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COVID-19's impacts on global value chains, as seen in the apparel industry

Jennifer Castañeda-Navarrete¹ | Jostein Hauge² | Carlos López-Gómez³

¹Senior Policy Analyst at IfM Engage, University of Cambridge, UK

²LSE Fellow in International Political Economy, Department of International Relations, London School of Economics, UK

³Head of Policy Links, IfM Engage, University of Cambridge, UK

Correspondence

Jennifer Castañeda-Navarrete, Senior Policy Analyst at IfM Engage, University of Cambridge, UK.

Email: jc2190@cam.ac.uk

Abstract

Motivation: The COVID-19 pandemic has massively disrupted international trade and global value chains. Impacts, however, differ across regions and industries. This article contributes to a better understanding of the scale of disruptions to industries and value chains integral to the economies of and livelihoods in developing countries, and what role policy can play to mitigate harm.

Purpose: This article aims to: (1) analyse and characterize disruptions to the global apparel value chain caused by the COVID-19 pandemic, focusing on how developing countries have been impacted, and; (2) identify key policies to support a resilient, inclusive and sustainable recovery.

Approach and methods: We review COVID-19 related reports published by international and non-governmental organizations, international trade and production statistics, industry surveys and media reports. We frame our analysis predominantly within the Global Value Chains literature.

Findings: The global apparel value chain has been severely disrupted by the pandemic, owing to direct effects of sickness on workers in factories, reduced output of materials—cloth, thread, etc.—used to fabricate clothing, and to reduced demand for apparel in high-income countries. Developing countries are suffering disproportionately in terms of profits, wages, job security and job safety. Women workers in the apparel chain have been hit especially hard, not only because most workers in the chain are women, but also because they have experienced increasing unpaid care work and higher risk of gender-based violence.

Policy implications: Five key areas of policy to support a resilient, inclusive and sustainable recovery stand out: (1) delivering emergency responses to ensure firm survival and the protection of workers' livelihoods; (2) reformulating FDI attraction strategies and promoting market diversification; (3) supporting technology adoption and skills development; (4) deploying labour standards to improve workers' conditions and strengthening social protection systems; and (5) adopting gender-sensitive responses.

KEYWORDS

apparel industry, COVID-19, economic development, global value chains, power disparities, reshoring, supply chains

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1 | INTRODUCTION

The global apparel industry has been a key driver of export-led industrialization and economic development. Due to its low capital investment requirements and its labour-intensive nature, apparel production has been a typical entry point for developing countries to participate in global value chains. Worldwide, the apparel industry generates around 20 million formal jobs and at least three times more informal jobs, most of these in developing countries (Ascoly, 2004; UNIDO, 2020; WIEGO, 2020).

The COVID-19 pandemic has disrupted global value chains, and the global apparel industry is no exception. The power asymmetries and unequal distribution of profits along the apparel value chain has become apparent from the uneven distribution of losses as a result of the pandemic. Drawing on the global value chain (GVC) framework, this article characterizes and explains the differentiated impacts of the pandemic across the apparel GVC, and suggests key areas of policy action.

The impacts of the COVID-19 pandemic on global production systems are analysed in terms of a “triple hit”—supply disruptions, supply contagion and demand disruptions. Our analysis is based on a review of COVID-19 related reports published by international organizations and non-governmental organizations; international trade and production statistics; industry surveys; and media reports. The article is structured as follows: Section 2 introduces the framework of GVCs as a method for analysing the global economy, global industries, networks of firms and the role of national economies in these networks. Section 3 reviews the structure, governance and dynamics of the apparel value chain, focusing especially on developing countries. Section 4 discusses the impact of COVID-19 on GVCs. Section 5 analyses emerging evidence on the short-term impacts on firms, workers and gender disparities. Section 6 outlines potential long-term effects on the industry’s supply-chain consolidation, geographical reconfiguration and drivers of competitiveness and inclusiveness. Finally, the article concludes by discussing five key areas of policy action.

2 | ANALYSING THE GLOBAL ECONOMY THROUGH A GVC FRAMEWORK

Since the late 1980s, a globalization of production and service provision has taken place, driven by falling transport costs, advances in information and communication technology, and lower trade and investment barriers. This is evidenced by several trade metrics, many of which overlap, including an explosive growth in global exports and imports, foreign direct investment, offshoring, and intermediate goods trade (Hauge, 2020; World Bank, 2019). This has led to the expansion of complex and borderless business networks and production systems, popularly referred to as global value chains.

Studying global industries through the framework of GVCs was primarily developed in the 1990s by the sociologist Gary Gereffi. In many ways, GVC analysis was inspired by debates among dependency and world-systems scholars (Amin, 1976; Frank, 1967; Wallerstein, 1974), who emphasized the importance of studying the global economy through a core-periphery system. But, according to Gereffi, these frameworks lacked: (1) an integrated global perspective on multinational corporations; and (2) the ability to address the empirical question of how to analyse the global industries that actually make up the world economy (Gereffi, 2018).

The GVC framework builds on a seminal article in 1994 (Gereffi, 1994), outlining how US retailers shape production networks overseas, and a seminal book in which this article is contained, entitled *Commodity chains and global capitalism* (Gereffi & Korzeniewicz, 1994). A stream of literature has since followed offering a network-centred perspective on the global economy that views different types of multinational corporations as “lead firms” that orchestrate multi-tiered global supply chains

(see Gereffi, 2018, for a concise overview of this literature). Some of this literature is firmly grounded in the GVC approach while some other strands deviate from it. For example, a notable branch of literature that has emerged is the so-called global production network (GPN) approach (Coe & Yeung, 2015; Henderson et al., 2002; Hess & Yeung, 2006). This approach defines networks to encompass more actors—such as geographical territories and states—compared to the firm-centric focus common to the GVC approach (Behuria, 2020). Beyond the GPN approach, increasing attention is also being paid to the role of the state in GVCs (Gereffi, 2019; Horner & Alford, 2019; Staritz & Whitfield, 2019).

In addition to the abovementioned features that encompass the GVC framework and related literature, two additional features of the GVC framework are integral to the analysis of how COVID-19 is impacting the global economy. The first is governance structures and the uneven distribution of value across value chains. The GVC literature provides core insight into how different industries are governed by different types of firms (e.g. “buyers” and “producers”), with varied levels of explicit co-ordination between lead firms and their suppliers (Gereffi, 1994; Gereffi et al., 2005). In turn, governance structures have implications for value added at different parts of a value chain as well as the division of profits between labour and capital at different parts of a value chain (Gereffi & Fernandez-Stark, 2018; Selwyn, 2019). Other factors, of course, influence value addition at different stages of a value chain as well, such as technological sophistication of activities, international trade agreements (e.g. patent protection agreements), knowledge monopolies and globalization trends (Hauge, 2020; Starrs, 2014; Chang et al., 2016).

Second, as well as studying the global organization of industries and governance of global industries, a primary concern of GVC analysis are the possibilities of “upgrading” that developing countries have by participating in global value chains (Gereffi & Fernandez-Stark, 2018; Humphrey & Schmitz, 2002). Given the increasing importance of multinational corporations in developing countries’ economic development strategies, GVC analysis has become an integral part of development studies and international development literature. Initially, GVC analysis focused on various forms of upgrading that were mostly related to technological development and productivity growth, but over time, noting that such upgrading does not necessarily lead to gains for workers, the literature has started paying more attention to “social upgrading” (Barrientos et al., 2011; Milberg & Winkler, 2011).

Besides these core features of GVC analysis, there are a few additional ones that are especially relevant in the time of COVID-19: (1) the changing geographies of global supply chains and changing sourcing patterns (Dicken, 2015; Gereffi, 2018; Gereffi & Wu, 2020); and (2) the highly specialized division of labour within GVCs and the interconnectedness and dependency between actors along GVCs (Gereffi, 2018; Sturgeon et al., 2008). In the following sections, we will draw on the GVC framework to analyse how COVID-19 has disrupted global value chains, looking especially at the global apparel industry and implications for developing countries.

