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THE ITALIAN CLIMATE CHANGE THINK TANK

FROM THE STABILITY PACT TO THE SUSTAINABILITY PACT

How to revise instruments, rules and governance to fund the ecological transition

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1 EXECUTIVE SUMMARY

The economic indicators and scenarios applied so far in Italy and the EU do not include the significant climate risks among the variables to monitor for the purposes of compliance with the stability pact. This paper analyses why, when properly evaluated and incorporated, such risks mean it is crucial to make radical changes to the sustainability criteria applied to public debt.

The logic so far applied to fiscal policy choices has been based on the assumption that the cost of climate damage will become manifest at an indefinite future date and should not therefore be included in cost-benefit analyses, while the costs of transition apply immediately.

When debt sustainability is measured based on current models, this means that funding the transition through public expenditure is restricted to the fiscal space within the maximum debt thresholds. In the absence of this fiscal space, funding is only possible when other expenditure is cut, or taxes are increased.

An increasing number of institutions, such as the European Central Bank, in charge of governing economic policy, have accepted the fact that physical **losses and damage caused by climate change are certain and greater than the cost of the just, resilient and zero-emission transformation of the economy.** An evaluation of all the implications of this awareness and of the connections between all the variables is still being studied and will require a radical process of revision. However, it is unlikely that models, tools and scenarios will be comprehensively revised in the short term. Economic players will need new instruments the ECB has given itself until 2024 to develop new models to analyse the various scenarios.

The end of the suspension of the stability pact due to the Covid-19 emergency, scheduled for December 2022, means that a decision about the future of the pact needs to be taken immediately. This offers an opportunity for reform to ring-fence the public expenditure necessary for climate action in the face of limitations set by the current rules and timescales applicable to the repayment of existing debt. It is also clear that private investment will play a predominant role in delivering the necessary innovation. However, in order to meet the goals, set, public spending will need to catalyse and orient private spending, especially at the beginning.

This paper proposes that these decisions to increase public spending on safeguarding the climate should be subject to different rules. The qualifying criterion cannot be that such spending must qualify as an investment, but that other fundamental forms of spending, such as demand incentives and spending on forms of support aiming at guaranteeing social equity, should also be included. A broader criterion needs to be applied, alongside a reform of fiscal policy with climate in mind.

Alongside this, strict conditions should be introduced to ensure that such spending is in line with climate goals and debt sustainability. This requires a compliance and governance system capable of monitoring the process, of guaranteeing tools and qualified personnel within ministries and of clarifying responsibilities for the various actions.

“Sustainability roadmaps” tied to countries’ long-term climate strategies could help structure the timing of actions and of the repayment of green debt.

The European Commission should be the body in charge of the task of approving roadmaps, monitoring their coherence and implementation, and recommending any corrective measures or exclusion of non-relevant expenditure from green debt.

2 CLIMATE RISK AND NEW POLICIES: REVISING THE TOOLS AND SCENARIOS UNDERLYING MONETARY AND FISCAL POLICY CHOICES

All transitions cause shocks and alter equilibriums based on assumptions and conventions that are no longer deemed valid. The transition towards an economic model in which protection of the environment is a priority goal, through measures to combat climate change and the construction of a resilient economy, is no exception.

At the COP21 in Paris, the majority of countries agreed on the need to make a commitment, which was confirmed at subsequent COPs, including Glasgow. However, it is clear[1] that so far, the determination to pursue this goal has not lived up to the agreements made. Taken together, the countries and their National Plans have claimed pollution rights that exceed levels compatible with keeping temperature rises below 1.5°C. Before Glasgow, UNFCCC analysts[2] demonstrated that the pledges made up until then would lead to a rise of 2.7°C. After Glasgow, and without implementation of the new pledges, we are still on that trajectory, whereas, if we were to implement the pledges made to 2030, we would arrive at the intermediate scenario of 2.4°C. In the best-case scenario, if all the pledges made were fully implemented within the agreed timeframe, we could reduce this to 1.8°C.[3]

One of the reasons that has led to insufficient action being taken is the disconnect between climate models and macroeconomic models. This leads to an underestimation of the damages and of the frequency of extreme climate events, and therefore also of the long-term benefits of climate policies.

The impacts of climate risks are therefore poorly represented when it comes to the range of economic policy options. New analytical tools need to be developed to set out complex scenarios over various timeframes. This would create clarity and avoid a short-circuit between a future we have not yet clearly visualised and a past to which we are still tied largely to inertia.

