greater than 0.1 per cent of GDP;
- its nature ought to be inherently non-recurrent;
- the one-off amount should be beyond the range implied by usual volatility .

A second existing flexibility, which we feel should not be considered, is the structural reform/investment clauses. These offer flexibility for specific investment expenditure by governments provided that they meet strict

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<sup>26</sup> An Irish Department of Finance (2017) consultation paper that explores the possibility of a Rainy Day Fund for Ireland cites some of these flexibilities as potential avenues to allow for withdrawals from the fund in bad times.

<sup>27</sup> These guiding principles are extensively explained in Chapter II.3 of the 2015 Report on Public Finances in EMU (European Commission, 2016).

criteria and that specific macroeconomic conditions apply. In particular, these flexibilities:

- are limited to 0.5 per cent of GDP in practice;
- are only allowed as temporary deviations from requirements;
- can have strict conditions in terms of the macroeconomic context – often depending on potential output measurements, typically based on the EU methodology;
- can have various other requirements, including co-financing by the EU, being formally assessed as having direct long-term positive and verifiable budgetary effects, and not leading to deficits greater than 3 per cent of GDP.

Given uncertainties and strict conditions for existing flexibilities, these options do not satisfy objective (1) as outlined in Section 4.1, and it is difficult to say whether they would adequately accommodate objective (2). The limited size, short timeframe and strict conditionality applying to the structural reform/investment clauses mean they are unlikely to facilitate the RDF to act as a countercyclical tool during bad times, or to permit meaningful use of withdrawals as required. This is particularly the case as use of both the structural reform and investment clause is limited to one time per Member State until the MTO has been regained.

Most importantly, the uncertainties involved in the existing flexibilities could potentially limit the flexibility and responsiveness of any RDF and could make it less desirable to make contributions in the first place.

### 4.3 Proposed Changes to Facilitate Rainy Day Funds

Our proposal would see RDF transactions treated differently under existing rules. Specifically, we propose two key adjustments when assessing compliance with the fiscal rules:

- (1) For the purposes of the Expenditure Benchmark, contributions to the fund would be counted as a discretionary revenue-reducing measure. They would therefore reduce space for spending relative to what would otherwise be allowed. Withdrawals would then be treated as ordinary expenditure, albeit that the RDF-funded spending would be disregarded for the purposes of assessing compliance with the fiscal rules.<sup>28</sup> Specifically, we propose an automatic exemption of the expenditure increase funded by RDF resources. This would mean that the expenditure would be treated as an allowed increase with an unambiguous exemption, which would therefore not jeopardise compliance with the fiscal rules. This would ensure that policymakers can be certain that they will not be unfairly punished for setting aside savings in good times, when these funds are eventually used. Withdrawals should be conditional on the expenditure fulfilling relevant governance criteria (described further in Section 4.4).<sup>29</sup> Such an approach would mean that previous contributions could then be clearly relatable to the withdrawal.
- (2) For the purposes of the structural balance, the contribution to the RDF would not be treated as revenue or expenditure of any kind as it would remain within general government (i.e., it would not be recognised under standard accounting principles). The fiscal rules would currently treat withdrawals, however, as expenditure thus leading to a weaker balance, all else equal. This weakening of the actual and structural deficit would argue for recognition of the use of

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<sup>28</sup> Note that, if withdrawals were also treated as DRMs, this would lead to ever greater amounts of RDF reserves being required to adjust spending upwards from too low levels. This is due to the fact that the DRM treatment removes the amount treated as an increase in net spending from the base for assessments in subsequent years.

<sup>29</sup> Note that unlike the Balassone *et al* (2007) approach, our proposal isolates the treatment to changes that are within the operation of the fiscal rules. It therefore avoids introducing undesirable distortions to the actual accounting of what is happening to the deficit. The Balassone *et al* (2007) approach is the exact opposite in terms of the treatment: contributions are treated as a form of revenue (only for the purposes of the rules) and withdrawals are treated as expenditure.



the RDF. Similar to temporary deviations from the MTO, which are permitted for certain investments or structural reforms, we would argue that deviations caused by the use of RDF funds should not lead to assessments of non-compliance with the fiscal rules. Again, this treatment would mean that the policymaker is not punished for setting aside and eventually using savings as is prudent. Two factors supportive of this approach are that (i) governments may be more likely to plan future budgets more on the Expenditure Benchmark, given its capacity to outline clear nominal scope for discretionary measures; (ii) recent moves have seen calls for a greater emphasis being placed on the Expenditure Benchmark as the central pillar for assessing compliance.<sup>30</sup> Increased emphasis on the Expenditure Benchmark would be supportive of Member States that employ countercyclical policy tools such as an RDF and should be favoured.

### **Proposed Treatment for the Expenditure Benchmark**

We now consider the mechanisms outlined in the preceding section in more detail using a stylised example (Figures 5–6 and Table 1).

