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Lucchese, Matteo and Pianta, Mario

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# **Europe's alternative: a Green Industrial Policy for sustainability and convergence**

**Mario Pianta\* and Matteo Lucchese\*\*,<sup>1</sup>**

\* Scuola Normale Superiore, Florence, Toscana, Italy

\*\* Istat, Rome, Italy

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## **Abstract**

Europe is facing the twin challenges of addressing climate change and reducing the centre-periphery divergence. The 'European Green Deal' of the EU Commission includes larger climate change objectives, but with the same amount of EU resources and no clear vision on how to achieve aims. The lack of action for greater cohesion and convergence in economic performances is contributing to wider disparities within Europe, in particular with the countries and regions of Southern Europe. These challenges could be jointly understood as a need for deep changes in Europe's production systems, making them carbon-neutral and distributing more evenly economic activities in Europe's territory. A *Green Industrial Policy* for Europe could be the appropriate frame for developing a combined set of policies addressing such challenges.

## **JEL Classification**

L5, O2, P48

## **Keywords**

Europe, green industrial policy, economic convergence

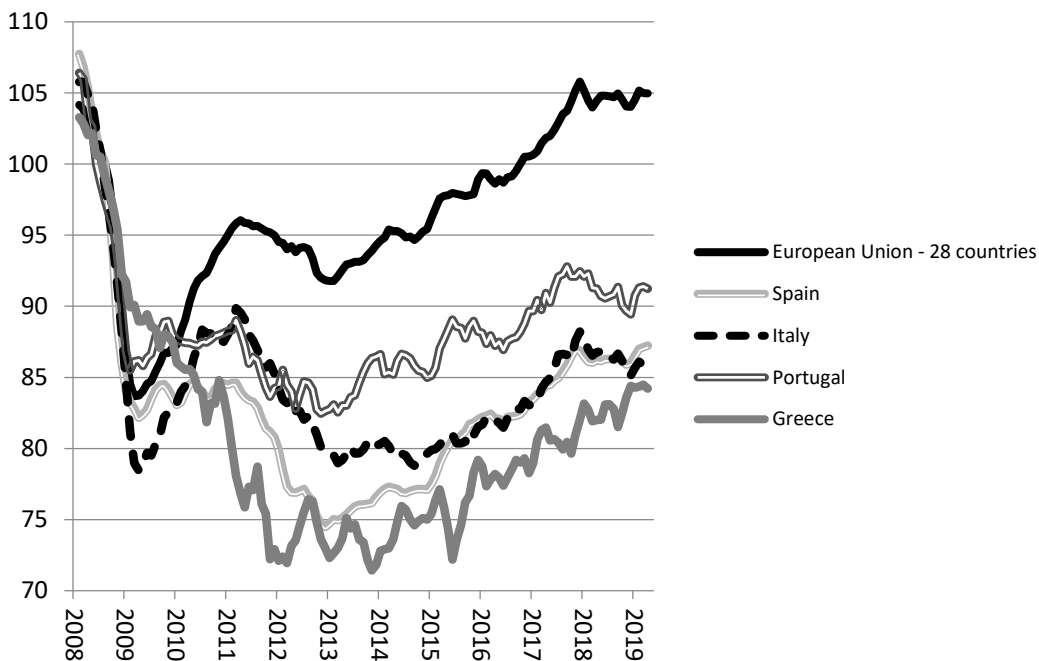
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<sup>1</sup> The views expressed do not necessarily reflect those of the institutions with which the authors are affiliated.

## I. Introduction

Twelve years have passed since the 2008 economic crisis and the European Union is still far from a full, evenly distributed recovery. The pace of growth has been highly uneven across European countries and regions and the gap between Northern and Southern Europe has widened. Manufacturing production in Southern economies – Italy, Spain, Portugal and Greece - has been unable to return to pre-crisis levels (Figure 1) and the slow recovery of the last years did not narrow the gap with other EU countries (Pianta et al. 2020).