3 | STRUCTURE AND GOVERNANCE OF THE APPAREL VALUE CHAIN

The global apparel industry has historically represented the quintessential opportunity for developing countries to enter GVCs. It is labour intensive, has low technological entry requirements and low capital investment requirements. Worldwide, the apparel industry employs around 20 million people, accounting for around 10% of manufacturing employment (UNIDO, 2020). In some developing countries, however, this figure is much higher. For example, in Bangladesh, Cambodia and Pakistan the industry accounts for around half of total manufacturing employment (Huynh, 2017).

In a global landscape characterized by numerous manufacturers but relatively few buyers, apparel brands and retailers exercise their purchasing power by setting prices and thus defining profit margins along the value chain (Frederick, 2015; Frederick & Daly, 2019; Gereffi, 2002). The labour-intensive nature of the apparel industry intensifies power disparities between buyers and producers and between producers and workers (Frederick, 2015; Gereffi, 2002). Buyers, “lead firms,” control the highest value-adding activities, such as design, branding and marketing. Lead firms, mainly based in the US and the European Union (EU), capture around 70% of the final retail price of apparel products (Frederick, 2015).

Lead firms typically outsource production to apparel manufacturers and intermediaries (first-tier suppliers), many of whom are located in Asia (Frederick & Daly, 2019). Although Chinese manufacturing has moved towards the production of higher value-added products, reducing its share in apparel production, China remains the world largest producer of apparel and textiles (Frederick & Daly, 2019). In 2018 the country accounted for 30% of global apparel exports and 38% of global textile exports (WTO, n.d.).

Two key types of apparel manufacturers can be identified: (1) first-tier suppliers, usually original equipment manufacturers (OEMs) responsible for all production activities, including logistics and procuring of inputs; and (2) second- and third-tier suppliers, branch locations and subcontractors, whose remit is usually limited to cutting the fabric, sewing it together and adding final trim (zippers, buttons) (Frederick, 2015). These cut, make and trim (CMT) operations tend to be the entry point for developing countries to participate in the apparel GVC. However, CMT activities represent less than 10% of the final retail price and about 20% of the production cost (UNCTAD, 2013). So, without further upgrading in the value chain, developing countries participating in the CMT segment are constrained to low-value products and low wages.

The apparel industry represents an important livelihood for low-skilled workers in least developed and developing countries. Nonetheless low skills required by the industry also mean low wages and hazardous working conditions (Luginbühl, 2019). Minimum wages in the apparel industry range between USD 50 and USD 300 (Barrett & Baumann-Pauly, 2019; Luebker, 2014). Considering an extreme poverty line of USD 1.90 a day, this means that apparel wages in some cases barely cover the essential needs of one adult. Working conditions tend to be precarious, particularly in the lower value chain tiers, workers are usually exposed to hazardous working conditions, including: inadequate ventilation; handling of chemicals, steam and hot fluids; and unsafe facilities (Andersson et al., 2019).

Women account for about 70% of jobs in the industry (ILO, 2014). Although the expansion of apparel production has opened opportunities for women to participate in formal labour markets, gender discrimination and sexual harassment have been reported in apparel factories (Andersson et al., 2019; ILO, 2019). In Pakistan and India, the wage gender gap is as high as 40% of the monthly earnings of their male counterparts (Huynh, 2017). Apparel workers also tend to be younger than in other industries (Huynh, 2017). Additionally, a large proportion of apparel labour work under informal arrangements. Informal workers are estimated to represent up to three times more than formal workers (Ascoly, 2004; WIEGO, 2020). Taken together, this means that workers in the global apparel industries are highly vulnerable to exploitative working conditions.

4 | GLOBAL VALUE CHAINS AND THE COVID-19 CRISIS

The increasing global interconnectedness of firms, countries and production networks over the last few decades has not been a smooth process. For example, the global financial crisis in 2007/2008 can be considered a negative “shock” to this process. The COVID-19 pandemic can also be considered

such a shock, but on a larger scale in terms of its impact on international trade and GVCs. According to the World Trade Organization's October 2020 update, world merchandise trade is projected to decline by 9.2% in 2020 due to the COVID-19 pandemic, recovering slightly in 2021 (WTO, 2020). While this figure is comparable to the reduction in world merchandise trade that we saw during the global financial crisis in 2007/2008, it is foreign direct investments—a very important indicator of international production—that are taking the biggest hit. Many investment expenditures have been delayed or blocked, mergers and acquisitions have been suspended or cancelled, and greenfield investment projects have been shelved. The UN estimates a global reduction in foreign direct investment of 30%–40% during 2020, a further decrease in 2021, with recovery not being initiated until 2022 (UNCTAD, 2020a). In other words, investment disruptions caused by the COVID-19 pandemic will be unprecedented.

It would be no understatement to say that GVC disruptions are at the heart of the global economic decline we are witnessing. While the term “supply chains” seem to be on everyone's lips during the pandemic (Gereffi, 2018), these are part and parcel of value chains, so the exact term used does not matter much in terms of explaining the disruptions. Using the Organisation for Economic Co-operation and Development's Inter-Country Input-Output (ICIO) database, Bonadino et al. (2020) have built a model of world production and trade disruptions covering 64 countries on six continents. They find that external global supply-chain shocks account for a third of the overall decline in gross domestic product in every country, on average. This is purely based on external shocks (i.e. lockdown/containment in other countries), irrespective of domestic containment measures. Most experts point to lockdown/containment measures as the main cause of the supply/value chain disruptions (Baldwin & Weder di Mauro, 2020). Another important explanation is the demand shock. Like the financial crisis of 2007/2008, the COVID-19 pandemic has made consumers and firms cautious about buying things, especially those purchases that can be put off (Baldwin & Freeman, 2020). When looking at the scale of supply/value chain disruptions, an obvious fact is that the virus (and by consequence containment measures) has hit hard in many countries that are central to GPNs. These include China, the United States, Japan, Italy, France, and the United Kingdom (Baldwin & Freeman, 2020).

Baldwin and Freeman (2020) outline a “triple hit” to global manufacturing due to the pandemic:

- *Direct supply disruptions* are hindering production, seeing that the disease started to spread in the world's manufacturing heartland (East Asia), and has subsequently been spreading fast in the other industrial giants—the US being the prime example.
- *Supply-chain “contagion”* is amplifying the direct supply-chain shocks as manufacturing firms in less-affected nations find it harder and/or more expensive to acquire the necessary imported industrial inputs from the hard-hit nations, and subsequently from each other.
- *Demand disruptions* due to: (1) macroeconomic drops in aggregate demand (i.e. recessions); (2) wait-and-see purchase-delays by consumers; and (3) investment-delays by firms.

Impacts across GVCs are not uniform, and analyses should account for these differences. Most importantly, disruptions to value chains involving the delivery of “critical” supplies, such as medical equipment and to some extent pharmaceuticals, have different short- and long-term impacts compared to value chain disruptions in sectors such as automotive and electronics. However, due to the massive scale of the economic impact of the pandemic, virtually every sector has been affected. And virtually every economy has been affected, but developing countries are being hit hardest. This is not because disruptions to value chains are larger in developing countries, or that the health impact of the virus is more serious in developing countries. It is because the fiscal capacity to deal with the economic downturn is limited, social systems are weaker, the informal economy sector is larger and, thus, people

in developing countries are left in a more precarious state when the economy contracts. According to a study published by the United Nations University, several hundred million people in developing countries will be pushed into extreme poverty because of economic knock-on effects of COVID-19 (Sumner et al., 2020).

The massive disruptions to GVCs have started discussions on the future of globalization and global production. The global interconnectedness of value chains has been exposed as a weakness in terms of securing domestic production and consumption. Firms and governments are now pressured to consider regionalization of supply chains, stockpiling reserves of critical items, and rethinking the scale and production mix in individual factories (Shih, 2020). COVID-19 has also ignited arguments about the need to “reshore” production that was previously offshored, as this is supposed to make countries that have engaged in the practice of offshoring less vulnerable to global shocks like these (Seric & Winkler, 2020). In the following sections, we will address impacts, debates and policy implications of disruptions to GVCs, focusing on the global apparel industry from the standpoint of developing countries.

