[DRAFT]

Sustainable finance, the good, the bad and the ugly: a critical assessment of the EU institutional framework for the green transition[1]

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Abstract

The transition to a green economy is arguably the most important economic transformation of the next decades. To be completed it requires the mobilization of astounding resources, a flow of technological innovation and a whole series of new rules going from technical standards to financial regulation. Given the resources it needs, the transition, to be credible, requires a full engagement of the financial system. On this regard we analyze the policy set-up of Europe, the most advanced area on the issue. We identify a three layers functioning of the EU project for transition. The first one ("green products") is fully compatible with the present financial system. A second layer entail changes in the business model and organization of financial operators that can nonetheless be phased in with minor overhauls. Finally, there is a third layer of transition that is needed to make it work and that is largely incompatible with how financial system presently works. We show that, according to the same EU analysis, the transition needs a total change in the financial landscape and therefore it is, rebus sic stantibus, intrinsically unfeasible. We suggest ways to escape the dilemma that connects financial stability and green economy.

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1. Introduction: the systemic dimension, finance and environment

The 2008 crisis shattered theoretical assumptions as well as policy prescriptions, leaving an entire generation of scholars and policy-makers in what Greenspan called "a state of shocked disbelief" (Andrews, 2008). One of the most striking conceptual fallacy that has emerged is the undervaluation of the role of systemic risk (Stiglitz, 2010). It is now clear that banking concentration and financialization entailed a massive growth of systemic risk that was not intercepted by micro-prudential tools and mainstream models (Galati and Moessner, 2011). Systemic risk is now heavily studied in its nature and many proposals are coming out on how to measure and to tame it (Acharya et al. 2010; Esposito, 2013; Zlatic et al., 2015), prudential requirements on globally systemic banks being an example of this trend (BCBS, 2014). In this framework, systemic risk has been analyzed also as a negative externality, so that, for instance, pigovian taxes on big banks have been proposed (Dia and VanHoose, 2013; de Mooij and Nicodème eds., 2014), although the distortion caused by big banks to world economy, measured by public resources needed to tackle the panic, is too expensive to be put on their shoulders[4].

During the unfolding of the world financial crisis, we have seen a growing awareness of another threat to the world economy: the climate change (UNEP, 2011). If the crisis has shown the importance of ensuring financial stability, extreme weather events and climate change are emerging as a basic risk for the world economy (WEF, 2017). Together financial stability and green transformation will be two of the main drivers of the world economy for the coming decades. In this context, there is a proliferation of studies on the transition to a green economy (OECD, 2015)[5]. What emerges from many of these analyses is a deep connection between the two aspects ("green finance"[6]). Many studies try to assess how the financial sector can help the transition (ESRB 2016; G20 2016; PRA 2015). On a theoretical level, they are trying to analyse how the production and management of a public good (financial stability) can help the production of another public good (a healthy environment). In this paper we try to give a contribution to this aim analyzing the EU framework to assess if and how it is useful to allow for the transition. In particular the work is structured as follows…

2. The landscape: climate change, green economy, sustainable finance

Although a structured discussion on climate change is a relatively recent issue (the First World Climate Conference was held in 1979, and the Second not until 1990) there are historical antecedents dating from the French scientist Jean-Baptiste Fourier who identified the greenhouse effect in 1827 (Evans and Steven, 2008). In the 50s the dangers of pollution became apparent, especially by some glaring episodes like the 1953 'killer smog' in London that showed how pollution could cause thousands of deaths in just a few days. However, the connection with a rise in the average temperatures was allowed only thanks to the high-accuracy measurements of atmospheric CO2 concentration, initiated by Keeling in 1958 that "constitute the master time series documenting the changing composition of the atmosphere" (Le Treut et al., 2007). The Keeling measurements at the Mauna Loa observatory in Hawaii showed an indisputable annual increase, revealing an average warming of 0.5-0.6C over the last 150 years (Harding, 2007). In the 80s other environmental issues came to the fore (rainforests, acid rain and the 'ozone hole' over Antarctica, which led quickly to the agreement of the 1987 Montreal Protocol). In 1988 the Intergovernmental Panel on Climate Change was set up by the World Meteorological Organiza-

[4] For instance, although from 2008 to 2011 banks in the US and EU were forced to raise $1.4 trillion in new capital, the cost to save these same banks has been put at $14 trillion (Mastromatteo and Esposito, 2016).
[5] From now on with "transition" we mean the transition to a green economy.
[6] See, for instance, the website of the EC on the topic: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en.

tion (WMO) and the United Nations Environment Programme (UNEP) to review research on global climate change.

