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## Export Restrictions: A Negative-Sum Policy Response to the COVID-19 Crisis

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European University Institute

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## **Abstract**

Many countries, including China, European member states, the European Union, India and the United States have put in place measures to restrict exports of medical products as part of their response to the COVID-19 pandemic. The objective is to allocate domestic supplies to national healthcare systems and citizens. These policies break supply chains that rely on sourcing of inputs from different countries, reduce access to critically needed supplies and foster excessive price spikes and volatility, and generate foreign policy tensions. Experience with widespread use of export restrictions by food exporting countries in times of market disruption and supply shortages suggests a priority for the G20 should be to work with industry to put in place systems to enhance access to information on production capacity, investments to boost supplies and address supply chain bottlenecks affecting production and trade in essential medical supplies.

## **Keywords**

Coronavirus; COVID-19 pandemic; export restrictions; trade policy; G20





## 1. Introduction\*

Governments and private health care providers around the world are greatly increasing their procurement of personal protective equipment (PPE), including protective masks, for health workers as well as infected people and those at risk. The global spike in demand far outstrips existing emergency stocks – insofar as these existed – and available supply capacity. China, the world's largest producer, confronted shortages early 2020 after the COVID-19 crisis erupted there and turned to export restrictions to reserve supply for domestic use, as well as increasing imports from foreign suppliers. The Chinese government banned exports in January 2020 and requisitioned all production capacity, instructing companies to ramp up capacity and to supply only to the government, and expanding imports of PPE from around the world.<sup>1</sup> Following the spread of the virus internationally, other countries followed suit in putting in place export bans and redirecting supplies to the government in order to provide healthcare workers with urgently needed PPE.

Often this involves direct intervention and requisition of medical products most needed to fight COVID-19. Particularly striking has been that export bans were implemented by several European countries, including the Czech Republic, Germany, France, Italy and Romania, that applied against each other as well as non-EU countries. A typical example occurred on the quays of the port of Gioia Tauro in Southern Italy, with Italian custom authorities seizing 364,200 pairs of surgical gloves coming from Malaysia and 9,720 devices for tracheal intubation from China during what would otherwise have been standard transshipment operation, with part of the consignment intended for customers in France.<sup>2</sup>

Policies to prohibit the export of medical products – and in some cases, food – to safeguard the interest of the nations concerned have been implemented by many countries. According to the Global Trade Alert, an independent trade policy monitoring initiative, as of early April 2020, some 70 governments, including China, the European Union, European member states, the UK, India, Turkey and the United States, had implemented some type of export curbs on medical supplies and medicines associated with the COVID-19 pandemic. At the same time over 75 countries liberalized imports of essential supplies with a view to reducing the cost of sourcing products.

In some cases, trade restrictions have been imposed and subsequently relaxed, responding to pressure from trading partners and following assessments of national demand, available stocks and supply capacity. A realization that most producers of medical products rely on imports of inputs needed to produce a good has been a factor leading to the reversal of some export restrictions. An example is the decision by the Indian government to partially reverse a ban on exports of certain drugs of which Indian

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<sup>1</sup> For example, in a February 6 notice, Makrite, a leading supplier of protective masks, announced that its facilities in Hubei and Dongguan were "... fully commissioned by the Chinese Government. We are banned from exporting and doing business domestically. Due to large demands from the coronavirus outbreak in China, we can now supply solely to the government." See <http://www.makrite.com/notice/>. Chinese demand was estimated at 240 million masks per day in January 2020, more than ten times its manufacturing capacity at the time (OECD, 2020).

<sup>2</sup> <http://www.gdf.gov.it/stampa/ultime-notizie/anno-2020/marzo/requisite-19-tonnellate-di-materiale-medico;>  
<https://www.lastampa.it/topnews/2020/03/28/news/gioia-tauro-il-sequestro-di-dispositivi-medici-rischia-di-creare-l-incidente-diplomatico-con-la-francia-1.38648894>. The legal basis for the seizure was decree number 18 of March 17 2020 which authorizes the head of the Civil Defense to order the requisition of basically any good (with the exception of real estate) needed to address the pandemic emergency. The decree includes provisions for the compensation of the owners of seized supplies or services. [https://www.gazzettaufficiale.it/atto/vediMenuHTML?atto.dataPubblicazioneGazzetta=2020-03-17&atto.codiceRedazionale=20G00034&tipoSerie=serie\\_generale&tipoVigenza=originario](https://www.gazzettaufficiale.it/atto/vediMenuHTML?atto.dataPubblicazioneGazzetta=2020-03-17&atto.codiceRedazionale=20G00034&tipoSerie=serie_generale&tipoVigenza=originario)

firms are leading global suppliers but often source a large share of the active ingredients from other countries, notably China.<sup>3</sup>

Export restrictions and requisitions of domestic supplies of essential goods have been a central element of government responses. They may seem logical and justifiable, but they give rise to unintended consequences and may reduce access to critical supplies, increase average prices, augment market volatility and distort investment decisions, with adverse effects both in the short and in the long run. These effects are not limited to public health and economic consequences. In the specific case of the EU, the immediate policy responses of some member states caused needless reputational damage to the European project and eroded trust among European partners.

This paper focuses on a product that is central in combatting COVID-19 – protective masks – and draws some lessons from the use of export restrictions by governments.

## 2. The protective medical mask market

Before diving into the discussion of business cases and trade policy measures a few basic notes on the structure of the market for protective medical masks are in order. Comprehensive information permitting assessment of the structure of the industry and up to date, detailed data on the relevant value chains for these critical devices does not exist, a matter we come back to subsequently.<sup>4</sup>

There are three types of protective medical masks: disposable procedural masks familiar from dental treatment; disposable surgical masks; and respirators (both disposable and reusable). The main difference between procedural and surgical masks is that the latter are sterile, a necessary condition for use in operating rooms. Both types primarily prevent wearers from contaminating others (e.g., patients), but, depending of design specifications, are less effective, if at all, in protecting the wearer from inhaling airborne infectious agents (aerosols). Respirator masks protect the wearer against fluids and inhalation of airborne particles. Depending on the technical standards they satisfy, respirators can filter at least 80% of particles (the EU FFP1 standard); up to 94 to 95% (FFP2 and N95); or 99% of particles (FFP3). The latter two types can filter out bacteria and viruses and are needed by people at risk from interacting with infected persons or environments.

China is the largest supplier of surgical masks in the world, accounting for about half of global production in 2019. Before the COVID-19 crisis erupted, China produced around 20 million masks per day; by early March 2020 industry observers suggest this had been ramped up more than six-fold, to 120 million per day (Bondaz, 2020), including through retooling and re-purposing idled manufacturing capacity of other sectors – automotive and electronics.<sup>5</sup> A key input into surgical mask production is nonwoven fabric that is used for the potentially many layers in a masks, including the filter. Usually this material is formed from polypropylene that has been melted and blown into rolled sheets ('meltblown').<sup>6</sup>

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<sup>3</sup> <https://www.washingtonpost.com/business/2020/04/12/drug-ventilator-shortage-coronavirus/>

<sup>4</sup> Analysts have been limited to trade flow data, which is often too aggregated for the fine level of detail required to identify specific products, and which does provide information on underlying supply chains. Chad Bown at the Peterson Institute has used such data to good effect – see Bown (2020a,b,c). The World Bank has put together an online database on COVID-19 relevant trade flows. See <https://www.worldbank.org/en/data/interactive/2020/04/02/database-on-coronavirus-covid-19-trade-flows-and-policies>

<sup>5</sup> See <https://www.frstrategie.org/publications/notes/covid-19-comment-chine-t-elle-considerablement-augmente-sa-production-masques-2020>; <http://www.byd.com/en/news/2020-03-13/BYD-Unveils-World%27s-Largest-Mass-Produced-Face-Masks-Plant>

<sup>6</sup> Additional components of respirators include aluminum or steel clips and staples; rubber or polypropylene valves; and seals (generally made of polyethylene foam or polyurethane). All masks have straps (polyester, polyisoprene or Lycra). Some 25% of global production polyethylene capacity is in Xiantao, Hubei province, and was taken offline when the region was locked down in January 2020. Several large producers of masks located in Hubei province were also closed. See

