

The role of fiscal rules in relation with the green economy



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Abstract

This paper discusses the analytical basis for facilitating green public investment under the Stability and Growth Pact fiscal rules. It concludes that additional public debt created by deficit-financed green public investment is likely to increase fiscal sustainability risks. However, such additional risks could be justified to avoid the economic damages (which would also have long run consequences for public finances) arising in the absence of sufficient green public investment. The trade off could be improved if green public investment were financed through EU debt.

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LIST OF ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
CEMAC	Communauté Économique et Monétaire de l’Afrique Centrale
ECB	European Central Bank
ESA	European System of Accounts
EU	European Union
GDP	Gross Domestic Product
HONG KONG SAR	Hong Kong (Special Administrative Region of China)
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
MTO	Medium Term Objective
OECD	Organisation for Economic Co-operation and Development
SDP	Sustainable Development Program
SGP	Stability and Growth Pact
UNCTAD	United Nations Conference on Trade and Development
WAEMU	West African Economic and Monetary Union

EXECUTIVE SUMMARY

This paper discusses the analytical basis for facilitating green public investment under the Stability and Growth Pact fiscal rules. Green public investment could be defined as public investment in the areas considered to be “green” in the “taxonomy” included in the final report of the EU Technical Expert Group on Sustainable Finance, possibly refined in some aspects. However, it would be reasonable to give a broad definition to the term “investment”, as including other forms of public spending that have favorable environmental effects including some current spending that is beneficial to the environment.

Should SGP rules be relaxed to allow deficit-financed green public investment? While the theoretical case could be allow to exclude green public investment from the SGP ceilings, there is no evidence that green public investment that is financed by issuing public debt involves lower costs in terms of roll over risks and of potential growth rates with respect to other priority forms of public spending. Thus, the rationale for a much broad and favorable treatment under the SGP rules of green public investment, with respect to the current situation, needs to be found somewhere else.

A possible rationale relates to the “newness” of the global warming challenge. When the SGP fiscal deficit and public debt ceilings were agreed, in the early 1990s, a balance was struck between the need to avoid excessive deficits and related costs and the need to allow adequate financing for priority spending. However, at that time, the nature and the extent of the global warming challenge were certainly less appreciated than they are now. The costs arising from global warming is an additional factor that now may justify accepting a higher degree of risk arising from public debt and fiscal deficits.

There are different options in allowing a different treatment of green public investment under the SGP rules. The first would be to maintain the current approach of not differentiating between different types of spending. This would imply just relaxing the overall fiscal deficit ceilings. This would have the advantage of simplicity, but there would be no guarantee that the additional room would be used for additional spending for green public investment. A second and preferable option would be to introduce a specific flexibility clause that would allow more green public investment, up to a certain level. The third, more restrictive approach would be to tighten the existing ceilings, while allowing them to be exceeded as a result of green public investment.

If flexibility for green public investment were introduced for the deficit ceiling, some corresponding adjustments would have to be made regarding other existing SGP rules, in terms of MTOs, and the pace of convergence towards them, the expenditure benchmark and the public debt ceiling. Consideration may also be given to a temporary flexibility clause allowing additional deficit and debt for a limited number of years, so as to allow a “green public capital stock” to be built.

In light of the risk of artificial “green painting” that might be given to any public investment, it would be appropriate if decisions on excluding certain investment projects from the fiscal ceilings were taken with the involvement of independent technical experts, possibly the very Expert Group that prepared the taxonomy.

As environmental damages are not affected by national frontiers, a better alternative, or complement, to changing the SGP rules would be to finance and approve more green public investment at the European Union budget level. In light of the limited amount currently in circulation of debt issued by European institutions, this approach would allow undertaking green public investment spending without a significant increase of costs and risks related to higher public debt. The proposals put forward by the European Commission regarding the Next Generation EU go indeed in this direction.

1. INTRODUCTION

While the world is currently struggling to overcome the corona virus crisis, another slow-moving emergency should not be forgotten: the climate crisis. Global warming and, in general, environmental degradation remain key challenges. Fighting them will require decisive action, including through fiscal policy tools. There is broad consensus that a critical role will have to be played by appropriate carbon pricing as a component of a strong mitigation strategy.¹ At the same time, both mitigation and adaptation goals will require green public investment (broadly defined as public investment spending aimed at reducing the impact of economic activity on the environment; see below). How should that spending be financed? Granted, some financing should come from carbon taxation and other green taxes. However, political economy considerations suggest that the revenues from green taxes may have to be used to a large extent to compensate the losers from their introduction. This may involve cutting other forms of taxation, such as labor taxation, particularly on low-income workers or raising transfers. Financing green public investment may involve cutting other forms of spending, but that also would involve political costs. Deficit financing, the third option, will be the main focus of this paper. Should fiscal rules constraining public sector deficits and debt, such as the Stability and Growth Pact (SGP), be revised to take into account the need to finance green investment? And, if so, how?

More specifically, the paper is organised as follows. Chapter 2 will review the definition of “green investment”, with a particular focus on the “taxonomy” recently introduced in the European Union. Chapter 3 will review the rationale for fiscal rules as a basis for the following discussion. Chapter 4 will address the main question of whether and how the SGP rules in the European Union should be modified to take into account the needs for green public investment. Chapter 5 will consider the role of the European Budget in financing green public investment, as an alternative or a complement to investment financed by individual member countries, also in light of the ongoing discussion regarding the Next Generation EU plan. Chapter 6 will summarise the main conclusions of the paper.

One important caveat before proceeding. What follows should be read keeping in mind that the existing SGP rules, now suspended because of the coronavirus emergency, are in any case under review and possible revision, based on the consultation launched in February 2020 by the European Commission. Any proposed change relating to the treatment of green public investment, should therefore be considered also in light of possible changes that may be introduced as a result of such a review, which may or may not already include revisions aimed at facilitating more green public investment. The review may, in any case, lead to a revision of the current SGP rules, in light, for example, of what we have learned over the past 20 years about the degree of public debt tolerance in EU member countries and, hence, on the existence of fiscal space. Only in case this review did not take into account, implicitly or explicitly, the challenges arising from environmental risks, the recommendations in this paper should be seen as entirely additional to those arising from the SGP review. Alternatively, this paper could be regarded as a contribution to the review of the existing SGP rules.