5 | THE IMPACTS OF COVID-19 ON THE GLOBAL APPAREL INDUSTRY

The apparel GVC represents a good case to study the “triple hit” caused by COVID-19, as outlined by Baldwin and Freeman (2020). First, *direct supply disruptions* were observed when apparel factories stopped operations in China as part of the containment measures enforced by the government. As the virus reached other countries, several more apparel manufacturers stopped production, including Bangladesh, India, Mexico and Pakistan. Second, the *supply-chain contagion* was felt even in countries with few COVID-19 cases and where only partial lockdowns were enforced, such as Cambodia and Vietnam. Since China is the main world exporter of cotton, fabric and other raw materials, apparel manufacturers in these countries experienced inputs shortages as well as price increases. Third, with lockdowns enforced across Europe and in the US, unprecedented global *demand disruptions* followed.

The direct supply hit due to lockdown measures was experienced differently across countries. The speed at which the virus reached the country, the effectiveness of containment measures, and combined supply-chain contagion and demand effects have influenced both the severity of the impact on apparel production and the recovery trajectories. Figure 1 shows the impact of COVID-19 on apparel production in key manufacturing countries, up until the latest data available. Among the countries analysed, China and Vietnam were impacted first, but falls in production were less severe and the countries seem to have largely recovered. A cost-effective containment strategy based on lessons learned from the SARS pandemic seems to be paying off in Vietnam (Dabla-Norris et al., 2020). This becomes especially apparent when comparing the impacts observed in this country with those experienced by countries such as Bangladesh, Mexico and Turkey. While in Vietnam the largest drop in production was of 18.3%, in Bangladesh it was of 77.6%, in Mexico it was of 75.8% and of 59% in Turkey.

As the COVID-19 outbreak spread across China—the epicentre of global manufacturing—apparel manufacturers from Bangladesh to Honduras started to experience shortages of inputs, particularly fabric and other textiles (Anner, 2020). In Cambodia, where over 60% of textile imports come from China (World Integrated Trade Solution, 2016), the government reported in February 2020 the closure of over 50 apparel factories due to shortages of textile inputs (Vicheika, 2020). In Bangladesh, a representative firm survey conducted in March found that over 90% of the firms were facing delays in shipments of inputs from China (Anner, 2020).

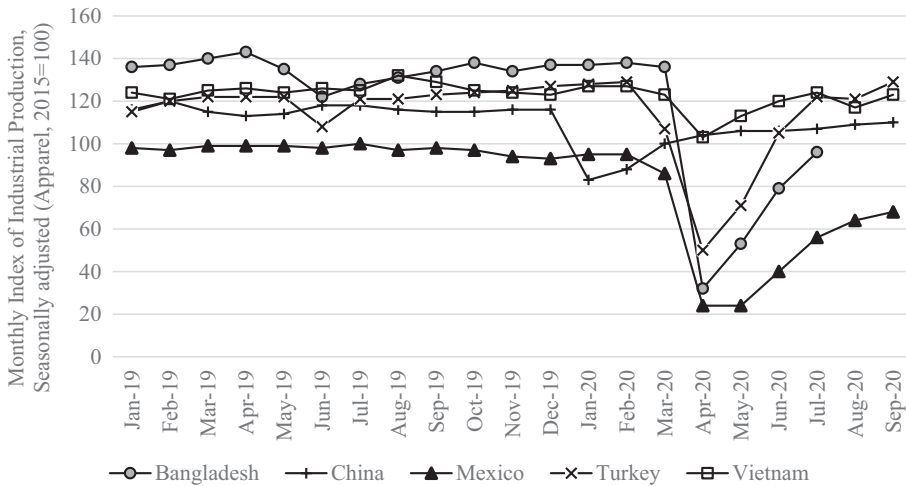


FIGURE 1 Apparel production in selected countries, January 2019 to September 2020
 Note: Countries were selected based on data availability, share in apparel exports and location criteria.
 Source: UNIDO (2020).

Nonetheless, the supply of inputs from China was soon resumed. In early March, as China managed to control the spread of the pandemic and factories restarted production, the supply of inputs was stabilised at 80% of the country’s capacity, as shown in Figure 2 (VITAS, 2020). Shortages, however, generated increases in prices of inputs, having negative impacts on the already narrow profit margins of apparel manufacturers. In Bangladesh, around 80% of firms reported some increase in prices of inputs (Anner, 2020).

On March 11, 2020, the World Health Organization (WHO) declared the COVID-19 outbreak a global pandemic (WHO, 2020). As the pandemic spread around the world, a surge of demand for personal protective equipment (PPE) provided an opportunity for apparel manufacturers. Established manufacturers as well as home-based workers have responded to the global demand for PPE. For example, in Vietnam, textile and apparel manufacturers repurposed their production lines for surgical

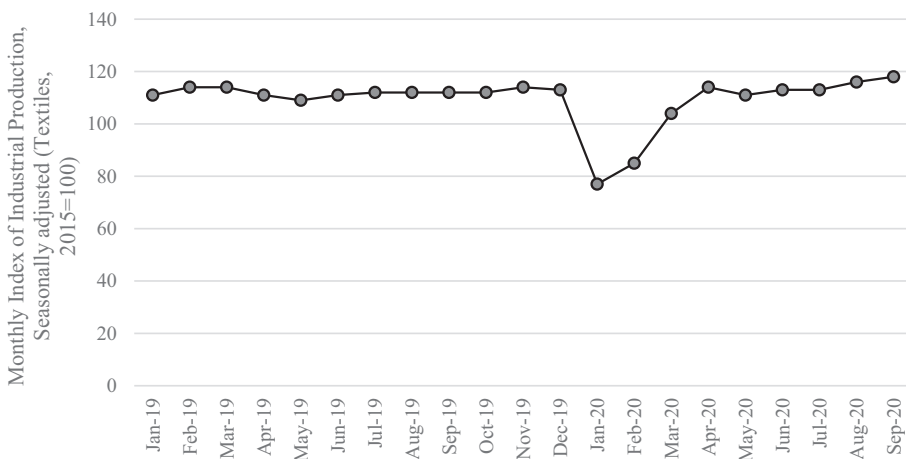


FIGURE 2 Textile production in China, January 2019 to September 2020
 Source: UNIDO (2020).

and cloth masks, achieving a total capacity of eight million face masks per day to address both domestic and overseas demand (Vietnam MOIT, 2020). Efforts of home-based workers from Cambodia to Uruguay have also been documented, particularly to supply face coverings to communities (WIEGO, 2020).

As the pandemic reached Europe and the US, however, lockdowns were enforced and the demand for clothing plunged. As depicted in Figure 3, large drops (between 50% and 80%) were observed in retail sales of clothing and footwear in March and April. In the US alone, the cumulative decline in clothing sales in March, April and May of 2020 represented USD 44 billion in lost sales. In fact, clothing sales exhibited the largest percentage decline of all major spending categories within the US economy over this period (U.S. Census Bureau, 2020).

While the latest figures reveal some recovery, sales are still far below the levels observed in 2019 (Eurostat, n.d.; U.S. Census Bureau, 2020). Although the time it will take for sales to return to levels close to those observed before the pandemic is still uncertain, emerging industry surveys reveal it is expected to take at least a year (Davis, 2020).

Power disparities across the value chain have meant that impacts of the COVID-19 pandemic have been unequally distributed between industry actors. The effects of demand reductions on lead firms were quickly transmitted to apparel manufacturers. Payment deferrals were followed by sanctions for shipment delays and cancellations of orders, many of them already completed or in progress (Anner, 2020; Davis, 2020). A survey conducted by the International Textile Manufacturers Federation (Davis, 2020) between May 20 and June 8 found that orders remained down on average by more than 40%.