Its production is highly capital intensive and supply of (access to) meltblown fabric rolls is one factor determining the ability of producers to rapidly ramp up mask production capacity. Production of masks tends to be capital intensive and large scale production is mostly fully automated.<sup>7</sup>

The global medical mask and respirator market is fragmented. Large players in the mask market include diversified multinationals such as 3M, Honeywell and KOWA (Japan), Kimberly-Clark Professional, a subsidiary of Kimberly-Clark, a major paper and pulp products company that operates non-woven fabric mills, specialized medical supply companies such as Makrite (Taiwan), Medicom (Canada), Shanghai Dasheng Health Products Manufacture Company and Shanghai Gangkai Purifying Products Company in China and firms that specialize in PPE products more generally, i.e., for many sectors and activities, such as uvex Safety Group, a subsidiary of uvex Winter Holding (Germany), Moldex-Metric (US) and SAS Safety Group, a subsidiary of Bunzl (UK). Many of these firms have subsidiaries or plants in other countries, often China. For example, Makrite has plants in China; Medicom owns eight manufacturing facilities in North America, Europe and Asia – this is not a phenomenon that pertains only to large players like 3M). Others supply primarily from and for a national or regional market – e.g., uvex Safety Group (Germany) and Prestige Ameritech (US). In many countries there are no large-scale production facilities and masks are made by numerous SMEs.<sup>8</sup>

### **3. Trade policy and protective masks: Two examples**

Two business cases help illustrate export restrictions “in action.”

#### ***Case 1: Mölnlycke***

On April 1, 2020 the French weekly L'Express reported on the case of Mölnlycke,<sup>9</sup> a Swedish company that designs and supplies medical products and solutions including surgical masks.<sup>10</sup> Mölnlycke is a multinational company with manufacturing sites in 15 countries that sells to over 100 countries. While not having production plants in France, Mölnlycke operates a warehouse and logistics center in Lyon that is the hub of its distribution network for clients located in France, Italy, Spain, Switzerland, Belgium and the Netherlands.

On March 3 2020 President Macron decreed that all stocks and production of surgical masks and surgical respirators on the French soil will be requisitioned by the authorities and distributed to medical staff and the French people affected by COVID-19.<sup>11</sup> The official decree published the same day set the deadline of the measure to March 31, which was extended to May 31 ten days later.<sup>12</sup> On March 5, French authorities, in full compliance with the decree, requisitioned the entire stock of surgical masks that Mölnlycke had in Lyon that had been produced by plants in Asia and that were in transit to clients in other European countries. This included 1 million masks purchased by Italian customers and 1 million

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<https://www.frstrategie.org/publications/notes/covid-19-comment-chine-t-elle-considerablement-augmente-sa-production-masques-2020> and <https://www.nytimes.com/2020/02/06/business/coronavirus-face-masks.html>

<sup>7</sup> <https://www.thomasnet.com/articles/other/how-surgical-masks-are-made/> and <https://www.thomasnet.com/articles/plant-facility-equipment/how-to-make-n95-masks/>

<sup>8</sup> In India, for example, the market is served by a “high number of fragmented small and medium-sized companies with a production capacity of between 10,000 and 1,00,000 masks a day.” <https://www.investindia.gov.in/team-india-blogs/solving-supply-chain-issues-mask-manufacturing>

<sup>9</sup> [https://www.lexpress.fr/actualite/monde/europe/requisition-et-indignation-partagee-la-guerre-des-masques-entre-la-suede-et-la-france\\_2122374.html](https://www.lexpress.fr/actualite/monde/europe/requisition-et-indignation-partagee-la-guerre-des-masques-entre-la-suede-et-la-france_2122374.html).

<sup>10</sup> <https://www.molnlycke.com/about-us/>

<sup>11</sup> <https://twitter.com/EmmanuelMacron/status/1234847500768509956?s=20>

<sup>12</sup> [https://www.legifrance.gouv.fr/affichTexte.do;jsessionid=52B4C18E13F97C69667B2AD9513DF05D.tplgfr27s\\_3?cidTexte=JORFTEXT000041721820&idArticle=&categorieLien=id](https://www.legifrance.gouv.fr/affichTexte.do;jsessionid=52B4C18E13F97C69667B2AD9513DF05D.tplgfr27s_3?cidTexte=JORFTEXT000041721820&idArticle=&categorieLien=id)

bought by clients in Spain. Another 1 million masks were ready to be shipped to other European nations that were services through the Lyon distribution center.

The requisition led to a diplomatic dispute at the highest political (Prime Minister) level between France and Sweden. The resulting political pressure and media attention resulted in an eventual decision by the French government to allow all Mölnlycke's consignments of masks to be released to their intended final destinations with a 1 month delay.<sup>13</sup> Similar events affected firms with medical equipment production facilities located in France, as occurred in China, Italy and other countries affected by COVID-19.<sup>14</sup> What is particularly striking about the Mölnlycke case was that the masks were not locally produced and simply happened to use a supply chain that included a distribution center in France.

### **Case 2: 3M**

A global company, 3M is a major manufacturer of respirators, with plants in Europe, Asia, Latin America and the United States. It produced some 550 million masks worldwide in 2019. Starting in January 2020, following the outbreak of the COVID-19, 3M ramped up planned production of N95 respirators, doubling its global capacity to 1.1 billion per year; it subsequently allocated resources to further boost capacity to 2 billion by early 2021. In the United States, 3M aims to produce 50 million N95 respirators per month by June 2020, a 40 percent increase.<sup>15</sup>

On April 2, 2020 the Trump administration invoked the 1950 Defense Production Act which gives the Federal government “any or all authority” to direct the output of US companies in the national interest, accompanied by an April 3 Presidential memorandum instructing the relevant Federal authorities to allocate scarce or threatened health and medical resources to domestic use.<sup>16</sup> A concrete manifestation of this was a prohibition on the export of N95 respirators, with 3M a major target. In an April 3 press release 3M responded to the Trump order banning exports, pointing to the significant humanitarian implications of ceasing respirator supplies to healthcare workers in Canada and Latin America, where 3M is a critical supplier of respirators. 3M also pointed out that “ceasing all export of respirators produced in the United States would likely cause other countries to retaliate and do the same, as some have already done. If that were to occur, the net number of respirators being made available to the United States would actually decrease. That is the opposite of what we and the Administration, on behalf of the American people, both seek.”<sup>17</sup>

In an April 5 press conference President Trump clarified the Administration's thinking behind his order:

“[W]e need the masks. We don't want other people getting it, and that's why we're — that's why we're instituting a lot of Defense Production Act, you could call it, retaliations because that's what it is; it's a retaliation. If people don't — if people don't give us what we need for our people, we're going to be very tough, and we've been very tough ..... We're very disappointed in 3M. They should be taking care of our country. And they can sell to others, but they should be taking care of our country. The people that have dealt with them have dealt successfully with many companies over

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<sup>13</sup> [https://www.lexpress.fr/actualite/monde/europe/guerre-des-masques-finalement-la-france-restitue-son-stock-a-la-suede\\_2123015.html](https://www.lexpress.fr/actualite/monde/europe/guerre-des-masques-finalement-la-france-restitue-son-stock-a-la-suede_2123015.html)

<sup>14</sup> For example, the New York Times reported that “Valmy SAS, a midsize medical supplies producer near Lyon, France, was unable to fulfill an order for a million masks by the British National Health Service because the French government requisitioned supplies.” <https://www.nytimes.com/2020/03/13/business/masks-china-coronavirus.html>

<sup>15</sup> <https://news.3m.com/blog/3m-stories/ceo-update-3ms-response-covid-19>

<sup>16</sup> <https://www.whitehouse.gov/presidential-actions/memorandum-allocating-certain-scarce-threatened-health-medical-resources-domestic-use/>

<sup>17</sup> <https://news.3m.com/press-release/company-english/3m-response-defense-production-act-order>.

the last month. They don't like the way 3M has treated our country. They don't, frankly, like the representatives of 3M."<sup>18</sup>

The background to this exchange was resistance by 3M to re-direct masks being shipped from Singapore to Asian clients to the US<sup>19</sup> and pressure not to export some 3 million N95 respirators to Canada and Latin America from 3M plants located in the United States. 3M argued it was a global company with clients worldwide and an associated responsibility to serve healthcare providers globally. The urgent need for the masks was stressed strongly in statements by the Canadian government, both at the federal level by PM Trudeau and the provincial level.<sup>20</sup>