¹ See, for example, Parry (2019), OECD (2013).

2. WHAT IS “GREEN PUBLIC INVESTMENT”?

Let us start with a preliminary but fundamental issue: what should be regarded as green public investment? If green public investment has to be treated differently under the SGP rules, then it is imperative to have a clear and unambiguous definition of what it is.

However, the difficulty of providing a clear and widely accepted definition of what could be regarded as green activities is well known. OECD (2012) - a comprehensive study devoted to this definitional issue - is a good example of the difficulties that have to be faced in this area. The study eventually concluded (p.5) that: “ ... given the lack of consensus on the usage and definition of the term “green”, the most productive approach could be to take an open and dynamic stance towards definitions and standards, with international institutions and governments adopting a governance approach to green investment”.

This does not really provide any useful operational definition of what constitutes green activities, nor of the sub-component of these activities, namely “green public investment”, which constitutes the focus of this paper.²

The need to have, instead, an operational definition of green public investment, namely something that could be used in practice to assess whether certain real or financial activities should unlock certain benefits, lies behind more recent attempts to define more precisely the characteristics that these activities should have in order to be classified as “green”.

Such attempts include the reports of the expert group set up by the European Union to define a “taxonomy” of what should be regarded as green investment. The expert group provided an “early feedback report” in December 2018 and a “technical report” in June 2019, while its final report was published in March 2020 (see EU Technical Expert Group on Sustainable Finance (2020)). The proposed taxonomy was referred to in the “[regulation on the establishment of a framework to facilitate sustainable investment](#)” proposed by the European Commission and adopted in December 2019 by the Council and the European Parliament (see, Official Journal of the European Union (2020)). The regulation is broadly consistent with the report of the Technical Expert Group, although it is less specific.

The taxonomy of the Technical Expert Group was not established to define green public investment, but, more generally, to determine whether an activity is environmentally sustainable, mostly for the purpose of assessing whether the related financing could be regarded as green (“sustainable finance”). However, there seems to be no reason why the taxonomy of the Technical Expert Group should not be followed also to identify green public investment.

In its simplest form, the approach followed in such a taxonomy is the following. The taxonomy identifies green (or environmentally-sustainable) economic activities as those that contribute (in a substantial way) to at least one of the following six objectives, without significantly damaging the other five: climate change mitigation, climate change adaptation, sustainable use of water and marine resources, circular economy, pollution prevention, and health ecosystem. In addition, the technical group set up to clarify the activities that could be regarded as green according to this definition specifically identified the extent to which about 80 activities could be regarded as being in line with the attainment of one or more of the above objectives (EU Technical Expert Group on Sustainable Finance, 2020, Section 5).

The literature on the definition of green activities has of course provided alternative definitions to the approach followed by the EU expert group, but these alternatives are usually more general and less operational.³ For example, UNCTAD (2010) defines green (more specifically “low-carbon foreign investment”) as investment that generates significantly lower greenhouse gas emissions than would

² OECD work published in the following years does not really address in a satisfactory way the definition of what exactly should be regarded as green investment from an operational perspective. See, for example, OECD (2017). For an earlier discussion of the definitional difficulties of defining green activities, see Kahlenborn (1999).

³ See also the discussions on ‘green financing’ in Joywin (2018).

otherwise prevail in the industry under business-as-usual circumstances. In addition, work undertaken at the IMF (see Eyraud et al (2011)) defines green investment as referring “to the investment necessary to reduce greenhouse gas and air pollutant emissions, without significantly reducing the production and consumption of non-energy goods. Green investment covers both public and private investment.” Lindenberg (2014), which also includes a review of other definitions, defines green investment as including investments in waste processing and recycling, biodiversity protection, water sanitation, climate change adaptation, renewable energy, energy efficiency, industrial pollution control, other climate change mitigation (e.g. reforestation).⁴

In addition to being more specific and operational, the taxonomy of the Technical Expert Group has one additional advantage. Using an approach already broadly recognised by the European Union would avoid a new and potentially lengthy decision process. Thus, it seems reasonable to define green public investment as public investment in the areas (i.e. “activities”) covered by the taxonomy of the Technical Expert Group.

Two issues, however, remain to be clarified. The first one relates to the coverage of the term “investment”. Should it refer only to fixed investment, or at least to any capital spending according to the definition of the European System of Accounts (ESA) 2010? Or should it include other forms of public spending that has favorable environmental effects, such as, for example, subsidies to the use of clean energy? In the latter case, it would be more appropriate to talk about green public spending, rather than green public investment, but that is just semantics. The real issue is whether a different treatment under SGP rules should be given only to capital spending or also to current spending that is beneficial to the environment. That is to some extent a political choice of how strongly policy-makers intend to support the fight against climate change or other forms of environmental degradation. This said, if the goal is to support the environment, it is not clear why a difference should be drawn between capital and current spending, as both can achieve similar results. Indeed a number of activities included in the taxonomy involve current public spending, such as reforestation or existing forest management. Therefore, while, for simplicity, this paper will continue to refer to green public investment, this term should be understood in a broader sense, as inclusive also of all green public spending.

The second issue relates to the decision making or governance process followed to define whether a certain activity should be regarded as “green” based on the taxonomy. Indeed, while the EU adopted regulation on taxonomy is probably the most precise and operational definition of green investment (and, by implication, of green public investment), the conclusion that a specific public investment project should be regarded as green based on the taxonomy will still require a discretionary decision. Who should take that decision, for example, for the purpose of attributing it a special treatment under the SGP rules? The formal decision would probably have to rest on the Council, under a proposal of the EU Commission. The matter is, however, rather technical. Moreover, significant political pressure may arise for greening any investment project. Therefore, while the final decision may eventually have to rest with the Commission and the Council, consideration should be given to requiring a mandatory opinion on whether a specific public investment project could be regarded as green from an independent and technical expert group. Of course, such a group could be the very EU expert group that produced the above-mentioned taxonomy reports.

⁴See also, for work on the definition of green activities undertaken by APEC, Cheok and Singh (2018); and for work undertaken by the World Bank relating to the definition of green technologies see Pigato et al. (2020).

3. THE RATIONALE FOR FISCAL RULES

In order to evaluate whether green public investment should receive a different treatment than other forms of public spending, or more generally of deficit-generating fiscal measures, under the SGP rules, it is useful to recall the rationale for fiscal rules and, more specifically, of SGP rules.