In Bangladesh, more than half of all apparel manufacturers have faced cancellations of orders already completed or in process, representing losses of over USD 3 billion (Anner, 2020; BGMEA, 2020). This reduction in demand together with the defaults of contracts is having devastating effects on the most vulnerable segment of the supply chain: workers. Over two million apparel workers have been fired or furloughed in Bangladesh (BGMEA, 2020).

Survival wages in the apparel industry mean that workers tend to be more vulnerable to shocks. In Ethiopia, where wages in the apparel industry are reportedly the lowest in the world (Barrett &

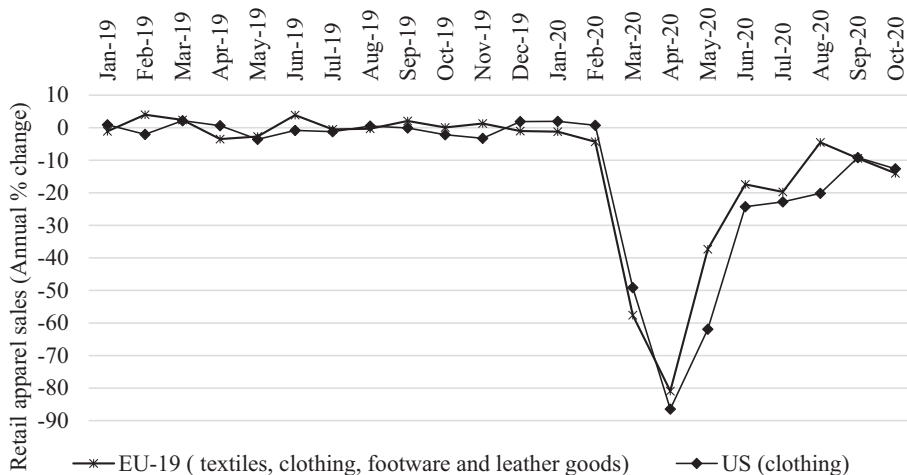


FIGURE 3 Retail apparel sales in the EU and the US, January 2019 to October 2020

Note: EU-19 comprises Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovenia, Slovakia and Spain.

Source: Eurostat (n.d.).

Baumann-Pauly, 2019), a survey found that at least 40% of workers in the apparel industry were experiencing some level of food insecurity (Demeke et al., 2020).

Beyond the loss of jobs, workers of those companies that continued operating or have resumed operations also face health and safety risks. Although some companies have managed to protect their workers, as documented in Ethiopia (ILO, 2020b), as companies resume operations there are increasing concerns as to how apparel companies are managing the health and safety of their workers (Shammi et al., 2020). Additionally, there have been reports of human rights violations committed against workers who protest against being laid off without pay (CCC, 2020).

Women have been disproportionately affected by the COVID-19 pandemic, not only because they represent the largest number of workers in the apparel value chain, but also because they have experienced increasing unpaid care work and higher risk of gender-based violence. In the context of gender-based structural inequalities, social isolation measures, such as school closures and reduced health services for elderly people, have resulted in heavier burdens of care work for women (UN, 2020). Lockdowns have also resulted in many women spending more time with their abusers and having reduced access to social services (UN, 2020). Additionally, since women make up the largest number of informal workers in the apparel industry, they tend to be left out from furlough and other job-related social protection schemes (Devereux et al., 2020a).

6 | LONG-TERM IMPLICATIONS: CONSOLIDATION, RECONFIGURATION AND DRIVERS OF COMPETITIVENESS

The COVID-19 pandemic hit the apparel industry at a time when it was already experiencing deep transformations and a slowdown in demand from Europe and the US (Amed et al., 2018; Frederick & Daly, 2019). Key trends that were already transforming the apparel GVC are expected to accelerate as a result of the COVID-19 pandemic. These include the consolidation and reconfiguration of supply chains and the emergence of new drivers of competitiveness (Amed et al., 2018; Andersson et al., 2019; Euratex, 2020; Frederick & Daly, 2019).

The consolidation of the supply chain towards fewer, larger and more capable suppliers is a trend that has been observed in the apparel GVC even before the 2007/2008 crisis (Forstater, 2009; Gereffi & Frederick, 2010). Factory closures accelerated this trend in 2008, since more capable and solvent companies were more likely to survive the crisis (Gereffi & Frederick, 2010). This trend has continued over the last decade and it is likely to intensify as a consequence of the COVID-19 pandemic. This does not necessarily mean that there will be fewer apparel manufacturers in the long term, but rather that smaller subcontracting firms will see their roles reduced to second- and third-tier suppliers (Frederick & Daly, 2019).

The disruptions caused to the supply of inputs, such as cotton and textiles, and in the delivery to final consumers, have led firms to reassess the global footprint of their supply chains (CNTAC, 2020). “China-plus-one,” for example, is an investment diversification strategy adopted first by Japanese firms and later followed by companies from other developed countries, involving the diversification of their investments in China towards Southeast Asian and South Asian countries (Siddiqui, 2020). “China-plus-one” was first adopted by Japanese firms in 2003 who redirected investments away from China towards Malaysia and Thailand following the SARS pandemic in order to avoid over-reliance on Chinese suppliers and operations (Iida, 2015). Increasing political tensions between Japan and China, rising labour costs and reduced preferential treatment for export product assembly operations in China have exacerbated this trend in the last decade (Iida, 2015). Neighbouring countries with lower labour costs, including Bangladesh, Cambodia, Laos, Myanmar and Vietnam, have been the main alternative

locations of consumer goods such as apparel (Iida, 2015; Siddiqui, 2020). Such trends are likely to accelerate the reconfiguration of the apparel GVC, displacing its centre of gravity from China to neighbouring countries and beyond (CNTAC, 2020; Siddiqui, 2020).

As trade tensions have increased between the US and China, US companies have also sought to reduce their dependence on China (Siddiqui, 2020). European, Korean and even Chinese companies previously using domestic inputs have followed (Siddiqui, 2020). The offshoring of Chinese investments is also explained by the increasing focus of the Chinese government on promoting higher-value-added production. As a result of this, incentives for labour-intensive industries have decreased and Chinese investors have offshored operations to both neighbouring and sub-Saharan African countries, a trend which is likely to intensify in the future (Iida, 2015; Siddiqui, 2020).

Trade preferences are a key driver of competitiveness among apparel manufacturers. Least developed countries (LDC) have benefited from generalized schemes of preferences, such as the EU Everything But Arms (EBA) scheme, granting them duty-free and quota-free access to high-income markets. However, key apparel producers including Bangladesh, Cambodia, Laos, Myanmar and Nepal are expected to graduate from their LDC status in the next five years (Elliott, 2019). As countries graduate, trade preferences will be more dependent on bilateral agreements and subject to stricter rules of origin, making it more important for LDCs to develop capabilities upstream and downstream within the value chain. An example of this is the EU–Vietnam Free Trade Agreement (EVFTA), signed on June 8, 2020, which adopts fabric-forward rules of origin, meaning that fabrics used in the apparel exported to the EU have to be either Vietnamese, from the EU or from a country that enjoys zero tariffs with the EU (e.g. South Korea) (Lu, 2020). This agreement was signed shortly before the withdrawal of part of the tariff preferences granted under EBA to Cambodia, Vietnam's neighbouring country (EC, 2020).

Competitiveness in the apparel industry no longer relies so heavily on low wages. Increasing use of e-commerce and volatility of consumer preferences are shifting business models from mass production and cost-effectiveness towards customization, sustainability and fast delivery (Amed et al., 2018). As customers are more concerned with how their clothes are made, compliance with social and international standards among apparel manufacturers is becoming a more important factor in the sourcing decisions of international buyers (Andersson et al., 2019).

Consumers are increasingly willing to pay premium prices for products that can be identified as ethical. However, a rise in demand for low-price clothing may also be expected, as was observed after the financial crisis of 2007/2008. Although this had positive effects on the number of jobs that were sustained, this trend exacerbated downward price pressures on apparel manufacturers, having negative effects on wages and workers' well-being (Forstater, 2009; Thoburn, 2010).