The foreign policy pressure and pushback by 3M had some effect. On April 6, 3M and the Trump Administration announced a resolution of the conflict, based on a plan to ship 166.5 million respirators to the US from foreign plants, primarily in China, over the following three months. The agreement reached with 3M reflected the reality that as a global company 3M had much more capacity outside than inside the US, and that what was needed was to leverage its global capacity and expand US imports. The 3M press release notably included a statement 3M and the Administration worked together "to ensure that the plan will not create further humanitarian implications for countries currently fighting the COVID-19 outbreak, and committed to further collaborate to fight price gouging and counterfeiting."<sup>21</sup>

On April 8, the Federal Emergency Management Agency (FEMA) issued a temporary final rule prohibiting exports of scarce COVID-related products without FEMA authorization. Reflecting the deal with 3M, the rule included an exception for exports of US-produced PPE equipment, indicating that FEMA:

"...will not purchase covered materials from shipments made by or on behalf of U.S. manufacturers with continuous export agreements with customers in other countries since at least January 1, 2020, so long as at least 80 percent of such manufacturer's domestic production of covered materials, on a per item basis, was distributed in the United States in the preceding 12 months. The Administrator decided that this exemption is necessary or appropriate to promote the national defense because it would limit the impact of this order on pre-existing commercial relationships, in recognition of the importance of these commercial relationships to the international supply chain, and for humanitarian reasons, in consideration of the global nature of the COVID-19 pandemic."<sup>22</sup>

Thus, the upshot was that the Trump Administration permitted 3M to only partially continue exporting to existing customers: this is conditional on at least 80% of US output being allocated to the US market.<sup>23</sup> As of April 6, some 500,000 masks "had been cleared for release, but nearly three million masks were intercepted by US officials at 3M's South Dakota facility."<sup>24</sup>

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<sup>18</sup> <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-vice-president-pence-members-coronavirus-task-force-press-briefing-19/>. In a CNBC interview, 3M CEO Mike Roman stated that "The idea that 3M is not doing all it can to fight price gouging and unauthorized reselling is absurd. The narrative that we are not doing everything we can to maximize delivery of respirators in our own company, nothing could be further from the truth."  
<https://www.cnbc.com/2020/04/03/coronavirus-update-3m-ceo-defends-mask-production-after-trump-invokes-dpa.html>.

<sup>19</sup> <https://www.ft.com/content/cee34681-5f47-416b-9cbc-d824e9eec68e>.

<sup>20</sup> <https://www.politico.com/news/2020/04/03/3m-warns-of-white-house-order-to-stop-exporting-masks-to-canada-163060>. Ontario's premier Doug Ford stated that the province "desperately" needed the masks. See <https://www.toronto.com/opinion-story/9936345-if-donald-trump-turns-the-coronavirus-pandemic-into-a-trade-war-justin-trudeau-knows-just-how-to-fight-it/>.

<sup>21</sup> <https://news.3m.com/blog/3m-stories/3m-and-trump-administration-announce-plan-import-1665-million-additional-respirators>

<sup>22</sup> U.S. Federal Register, Federal Emergency Management Agency, 44 CFR Part 328 Docket ID FEMA-2020-0018 RIN 1660-AB01. *Prioritization and Allocation of Certain Scarce or Threatened Health and Medical Resources for Domestic Use*, temporary final rule.

<sup>23</sup> <https://www.ft.com/content/f6768727-e04c-4483-ab24-37a8da4d7437>

<sup>24</sup> <https://www.theguardian.com/world/2020/apr/06/us-blocks-face-masks-canada-n95-protection-equipment>.

#### 4. Trade policy and protective equipment: Five lessons

The two firm-level cases are illustrative of many instances in which governments have imposed export controls. The associated public health, economic and foreign policy implications suggest five broad lessons with implications for policy and international cooperation.

##### *Export controls will have predictable unintended adverse consequences*

Robust government intervention is critical in emergencies like the current COVID-19 pandemic. Regulation is needed to control speculation and to ensure that scarce critical supplies are allocated to priority uses, notably health care providers. This cannot and certainly should not be “left to the market.” The examples above – and past experience with other supply crises, e.g., the global food price volatility on commodity markets in 2007-08 – make clear that not only may governments be inclined to use trade policy instruments to maximize domestic supply of essential goods, they are likely to do so without much consideration for the effectiveness of the trade measures they use, the second-order incentive effects they create in the affected markets or the spillovers for other countries.

As has been emphasized by many observers, export restrictions are very much second-best responses (e.g., Bown, 2020a,b,c; Evenett, 2020). This is because they tend to be both inefficient and ineffective in realizing their objectives while causing harm to trade partners, with potential humanitarian and associated negative foreign policy and potentially security consequences. Reasons for inefficiency and limited efficacy include retaliation by affected exporting countries, reallocation of production and distribution by companies producing critical supplies in the rest of the world away from the country taking action, promotion of panic buying, hoarding and speculation, and negative reputational effects that impact on investor risk perceptions and allocation decisions once the crisis has passed. In the short run many of the downside effects are associated with boosting price volatility and price spikes for targeted products.

Export bans may be met with partner countries doing the same. If many countries restrict exports – as is the case in the current situation – the result will be to increase prices above what they otherwise might be and more generally increase uncertainty of supply and associated price volatility. Retaliation – or more likely, simply emulation – will affect all domestic plants needing to import critical parts and supplies to ramp up local production rapidly, reduce the availability of final goods that are in short supply at home and that will take time to produce locally given that retooling factories or creating new ones inevitably will take a substantial amount of time. Export bans affecting key inputs used by producers in other countries will negatively affect their ability to respond to greater global demand and increase exports to the markets concerned. India, for example, a major global supplier of generic medicines, imports a large share of the active ingredients from China and other countries. Many firms that have organized production in international production networks need to be able to source parts and components in order to continue to produce let alone scale up production.<sup>25</sup>

A ban on exports of medical products and supplies will have no effect if the country does not produce anywhere near enough of what it needs during a crisis. Export bans and associated policies to requisition all domestic stocks and production capacity, especially if implemented by major suppliers, may increase shortages and prices by stimulating panic buying. Numerous press reports have also documented this

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<sup>25</sup> To some extent such constraints may be overcome through use of new technologies. An example is the use of 3D printing to produce parts that cannot be supplied by an OEM because of export restrictions. However, the feasibility of such responses will be affected by intellectual property rights held by the original producer/designer and thus may call for governments to provide legal cover for reverse engineering parts and components and to address potential liability risks associated with lack of certification and conformity assessment. See <https://www.forbes.com/sites/amyfeldman/2020/03/19/talking-with-the-italian-engineers-who-3d-printed-respirator-parts-for-hospitals-with-coronavirus-patients-for-free/#44fb19ba78f1>

dynamic.<sup>26</sup> Examples include vigorous competition between US state-level authorities competing with each other for supplies<sup>27</sup> and French media reports on alleged American buyers making better offers for masks that had been ordered by French authorities directly on the airport apron.<sup>28</sup> While subsequent reporting and clarifications by protective mask suppliers and independent specialists revealed that in this particular case no contracts had been signed by the prospective French buyers and that they were simply outbid, the case illustrates that excess demand for products in short supply will naturally drive up prices.<sup>29</sup>

Requisition policies may make matters worse as suppliers have incentives not to ship large consignments to a country that otherwise would be re-distributed to many final clients in given region (the Mölnlycke example) or if there is a significant probability of confiscation on arrival and/or likely payment delays. Clearly reputation will matter, and much will depend on relationships between supplier and buyer, but on balance supply from the rest of the world will not be enhanced. Widespread use of export bans will increase prices, both because of shortages (demand outstripping supply) and because of attempts by buyers to capture some of the limited supply. Price increases reflecting higher input costs – e.g., the price of surgical masks has increased in many markets because of sharp increases in the demand for meltblown nonwoven fabric and increasing transport and logistics costs due to lockdowns – will be augmented by speculation and hoarding. This in turn may induce traders to refrain from operating in the relevant markets<sup>30</sup> and forces governments to spend more resources on combating the adverse consequences of such policies.<sup>31</sup>

