



What can we learn about reshoring after Covid-19?

Paolo Barbieri¹ · Albachiara Boffelli² · Stefano Elia³ · Luciano Fratocchi⁴ · Matteo Kalchschmidt² · Danny Samson⁵

© Springer Science+Business Media, LLC, part of Springer Nature 2020

While the World is still dealing with the health and safety issues raised by the Covid-19 pandemic, it is already quite apparent – and acknowledged – that this event will have a substantial impact over the national and global economies, as well as on the structure, the organization and the management of operations and supply chains, as highlighted in the June 2020 editorial (Samson 2020). In particular, a certain consensus is found among authoritative experts, analysts, and Institutions (e.g., Javorcik 2020; The Economist Intelligence Unit 2020; UNCTAD 2020; World Economic Forum 2020), that the pandemic will undermine the “Global value chain” model – a production network paradigm which has deeply characterized the World economy over the past 30 years, and one of the most visible “trademarks” of Globalization. This likely reshaping of the supply chains will be driven by both managerial (i.e., firm-level) and political (i.e., Sub-National, National, or Supranational-level) factors.

At the firm level, many companies experienced dramatic exposure to supply chain disruptions during the pandemic and the subsequent lockdowns (Strange 2020) due to their reliance on offshore supplies. While the increased hazards of global operations had been highlighted in supply chain risk management literature (Manuj and Mentzer 2008), the 2020 pandemic has represented an unprecedented demonstration of how disruptive their effects could be. It is now difficult to believe that managers could simply restart to focus solely on efficiency and growth, without paying the necessary regard to risk-related practices (The Economist Intelligence Unit 2020), especially when considering that the pandemic happened as a shock in an already turbulent context of trade battles, raising

protectionist policies (Javorcik 2020), and increasing pressures for more sustainable business models.

Further, the pandemic unveiled in many countries their lack of self-sufficiency for needed products – like those required to hinder the spread of the contagion, such as masks and other personal protective equipment (PPE), or to ensure medical assistance to the people affected by the virus, such as ventilators – as well as their dependency on China for several others (Gurvich and Hussain 2020). The latter include strategic supplies like pharmaceutical items but also components of key industrial supply chains (e.g., automotive, chemicals) whose stoppage can dramatically hurt the GDP of an advanced economy. As a consequence, the call for more self-reliance will – and in some cases has already started to (e.g., in the case of Japanese Government that started to incentivize relocation initiatives) – raise in the political debate, urging measures to better protect, reinforce, or even reinstate the macro-regional or national production of these goods. In particular, this editorial focuses on the “reshoring” phenomenon, defined as the decision to relocate a manufacturing activity either back to the home country (back-reshoring) or to a nearby country that belongs to the same macro-region (near-shoring).

1 The past of reshoring

In 2016, Operations Management Research published a Special Issue on “Reshoring: A Supply Chain Innovation Perspective” (Barbieri and Stentoft 2016). By that time, the interest in the reshoring phenomenon was already increasing, yet the related literature – especially the empirical one – was still scarce and fragmented. Also, the supply chain implications of reshoring had not been extensively addressed to date. In the following years, however, the reshoring literature has continued to grow (Barbieri et al. 2018), and new studies on the topic have been published also by this journal (Benstead et al. 2017; Boffelli and Johansson 2020). Since reshoring constitutes a main element of the global supply chain reconfiguration (Barbieri et al. 2019; Strange 2020) that, as discussed above, it is expected to be heavily influenced by

✉ Matteo Kalchschmidt
matteo.kalchschmidt@unibg.it

¹ Alma Mater Studiorum University of Bologna, Bologna, Italy

² University of Bergamo, Viale Paubio 7/b, 24044 Dalmine, BG, Italy

³ Politecnico di Milano, Milan, Italy

⁴ University of L’Aquila, L’Aquila, Italy

⁵ University of Melbourne, Melbourne, Australia

the Covid-19, the ambition of this Editorial is to share reflections – and hopefully stimulate a debate – on the possible impacts of the pandemic on reshoring, and on how research should address this issue over the forthcoming months and years. In doing that, the authors keep in view the past contributions on reshoring, particularly those published on OMR, and try to figure out to what extent they are still timely and valid, and what instead needs to be revised in light of the exceptional event the World is experiencing.

