

Some Notes on the Impacts of Covid-19 on Italian SME Productive Systems

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Abstract

This paper presents some concepts and reflections on the prospects of SME productive systems that try to cope with the crisis provoked by the Covid-19, to reposition for the post-emergency, and to increase the readiness towards impending digital and green challenges. It focuses on the impacts of the emergency on a frame of opportunities and threats for such systems in Italy. An effective and progressive governance would be needed to overthrow barriers to change and reduce systemic uncertainties that hinder productive investments. The governance contemplates the collaboration among various types of societal and business actors open to progressive local path transformations within multi-scalar networks. An effective governance requires a supportive national strategic planning as well. The recovery and resilience plan of the Italian government within Next Generation EU should consider such support to increase the possibility of successful digital and green transformation in SMEs productive systems within new paths of territorial development.

Keywords: SME Productive Systems; Covid-19 Emergency; Territorial Development; University; Next Generation EU

1. Premise

A violent and prolonged shock may imply a catastrophic crisis for a socio-economic system, with enduring impacts even after the end of the shock itself. Agreed, but what nature will those impacts have in the medium-long term? Is that possible that such reaction will address, with the recovery from the crisis, also a fruitful path transformation? Specifically, would the reaction possibly aim at correcting pre-existing structural deficiencies that the system was suffering even before the shock? Many could advocate such type of coupling as a desirable exercise of collective rationality, especially if the deficiencies have revealed themselves more clearly as crucial weaknesses during the crisis triggered by the shock. Was the world going towards unsustainable environmental impacts, social inequalities, and global monopolistic power? Fine, the investments needed to recover from the crisis should be employed to push a wave of green renewal, societal healing, and entrepreneurial renaissance. Such solutions would feature collective rationality within paths of socio-technical transformation. However, they unavoidably meet inertial lock-ins, strategic barriers, as well as internal conflicts.

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What follows will apply this general scenario as a key to enlighten the difficulties of SME productive systems coping with the crisis triggered by the Covid-19 and trying to upgrade, under sets of supportive levers and hindering barriers, in face of the increasing pressure of challenges already emerged before the pandemic.

Section 2 will complete the general scenario on opportunities and threats for socio-economic systems facing disruptive shocks. Section 3 introduces to Italian SME productive systems before Covid-19, with a particular attention to digital and green challenges they were already facing. Section 4 recalls the Covid-19 emergency and suggests some non-accidental levers for repositioning in the post-emergency and increasing the readiness towards the impending digital and green transformation. Section 5 introduces the Guidelines presented recently by the Italian Government for a plan of recovery and resilience within Next Generation EU. The section focuses on the relations between education, research and industry evoked by the Guidelines, and comments on them considering some stylized facts of the relations between SMEs productive systems and universities. Section 6 concludes arguing for processes of strategic governance of collaborative projects between various types of societal and business actors that are open to progressive local path transformations within multi-scalar innovation networks and institutional frames.

2. Persistence, Resistance, Conflicts, and Emergent Processes

In a socio-economic system facing a disruptive shock, persistence comes from the stock of material and immaterial infrastructures that have not been destroyed by the shock and that in our societies is enormous.

Strategic barriers come from actors who, within the old order, enjoyed top rent positions that, even if possibly weakened, have not been removed by the shock and the crisis. Furthermore, the many who hold small privileges may angrily oppose any change, being terrified by the widening uncertainty brought about by the shock, with its combination of social fragilities amplified under the crisis and waves of emotional driven messages if not fake news broadcasted by media and exchanged within social networks. Finally, solutions that draw an ex-ante collective rationality always include distributive options and alternative operative details. Choices easily imply conflicts in terms of either diverging interests or disparate cognitive approaches or both, even among the actors sharing a common aspiration to promote a progressive transformational path (Torre, 2018).

For examples, the transition to a higher green, societal, market sustainability implies higher direct private costs for large parts of the business sector with respect to the simple restoration of traditional solutions. The higher costs could be considered investments within private strategies that foresee a higher efficiency for businesses able to insert effectively within the context emerging from the possible transition; but uncertainty in returns increases with the need to coordinate private strategies and new public goods (specific material and immaterial infrastructure, new sets of skills, etc.). Uncertainty would decrease if part of private investments as well as new public goods are funded directly or indirectly by quite clear public policies. In particular, the management of systemic uncertainty would require a new industrial policy that supports strategic collaborative governance among societal and business stakeholders open to progressive path transformation and that provides coordination

inputs as part of the public goods needed for solutions specific to complex socio-technical systems in flux (Di Tommaso, 2020).