We assume that:

- total government expenditure starts at a level of €100 billion
- the various expenditure corrections made under the Expenditure Benchmark are assumed as zero throughout (e.g., for investment matched by EU funds, interest expenditure, smoothed investment spending, and cyclical unemployment benefit expenditure).
- a government is allowed to grow spending by the Reference Rate plus inflation set for the year ahead (the “Allowed Growth Rates”). In this case, we assume that the allowed growth rates range between 2 per cent and 7 per cent over the cycle.
- a government might wish to grow at a pace different to the allowed growth rate as this is subject to procyclical bias. For simplicity, we

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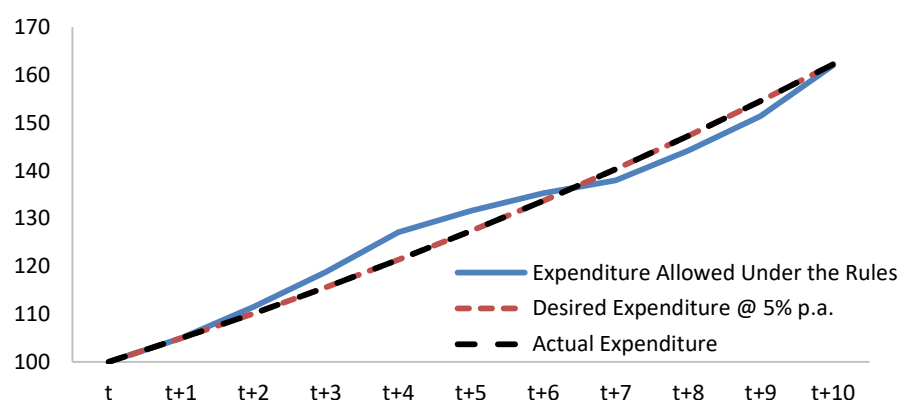
<sup>30</sup> In the context of a greater emphasis on the Expenditure Benchmark already being considered in proposals from the European Commission (2017b), we would see this emphasis as being a reasonably modest adjustment to the existing framework.

assume that this “Desired Growth Rate” is set by policymakers with regard to the long-run average of the allowed growth rates over the full cycle so as to smooth through the procyclical bias. In contrast to the allowed growth rates, which are procyclical, the desired growth rate is assumed constant at 5 per cent.<sup>31</sup>

Figure 5 shows an illustrative path for expenditure levels where minimum compliance with the fiscal rules is followed. The “expenditure allowed under the rules” path shows what would happen to spending levels if the rules act in a procyclical manner and spending grows in line with exactly what is allowed under a policy of minimum compliance with the fiscal rules. During the upswing phase of the cycle, the allowed growth rates for spending (i.e., the Reference Rates plus inflation) rise due to mismeasurement. Expenditure, in turn, follows the procyclical path shown. In the downturn, the Reference Rates fall and – correspondingly – so too does the pace of expenditure growth.

**Figure 5: Illustrative Spending Levels (Under the Proposal)**

€ billions



We contrast the minimum compliance path with a more desirable path for spending that is not prone to this procyclicality. The “desired expenditure” path would be set by a Member State at whatever rate it considered more appropriate for expenditure to grow at. As a simplifying assumption, we set this as the average of the allowed growth rates over the full period.

<sup>31</sup> This 5 per cent growth rate would be broadly consistent with, for example, a Reference Rate of 3 per cent and inflation of close to 2 per cent.

In order to allow actual expenditure to follow this desired expenditure path, a policymaker would be able to use the RDF to achieve this under our proposal. The path for the “actual expenditure (proposal)” spending level follows the desired path by prudently holding back spending levels in the upswing phase by introducing contributions to the RDF. This sustains spending at more stable pace of expansion compared to the allowed levels under minimum compliance. Correspondingly, in the downturn phase, the proposal allows for actual spending levels to be pushed up using RDF funds to boost expenditure when allowed growth rates fall to levels that are too low in a procyclical manner. This approach leads to a level of spending above what is allowed in the downturn without breaching the fiscal rules (provided that the RDF is the source of the funds).

**Figure 6: Illustrative Spending Levels (Current Rules Basis)**

€ billions

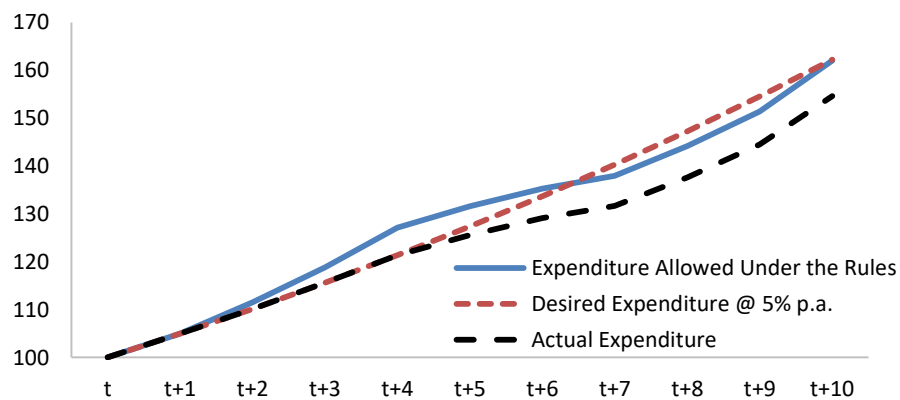


Figure 6 shows the example of a Member State that wishes to operate fiscal policy in a prudent manner as the rules currently apply. As before, we assume procyclicality in the allowed growth rates. In the upswing phase, the Member State prudently eschews the option of growing expenditure at the pace allowed under the rules, instead favouring the slightly lower desired pace. Problematically, this actually has no binding role (i.e., the contributions to the RDF do not actually prevent the Member State from growing at the faster pace even though contributions to the RDF may have been made).<sup>32</sup>

<sup>32</sup> As the rules apply, the contributions to the RDF would not actually prevent the Member State from growing spending at the allowed pace either. Instead, they would be able to grow spending at the allowed growth rate in addition to being able to contribute to the RDF. This is due to the fact that the transfer (a movement of funds within general

If the excess allowed spending is contributed to an RDF and spending is kept at the desired pace of expansion, problems remain for when the Member State wishes to withdraw these funds later on. In the downswing phase, the rules prevent them from using the funds amassed to grow at a pace that exceeds the allowed growth rate. This leads to a ratcheting down of spending levels over the long run relative to the desired path (and also below the path under a minimum compliance approach).