Advances in digital technologies are also disrupting the industry. Particularly, the potential of automation technologies to increase productivity and facilitate reshoring and nearshoring is gaining growing attention both from policy and industry actors (ILO, 2019; Altenburg et al., 2020). However, many barriers still exist, both financial and technical, to the adoption of automation technologies in the apparel industry (Parschau & Hauge, 2020).

While we have witnessed a few examples of reshoring of apparel production back to high-income countries, particularly by the use of automation technologies, empirical evidence shows that nearshoring is more likely to occur, at least in the next decade (Amed et al., 2018; Altenburg et al., 2020). In 2016, Adidas opened a "speedfactory" in Ansbach, Germany, using a fully automated sewing system. This was followed by the establishment of another factory in Atlanta, US in 2018. However, throughout 2019 and 2020, the company decided to stop operations in both these countries. Instead, the advanced digital production technology used in these factories was transferred to two Asian suppliers, where the technology could be deployed more cost-efficiently (Altenburg et al., 2020). Nonetheless,

automation technologies may open opportunities for apparel manufacturers located closer to consumer markets—in particular for those that had lost competitiveness in the last two decades due to higher labour costs than their Asian competitors, such as Mexico and Turkey (Amed et al., 2018; Thoburn, 2010).

In terms of technology trends, digitalization and the introduction of robotics in manufacturing, processes are expected to reshape the future economic landscape and division of labour in the apparel GVC. In particular, digitalization is expected to accelerate in the aftermath of the COVID-19 pandemic (Amed et al., 2018; Euratex, 2020). The application of digital technologies can help to strengthen the resilience of the GVC, increase its transparency and improve its sustainability. For example, by using cloud-based production tracking systems and radio-frequency identification (RFID) tags, producers can monitor production and inventory levels, and respond more quickly to quality and productivity problems. Firms can also share these data with their buyers in order to provide real-time visibility of delivery lead times. When deployed across the supply chain, such data-sharing approaches can help improve planning, strengthen collaboration and reduce waste.

Digital solutions can also be used to better understand and respond promptly to changes in demand. On the one hand, data analytics can help producers respond faster to changes in consumer demand. On the other, digital technologies are helping to address increasing consumer concern about the social and environmental implications of their purchases. Blockchain, for example, is being used to track CO₂ emissions and water consumption in production processes (Amed et al., 2018).

7 | TOWARDS A POLICY AGENDA FOR A RESILIENT, INCLUSIVE AND SUSTAINABLE APPAREL VALUE CHAIN

Based on the above discussion of both long-standing challenges for developing countries as participants in the global apparel value chain, and the impacts of COVID-19, this section outlines a policy agenda to increase the resilience, inclusiveness and sustainability of the apparel value chain. We propose five themes in this policy agenda: (1) delivering emergency responses to ensure firm survival and the protection of workers' livelihoods; (2) reformulating FDI attraction and market diversification strategies to seize the opportunities from the reconfiguration of the apparel GVC; (3) supporting technology adoption and skills development to upgrade in the value chain; (4) deploying labour standards to improve workers' conditions and strengthen social protection systems; and (5) adopting gender-sensitive responses to balance structural inequalities.

(1) Delivering emergency responses to ensure firm survival and the protection of workers' livelihoods. Short-term financial and fiscal relief measures have proven critical to help different actors of the value chain cope with the crisis. Internationally, the focus has been on supporting firm cash flow (through soft loans, guarantees, subsidies, tax breaks, etc.); guaranteeing workers income (through job retention schemes, direct cash transfers, etc.); aiding manufacturing repurposing (through financing and technical assistance for the production of, among other products, PPE such as masks and gowns); and supporting the resumption of operations (through provision business continuity guidelines, health and safety training, etc.) (ILO, 2020a; IMF, 2020; Policy Links, 2020).

Although priority areas are similar across countries, the size of relief funds varies significantly across geographies. For instance, while business and workers based in the US can benefit from USD 268 billion additional funds in unemployment benefits, USD 510 billion in corporate support, and USD 349 billion in small and medium-sized enterprise (SME) loans, in Bangladesh the total support released for business, including loans to cover wages, has been around USD 6.5 billion (IMF, 2020). These disparities across the value chain highlight the space for international organizations,

development banks and donors to level up the capacity of governments to respond to the crisis. Of critical importance will be public and private collaborations to avoid losing worker skills and firm capabilities that have taken significant efforts to build over time.

(2) *Reformulating FDI attraction and market diversification strategies to seize the opportunities from the reconfiguration of the apparel global value chain.* The COVID-19 pandemic has highlighted the important role of apparel manufacturing in providing supplies to national health systems. In this context, a number of developed countries have announced efforts to build domestic production capability to respond to the current surge in demand and potential future needs. While there has been significant debate about the potential negative effects of reshoring on developing countries, emerging evidence suggests that *nearshoring* is more likely to occur, at least in the next decade (Amed et al., 2018; Altenburg et al., 2020).

The reconfiguration of the apparel GVC and stricter rules of origin that require increased use of local inputs also represents new potential opportunities. In order to address them, developing countries may need to reformulate their FDI attraction strategies. An immediate task is to gain visibility of, and refocus efforts towards, growing international trends—whether targeting firms from developed countries seeking an alternative base to China or Chinese firms seeking to expand overseas. Other key areas of policy action include: targeting “green” and socially responsible investors; increasing regional co-operation; and prioritizing investments where linkages with local SMEs can be developed (UNCTAD, 2020b). For all these tasks, in-depth dialogue with firms already operating in the country is likely to be a key source of information.

Bilateral trade agreements are likely to become increasingly important to guarantee access to mature markets such as Europe and the US. But new opportunities for market diversification are also opening up as incomes in developing countries rise. The market for apparel is growing fast in Southeast Asia, South Asia and Latin America, while demand in Europe and the US shows some signs of stagnation (Amed et al., 2018; Frederick & Daly, 2019; Gereffi & Frederick, 2010). Relevant policy mechanisms to support market diversification include: trade advice, market intelligence, and export finance and insurance (Policy Links, 2020).

(3) *Supporting technology adoption and skills development to upgrade in the value chain.* While there is a strong trend towards automation, recent studies suggest that a gap persists between what is technologically feasible and what can economically be implemented at scale in developing countries (Altenburg et al., 2020; Parschau & Hauge, 2020). This means that low wages are likely to remain a key determinant of investment decisions and that, by some estimates, developing countries have 10–15 years, perhaps longer, before the advent of fully automated production (Altenburg et al., 2020).

As drivers of competitiveness shift from low cost to a combination of cost-effectiveness, flexible production systems, fast delivery and compliance of social and environmental standards, developing countries will need to leverage new technologies, and develop the skills required to use them effectively, in order to remain competitive. In this regard, areas of policy action include: facilitating technology transfer, supporting workforce training and ensuring the domestic availability of specialized business services. Contextual enablers such as infrastructure and modern regulatory frameworks are preconditions for technology upgrading.

Amid the COVID-19 crisis, increasing public expenditure in developed countries is being used to support industrial digitalization, including low-cost solutions (Policy Links, 2020). Because digital technologies are becoming cheaper, more widely available and easier to use, they also offer upgrading opportunities for developing countries despite their limited resources and weaker institutional capacity (Castañeda-Navarrete et al., 2019).

The consolidation of supply chains means that upgrading strategies will need to target tier 2 and tier 3 as well as tier 1 suppliers. Subcontracted factories, workshops and home-based workers working

on small profit margins are particularly vulnerable to crises (Andersson et al., 2019). Financial and technical assistance directed to these actors can also contribute to increasing productivity while supporting better and more sustainable jobs.

(4) *Deploying labour standards to improve workers' conditions and strengthen social protection systems.* A chain is only as strong as its weakest link and, hence, a more resilient and sustainable apparel value chain will need to review current pricing models and ensure tangible commitments to improve worker conditions. The COVID-19 pandemic has exposed and attracted public attention to the inequalities across the apparel value chain. This may help the debate on living wages to gain momentum. A living wage is defined as a remuneration that allows the worker to afford a decent standard of living including "food, water, housing, education, health care, transportation, clothing, and other essential needs including provision for unexpected events" (Luginbühl, 2019, p. 10).