The contributions included in the OMR's 2016 Special Issue cover three main areas of investigation about reshoring: conceptualization, motivations, and decision making/decision execution. The first aspect – specifically touched in Stentoft et al. (2016a) – consists of a literature-based descriptive analysis of the emerging phenomenon, which is characterized in terms of definition, industry and size of the reshoring firms, etc.

The motivation aspect is the core of four essays, and it offers quite interesting insights. The work by Zhai et al. (2016) is one of the first survey-based studies on reshoring. It highlights that reshoring – much more than offshoring, a phenomenon that is largely explained by cost reduction and market-seeking motivations – is indeed triggered by several, and possibly co-existing reasons: for example, while “cost” and “operations” emerge as the main groups of motivations in their study, product quality issue is the single most frequent one. However, the contributions by Ashby (2016) and Robinson and Hsieh (2016) examine cases of reshoring from a longitudinal perspective and show how firms can eventually embrace reshoring to better align their supply chain strategies to the corporate priorities and value propositions, be it the firm heritage and restored brand values, or the achievement of higher environmental sustainability. Finally, Stentoft et al. (2016b) report a case of a relocation from a developed country in which the main motivation was the flexibility and security of the work legislation. So, from these studies, reshoring emerges either as an adjustment to modified contextual conditions (or unexpected issues in the firm's global footprint) or as a move for achieving strategic re-alignment.

The 2016 special issue also touches the decision making/decision execution aspect, with Joubioux and Vanpoucke (2016) developing and empirically refining a framework for the location decision that accounts also for long-term considerations (e.g., development of business relationships) in addition to short-term, cost-oriented ones. Bals et al. (2016), in addition to clarifying the decision-making processes related to the distinct yet closely related phenomena of insourcing and reshoring, also offer some preliminary, theoretical insights on the implementation aspect of reshoring, particularly by stressing the importance of considering, in the implementation phase, the effects of learning.

Recognizing that the “How” (that is, the decision making and implementation process) of reshoring has not been

adequately addressed in the literature, the contribution by Benstead et al. (published in OMR in 2017) theoretically develops and empirically refines a framework for the reshoring process. The framework (a) provides an extensive characterization of the implementation steps, and (b) assumes that the link between reshoring drivers and implementation steps is influenced by several contingency factors. It is one of the very first research work to examine the process implementation approach at such level of detail.

Recently, Boffelli and Johansson (2020) conducted a meta-synthesis of the published research cases that include both the offshoring and reshoring processes, to develop a quite comprehensive framework that explains in detail the typical aspects, and steps, of the two processes as well as the connection between them. Among the major novelties identified by the two researchers, three elements appear to be particularly relevant to explain the role of the global pandemic. First, among the reasons behind reshoring (*Why*), they recognize that it commonly happens that one or more factors can act as *Trigger* (or tipping point) of the relocation decision (Benstead et al. 2017). Second, the time perspective (*When*) appears to be extremely relevant, given that factors evolve and differentiating a short-term and long-term perspectives can even enable better understanding of the outcome of the decision (Ancarani et al. 2015). Third, concerning *How* the process occurs, a preliminary stage of *Preparation* is found as a predecessor of the actual implementation (Nujen et al. 2018).

2 The present of reshoring

Starting from the previous knowledge provided in the literature, we can recognize that Covid-19 can be associated with the role of a trigger for reshoring decisions. We can expect it to foster and accelerate decisions that have not been made yet, even if possible drivers had already been identified.