### **Detailed Treatment for the Expenditure Benchmark**

The treatment we propose for contributions to an RDF under the Expenditure Benchmark is conceptually similar to an existing mechanism under the fiscal rules – namely Discretionary Revenue Measures (DRMs). For expenditure funded by RDF withdrawals, we see a new category of exemption for such spending as appropriate.

Table 1 gives more detail on the proposed treatment and operation of our proposal using the same assumptions as in the previous section (i.e., no expenditure corrections, desired growth rates of 5 per cent as informed by the average of the allowed growth rates). Note that we use a realistic range of allowed growth rates that are calibrated based on historical experiences.<sup>33</sup>

We assume that in year  $t$  the RDF has accumulated reserves of €4 billion. In year  $t+2$ , a €1.3 billion RDF contribution is made given that the allowed growth rate for spending exceeds the desired growth rate. The contribution is calculated on the basis of this excess and it is treated in much the same way as a discretionary revenue-reducing measure. This allows the use of available fiscal space in year  $t+2$  without permanently adding this to the expenditure base for following years. Doing so would lead to an upward drift in spending levels away from the desired level. For subsequent years (as far as year  $t+4$ ), additional contributions are made recognising this gap between desired and allowed spending growth rates.

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government) would not be recognised as expenditure or as a discretionary revenue measure.

<sup>33</sup> The maximum allowed real growth rate for Ireland historically is 7.4 per cent before inflation, while the lowest is 1.8 per cent; similarly, Portugal has an historical range for its implied Reference Rates of 5.1 percentage points.

**Table 1: Illustration of the Proposed Treatment of RDFs**

€ billions unless otherwise stated

	t	t+1	t+2	t+3	t+4	t+5	t+6	t+7	t+8	t+9	t+10
<b>% Growth Rates</b>											
Allowed Growth Rate under Rules <sup>1</sup>		5.0%	6.3%	6.5%	7.0%	3.5%	3.1%	2.3%	4.5%	5.0%	7.0%
Desired Growth Rate under Proposal <sup>2</sup>		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
<b>Allowed and Desired Expenditure Levels</b>											
Allowed Expenditure under Rules <sup>3</sup>	100.0	105.0	111.6	117.4	123.9	125.8	131.5	137.1	147.0	155.1	166.0
Desired Expenditure <sup>4</sup>	100.0	105.0	110.3	115.8	121.6	127.6	134.0	140.7	147.7	155.1	162.9
<b>RDF Operations</b>											
Gap between Allowed and Desired Expenditure <sup>5</sup>		-	1.3	1.7	2.3	-1.8	-2.5	-3.6	-0.7	-	3.1
RDF Contributions <sup>5</sup>		-	1.3	1.7	2.3	-	-	-	-	-	3.1
RDF Withdrawals <sup>5</sup>		-	-	-	-	1.8	2.5	3.6	0.7	-	-
RDF's Accumulated Reserves <sup>6</sup>	4.0	4.0	5.3	7.0	9.3	7.5	5.0	1.4	0.7	0.7	3.8
<b>Actual Expenditure</b>											
Actual Expenditure <sup>7</sup>	100.0	105.0	110.3	115.8	121.6	127.6	134.0	140.7	147.7	155.1	162.9
Corrections <sup>8</sup>	-	-	-	-	-	-	-	-	-	-	-
Actual Corrected Expenditure <sup>8</sup>	100.0	105.0	110.3	115.8	121.6	127.6	134.0	140.7	147.7	155.1	162.9

Source: Own workings.

<sup>1</sup> Allowed Growth Rates: the spending growth rates allowed under the fiscal rules (i.e., the Reference Rates plus inflation). The Reference Rates are based on 10-year averages of potential output growth rates as estimated by the European Commission and inflation is given by the forecast GDP deflator.

<sup>2</sup> Desired Growth Rates: the sustainable spending growth rates as set out by the policymaker. Here, we assume that they are equal to the average of the long-term allowed growth rates (at 5 per cent per annum).

<sup>3</sup> Allowed Expenditure in year t is given by:  $Actual\ Corrected\ Exp_{t-1} \times (1 + Allowed\ Growth\ Rate)$

<sup>4</sup> Desired Expenditure in year t is given by:

$Actual\ Corrected\ Exp_{t-1} \times (1 + Desired\ Growth\ Rate\ under\ Proposal)$

<sup>5</sup> Gap between allowed and desired expenditure: this is the difference between the allowed expenditure and the desired expenditure. If positive, a lodgement to the RDF will take place; if negative, reserves will be withdrawn from the RDF. In particular,

$$\begin{cases} \text{if } Gap > 0 \Rightarrow RDF\ Contribution_t = +Gap \\ \text{if } Gap < 0 \Rightarrow RDF\ Withdrawal_t = -Gap \end{cases}$$

<sup>6</sup> The size of the accumulated reserves in the RDF in year t is given by:  $RDF_t = RDF_{t-1} + Gap_t$

<sup>7</sup> Actual Expenditure in year t is given by:  $Actual\ Corrected\ Exp_{t-1} \times (1 + Allowed\ Growth\ Rate) - RDF\ contributions + RDF\ withdrawals$

<sup>8</sup> Actual Corrected Expenditure = Actual Expenditure – Corrections (where Corrections are assumed as equal to zero for simplifying purposes). Corrections refer to the various expenditure corrections made under the Expenditure Benchmark (e.g., for one-off items, investment matched by EU funds, interest expenditure, smoothed investment spending, and cyclical unemployment benefit expenditure).