Fiscal rules aim at reducing the fiscal deficit bias that governments may have. Fiscal rules self-imposed by individual countries are thus introduced to enhance the credibility and predictability of their fiscal policy, with the hope that this would lead to lower interest rates on public debt. In a monetary union, however, there is an additional strong reason for having supra national fiscal rules: reducing the risk that the implicit insurance provided by other members of the currency union would foster free-riding behaviors in the management of their fiscal accounts by individual states. In other words, market discipline would be less stringent, or would act too late, in a currency union because of the assumption of a likely bail out.

The need to contain fiscal deficits and public debt, however, needs it turn to be justified. Why would high deficits and debt be bad? The question is particularly important for the topic discussed in this paper if we rephrase it more specifically: would any increase in deficits and debt have unpleasant consequences even if it were for a “just cause”, like fighting climate change? Before answering this question, two things should be underscored.

The first one is that setting ceilings on these fiscal variables does not imply that fiscal deficits and public debt are not useful. The issue is simply that the increase in deficit and debt, while having potentially positive effects on the economy, may also lead to costs and, beyond certain levels of deficit and debt, these costs may exceed the benefits.

Second, any statement regarding the negative consequences of deficit and debt must be made in terms of risks and probabilities. The costs that may be caused by excessively high deficits and debt levels (which we will discuss in a moment) are affected by a number of factors that cannot be summarised simply in the numerical ceilings included in fiscal rules. The reason why specific numerical ceilings are used is simply a practical one: it would not be possible to set rules in terms of increasing risks as fiscal accounts deteriorate. The approach is similar to the one used for speed limits: a speed limit of 50 Km per hours is set not because driving faster than that will certainly lead to a crash. However, we know that the faster the speed, the higher is the risk of a crash. A speed limit, like a deficit or a debt ceiling, is just a convenient way of avoiding excessive risk. However, it is useful to keep in mind that in the real world we will have to deal with risks and probabilities. Thus, for example, raising deficit ceilings may reflect the perception that risks arising from a given deficit and debt level have declined and that therefore a higher level of deficits and debt can be tolerated, or the willingness to accept a higher degree of risk.

With these caveats, let us now consider the main costs (henceforth we use this term even if, as explained, we should be talking about risks) that are usually regarded to be associated with higher deficits and debt. There are, broadly speaking, two kinds of costs:⁵

- The first one relates to the occurrence of a roll over crisis, that is of the inability of the government to sell its debt because investors become concerned that a highly indebted government may prefer to default on its debt, rather than raising taxes or cutting public spending in order to service it. A roll over crisis would cause severe damage to the economy, as the experience of several emerging market economies has shown over the last several decades, as well as of the experience of some advanced economies more recently.
- The second one relates to the reduction in long-term potential growth in countries with higher fiscal deficit and public debt. Such a reduction, in turn, could arise from the distortionary effects of the higher

⁵ At least some of these costs arise when public debt is financed by financial markets, not when it is financed by central banks, i.e. by printing money. In case of monetary financing the risk is then inflation. For simplicity, we do not consider the case of monetary financing. It is not explicitly considered by the current European fiscal rules either (public debt in the SGP definition includes debt financed by the ECB), presumably under the assumption that money-financed deficits would be as harmful as debt financed deficits because of its potential inflationary implications.

taxes needed to service high public debt, from higher interest rates and related crowding out, and from the possibility that private investment is discouraged in an environment exposed to the risk of a roll over crisis.

This paper does not discuss whether these costs are material or not, nor whether the introduction of fiscal rules is the most appropriate way of reducing them (as opposite to other approaches such as those followed by countries that introduced medium-term fiscal frameworks allowing for a more discretionary approach to managing fiscal policy). Rather, the paper assumes that there continue to be ceilings on fiscal deficits and public debt, as possibly revised as a result of the current SGP review, and discusses whether the nature of green investment justifies a different treatment under those rules. Before proceeding, it is worth mentioning that the existing SGP rules already take into considerations some potential consequences of global warming for public spending. Global warming is likely to lead to more frequent natural disasters and the existing SGP rules already allow:

- excluding additional deficits related to natural disasters that has already occurred from the calculation of the deficit in assessing compliance with SGP rules, in the SGP preventive arm. However, additional deficit arising from natural disasters is not netted out in assessing the breach of the 3 percent deficit ceiling. Nor it is netted out in assessing the beginning of an excessive deficit procedure triggered by insufficient decline in the public debt ratio, although presumably the existence of a natural disaster could be regarded as part of the “relevant factors” that should be taken into account in assessing the breach. In any case, the exclusion would apply only to spending related to natural disasters that have already happened, and, therefore, would not work to accommodate green public investment aimed at preventing natural disasters.
- taking into account additional deficits related to natural disasters in assessing effort to reduce excessive deficits in the SGP corrective arm.⁶

Therefore, there is at present no specific allowance for green public investment undertaken to address more generally global warming or other environmental challenges, other than the flexibility of the above-mentioned generic and rather limited “investment clause”.

⁶ The basis for the exclusion of public spending related to natural disaster is the unusual event clause discussed, for example, on pages 25 and 26 of the “Vade mecum of the Stability and growth Pact” (European Commission (2019.a)). The Vade Mecum specifically indicates that the “clause had been considered as being intended to allow for events such as natural disasters”. Regarding the corrective arm, see the discussion on “adverse economic events” on page 61 of the Vade Mecum.

4. SHOULD SGP RULES BE MODIFIED TO FACILITATE GREEN PUBLIC INVESTMENT?

Given the above rationale for the existence of fiscal rules, a different treatment of spending for green public investment under the SGP could, for example, imply that the definition of fiscal balance relevant for assessing whether the deficit ceiling is respected does not include such spending (see below for further specific discussions on the different options regarding the treatment of green public investment under the SGP rules). In the same way, the cumulative sum of past green public investment would be subtracted from actual public debt in assessing whether the debt ceiling (or any rule regarding the reduction of public debt) is respected.

A special treatment of green public investment of this sort could be justified, in principle, by two different arguments:

- that the costs associated with higher deficits and debt discussed above are less relevant when the deficits and debt arise from green public investment;
- that the advantages arising from green public investment are such that they justify accepting higher costs (at least in terms of risks) that may potentially arise from higher deficits and debt.