By looking at the first empirical evidence emerging from the early secondary data retrieved from news and press releases, we could recognize the triggering role played by the Covid-19 pandemic (*Trigger*). Particularly, on the short-term, we have been able to retrieve examples of companies relocating to Europe either for the disruptions of the Chinese production or for seizing market opportunities triggered by the Covid-19 pandemic. Respectively, the case of the French company Stil (Terzian 2020) - that decided to bring back the production of glass thermometers to France because of the unexpected closure of its Chinese suppliers - and the one of the Italian company Coccato e Mezzetti Srl - that started again the production of a disposable biodegradable face mask in Italy after stopping the production in 2005 for the competition of low-cost alternatives coming from China (Greco 2020). Looking at the long term (within the next 5 years), we can foresee different types of relocation initiatives triggered by

Covid-19. First, a relocation guided by the need to reduce the risk exposure. This is the case of the Italian company DiaSorin, that is considering moving part of the production back to Italy to have a back-up production in case of disruptions (Carrer 2020). Since much of business strategy can be conceived of as balancing of risk and return, existing tools such as decision trees and Monte Carlo risk analysis approach, see Samson and Gloet (2018), can be usefully applied to model and evaluate reshoring decisions, in such a way as to explicitly account for uncertainty in turbulent times. For example, quantifying factors using these approaches such as supply reliability can improve the managerial focus and clarity on the benefits and motivation for reshoring.

Second, we foresee decisions from entire supply chains that may be driven by the actors of the supply chain itself or by policy interventions to attract strategic productions. We can refer here to the statements from the President of Fondazione Altgamma (an Italian association of 107 brands operating in the high-end of fashion, jewellery, design, food, hotels, automotive and wellness industries), who claimed that it is time for the luxury production of silk and technical tissues to come back to Italy (Crivelli 2020). Another example is provided by the words from the President of the French group Sanofi and the French Federation of Health Industries, who recognized the need to bring back to France – or at least in Europe - the production of active pharmaceutical ingredients (Fayçal 2020). More recently, the French Government has launched a call for projects aimed at recreating the paracetamol supply chain locally within the next 3 years (Le Figaro 2020). This last example demonstrate how such joint decisions may be boosted by policymakers, aiming to stimulate relocation initiatives for strategic supply chains. A clear example is provided by the Japanese initiative aiming to finance 70% of the relocation costs for small and medium enterprises producing PPE and raw materials for drugs. Other policies were introduced all over the world after the Covid-19 outbreak, mainly towards three areas of intervention: i) ensuring continuing operation of

manufacturing businesses; ii) mobilizing manufacturing towards critical supplies; iii) supporting post-crisis manufacturing growth (Policy Links 2020). The latter, in particular, may support and foster reshoring in the long-term. For example, Singapore launched the SG Together Enhancing Enterprise Resilience Programme, providing funds to support business growth and capability upgrading; interestingly, the funds are addressed to companies or industry groupings. Australia, instead, promoted a time-limited incentive to invest by accelerating depreciation deductions and increased the threshold for tax deduction for capital investments. Finally, India introduced a scheme for financing three pharmaceutical parks to reduce the country dependence on drug imports (Policy Links 2020). Many of these examples make evident that, besides individual initiatives by single companies, also joint reshoring initiatives are enabled as a reaction to Covid-19. On the short-term, we did not find evidence of such joint actions. A possible explanation is a need for *preparation*, as evidenced in the literature, that is much more complicated to be assured in a joint reshoring initiative. Instead, examples of multi-firm collective production shifts and supply chain restructuring may be found even in the short-term, enabled by policies pushing manufacturing towards critical supplies. An example is an Italian policy providing funds to firms producing protection devices, that pushed many companies from the textile and fashion industry to start new lines of PPE, in some cases coordinated by local or national entrepreneurial associations. In the end, two elements appeared to be critical in differentiating the type of responses, namely the time (short term vs. long term) and the decision-maker (single firm vs. supply chain), as reported in Fig. 1.