This approach addresses the potential problem of a distorted Reference Rate – owing to procyclical bias – feeding through to unsustainably high expenditure increases in cyclical upswings. The proposed treatment serves to moderate the impact of procyclicality by, in effect, taking any such permitted increases in expenditure (net of tax measures) off of the table for a government in advance. Instead, these funds are set aside and used to boost spending beyond levels that are set too low (again, in a manner that is procyclical) in cyclical downturns.

Note that this exemption should recognise minimum governance criteria set out *ex ante* that must be adhered to before the spending could be funded by the RDF (see Section 4.4).

The mechanism by which a €1.8 billion withdrawal from the RDF would apply under the Expenditure Benchmark is shown for year  $t+5$ . In this year, the allowed growth rate falls to 3.5 per cent as compared to the desired 5 per cent growth rate and RDF funds are withdrawn to make up the gap. These are added to the expenditure base for the subsequent year's assessment.<sup>34</sup> The proposed treatment would see withdrawals result in an expenditure level above what would otherwise take place, subject to this expenditure meeting all relevant withdrawal criteria.

It should be noted that the mechanism proposed would see automatic exemption of the expenditure increase funded by RDF resources. This would mean that the expenditure would be treated as an allowed increase with an unambiguous exemption. It would therefore not jeopardise compliance with the fiscal rules. Satisfying the relevant governance criteria would enable proper release of the funds, provided the criteria are appropriate and secure enough to ensure the RDF has a well-specified design. As a result, there would be a clear and uncontroversial relationship between the withdrawals and associated prior contributions, meaning a government would not be penalised by the fiscal rules for utilising a prudent policy tool such as an RDF.

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<sup>34</sup> Note that if these withdrawals were not added to the expenditure base for the following year's assessment (i.e., if they were treated as a temporary expenditure item), it would lead to increasingly larger withdrawals in order to get back to the steady state path desired. In turn, this would require RDF funds to be of an unrealistically large scale.

Appendix A gives a more stylised example of our proposed treatment of the RDF under the fiscal rules.

### **Setting an Appropriate “Desired Growth Rate”**

It is worth considering what would happen if the desired growth rate for spending is set inappropriately high or low. This is akin to considering whether the accumulated RDF reserves will be too high or too low. For example, accumulated RDF reserves could run out during a downturn so that a government cannot return spending levels to its desired level. Similarly, if there is a very large accumulation of RDF reserves built up, it could be argued that a Member State has set its desired growth rate for spending at a pace that is below what actually proves to be sustainable.

This issue goes to the heart of the difficulties in setting an appropriate and sustainable path for the public finances. A sustainable pace of growth for spending net of discretionary revenue measures is something that is arguably unknowable but it is something that Member States should have some clear view on (or at least a clearer view than one that is informed solely by the mechanical application of the commonly agreed methodology). A risk, of course, is that governments might be biased toward thinking that good times are seldom evident (i.e., there is always more that can be done to improve the economy), and that spending growth should typically be at a pace that subsequently turns out to be faster than proves sustainable.<sup>35</sup> The desired pace, whatever it may be, is one that should clearly be set publicly and subject to ongoing assessment, including by independent institutions. It should not be subject to regular changes as the cycle evolves.

An advantage of the RDF proposal we outline is that it is relatively agnostic on exactly how the desired growth rate is arrived at and what it should be. If, for example, a Member State sets a desired growth rate that proves to be too high such that reserves accumulated in the RDF turn out to be very low, this would lead to an eventual requirement to correct spending downwards to more sustainable levels. In any case, it would not lead to a situation which goes beyond the limits set by the Expenditure Benchmark. The allowable

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<sup>35</sup> This relates to the time-inconsistency literature that began with Kydland and Prescott (1977), which notes that policymakers can sometimes better achieve their goals by limiting their discretion. This recognises that pressures may inevitably form, which may lead policymakers to stray from sensible policy stances adopted before such pressures built up.

growth rate set by the Expenditure Benchmark would serve as a binding limit in the case where accumulated RDF reserves have been set at too low a level due to an inappropriately high desired growth rate (i.e., there would be no RDF reserves available to grow spending at a pace beyond the level allowed by the Expenditure Benchmark in a downturn when rates are procyclically lower).

Correspondingly, if the desired growth rate is set too low, and RDF funds were to accumulate rapidly, this would lead to a situation in which a very large RDF would be built up. Over time, Member States would be able to form a clearer sense of the appropriateness of the desired growth rate initially set out. This would lead to a situation in which the best use of such accumulated reserves could be considered recognising the uncertainties involved. Appendix B considers these scenarios in more detail.

#### **Proposed Treatment for the Structural Balance**

For the structural balance, the current fiscal framework would see contributions to an RDF not reflected as expenditure. This is due to their classification as a financial transaction for the purposes of general government accounting. With no initial impact of the contribution on the general government balance, and given the proposal in Table 1 to treat contributions as a discretionary revenue-reducing measure, there is no adjustment to the structural balance calculation made.

### **4.4 Governance Criteria**

For an RDF to effectively support countercyclical policy, withdrawals in support of temporary additional expenditure or tax reductions should only be made in specified circumstances. The economic circumstances in which contributions to the fund are to be made should be identified and the means of measuring these specified clearly. These guidelines should recognise country-specific concerns in relation to appropriate estimation of the impact of the economic cycle.