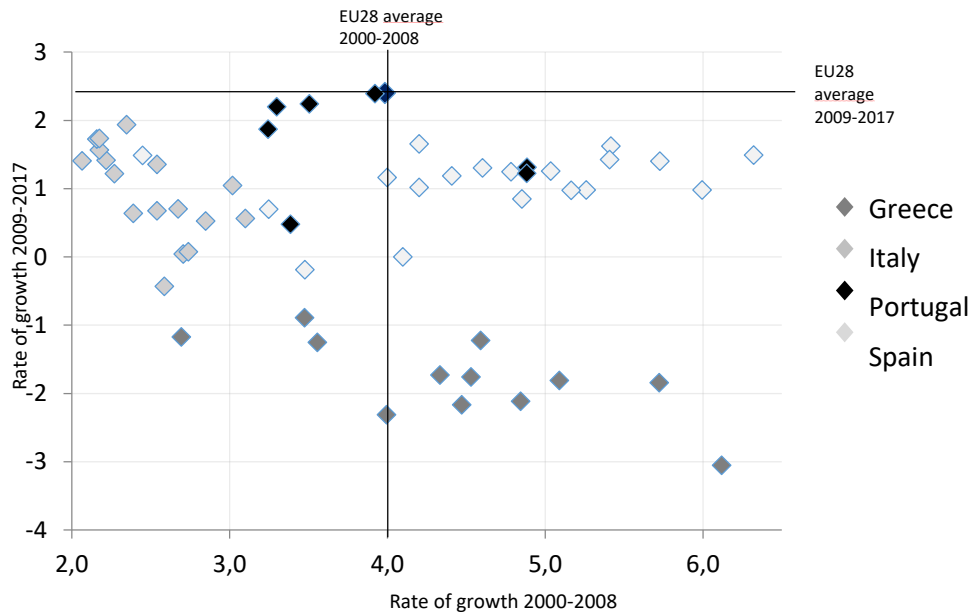
**Figure 1. Volume index of manufacturing production in Southern economies from 2008 to 2019.** Monthly data, seasonally and calendar adjusted data, index 2008=100.



Source: Eurostat, Short-term business statistics.

Disparities are even greater at the regional level, with some regions in Southern European countries showing in 2017 a GDP per capita that remains below 2008 levels (Eurostat, 2019). Figure 2 compares the rate of change of GDP per capita before and after the 2008 crisis: all Southern regions show a pace of recovery after 2008 that is below the EU28 average, with major reductions of the rate of growth for Spain and Portugal, a long term stagnation for Italy and a collapse of GDP per capita in all regions of Greece. This income decline is rooted in the loss of production capacity in contexts where specialization is biased towards agriculture, low-tech manufacturing and traditional services, with low or negligible opportunities for diversification and adoption of new technologies.

**Figure 2. Change in GDP in PPP per inhabitant in regions of Italy, Spain, Portugal and Greece (NUTS 2) in 2000-2008 and 2009-2017.** Annual data, Purchasing power standard (PPS, EU27 from 2020) per inhabitant (value at current market prices)



Source: Eurostat, National Accounts.

The legacy of the crisis - a mix of accelerated de-industrialization and rising regional divide - has not yet received proper attention. The EU industrial system is becoming more integrated and hierarchical, constrained by a complex re-organization of production around a manufacturing core centered in Germany which is pushing Europe towards a greater fragmentation and with a rising dependence of Eastern - and, to some extent, Southern - economies from the German economic system (Celi et al. 2018). Inhibited by a defective EU institutional set up that limits their space of action at the national level and by severe financial constraints, Southern economies are falling behind, losing their industrial capacity.