Nonetheless, I would assume that windows of opportunity for a transition featuring collective rationality enlarge if the solutions ground on evolutionary processes that:

- a) Were already emergent before the shock, expressing clusters of interests, technologies, public goods, social and market needs within new socio-technical niches (Geels, 2002);
- b) Have shown clear potentialities to expand even within the difficult conditions engendered by the shock and the crisis, perhaps enjoying the access to resources made redundant by the temporary weakening of some inefficient solutions and some monopolistic positions of the old order (Bellandi & Santini, *forthcoming*).

3. Italian SME Productive Systems before Covid-19 and Digital Challenges

I will try to suggest in what follows an application of the previous remarks to the perspectives of Italian SME productive systems coping with the crisis provoked by the Covid-19 emergency. They would need both to reposition for the post-emergency and to increase the readiness towards the impending digital and green challenges.

Let us recall, first, a stylized structural frame of trajectories ante Covid-19. In general terms, the performance and organizational heterogeneity within and among such systems has been increasing in the last two decades, and more clearly after the blowing of the international financial crisis in 2007 (Istat, 2015). Old South-North territorial dualisms have resurged, and new ones have shown up, for examples between systems located within (or well connected with) dynamical metropolitan areas and those located in less connected areas (Iammarino et al., 2019).

A powerful driver of such divergence has been the triumphant neo-liberistic globalisation from the end of the 1990s, and its selective transformation after 2007. A related driver has been precisely technological change. Within this, a new wave of technologies emergent before Covid-19 has started to bring wide opportunities and huge threats to SMEs productive systems and their territories. Let us refer here to the umbrella name “Industry 4.0”. It covers an open and expanding set of potential and effective digital-based solutions that amplify machine-driven functions and connectivity in production process, products, organization of business networks, and trade relations (Bianchi et al., 2019).

Such solutions combine increasingly also with those related to the green transformation in productive and territorial systems (Cainelli et al., 2012), e.g. AI, IoT and sensors applied to a variety of processes and products that help a digitalised support to reduced environmental impacts (Shubhangini & Surya, 2019). The increasing awareness of worsening territorial and environmental crises brought about by the cumulation of the unregulated external effects propels innovative solutions of circular economy, etc. (European Commission, 2020).

Opportunities for SMEs come from the possibility of scaling-down the size of efficient production processes, while inserting new artisanal and environmental-friendly features within personalised products and customer relations in enlarging clusters of market niches. The systemic advantages (*viz.* Marshallian external economies) of a cluster of specialized SMEs enjoying such opportunities and embedded in a vibrant and cohesive local society could have a new lease of life

(Bellandi & De Propris, 2017). They depend on the combination of SMEs' business strategies and capabilities within innovation platforms or ecosystems aiming at transformational results such as development of reshoring solutions, cross-fertilization among traditionally separate productive *filières*, territorial servitization, and democratized smart cities' initiatives (De Propris & Bailey, 2020; Lafuente et al. 2017; Morozov & Bria, 2018).

A crucial factor of such platforms/ecosystems is their multi-level, multi-actor, and multi-disciplinary nature, allowing dynamic SMEs to leverage local resources and cultural peculiarities (Cooke & Lazzarotti, 2018), to become qualified members of more extended (e.g. national or European) but still accessible innovation networks and value chains (Carayannis et al., 2018; Plechero & Rullani, 2019).

Threats come from mainstream technocratic approaches to Industry 4.0 that favour top-down applications led by big firms (Strange & Zucchella, 2017). This is also related to the increasing global monopolistic power built on big-data management and digital platforms (Feldman et al., 2019). Threats come as well from internal and local weaknesses, given the difficulties for large populations of small entrepreneurs to adopt a business culture open to delegation of management and to inter-organizational R&D projects, for a large part of the qualified workforce to upgrade skills to digital and green readiness, and for place-leaderships to accept the end of rent positions based on old gateway roles (Bellandi & Santini, *forthcoming*).

4. Italian SME Productive Systems and the Covid-19 Lock-down

The period of lock-down has had an immediate deep negative impact on the business of many Italian SMEs and the local productive systems in which they embed, a part from cases directly or indirectly related to *filières* of health and basic life support (<https://www.istat.it/it/archivio/239854>).

Of course, the crisis could engender wide selection effects on SME productive systems, even if the Governments have devoted large resources to financial and economic mechanisms cushioning a free fall in business. The sign of such selection effects on the productive systems, particularly towards either a collective strengthening or a risky fragmentation in terms of readiness to the impending digital and green transformation, will depend on different real-world combinations of a set of factors:

- a) the trajectories ante Covid-19 recalled in Section 3;
- b) the emergency and recovery policies that quite surely will be non-neutral;
- c) some levers of non-transitory change, which the lock-down may have generated within the structural contexts where the same systems and their SMEs are on the move;
- d) the barriers to productive transformation paths hinted in Section 2.

Next Section presents a few specifications on points b) and d) in the light both of what argued above on point a) and of a list of four levers that is proposed now with regards to point c). Such list comes from personnel but non-extraordinarily original reflections on the meaning of the experiences shared by a vast part of the Italian population during the lock-down.