Aspects for consideration may include domestic economic performance and current fiscal sustainability. This may include reference to the volatility of certain tax sources (as noted in Section 3 for Virginia in the United States). In particular, criteria for withdrawals should be stringent enough to avoid



inappropriate drawdowns by an opportunistic government, but flexible enough to enable speedy access when needed. Supermajority approval by legislators may improve transparency surrounding the fund's usage.

Adequate safeguards should also be in place as regards the management of the fund. Governance criteria would ideally be agreed with the European Commission in advance of the establishment of an RDF and clearly incorporated into its mandate. This approach could improve the ability of the fiscal rules to facilitate countercyclical fiscal policy while recognising country-specific concerns.

## 5. Conclusions

The EU is finally experiencing a robust recovery and a number of Member States – particularly those with more volatile revenue bases – are beginning to see their structural budget position rapidly improve. This recovery presents new challenges for fiscal policy, challenges which the existing fiscal framework in the EU may be ill-prepared to deal with.

We identify two unresolved risks under the current EU fiscal rules framework. First, the fiscal framework is still known to exhibit tendencies towards procyclicality when measuring sustainable output growth and the level of the structural balance. Temporary or cyclical revenues may therefore translate into long-lasting expenditure increases when deficit bias manifests in good times (Manasse, 1996; Tornell and Lane, 1999). Such increases – should they ultimately prove unsustainable – would leave Member States' public finances exposed in the event of a future downturn. Second, financing potential fiscal stimulus in future downturns by setting aside savings in good times may not be adequately facilitated in the existing EU fiscal rules framework. Such a stimulus is desirable from a policy perspective (particularly when monetary policy is confronted with the zero lower bound and for smaller countries confronted with asymmetric shocks). However, the fiscal framework as currently designed risks treating this desirable behaviour as potentially being in breach of the fiscal rules, hence binding the hands of policymakers.

This paper examines the role of a countercyclical Rainy Day Fund as a possible means of augmenting countercyclical policy at the Member State level. We examine best practices internationally for such funds and we propose a rethink of how the fiscal rules treat such structures. An RDF could play a useful role in running a countercyclical policy – one that corrects for how the fiscal rules operate and calibrates them to operate in a less procyclical manner. Drawing on existing mechanisms, our proposal requires little need for major changes to the current fiscal framework, yet it could helpfully expand the policy toolkit available to Member States when seeking to enhance scope for appropriately countercyclical fiscal policy.

## Appendix A: Treatment of the RDF under the Assessment of the Fiscal Rules

This Appendix gives some additional detail on how the assessment of the fiscal rules would treat contributions to and withdrawals from the Rainy Day Fund. Note that this is highly stylised and is mainly intended to explain how the rules would treat the flows into and out of the RDF. For an economic understanding of what is happening, please refer to Table 1 in the main text.

In Tables A.1 and A.2 we show a stylised example where total government spending is €70 billion and is flat for all years except for when RDF withdrawals are used to fund additional spending. Corrections to total spending are assumed as zero for simplicity.

Table A.1 shows an application of the Expenditure Benchmark where no changes are made to the fiscal rules. In this example, we see that:

- contributions to the RDF are not treated as either expenditure or revenue. They are essentially a within-general government transfer and so do not have any impact in terms of gross flows (i.e., it is not expenditure that flows out of government, nor is it new revenue received. It is merely a movement of funds within government).
- in year  $t+1$ , a contribution is made to the RDF of €1 billion. The fact that the RDF contributions do not show up as general government expenditure means that – for the purposes of the fiscal rules – the government is still allowed to grow spending at whatever the allowed growth rate is under the fiscal rules. This is the case even though the government has decided to make a contribution to the RDF in year  $t+1$ . Measured growth under the Expenditure Benchmark is therefore zero and total expenditure is not affected by the RDF contribution.
- in year  $t+4$ , a withdrawal is made from the RDF of €1 billion. This does not count as government revenue but – if spent – shows up under the fiscal rules as additional expenditure of €1 billion and is assessed against the expenditure growth that is allowed under the

Expenditure Benchmark. This treatment is punitive in the sense that it does not recognise the foregone expenditure in previous years used to build up the reserves in the RDF.

**Table A.1: Stylised Example of Fiscal Rules Treatment of RDFs (as the rules currently apply)**

€ billions unless stated

		t	t+1	t+2	t+3	t+4	t+5
a	Total Expenditure	70	70	70	70	71	71
b	Expenditure Corrections	-	-	-	-	-	-
c = a-b	Corrected Expenditure Aggregate ("Expenditure Base")	70	70	70	70	71	71
d	RDF contribution (similar treatment as for DRMs)						
e = a-b-d	Corrected Expenditure Aggregate net of DRMs and RDF contributions	70	70	70	70	71	71
f	RDF Funded Expenditure Exempt for Assessment						
$g = e_t/c_{t-1} - 1$	Measured growth under the Expenditure Benchmark		0.0%	0.0%	0.0%	1.4%	0.0%

In Table A.2 we show the same example as before, but we introduce the changes to the fiscal rules to allow for RDFs in the manner described in this paper. Our changes mean that:

- the contribution to the RDF is now treated in a similar manner to DRMs and so deducts from the allowed increase in spending for year t+1 (measured growth under the Expenditure Benchmark shows up as +1.4% as opposed to zero in Table A1). This has the desired effect of bringing allowed expenditure growth in line with desired spending growth (Section 4.3).
- the withdrawal from the RDF in year t+4 is treated as exempt from the assessment of growth for the purposes of the Expenditure Benchmark. This has the desired effect of allowing a policymaker to use the accumulated reserves from foregone expenditure in previous years to bring allowed expenditure in line with desired spending growth.

