Introduction: Disruptions in global value chains – Continuity or change for labour governance?

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Abstract. *Global production and trade organized in global value chains (GVCs) have structured labour governance and the conditions of work for multiple decades. Since the early 2000s, a series of new economic, technological and political disruptions, along with the current COVID-19 global health pandemic, have accentuated critical concerns about the role of labour governance and the future of work in the global economy. The articles in this Special Issue address these themes through original industry and country case studies, using both longitudinal and comparative research designs and mixed methods to offer insights into a labour governance framework that will fit future GVCs.*

Keywords: *global value chains, decent work, labour governance, economic crisis, digital transformation, automation, Industry 4.0.*

1. An era of global value chain disruptions

The predominance of global value chains (GVCs) as a business model in international production, trade and investment has become solidly established in recent decades. It is estimated that in 2015 roughly 50 per cent of global trade took place within GVCs coordinated by transnational corporations (TNCs) (World Bank 2020).[1] The broad incorporation into GVCs of firms and workers in the global South has stimulated debate concerning how to leverage positive

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[1] This involves the cross-border exchange of inputs and outputs within TNC-coordinated GVCs through their networks of contractual partners, affiliates and arm's-length suppliers.

economic and social impacts to promote dynamic, inclusive and sustainable development in low-income and emerging economies.

The expansion of trade through GVCs has led to a reduction in poverty in those countries that have been able to establish themselves firmly in labour-intensive export-oriented production. This is the case of Bangladesh, China and Viet Nam (World Bank 2020), where there has been a surge of employment opportunities, especially for young, low-skilled workers, often women. But reaping the benefits of participation in GVCs is not an automatic process. Understanding how to capture the gains of GVC participation and use GVCs as an effective tool for development is a central focus for scholars and policymakers (Barrientos, Gereffi and Rossi 2011; ILO 2016; Gereffi 2006 and 2018; World Bank 2020). This question has gained renewed prominence owing to major changes, disruptions and trends in the GVC model, such as those briefly highlighted below.

- *External economic shocks and precarious upgrading in GVCs*. The global economic and financial crisis of 2008–09 exposed fault lines in export-oriented GVCs after their steady expansion from the mid-1960s to the mid-2000s (UNCTAD 2013). Labelled "the world economy's backbone and central nervous system" (Cattaneo, Gereffi and Staritz 2010, 7), GVCs became more consolidated both organizationally and geographically as lead firms streamlined their supply chains to include a much smaller number of larger and more capable suppliers located in several prominent emerging economies (Gereffi 2014). Given that producers of both final and intermediate goods are typically concentrated in the global South, these trends made economic and social upgrading more challenging for small firms and workers in the least developed economies and regions of the world (Barrientos, Gereffi and Pickles 2016).
- *The rise of Industry 4.0*. During the past decade, virtually all industries in the global economy have been dramatically transformed by the rise of the digital economy, powered by the internet and a suite of advanced technologies associated with the Fourth Industrial Revolution or Industry 4.0. The trend towards Industry 4.0 involves labour-saving technologies (including digitalization, automation, robotics and 3D printing) that some analysts predict will replace repetitive, routine, low-skilled tasks and demand higher capabilities, such as design, programming and monitoring activities (UNCTAD 2017; Brun, Gereffi and Zhan 2019). However, the characteristics of some sectors and products may limit the adoption of these advanced technologies in the short term. In other sectors, the cost and sophistication of Industry 4.0 may create trade-offs that could inhibit more rapid diffusion of automation to replace low-cost labour in the global South.
- *The COVID-19 pandemic*. Alongside these economic and technological shifts, the COVID-19 global pandemic that emerged in early 2020 has resulted in unprecedented supply shortages and demand fluctuations. These have affected virtually all global industries, from medical supplies to food products, and from the transportation and service sectors to critical intermediate goods. Multiple impacts of the pandemic, including disruptions in production and distribution, requirements to continue working despite risks of exposure to infection, and the increased care burden in households that falls primarily on women, have magnified the vulnerability of workers and small firms,

especially in export-oriented developing economies (Keynes, Bown and Rocha 2020; Farrell and Newman 2020; Gereffi 2020 and 2021; Anner 2020).