The ECB has openly acknowledged this[4], and has set out the guidelines for redrafting its strategic goals, where the risks and implications for the stability of the financial markets will need to be appropriately represented. New and less simplified analytical models will need to highlight with clarity the risks of climate change, depending on the policy scenarios, and clearly set out the methods for calculating the impacts of adverse climate events on economic and social variables, detailing them by sectors and by country.

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[1] IEA (WEO 2021) https://iea.blob.core.windows.net/assets/4ed140c1-c3f3-4fd9-acae-789a4e14a23c/WorldEnergyOutlook2021.pdf e UNEP (Emissions Gap Report 2021) https://www.unep.org/resources/emissions-gap-report-2021

[2] UNFCCC (2021) https://unfccc.int/news/updated-ndc-synthesis-report-worrying-trends-confirmed

[3] CAT (2021) https://climateactiontracker.org/publications/glasgows-2030-credibility-gap-net-zeros-lip-service-to-climate-action/ e IEA (2021) https://www.iea.org/commentaries/cop26-climate-pledges-could-help-limit-global-warming-to-1-8-c-but-implementing-them-will-be-the-key

[4] "The climate-specific models that are currently used or integrated in economic frameworks [...] tend to represent the economy in a highly simplified way. Conversely, the macroeconomic models used [...] lack climate-related forces and are operated to generate projections over horizons that are shorter than those relevant for climate analysis." ECB Occasional Paper no. 271, September 2021

The ECB has established a roadmap of the actions that need to be taken to produce analytical models, which will involve new indicators and new data to build more complex models. The process will be completed in 2024, but since the problems to be tackled are urgent, the ECB also intends to update the tools currently in use in 2022 by incorporating climate variables.

This will make it possible to assess the impact[5] of climate risks on economic growth and on the sustainability of public debt. The approach adopted so far, based on the assumption that climate damages are uncertain and far in the future, is not the optimal approach. The European Environment Agency has calculated that since 1980, Europe has already suffered economic losses of approximately €500 billion due to climate and weather events, with Italy the second most affected country after Germany, and only 5.5% of the losses was insured[6]. The precautionary principle is crucial in managing existential risks, but if it cannot measure or evaluate resilience, it may lead to choices that appear to be safer but are actually riskier.

It is therefore clear that future risks and the need for urgent preventive action make the re-examination of the criteria used for assessing sovereign debt. The re-imposition of the criteria used in the European Union until 2020 to assess the sustainability of public debt is incompatible with the transformative actions needed, and inconceivable in a situation of uncertainty about the entity and interrelations of the impacts of climate change, together with the knowledge that these are already present and increasing.

[5] These impacts can be grouped into three categories, which are interlinked: impacts on public expenditure (due to physical damage and social costs); impacts on GDP levels and inflation; and impacts on the cost of debt and the wealth effect that derives from it. Different climate policies also have social impacts, with different winners and losers in the domestic and global climate arenas.
[6] EEA (2022) https://www.eea.europa.eu/publications/economic-losses-and-fatalities-from/economic-losses-and-fatalities-from

3 THE NEED TO MOBILISE INVESTMENTS AND REORIENT THE FINANCIAL MARKETS

The estimated cost of achieving the targets of a 55% reduction of CO2 emissions compared to 1990 by 2030 has been quantified by the Commission as 2% of annual GDP until 2030. A similar amount would also be needed in the following two decades. This estimate is considered to be conservative by other research centres and is largely dependent on developments in technology in order to reach the 1.5°C target[7]. Other estimates indicate a far higher amount[8]. The scenarios put forward by the Commission and by other institutions assume that 20-25% of this need will be met by public intervention, with a higher percentage during the first part of the decade in order to generate momentum. The Commission estimates that public expenditure would go from 1% of GDP in 2019 to 0.5%-0.3% of GDP towards the end of the decade. Taking into account estimates based on more radical action, this could translate into an initial expenditure of 2.5% of GDP falling to 1% by the end of the decade. Overall, if this public expenditure were to be totally financed by debt, this would account for between 10% and 20% of Europe's 2019 GDP by the end of the decade.

Even though the costs we are considering are incredibly significant, **tackling the emergencies which would arise from failing to make the transition happen would in any case require far more resources. As an example, managing the Covid-19 emergency increased the debt-to-GDP ratio (calculated based on 2019 values) of the various countries by between 15 and 20 percentage points in a single year.**

The perception of environmental and climate risk in the immediate term does not appear to justify the fear of such a concentrated impact, but the violence and frequency of extreme events will increase over time, and their costs will become ever more visible and their impacts ever greater[9]. For Italy, the Euro-Mediterranean Centre on Climate Change[10] estimates that, unless there is a change of direction, the costs of climate change will increase "rapidly and exponentially with the increase in temperature" potentially reaching 8% of GDP by the end of the century. Infrastructure capital losses would exceed €15 billion; the costs of rising sea levels and coastal flooding would reach almost €6 billion; the loss in the value of agricultural land in Italy would reach over €160 billion a year; and the fall in demand in the tourism industry would bring about losses in excess of €50 billion a year – "only 18% of all the ski resorts operating in the Italian Alps would have sufficient natural snow to guarantee the winter season".