3 The future of reshoring

The current situation raises several quests for the very next future in the area of manufacturing strategy and operations management.

Fig. 1 Framework for reshoring decisions triggered by Covid-19

		Time horizon	
		Short-term	Long-term
Decision-maker	Single firm	Individual reactive reshoring <i>e.g. Stil, Coccato e Mezzetti Srl</i>	Individual preventive reshoring <i>e.g. Diasorin</i>
	Supply Chain	Joint reactive reshoring <i>Not possible in the short-term, need for preparation</i>	Joint preventive reshoring <i>e.g. Fondazione Altgamma, Japan policies</i>

3.1 How will policymakers and companies be affected?

Figure 1 suggests decisions will be developed within two different time frames: the short term and the long term. In the short term, companies and governments will react simply to the current situation using reshoring to revise their current operations with potentially no substantial change in their future strategy. In this perspective, reshoring will be simply a way to cope with the current conditions, where companies and supply chains may either face a transitory condition before coming back to normality or adapt to a new normality. Other organizations will consider the current situation in a long-term perspective revising drastically their strategy. We do not argue that this is due to a radical change in the environment, but the current situation has accelerated already developing processes, that probably in different modes and times would have eventually happened. In this scenario, a new normality will settle. In the long-term, we expect to see two different approaches to reshoring, according to the level at which decision making is processed: single firm or supply chain. From a policymaker perspective, we expect to see actions at both levels. Policies at the single-firm level are easier to be implemented, more popular in a strictly political sense, but potentially not solving the problems that several industries faced during the COVID-19 emergency breakdowns. Focusing on a supply chain perspective can be critical to cope with sudden variations and to increase its resilience, responsiveness and restoration capabilities. Moreover, it may become difficult to attract an entire supply chain within one single country's boundaries; for this reason, proper cooperation with countries in close macro-regions could become a turning point to favor near-shoring initiatives.

When boards and executives make reshoring decisions, there is often a tendency to assume that the 'Do Nothing/Change nothing' base case alternative of leaving a plant or processing or call centre overseas in a low cost country is subject to 'status quo' conditions. Such decisions are often analysed in a 'ceteris paribus' condition, which may be reasonable to assume in the short term, but often invalid in the long run. In the longer run, a low cost country may not remain so. In the long run, an offshored plant in a politically stable country might be subject to that country's political ructions that disrupt supply. The offshore country might not keep pace with technological infrastructure in the long run or there may be labour market turbulence in the long run. Indeed, in that long run, such turbulence can also occur in the home country perhaps, and should be considered. Assuming long run 'status quo' can lead to underestimation of uncertainty factors of offshoring/reshoring.

Further, the timing of a reshoring transfer can be considered as a parameter to be optimized. If a substantial capital investment has just been made offshore, perhaps reshoring is best left until a return is achieved on that investment, and reshoring decisions can be intertwined with technology decisions, capital investments and changes in capacity, as part of a broader operations strategy decision set.

3.2 What will happen to research and academia?

While we are writing this editorial, we already see a spread of contributions coming out on "COVID-19 &...". The topic is challenging and, so to say, "trendy". Most of the special issues, conference, debates, articles and so are wondering around the question "what's next?". This makes perfect sense and is the natural reaction of a system that has been challenged in its ore profound roots. We argue, however, that what could be more intriguing is to understand how companies', policymakers' and individuals' perceptions have and will change in future. We do not believe that COVID-19 will make lean or offshoring out of date or change completely the validity of the theoretical lenses that we have used in the last 50 years. It has however made evident that there offshoring decisions are associated to an opportunity cost that companies often neglect or underestimate: the implication of sudden disruptions, even if considered in the initial evaluations, can be significantly higher than what has been planned. Thus any time a company decides to modify its supply structure, it must take into serious consideration the possible options that the decision is limiting or affecting. This requires us to review how our common knowledge of business and decision-making has been affected by such evidence, as well as how COVID-19 is changing the perception and the strategic thinking of companies and policymakers.