As is happening in the current crisis, the fragile living conditions of apparel workers were exposed amid the financial crisis of 2007/2008. This helped achieve some progress in the adoption of labour standards and to strengthen social protection systems (Bonnet et al., 2012; Forstater, 2009). Nonetheless, as has become apparent from the impacts of COVID-19 on workers, not enough progress has been achieved. A more decisive approach involving legal incentives rather than voluntary codes of conduct may be needed to make tangible progress on workers' conditions (Renfrew, 2020).

The differentiated impacts of the COVID-19 pandemic have also exposed the weaknesses of social protection systems. Informal workers have emerged as one of the most impacted groups. As holders of some level of income they tend to be excluded from social assistance, but they are also excluded from the social security provided to formal workers (Devereux et al., 2020a). Social protection systems will need to be adapted to reach informal workers more effectively, but broader strategies will also be required to facilitate their transition towards the formal economy.

The need for universal cash transfers is also being revisited as a result of the economic shock caused by COVID-19. Targeted schemes have been less effective in reaching groups at risk of poverty and food insecurity beyond those usually identified as poor (Razavi, 2020). Scholars and practitioners have also called for a global safety net, recognizing that countries in greater need of expanding their social protection systems also tend to have lower financial capacity to do so and the economic impacts of the current crisis will likely exacerbate their financial constraints (Devereux et al., 2020b).

(5) *Adopting gender-sensitive responses to balance structural inequalities.* Women constitute the majority of apparel workers and, as such, they need to be placed at the centre of initiatives aiming to improve working conditions in the industry. For example, in the case of a living wage this would translate into accounting for the expenses related to care work and not making the wage dependent on marital status (Luginbühl, 2019).

Gender-sensitive approaches should also be adopted in the relief measures delivered by governments and development actors. From their design, including women's voices, to their monitoring and evaluation, collecting sex disaggregated data and accounting for differentiated impacts. For example, in South Korea, the government has announced a 24-hour care service and a safety net for female-headed households (South Korea Ministry of Economy and Finance, 2020).

Otherwise, in the context of structural inequalities, policy responses are likely to exacerbate existing gender gaps, as has been the case in previous crises. In the aftermath of the 2008 global financial crisis, temporary employment support was provided to participate in infrastructure projects, jobs mainly performed by men, while female-intensive sectors experienced job cuts (UN, 2020).

REFERENCES

- Altenburg, T., Chen, X., Lütkenhorst, W., Staritz, C., & Whitfield, L. (2020). *Exporting out of China or out of Africa? Automation versus relocation in the global clothing industry* (DIE Discussion Paper No. 1/2020). <https://www.die-goldberg.com/>

- die-gdi.de/en/discussion-paper/article/exporting-out-of-china-or-out-of-africa-automation-versus-relocation-in-the-global-clothing-industry/
- Amed, I., Berd, A., Balchandani, A., Andersson, J., Hedrich, S., & Young, R. (2018). *The state of fashion 2019*. <https://www.mckinsey.com/~media/McKinsey/Industries/Retail/Our%20Insights/The%20State%20of%20Fashion%202019%20A%20year%20of%20awakening/The-State-of-Fashion-2019-final.ashx>
- Amin, S. (1976). *Unequal development: An essay on the social formations of peripheral capitalism*. Monthly Review Press.
- Andersson, S., Machiels, A., & Bodwell, C. (2019). *Securing the competitiveness of Asia's garment sector: A framework for enhancing factory-level productivity*. https://www.ilo.org/asia/publications/WCMS_732907/lang--en/index.htm
- Anner, M. (2020, March 27). *Abandoned? The impact of Covid-19 on workers and businesses at the bottom of global garment supply chains* (Penn State Center for Global Workers' Rights Research Report). <https://www.workersrights.org/research-report/abandoned-the-impact-of-covid-19-on-workers-and-businesses-at-the-bottom-of-global-garment-supply-chains/>
- Ascoly, N. (2004). *The global garment industry and the informal economy: Critical issues for labor rights advocates* (IRENE/CCC Discussion Paper). <https://cleanclothes.org/file-repository/resources-publications-04-09-informal-labour-seminar-discussion-paper-ccc.pdf/view>
- Baldwin, R., & Freeman, R. (2020). *Supply chain contagion waves: Thinking ahead on manufacturing 'contagion and reinfection' from the COVID concussion*. <https://voxeu.org/article/covid-concussion-and-supply-chain-contagion-waves>
- Baldwin, R., & Weder di Mauro, B. (2020). *Economics in the time of COVID-19*. <https://voxeu.org/article/economics-time-covid-19-new-ebook>
- Bangladesh Garment Manufacturers and Exporters Association. (2020). *COVID-19 Impact: Calling for responsible partnership*. https://www.bgmea.com.bd/page/COVID-19_Impact_Calling_for_responsible_partnership
- Barrett, P. M., & Baumann-Pauly, D. (2019). *Made in Ethiopia: Challenges in the garment industry's new frontier*. <https://www.stern.nyu.edu/experience-stern/faculty-research/made-ethiopia-challenges-garment-industry-s-new-frontier>
- Barrientos, S., Gereffi, G., & Rossi, A. (2011). Economic and social upgrading in global production networks: A new paradigm for a changing world. *International Labour Review*, 150(3–4), 319–340. <https://doi.org/10.1111/j.1564-913X.2011.00119.x>
- Behuria, P. (2020). The domestic political economy of upgrading in global value chains: How politics shapes pathways for upgrading in Rwanda's coffee sector. *Review of International Political Economy*, 27(2), 348–376. <https://doi.org/10.1080/09692290.2019.1625803>
- Bonadino, B., Huo, Z., Levchenko, A., & Pandalai-Nayar, N. (2020, June). *The role of supply chains in the COVID-19 pandemic and beyond*. <https://iap.unido.org/articles/role-global-supply-chains-covid-19-pandemic-and-beyond>
- Bonnet, F., Saget, C., & Weber, A. (2012). *Social protection and minimum wages responses to the 2008 financial and economic crisis: Findings from the ILO/World Bank Inventory* (ILO Employment Working Paper No. 113). https://www.ilo.org/employment/Whatwedo/Publications/working-papers/WCMS_175204/lang--en/index.htm
- Castañeda-Navarrete, J., Leal-Ayala, D., López-Gómez, C., & Palladino, M. (2019). *Adaptation and adoption of Industry 4.0 in Cambodia*. <https://www.kh.undp.org/content/cambodia/en/home/library/adaptation-and-adoption-of-industry-4-0-in-cambodia.html>
- Chang, H. J., Hauge, J., & Irfan, M. (2016). Transformative industrial policy for Africa. *Addis Ababa, Ethiopia: Economic Commission for Africa*. <https://repository.uneca.org/handle/10855/23015>
- China National Textile & Apparel Council. (2020). *Sun Ruizhe: My country's textile industry status and prospects*. China National Textile and Apparel Council. https://www.cntac.org.cn/jinghua/202007/t20200707_4026847.html
- Clean Clothes Campaign. (2020, May 18). *COVID-19 demands in defense of garment workers in global supply chains*. <https://cleanclothes.org/news/2020/covid-19-short-term-demands-in-defense-of-garment-workers-in-global-supply-chains>
- Coe, N. M., & Yeung, H. W. C. (2015). *Global production networks: Theorizing economic development in an interconnected world*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780198703907.001.0001>
- Dabla-Norris, E., Gulde-Wolf, A.-M., & Painchaud, F. (2020, June 29). *Vietnam's success in containing COVID-19 offers roadmap for other developing countries* (IMF Country Focus). <https://www.imf.org/en/News/Articles/2020/06/29/na062920-vietnams-success-in-containing-covid19-offers-roadmap-for-other-developing-countries>
- Davis, R. (2020, June 18). *Fourth ITMF-Survey about the impact of the Corona-pandemic on the global textile industry*. <https://www.itmf.org/images/dl/articles/2020/Fourth-ITMF-Survey-About-The-Impact-Of-The-Corona-Pandemic-On-The-Global-Textile-Industry.pdf>