Another possible unintended consequence of restricting exports is to incentivize firms to adjust production and distribution in ways that increase costs both directly and indirectly. Directly because firms will change their distribution system to meet contracts and doing so can only be done by using more expensive logistics solutions. As soon as companies associate a positive probability to the event of losing their produce at a specific node in their distribution network, they will start contemplating the possibility of avoiding that node, choosing more costly routes. It did not take more than few hours for Mölnlycke to adjust. The Irish Times reports a non-confirmed "colorful [story] involving a ship's captain who allegedly halted unloading in Marseille to reroute [a subsequent shipment of Mölnlycke masks] for the safety of a Belgian port."<sup>32</sup> What was confirmed, by Mölnlycke CEO Richard Twomey in an interview on Radio Sweden, is that the company decided to serve the Italian and the Spanish market via a Belgian hub and then through air freight to the final destination.<sup>33</sup> This alternative route is substantially more expensive but was deemed necessary to enable the company to meet its commitments. Following

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<sup>26</sup> E.g., <https://www.boston.com/news/politics/2020/04/03/white-house-scrambles-to-scoop-up-medical-supplies-angering-canada-germany>;

<sup>27</sup> [https://www.washingtonpost.com/politics/as-feds-play-backup-states-take-unorthodox-steps-to-compete-in-cutthroat-global-market-for-coronavirus-supplies/2020/04/11/609b5d84-7a70-11ea-a130-df573469f094\\_story.html](https://www.washingtonpost.com/politics/as-feds-play-backup-states-take-unorthodox-steps-to-compete-in-cutthroat-global-market-for-coronavirus-supplies/2020/04/11/609b5d84-7a70-11ea-a130-df573469f094_story.html)

<sup>28</sup> <https://www.rtl.fr/actu/debats-societe/masques-detournes-les-americains-sortent-le-cash-il-faut-se-battre-dit-jean-rottner-sur-rtl-7800346680>

<sup>29</sup> [https://www.lepoint.fr/monde/la-guerre-des-masques-s-enlise-dans-les-tranchees-chinoises-08-04-2020-2370646\\_24.php](https://www.lepoint.fr/monde/la-guerre-des-masques-s-enlise-dans-les-tranchees-chinoises-08-04-2020-2370646_24.php); <https://www.ft.com/content/a94aa917-f5a0-4980-a51a-28576f09410a>

<sup>30</sup> "Tamer Abdouni is a Beirut-based consultant who facilitates the trade of, among other things, 3M respirators. Usually he can buy them for \$1.25 apiece and resell them for a dime more. Lately the best purchase price he can get is \$7.25. Even if he were willing to buy at that price, he says, selling respirators at multiples of his usual price during a pandemic would tarnish his reputation." <https://www.bloomberg.com/news/features/2020-03-25/3m-doubled-production-of-n95-face-masks-to-fight-coronavirus>

<sup>31</sup> For example, the Turkish Trade Ministry has announced a dramatic rise in predatory pricing of medical equipment and laid out a series of measures to better monitor and combat price gouging. See <https://www.eticaret.gov.tr/haberler/30/detay>.

<sup>32</sup> <https://www.irishtimes.com/news/world/europe/coronavirus-european-solidarity-sidelined-as-french-interests-take-priority-1.4216184>

<sup>33</sup> <https://sverigesradio.se/sida/artikel.aspx?programid=2054&artikel=7445229>

disruptions in the distribution chain, the updated optimal choices of firms will most likely involve additional costs on critical imports to manage the COVID-19 emergency.

A potential longer-term consequence of export ban-cum-requisition policies are to increase incentives to locate distribution and logistics centers in small countries that are specialized in this activity, e.g., Singapore and Dubai. The risk of requisition in such locations is relatively low given the size of the local population. From the production side, the incentive will be to diversify and to reduce reliance on a small number of large plants with associated economies of scale to service multiple markets. The cost of this will depend on the magnitude of scale economies forgone and the availability of inputs needed for production – in turn in part a function of the perceived trade policy risks associated with different locations. The likely consequence will be higher long run average costs and thus final prices, but this will be offset by the benefits of greater resilience of the supply chain. Recent price forecasts for COVID-19 related products that consider trade and trade policy trends are consistent with these arguments. Espitia, Rocha and Ruta (2020) estimate that an escalation in export restrictions would increase prices of COVID-19 relevant goods by around 20 percent on average, with peaks of over 40 percent for protective equipment such as aprons, face shields and masks.<sup>34</sup>

### ***Maintaining open borders is part of the solution***

As has been stressed by numerous organizations and commentators,<sup>35</sup> it is critical to keep borders open to allow supply chains to work it is critical to keep borders open to allow supply chains to work. Some politicians and their advisors argue that the current crisis points to the need for greater – if not complete – self-sufficiency to ensure adequate domestic supply in a time of crisis. The implicit premises underlying such views are that (i) global markets are unreliable; (ii) countries can be (become) self-sufficient; and (iii) are willing to bear the costs of doing so. There is a reason why firms specialize in different activities and locate in different countries. This is not the place to revisit the concept of comparative advantage and the extensive evidence on the welfare gains from specialization and trade. But arguments that the lesson to draw from the COVID-19 crisis is that countries should not rely on trade and incentivize firms through restrictive trade policies and local content requirements to secure critical supply chains and bring production back to the country are misconceived.<sup>36</sup>

Whatever one's views of the industrial policy arguments that often motivate opposition to globalization, self-sufficiency will not necessarily result in a better outcome than one where countries accept specialization and rely on trade. The current pandemic has led to serious short-term supply constraints, but these would exist at national level as well. Having to cross a border is not the issue given that it only takes 36 hours or so to get anything from anywhere in the world. Autarky will not make it any faster to get whatever is critical in a crisis to those who need it. It is better that capacity is distributed so that supply of critical products is diversified, located in the most productive locations and can be ramped up rapidly without the risk of being blocked or impounded.

The keep markets open prescription is not conditional on GVC production. In the case of PPE production, the value chains are not that complex and tend to be regional. As noted by 3M CEO Mike Roman, for example, 3M, follows a regionalization strategy with close-proximity suppliers and

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<sup>34</sup> The price of respiratory masks in Turkey increased almost 20 fold after the Turkish government imposed export curbs on medical equipment – see: <https://www.trthaber.com/haber/gundem/maske-fiyatlarinda-astronomik-artist-463317.html>.

<sup>35</sup> E.g., Bown (2020a,b,c), Evenett (2020), Espitia et al. (2020), Gonzalez (2020), OECD (2020), WTO (2020), Brekelmans and Poitiers (2020).

<sup>36</sup> See, e.g., Rep. Dingell: Trade Policies Have Left U.S. ‘Vulnerable’ During the Pandemic. At: <https://insidehealthpolicy.com/vitals/rep-dingell-trade-policies-have-left-us-%E2%80%98vulnerable%E2%80%99-during-pandemic> and Rep. Hawley: Americans are ready for a comeback. Congress must help unleash it, at [https://www.washingtonpost.com/opinions/congress-should-protect-every-job-in-the-country-during-this-crisis/2020/04/08/5f48e1ac-79cd-11ea-9bee-c5bf9d2e3288\\_story.html](https://www.washingtonpost.com/opinions/congress-should-protect-every-job-in-the-country-during-this-crisis/2020/04/08/5f48e1ac-79cd-11ea-9bee-c5bf9d2e3288_story.html)



importers, serving nearby customers through local sourcing. Thus, 3M makes respirators in China mostly for the China market; in Korea mostly for the Korea market; and in the US, two facilities in Aberdeen and Omaha produce 400 million respirators annually mostly for the US market, using components, including the filters, that are mostly made in-house.<sup>37</sup> Although supply chains are less of a factor for protective masks than for other medical products, being able to import final products is an important source of additional supply when needed.<sup>38</sup>

Some countries have responded to the threat to traditional sources of supply and commercial relationships designed to leverage global supply chains by establish new bilateral relationships and logistics systems that will provide needed equipment and supplies. Canada for example has decided to build its own PPE supply chain. The “made for Canada” initiative seeks to reduce uncertainty and the scope for side-selling by middlemen and brokers by employing an established consulting firm to identify and contract with reliable suppliers to Canadian standards and an international logistics service company that handles local transport of consignments from factories and stores them in secured airport facilities. These are then airlifted to Canada on Canadian carriers.<sup>39</sup> This strategy is conditional on China permitting supplies to be exported. Following the immediate need to control the epidemic which included redirecting medical supplies for domestic needs in January-February, and the massive ramping up of production in February-March, Chinese plants can produce for export again.