We can expect to see the return of evergreen topics that have always been there (e.g. risk management), but we can take the chance to tell something new, by asking ourselves the right questions. A key element here is understanding how our perception of problems changes. COVID-19 will not change per se the validity of theories we use and rely on, but it can help us understanding either their domain of validity or their real explicative power in the new normality.

Whether it is a single firm or a supply chain network, the calculus of reshoring will be quite different depending on the market segment a firm is in, by which we refer to low cost, versus differentiated (luxury, highly innovative, high service, advanced tech, etc). for example, we studied for many years a textile company that offshored all its production from Australia to China and Pakistan. There was one reason: cost! It was in the low price segment, in which it won and lost large

orders by as little as 2 cents per item, with low specification quality into mass markets. Reshoring is not an option because of local costs. In contrast, we also worked with an Australian machine tool company, with premium priced, advanced technology in its products, that offshored, that possibly could reshore, because cost is certainly not its only ‘order winner’, as its prices are quite high for its cutting edge products, and supply reliability and quality are critical for it. So, market segment and strategic competitiveness factors are important to reshoring decisions. This could also apply for a supply network/ chain.

3.3 What is the future of data?

Clear evidence we have faced is that even if we keep on saying that we live in the world of data, it is clear that we do not know yet how to live in this world. The culture of data is characterizing our society in the sense that data are potentially available and usable by anyone like never in human history, however, we lack still the culture to create, use and share it properly. It is thus important to foster and contribute to initiatives that allow easy access to data; projects like European Reshoring Monitor or ReshoreNow are of extreme importance to have an understanding of the evolution of the phenomenon.

The events that we are currently living give us a critical chance. They are telling us that: “There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy”. We face the chance to rethink if what we argued were truths and create new knowledge to help our society spread and develop. We need to consider the current events now for what they are, but, more importantly, for what they represent: a chance to foresee what the future may be and the possibility to prepare ourselves to it.