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[7] In an article in the FT of 29 October 2021, former Bank of England Governor Mark Carney estimates the amount of funding the private sector is ready to mobilise to support the transformation of global economic systems to achieve decarbonisation by 2050 to be $100 trillion. However, he also recognised that "finance does not act in isolation. Governments must back their net zero commitments with clear, credible and concrete policies."

[8] In a seminar organised by the FEPS on "climate investment and financing the Green New Deal," Rafael Wildwer stated the cost was 6% of annual GDP.

[9] IEA (WEO2021) estimates that the frequency of extreme events will double, and their intensity will be 120% greater. The physical damage brought about by climate change to the energy system alone would be devastating. It would involve the destruction of one-quarter of the world's electricity networks, 10% of energy production from fossil fuels would be submerged by the rising sea levels, and a third of heating systems would have serious problems due to the lack of water. This would be in addition to the damage to the production system and social damage. The ECB (OP 271) estimates that in Europe 16% of enterprises has a probability of at least 1% of being affected by damage cause by fires, rising sea levels, flooding, etc. Vulnerable businesses could lose 3% of the value of their assets each year. The impact of physical risks would be far greater than the risks of transition, whether this takes place in an orderly or disorderly manner.

[10] CMCC (2020) Analisi del Rischio – I cambiamenti climatici in Italia https://www.cmcc.it/analisi-del-rischio-i-cambiamenti-climatici-in-italia

There is broad consensus around the fact that the fall in the long-term growth rate (along with a worsening in the financial stability indicators for businesses and in public debt sustainability) due to a failure to take action is far more serious than the fall due to the **management of transition**[11]. The more orderly and determined the transition, the lower the risk of deviating from the more favourable trajectories. The leading international bodies and now the Central Banks are unanimous in this view.

Given the high levels of spending required in order to deliver the required innovation, private investment have a predominant role to play. However, in order to achieve the targets set, public spending is required to catalyse and channel private spending, which means that the percentage of public investments on the total will be higher in the early years of the decade and decrease once technology finds the critical mass in private demand. For mature technologies (such as solar, wind power and energy efficiency), the first tool governments can use to support private investment is to meet their needs in terms of energy, goods and services, by using companies that employ best environmental practice, based on scientific evidence in line with the 1.5°C target, and the highest levels of resilience. This makes it possible to support new industries, or new activities by existing industries that decide to innovate, without additional costs beyond the normal market costs.

In the case of non-mature technologies, uncertainty about the timing and extent of the risks to be faced, which we have no experience of, could be a barrier to private investment, a barrier however that can be overcome with public support by means of public-private partnerships and guarantee funds[12]. This is especially true for technologies still under development, where a public guarantee using innovative financial instruments can support investors in their decision-making by removing at least part of the risk. Most international studies assign to public spending a high multiplier effect (1:4, 1:5) on private spending, which would be of fundamental importance for reaching the high levels of spending that, as we have seen, are deemed necessary for the transition. This is one of the reasons why it would be appropriate to monitor the ability of the measures taken as part of the transition process to activate the multiplier, in order to ensure that public spending has the desired effect.

However, other instruments are required alongside that of public spending, as the climate transition will require a radical reorientation for private finance. We have seen that monetary policy authorities have taken action to implement monetary regulation to force banks to make a more adequate assessment of their exposure to environmental risk. However, this might not be sufficient for the development of suitable financial instruments, within the timeframe required by the transition. For this to happen **it is crucial to develop a fully focused financial system through international agreements. This would involve developing criteria and indicators for assessing climate risks within financial institutions and developing**

[11] Methods for calculating the correct GDP to take into account pollution and its development have been proposed by various authors since 1973. Muller estimates for the US a difference between GDP growth rate and and growth rate adjusted to consider environmental destruction of up to 150 basis points from 1950 onwards. See N.Z. Muller, The long-run environmental accounting in the U.S. Economy. NBR working paper no. 25910. See more recently Nordhaus (2021). The reasoning proposed here concerns the future, and it doesn't imply a correction of calculation methods, but rather a better estimate of the consequences of climate shocks on GDP calculated using the existing methods.