It is interesting to note that at the beginning, a strong lobbying activity was directed against the IPCC, but with the years, large companies understood that for long term profits, a green reputation was good marketing. So at the end of the 90s, one after another, they changed direction and in 2002 the GCCC, the umbrella lobby group against the IPCC, was disbanded (Evans and Steven, 2008). In 1992, The UN Framework on Climate Change (UNFCCC[7]) was adopted at the Rio Earth Summit. The framework called for action aimed at stabilizing atmospheric concentrations of greenhouse gases to avoid "dangerous anthropogenic (human-emitted) interference with the climate system". The UNFCCC came into force on 21 March, 1994. In 1995 it was proposed the first Conference of the Parties (COP for short) to review the implementation of UNFCC and the first meetings (COP1) were held in Berlin followed by subsequent conferences almost every year (Sinha, 2015, UNFCCC 1995). The proof of the new attitude by governments as well as firms and the public opinion was the 1997 Kyoto Protocol (COP3) that set binding targets for 37 industrialized countries and the European Union to reduce greenhouse gas emissions roughly 5% below 1990 levels by 2012.

It is important to point out that "Kyoto was a battle between countries with different interests and priorities" (Evans and Steven, 2008). This was true not only between developed and developing countries but also among advanced economies. In fact, although the Protocol was signed by the US President Clinton, President W. Bush withdrew the United States from the Kyoto Protocol in 2001 due to Senate opposition and concerns that limiting greenhouse gas emissions would harm the US economy. This was only the first of US about-turns on the issue. The last one was in June 2017, when President Trump announced his intention to withdraw the United States from the Paris Agreement (the COP21)[8], that President Obama had signed, aimed to achieve a legally binding and universal agreement on climate with the aim of keeping global warming below 2°C.

Nowadays, the problem is largely considered as one of the most if not the most important facing humankind. The scale of the task to the transition is immense: "The 2014 New Climate Economy Report estimates that some US$90 trillion will be needed between 2015 and 2030 to achieve global sustainable development and climate objectives" (GFT, 2018). A UNEP 2011 Report put the costs to world economy at US$6.6 trillion for 2008 that will grow to 28.6 trillion in 2050 (18% of the world GDP). Delaying action is harmful: "in the absence of further action to tackle climate change, the combined negative effect on global annual GDP could be between 1.0% 3.3% by 2060. As temperatures could continue to rise to a projected 4°C above pre-industrial levels by 2100, GDP may be hurt by between 2% and 10% by the end of the century relative to the no-damage baseline scenario" (OECD, 2015). Some sector and country is going to pay more. For instance: "changes in crop yields and in labour productivity are projected to have the largest negative consequences" (ivi).

This last observation is useful to note that, besides the impressive absolute dimension of the problem, transition entails "distributive and intergenerational justice issues" (Cass, 2010). For instance, climate change will harm some areas the most (typically Africa and Asia and coastal areas, OECD, 2015) while others could be even positively affected. Do the latter should compensate the former? There are not legal basis for this compensation. Secondly, there is a social redistributional effect due to pollution in general and in the future to climate change. For

[7] See the website: www.unfccc.int.

[8] See the UN website on the issue http://unfccc.int/paris_agreement/items/9485.php, see also http://www.cop21paris.org/about/cop21.

instance in Italy, households pay 70% more than their pollution external costs, firms 26% less and there are differences also among economic sectors (Molocchi, 2017).

The scale of the problem and its differentiated consequences explain why the UNEP was created, although with not much power to act for now. To become real, the transition requires that the financial system, and in particular, the banking sector, is fully engaged (Batten et al., 2016). The connections between finance and transition are manifold and sometimes complicated to detect. Anyway the idea of sustainable finance is gaining traction with the idea of financing investments that take into account environmental, social and governance considerations (see Rezende de Carvalho Ferreira et al., 2016 for a survey on socially and environmentally concerned investment practices). The idea is that without a deep change in the productive fabric of the world, intermediaries are going to be destabilized. In fact, the importance of the topic has pushed central banks and financial intermediaries to deepen the "transition risk" that, if not tackled, could lead to a "climate Minsky moment" (Scott et al., 2017; on transition risk see also Batten et al., 2016 and, for the Italian scenario, Bernardini et al., 2017). The transition risk goes beyond the *physical* and *liability risks* (indirect threats created by litigation against financial institutions), it is the general, direct and indirect threat generated by responses to environmental degradation, including new regulations, shifting market demand, technological innovation and changing societal expectations (PRA 2015, G20, 2016). Transition risk has many components, many are differentiated in nature, i.e. they hit in different ways different sectors and agents. This bring us back to the redistributional effects of climate change and how to deal with it. For instance, if strong and swift actions will be taken to decarbonize the world economy, the business models of many economic sectors will be disrupted, decarbonization "would shift the economic balance of some countries and change the business models of several industries" (Covington, 2017). Should they be compensated or simply left going in default? The fact that the transition risk is completely undetected by equity markets can be explained either by the fact that markets are not efficient or by the fact they don't believe to a rapid transition (Silver 2017, Thomä e Chenet, 2017).