The already existing pattern of regionalization of production is likely to be strengthened as a result of the current crisis. Greater geographic diversification of production will enhance the resiliency of supply chains by reducing the need and thus the probability of confronting export restrictions and resulting supply shortages. There were already clear trends towards reshoring following the financial crisis, mostly reflecting technology driving down the unskilled labor share of total cost and market drivers such as a need to keep up with and respond to rapidly changing local consumer preferences (McKinsey Global Institute, 2019; Miroudot and Nordstrom, 2020). But reshoring incentives were bolstered by a trend towards more restrictive trade policies and trade policy uncertainty (Evenett, 2019; Constantinescu, Mattoo and Ruta, 2019).<sup>40</sup>

From a resilience perspective relying less on very large plants in one location increases the probability that an exogenous shock creates serious shortages. Developing regional value chains to serve regional markets may have only a limited cost penalty and may also have a smaller climate footprint. This crisis is likely to accelerate an ongoing trend towards diversification of supply, but with trade still very much part of the equation and an associated need for cooperation to keep borders open and operating efficiently. The decision by the state of California to guarantee demand for 200+ million masks a month<sup>41</sup> is just one example of the order of magnitude increase in demand for masks relative to 2019 by governments, health care providers and households around the globe. Satisfying that demand efficiently and effectively will be greatly facilitated by keeping borders open.

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<sup>37</sup> As noted US production will be greatly ramped up in the course of 2020. See [https://www.bloomberg.com/news/features/2020-03-25/3m-doubled-production-of-n95-face-masks-to-fight-coronavirus?utm\\_source=twitter&utm\\_content=businessweek&cmpid=socialflow-twitter-businessweek&utm\\_medium=social&utm\\_campaign=socialflow-organic](https://www.bloomberg.com/news/features/2020-03-25/3m-doubled-production-of-n95-face-masks-to-fight-coronavirus?utm_source=twitter&utm_content=businessweek&cmpid=socialflow-twitter-businessweek&utm_medium=social&utm_campaign=socialflow-organic). See also <https://seekingalpha.com/article/4336228-3m-surge-in-demand-for-respirators-and-supply-chain-strength>

<sup>38</sup> A regionalization strategy is still susceptible to export bans. In early March Germany banned the export of medical masks and other PPE, precluding 3M from servicing demand by Italy from its German facilities. <https://www.ft.com/content/d3bc25ea-652c-11ea-b3f3-fe4680ea68b5>

<sup>39</sup> [https://www.cbc.ca/news/politics/canada-building-own-ppe-supply-chain-in-china-1.5530259?\\_\\_vz=medium=sharebar](https://www.cbc.ca/news/politics/canada-building-own-ppe-supply-chain-in-china-1.5530259?__vz=medium=sharebar)

<sup>40</sup> See Baldwin (2020) for a discussion of supply chain production in light of the COVID-19 crisis.

<sup>41</sup> <https://www.politico.com/states/california/story/2020/04/08/california-inks-nearly-1b-deal-to-buy-200-million-masks-each-month-1273702>

***Trade agreements are not a binding constraint on beggar-thy-neighbor policies***

Doing so is largely in the hands of national governments. Trade agreements – even a very deep integration arrangement like the EU – are not binding constraints on the ability of governments to block trade if they deem this to be in the national interest. In principle the WTO prohibits export bans as these are a quantitative restriction on trade. However, GATT Article XI:2 allows for export prohibitions or restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party. More important in practice is the general exceptions provision of the WTO, Article XX. Art. XX(b) permits trade measures that are necessary to protect human, animal or plant life or health – and thus provides for the types of measures currently being applied by many countries.<sup>42</sup>

EU law also does not prohibit national export restrictions. The EU has a common commercial policy – reflected in the common external tariff, EU-level trade defense instruments (such as antidumping) and delegating the negotiation of trade agreements to the European Commission. The export bans imposed by France and Italy discussed in this article imply a re-nationalization of trade policy, not just vis-à-vis non-EU countries (which is an exclusive competence of the European institutions (Commission, Council and European Parliament) but also vis-à-vis other EU member states.<sup>43</sup> This is not prohibited by the EU treaty. Export bans are permitted when necessary to address emergencies and safeguard national health and safety. Over time the European Court of Justice has narrowed the scope for members to invoke exceptions as a justification to restrict intra-EU trade, but the EU treaty does not ban the type of actions taken for instance by France and Italy, as they are clearly motivated by public health goals. The same applies to another dimension of the policies in play: the de facto nationalization of private property by the State. Even if there was an unconditional prohibition on the use of national export bans on intra-EU and extra-EU trade, seizures and requisitions in the national interest could be – and have been – used as a substitute mechanism.

All trade agreements include provisions allowing for exceptions. In this regard, the EU is akin to any other trade agreement. At the end of the day what matters is not EU law, but good will and the value attached to cooperation over time – the repeated nature of interactions between EU Member States. This explains why enacting measures that limit the circulation of critical medical equipment within the Single Market ultimately were contested by EC President Ursula von der Leyen on moral and political grounds as opposed to legal ones: "National bans on selling protective equipment to other member states are not good."<sup>44</sup> The same applies to actions taken by member states with respect to food products as was done by the Government of Romania, which banned export of grain products including wheat, corn, and rice as well as oil seeds, vegetable oils, sugar, and various bakery products – motivated by the COVID-19 crisis situation.<sup>45</sup>

Where the European Commission did act – in part in response to measures being imposed by member states – was on the external front, where it has exclusive competence. On March 14 the EC implemented a new regulation to control exports of medical devices to non-EU countries.<sup>46</sup> The upshot of the regulation was that the EU as a whole implemented a policy that several of the member states had

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<sup>42</sup> The WTO also includes a broadly worded national security exception. Art. XXI(b)(iii) states that the WTO does not constrain a member from taking any action which it considers necessary for the protection of its essential security interests.

<sup>43</sup> Other EU Member States enacted similar measures, see Evenett (2020).

<sup>44</sup> <https://twitter.com/vonderleyen/status/1239221732218744833?s=20>

<sup>45</sup> It is worth noting that EU member states are also permitted and actively use national policy instruments that affect trade incentives. Mostly these comprise export promotion organizations, export credit and guarantee mechanisms and development finance organizations (see e.g., Van Bergeijk and Moons, 2018; Dawar 2020).

<sup>46</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:L:2020:077I:FULL&from=EN>.

imposed at the national level.<sup>47</sup> The export authorization regime is scheduled to last until April 25, 2020. On April 9 the European Commission announced it would circulate revisions to export restrictions on PPE after reviewing availability of masks and gloves among EU member states, indicating that the restrictions will reflect assessments of availability of different products.

Following the implementation of the 15 March regulation requiring all exports of relevant products obtain an export license (export authorization), on 16 March the European Commission published complementary "Guidelines for border management measures to protect health and ensure the availability of goods and essential services."<sup>48</sup> The guidelines included a call that "Member States should preserve the free circulation of all goods and guarantee the supply chain of essential medical and food products. No restriction should be imposed on the circulation of goods in the Single Market, especially (but not limited to) essential, health-related and perishable goods, notably foodstuffs, unless duly justified. Member States should designate priority lanes for freight transport (e.g. via 'green lanes') and consider waiving existing weekend bans." This is only "guidance" however – binding disciplines to this effect cannot be imposed.<sup>49</sup>

The moral suasion and political pressure had an impact. According to the GTA, Germany, for example, reduced its export curbs to a certain extent and as noted above in the Mölnlycke case eventually the French government permitted supplies that had been contracted and paid for by Spain and Italy to be shipped. But the general framework remains one that ultimately is based on national sovereignty, domestic politics and foreign policy considerations. For Mölnlycke to get its masks, requisitioned by France, to clients in Italy and Spain, the Swedish prime minister needed to talk to his French counterpart, with the outcome a function of the balance between perceived national needs, the relationship between the two countries, the potential reputational damage and the discount factor on future bilateral relations and cooperation within the EU.<sup>50</sup> These factors play a stronger role among EU member states than in other settings – e.g., the Trump decision relating to 3M exports to Canada may have had less to do with the relationship and history, and more with the need to keep 3M on side given its role as a large global supplier and, perhaps more salient, the not so implicit threat of retaliation by Canada.