With falling industrial production since 2008, Europe has experienced a significant reduction in greenhouse gas emissions, but there has been no clear redirection of Europe's investment towards environmentally sustainable economic activities; advances in some areas have not been enough to reduce pressures on the environment. The new EU Commission is now calling for more ambitious targets on climate change (European Commission 2019), but a radical redesign of policies would be needed. The environmental policies set out in the last years are not well equipped to face this challenge, especially in energy-intensive sectors and where the climate crisis is more dramatic (European Environmental Agency 2019). New policies are required to put Europe on a path of long-

term socio-ecological transition, with a radical change with past trajectories and a more even distribution of efforts towards sustainability.<sup>2</sup> At present the potential for developing clean technologies and raising capital for ‘green’ investments is highly uneven across European countries; Denmark, Finland, Sweden and Germany show particular strengths in these fields compared to Southern economies in several indicators of sustainable technologies, including patenting activity in environment-related areas.<sup>3</sup> This is a novel source of divergence that may further increase disparities and fragmentation in Europe.

In this article we argue that the parallel challenges of achieving sustainability and convergence in Europe could be jointly understood as a need for deep changes in Europe’s production systems, making them carbon-neutral and distributing more evenly economic activities in Europe’s territory. A *Green Industrial Policy* for Europe could be the appropriate frame for developing a combined set of policies addressing such challenges.<sup>4</sup> Yet, a parallel conceptualization of the processes of de-industrialization, divergence and environmental change is so far missing, with no vision of how a sustainable and more equitable economy may emerge in Europe. An effective transition towards a green economy would require a complex re-organization of technologies and institutions, modifying the structure of the - real or perceived - costs of structural change and changing the power relationships among the actors involved. As Rodrik has argued, the challenge of climate change directly affects the underlying structure of national economies and “places industrial policy squarely on the policy agenda of governments” (Rodrik 2014). But there is still a poor understanding of what such a change could mean for backward regions and what are the key challenges and tools for an industrial policy to be effective in rebuilding strong economic activities in declining regions.

After decades in which industrial policy has been left on the margins of political action, we are now witnessing a return of interest and a flourishing of initiatives (Andreoni and Chang 2019; Pianta et al. 2020).<sup>5</sup> At the European level such a revival has taken different forms and translated into heterogeneous interventions, without a coherent and integrated conceptual framework. Current EU actions in the field of industrial, investment and innovation policies have been investigated elsewhere (Pianta et al. 2020); a critical assessment can be summarised as follows.

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<sup>2</sup> See Aiginger and Schratzenstaller (2016), Altvater and Mahkopf (2018); Mahkopf (2019); EuroMemo Group (2020).

<sup>3</sup> See Cleantech Group (2017). Recent patterns suggest that countries diversify towards green technologies on the basis of their existing competences, moving along a cumulative path of specialization (Perruchasa et al. 2019); this process is likely to widen, rather than reduce, differences among countries in sustainable technologies.

<sup>4</sup> The Paris Agreement and the 2030 Agenda for Sustainable Development (OECD 2017) commit the governments towards a ‘just transition’.

<sup>5</sup> For an analysis of the rise and the fall of industrial policy in Europe see Pianta et al. (2016). Since 2008 many governments have formally adopted specific national industrial policies - about 114 formal policies from 101 economies (UNCTAD 2018).

- a) Based on the view that ‘markets are efficient’, the EU has increasingly relied upon competition policy and the benefits of the Single Market; a direct consequence of this approach has been a major reduction in public intervention in the economy, with pressure on governments to reduce ‘State Aid’ and privatise public companies; a focus on ‘horizontal’ measures that treat all firms and sectors equally; a weakening of investment strategies at the national and regional level.
- b) Current European policies have given little attention to the growing divergence in industrial production. While Structural Funds and Cohesion Policy are supposed to mitigate these differences, their impact is limited by their focus on context conditions – infrastructure, education, etc. – with very limited effect on upgrading local production systems. Moreover, little coordination exist between actions at the European, national and regional levels, especially when the institutional capabilities of regions are weaker.<sup>6</sup>
- c) There is a clear contradiction between EU fiscal objectives, the compliance with spending and public debt constraints at the national level and the lack of a well funded EU-budget. The intertwining of these elements has worsened macroeconomic conditions around Europe and slowed down the path of investments, reducing in turn the space for government action.