Besides the general topic of sustainable finance, due to the differences on how environment is changed by human activities, the UNFCCC proposed the idea of *climate finance* that is a frame-work where developed country Parties are to provide financial resources to assist developing country Parties in implementing the objectives of the UNFCCC[9]. With the Paris Agreement it was established a financial mechanism to provide financial resources to developing country Parties starting with a Green Climate Fund that has a present commitment of $ 3.7 billion[10]. Funding the transition is one if not the most important topic. Therefore sustainable finance is at the core of the issue.

3. How to deal with climate change: regulations, taxes, voluntary approaches

A clean environment is a public good and it faces the typical problems associated with them (Stiglitz, 2000). Economics proposes two basic ways to deal with public goods and negative ex-ternalities: rules and taxes (besides direct public production). The first tool is utilized when governments deem more efficient to directly prohibit a behavior (for instance smoking in a public building). The second is a pigovian tax, that has been extensively analyzed with refer-ence to pollution and climate change ("carbon tax"[11]). Generally speaking, direct regulations imply that the public authority know exactly how it is possible to solve the problem, that it is not easy to bypass the rule and that enforcement is not very costly. Moreover, if the damage,

[9] On the issue see: https://unfccc.int/topics/climate-finance/the-big-picture/introduction-to-climate-finance.
[10] See its website: https://www.greenclimate.fund/home.
[11] For an application to Italy, see Faiella and Cingano, 2015.

even the marginal increase of damage, is huge (as with some toxic substance), the market-based approach is not feasible. On a theoretical level, it is difficult to assess what tool is better as every situation is peculiar (Harrington and Morgenstern, 2004). On a practical level, uncertainty on benefits and costs (total as well as their distribution) is pervasive (Pindyck, 2006). Public policies should be able to push families and firms to change their habits but not to rapidly, otherwise, the transition could well destabilize economic growth with second round effects on the possibility of the transition itself.

The discussion on who pays for pollution, besides general topics such as global warming, is enriched by single striking episodes (like the Deepwater Horizon 2010 incident in the Mexican Gulf[12]) where firms were considered liable of environmental damaged using legislation inspired by the "Polluter Pays Principle" (PPP). These events are linked to a corporate strategy and can be attributed to the firm that caused the damage. However, climate change is connected to a whole series of behavior by firms, households, public authorities that it is very difficult to deal with the PPP (Molocchi, 201x). Anyway these single episodes show that the riskiness of many firms is understated.

An important difference in the approaches towards how to deal with the transition is if they are able to change behavior beforehand. To give an example: we can fine someone who is smoking in a hospital but the damages produced by his behavior are not reversible. This is only a punishment. Of course fines are used to convince people not to smoke in a hospital but maybe someone will take the risk nonetheless. The optimal solution would be to find a policy that prevent the behavior at all, possibly without disrupting other aspects of people's life. Here comes the role of finance. As for pollution and climate change, because as Minsky (19xx) put it: only what is financed can exist. No economic sector can exist without a proper funding by the banking system (HLEG, 2017). On a legal side, this is also true. In fact, there is a growing literature on the banks' environment responsibility (the so called *sustainable lending*, Bouma et al., 2001) that deals with the direct legal costs and with reputational risks coming from funding of controversial projects and firms (Ulph and Valentini, 2004; Aspromonte and Molocchi, 2014). The idea of "lender liability" is also part of many laws such as the US 1980 Comprehensive Environmental Response, Compensation, and Liability Act (Bearden, 2012, see also Wolford, 2014), the 1993 Lugano Convention (EC, 1993) and the UK 1995 Environment Act (Dechezleprêtre and Sato, 2014). In different ways, these laws state that certain costs associated with pollution should be put on lenders. These topics are under discussion by lawyers and different players of the financial system. For instance, credit rating agencies are trying to incorporate the climate risk in their assessments (Matikainen et al., 2017) also because they could be held responsible for them (CIEL, 2015). Because of possible huge litigation costs, self-regulation rules to address these potential risks are starting to emerge in the sector (for instance by the Association of Banks in Singapore, 2015) and there is a growing literature on sustainable banking and CRS (Weber and Feltmate, 2016). All in all, "the role of banks in contributing toward sustainable development is potentially enormous" (Bouma et al. 2001, p. 25; see also Antonietti and Marzucchi, 2014).