References

- Ancarani A, Di Mauro C, Fratocchi L, Orzes G, Sartor M (2015) Prior to reshoring: a duration analysis of foreign manufacturing ventures. *International Journal of Production Economics, Elsevier* 169: 141–155
- Ashby A (2016) “From global to local: reshoring for sustainability”, *Operations Management Research. Oper Manag Res* 9(3–4):75–88
- Bals L, Kirchoff JF, Foerstl K (2016) “Exploring the reshoring and insourcing decision making process: toward an agenda for future research”, *Operations Management Research. Oper Manag Res* 9(3–4):102–116
- Barbieri P, Ciabuschi F, Fratocchi L, Vignoli M (2018) What do we know about manufacturing reshoring? *Journal of Global Operations and Strategic Sourcing* 11(1):79–122
- Barbieri P, Elia S, Fratocchi L, Golini R (2019) Relocation of second degree: moving towards a new place or returning home?. *J Purchas Supp Manag Elsevier* Vol 25 No 3
- Barbieri P, Stentoft J (2016) Guest editorial: reshoring-a supply chain innovation perspective. *Oper Manag Res* 9:49–52
- Benstead AV, Stevenson M, Hendry LC (2017) “Why and how do firms reshore? A contingency-based conceptual framework”, *Operations Management Research. Oper Manag Res* 10(3–4):85–103
- Boffelli A, Johansson M (2020) What do we want to know about reshoring? Towards a comprehensive framework based on a meta-synthesis. *Oper Manag Res* 13:53–69
- Carrer S (2020) DiaSorin è pronta a riportare in Italia alcune produzioni. *Il Sole 24 Ore*
- Crivelli G (2020) Il lusso pronto a portare in Italia anche le filiere decentrate in Asia. *Il Sole 24 Ore*
- Fayçal B (2020) Amid outbreak, French economy’s dependency on China in the spotlight. Available at: cnsnews.com/article/international/faycal-benhassain/amid-outbreak-french-economy-dependency-china-spotlight (accessed 30 March 2020)
- Figaro L (2020) La France veut relocaliser toute la chaîne de production du paracétamol d’ici trois ans. Available at: <https://www.lefigaro.fr/societes/la-france-veut-relocaliser-toute-la-chaîne-de-production-du-paracetamol-d-ici-trois-ans-20200618> (accessed 20 June 2020)
- Greco F (2020) Promovita, Cina addio ‘Torniamo in Italia’. *Il Sole 24 Ore*
- Gurvich VJ, Hussain AS (2020) In and beyond COVID-19: US academic pharmaceutical science and engineering community must engage to meet critical National Needs. *AAPS PharmSciTech. https://doi.org/10.1208/s12249-020-01718-9*
- Javorcik B (2020) Global supply chains will not be the same in the post-COVID-19 world. In Baldwin RE, Evenett SJ (Eds.), *COVID-19 and Trade Policy: Why Turning Inward Won’t Work*, CEPR Press pp 111–116
- Joubioux C, Vanpoucke E (2016) Towards right-shoring: a framework for off-and re-shoring decision making. *Oper Manag Res* 9(3–4): 117–132
- Manuj I, Mentzer JT (2008) Global supply chain risk management strategies. *Int J Phys Distrib Logist Manag* 38(3):192–223
- Nujen BB, Mwesummo DE, Solli-Sæther H, Slyngstad AB, Halse LL (2018) Backshoring readiness. *Journal of Global Operations and Strategic Sourcing* 12(1):172–195
- Policy Links (2020) Covid 19: International Manufacturing Policy Responses A Preliminary Review of International Approaches to Supporting the Manufacturing Supply Chains and Workforce., available at: <https://www.ciip.group.cam.ac.uk/reports-and-articles/covid-19-international-manufacturing-policy-respon/download/2020-04-07-COVID19A.pdf>
- Robinson PK, Hsieh L (2016) Reshoring: a strategic renewal of luxury clothing supply chains. *Oper Manag Res* 9(3–4):89–101
- Samson D (2020) Operations/supply chain management in a new world context. *Oper Manag Res* 13:1–3
- Samson D, Gloet M (2018) Integrating performance and risk aspects of supply chain design processes. *Production Planning & Control* 29(15):1238–1257
- Stentoft J, Mikkelsen OS, Jensen JK (2016a) Flexicurity and relocation of manufacturing. *Oper Manag Res* 9(3–4):133–144
- Stentoft J, Olhager J, Heikkilä J, Thoms L (2016b) Manufacturing backshoring: a systematic literature review. *Oper Manag Res* 9(3–4):53–61
- Strange R (2020) The 2020 Covid-19 pandemic and global value chains. *J Ind Business Econ Springer*, p 1
- Terzian H (2020) Coronavirus : Une usine de thermomètre relocalise sa production en France. *Europe 1*, available at: <https://www.europe1.>

[fr/economie/coronavirus-une-usine-de-thermometre-relocalise-sa-production-en-france-3953430](https://fr.economie/coronavirus-une-usine-de-thermometre-relocalise-sa-production-en-france-3953430) (accessed 9 July 2020)

The Economist Intelligence Unit (2020) The great unwinding Covid-19 and the regionalisation of global supply chains

UNCTAD (2020) *Impact of the Coronavirus Outbreak on Global FDI*, available at: https://unctad.org/en/PublicationsLibrary/diaefinf2020d2_en.pdf

World Economic Forum (2020) Here's how global supply chains will change after COVID-19. Available at: <https://www.weforum.org/>

agenda/2020/05/this-is-what-global-supply-chains-will-look-like-after-covid-19/ (accessed 4 June 2020)

Zhai W, Sun S, Zhang G (2016) Reshoring of American manufacturing companies from China. *Oper Manag Res* 9(3–4):62–74

Publisher's note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.