The current debate on industrial policy remains completely disconnected from the broader economic policy challenges of the EU and from the question of sustainability. In the next section we present the ‘European Green Deal’, the new strategy announced by the EU Commission to develop climate-friendly policies. In section III we address the key challenges to implement a new approach to industrial policy in the European Union with the aim to ensure sustainability and reduce divergence.

## **II. The European Green Deal**

With the aim to accelerate the transition to a low-carbon economy, the EU Commission has launched in late 2019 a roadmap to make Europe the first carbon-neutral continent by 2050 (European Commission 2019).<sup>7</sup> The EU aims to bring EU greenhouse gas emissions target for 2030 to at least 50% of 1990 levels (from the previous goal of a 40% reduction) - becoming fully carbon-neutral by 2050 - revising policy instruments and regulations accordingly.

The European Green Deal is presented as a long-term commitment to the transition to a low-carbon

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<sup>6</sup> Landesmann and Stollinger (2018) stress the need to provide an ‘appropriate industrial policy’ in Europe for countries at different developmental stages taking into account trade balance concerns.

<sup>7</sup> This strategy represents an update of the communication on climate-neutrality transition published in 2018 (European Commission 2018).

economy, covering seven areas<sup>8</sup> which are relevant for a green transition. To this end, the EU Commission is going to adopt a new industrial policy strategy - that should be announced in March 2020 - assuming the twofold aim of realizing a green - and circular – economy, whereas fostering a digital transformation of the society. Significantly, the strategy will be accompanied by a ‘Just Transition Mechanism’, a fund which is supposed to support sectors and regions that depend more on carbon-intensive processes. Through it, the EU Commission hopes to reduce the resistance of Central and Eastern European countries - that have always opposed more ambitious environmental policies - and ensure a greater acceptance of supranational legislation on climate change targets.<sup>9</sup>

In terms of resources, the amount of new funds for the European Green Deal is still uncertain. The Sustainable Europe Investment Plan - which would oversee Europe’s green investment policy - should be mainly equipped with funds coming from existing resources (European Commission 2020): 25% of the new Multiannual Financial Framework (MFF) for 2021-2027 - including 35% of the budget of the research programme Horizon Europe - as well as (at least) 30% of funds of the InvestEU programme should finance green projects. The European Investment Bank (EIB) should double its climate target from 25% to 50% by 2025<sup>10</sup>. Finally, 20% of the revenues of the EU Emissions Trading System (ETS) should go to increase the EU budget - enlarging EU own resources - and be addressed to climate-friendly policies.<sup>11</sup> The Just Transition Mechanism - should instead receive 7.5 billion of ‘fresh’ EU resources (in addition to the new MFF budget) with the goal of leveraging about 100 billion of public and private funds over the period 2021-2027 (European Commission, 2020).

The total amount of financing that should be mobilized (with a huge financial leverage) by the Green Deal should reach one trillion over the next decade – an amount that includes funds from private actors and the national co-financing by Member States.<sup>12</sup>

Although the European Green Deal represents an attempt to draw an overall European strategy for sustainability, it has obvious limitations and several aspects have yet to be clarified.<sup>13</sup>

First, it largely relies on a ‘repackaging’ of existing resources; it improves emission targets but leaves

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<sup>8</sup> Key areas are: supplying clean, affordable and secure energy; mobilizing industry for a clean and circular economy; building and renovating in an energy and resource-efficient ways; accelerating the shift to sustainable and smart mobility; designing a fair, healthy and environmentally-friendly food system; preserving and restoring ecosystems and biodiversity; and a zero pollution ambition for a toxic-free environment.

<sup>9</sup> See Burns et al. (2020).

<sup>10</sup> In November 2011, the European Investment Bank has confirmed that, at the end of 2021, it would no longer finance projects relating to the production of energy from fossil fuels, while speeding up investments in the area of clean energy, energy efficiency and renewable energies.

<sup>11</sup> It is worth noting that the destination of funds from ETS is not currently allocated by member states for environmental purposes.