4. Europe and climate change

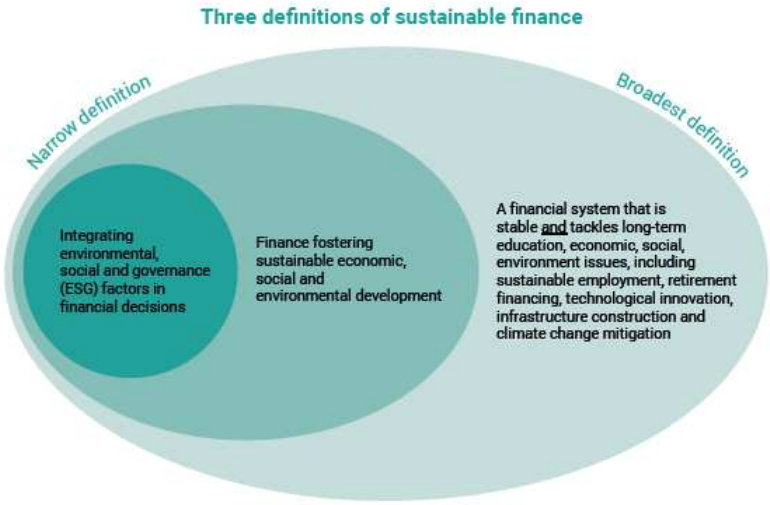
Europe is at the forefront of the fight against climate change having put sustainability at the core of its development model. This is clearly stated in the two reports that the EC commissionned to the HLEG spiegare la genesi dei due report

[12] BP has reported liabilities of more than $ 60 billion for compensation claims and clean-up and its shareholders paid heavily for the incident (Crooks, 2016).

(EU HLEG Interim Report 2017 and EU HLEG Final Report 2018[13]). In this regard the EU contributed to the development of the 2030 Agenda for Sustainable Development where financial issues are paramount. In fact the European Commission released an Action Plan for a greener economy based on the recommendations of the HLEG (Press Release, 8th March, 2018). The subsequent 24th May, the EC delivered the first concrete actions to enable the EU financial sector to help the transition (Press Release, 24th May, 2018). Finance is an essential lever for achieving transition and the EU connects the transition to ambitious goals such as economic prosperity, social inclusion and environmental regeneration. Of course it is difficult to disentangle how much European institutions care about the environment from propaganda and trade wars. After all, austerity meant misery for tens of millions of European households and one can wonder why the EU should care for the future environment than for the present poverty of its citizens. Anyway, especially after the signature of the Paris agreement on 2015, EU put itself at the forefront of the shift towards a low-carbon society, with its pledge to reduce CO2 emissions by 40% in all economic sectors by 2030. espandere

5. The three layers of EU intervention on sustainable finance

For the transition to be completed the full resources of society will have to be mobilized. The scale of the investment challenge in the EU analysis "is well beyond the capacity of the public sector alone" (FR, p. 2). Therefore, besides the European Fund for Strategic Investments, that has already generated about €90 billion into energy, environment and resource efficiency, it is needed private capital. To lead the way, EU needs "no less than a transformation of the entire financial system, its culture, and its incentives" (FR, p. 2). However, we can see a huge gap between general proclamation on the importance of sustainable finance and practical proposals in the very same reports. In particular, we can detect three different layers of sustainable finance based on an assessment made by the EU itself, where, in the Interim Report, proposed this tripartite definition (IR, p. 12):



Basing ourselves on this breakdown of sustainable finance, we analyse the two EU reports to see their contradictory nature and to propose alternatives.

5.1: The good: rules and green products

[13] From now on IR and FR.

The first most superficial level at which sustainable finance is connected to transition is what the IR calls "integrating environmental…factors in financial decisions". This means a series of rules to improve something that is already under way. For instance norms on disclosure, corporate governance, reporting and so on. Basically all the "early recommendations" of the IR are in this layer. All these rules are part of the re-regulation wave under way after 2008 and they suffer from the same problem: they go in the right direction but not rapidly enough to prevent another crisis [MaB]