[12] Public guarantees, in their various forms, should in any case include the taking of benefits by the state in the medium to long term.

approaches to account for stranded assets within their portfolios in a transparent manner, anticipating and preventing any turbulence. Public and private institutions need to work together to implement rigorous practices and mechanisms to ensure they remain fine-tuned in the context of changing needs and technologies.

The European Taxonomy was intended as a tool able to orient private finance by clearly indicating which economic activities are in line with the climate transition. Unfortunately, the proposed awarding of a 'green' label to nuclear power and gas risks having the opposite effect, creating confusion and potentially increasing the country risk[13].

[13] ECCO (2022) La tassonomia con gas e nucleare sfavorisce l'Italia https://eccoclimate.org/la-tassonomia-con-gas-e-nucleare-sfavorisce-litalia/

4 SUPPORTING THE TRANSFORMATION WITH MORE PUBLIC DEBT IS NOT UNSUSTAINABLE, IF NECESSARY AND IN LINE WITH CLIMATE GOALS

Given that the climate is a shared asset that has been abused by various public and private bodies, the change of direction to be imposed on private and public spending to transform our economic and social systems inevitably requires action from the public sector. Governments must pursue with determination clear and convincing policies, not least to reorient private finance and spending, without these policies being subject to external constraints that do not sufficiently take into account the impacts of climate risk.

These policies include the recourse to instruments such as carbon pricing, the elimination of fossil fuels subsidies, limitations on polluting technologies by imposing standards and all actions aimed at rebalancing market failures, where the market is not able to consider certain external climate-related externalities.

But this is not enough. If the risks are high and the redistributive impacts significant, consumers and investors will not follow the new signals promptly and without conflict. **Historically, it has been the use of debt that has enabled countries to tackle such problems, by investing in infrastructure, providing public assets, encouraging research and the spread of information to allow considered choices, both through spending and through tax relief.**

In this way, public intervention aimed at tackling collective needs through long-term objectives has succeeded in attracting savings and private investments, where private actors were unable to see the opportunities, due to the more limited time horizon of their decisions. Furthermore, in the past the ability to borrow to support transformation and in order to modernise the economic system, including through various types of consolidation operations, has made it possible to overcome high levels of debt accumulated during periods of systemic crisis. **For the climate transition, recourse to debt can also play a crucial role in ensuring that the choices made by consumers and investors support and facilitate change, creating a virtuous cycle of economic growth capable of making the debt more sustainable in the long term.**

Obviously, the recourse to debt is not always a positive step, and there have been examples of abuse and unproductive debt spending that have helped to create depressions and ultimately made it more difficult to repay debt. To avoid such a risk, Europe set rules with the stability and growth pact. However, these rules have already been repeatedly tested by a succession of unexpected shocks.

In the two global systemic crises, the financial crisis of 2007-2008 and the pandemic of 2020-2021, governments have had to borrow considerably to fund spending to stabilise financial systems, keep businesses afloat and guarantee minimum income to struggling workers, among other things. However, this has been done by reducing investments. The weaknesses and limitations of the stability pact in countries in the Euro area have been clearly demonstrated by the work of the European Fiscal Board (EFB)[14] and by numerous studies. While the EFB does not appear to have explicitly considered climate risk when indicating the

[14] Niel Thygsen et al "Reforming the Eu Fiscal Framework: now is the time," Vox October 2020

reforms to be introduced, by emphasising the importance of protecting spending that supports growth in the revision of the stability pact, it effectively proposes to safeguard that dynamic, while making the timing for repaying public spending country specific. This would lead to level of debt, which is predefined and different for each country, a system that could incorporate safeguarding expenditure on climate transition. There is however an elevated risk of underestimating the impact of climate on growth in order to keep spending parameters in line with debt reduction commitments in the short to medium term.

Fiscal policy and monetary policy need to adopt shared and coherent medium to long-term instruments and scenarios to guide choices and tackle climate risks. It would also be appropriate to create an independent body tasked with monitoring the probability that should be attached to the future development of risks based on various potential actions and technological development, providing evidence of their impact by country and by sector. This would require maximum transparency with regard to the assumptions made and relations underlying the analysis.

In the short term, it is important to revise the stability pact to ensure that it does not hinder the necessary financing of the decarbonisation and the climate transition.