<sup>12</sup> In January 2020 the European Parliament has called for a more ambitious plan, a higher binding national targets and a speed up reduction of emissions and revision of EU legislation, together with an adequately financing for the ‘Just Transition Mechanism’.

<sup>13</sup> See Watt (2020) and Euro Memo Group (2020) for a broader critical review of the European Green Deal.

funds unchanged.<sup>14</sup> In addition, in the funding of investments there is no assurance that EU funds lead to initiatives that would have not been carried out anyway by business without such policy. Moreover, the priority given to low-risk investment by the private sector is in clear contradiction to the inherent high risk of projects associated to environmental transition, where new technologies, processes and organizations have to be developed.

Second, the Green Deal has weak policy tools for pushing both business and governments to follow its priorities; business has no clear set of economic incentives for investing in sustainable production; Member States have no official political constraints that may push governments to implementing the Green Deal agenda.

Third, the EU Commission has not made clear whether and how it will modify the price system - including carbon pricing - that has allowed business to take the road of environmentally destructive production activities. EU policy has so far had little attention to the ways economic behaviour – of firms, banks, consumers, public bodies – has to be changed to adapt to a sustainable economy. In this regard, the EU Commission plans to introduce a ‘Carbon Border Tax’ to avoid ‘carbon leakage’ - the move of production to countries with weaker climate regulations. Finally, there are no actions on the possibility to use indirect taxes in a targeted ways, nor a much needed public discussion has started on how large public subsidies that are environmentally damaging could be progressively removed.<sup>15</sup>

Fourth, the Green Deal has no relationship with overall fiscal policy in the EU. It is not linked to the introduction of a EU-level fiscal policy capable to fund some of the required investment (Pianta et al. 2020). It has yet no relationship with the possibility for Member States to expand their budget deficits, including the ‘Golden rule’ which could exclude environmental public investment from European fiscal constraints, while there is a debate on the possibility to revise some rules preventing State Aid by governments to firms and sectors engaged in environmental transition.<sup>16</sup>

Fifth, there is no vision of how the initiatives of the Green Deal could fit in the broader structural change of European economies, including the sectors and activities that may emerge as new fields of job creation, and the territorial dimension of such changes. There is no link to the Regional and Cohesion policies of the EU and no consideration of how the Green Deal could contribute to reverse

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<sup>14</sup> In Pianta et al. (2016, 2020) we suggested an investment program mobilizing resources for about 2% of EU GDP (about 320 billion) per year over 10 years. Claeys et al. (2019) observe that, even if the EU Commission succeeded in mobilizing 1 trillion over ten years, this would just represent a third of the ‘green investment gap’ calculated by the Commission itself for the period up to 2030.

<sup>15</sup> A clear proposal on how to improve the Emissions Trading System is in Euro Memo Group (2020).

<sup>16</sup> As shown in Pianta et al. (2020), Germany and several Northern European countries have substantially expanded national State Aid aimed at environmental and energy issues, while Southern Europe’s economies have reduced their contribution to traditional industries.



the divergence experienced by Europe in the last decade.<sup>17</sup>

### III. Key challenges for a Green Industrial Policy

A new approach to a *Green Industrial Policy* in Europe could jointly address the questions of the environmental sustainability of economic activities and the need to reduce territorial divergence. It could be built on the following corner stones.<sup>18</sup>

*Markets cannot work alone.* Market-based processes that are supposed to foster structural change towards a low-carbon economy work poorly (Aiginger and Rodrik 2017) and appear to be an engine of divergence rather than convergence across Europe (Pianta et al. 2020). A *Green industrial policy* should be based on a key role of public policies setting the direction of technological development towards the creation and the diffusion of new clean technologies, creating new market opportunities and fostering a green transition (Mazzucato and Perez 2015, Lamperti et al. 2018).