These two arguments should be treated separately. Although both can be either correct or not, it is enough that one of them holds to justify a different treatment of green public investment. Therefore, the next two subsections discuss these arguments, while the following subsections discuss how, in practice, the SGP rules might be modified to facilitate green public investment, as well as some related implementation issues. Let us first consider the first argument.

a. Does green public investment imply lower costs with respect to other forms for deficit spending?

This question, in turn, should be split in two parts.

The first one relates to whether an increase in public debt caused by green investment implies a lower increase in rollover risks than an increase in public debt due to other reasons. If this were the case, at least from this perspective, it would then make sense to correct, at least partially, any increase in public debt (which is, broadly speaking, equal to the fiscal deficit) for the component of the increase due to green public investment. Deficit ceilings would then be assessed against a definition of deficit net of green investment spending. Correspondingly, public debt ceilings could be assessed against a definition of public debt net of the cumulative sum, starting with a certain year, of past green public investment.

A theoretical case could certainly be made for excluding green public investment from the deficit definition relevant for assessing whether fiscal rules have been met or not. Indeed, such a case could be made, and, indeed, it is often made, for all public investment, not just green public investment. The argument runs as follows: public investment involves the accumulation of an asset by the government and so spending for investing does not cause a decline in the government's net worth, or an increase in net debt. As long as rollover risks are likely to arise because financial markets believe the government does not meet its intertemporal budget constraint, spending for investment would not affect the government's intertemporal budget constraint and therefore should not be regarded negatively by financial markets.⁷ This reasoning is behind the view that balanced budget rules should be imposed not on the overall budget balance but just on its current component (the so-called golden rule).⁸

⁷ The government's intertemporal budget constraint requires that the discounted stream of primary surpluses (equal to the overall balance net of net interest payments) is equal to the government's net worth. Public investment leaves net public worth unchanged.

⁸ One additional reason why it is sometimes argued that fiscal constraints should be set on the current balance rather than on the overall balance is that public investment may suffer disproportionately from those constraints. This is because, politically, cutting public investment is less risky than cutting other forms of public spending, or of raising taxes. See on this issue Ardanaz et al. (2020). This argument may be used also for green public

This case could be made perhaps even more strongly for green public investment insofar as it could be argued that the “yield” from green public investment is larger, for the economy as a whole, than for other public investment. In the absence of adequate resources to fight climate change, the decline in the long-run growth rate of the economy would be larger and it would be even more difficult to meet the government’s intertemporal budget constraint, as fiscal revenues would be lower.

The problem with this view is that it lacks empirical validation. Empirical models of the probability of roll over crises typically include as independent variables gross public debt and the total deficit net of public debt and the current deficit.⁹ This means that the risk of a crisis appears to be related to the total amount of gross debt in circulation and that needs to be rolled over, not to the net worth of the government. This perhaps explains why fiscal rules around the world are typically defined in terms of total deficit and gross public debt, rather than on their counterparts net of investment spending (the current balance and total debt net of the public capital stock), with only a few exception.¹⁰

Some econometric models of roll over risks include the economy’s GDP growth rate; so, one could argue that public investment, by raising the long-term GDP growth rate, is captured in this way. However, in these specifications, it is the short-run GDP growth rate that enters in these specifications and, thus, measures, at most, the short-term impact of any deficit increase through Keynesian effects, not just of public investment. If one had to follow this logic, then any kind of deficit-increasing measure should be excluded from the ceilings, which would not make any sense. To the extent that fiscal deficits do increase in the short-run GDP, presumably the estimated coefficients would be such that the effect on the probability of a roll over crisis of a fiscal expansion on GDP are likely to be more than offset by the direct impact of the increase in the deficit.

One could argue that past research on the determinants of roll over crises did not focus enough on the difference between gross debt and net debt. And certainly they did not focus at all on gross debt net of what was accumulated against green public investment, as the concept of green public investment is relatively new. Yet, the fact remains that, at present, there is essentially no empirical evidence supporting the view that, for a given amount of gross public debt, the risk of a roll over crisis is reduced by the fact that public debt was accumulated as a result of public investment, let alone green public investment.

The second part of the question relating to whether green public investment implies lower costs with respect to other forms of deficit spending focuses instead on the other cost arising from a high level of public debt: its potential impact on the long-term growth rate of the economy. Here one could make an even stronger theoretical case. To the extent to which green public investment is, almost by definition, necessary to avoid an economic collapse during the next decades, one could expect that the detrimental effect to potential growth arising from the additional gross debt necessary to finance it, and the related distortionary taxation and crowding out effects, could be partly offset. Here, however, one would also have to argue that detrimental channels through which higher gross debt may negatively affect the long-term growth rate of the economy would not operate if public debt were issued to finance green public investment. Distortionary taxes would not have to be raised to service higher interest payments, because of, again, the expected higher revenues compared with a scenario of environmental degradation that would emerge if green public investment were not undertaken. There would have to be no crowding out in spite of the higher gross debt and borrowing requirement of the government. And there would have to be no higher roll over risks and uncertainty as a result of higher gross public debt.

investment. This argument, however, is not discussed in the text because it would not make sense to modify EU-wide SGP rules to correct distortions in the correct allocation of limited public resources that may or may not arise at the level of individual countries. If this argument were followed, the SGP rules would promote irresponsible behaviors, i.e. cutting spending for more useful activities, with the hope that this would lead to their exclusion for the SGP ceilings.

⁹ See, for example, Bassanetti, Cottarelli and Presbitero (2019), Manasse, Roubini and Schimmelpfennig (2003), Reinhart, Rogoff and Savastano (2003), Manasse and Roubini (2009), and Ghosh et al. (2012).

¹⁰ In the whole world fiscal rules data base put together by the IMF in the early 2010s (see Schaefer et al. (2012), Table 4, p. 19), only Brazil, Ecuador, Hong Kong SAR, Japan and the two African Monetary Unions (WAEMU and CEMAC) excluded public investment from their fiscal ceilings.