5 THE REFORM OF THE STABILITY PACT

It is clear that the greater need for public intervention in the next decade and beyond, which is necessary to ensure a climate transition also in countries with high levels of public debt, requires the revision of the financial stability principles and agreements within the European Union.
The pathways for bringing debt back within the limits established by the stability and growth pact have short-term timescales based on scenarios where the difference between the interest rate paid on sovereign debt and the growth rate (albeit adjusted with dubious estimates of potential output) remains constant.

This assumption does not hold when faced with the increase in the violence and frequency of extreme events that we are already witnessing, the gravity of which will become more serious the slower the decarbonisation and our ability to invest in physical, economic and social resilience are.

Towards the end of 2021, Vice President Valdis Dombrovkis and the European Commissioner for Economic and Monetary Affairs Paolo Gentiloni launched a consultation on the reform of the stability pact, which re-ignited the debate at European level. On the one hand, French President Emmanuel Macron and Italian Prime Minister Mario Draghi asked for a revision of the budget rules, considered too opaque and overly complex, in order to incentivise key investments in the future. On the other hand, the European Budget Commissioner Johannes Hahn opposed giving special status to green debt, and insisted on the importance of reducing existing debt, while remaining open to the possibility of different timescales for different countries. The new coalition in power in the Netherlands appears to be less hostile to increasing national public expenditure than in the past and accepts the need to revise the stability pact. However, it is not yet clear to what extent the new positions are different from the country's traditionally frugal stance. The new German coalition has reiterated the need to maintain the fundamentals of the stability pact, albeit with the option of seeking flexibility within the existing rules, while seemingly being open to the possibility of according to special status to future-looking investments.

In any case some hardliners see the explosion of debt taken on to tackle the two recent systemic crises as a reason to avoid taking on more debt during the post-Covid recovery phase, even where this is necessary in order to finance policies recognised as necessary to mitigate the social costs and physical damage produced by climate change. Faced with this concern about the explosion of public debt during the pandemic, we should emphasise that spending linked to actions taken during the last two crises has in any case been lower than the costs and impacts that the financial crisis and the pandemic would have had if they had not been mitigated by actions funded through debt. Similarly, **the complexity of managing the public spending necessary to reach the 1.5°C target and to safeguard the economy is in any case preferable to the impacts and costs of failing to act.**

It is also important to note that the sustainability of public debt is more at risk if action in this space is insufficient and subject to constraints that do not take climate risk into account. This is especially the case given that the occurrence of an adverse event would no longer be perceived as bad luck by the markets, but rather as bad management. This means that in the case of an adverse climate-related event that showed how significant the damage to a given

country could be, the markets could react negatively towards other countries not directly affected, but whose low level of preparation is perceived as a risk. Similarly, the markets could be reluctant to invest in countries whose weak climate action is perceived to be a factor likely to increase the global risk of future adverse climate-related events.

Sticking to strict regulations would also mean that countries with high levels of debt and little room for fiscal manoeuvre would face radical reorientation of their public spending, which would increase the risks of the transition.

Public spending on the climate transition, whether current spending or investment, finances interventions that are urgent and necessary, although the benefits will mainly be seen in the long term, also due to its ability to reorient private investment. It is therefore necessary for climate-related public spending to have a special place within the stability pact, so that it is not subject to arbitrary limitations stemming from the analytical models on which the pact is based, which are now obsolete.

This does not mean that green expenditure must not be subject in the long term to repayment of the debt it generates, but that the timing and monitoring of its effectiveness must be different from other types of debt. In this context, the increased spending must be subject to new rules, parameters, contractual structures, and institutional and monitoring mechanisms that guarantee its destination.

6 BEYOND THE GREEN GOLDEN RULE

The paths towards redesigning the rules of the stability pact fall into three categories:

1. Consider the **spending and investments in decarbonisation** and climate transition as part of the European plan and therefore of the European budget, and finance it through a shared European loan as in the case of Next Generation EU. This would stabilise the funding for climate policy over the next thirty years, but it requires a revision of the treaties, with all the political and timescales implications this implies.
2. Modify the **Six Pack and Two Pack regulations**. In addition to correcting the main distortions produced by the current rules, such change should exclude public spending on the transition from the debt repayment path normally applied to other government functions and investments, and make it subject to a different, more specific set of rules.
3. **Agree on an interpretation of the current rules of the stability pact** in order to introduce flexibility, as the Juncker Commission did in 2015. This would be **the simplest route, but would not give much room for manoeuvre, and would therefore also be more fragile**. Unless this is part of a wider revision process, this solution would in fact be subject to greater discretion in its interpretation and an increased risk of speculation, with possible undesirable effects on the debt rating of the most indebted countries.

These possible options are not mutually exclusive, given that they apply over different timeframes, and they could be implemented in succession in order resolve the stalemate on the reform, providing the path to be followed is clear from the outset.