One of these rules deals with green financial products. The proposal is that the EU introduce an official Green Bond Standard and Green Bond label to help the market develop. These rules show that, a part from these regulations, that don't warry at all to banks and other financial intermediaries, the aim of this aspect is to promote "green finance" that is, in this context, like a new product line as other "eco-friendly" commodities. It is a good marketing move and it makes sense also on a regulatory basis. Banks and asset managers can sell green bonds, green finance etc., without changing a thing to their business model exactly like a superstore can sell vegan food besides meat and poultry. This is not a secondary development: green economy funding gap is still conspicuous (OECD, 2011) not only in bank lending but also in bonds, with less than 1% of global bonds labeled as green (G20, 2016, p. 3). Only for the EU, funding gap for the transition is estimated at around €180 billion per year (IR, p. 2). The reason why public institutions are proposing to mobilize the financial system is that, as we said, the dimension of the financial needs are considered beyond the capacity of the public sector. Authorities are thus creating a legal framework to sell green products. Data confirms that the green fad is well under way: "Over US$3.3 trillion of private climate finance has been mobilised to date; the global green bond market in 2017 reached US$155.4 billion new issuance in the year, compared to US$81.6 billion in 2016" (GFT, 20xx, p. 11). The creation of benchmarks and market indices is also a boost to green products. The "concrete actions" proposed by the EC are based on HLEG recommendations and therefore are all well inside the layer 1 (taxonomy, disclosure, information to clients and so on[14].

The rules on green finance products are used to help the development of the market or, to be more precise, the single national markets. Every nation is trying to promote its financial hub in the international competition. This is very clear in the case of UK government that explicitly uses green finance to help the City (the GFT reports links green finance goals to the "consolidation of UK leadership in green finance", p. 59 and following). So much for a cooperative effort to decarbonize the world.

5.2: The bad: a green business model

Green products are a help but they cannot change the landscape of the financial system. At least not rapidly enough. Superstores sold eco-friendly products for decades and this did not change much in the consumers' behavior unless the other products were prohibited or in some way strongly discouraged.

This is also because consumers cannot pay a too high price for green products, especially in years of crisis, rising inequality, low wages and so on. Moreover, the emphasis on "information" is misplaced. It is not sufficient for consumers to know something. For instance, smokers or heavy drinkers know that their habits can kill them and yet they go on with them. After the crisis, regulators gave a strong importance to financial education, but this is an illusion. The crisis was originated by the reckless behavior of CEO of big banks. Are we implying that Fuld or other top manager needed financial education in the 2000s? Education and information are im-

[14] http://europa.eu/rapid/press-release_IP-18-3729_en.htm.

portant, but far from enough. Climate change needs much more and at much more speed. We need green regulation. The second and deeper layer of sustainable finance is thus linked to a finance able to fostering an environment compatible development. In practice, this means a regulatory framework able to change the banks' business model to comply with the aims of COP21.

For the finance to be sustainable it needs monetary policy as well as banking regulation with obvious interlinkages. The relation between monetary policy and the transition has been studied as far as growth (Barkawi and Monnin, 2015), rules for central banking operations (Matikainen et al., 2017) and interest rates setting (Rozenberg et al., 2013) are concerned.
[espandere]

Also the Reports emphasize the role of banking regulation to help the transition. The most important point is financial stability. After 2008 the importance of financial stability has been rediscovered (Dombret and Lucius, 2013). Besides more traditional factors that have been considered, it is now clear that climate change as well can derail financial stability because "climate systemic risk is a potential source of financial disruption" (Aglietta and Espagne, 2016), for instance by destroying the capital of the firm or provoking rapid portfolio reallocation (Dafermos et al., 2017a). Regulation is also a defensive move because the strong uncertainty and the global nature of the transition can hit particularly insurance and banking sector. For instance it has been estimated that the European financial institutions are exposed to fossil-fuel firms for more than €1 trillion and potential losses up to €400 billion (ESRB, 2016). The importance of fostering a new financial regulation to help transition is made more compelling by the fact that the crisis has reduced green economy investment in line with the general reduction of credit growth but also for specific reasons (Campiglio et al., 2017a). Moreover, Basel III has been considered a specific cause for the funding gap of the green economy (Liebreich, 2013, and Narbel, 2013). All in all, financial barriers to the transition are mounting (Ghisetti et al., 2017).

Although the importance of financial regulation is clear, the proposals so far have been poor (for instance a more structured corporate disclosure and a specific design of stress tests, Villeroy de Galhau, 2015; see also ICBC 2014, and Signorini, 2017, and on how to integrate sustainability into accounting standards EU, 2017). All these proposals can be considered layer 1 issues, because they are not able to change significantly bank's business model. What is needed to this aim is prudential supervision. In fact, European authorities are exploring how to incorporate sustainability factors into the Basel II supervisory review process. It has also been suggested to create specific prudential tools to help the transition, although the measures that came out so far concerned reserve requirements not prudential supervision (Campiglio 2014, and Rozenberg et al. 2013). Suggestions on lowering minimum capital requirements for green assets are starting to emerge (EU, 2017, pp. 32 and 62: "green supporting factor", EU 2018).