- i. An enlarged experience, even if traumatic, of contact with a set of various digital technologies supporting distancing and work/study/socialization from home, that families, small firms, local institutions have had in many places.
- ii. For the same set of actors, a rapid accumulation of perceptions and feelings diverging from common sense diffused at least in Italy, four in particular:
 - that the organization of production and social and health services in the territory of the community is a fundamental factor impacting directly on health, work, consumption;
 - that the organization and strategic power of the State, from the national government to the local levels, have as well a fundamental and dramatic impact on the same fields;
 - that research & innovation structures as well as educational institutions are necessary ingredient of the contemporary life;
 - that the temporary clamping-down of our model of mobility and of related production processes has had a sensible positive impact on the local environment, in terms of cleaner air for example.
- iii. For many SMEs in particular, the evidence of serious difficulties in coping individually with the necessities of the emergency and in gearing up for the restart of activities after the lock-down, being necessary not only the support of the State but also that of collective actions organized at the local level.
- iv. Again, for many firms, SMEs and larger ones, the evidence of the risks associated to the international fragmentation of production processes, with the dependence from China for many supplies, from Europe for many direct and indirect destinations of products, and from international personal mobility for tourism and other services that imply temporary proximity.

5. Italian Guidelines on NGEU, SMEs Productive Systems, and Universities

Concerning policies, though the tragedy brought about by Covid-19 is not concluded, public recovery plans have started necessarily to be discussed and designed. Many proposals in this field advocate that the investments needed to recover should be addressed towards solutions that also help societies and individuals manage serious collective weaknesses made dramatically more evident by the pandemic. This is precisely imaging how to insert collective rationality and make recovery an opportunity for path transformation. Next Generation EU (NGEU) exemplifies well such stance, specifically recommending the presentation of national plans of investments that should associate environmental sustainability, health security, social inclusion, and digital transformation (see European Council, 2020).

The Guidelines presented recently (2020, 11th of September) by the Italian Government for the “definition of a national plan of recovery and resilience - rullani#nextgenerationitaly” (PCM, 2020) combine the reference to the NGEU frame with a stylized SWOT analysis of the Italian socio-economic context and the specific recommendations of EU to Italy in 2020. The combination is the basis for a set of challenges/objectives, missions and projects’ evaluation criteria that should stimulate and regulate a partially bottom-up (from various institutional layers and public-private partnerships) presentation of clusters of projects (around the missions) to be

(co-)funded with the resources of NGEU, in particular the loans and the subsidies of the Recovery and Resilience Facility.

Both the recommendations and the SWOT analysis point out deep structural problems that have emerged in the last twenty years, bringing about low economic growth and increasing social and territorial weaknesses in Italy, and that should be dealt with in order to give clusters of projects a chance to be effective and impactful. Therefore, the Guidelines include, as well, the reference to a set of structural reforms and policies that the current Italian Government would intend to start implementing as a necessary complement to the projects' clusters.

Here, I would refer briefly just to a specific combination among the set of missions and policies that more or less directly, within the Guidelines, seemingly aim at supporting Italian productive systems and SMEs under a digital and green transformation that should feature all the country. The combination evokes a role for universities (with other research organization and higher education institutions) and raises some related questions.

Within Mission 1 on “Digitalization, Innovation and Competitiveness of the Productive System”, and within Mission 2 on “Green Revolution and Ecological Transition”, together with a set of references to infrastructural initiatives, it is underlined the necessity of strengthening the public and private investments in R&D. Such investments should also couple with tools helping small firms to increase their size, the financial solidity, the organization in business groups and networks, an active participation in value chains and reshoring, the adoption of circular economy's solutions, and the presence on international markets.

Within Mission 4 on “Education, Research, and Culture”, the documents asserts that the “improvement of educational paths and of access to higher education is an essential condition to favour a tighter interaction between universities and research, business and institutions.” In particular, the mission should host initiatives “aimed at creating strong synergies among different actors, stimulating their innovation propensity, by means of research for productive *filières*, with a specific attention to smaller firms” (PCM, 2020, 17 – *personal translation*).