*Structural change has to be managed.* The transition to a sustainable economy requires deep changes in technologies and production systems. Radically new technologies have to be developed and older ones have to be replaced (Altenburg and Rodrik 2019; Cosbey et al. 2017). Economic structures have to evolve with a broader use of knowledge, a reduction of technology gaps, the development of new production capabilities and economic and social activities. This evolution should reverse the divergence in economic performances and incomes that has emerged in Southern and Eastern European economies. This approach to industrial policy has wide-ranging implications that have to be considered:

- a. the phasing out of old technologies and the introduction of new sustainable ones has major, widely differing effects on firms, industries, regions and workers; the distribution of the benefits and costs should be considered and appropriate adjustment policies should be developed.<sup>19</sup> Coal, steel and other heavily polluting industries are likely to need a long period of phasing out of old technologies, with a crucial role for governments in managing this process.
- b. with large scale changes in energy sources and use of natural resources, prices and costs are likely to be deeply modified; appropriate ways to ensure continuing competitiveness have to

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<sup>17</sup> See Landesmann and Stollinger (2020) for an analysis of the role of the EU institutions in designing and implementing industrial policy across Europe and of their main policy priorities.

<sup>18</sup> A normative perspective on how appropriate industrial policies could be developed is in Pianta et al. (2016).

<sup>19</sup> On these aspects see Botta (2019) and Mackie and Hašič (2019).

be found. Such processes may amplify disparities between firms with greater technological capabilities and market power – which may move more easily into sustainable productions – and laggard firms with lower resources and older technologies, often located in weaker regions. This has already happened in the case of the rise of Information and Communication Technologies, where a more concentrated industrial structure has emerged in most fields, leading to greater economic, social and territorial inequalities. Policies should be targeted to upgrade production capabilities of the system as a whole and encourage the catching up towards higher technological and environmental standards (Ambec 2017; Never and Kemp 2017).

c. in some fields – such as mobility in cities, the circular economy, etc. - the move towards sustainability requires a drastic change in complex systems that affect production capabilities (such as the auto industry), infrastructure provision ('smart' systems integrating roads, rail, bicycle and other forms of mobility), public services (traditional and new public transport systems in cities and metropolitan areas), individual habits of mobility and consumption (use of different means of transport, car-sharing, etc.), with a need for reconsidering the priorities of urban and regional planning. The upgrading of infrastructures and public services, especially for Southern European economies and backward regions, becomes a preliminary, necessary condition for setting in motion changes toward sustainable systems.

d. these changes in technologies, production systems and service provision are likely to have a major impact on the quantity and quality of jobs, skills and wages. Policies should ensure that the benefits of greater sustainability are widely spread to workers in terms of greater employment opportunities, higher skills and wages, making sure that territorial disparities in these fields are reduced.

*New governance arrangements have to emerge.* Building a low-carbon economy and ensuring a process of real convergence across Europe asks for a new model of governance of economic activities. A first issue concerns the coordination between top-down and bottom-up approaches to policies; in the first case we have the case of investment projects selected by a 'technocratic' authority such as an investment bank; in the second one, we have place-based approaches (which have been shown to work better in more advanced regions) such as the EU 'smart specialization' strategy. A key question here is how to design policies that take into account the different resources and institutional capabilities of countries, regions and production systems.<sup>20</sup>

A second question concerns the balance between public and private interests that should be found in

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<sup>20</sup> Bailey et al. (2019).

setting rules, funding initiatives, managing projects and making decision (Rodrik and Sabel 2019). The reach of public policies could widely range, according to institutional capabilities and power relations; public authorities could set the general goals of the transition to a sustainable economy; organize a ‘corporatist’ consensus among economic and social actors; create public research and technology diffusion agencies for developing the required know how together with firms and universities; establish or support public banks for funding projects; or develop public enterprises for implementing required changes.<sup>21</sup>

*Sustainability and convergence are political projects.* The transition to a low-carbon economy is a political process (Kohler et al. 2019), constrained by vested interests. It requires a long term vision on the future of Europe, a wide consensus from European citizens, social forces, and political parties. For European citizens (and voters) the concrete benefits of a more sustainable and less unequal development should be evident, in terms of improved environmental and social conditions, job opportunities, higher skills and wages. These are crucial requirements for mobilising a broad support around the proposal of a European industrial policy.