One possible solution that has been proposed to ensure that the stability pact does not become an obstacle to achieving the green transition is to introduce a Green Golden Rule.[15] According to this rule, 'green' investments would not be included in the debt-to-GDP calculation, and therefore would not be subject to the rules and repayment timescales of the stability pact.

Spending that comes under the category of 'investments,' however fundamental, is not in itself sufficient to achieve the ecological transition. There are areas of spending which are fundamental for the green transition, such as targeted demand support and the management of social impacts, but which cannot be considered investments, and therefore must be classified as debt.

Targeted demand support, such as financial incentives for the purchase of goods such as electric cars or heat pumps is crucial to incentivise the transition from fossil fuel-based technologies to green technologies. The excessive costs of these technologies mean that, without intervention, this shift could not take place within the timescales and volumes compatible with climate neutrality by 2050, even with the price signal given by rising fossil fuel costs.[16].

[15] Bruegel (2021) https://www.bruegel.org/wp-content/uploads/2021/09/PC-2021-18-0909.pdf

[16] The 'Fit for 55' package includes the proposal to introduce an ETS mechanism for road transport fuel and gas for domestic use. In addition, as noted below, it is to be hoped that there will be a fiscal rebalancing to ensure taxation weights more and more consistently on fossil fuels, in line with the goals of the European Green Deal.

The creation of strong demand for green technologies is also fundamental in order to drive the development and production of these technologies. This would also produce a growth effect for the economy that would, in turn make the debt more sustainable in the long term. This is especially true in Italy, Germany, France and Spain, given the importance of sectors such as automotive and construction, but it is a principle that also applies to the other Member States.

However, it should be noted that demand support goes beyond monetary measures to incentivise purchases and includes measures such as consumer education. Theoretical studies[17] have shown that the speed of change does not depend as much on incentives as on how these are linked to the perception of the real need for and benefits of the goods for which the incentives are provided[18]. A widespread awareness of the importance of the shift to sustainable goods and technologies would also have positive repercussions on the funding of new interventions through green bonds and on the social acceptance of the effects on income distribution that would stem from the transition. A further non-monetary measure for creating demand and driving the market is the introduction of green standards and conditionalities to the public procurement process, by means of green public procurement agreements.

Another important effect of targeted demand support measures is that they reduce the social costs of transition. In a context in which consumer costs of fossil fuels are subject to the extreme volatility of the international market and the likely application of carbon pricing, incentives that make green technologies affordable for less well-off families would reduce the potential future social costs to the state.

The changes to the production and economic systems and the measures necessary for this to happen inevitably generate significant social impacts in terms of employment and the cost of goods and services, which risk weighing particularly heavily on categories of workers exposed to technological change, low-income families, and smaller, more fragile businesses. Absorbing the shock of these impacts and managing a 'just transition' is necessary from the point of view of social equity, but it also a pre-requisite for the success of transition itself. In the face of changes affecting many aspects of our society, a transition that is not 'just' would understandably create a strong front of resistance, a front capable of catalysing social discontent and creating a stiff opposition to the transition.

A just transition consists, on the one hand in managing the impacts on production and work networks in the sectors most closely tied to fossil fuels, through the redevelopment of production sites, retraining of the work force along with welfare measures and reconfiguration of local production chains. On the other hand, it consists of managing the impacts of the growing costs of fossil fuels which are passed onto consumers, especially when applied on

[17] Philippe Aghion - Roland Benabou - Ralf Martin - Alexandra Roulet "Environmental Preferences and Technological Choices: Is Market Competition Clean or Dirty?" (NBER Working paper 26921 April 2020). The paper tests an model that links consumer attitudes towards the environment with innovation and concludes as follows: "Using a panel of 8,562 firms from the automobile sector that patented in 42 countries between 1998 and 2012, we indeed find that greater exposure to environmental attitudes has a significant positive effect on the probability for a firm to innovate in the clean direction, and all the more so the higher the degree of product market competition. Results suggest that the combination of historically realistic increases in prosocial attitudes and product market competition can have the same effect on green innovation as major increase in fuel prices."

[18] Reference can be made to a famous article by D. Centole ed al, published in *Science* in 2018 "Experimental evidence for tipping point in social convention" which shows that minorities can change the viewpoint of majorities if there is coordination.

essential goods such as vehicle fuels and gas for domestic use. These impacts will tend to grow as the decarbonisation process moves forward and will be due to the volatility of fossil fuel costs, caused by demand and supply uncertainties during this transition phase, geopolitical tensions, and the rising carbon costs applied. It is important to emphasise that these actions must be carefully targeted towards those who are most in need, people already suffering from energy poverty and the more fragile businesses, and that energy bill subsidies on large scales have high cost and low impact and should be avoided[19].