**Table A.2: Stylised Example of Fiscal Rules Treatment of RDFs  
(on the basis of our proposed changes)**

€ billions unless stated

		t	t+1	t+2	t+3	t+4	t+5
a	Total Expenditure	70	70	70	70	71	71
b	Expenditure Corrections	-	-	-	-	-	-
c = a-b	Corrected Expenditure Aggregate ("Expenditure Base")	70	70	70	70	71	71
d	RDF contribution (similar treatment as for DRMs)		-1				
e = a-b-d	Corrected Expenditure Aggregate net of DRMs and RDF contributions	70	71	70	70	71	71
f	RDF Funded Expenditure Exempt for Assessment					1	
$g = (e_t - f_t) / c_{t-1} - 1$	Measured growth under the Expenditure Benchmark		1.4%	0.0%	0.0%	0.0%	0.0%

## **Appendix B: Spending Paths when the Policymaker's Desired Growth Rates are Excessively High or Low**

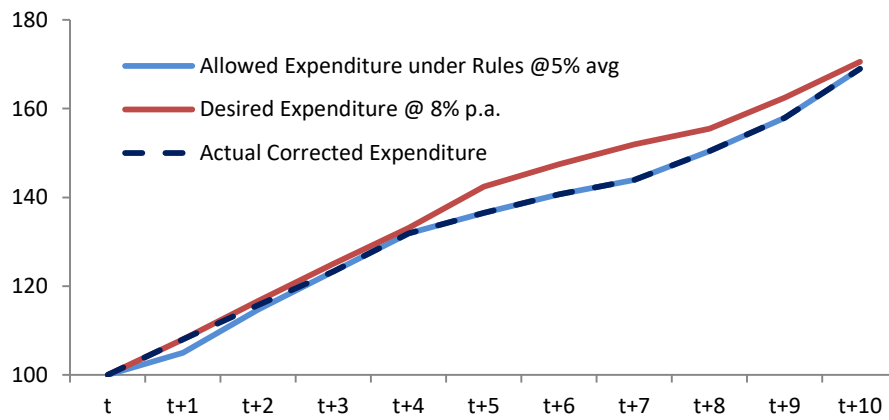
This appendix shows two alternative scenarios where the Desired Growth Rate set out by the policymaker may be deemed as “too high” or “too low” with respect to the Allowed Growth Rate under the fiscal rules (i.e., the ten-year average of potential output growth). The first “high” scenario assumes an annual Desired Growth Rate of 8 per cent – well over the average Allowed Growth Rate of 5 per cent that is assumed in the stylised example presented in Section 4. The second “low” scenario assumes a low Desired Growth Rate of 2 per cent annually.

In the “high” scenario (Figure B.1), the very high targeted growth implies that the desired spending path is above the allowed path for the whole time horizon (i.e., at 8 per cent rather than 5 per cent on average). As a result, in order to keep actual spending close to the desired level, large withdrawals are required from the RDF. Given the large withdrawals from the fund, the RDF runs out of reserves at a certain point in time. In this example, the RDF runs out of reserves in year  $t+2$ , and hence is unable to support an upward adjustment in the spending path relative to the maximum limit set by the rules. In a context like this, the only option for a Member State – absent any other policy measures – is to follow the spending path that is determined by the rules. Assuming that the withdrawals come in periods when allowed growth rates are too low, this would imply the need for a correction in net spending levels.

Conversely, in the “low” scenario (Figure B.2), the desired growth rate is set by a policymaker below the rate allowed under the rules (i.e., at 2 per cent rather than 5 per cent on average). In this scenario, large contributions are made to the RDF. The contributions lead to a fund that, starting from €4 billion reserves, increases to an amount of €36.8 billion of accumulated reserves in period  $t+10$ . This allows the actual spending path to follow the desired trend. Due to the fact that desired spending growth is set so low, the eventual levels of expenditure are substantially lower by the end of the horizon studied than in the scenario depicted in Section 4. It is also far lower

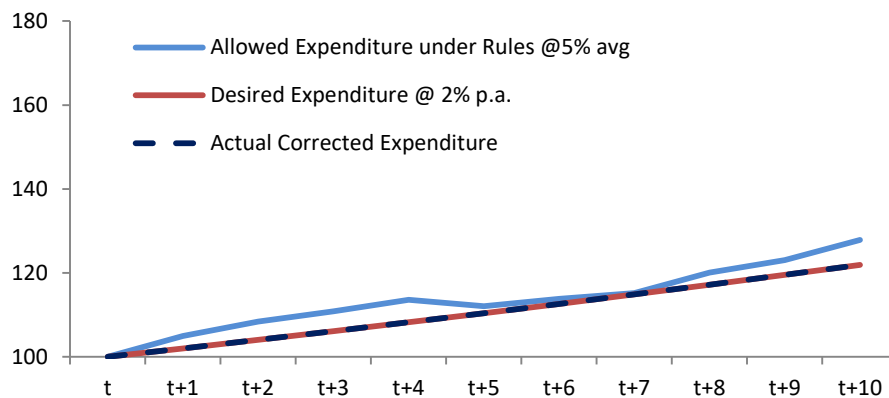
than in the “high” scenario. It is worth noting that the path being lower than that allowed by the rules in this example would simply reflect the policymaker’s preference. Foregone expenditure of this sort is not necessarily a costless policy to the extent that the foregone public expenditure may have yielded productive benefits to the economy. It would still be possible to raise spending levels to levels close to that foregone in every preceding year at the end of the period by making use of the accumulated RDF reserves. However, a more appropriate growth path is still likely to be one that is in line with the sustainable growth rate of the economy.