Such structural transformations and external shocks shaping the evolution of GVCs lead to constant innovations in labour governance (Barrientos, Gereffi and Pickles 2016; Posthuma and Rossi 2017; Knorringa and Nadvi 2016). New frontiers of labour governance in GVCs build on decades of experimentation with public, private and social governance mechanisms to regulate conditions of work and labour standards in GVCs (Rodrik and Sabel 2019). Meanwhile multilateral institutions such as the ILO advocate more linked-up forms of "synergistic governance" (ILO 2016; Gereffi and Lee 2016). Although significant gaps remain, this process has laid a foundation of global labour governance and national governance instruments and enforcement (for example, trade union activities, government legislation, and labour inspection and enforcement).

These unfolding trends and disruptions raise new questions: What are the likely impacts on core issues such as the scale of employment in GVCs, the quality of those jobs, and the skill requirements of diverse categories of workers in different tiers of GVCs? How do structural transformations like Industry 4.0 and external shocks such as the impact of COVID-19 affect labour governance and the conditions of work in GVCs? What will the future of work in GVCs look like?

This Special Issue of the *International Labour Review* examines the implications of the current era of GVC disruptions for economic and social upgrading, labour governance and the future of work. It offers insights on what types of policy solutions, experiences and strategies are needed to ensure GVCs can contribute to inclusive and sustainable growth, and it highlights an emerging research agenda on the future of work in the context of GVC disruptions and the resulting labour governance challenges.

2. Main themes in the Special Issue: Transformative trends, conditions of work, labour agency and worker voices in global value chains

The articles in this Special Issue are clustered around three main themes: (1) transformative trends in the evolution of buyer-driven GVCs; (2) chronicling the conditions of work in GVCs and the impact of labour governance mechanisms on them; and (3) labour agency and worker voice in GVCs. In exploring the macro-, meso- and micro-level changes associated with GVCs in the current era of disruptions, the articles contained in this Special Issue employ a variety of analytical and methodological approaches. Many of the authors have long-standing research and personal experience with the topics they are covering, and careful literature reviews are complemented by in-depth interviews with key firms and other stakeholders in relevant GVCs. Several articles adopt both longitudinal and comparative research designs that allow stronger generalizations, even with a limited number of empirical cases. In contemporary studies of GVCs, mixed-methods approaches are common and desirable, especially when they are anchored in solid conceptual frameworks drawn from existing academic literature, as is true of the studies

in this Special Issue. The outcome is theoretically informed, actor-oriented and policy-relevant scholarship that addresses key current questions and lays the groundwork for future research.

2.1. Transformative trends in buyer-driven global value chains

The potential for new technologies to disrupt the world of work has received a great deal of attention in the literature (Chang, Rynhart and Huynh 2016; Frey and Osborne 2017). Recent technologies such as those associated with the digital economy and Industry 4.0 may dramatically decrease the need for workers and may facilitate reshoring of production back to high-income countries. Shifting geographies of production related to trade agreements and government policies can also promote nearshoring. However, the transformative trends in GVCs are organizational as well. They include new divisions of labour among lead firms and first-tier suppliers (FTSs) that alter the dynamics of both social and economic upgrading. These topics are addressed in the first three articles of the Special Issue.

In the first article, entitled "Disruption in the apparel industry? Automation, employment and reshoring", Fernanda Bárcia de Mattos, Jeff Eisenbraun, David Kucera and Arianna Rossi focus on the question of the potential impacts of automation on jobs and geographies of production from the vantage point of lead firms in the apparel and footwear GVCs. Their contribution is grounded in a series of eight in-depth interviews with five leading companies in the apparel and footwear industry, each in a different region and with a distinct business model, and all with a strong record of innovation. The authors find that, despite the heterogeneity of products, locations and skills, lead firms in apparel and footwear did not fully embrace automation and were engaging with the process only on a limited scale.