While all this may be argued, the bottom line is that, once again, there is at present no empirical evidence that gross public debt is less harmful to potential growth when it is originated by public investment or public green investment. All empirical studies available in this area focus on gross public debt.¹¹ Some of the estimated models of long-term growth do find that higher public debt could increase long-term growth, which may perhaps be attributed to the beneficial effect on growth of public investment, but this effect disappears as public debt rises.¹²

In conclusion, there is in principle a theoretical case for excluding green public investment and its cumulative stock from ceilings, respectively, on public deficits and debt. However, there is at present virtually no empirical evidence showing that the costs associated with high public deficits and debt are lower when these originate from public investment and, more specifically, from green public investment. This applies to both the costs in terms of rollover risk and the costs in terms of long-term potential GDP growth. This said, it is possible that the lack of empirical results is due to the fact that not enough attention has been paid to this issue. More empirical work would definitely be useful in this area. One should, however, add that market analysts do not seem to pay much attention to whether higher public debt was originated from public investment rather than from other types of public spending. The focus seems to be on gross public debt and on the overall deficit, which suggests that empirically that is what matters.

b. Do the benefits arising from green public investment justify a higher degree of tolerance of the potential costs arising from higher public debt?

Even recognizing that additional fiscal deficits and public debt related to spending for green public investment would cause an increase in the above-mentioned costs, a special treatment of the latter under the European fiscal rules could be justified on different grounds. Indeed, the costs and risks arising from high public debt would have to be balanced against those arising from global warming and from other environmental consequences that would emerge in the absence of green public investment. The recognition of the existence of costs arising from not undertaking certain public spending initiatives is obvious. This is indeed the reason why the ceiling on public debt is not set to zero: if public debt were zero and there were no borrowing requirement, there would be no possibility of a rollover crisis! Public debt can finance useful initiatives, and a balance would have to be struck between reducing the costs arising from higher public debt with those arising from the absence of some useful deficit-financed spending. Therefore, one could argue that the costs for the society and the economy arising from the absence of sufficient green public investment outweigh those arising from some additional public debt.

However, the problem with this argument, while certainly valid in principle, is that it can be applied to many other forms of public spending and investment. Insufficient health care spending could have severe social and economic costs. So could insufficient educational spending, as well as insufficient resources for many other forms of public spending, such as social safety nets. This said, the case could be made that there is one important difference between green public investment and these other useful forms of spending. The fact is that, at the time when the fiscal rules were set up in the early 1990s: the nature and the extent of the global warming challenge were certainly less appreciated than they are now.

The Intergovernmental Panel on Climate Change (IPCC), the scientific forum promoted by the World Meteorological Organisation and by the United Nations Environment Program to prepare, based on available scientific information, assessments on all aspects of climate change and its impacts, was set up only at the end of 1988. As argued in Le Treut et al. (2007), "Awareness and a partial understanding of most of the interactive processes in the Earth system that govern climate and climate change predate the IPCC,

¹¹ See the empirical literature on the relationship between long-term growth and public investment quoted by Cottarelli (2017), chapter 4.

¹² A strand of economic literature (see, for example, Arslanalp et al. (2010) does find an impact on long-term growth from higher capital stock, but this strand does not refer to debt financed public investment. Moreover, effects are significant only for low-income countries and for relatively low levels of the initial public capital stock.

often by many decades. A deeper understanding and quantification of these processes and their incorporation in climate models have progressed rapidly since the IPCC First Assessment Report in 1990.¹³ However, the United Nations Framework Convention on Climate Change, the first [international environmental treaty](#) aimed at Dealing with the climate change problems created by the rising [greenhouse gas](#) concentrations in the atmosphere was only opened for signature at the [Earth Summit](#) in [Rio de Janeiro](#) in June 1992 and entered into force only in March 1994. But the slow growth in the awareness of the problem, until, the last few years is well illustrated by the references to the world “climate” in the summaries of proceedings of the World Economic Forum (World Economic Forum (2020)). The term was first used in 1977, but with reference to the “sport climate”. The first real reference dates back to 1985. Then follows a 16 years hiatus, before the word reappears in 2001, 2004, and thereafter, but only once until 2008. Since 2008, there are on average 3.5 references per year, until the 2019 boom (12 references).

In contrast, the 3 percent deficit ceiling in the existing SGP was already formalised in the Resolution of the European Council on the Stability and Growth Pact held in Amsterdam in June 1997. However, the Protocol of the Maastricht Treaty, signed in November 1993, specifying the criteria to assess whether the deficit was excessive already set the 3 percent of GDP fiscal deficit ceiling and a 60 percent of GDP as a public debt ceiling as conditions for identifying “excessive deficits”.¹³

The existence of costs of lower resources for health care, education and other useful forms of public spending were already considered when the SGP ceilings were set up. The costs arising from global warming is an additional factor that was not considered. The emergence of the global warming challenge could therefore be regarded as unexpected news that, like a war, might justify accepting a higher degree of risk arising from public debt and fiscal deficits.

c. How, in practice, SGP rules might be modified to facilitate green public investment

If we accept the argument that global warming would cause additional costs and risks that were not considered at the time when the SGP ceilings were established, and that justify the acceptance of higher fiscal risks, there still would be two options to revise the SGP rules to facilitate additional spending for green public investment.

The first option would be to maintain the current approach of not differentiating between different types of spending. This would lead to the relaxation of overall fiscal ceilings. This would mean, for example, to raise the deficit ceiling from 3 to, say, 3.5 percent of GDP without a specific flexibility clause related to the implementation of green investment spending.¹⁴ This would have the advantage of simplicity as, for example, would not require specifically defining what green public investment is. Of course, there would be no guarantee that the additional room would be used for additional spending for green public investment, so the rationale for the change, while plausible, would be at least more difficult to explain, particularly to those that are concerned with additional public debt.

The alternative possibility, more acceptable from a political economy standpoint, would be to introduce a specific flexibility clause that would apply to green public investment, up to a certain level of spending for the latter. In other words, the deficit ceiling would remain 3 percent, but in assessing compliance with this ceiling green public investment would not be counted as spending up to a level, say 0.5-1 percent of GDP. In deciding how much room would have to be given (0.5 per cent, 1 per cent, what else?), one could start with an estimate of the total green public investment that would ideally be needed to address climate

¹³ Exceeding these ceilings would prevent entering the third phase of the Economic and Monetary Union and the adoption of the euro (unless, for the debt criterion, debt was declining at a sufficiently fast pace). See, for example, European Monetary Institute (1995), especially Box 3.1.