In addition to this, the physical impacts of climate change generally have more serious consequences for those who live in vulnerable zones and are without the economic means to move or invest in adaptation measures. In general, therefore, it is safe to say that those already suffering economic poverty are more vulnerable both to climate change and to the transition aiming to mitigate it.

Targeted demand support measures and the management of social impacts are therefore fundamental for the transition[20], but cannot be classified as investments and therefore would not be covered by the classic Green Golden Rule.

6.1 *RESTRUCTURING THE FISCAL SYSTEM*

In the present debate, restructuring the fiscal system is presented as a way of funding the social costs of the transition. **Restructuring the fiscal system to take climate change into account can create or strengthen the financial disincentives against the use of fossil fuels and generate funding for the transition.** It should be noted that, however important the funds generated may be, they will never be sufficient to cover the costs of demand support measures and social measures.

In fact, as fiscal systems have developed over the years without taking into account climate issues, in many cases they provide incentives for behaviour that is not coherent with the transition. Restructuring the fiscal system to align it with the goals of the European Green Deal would have the effect of accelerating the transition and expanding the positive effects on the economy and economic growth and increasing debt sustainability in the long term[21]. Considering this, bringing ordinary taxation into line with the transition should be one of the conditions for the creation of green debt.

All public sector spending, together with ordinary taxation, must therefore be a tool for reinforcing the underlying choice and determination to pursue the targets, ensuring the development of markets for goods classified as sustainable based on international standards certified by independent bodies.

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[19] The recent increase in the price of gas has led to the introduction of a series of measures to mitigate the costs. For example, Italy has set aside €3.5 billion to subsidise energy bills, without introducing any conditionalities.

[20] There are funds dedicated to these purposes within the Next Generation EU and Fit for 55 packages. The lack of strict climate conditions in the Recovery Funds, however, means that in many cases (and this certainly applies to Italy), funds really dedicated to the transition are few and, in many cases, poorly directed. In the case of the Social Climate Fund, the inadequate size of the fund means it will not be able to achieve its targets without input from the Member State in question.

[21] ECCO per WWF (2021) https://www.wwf.it/uploads/Executive-summary-ECCO-per-WWF-su-GAS.pdf

This justifies a special treatment for all spending on the transition (not just green investments), ensuring that it is subject to different rules than those in the stability pact. Such special treatment must, however, be accompanied by strict conditionalities, and an assessment of the environmental and climate risk linked to the public budget as a whole.

7 COMPLIANCE AND GOVERNANCE

The impact and effectiveness of public spending to tackle climate change depends on how the policies it funds are implemented. To avoid abuses, the special treatment we propose for public spending in the next, reformulated, sustainability and growth pact will need to depend on the one hand on the individual actions' compliance with green standards, and on the other hand on these actions as a whole being coherent with a binding long-term strategy.

This binding strategy can be an updated version of the Long-Term Strategy (LTS)[22], integrated by a **clear and well-structured "sustainability roadmap" of the timing for interventions and for the repayment of the green debt**. This roadmap would be subject to approval by the Commission and would also need to be regularly monitored in order to ensure that the plan remains in line with climate goals. The reason for this is that the continuous development of modern technologies and the intrinsic uncertainty of a process never attempted before, such as the green transition, require that measures are adjusted regularly, in order to ensure maximum efficacy.

Sustainability roadmaps should:

- Define interventions, their timescales, including timescales for revision, and show how they are aligned with the LTS.
- Be accompanied by indicators showing their effectiveness compared to alternative choices, the potential risks of transition (and how these will be addressed) in the time horizon when these will occur.
- Demonstrate an impact on the main macro variables to be monitored in order to assess the sustainability of the debt generated by public spending on the transition, according to appropriate timescales.
- Include a review of ordinary taxation that brings it into line with the LTS goals and the timescales for repayment of the debt indicated in the roadmap.
- Contain a social agenda by including funding for measures such as the protection of the categories and areas affected, the creation of environmental education systems, workforce redeployment and other just transition measures, including dealing with and eliminating energy poverty.
- Include a credible governance plan for implementation of the roadmap.

The task of approving roadmaps and the ex-post monitoring of their implementation and continued coherence of the interventions within it would be assigned to the Commission, which would have the option to partially approve a roadmap, indicating which spending items are consistent with the criteria indicated above and therefore can be excluded from the calculation of debt. The Commission should also monitor, at European level and based on the effective implementation of the roadmaps, the effective containment of the debt sustainability risk.