The article identifies two main obstacles to the uptake of automation: (1) the technical limitations linked to the pliability of fabrics and constantly changing products; and (2) the economics of adopting new technology given that the apparel industry tends to follow the GVC model of global outsourcing that relies on low labour costs in producing countries. Hence, the comparative advantage of low wages in developing economies still overrides any efficiency gains from automation. When looking at a five-year horizon, lead firms claim that significant job loss in producing countries is unlikely. Rather, they point to the prevalence of "semi-automation" where workers hand-feed fabrics into machines that divide the apparel-making process into discrete steps, and to a continued reliance on production workers with different skill sets. Since the research was undertaken before COVID-19, the authors identify the impact of automation, reshoring and nearshoring in the wake of the global pandemic as a critical question for future research.

International organizations like the United Nations Conference on Trade and Development (UNCTAD 2017) and the World Economic Forum have, for nearly a decade, been drawing attention to the impact of the digital economy on production in GVCs and its association with Industry 4.0 (Schwab 2016). In their article "Beyond 'Industry 4.0': B2B factory networks as an alternative path towards the digital transformation of manufacturing and work", Florian Butollo

and Lea Schneidemesser anchor their discussion of these topics in the experiences of the German and US industrial models and highlight their impact in the contemporary Chinese economy.

The stylized German narrative of "Industry 4.0", a term first coined in 2011 by employers' associations and supported by the German Ministry of Economics and Technology, focuses on the reconciliation of high-volume, high-productivity manufacturing and the customization of products for diversified consumer demand in "smart factories". This vision reflects the engineering-heavy German tradition of precision manufacturing and a corporatist emphasis on skills, comprehensive training and worker autonomy, with its purported competitive advantages vis-à-vis the traditional US paradigm of standardized mass production.

In contrast to this "smart factory" model, the authors draw on their qualitative interviews and factory visits with digital platform providers and their manufacturing partners in China to identify a "factory network" alternative based on China's efforts to adopt a novel approach to digitalized manufacturing. In China's factory network model, digital platform companies (such as the e-commerce giant Alibaba) function as matchmakers between industrial suppliers and buyers organized in vast flexible manufacturing networks. Through digital platforms, suppliers can easily qualify for contracts with buyers that lie beyond their geographically circumscribed reach, but they lose the capacity to bargain. This can result in a "race to the bottom" in terms of workers' rights as competition becomes more intense.

The producer-centred "smart factory" and distribution-oriented "factory network" approaches are not unique to Germany and China, respectively, but, according to Butollo and Schneidemesser, these two economies showcase the two approaches' trade-offs and point to a number of implications for social and economic upgrading. In the smart factory model, possible negative effects include deskilling, the intensification of work and the loss of autonomy. The B2B factory network scheme popularized by Chinese platform companies has different implications for social upgrading. Small-batch production requires skilful and experienced workers, and wages can increase substantially, especially given the growing labour scarcity in certain regions of China. However, against a backdrop of intense competition and high levels of informality in Chinese industries, distribution-oriented factory networks may also lead to precarious conditions for workers and small suppliers, whether oriented towards domestic or export markets.

The Republic of Korea was a key apparel exporter, along with Hong Kong (China) and Taiwan Province of China, in the early expansion of the garment GVC. In their article "South Korean first-tier suppliers in apparel global value chains: Upgrading and labour implications in the Asian context", Hyunji Kwon, Sun Wook Chung and Joonkoo Lee highlight the unique contributions of two Korean FTSs to economic and social upgrading in the apparel GVC after the global recession of 2008–09. The apparel industry was a major source of the Republic of Korea's exports in the 1970s and 1980s, and the United States of America was its main export market. In 1989, the Republic of Korea accounted for 15 per cent of US apparel imports, second only to Hong Kong (China), but amidst the country's push for export diversification the share of textiles and

apparel in its total exports diminished from 54 per cent in 1972 to 24 per cent in 1989. However, the Republic of Korea continued to expand its international presence, establishing its main factory base for apparel in Viet Nam in the 2000s and an additional export hub for the US market in Central America.