### ***Businesses will respond – but may need support***

There has been a massive supply response to the need for PPE. In the case of masks this is reflected in rapid expansion of production by incumbents and by entry of large numbers of new players many of which retooled production plants and used technical skills that had been applied in other industries. Examples of new entry abound. One is a consortium of US apparel makers that are converting production capacity to make reusable and washable all-cotton 3-ply face masks for the U.S. Department of Health and Human Services. One member of this consortium, Hanesbrands, expects to make more than 320 million masks. Some 10 million were delivered in early April and the company is ramping up to produce 40 million per week. The masks are approved by the U.S. Food and Drug Administration

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<sup>47</sup> On March 20, the regulation was amended to make clear that the requirement for export authorization did not apply to EEA members and Switzerland.

<sup>48</sup> [https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-migration/20200316\\_covid-19-guidelines-for-border-management.pdf](https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-migration/20200316_covid-19-guidelines-for-border-management.pdf).

<sup>49</sup> Similarly, the Guidance note to Member States related to Commission Implementing Regulation (EU) 2020/402 (making the exportation of certain products subject to the production of an export authorization) noted that the Implementing Regulation was adopted with the understanding that Member States should revoke any restrictive national actions taken, formally or informally, concerning either exports to third countries or trade between the Member States within the Single Market, going beyond actions designed to ensure priority access to such material by those who need it most (e.g. hospitals, patients, healthcare workers, civil protection authorities).

<sup>50</sup> There is of course an extensive international relations literature on these factors and the dynamics at play. See e.g., Axelrod (1984).

and are intended for everyday wear to help mitigate the spread of COVID-19.<sup>51</sup> A smaller scale example from Europe is the French company Chargeurs, which has converted its technical textile fiber production to supply over one million sanitary masks per week and is developing new types of masks satisfying both health and safety and sustainability standards in light of expected longer-term needs. Yet another example is the Italian clothing company Ermenegildo Zegna, which converted two facilities to produce 300,000 units of protective equipment for hospitals in the Italian region of Piedmont and the Swiss Canton of Ticino.<sup>52</sup>

These examples illustrate the importance of firms having access to information on applicable product and production standards, obtaining rapid certification of prototypes and production facilities and being able to source requisite inputs – including from foreign suppliers. Effective two-way communication channels are needed for firms to signal where policies constitute barriers to entry, identify specific bottlenecks that impede ramping up of supply and for companies to know what the standards are and to be able to certify products on an expedited basis. Part of what is needed is for authorities to have information enabling them to understand the relevant supply chains to produce and distribute essential products. Firms in turn should be able to form expectations regarding final demand in the short and medium run and have information on the availability of critical components and inputs needed to produce prioritized products.

Standards and certification of products/plants/suppliers are critical for safety, but the associated regulatory enforcement processes can be a constraint in responding rapidly to an emergency. One good practice here is for governments to accept foreign standards during the emergency (Gonzalez, 2020) as was done by the US Centers for Disease Control approving use of respirators that satisfied equivalent foreign standards, including China's GB 2626-2006 and GB 2626-2019 standards as well as the European EN 149-2001 standards.<sup>53</sup> Flexibility on certification requirements is another action that can be taken to expand access to essential supplies, as was done by Italy in permitting self-certification by firms.<sup>54</sup> The existence of common product standards and mutual recognition of standards facilitates supply responses and cross-border production arrangements. Common EU standards and internationally accepted standards for protective masks, combined with certification of manufacturing plants both at home and in other countries helped firms and health care providers to contract with each other and supply/obtain medical supplies and protective equipment.

Looking ahead, recent experience reinforces the value added that can be generated through international regulatory cooperation, mutual recognition arrangements and efforts to determine whether and where regulatory regimes across countries/systems have the same goals – and in such instances work towards establishing equivalence regimes. This would both support international sourcing in response to crises and assist firms to ramp up supply when needed, as well as reduce trade costs in

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<sup>51</sup> <https://www.businesswire.com/news/home/20200407005837/en/HanesBrands-Takes-Actions-Navigate-COVID-19-Pandemic-Preserve>

<sup>52</sup> <https://www.chargeurs.com/chargeurs-va-produire-en-quantites-industrielles-du-gel-et-des-masques-de-protection/> and <https://wwd.com/fashion-news/fashion-scoops/ermenegildo-zegna-group-produce-medical-overalls-coronavirus-1203560377/>

<sup>53</sup> <https://www.thomasnet.com/articles/plant-facility-equipment/how-to-make-n95-masks/>

<sup>54</sup> Art. 15 of Decree 18/2020: [https://www.gazzettaufficiale.it/atto/vediMenuHTML?atto.dataPubblicazioneGazzetta=2020-03-17&atto.codiceRedazionale=20G00034&tipoSerie=serie\\_generale&tipoVigenza=originario](https://www.gazzettaufficiale.it/atto/vediMenuHTML?atto.dataPubblicazioneGazzetta=2020-03-17&atto.codiceRedazionale=20G00034&tipoSerie=serie_generale&tipoVigenza=originario); <https://www.bakermckenzie.com/en/insight/publications/2020/03/medical-masks-without-ce-marking-covid19>. Most of the products that are needed on the frontlines to combat COVID-19 are so-called 'harmonized products' when it comes to technical regulations in that there is specific EU product legislation that lay out performance requirements that if satisfied permit a product to circulate freely within the Single Market. If specific technical solutions laid out in the harmonized standards are adopted products are presumed to conform to EU requirements and need not be tested before offered for sale if the firm can show it satisfies norms. The Italian decision to rely on self-certification by firms is consistent Commission recommendations on measures that can be used to address critical shortages of equipment for healthcare providers. See <https://ec.europa.eu/docsroom/documents/40521>

normal times. The opportunity cost of not having equivalence and recognition regimes in place was illustrated by the decision by China to impose new export license requirements in early April 2020. The government was responding to rejections by several European countries of PPE shipments sourced from Chinese companies on quality grounds. The Chinese authorities feared a reputational backlash and sought to ensure that exported products meet quality and safety standards by limiting exports to firms certified to sell in domestic market (i.e., firms having been accredited as meeting Chinese technical regulations). Companies accredited by buyers in the US or EU – e.g., firms with CE certification – were blocked from exporting by the new regulation until they had obtained certification in China.<sup>55</sup>

Such instances call for cooperation between the governments concerned that permits greater differentiation between suppliers and that allow for flexibility in imposing penalties. Formal recognition and equivalence arrangements for certification and acceptance of foreign standards would help prevent the application of rigid enforcement of national standards with their associated detrimental trade restricting effects, especially in a time of crisis where unilateral action can have very high humanitarian costs. While quality and safety of products is paramount, this can be ensured through close cooperation between regulators and use of contracts between buyers and sellers that clearly specify the standards to be used.

Models for the type of engagement that can sustain cooperation on technical standards and regulatory regimes have been developed for many areas of regulation. They include mutual recognition, international regulatory cooperation between regulators in a given subject area, agreements of good manufacturing practices and agreements that establish a framework for engagement among a set of countries/regulators to identify good practices, facilitate joint learning and determine whether national regulatory regimes have similar goals and are equivalent in attaining desired outcomes. Since 2017 groups of WTO members have begun to engage in talks that may lead to open plurilateral agreements on specific trade and investment policies. The current crisis suggests doing more to harness the potential of such instruments to cooperate on technical regulation and related production processes could have substantial payoffs for participating countries.<sup>56</sup>

### ***Information is critical – for governments and for firms***

Firms need to have systems to monitor market conditions and identify slack and chokepoints in their global network to enable adjustments in production to respond to changes in demand. Governments need information systems that allow them to determine where supply capacity exists. Firms generally can be expected to be able assess demand and their supply options, but governments often will not have such information readily to hand. Both sets of actors need to be able to identify bottlenecks in the supply chain in real time and cooperate in addressing them. This calls for information to identify weak links in supply chains or sources of major friction impeding production expansion which are due to or can be overcome through policy action. Such information systems were not in place in many if not most countries. Authorities did not have a good understanding of the prevailing supply chains and production capacity. Individual lead firms of course know their supply chains but do not share this information as it is source of competitive advantage. Some regulators – notably the New Zealand Medicines and Medical Safety Authority – require approved marketers of products to disclose the supply chain, including where active ingredients for medicines are made and where they are packaged.<sup>57</sup> However, most authorities and jurisdictions appear to have been largely in the dark on the specific nature and

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<sup>55</sup> <https://www.scmp.com/news/china/diplomacy/article/3078427/coronavirus-chinas-new-export-restrictions-medical-supplies>. According to one report, of 102 Chinese medical supply companies with CE accreditation, just 21 were licensed to sell their products within China. See: <https://www.scmp.com/news/china/society/article/3077953/coronavirus-china-bans-export-test-kits-medical-supplies-firms>

<sup>56</sup> See e.g., Hoekman and Sabel (2018; 2019).