¹⁴ This seems to be the recommendation of one of the few existing paper on whether fiscal rules should be revised in light of the environmental challenges (Stirling, Powell and Van Lerven, (2019). This paper, focusing on the United Kingdom fiscal rules, simply makes the case that the existing fiscal rules are too tight and that they should be revised in light of a reassessment of the process to evaluate the existence of fiscal space and of the trade-offs between different uses of limited fiscal resources. However, the paper does not say anything on how environmental considerations should be taken explicitly into account in the definition of the new fiscal rules, which suggests that the author simply advocate more relaxed fiscal rules.

change challenges. However, the flexibility would need to be just a part of such amount because green public investment would replace anyway other forms of investment that would have taken place anyway. For example, building a “green” bridge is probably more expensive than building an old-fashioned bridge but the additional cost is just the difference between the costs of the two bridges. Of course, the elasticity would have to be limited to a predetermined amount on account of the fact that, as discussed above, even green public investment does involve some costs and risks related to the accumulation of public debt. Allowing any amount of green public investment regardless of any other consideration does not seem to be appropriate and not in line with the treatment of other valuable public spending.

The above approach would imply that the financing of green public investment would occur through additional debt, not as a result of reprioritizing spending needs. Of course, flexibility to allow more easily green public investment could also take a different form if member states wanted to maintain unchanged the overall costs and risks arising from high public deficits and debt. In that case, the deficit ceiling would have to be lowered from 3 to, for example, 2-2.5 per cent of GDP, while allowing the deficit to rise to 3 per cent to undertake green public investment up to 0.5-1 per cent. With respect to the current situation such an approach would require reprioritizing public spending, to make space for green public investment.

Having a special degree of flexibility for green public investment as a result of the “newness” of the related investment needs that did not exist when the SGP rules were set up is entirely justifiable and would help limiting the risk that the same approach is followed for other high priority spending. Yet, new spending needs always arise and other disappear. The case would then have to be made that not realizing additional deficit-financed green public investment would have higher social and economic costs than not realizing other forms of public spending aimed at addressing new spending needs (say digitalizing the public sector). Given the difficulty of implementing in a rigorous way a comparison of the additional social and economic costs arising from the lack of certain public spending, such a case may have to be settled on purely political grounds: it would be a political choice to decide whether protecting the environment is more deserving than addressing any new additional spending need. The case could indeed be made, for example, because, the deterioration of the environment, beyond certain levels, could reduce the effectiveness of all other forms of public spending and should therefore have priority. However, it would remain to a large extent a political argument about societal priorities.

If flexibility for green public investment were introduced for the deficit ceiling, some corresponding adjustments would have to be made regarding other existing SGP rules, at least to some extent:

- In the preventive arm, the MTO, and the pace of convergence towards it, would have to be modified correspondingly to allow additional room for green public investment.
- The expenditure benchmark would also be modified correspondingly.
- Compliance with the public debt ceiling could be assessed after netting out debt accumulated from a certain date as a result of green public investment for which flexibility was allowed regarding the deficit ceiling. Consideration might, however, be given to the possibility of allowing a full correction only to countries with public debt levels below certain thresholds. This would allow more short-term flexibility in determining fiscal deficits, while avoiding an accumulation of excessive public debt.

Different mixes of the above options are, of course, possible and it will be ultimately a political choice to decide how much additional risk arising from higher fiscal deficits and gross public debt is acceptable to facilitate higher spending for green public investment. Consideration may also be given to a temporary flexibility clause allowing additional deficit and debt for a limited number of years, so as to allow a “green public capital stock” (the cumulative sum of green public investment) to be built.

d. Some additional implementation issues

If this path were followed, it would remain important to “ring fence” the different treatment of green public investment so as to ensure that the additional flexibility attributed to the latter does not lead to endless requests for special treatment for any other form of public spending that would become a priority. Political resolve would have to ensure this.

Another important requirement relates to the governance process leading to the exclusion of green public investment from deficits and debt ceilings as well as to the monitoring process leading to effective implementation of the flexibility granted:

- Regarding the governance process, given the risk of artificial “green painting” that might be given to any public investment, it would be preferable if decisions on the exclusion of certain investment projects from the fiscal ceilings were taken carefully on a project-by-project basis and with the involvement of independent technical experts, possibly the very Expert Group that prepared the taxonomy, as discussed in section 2.
- Regarding the monitoring process, it must focus on ex post data, not on promises that green investment spending will take place. This, however, raises a broader issue relating to the monitoring of compliance with European SGP rules. The focus is largely of planned deficit and debt figures. Compliance ex ante is based on policies that are expected to trigger some “flexibility”, including, in the past, the so called “investment clause”. Whether the planned investment has taken or not place is observed only with a lag, which is magnified by data revisions that may become higher when they relate to individual investment projects. Moreover, the “significant deviation” rule, in the way it has been applied in practice, implies that sizable deviations from the adjustment path defined ex ante by the SGP rules have often been tolerated even in periods of relatively strong growth.
- In any case, the ex post monitoring needs to take into account the accounting and recording rules applied to the definition of fiscal deficits and debt, based on the European System of Accounts (ESA 2010). Therefore, the exclusion of green public investment from the deficit ceilings must be based on clear evidence that the investment has been undertaken in an accrual sense as the deficit is monitored on an accrual sense. The possible exclusion of the cumulative sum of green public investment for the purpose of assessing compliance with debt ceilings must instead be based on the timing of the actual payment, as this is what causes the related financing need and the accumulation of public debt.

5. GREEN PUBLIC INVESTMENT AND THE EU BUDGET

The above discussion has focused on the possibility that SGP rules constraining deficits and debt of individual member states may be modified to facilitate green public spending. However, an alternative, or complementary, possibility should be considered: namely, that green spending is undertaken, directly or indirectly, at the EU level and therefore does not give rise to spending that would lead to higher fiscal deficit and public debt by individual member countries. Such an approach would have strong merits from an analytical standpoint. Indeed, one could argue that:

- environmental damage is not affected by national frontiers;
- everybody in the European Union would benefit from green public investment undertaken in one country;
- therefore, spending should be undertaken more at the central level than at the national level.