For major economic actors a Green industrial policy represents a novel arena of conflict where the maps of economic and political power are redrawn at the national and European level; careful ‘conflict management’ (Chang and Andreoni 2016) and new compromises are required to bring large firms and financial actors to an agreement on such agenda of sustainability. For inter-governmental relations, a European policy integrating sustainability and convergence has to build a common vision and find a difficult agreement among countries with different national interests and priorities. Key elements in this regard include the distribution of costs and benefits, the balance between incentives and constraints, the institutional setting and decision power arrangements.

*Macroeconomic and Green Industrial Policies have to be integrated.* The integration of a green industrial policy with Europe’s overall policy framework is a key requirement for success. A joint approach to environmental and industrial policy has close connections with fiscal, monetary, competition, trade, technology and labor and wage policies that have to be considered.

With regard to fiscal policy, the launch of the Green Deal could be the opportunity to move out of the austerity trap and tight fiscal constraints that have contributed to Europe’s stagnation (Pianta et al., 2020). An expansionary fiscal outlook is needed to allow the growth in demand that has to match the novel capabilities of sustainable production systems. Without a growth in demand – in private and public investment, in current public expenditure for environmental goods and services, in exports and

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<sup>21</sup> See, for example, the work of Block et al. (2020) on the US innovation system.

consumption – the reduction of old polluting productions would simply lead to a reduction of output, jobs and incomes, destroying consensus for the Green Deal.

With regard to monetary policy, the expansionary approach of ECB's 'Quantitative easing' is coherent with the requirements of a Green industrial policy. However, money creation has to move out of the financial circuits that failed so far to expand Europe's economies and has to be directed to real investment – finding ways to directly fund the Green Deal budget of the European Union, the investments of the European Investment Bank, and to alleviate the burden of the countries with high public debt. The possibility to introduce 'European Green Bonds' could also be considered.

With regard to competition, trade and technology policies, the actions of Green Industrial Policies could be temporarily exempted from the norms on competition, restrictions on State aid and EU Single Market rules, as their objective is to develop activities that markets are unable to expand. This should include the possibility that targeted firms – with either private or public ownership – could be supported in various ways, including public procurement, in order to restructure their economic activities. Trade rules will have to account for the global goals of carbon reduction, avoiding the 'carbon leakage' that could result from the shift of production to countries with laxer regulations than the EU. Finally, research and technology policies have to obtain greater resources and to develop mission oriented programmes with specific sustainability targets (Lamperti et al. 2018; Mazzucato 2018).

With regard to labor and wage policies, the Green Deal could lead to more knowledge based production systems with a higher intensity of skilled labor, thus creating a large number of high skill, high wage jobs, many of them in the public sector. As part of the social consensus around the Green Deal, labor contracts could be designed to strengthen collective bargaining, reduce the high level of precarious employment and significantly increase minimum wages.

*Institutional and social changes are crucial.* As in previous technological transitions, changes in production systems have to be matched by appropriate changes in institutional settings and social dynamics in order to obtain the benefits of a more sustainable and equitable economy (Perez 2016). Wide-ranging, environmentally conscious changes in political processes, governance arrangements, collective practices and social relations are the way the broad vision of a sustainable Europe could materialise in the lives of European citizens.

There is a strong need to bring Europe on a path of sustainability and green growth. In order to be convincing and effective, however, the European Green Deal has to incorporate the goal of reducing economic divergence and social disparities among countries and regions, and has to be integrated in

the overall framework of Europe's policies. Market mechanisms are unable to introduce such a change of direction; the policy space at the European and national level has to be expanded, with new effective tools of public intervention and new democratic, participatory political processes. A *Green industrial policy* could chart the direction for change of production systems, preventing global climate change and reducing Europe's disparities.

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