<sup>57</sup> <https://www.cidrap.umn.edu/news-perspective/2020/03/experts-say-covid-19-will-likely-lead-us-drug-shortages>

composition of the relevant supply chains. There is a notable contrast in this area relative to others such as food products, where traceability has become an element of the production process.

This contrasts with the state of play regarding sharing of data between governments on public health matters with potential international ramifications. The International Health Regulations (IHR), a multilateral convention signed by 196 countries that entered into force in 2007, establish a framework for responding to international spread of disease. A central feature is an operational mechanism for rapid, global reporting and information sharing through which countries agree to report any event that may constitute a potential public health emergency of international concern. Such information is shared through an Event Information Site Platform and associated database maintained by the World Health Organization. While the system can and should be improved (Charnovitz, 2020), the IHR and related information sharing system was put in place to deal with the type of pandemic that erupted in 2020.<sup>58</sup>

In the case of agri-food production and policy responses to COVID-19 a system exists that facilitates collection and sharing of information on global agricultural markets, the Agricultural Market Information System (AMIS) (FAO et al. 2011). An international effort spanning several international organizations and governments to ensure accurate, up-to-date information on market developments and relevant food trade policies established by the G20 after the food price shocks and market volatility in 2007-08, when over a third of global wheat production and over half of world rice output became subject to export restrictions (Mitchell, 2015), AMIS has helped countries to generate valuable information (a public good) and create a network of international expertise to inform coordinated policy responses to shocks.<sup>59</sup> Putting in place a similar system for the types of products needed to respond to public health emergencies should be an immediate priority for the international community. This will not prevent countries from imposing export controls – major grain producers imposed such restrictions again in early 2020 – but it ensures there is a vehicle to promote transparency, informing countries of the market situation and a platform for governments and relevant international organizations to engage with each other.

## **5. Looking forward: Towards more effective transparency and information systems**

Governments will – and must – prioritize resources to address the needs of their citizens. But meeting those needs – even in times of crisis – will not be facilitated by closing borders to trade in essential supplies, parts and ingredients. There is an extensive agricultural trade policy literature that documents how export restrictions distort price incentives and resource allocation, impeding supply-side responses to shortages; aggravating supply and price concerns; and exacerbate price volatility, creating incentives for trading partners to follow suit, curb exports, and hoard. Moreover, by signaling that global markets cannot be relied upon to function, export controls create incentives for importing countries to subsidize domestic production and revert to higher levels of import protection (Martin and Anderson, 2012). Commodity markets and the shocks that affect them differ from the current pandemic – where the key need is to significantly ramp up global output of essential supplies – but similar forces and outcomes apply when it comes to the effects of trade restrictions.

A lesson that was drawn from the 2007-08 period of food price spikes and volatility and the associated use of export controls by exporting nations was that one reason for the trade restrictions was uncertainty, notably lack of reliable shared information on stocks, drivers of demand and the availability

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<sup>58</sup> See Goldin and Mariathan (2014) on the importance of local level information gathering and global reporting to fight epidemics and weaknesses in extant systems, and the need for much greater resources to be allocated to contain and address infectious diseases on the ground, especially in capacity-constrained low-income countries. In response to criticism regarding the timeliness and accuracy of reporting by China on the spread of the corona virus, the Chinese authorities issued a document providing a summary of reporting and communications with the international community. See [http://www.xinhuanet.com/english/2020-04/06/c\\_138951662.htm](http://www.xinhuanet.com/english/2020-04/06/c_138951662.htm)

<sup>59</sup> Clapp and Murphy (2013) critically assess this example of G20 cooperation.

of substitute products for different end uses of grains. AIMS was conceived as a mechanism to address problems of asymmetric information regarding policies and conditions prevailing in markets. It is playing that role today with respect to the recurring use of export restrictions for food products that some countries have put in place. The incidence of such measures is still low. They may increase but at least there is an international platform to monitor policies, stocks and supply conditions that was not in place before. AIMS was a G20 initiative that brought together (“orchestrated”) the relevant international organizations with salient expertise and resources. A priority for the G20 is to learn from what was done for enhancing transparency of national policies affecting global food commodity markets and emulate this for the markets for medicines, devices and PPE needed to address epidemics and pandemics.

The G20 trade ministers’ joint declaration on March 30 pledged to take immediate necessary measures to facilitate trade in essential goods, conditional on national requirements and needs, and agreed that “emergency measures designed to tackle COVID-19, if deemed necessary, must be targeted, proportionate, transparent, and temporary, not create unnecessary barriers to trade or disruption to global supply chains, and be consistent with WTO rules.”<sup>60</sup> This is less robust language than that found in the March 25 declaration by trade ministers of Australia, Brunei Darussalam, Canada, Chile, Myanmar, New Zealand and Singapore Canada which stressed the importance of keeping markets open and sustaining cross-border supply chains by refraining from the imposition of export controls and removing tariffs and non-tariff barriers on essential goods, especially medical supplies.<sup>61</sup>

Over a decade of experience has shown that G20 countries are unable (i.e., unwilling) to live up to trade policy commitments. It is unrealistic to expect all G20 members to agree to disciplines on export restrictions. The attenuation in support for multilateral cooperation that has been evident since the global financial crisis and the electoral success of political candidates and parties that oppose globalization and an open world economy makes any such effort even more unlikely to succeed. In the short term, agreement on binding rules is not possible. Work on developing more informal discipline based on information, dialogue and peer review may be more feasible. Such efforts should go beyond inter-state cooperation and include the private sector given that the latter has a much better grasp of the relevant supply chains. The need looking forward is for public-private policy partnerships (Rosenau, 2000) to generate and share up-to-date critical data on supply conditions and supply chain capacity around the globe.<sup>62</sup>

A specific feature of recent trade policy trends in some countries, one that has grown during the COVID-19 crisis is increasingly reliance on “managed trade” as opposed to market-intermediated exchange. The Trump Administration negotiated an arrangement with China in 2019 that centered on a promise by China within two years to import \$200 billion more than the country had imported in 2017.<sup>63</sup> In responding to COVID-19, many governments are dealing bilaterally with large producers and circumventing standard competitive sourcing procedures called for in public procurement regulation. This is another form of recourse to managed trade. While driven by the crisis situation and perceptions that arms-length transactions are unreliable when engaging in public procurement of medical and protective supplies (viz. the Canadian initiative mentioned above), such practices can be costly in economic terms, are more susceptible to fraud and can create negative spillovers on other countries. Ensuring such measures are time-limited and transparent to domestic stakeholders clearly is important

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<sup>60</sup> G20 Trade and Investment Ministerial Statement, March 30, 2020. <http://www.arabia-saudita.it/news.php?id=1301>

<sup>61</sup> <https://www.international.gc.ca/gac-amc/news-nouvelles/2020-03-25-joint-ministerial-statement-declaration-ministerielle-commune.aspx?lang=eng>

<sup>62</sup> The concept of supply chain councils suggested in the trade facilitation literature could be applied here. See Hoekman (2013).

<sup>63</sup> See Economic and Trade Agreement Between the Government of the United States and the Government of the People’s Republic of China, January 15, 2020. At: [https://ustr.gov/sites/default/files/files/agreements/phase%20one%20agreement/Economic\\_And\\_Trade\\_Agreement\\_Between\\_The\\_United\\_States\\_And\\_China\\_Text.pdf](https://ustr.gov/sites/default/files/files/agreements/phase%20one%20agreement/Economic_And_Trade_Agreement_Between_The_United_States_And_China_Text.pdf)

for accountability purposes. Putting in place a mechanism that ensures international transparency and monitoring can help provide the needed accountability while also providing a basis for identifying and addressing negative spillover effects.