This approach would also allow, at least to some extent, to leave SGP rules unaffected by the need to boost green public investment. It would thus reduce the risk that the introduction of flexibility clauses for green public investment leads to demands for similar treatment for other kinds of public spending, thus further reducing the effectiveness of the fiscal rules and complicating their management. Moreover, the very limited amount currently in circulation of debt issued by all European institutions, even taking into account the 750 billion of the Next Generation EU (some 5 percent of EU GDP) would allow undertaking green public investment spending without a significant increase of costs and risks related to higher public debt.

The proposals put forward by the European Commission regarding the Next Generation EU go indeed in this direction. Part of the activities envisaged by this plan would be financed by unrequited transfers from the European Union budget, in turn financed by the issuance by the European Union of debt instruments. Therefore, the corresponding spending would not lead to any increase in deficits—and country-level spending financed by grants do not increase the fiscal deficit. Nor would they lead to the accumulation of public debt by individual member countries. Finally, as the projects that member countries would finance with these resources would have to be approved by the European Commission, the risk that the financing provided is diverted to other purposes would be correspondingly lower.

Therefore, the Next Generation EU approach does reduce the need for special treatment under the SGP rules of green public investment. The only issue is whether the green spending that could be undertaken under this program would be of sufficient size given the existence of major foreseeable environmental challenges.

6. CONCLUSIONS AND POLICY ADVICE

The above discussion suggests the following conclusions and policy recommendations:

- The “taxonomy” presented in the final report of the EU Technical Expert Group on Sustainable Finance was not established to define green public investment. However, there seems to be no reason why the taxonomy should not provide the main analytical basis also to identify green public investment. Other definitions proposed in the environmental and economic literature are more general and less operational. Another advantage of the taxonomy proposed by the above-mentioned report is that it is already recognized by the European Union and therefore would reduce the risk of new lengthy and complex discussions. Therefore, broadly speaking, green public investment could simply be defined as public investment in the areas listed by the taxonomy included in the report.
- It is reasonable to give a broad definition to the term “green public investment”, as including other forms of public spending that have favorable environmental effects. If a rationale were found to having a special treatment under the SDP rules to green public investment, the same rationale would apply to all spending that can achieve the same purposes, including current spending that is beneficial to the environment.
- At present, SGP rules make very limited allowance for spending related to environmental goals. This allowance is limited to the flexibility related to spending for natural disasters (which can be activated only ex post) and to the short-term and small investment clause in the preventive arm of the SGP.
- There is no evidence that green public investment that is financed by issuing public debt involves lower costs in terms of roll over risks and of potential growth rates with respect to other priority forms of public spending, such as health care spending or public education. Thus, the rationale for a more favorable treatment, under the SGP rules, of green public investment, with respect to the current situation, needs to be found somewhere else.
- A better argument relates to the “newness” of the global warming challenge. When the SGP fiscal deficit and public debt ceilings were agreed, in the early 1990s, a balance must have been struck between the need to avoid excessive deficits and related costs and the need to allow adequate financing for priority spending (such as health care, public education and so on). However, at that time, the nature and the extent of the global warming challenge were certainly less appreciated than they are now. The costs arising from global warming is an additional factor that now has to be considered. The emergence of the global warming challenge could indeed be regarded as unexpected news that might justify accepting a higher degree of risk arising from public debt and fiscal deficits.
- There are different options in allowing a different treatment of green public investment under the SGP rules. The first would be to maintain the current approach of not differentiating between different types of spending. This would imply just relaxing the overall fiscal deficit ceilings. This would have the advantage of simplicity, but there would be no guarantee that the additional room would be used for additional spending for green public investment. A second and preferable option would be to introduce a specific flexibility clause that would allow more green public investment, up to a certain level. How much additional room to allow would depend on the extent of the green public investment that is needed, but taking also into account that such investment would replace other forms of investment that would have taken place anyway. So a full adjustment may not be needed. The third, more restrictive approach would be to tighten the existing ceilings, while allowing them to be exceeded as a result of green public investment.
- If flexibility for green public investment were introduced for the deficit ceiling, some corresponding adjustments would have to be made regarding other existing SGP rules, in terms of MTOs, and the pace of convergence towards them, the expenditure benchmark and the public debt ceiling, although consideration might be given to allowing a full correction in the debt ceiling only to countries with public debt levels below certain thresholds.

- Consideration may also be given to a temporary flexibility clause allowing additional deficit and debt for a limited number of years, so as to allow a “green public capital stock” to be built.
- In light of the risk of artificial “green painting” that might be given to any public investment, it would be appropriate if decisions on excluding certain investment projects from the fiscal ceilings were taken with the involvement of independent technical experts, possibly the very Expert Group that prepared the taxonomy.
- The exclusion of green public investment from the deficit and other ceilings must be based on clear evidence that the investment has been undertaken in an accrual sense as the deficit is monitored on an accrual sense. The possible exclusion of the cumulative sum of green public investment for the purpose of assessing compliance with debt ceilings must instead be based on the timing of the actual payment, as this is what causes the related financing need and the accumulation of public debt.
- As environmental damages are not affected by national frontiers, an even better alternative, or complement, to the revision of SGP rules to allow larger deficit-financed green public investment by individual member countries, would be to finance and approve more green public investment at the European Union budget level. In light of the very limited amount currently in circulation of debt issued by European institutions, this approach would allow undertaking green public investment spending without a significant increase of costs and risks related to higher public debt. The proposals put forward by the European Commission regarding the Next Generation EU go indeed in this direction. The only issue is whether the green spending that could be undertaken under this program, as currently envisaged, would be of sufficient size given the existence of major foreseeable environmental challenges.