A key contribution of this article is its documentation of the shifting role of two large Korean FTS firms in promoting economic and social upgrading in the multiple export hubs where they operated. In terms of economic upgrading, the Korean FTSs helped US buyers (retailers and brands) implement their cost reduction goals by achieving strategic partnerships in which the Korean firms augmented selected pre- and post-production research and development, and sales capabilities. They also furthered their technological investment by introducing lean production and factory automation to achieve manufacturing excellence. Social compliance was an equally important goal, since US lead firms were under increasing pressure to maintain buyer codes aligned with high international standards. Korean FTSs took proactive steps to create their own codes of conduct and self-audit systems to avoid unexpected risks. However, the COVID-19 pandemic has placed some of these experiments in peril owing to a domino effect of order cancellations.

2.2. Chronicling labour conditions in global value chains

The second section of this Special Issue deals with how the business model and the labour governance systems (LGSs) that underpin the apparel GVC affect the likelihood that working conditions will improve. Both the articles in this section rely on longitudinal factory surveys designed and administered by the authors in a variety of national contexts, and both focus on the apparel GVC. The conceptual framing of the articles allows the survey results to address several of the root causes of the recurrent mismatch between economic upgrading and social downgrading in the countries considered, which reflect both the power asymmetries and the weak LGSs of the apparel GVC.

In their article "Why is the business case for social compliance in global value chains unpersuasive? Rethinking costs, prices and profits", Ana Antolin, Laura Babbitt and Drusilla Brown ask a fundamental question: if decent work in GVCs is good for business, why are supplier factories not improving working conditions? They provide an original contribution to the literature by focusing not only on productivity gains but also on the costs and profits for the firm. They do so by analysing primary data from large-scale surveys to understand worker well-being, productivity and profitability in apparel factories in Cambodia, Indonesia, Jordan and Viet Nam. Responses from apparel factory managers in Cambodia show they believe that better working conditions improve productivity but they do not see a relationship between working conditions and profit. Their responses support the authors' contention that the business case is not persuasive enough to encourage a change in company behaviour.

The authors complement their empirical findings with the question of labour governance in GVCs. They collect data from apparel factories in Indonesia, Jordan and Viet Nam that participate in the ILO/International Finance Corporation (IFC) Better Work programme, which supports factories to invest in improvements in working conditions and higher compliance with labour laws. They find that total

costs in apparel factories increase with exposure to the programme. Interestingly, in the cases of Indonesia and Viet Nam, profits also rise with programme participation. For both unit costs and profits to go up, there needs to be an increase in price, which is set by the buyer. Buyers can establish the value of good working conditions by setting higher prices to reward compliance; they can also support factories by maintaining business relationships as firms transition to the high road. Thus, in order to make a salient business case to suppliers, commitment by buyers is essential.

There could be a win–win scenario in which garment workers have better working conditions and factory managers see an improvement in productivity and profits as a result. For this to happen, the business case needs to prevail in the overall GVC and not just at the enterprise level. Otherwise, any productivity gains arising from improved working conditions would be captured solely by GVC lead firms, unless they are willing to alter their pricing model and profits to share the costs of change with suppliers and workers.

The article highlights how the COVID-19 pandemic further reveals that buyers are the keystone in building sustainable, positive reforms in the apparel industry. As buyers abandon contracted orders to factories, many of the gains in working conditions disappear (Anner 2020). Therefore, the authors conclude, the long-term success of investment in decent work is dependent on brands being engaged with and committed to recalibrating their pricing to compensate factories for the higher labour costs resulting from social compliance.

No case of substandard working conditions in apparel factories has received more attention than the post-Rana-Plaza landscape in Bangladesh (Bair, Anner and Blasi 2020; Anner 2020). The 2013 disaster highlighted the failure of regulation to ensure the safety of garment workers producing for major Western retailers and brands, and it spurred innovations in terms of labour governance of GVCs. Through a case study of the Bangladeshi apparel industry, presented in their article "From Rana Plaza to COVID-19: Deficiencies and opportunities for a new labour governance system in garment global supply chains", Stephen J. Frenkel and Elke S. Schuessler consider the changes that have occurred in labour regulation and their consequences for workers. They draw on longitudinal primary data collected from managers and workers, which are linked to a conceptual framework that distinguishes between strong and weak ideal types of LGS.