**Figure B.1: Spending Paths with “High” Desired Growth Rates**  
€ billions



Sources: Own workings.

**Figure B.2: Spending Paths with “Low” Desired Growth Rates**  
€ billions



Sources: Own workings.

## References

- Bailey, S., B. Brockmyer, A. Russell Davis, B. Erford, L. Gross, K. Huh, M. Murphy, R. Zahradnik, (2014). Building State Rainy Day Funds: policies to harness revenue volatility, stabilize budgets and strengthen reserves. Pew Charitable Trusts Report. July 2014. Available at: [http://www.pewtrusts.org/~media/assets/2014/07/sfh\\_rainy-day-fund-deposit-rules-report\\_artready\\_v9.pdf](http://www.pewtrusts.org/~media/assets/2014/07/sfh_rainy-day-fund-deposit-rules-report_artready_v9.pdf)
- Balassone, F., D. Franco, S. Zotteri, (2007). Rainy Day Funds: Can They Make a Difference in Europe? Bank of Italy Occasional Paper No. 11. October 2007. Available at: [https://www.bancaditalia.it/pubblicazioni/qef/2007-0011/qef\\_11.pdf?language\\_id=1](https://www.bancaditalia.it/pubblicazioni/qef/2007-0011/qef_11.pdf?language_id=1)
- Bernanke, B., (2017). How Big a Problem is the Zero Lower Bound on Interest Rates? April 2017. Brookings Institution Press. Available at: <https://www.brookings.edu/blog/ben-bernanke/2017/04/12/how-big-a-problem-is-the-zero-lower-bound-on-interest-rates/>
- Borio, C., P. Disyatat and M. Juselius, (2014). A Parsimonious Approach to Incorporating Economic Information in Measures of Potential Output. BIS Working Papers, No 442, Bank for International Settlements, February 2014.
- Christiano, L. J., Eichenbaum, M. and S. Rebelo, (2011). When is the government spending multiplier large? Journal of Political Economy, Vol. 119, No 1, pp. 78-121.
- Cornia, G.C., Nelson, R.D., (2003). Rainy day funds and Value at Risk. State Tax Notes 29, pp. 563–567.
- Darvas, Z., and A. Simon (2015). “Filling the gap: open economy considerations for more reliable potential output estimates” Working Paper 2015/11, Bruegel.
- Erceg, J.C. and J. Lindé, (2010). Is there a fiscal free lunch in a liquidity trap? CEPR Discussion Papers No. 7624. Available at: <https://www.federalreserve.gov/pubs/ifdp/2010/1003/ifdp1003.pdf>



European Commission, (2018). Vade Mecum on the *Stability and Growth Pact*. Institutional Paper 052. Available at:  
[https://ec.europa.eu/info/publications/economy-finance/vade-mecumstabilityand-growth-pact-2017-edition\\_en](https://ec.europa.eu/info/publications/economy-finance/vade-mecumstabilityand-growth-pact-2017-edition_en)

European Commission, (2017a). Proposal for a Council Directive Laying Down Provisions for Strengthening Fiscal Responsibility and the Medium-Term Budgetary Orientation in the Member States. Available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52017PC0824&from=EN>

European Commission, (2017b). New Budgetary Instruments for a Stable Euro Area within the Union Framework. Available at: <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017DC0822&from=EN>

European Commission, (2016). Report on Public Finances in EMU 2015. Institutional Papers 14. December 2016. Brussels. Available at:  
[https://ec.europa.eu/info/publications/economyfinance/report-public-finances-emu-2015\\_en](https://ec.europa.eu/info/publications/economyfinance/report-public-finances-emu-2015_en)

Fratzscher, M. and M. Bussiere, (2004). Financial Openness and Growth: Short-Run Gain, Long-Run Gain? Frankfurt. European Central Bank. Working Paper No. 348.

Heimberger, P., and Kapeller, J. (2017). The Performativity of Potential Output: Pro-Cyclicality and Path Dependency in Coordinating European Fiscal Policies. *Review of International Political Economy*. Vol.24, pp.904-928.

IMF, (2007). Global Financial Stability Report. Appendix 1.2.: Sovereign Wealth Funds. October 2007. Available at:  
<https://www.imf.org/external/pubs/ft/gfsr/2007/02/pdf/annex12.pdf>

IMF, (2009). Republic of Estonia: Reassessment Report on the Observance of Standards and Codes – Fiscal Transparency Module. March 2009. IMF Country Report No 09/94. Washington: International Monetary Fund.

Joyce, P.G., (2001). What's So Magical about Five Percent? A Nationwide Look at Factors That Influence the Optimal Size of State Rainy Day Funds. *Journal of Budgeting & Finance*, Vol. 21(2), pp. 62-87.