Recently, Esposito, Mastromatteo and Molocchi (forthcoming) proposed to modify the banks' assets weight in term of capital requirements to internalize the pollution risk of the borrower, so that prudential regulation would move from the present risk weighted assets to *environment weigthed assets* that would be the new basis for the capital requirements of the bank. The proposal is able to allow financial regulation to take into account important relationships between pollution and credit. First of all, there is an issue of composition of assets that are distorted towards tangible assets that are easier to be pledged as collateral, thus increasing emissions (Andersen, 2017). Secondly, in a situation of credit crunch or at least risk aversion by banks, financing green economy can be considered too dangerous and the banks can play it safe funding more traditional technologies, entrenching technological lock-ins and old oligopolies (Ghisetti et al., 2015). EWAs entails a deep change in regulation and therefore in the business model of

the banks. Nonetheless they are still inside the perimeter of what is the financial system now. It is an example of how to push the financial syste, to be functional to the transition. The enforcement of these tools would push for a change in how banks work but far from the scale needed for the transition.

5.3 The ugly: a green world

Transition is such a momentous goal with repercussions on every aspect of economic and social life, that it is impossible to over-estimate its importance. Reflections on its causes and consequences could change the way we look at the economy in general. As Mathur and Berwa (2017) put it: "The capitalistic ideology of unabated growth leading to amelioration of the greatest ills of humanity – poverty – via the trickledown theory has ceased to bear fruit. The dismal condition of world's poor, rising global social unrest, mass exploitation of the ecosystem, global warming, depletion of natural resources and deterioration of environment, are causes of grave concern today. As we look ahead, we recognize the necessity to build the foundation of a new era of sustainability". To bring about a new era is such an important goal that requires seriousness. There are important observations in the Reports that hints at the scale of change we need to make the transition real and that go far beyond climate change issues. For instance EU observes: "Reflecting these concerns, building a fairer Europe and strengthening its social dimension have become a priority for the Commission…The financial system should be a vehicle for promoting these objectives by embedding social and other sustainability considerations into capital allocation, and by promoting more socially sustainable approaches to finance" (EU 2017, p. 85). How this is compatible with the general economic policy that rules Europe is at least unclear. Anyway, the EU boldly identifies problems with the present financial system. In particular this is true for the core point of the time-life of investment. Transition implies long term investment. Unfortunately, this weltanschauung is incompatible with how financial markets work. This is an old theme dating at least since Keynes. Analyzing financial markets, Keynes observed that modern capitalism is based on the separation of ownership and control of the enterprises. The separation implies that the capital markets have a key influence on investment and hence on business cycles, that are based on investment waves. Capital markets allow for a far wider funding of the firms, thus facilitating investment, but they also increase instability because they induce a continuous re-assessment of assets value. Therefore, institutional investors yield higher volume of credit at firm's disposal but also "short-termism" in the financial markets (Whalen, 2017). This is reflected, for instance, in the collapse of the average holding period for stocks (Lukasz and Smith, 2015). As Crotty (1990) put it "To exaggerate only slightly, *there are no long-term stockholders anymore*". These developments make also differences among sectors and firms less relevant because their top management is made by professionals that often change position making firms' strategies, behavior, business models more similar. Contendibility reduced diversity among firms. The rush to have the best CEOs, paid more and more in stock options, in its turn exasperated short-termism in corporate strategies (Pasinetti, 2009). This means that green "sectors" or "firms" are simply a marketing strategy not a true specific business model. All in all there is an increase in uncertainty and short-termism (Mazzucato and Penna, 2015) that plays against transition that is by definition a long term plan ("sustainable finance is axiomatically linked to the long term", IR, p. 9).
Reports are aware of this fact "Recent trends suggest that short-termism in the financial sector may have got worse, with the average holding period of market-traded assets becoming shorter" (FR, p. 46) and therefore: "The HLEG sees short-termism as a clear challenge and potential obstacle for the establishment of a sustainable financial system and has already highlighted the issue in its interim report" (FR, p. 47). Without solving this problem, the whole project is doomed. So we would expect courageous measure to face it. This is how concretely EU tackles the issue: "The policy priorities should therefore be to lengthen the time horizon and broaden

the conception of risk" (IR, p. 19), of course but how? The reality is more sober: "There is no single parameter that could switch off 'short-termism' and move finance to the long term, aligning it with all the major economic challenges that demand a long-term perspective. Nevertheless, progress can be made through, first, *continued emphasis by policy-makers* that what is needed in particular is long-term finance" (IR, p. 20, emphasis added). Other suggestions are added (on financial literacy, social awareness, accounting issues on the IFRS 9), but how all this can confront short-termism is beyond any imagination. The Reports do not put up any feasible way to face the issue.