REFERENCES

- Ardanaz, Martín, Eduardo Cavallo, Alejandro Izquierdo, Jorge Puig, (2020), "Growth-friendly Fiscal Rules? Safeguarding Public Investment from Budget Cuts through Fiscal Rule Design", IDB Working Paper Series, N° IDB-WP-1083, Inter-American Development Bank (<https://publications.iadb.org/publications/english/document/Growth-friendly-Fiscal-Rules-Safeguarding-Public-Investment-from-Budget-Cuts-through-Fiscal-Rule-Design.pdf>).
- Arslanalp, Serkan, Fabian Bornhorst, Sanjeev Gupta, and Elsa Sze, (2019), "Public Capital and Growth", IMF Working Paper No. 10/175, International Monetary Fund (<https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Public-Capital-and-Growth-24095>).
- Bassanetti Antonio, Carlo Cottarelli, and Andrea F Presbitero (2019), "[Lost and found: market access and public debt dynamics](#)", *Oxford Economic Papers*, Oxford University Press, vol. 71(2), pages 445-471.
- Cheok, Denise and Satvinderjit Kaur Singh, (2018), "Identifying green sustainable and innovative MSMEs in APEC", APEC Policy Brief, No.19, February.
- Cottarelli, Carlo (2017), "What we owe: Truths, Myths and Lies about public debt", Brookings Institution Press.
- Eyraud, L., Wane, A., Zhang, Ch., Clements, B. (2011), "Who's Going Green and Why? Trends and Determinants of Green Investment", IMF Working Paper WP/11/296.
- European Commission, (2019.a), "Vade mecum on the stability and growth pact", Institutional Paper 101, April (https://ec.europa.eu/info/sites/info/files/economy-finance/ip101_en.pdf).
- European Commission (2019.b), "Factsheet: Financing sustainable growth", June 18 (https://ec.europa.eu/info/sites/info/files/business_economy_euro/accounting_and_taxes/documents/190618-sustainable-finance-factsheet_en.pdf).
- European Commission (2020), "The European green deal investment plan and just transition mechanism explained", January, (https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_24).
- European Council, (1997), "Resolution of the European Council on the Stability and Growth Pact Amsterdam, 17 June 1997" ([https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997Y0802\(01\):EN:HTML](https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997Y0802(01):EN:HTML)).
- European Monetary Institute, (1995), "Progress towards convergence" (<https://www.ecb.europa.eu/pub/pdf/othemi/emiprogresstowardsconvergence199511en.pdf>).
- EU Technical Expert Group on Sustainable Finance (2020), "Taxonomy: Final report of the Technical Expert Group on Sustainable Finance", March (https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy_en.pdf).
- Ghosh, Atish, Jun I. Kim, Enrique Mendoza, Jonathan Ostry, and Mahvash Qureshi (2012), "Fiscal Fatigue, Fiscal Space and Debt Sustainability in Advanced Economies", *The Economic Journal*, 123: F4–F30.
- Joywin, Matthew, (2018), "Shades of Green in Financing: A Discussion on Green Bonds and Green Loans" (<https://www.lexology.com/library/detail.aspx?g=a11d9d52-4799-45e9-954a-99083c2702c4>).
- Kahlenborn, Walter (1999), "Transparency and the Green Investment Market", *Greener Management International*, No. 27, Autumn, pp. 65-78.
- Le Treut, H., R. Somerville, U. Cubasch, Y. Ding, C. Mauritzen, A. Mokssit, T. Peterson and M. Prather, (2007), "Historical Overview of Climate Change". In: "Climate Change 2007: The Physical Science Basis." Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.), Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA (<https://www.ipcc.ch/site/assets/uploads/2018/03/ar4-wg1-chapter1.pdf>)

Lindenberg, Nannette (2014), "Definition of green finance", German Development Institute, April (<https://www.cbd.int/financial/gcf/definition-greenfinance.pdf>).

Manasse, Paolo, Nouriel Roubini, and Axel Schimmelpfennig, 2003, Predicting Sovereign Debt Crises, IMF Working Paper WP/03/221, Washington. Manasse, Paolo, and Nouriel Roubini, 2009, "Rules of Thumb" for Sovereign Debt Crises, *Journal of International Economics*, 78(2):192–205.

OECD (2012), "Defining and Measuring Green Investment", Organization for Economic Development and Cooperation, Paris (https://www.oecd.org/environment/WP_24_Defining_and_Measuring_Green_Investments.pdf).

OECD (2013), "Climate and Carbon – Aligning Prices and Policies", Organization for Economic Development and Cooperation, Paris.

OECD (2017), "Investing in Climate, Investing in growth", Organization for Economic Cooperation and Development, Paris, May 23 (<https://www.oecd-ilibrary.org/docserver/9789264273528-en.pdf?expires=1592139278&id=id&accname=guest&checksum=A899CFF8F6112F5CC2570C713187C11C>).

Official Journal of the European Union (2020), "Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 on the establishment of a framework to facilitate sustainable investment, and amending Regulation (EU) 2019/2088" (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1592991575020&uri=CELEX:32020R0852>).

Parry, Ian (2019), "Putting a price on pollution", Finance and Development, International Monetary Fund, December (<https://www.imf.org/external/pubs/ft/fandd/2019/12/the-case-for-carbon-taxation-and-putting-a-price-on-pollution-parry.htm>).

Pigato, Miria, Simon J. Black, Damien Dussaux, Zhimin Mao, Miles Kenna, Ryan Rafaty, and Simon, Touboul, (2020), "Technology Transfer and Innovation for low-carbon development", World Bank, March.

Reinhart, Carmen, Kenneth Rogoff, and Miguel Sevastano (2003), "Debt Intolerance", *Brookings Papers on Economic Activity*, 34:1–74.

Schaecter, Andrea, Tidiane Kinda, Nina Budina, and Anke Weber, (2012), "Fiscal Rules in Response to the Crisis—Toward the "Next-Generation" Rules. A New Dataset Andrea Schaechter", WP/12/187, International Monetary Fund. (<https://www.imf.org/external/pubs/ft/wp/2012/wp12187.pdf>).

Stirling, Alfie, David Powell and Frank Van Lerven, (2019) "Changing the fiscal rules – Unlocking public investment for a green new deal", Working Paper, New Economics Foundation, July (<https://neweconomics.org/uploads/files/changing-fiscal-rules.pdf>).

UNCTAD, (2010), "World Investment Report", Geneva, UNCTAD.

World Economic Forum, (2020), "The World Economic Forum - Partner in Shaping History 1971–2020" (http://www3.weforum.org/docs/WEF_A_Partner_in_Shaping_History.pdf).

This paper discusses the analytical basis for facilitating green public investment under the Stability and Growth Pact fiscal rules. It concludes that additional public debt created by deficit-financed green public investment is likely to increase fiscal sustainability risks. However, such additional risks could be justified to avoid the economic damages (which would also have long run consequences for public finances) arising in the absence of sufficient green public investment. The trade off could be improved if green public investment were financed through EU debt.

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