- Demeke, E., Hardy, M., Kagy, G., Meyer, C. J., & Witte, M. (2020). *The impact of COVID-19 on the lives of women in the garment industry: Evidence from Ethiopia*. <https://osf.io/e2ukt/>
- Devereux, S., Roelen, K., Lind, J., & Sabates-Wheeler, R. (2020a, May 7). *Covid-19 and social protection needs: Who are the most vulnerable?*. <https://www.ids.ac.uk/opinions/covid-19-and-social-protection-needs-who-are-the-most-vulnerable/#:~:text=Groups%20who%20are%20vulnerable%20to,and%20refugees%2C%20pastoralists%20and%20children>
- Devereux, S., Roelen, K., Lind, J., & Sabates-Wheeler, R. (2020b, May 14). *Covid-19 and social protection responses: Time for a global safety net?*. <https://www.ids.ac.uk/opinions/covid-19-and-social-protection-responses-time-for-a-global-safety-net/>
- Dicken, P. (2015). *Global shift: Mapping the changing contours of the world economy* (6th ed.). Guilford Publications.
- Elliott, K. A. (2019, November). *A smoother trade transition for graduating LDCs* (CGD Note). <https://www.cgdev.org/publication/smooth-trade-transition-graduating-ldcs>
- Euratex. (2020, April 24). *The European textiles and apparel industry in the post corona era: Proposals for recovery*. <https://euratex.eu/wp-content/uploads/Post-Corona-Strategy-Final.pdf>
- European Commission. (2020, February 12). *Trade/human rights: Commission decides to partially withdraw Cambodia's preferential access to the EU market* [Press release]. https://ec.europa.eu/commission/presscorner/detail/en/ip_20_229
- Eurostat. (n.d.). *Turnover and volume of sales in wholesale and retail trade - monthly data* [Data set]. https://ec.europa.eu/eurostat/en/web/products-datasets/-/STS_TRTU_M
- Forstater, M. (2009). *Implications of the global financial and economic crisis on the textile and clothing sector*. https://www.ilo.org/wcmsp5/groups/public/-/ed_dialogue/-/sector/documents/publication/wcms_162597.pdf
- Frank, A. G. (1967). *Capitalism and underdevelopment in Latin America: Historical studies in Chile and Brazil*. Monthly Review Press.
- Frederick, S. (2015). Case one: Pro-poor development and power asymmetries in the apparel GVC. In A. Abdulsamad, S. Frederick, A. Guinn, & G. Gereffi (Eds.), *Pro-poor development and power asymmetries in global value chains* (pp. 7–22). https://gvcc.duke.edu/wp-content/uploads/Pro-PoorDevelopment_and_PowerAsymmetries_inGlobalValueChains_Final.pdf
- Frederick, S., & Daly, J. (2019). *Pakistan in the apparel global value chain*. <https://gvcc.duke.edu/cggclisting/pakistan-in-the-apparel-gvc/>
- Gereffi, G. (1994). The organization of buyer-driven global commodity chains: How US retailers shape overseas production networks. In G. Gereffi & M. Korzeniewicz (Eds.), *Commodity chains and global capitalism* (pp. 95–122). Praeger.
- Gereffi, G. (2002). *The international competitiveness of Asian economies in the apparel commodity chain*. Asian Development Bank. <https://www.adb.org/publications/international-competitiveness-asian-economies-apparel-commodity-chain>
- Gereffi, G. (2018). *Global value chains and development: Redefining the contours of 21st century capitalism*. Cambridge University Press. <https://doi.org/10.1017/9781108559423>
- Gereffi, G. (2019). Economic upgrading in global value chains. In S. Ponte, G. Gereffi, & G. Raj-Reichert (Eds.), *Handbook on global value chains* (pp. 240–254). Edward Elgar. <https://doi.org/10.4337/9781788113779>
- Gereffi, G., & Fernandez-Stark, K. (2018). Global value chain analysis: A primer. In G. Gereffi, *Global value chains and development: Redefining the contours of 21st century capitalism* (2nd edition, pp. 305–342). Cambridge University Press. <https://doi.org/10.1017/9781108559423.012>
- Gereffi, G., & Frederick, S. (2010). *The global apparel value chain, trade and the crisis: Challenges and opportunities for developing countries* (World Bank Policy Research Working Paper No. 5281). <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/100641468339015732/the-global-apparel-value-chain-trade-and-the-crisis-challenges-and-opportunities-for-developing-countries>
- Gereffi, G., & Korzeniewicz, M. (Eds.). (1994). *Commodity chains and global capitalism*. Praeger.
- Gereffi, G., & Wu, X. (2020). Global value chains, industrial hubs, and economic development in the 21st century. In J. Lin & A. Oqubay (Eds.), *The Oxford handbook of economic hubs and industrial development* (pp. 1049–1068). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780198850434.001.0001>
- Gereffi, G., Humphrey, J., & Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy*, 12(1), 78–104. <https://doi.org/10.1080/09692290500049805>

- Hauge, J. (2020). Industrial policy in the era of global value chains: Towards a developmentalist framework drawing on the industrialisation experiences of South Korea and Taiwan. *The World Economy*, 43(8), 2070–2092. <https://doi.org/10.1111/twec.12922>
- Henderson, J., Dicken, P., Hess, M., Coe, N., & Yeung, H. W. C. (2002). Global production networks and the analysis of economic development. *Review of International Political Economy*, 9(3), 436–464. <https://doi.org/10.1080/09692290210150842>
- Hess, M., & Yeung, H. (2006). Whither global production networks in economic geography? Past, present and future. *Environment and Planning A: Economy and Space*, 38(7), 1193–1204. <https://doi.org/10.1068/a38463>
- Horner, R., & Alford, M. (2019). The roles of the state in global value chains. In S. Ponte, G. Gereffi, & G. Raj-Reichert (Eds.), *Handbook on global value chains* (pp. 555–569). Edward Elgar. <https://doi.org/10.4337/9781788113779>
- Humphrey, J., & Schmitz, H. (2002). How does insertion in global value chains affect upgrading in industrial clusters? *Regional studies*, 36(9), 1017–1027. <https://doi.org/10.1080/0034340022000022198>
- Huynh, P. (2017). *Developing Asia's garment and footwear industry: Recent employment and wage trends* (Asia-Pacific Garment and Footwear Sector Research Note No. 8). https://www.ilo.org/asia/publications/issue-briefs/WCMS_581466/lang--en/index.htm
- Iida, K. (2015). Political risks and Japanese Foreign Direct Investment in East Asia: A case study of “China-Plus-One”. *The Korean Journal of International Studies*, 13(2), 383–410. <https://doi.org/10.14731/kjis.2015.08.13.2.383>
- International Labour Organization. (2014). *Wages and working hours in the textiles, clothing, leather and footwear industries*. https://www.ilo.org/sector/Resources/publications/WCMS_300463/lang--en/index.htm
- International Labour Organization. (2019). *The future of work in textiles, clothing, leather and footwear*. https://www.ilo.org/sector/Resources/publications/WCMS_669355/lang--en/index.htm
- International Labour Organization. (2020a, April 8). *COVID-19 and the textiles, clothing, leather and footwear industries* (ILO Sectoral Brief). https://www.ilo.org/sector/Resources/publications/WCMS_741344/lang--en/index.htm
- International Labour Organization. (2020b, June). *COVID-19 and the garment and textile sector in Ethiopia: Workers' perspectives on COVID-19 response*. https://www.ilo.org/africa/technical-cooperation/inclusive-industrialization/WCMS_751045/lang--en/index.htm
- International Monetary Fund. (2020). *Policy responses to Covid-19. Policy tracker*. <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19#Z>
- Lu, S. (2020, June 12). *EU-Vietnam Free Trade Agreement and outlook of Vietnam's apparel export*. <https://shengluflation.com/2020/06/12/eu-vietnam-free-trade-agreement-and-outlook-of-vietnams-apparel-export/>
- Luebker, M. (2014). *Minimum wages in the global garment industry*. https://www.ilo.org/asia/info/research-and-data/WCMS_317002/lang--en/index.htm
- Luginbühl, C. (2019). *Will women workers benefit from living wages? A gender-sensitive approach to living wage benchmarking in global garment and footwear supply chain*. https://cleanclothes.org/file-repository/ccc_dec2019_luginbuhl_lw_gender.pdf/view
- Milberg, W., & Winkler, D. (2011). Economic and social upgrading in global production networks: Problems of theory and measurement. *International Labour Review*, 150(3–4), 341–365. <https://doi.org/10.1111/j.1564-913X.2011.00120>
- Parschau, C., & Hauge, J. (2020). Is automation stealing manufacturing jobs? Evidence from South Africa's apparel industry. *Geoforum*, 115, 120–131. <https://doi.org/10.1016/j.geoforum.2020.07.002>
- Policy Links. (2020). *Covid-19: International manufacturing policy responses* (October 2020 update). <https://www.ciip.group.cam.ac.uk/reports-and-articles/covid-19-international-manufacturing-policy-2/>
- Razavi, S. (2020, May 3). *The COVID-19 pandemic as a wake-up call: Social protection systems for all*. <https://www.fes-connect.org/trending/the-covid-19-pandemic-as-a-wake-up-call-social-protection-systems-for-all/>
- Renfrew, A. (2020, April 24). *The impact of COVID-19 on garment workers*. <https://thecircle.ngo/impact-covid-19-garment-workers/>
- Selwyn, B. (2019). Poverty chains and global capitalism. *Competition and Change*, 23(1), 71–97. <https://doi.org/10.1177/1024529418809067>
- Seric, A., & Winkler, D. (2020, April). *Managing COVID-19: Could the coronavirus spur automation and reverse globalization?*. <https://iap.unido.org/articles/could-coronavirus-spur-automation-and-reverse-globalization>
- Shammi, M., Bodrud-Doza, M., Towfiqul Islam, A., & Rahman, M. M. (2020). COVID-19 pandemic, socioeconomic crisis and human stress in resource-limited settings: A case from Bangladesh. *Heliyon*, 6(5), e04063. <https://doi.org/10.1016/j.heliyon.2020.e04063>