Financial markets are based on short-termism and this feature is unassailable, but there is an economic player that can be more interested in long term: the State. EU and others economic area have endorsed the idea of a public-private partnership, although the content of this relation is unclear to be polite. If we should base our judgement on the historical partnership between the State and financial operators the result would be even too obvious: the public takes the losses and the private takes the profits (citaz) . There are indications of the same game played in sustainable finance. For instance in 2012 the UK government created a Green Investment Bank that in 2017 was sold to private investors (citaz). So much for long term.

The problem is that EU Reports (and more generally international reports on climate change) try to please everyone, basically becoming mountains producing mice. They sell the general scenario of a green economy to the public opinion but the concrete proposals are kept in the layer 1 to keep banks and firms happy. In particular, if we look at the recommendations to single operators (banks, insurance companies, pension funds, etc.) that are all vague enough to be in the layer 1 (for instance "Asset managers should ensure that their governance, expertise and stewardship practices take account of sustainability in order to deliver the best possible investment outcome for clients"). They are ambitious ("Putting sustainability at the heart of the financial system", IR p. 5) but only in words.

6. Other Institutions' Recommendations

We criticized the EU ambiguity outlook on sustainable finance and its causes but we must also observe that EU is far from being alone in this attitude. Let's see other important examples.

FSB

The FSB-G20 Task Force developed four recommendations around four thematic areas that represent core elements of how organizations operate—governance, strategy, risk management, and metrics and targets (TCFD, pp. 13 and following) but they are simple disclosure proposals of no effect whatsoever. For instance for strategy: "Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material".

GFT

This is the report of the UK Commission on the issue. The key recommendations are all in layer 1 (pp. 21 and following) or even a plain strategy for competition. For instance: "Government and the City of London should establish a new Green Finance Institute brand under which strengthened and rebranded Green Finance Initiative capacity is established". Or: "Companies and investors should use the TCFD framework to develop their financial, corporate governance and stewardship disclosures on a comply or explain basis" and: "Government should require that the Statement of Investment Principles118 include statements on the extent to which social, ethical and environmental issues (including climate change) are considered, or why the trustees have determined that such considerations are not material or relevant factors to consider. Although it

deals with "More ambitious reforms for the future", this is only a whitewash on completion issues against EU countries after Brexit.

UN
Options all well in the layer 1, for instance option 4 ("Support the Development of Local Green Bond Markets" and option 5 "Promote International Collaboration to Facilitate Crossborder Investment in Green Bonds". Espandi su proposte di orizzonte

UNEP-FI
Con il cappello in mano dagli investitori istituzionali per fargli notare che la transition conviene anche a loro: "External costs caused by companies can reduce returns to investors", siamo dunque ancora alla mano invisibile da aiutare. Seven recommendations all layer 1. For instance: "Ask for regular monitoring and reporting from investment managers" and: "Encourage rating agencies, sell-side analysts and fund managers to incorporate environmental costs into their analysis". They are also prey of the illusion that institutional investors are long term investors. At least, HLEG had read Keynes.

7. Conclusions: what is missing? How to take transition seriously

Two main points on how to take transition seriously: the complementary role of markets and State and the short-long term (maybe they are a single point after all).
Tools:
a) EWA
b) investimenti pubblici (Mazzuccato, ecc.) e QE
c) nuova cultura: no allo short termism, al profitto ecc
usare la SF per disfarsi dello short-termism for ever: introiettare il bene pubblico per eccellenza: salvare la Terra, disfarsi della finanza
CRA pubbliche La BCE dovrebbe usare l'ICAS per creare una CRA pubblica invece…

UNFCC, *Adoption of the Paris Agreement*
Al punto 40 parla di "non-market approaches to sustainable development"
"Emphasizing the intrinsic relationship that climate change actions, responses and impacts have with equitable access to sustainable development and eradication of poverty" (p. 21) poi ripreso come tema all'art. 2 che connette lotta al riscaldamento e alla povertà (peccato che la finanza redistribuisca il reddito verso l'alto).

"As part of a global effort, developed country Parties should continue to take the lead in mobilizing climate finance from a wide variety of sources, instruments and channels, noting the significant role of public funds" (art. 9).

La climate finance (definita come sotto) tocca comunque sempre i due aspetti chiave: a) rapporto pubblico-privato, b) breve-lungo termine.

Pubblico-privato
Anche qui il tema è il rapporto tra finanza pubblica e privata. vedi: https://www.tandfonline.com/doi/full/10.1080/20430795.2014.971097

Breve-lungo
In 2015 the Governor of the Bank of England Carney fully exposed the "tragedy of the horizon", contributing to the debate that brought about the creation of the Task Force on Climate Disclosure inside the FSB (Carney, 2015).