Should monitoring reveal activities not in line with the roadmap presented or with one or more of the assessment criteria, the Commission would then recommend corrective measures. If these are not effective, the spending for this activity from the special

[22] For Italy, the Ministry of Ecological Transition (2021), Long-term Italian Strategy https://www.mite.gov.it/sites/default/files/lts_gennaio_2021.pdf

treatment of transition-related spending, and include it under ordinary spending, making it subject to the normal rules of the stability pact. The intrinsic penalty of such a situation would come from the markets, as it would increase the country risk.

7.1 *ITALY UNDER SPECIAL SURVEILLANCE*

With a public debt-to-GDP ratio of 155.6% in 2020, among the highest in the EU, Italy is undoubtedly under special surveillance when it comes to public spending. On the one hand, this means that in the context of this proposal, Italy will need to make ample recourse to the financial markets to fund the transition, and on the other that the robustness of the Italian roadmap will be looked at in detail. **It is therefore of primary importance that Italy creates a robust governance system to drive forward its climate action, from the identification of the goals and the development of plans to the monitoring of its implementation.**

The main normative instruments that guide Italian climate policies are the Integrated National Energy and Climate Plan (PNIEC in Italian), published in 2019, and the Italian Long-Term Strategy (LTS) published in January 2021.

The inadequacy of these instruments[23] has been recognised by the Italian Government itself. Together with the other G7 countries, in June 2021 Italy pledged to update its LTS before COP26 in Glasgow, but it has so far failed to do so. In fact, the PNIEC and Italian LTS may be recent, but they are already obsolete and inadequate in terms of their content, strategy and implementation, when it comes responding promptly to the climate change challenge. Updating the Italian LTS becomes even more important in the context of the proposal of this paper, as compliance with the LTS, as integrated by the roadmap, is one of the fundamental prerequisites for the exclusion of the spending on climate policies from the debt sustainability criteria, even when revised, that are currently under discussion.

Staff within the relevant Ministries are also fundamental to ensure that the necessary time and skills are dedicated to these processes. In addition to this, it is important to ensure a constant channel of communication between the technical officers in charge of the operational management of individual files, and the political side, responsible for defining the national priorities and the overall position[24].

8 CONCLUSIONS

Europe is facing a great opportunity for reform that would strengthen the security and prosperity of its citizens now and in the future. In the context of the necessity and urgency of a resilient green transition that needs to be supported and accelerated by considerable public spending in the immediate future, the stability and growth pact needs to be reformulated, as it does not consider the impact of climate risk and the policies to combat it among its variables. It is important to ensure that the choice of the actions to take as part of transition is not limited

[23] ECCO (2021) I pilastri della governance per il clima https://eccoclimate.org/wp-content/uploads/2021/10/4-I-pilastri-della-governance_ottobre-2021.pdf
[24] Ibid.

by the criteria, currently under discussion, which are used to measure the sustainability of countries' existing debt. The sustainability of countries with high public debt levels becomes in fact more problematic if the government intervenes, in the context of the urgency imposed by European climate commitments, with inadequate measures and late.

The reformulation of the stability pact must therefore consider that many significant risk factors are not included in the macroeconomic scenarios, and that updating the methodologies used to measure the impact of economic policies will take time. A short-term solution could be the creation of a special category of green, resilient spending, subject to certain requisites of consistency with the transition and to special financial responsibility rules. This would not be limited to green investments but extended to expenditure on demand incentives and the just transition.

Robust governance will be needed to manage and monitor all of this, a governance capable of verifying not only compliance with standards in line with resilience objectives and the goal of a maximum temperature increase of 1.5 degrees, but also in line with the ability to manage the risks of the transition, with their ability to mobilise and reorient private spending and to support growth, and therefore with their long-term sustainability.

In the long term, on the other hand, new analytical models will need to be developed to take into account the impacts and costs of climate change, in order to create a consistent reference framework for the assessment of the impact of climate risk on the entire volume of debt, on the basis of different scenarios.

THE ITALIAN CLIMATE CHANGE THINK TANK

ECCO is the independent Italian climate think tank. The mission of the group of experts at ECCO is to work in the public interest to accelerate decarbonisation and to build resilience to the challenge of climate change.
The scope of ECCO's work is national, European and global.
ECCO works to develop and promote climate analyses, proposals and strategies based on facts and on science, through a constant dialogue with experts from the scientific community, political decision-makers, institutions, civil society, businesses, trade unions and philanthropy.
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