Juncker, J.-C., D. Tusk, J. Dijsselbloem, M. Draghi, and M. Schulz, (2015). Completing Europe's Economic and Monetary Union, June 2015. Brussels: European Commission. Available at:  
[https://ec.europa.eu/commission/sites/beta-political/files/5-presidents-report\\_en.pdf](https://ec.europa.eu/commission/sites/beta-political/files/5-presidents-report_en.pdf)

Knight B., A. Levinson, (1999). Rainy Day Funds and State Government Savings. *National Tax Journal*, Vol. LII, 3: 459-472. Available at:  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.477.1457&rep=rep1&type=pdf>

Krugman, P., (2009). Zero Lower Bound Blogging. *The Opinion Pages: The Conscience of a Liberal*. The New York Times. January, 2009. Available at:  
[https://krugman.blogs.nytimes.com/2009/01/17/zero-lower-bound-blogging/?\\_r=1](https://krugman.blogs.nytimes.com/2009/01/17/zero-lower-bound-blogging/?_r=1)

Kussi, T., (2017). Does the Structural Budget Balance Guide Fiscal Policy Pro-Cyclically? Evidence from the Finnish Great Depression of the 1990s. *National Institute Economic Review* No. 239. February 2017. Available at:  
<https://www.etla.fi/wp-content/uploads/002795011723900111.pdf>

Lagarde, C., (2018). A compass to Prosperity: the Next Steps of Euro Area Economic Integration. Speech at the German Institute for Economic Research. March, 2018. Available at:  
<http://www.imf.org/en/News/Articles/2018/03/26/sp032618-a-compass-to-prosperity-the-next-steps-of-euro-area-economic-integration>

Manasse, P., (2006). Procyclical fiscal policy: shocks, rules, and institutions: a view from MARS. *IMF Working Paper* No. 06/27.

McMorrow, K., W. Roeger, V. Vandermeulen, and K. Havik, (2015). An Assessment of the Relative Quality of the Output Gap Estimates Produced by the EU's Production Function Methodology. European Commission

Discussion Paper 020. December 2015. Luxembourg. Available at:  
[http://publications.europa.eu/resource/cellar/35f38dac-cbd3-11e5-a4b5-01aa75ed71a1.0001.03/DOC\\_2](http://publications.europa.eu/resource/cellar/35f38dac-cbd3-11e5-a4b5-01aa75ed71a1.0001.03/DOC_2)

Merola, R., (2012). Monetary Policy and Fiscal Stimulus with the Zero Lower Bound and Financial Frictions. Institut de Recherches Économiques et Sociales de l'Université Catholique de Louvain. Discussion paper 2012-24. Available at: <https://sites.uclouvain.be/econ/DP/IRES/2012024.pdf>

Misiunas, A., (2010). Purpose, Formation and Management of Sovereign Wealth Funds. Intellectual Economics, No. 1(7), pp. 41-47. Available at: <https://www.mruni.eu/upload/iblock/ea3/misiunas.pdf>

Norwegian Ministry of Finance, (2016). The Management of the Government Pension Fund in 2016. Meld. St. 26 (2016–2017) Report to the Storting (white paper). Available at:  
<https://www.regjeringen.no/contentassets/114c28f5daba461e95ed0f2ec42ebb47/en-gb/pdfs/stm201620170026000engpdfs.pdf>

Obstfeld, M., (1985). Capital Mobility in the World Economy: Theory and Measurement. Paper presented at the Carnegie-Rochester Public Policy Conference (1985).

OECD, (2001). Measuring Capital. OECD Manual, Paris.

OECD, (2011a). OECD Economic Surveys: Estonia 2011. April 2011. Available at: [http://www.oecd-ilibrary.org/economics/oecd-economic-surveys-estonia-2011\\_eco\\_surveys-est-2011-en](http://www.oecd-ilibrary.org/economics/oecd-economic-surveys-estonia-2011_eco_surveys-est-2011-en)

OECD, (2011b). Estonia: Review of the Financial System. October 2011. Available at: <https://www.oecd.org/finance/financial-markets/49497930.pdf>

Pew Charitable Trusts, (2017a). When to Use State Rainy Day Funds: withdrawal policies to mitigate volatility and promote structurally balanced budgets. April 2017. Available at:  
<http://www.pewtrusts.org/~media/assets/2017/04/when-to-use-state-rainy-day-funds.pdf>

Pew Charitable Trusts, (2017b). Rainy Day Funds and State Credit Ratings: how well-designed policies and timely use can protect against downgrades. May 2017. Available at: [https://www.brookings.edu/wp-content/uploads/2017/04/pew\\_full.pdf](https://www.brookings.edu/wp-content/uploads/2017/04/pew_full.pdf)

Pew Charitable Trusts, (2017c). State Rainy Day Funds in 2017: How states are improving the way they prepare for the next recession. Pew Charitable Trusts Fact Sheet. July 2017. Available at: <http://www.pewtrusts.org/en/research-and-analysis/fact-sheets/2017/07/state-rainy-day-funds-in-2017>

Pew Charitable Trusts, (2015). Why States Save. December 2015. Available at: <http://www.pewtrusts.org/~media/assets/2015/12/whystatessavereport.pdf>

Sobel R. S., H. Randall, (1996). The Impact of State Rainy Day Funds in Easing State Fiscal Crises During the 1990-1991 Recession. Public Budgeting & Finance, Vol. 16(3), pp. 28-48.

Tornell, A. and P. Lane (1999). The voracity effect. American Economic Review, 89, 22–46.

Wagner, G. A., (2003). Are State Budget Stabilization Funds Only the Illusion of Savings? Evidence from Stationary Panel Data. Quarterly Review of Economics and Finance, 43(2): 213-38.

Wagner G. A., (2004). The Bond Market and Fiscal institutions: Have Budget Stabilization Funds Reduced State Borrowing Costs? National Tax Journal, December, Vol. 57, No. 4, pp. 785-804.

Wagner G. A., E. M. Elder, (2005). The Role of Budget Stabilization Funds in Smoothing Government Expenditures over the Business Cycle. Public Finance Review, Vol. 33(4), pp. 439-465.

Woodford, M., (2011). Simple analytics of the government expenditure multiplier. American Economic Journal: Macroeconomics, Vol. 3, No 1, pp.1-35.