> The transition to a green economy and financial stability are two of the chief world policy goals for the next decades. To pursue both, we need a functional financial system, based on a long term vision and a healthy business model, something that was sorely missed, as the 2008 crisis clearly demonstrated. Financial regulation is going through a process of rapid and deep change with the aim of remodeling the financial landscape to prevent other major crises. In this context, a discussion on sustainable finance is gaining traction. A non-green finance is simply unworkable in the long run. Banking regulation is called to help the transition, that should be used as an opportunity to break with short-termism in the financial system, so that the pursuing of a global public good (a clean environment) could help to achieve another global public good (financial stability). We could not think of a better situation to apply the old dictum that says never waste a crisis.

Boulatoff e Boyer, 2017 *What is the impact of private and public R&D on clean technology firms' performance? An international perspective*
"Public support could be key to further foster a societal move to adopt sustainable clean technologies", non ci sono differenze: "Our findings suggest that the performance of clean technology firms was virtually equal to that of firms in the Morgan Stanley Capital International (MSCI) World Index over the past decade (2004–2014)". Il tema teorico è che sono beni pubblici e dunque sottoprodotti dal settore privato per definizione.

HLEG, *Interim Report*
"In the aftermath of the financial and sovereign debt crises, sustainable finance could provide the best opportunity for the EU to reorient its financial system from short-term stabilisation to long-term impact" bello ma con i green bond?

The scale of the investment challenge is well beyond the capacity of the public sector alone. The European Union is providing massive impetus to help attract the required investments. The European Fund for Strategic Investments (EFSI) has already generated over €250 billion in investment. In 2017, almost one third of funds were channelled into energy, environment and resource efficiency, as well as social infrastructure. Now the EFSI 2.0 extends the lifetime of the Fund until 2020, and raises its investment target to €500 billion, with at least 40% of new investments helping to reach the Paris agreement objectives.
But to decisively address the funding shortfall, we are also looking into regulatory changes to mobilise the significant funding capacity of private capital.

Chiarissimo...vogliono trasformare il tutto in un banchetto per i mercati finanziari. Il pubblico non basta e i privati i soldi da dove li prendono? Li creasse lo stato con un apposito QE.

Il ruolo pionieristico della BEI: "The first ever green bond was issued by the European Investment Bank (EIB) in 2007; between 2010 and 2014, as the largest climate financier globally, the EIB provided more than €90 billion for climate action projects, €13.8 billion financing for energy infrastructures and energy security in 2015 and over €150 billion since 2005 in the transport sector" (p. 11).

Final Report
e) andare avanti con il piano infrastrutturale europeo (al solito lo stato fa le cose che costano), il Juncker Plan. Il ruolo della BEI è stato positivo ma ridotto (580 progetti per 90 mld). Il progetto è assolutamente germanico: "The Sustainable Infrastructure Europe headquarters should be

located in Brussels, and the organisation should be responsible for accelerating infrastructure investment in Europe, with a particular focus on the 'Central and Eastern Europe' macro area – since that area accounts for the majority of the infrastructure investment gap" ossia rimediare all'indotto tedesco.
raccomandazioni impossibili
a) dare degli obblighi agli investitori: "Explicitly linking the duties of investors to the investment horizons and sustainability preferences of the individuals and institutions they serve is key to achieving a more sustainable financial system". Nel concreto mettere la sostenibilità nella normativa di riferimento (IORP II, MiFID II e Solvency II) così come nella normativa UCITS e AIFMD. Ma gli investitori istituzionali aumentano lo short-termism, quindi è una raccomandazione folle.
senza stabilità finanziaria non c'è transizione possibile ma il capitalismo è fragile in modo endogeno e intrinseco.

Poi ampliano l'orizzonte e si ride di gusto: "Reflecting these concerns, building a fairer Europe and strengthening its social dimension have become a priority for the Commission" come no...con l'austerity, strangolando la Grecia e per provocare grosse risate: "The financial system should be a vehicle for promoting these objectives by embedding social and other sustainability considerations into capital allocation, and by promoting more socially sustainable approaches to finance" (85).

"Europe now has the unique opportunity to build the world's most sustainable financial system" (p. 10) è marketing "Sustainability cannot develop in a context where investment is dominated by short term considerations" p. 45

Nota che ci sono aspetti metodologici davvero interessanti per l'economia da questo tema. Ad esempio il ruolo dei modelli e delle simulazioni e anche la natura dell'incertezza.

Sciogliere la metafora...(Partire con la tram del film complicata: Tuco è la finanza, il Biondo è l'UE? https://it.wikipedia.org/wiki/Il_buono,_il_brutto,_il_cattivo)

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