The authors find that since the external shock ("focusing event") of the Rana Plaza building collapse, labour governance has become more complex and in some respects more effective, particularly regarding building and worker safety, given that these issues were at the forefront of the LGS reforms after the 2013 disaster. There have been modest gains in worker awareness of employers' obligations. However, endemic violations of labour rights such as freedom of association, unpaid wages, excessive working hours, and sexual harassment have continued. This is because of unchanged power structures and regulatory gaps that have so far limited significant transformation of the LGS in Bangladesh.

Building on the empirical evidence of the post-Rana Plaza configurations, the authors reflect on whether the COVID-19 pandemic could also be a "focusing event" or a window of opportunity to spur LGS innovation across the apparel

GVC. In the wake of the supply and demand shocks to the global apparel industry, and specifically in Bangladesh, driven by the COVID-19 crisis since early 2020, the authors suggest that any debate among LGS stakeholders to address the root causes of poor working conditions in GVCs should concentrate on three main objectives: a systematic, realistic increase in purchasing prices; a commitment to factory upgrading; and a strengthening of worker representation. They see these goals as critical to strengthening the LGS for workers in GVCs.

2.3. Labour agency and worker voices in global value chains

The ILO has for several decades been concerned with how labour governance gaps contribute to decent work deficits in GVCs (ILO 2016). This is a challenge that responds to the ILO's principle of tripartism, which involves dialogue and cooperation among governments, employers and workers in the formulation of standards and policies dealing with labour matters. It also requires cross-national, multi-industry and actor-centred studies because labour governance issues are shaped by national and industry contexts and by distinct patterns of worker protests. The three articles in this final section illustrate the empirical and analytical strengths of this approach.

The article by Mark Anner, entitled "Three labour governance mechanisms for addressing decent work deficits in global value chains", examines the interplay between labour governance and decent work deficits, drawing on the author's two decades of experience with the apparel GVC in three countries: Bangladesh, Honduras and Viet Nam. Anner's data sources include extensive interviews with workers, union leaders, employers, government representatives and industry experts, as well as his own original surveys and primary data analysis.

The analytical framework is clear and comprehensive. The article focuses on a single industry, the buyer-driven apparel GVC, for which the governance structure of lead firms is held constant. Based on relevant academic literature (Gereffi and Lee 2016), Anner identifies the three most likely mechanisms (or "paths") to improve labour conditions and workers' rights in the apparel GVC: public governance, which involves state actors; the labour-centred path whereby workers mobilize, organize, and monitor compliance; and the multi-stakeholder path, which involves cooperation among private and non-private actors to ensure compliance monitoring and capability-building.

The apparel GVC is characterized by significant power asymmetries between buyers, suppliers and workers. The national case studies provide detailed accounts of how the main forms of labour control in each country give rise to different patterns of worker resistance and leverage, which in turn shape the governance outcomes intended to promote decent work. In Viet Nam, the author argues, in a context of poor working conditions, state labour control led to recurrent wildcat strikes by garment workers in the early 2000s. The pressure from striking workers led to concessions on collective bargaining, social protection and labour reform. In Honduras, a long history of violence and worker repression led garment workers to combine sustained local organizing with cross-border campaigns to pressure international brands. This resulted in collective bargaining agreements that have significantly improved labour conditions in apparel.

In Bangladesh, labour control is characterized by "market despotism" and a fragmented labour movement. Following the Rana Plaza building collapse in April 2013, which killed 1,134 workers, an international and national campaign created a multi-actor global binding agreement signed by multiple TNCs, labour unions and advocacy organizations.