Joint action to complement monitoring of trade policy responses to the crisis with analysis of their incidence and effectiveness could be pursued in conjunction with the information on medical supply chains and productive capacity advocated above. Providing a global picture of supply and demand and high-frequency assessments of policy responses could both reduce the political pressures to close borders by increasing common knowledge of existing capacity and progress in ramping up supply, as well as a forum for the exchange of experience and learning that is indispensable to identify effective and efficient interventions. Such an initiative need not include all G20 members if consensus cannot be obtained.<sup>64</sup> What is needed is that the major players cooperate, as was done for steel in the OECD Global Forum on steel excess capacity which brought together the major steel producing countries in the world and drew on the industry to provide data on production capacity, stocks and investment plans. The Global Forum and AIMS provide examples that illustrate the type of initiative suggested here is feasible.

More ambitiously, this line of argument applies as well to the challenge of reversing the massive fiscal support that is being provided to keep economies afloat. As has been extensively documented by the Global Trade Alert initiative, in recent years many countries have increasingly used a variety of subsidy-like instruments to support domestic production and exports. Hoekman and Nelson (2020) call for an international work program that brings together national Finance and Economy ministries, relevant regulators, and other government authorities concerned with the governance of subsidies. Delegation of both measurement and analysis to a trusted, neutral and technically capable body is critical to support the needed deliberation by states. A joint initiative that spans the specialized international financial and development organizations in which the major emerging economies are members can provide the needed technical and analytical support. Development of a body of professionally competent, peer reviewable, internationally balanced work may support agreement over time on good practice norms and standards. The need for such a mechanism has become more urgent to assist countries deal with the aftermath of pandemic policy responses.

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<sup>64</sup> In contrast to information sharing and action on public health matters, which by definition must be global in scope given that diseases can originate anywhere (Oxford Martin Commission, 2013), information on supply capacity and related trends can be limited to a smaller number of countries that account for most of global production.



## References

- Axelrod, R. 1984. *The Evolution of Cooperation*. New York: Basic Books.
- Baldwin, R. 2020. "Supply chain contagion waves: Thinking ahead on manufacturing 'contagion and reinfection' from the COVID concussion," April 1.
- Brekelmans, N. and N. Poitiers. 2020. "EU trade in medical goods: why self-sufficiency is the wrong approach," Bruegel blog post. <https://www.bruegel.org/2020/04/eu-trade-in-medical-goods-why-self-sufficiency-is-the-wrong-approach/>
- Bondaz, A. 2020. "Covid-19: comment la Chine a-t-elle considérablement augmenté sa production de masques? Fondation pour la recherche stratégique, Note #8/20, March 23.
- Bown, C. 2020a. "Trump's trade policy is hampering the US fight against COVID-19," March 13. <https://www.piie.com/blogs/trade-and-investment-policy-watch/trumps-trade-policy-hampering-us-fight-against-covid-19>
- Bown, C. 2020b. "EU limits on medical gear exports put poor countries and Europeans at risk," March 24. <https://www.piie.com/blogs/trade-and-investment-policy-watch/eu-limits-medical-gear-exports-put-poor-countries-and>
- Bown, C. 2020c. "COVID-19: Trump's curbs on exports of medical gear put Americans and others at risk," April 9. <https://www.piie.com/blogs/trade-and-investment-policy-watch/covid-19-trumps-curbs-exports-medical-gear-put-americans-and>
- Charnovitz, S. 2020. "China's New SCM Violations and the Larger Implications," At: <https://ielp.worldtradelaw.net/2020/04/chinas-new-scm-violations-and-the-larger-implications.html>
- Clapp, J. and S. Murphy. 2013. "The G20 and Food Security: A Mismatch in Global Governance?" *Global Policy*, 4: 129-138. doi:10.1111/1758-5899.12039
- Constantinescu, C., A. Mattoo and M. Ruta. 2019. "Policy Uncertainty, Trade, and Global Value Chains: Some Facts, Many Questions," EUI Working Paper RSCAS 2019/92.
- Dawar, K. 2020. "Official Export Credit Support: Competition and Compliance Issues," *Journal of World Trade*, forthcoming. Prepublication version at: <http://respect.eui.eu/publications/>
- Espitia, A., N. Rocha and M. Ruta. 2020. "Trade and the COVID-19 crisis in developing countries," at <https://voxeu.org/article/trade-and-covid-19-crisis-developing-countries>
- European Commission. 2020a. "Commission Recommendation (EU) 2020/403 of 13 March 2020 on conformity assessment and market surveillance procedures within the context of the COVID-19 threat," C/2020/1712, Official Journal, L 79I, 16.3.2020, pp. 1–5.
- European Commission. 2020b. "Conformity assessment procedures for protective equipment," March 30. At: <https://ec.europa.eu/docsroom/documents/40521>
- Evenett, S. 2019. "Protectionism, state discrimination, and international business since the onset of the Global Financial Crisis," *Journal of International Business Policy*, 2(1): 9-36.
- Evenett, S. 2020. "Tackling COVID-19 Together: The Trade Policy Dimension," Global Trade Alert, March 23. At: <https://www.globaltradealert.org/reports/51>
- FAO, IFAD, IMF, OECD, UNCTAD, WFP, World Bank, WTO, IFPRI and UN HLTF. 2011. "Price Volatility in Food and Agricultural Markets: Policy Responses," Paris: OECD.
- Goldin, I. and M. Mariathasan. 2014. *The Butterfly Defect*. Princeton: Princeton University Press.
- Gonzalez, A. 2020. "A memo to trade ministers on how trade policy can help fight COVID-19," <https://www.piie.com/blogs/trade-and-investment-policy-watch/memo-trade-ministers-how-trade-policy-can-help-fight-covid>.

- Hoekman, B. 2013. "Adding Value," *Finance & Development*. 50(4): 22-24.
- Hoekman, B. and D. Nelson. 2020. "Rethinking International Subsidies Rules," EUI Working Paper RSCAS 2020/20. <https://cadmus.eui.eu/handle/1814/66586>
- Hoekman, B. and C. Sabel. 2018. "In a World of Value Chains: What Space for Regulatory Coherence and Cooperation in Trade Agreements?" in B. Kingsbury, R. Stewart, P. Mertenskötter and T. Streinz (eds.), *Mega-regulation Contested*, Oxford: Oxford University Press.
- Hoekman, B. and C. Sabel. 2019. "Open Plurilateral Agreements, International Regulatory Cooperation and the WTO," *Global Policy*. At: <https://doi.org/10.1111/1758-5899.12694>.
- Martin, W. and K. Anderson. 2012. "Export restrictions and price insulation during commodity price booms," *American Journal of Agricultural Economics* 94(2):422-7.
- McKinsey Global Institute. 2019. *Globalization in transition: The future of trade and value chains*. <https://www.mckinsey.com/featured-insights/innovation-and-growth/globalization-in-transition-the-future-of-trade-and-value-chains>
- Miroudot, S. and H. Nordstrom. 2019. "Made in the world revisited," EUI Working Paper RSCAS 2019/84.
- Mitchell, I. 2015. "Grey Swans – Agricultural Price Spikes Are Not a Thing of the Past," *EuroChoices* 14(3): 40-46. At DOI: 10.1111/1746-692X.12108
- OECD. 2020. "COVID-19 and International Trade: Issues and Action," [https://read.oecd-ilibrary.org/view/?ref=128\\_128542-3ijg8kfswh&title=COVID-19-and-international-trade-issues-and-actions](https://read.oecd-ilibrary.org/view/?ref=128_128542-3ijg8kfswh&title=COVID-19-and-international-trade-issues-and-actions)
- Oxford Martin Commission. 2013. *Now for the Long Term*. The Report of the Oxford Martin Commission for Future Generations.
- Rosenau, P. 2000. *Public-Private Policy Partnerships*. MIT Press.
- Van Bergeijk, P. and S. Moons (eds.). 2018. *Research Handbook on Economic Diplomacy*. Edward Elgar.
- WTO. 2020. "Trade in Medical Goods in the Context of Tackling COVID-19." April. [https://www.wto.org/english/news\\_e/news20\\_e/rese\\_03apr20\\_e.pdf](https://www.wto.org/english/news_e/news20_e/rese_03apr20_e.pdf)

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