Within the chapter on Policies and Reforms supporting the Plan, Section IV.4 concerns “Research and Development”. Here, it is recalled again the role of secondary school and universities, e.g. the goal to increase the matching between undergraduate curricula and needs of the productive systems, as well as the qualification of graduate and post-graduate courses thank to “more advanced forms of collaboration with research organizations and companies engaged in highly innovative sectors” (PCM, 2020, 29 – *personal translation*). In general, Italian public investments in R&D should increase significantly. The private investments in R&D, with a particular focus on those aiming at the digital and green transformation, should be helped by a set of measures spanning the finance of innovation and the projects of collaboration on technological innovation, with a specific attention to the European level e.g. for the support to the participation to calls within the European Cluster Collaboration Platforms for “Important projects of common European interest” (<https://www.clustercollaboration.eu/tags/ipcei>)

Surely, universities have important roles to play here. Indeed, they should be more and more “engaged” (Breznitz & Feldman, 2012). The Italian university system has been progressing in the last decades towards a better alignment to needs of territorial and productive development (Cesaroni & Piccaluga, 2015). Nonetheless, the

difficulties for universities to have an effective impact, especially in relation with SMEs productive systems, cannot be ignored and are part of the problem (Bonaccorsi, 2017). It is a question of impoverished public funding to universities, as much as of both ivory tower's reminiscences within parts of the academic bodies and traditional lack of real interest in knowledge exchange of many local institutions with respect their universities. Furthermore, traditional small firms, which contribute largely to Italian SMEs productive systems, suffer disproportionately the well-known cognitive and incentive difficulties of university-industry relations. For them, it is highly difficult to come in touch with academics as well as to agree on problem identification, timing, resources, and contracts involved in technological transfer and collaborative research (Cappellin et al., 2017, 41-51). The experiences of the lockdown (see the third item of lever ii, point c, in Section 4), associating to a possible future increase in public funding (how much and when, who knows?), would surely help in the way of a better alignment but would not be enough.

The same concept of alignment, which models of entrepreneurial universities illustrate, is not devoid of ambiguities and risks prompting adverse reactions within complex academic bodies (Etzkowitz et al., 2000). Universities should be helped and help themselves to diffuse good civic and developmental practices (Brundenius et al., 2016; Goddard et al., 2016), which associate alignment with synergetic processes between higher education (HE), research, and innovation; as well as with a self-reinforcing coexistence of research/HE disciplinary specialisation and multi-disciplinary efforts in projects and paths of territorial development (Torre, 2018).

Their goal is not just supporting whatever digital-green transformation, nor just a broader SMEs' access to some Italian-led value chain or European high-tech cluster. Such practices aim at inserting digital-green transformation and SMEs' progress within projects of territorial development that enhance the civil, cultural and market potential of local productive *filières*, and together help the collective mobilization of professional and creative vocations, included those expressed by many small firms (Becattini, 2015). Projects concern, e.g., cross-fertilization of traditional and new productive specializations, business cultures, and know-hows; technological applications to cultural heritage and environmental protection; local creative industries and cultural initiatives; landscape and historical itineraries, social museum and experiential tourism; social innovation, smart-inclusive-healthy cities and territorially built-in wellness –also at national and international levels of cooperation (e.g. <https://www.nexteconomia.org/>; <https://www.euniwell.eu/index.php>).

6. Scenario and Concluding Remarks

An effective realization of plans of recovery pointing to digital and green transformation, confronting and healing as well Italy's deep-rooted structural problems, should be inserted in a frame of specific levers and barriers to change, as those recalled above. Let us come back to the levers i), ii), iii), iv), point c in Section 4. They must be considered carefully when advocating SMEs productive systems to exploit the hopefully effective bounce in public resources towards R&D for a digital and green transformation.

Levers iii) and iv), if left non-governed, will exacerbate the selection among the SMEs productive systems, the decline of many of them with lots of closures of

weakened SMEs, and the dependence of more dynamic SMEs from footless big firms, enlarging digital divide and territorial dualisms. Instead, a good governance of the levers could help to eradicate deep-rooted rent-seeking coalitions and build stronger business organizations and networks. It could as well liaise with growing orientations towards substantive social responsibility among some big firms (Porter & Kramer, 2011). Such governance should exploit the spread of digital and green readiness and competence, expressed by levers i) and ii), within innovation hubs or ecosystems built on quadruple-helices of pro-active entrepreneurs and renewed intermediating bodies, engaged universities, civic associations for social innovation, competent bureaucracies and responsive policy-making (Carayannis et al., 2018).

Eventually, effective and progressive governance processes would need guidance by strong and open place-leaderships (Sotarauta et al., 2017), which mobilize the new attitudes and feelings at the local level, craft institutional solutions appropriate to a new cycle of territorial investments, and help activate new markets from emergent community needs (Cappellin et al., 2017). However, such leaderships cannot be left alone to face entrenched regressive coalitions, new monopolies, and expanding illegal networks (Evans, 1996; Sciarrone & Storti, 2016). It would be necessary a more general strengthening of democratic negotiation, accountability, and strategic planning at the national level within the EU space (Stame, 2012; Trigilia, 2020).

In conclusion, the remarks in this paper point out the high degree of complexity and uncertainty of digital and green transformation. A key to navigate such difficult sea is to combine bottom-up innovative mobilization, universities included, and a clear top-down awareness of the necessity to support the place/system-based dimension of transformative paths within national and EU plans and networks.

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