- Shih, W. (2020, March 19). Is it time to rethink globalized supply chains? *MIT Sloan Management Review*, 61(4). <https://sloanreview.mit.edu/article/is-it-time-to-rethink-globalized-supply-chains/>
- Siddiqui, M. S. (2020, June 7). China plus one and FDI into Bangladesh. *Daily Asian Age*. <https://dailiasianage.com/news/231399/china-plus-one-and-fdi-into-bangladesh>
- South Korea Ministry of Economy and Finance. (2020, June 11). *Korea's health and economic response to pandemic: Luncheon with EU ambassadors*. http://english.moef.go.kr/co/fixFileDown.do?orgNm=Korea_Health_Economic_Response_to_Pandamic.pdf
- Staritz, C., & Whitfield, L. (2019). Local firm-level learning and capability in global value chains. In S. Ponte, G. Gereffi, & G. Raj-Reichert (Eds.), *Handbook on global value chains* (pp. 385–402). Edward Elgar. <https://doi.org/10.4337/9781788113779>
- Starrs, S. (2014). The chimera of global convergence. *New Left Review*, 87(1), 81–96. https://www.tni.org/files/download/shifting_power_global_convergence.pdf
- Sturgeon, T., Van Biesebroeck, J., & Gereffi, G. (2008). Value chains, networks & clusters: Reframing the global auto industry. *Journal of Economic Geography*, 8(3), 297–321. <https://doi.org/10.1093/jeg/lbn007>
- Sumner, A., Ortiz-Juarez, E., & Hoy, C. (2020). *Precarity and the pandemic: COVID-19 and poverty incidence, intensity and severity in developing countries* (UNU WIDER Working Paper No. 2020/77). <https://www.wider.unu.edu/publication/precarity-and-pandemic>
- Thoburn, J. (2010). *The impact of world recession on the textile and garment industries of Asia* (UNIDO Research and Statistics Branch Working Paper). <https://www.unido.org/api/opentext/documents/download/10079987/unido-file-10079987>
- United States Census Bureau. (2020). *Monthly retail trade: Time series data* [Data set]. <https://www.census.gov/retail/marts/www/timeseries.html>
- United Nations. (2020, April 9). *Policy brief: The impact of COVID-19 on women*. <https://www.un.org/sexualviolenceinconflict/wp-content/uploads/2020/06/report/policy-brief-the-impact-of-covid-19-on-women/policy-brief-the-impact-of-covid-19-on-women-en-1.pdf>
- United Nations Conference on Trade and Development. (2013). *Cambodia. Sector-specific investment strategy and action plan. Pilot study results*. https://unctad.org/system/files/information-document/diae_G20_Cambodia_en.pdf
- United Nations Conference on Trade and Development. (2020a). *Impact of the COVID-19 pandemic on trade and development: Transitioning to a new normal*. https://unctad.org/system/files/official-document/osg2020d1_en.pdf
- United Nations Conference on Trade and Development. (2020b). *World investment report 2020: International production beyond the pandemic*. <https://unctad.org/webflyer/world-investment-report-2020>
- United Nations Industrial Development Organization. (2020). *Monthly Index of Industrial Production (IIP) at the 2-digit level of ISIC Revision 4*. https://stat.unido.org/content/dataset_description/monthly-iip
- Vicheika, K. (2020, 31 March). Factories closing due to coronavirus pandemic; unionists worry about worker welfare. Voice of America Khmer Service. <https://www.voacambodia.com/a/factories-closing-due-to-coronavirus-pandemic-unionists-worry-about-worker-welfare/5353095.html> VOA.
- Vietnam Ministry of Industry and Trade. (2020, April 16). *Vietnam could become world's face mask factory amid COVID-19*. <https://www.moit.gov.vn/web/web-portal-ministry-of-industry-and-trade/tin-chi-tiet/-chi-tiet/vietnam-could-become-world-s-face-mask-factory-amid-covid-19-18502-1305.html>
- VITAS. (2020, April 9). *Summary of impact of Covid-19 to Vietnam textile & garment sector*. http://www.vietnamtextile.org.vn/summary-of-impact-of-covid-19-to-vietnam-textile-garment-sector_p1_1-1_2-2_3-615_4-4155.html
- Wallerstein, I. (1974). *The modern world system (Vol. I): Capitalist Agriculture and the origin of the European world-economy in the sixteenth century*. Academic Press.
- Women in Informal Employment: Globalizing and Organizing. (2020). *Home-based workers face a new kind of isolation* [Web article]. <https://www.wiego.org/home-based-workers-face-new-kind-isolation>
- World Bank. (2019). *World development report 2020: Trading for development in the age of global value chains*. <https://openknowledge.worldbank.org/handle/10986/32437>
- World Health Organization. (2020, June 29). *Timeline of WHO's response to COVID-19*. <https://www.who.int/news-room/detail/29-06-2020-covidtimeline>
- World Integrated Trade Solution. (2016). *Cambodia textiles imports by country by country in US\$ Thousand 2016* [Data set]. https://wits.worldbank.org/CountryProfile/en/Country/KHM/Year/LTST/TradeFlow/Import/Partner/by-country/Product/50-63_TextCloth

World Trade Organization. (n.d.). *Merchandise exports by product group*. <https://data.wto.org/?idSavedQuery=c63118f1-8f66-4877-b299-6d9dafda4103>

World Trade Organization. (2020, October 6). *Trade shows signs of rebound from COVID-19, recovery still uncertain* [Press release]. https://www.wto.org/english/news_e/pres20_e/pr862_e.htm

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