The article by Fabiola Mieres and Siobhán McGrath, entitled "Ripe to be heard: Worker voice in the Fair Food Program", enriches the evolving framework of global labour governance through an analysis of the Fair Food Program in the US state of Florida, which the authors view as an alternative mechanism to strengthen workers' collective voice, organization and the labour rights of precarious migrant workers in agricultural GVCs. The majority of farmworkers in the United States are migrants, yet they are exposed to potentially exploitative recruitment practices and lack protection for exercising basic labour rights of organization, unionization and collective bargaining.

The authors examine the labour governance mechanism of "worker-driven social responsibility" (WSR) implemented by the Coalition of Immokalee Workers (CIW) as a means of granting agency to migrant workers. The CIW worked with sending-country governments to monitor worker treatment via recruitment channels, and it mobilized US civil society consumers to support fair-pay initiatives. The authors contrast this experience with voluntary corporate social responsibility (CSR), which often includes freedom of association and collective bargaining in codes of conduct but may lack effective implementation and fail to provide genuine enabling rights for workers.

The WSR model has inspired initiatives in other countries, including the Accord on Fire and Building Safety in Bangladesh, developed in the aftermath of the Rana Plaza tragedy. The disruption of GVCs during the COVID-19 pandemic has had a bifurcated impact on agricultural workers who have come to be valued as "essential workers". On the one hand, agricultural labourers have continued working and been exposed to potential COVID-19 infection; on the other hand, they have received greater recognition and appreciation, which has imparted momentum to more ethical recruitment and better working conditions. A remaining question is whether workers' voice will be maintained after the pandemic as part of the broader effort to promote a human-centred recovery.

The unequal participation of women workers in GVCs has become a core issue in the academic and policymaking communities (Barrientos 2019). Taking this one step further, the article "Gender and COVID-19: Workers in global value chains" by Sheba Tejani and Sakiko Fukuda-Parr applies an innovative framework for analysing gendered effects on workers in low-value-added GVC segments that have resulted from the COVID-19 pandemic and the consequent economic disruption. This framework includes impacts in the spheres of both production and social reproduction, thereby addressing not only workplace issues of wages and employment but also health, autonomy, agency and non-work aspects of life.

The gendered impacts of these crises are examined via secondary sources from three sectoral GVCs: garments, electronics and business process outsourcing (BPO). The garment industry is traditional and highly competitive, with low margins and a captive GVC governance structure in which lead firms wield

considerable market power and capture the lion's share of profits. In India, over 60 per cent of the garment workforce are women and, during the pandemic, large numbers of women workers have been dismissed. In the electronics industry, over 30 per cent of the workforce is female, concentrated in lower-skilled assembly tasks. The sector is moving towards greater automation and the use of robotics, which, together with the COVID-19 crisis, has led to a reduction of the workforce and a shift towards higher-skilled, largely male workers. In the BPO industry, male employees tend to work in skilled white-collar activities, while women are concentrated in call centres, working on insecure and flexible contracts. BPO has suffered supply disruptions during the COVID-19 crisis, and businesses have expanded their offshoring of services as a cost-saving strategy. However, workers in this industry have been less exposed to workplace contagion and larger job losses have been avoided through home working, which was possible in most companies.

The analysis reveals power asymmetries and social norms, operating across the firm, workplace, household and education system, that place men and women in distinct roles and positions. Seen through this lens, crises in GVCs take place in gendered structures, norms and institutions that in turn produce varied impacts on men and women. The authors conclude that these crises have increased job and wage insecurity and worsened employment conditions for GVC workers with low bargaining power. Moreover, the gendered impacts of the crises have aggravated the vulnerabilities of women workers at the lowest-wage end of GVCs and reinforced traditional social norms regarding gender roles in ways that increase women's job losses and their unequal burden of care work.

3. Towards a framework for labour governance in a disruptive era for global value chains

A cross-cutting theme in this Special Issue is the governance of labour standards and working conditions in GVCs. The literature has focused on distinct modes of labour governance in GVCs: voluntary private-sector initiatives (including corporate social responsibility, codes of conduct, and compliance auditing); civil society and consumer campaigns; enforcement of compliance with labour standards through trade unions and worker mobilization and organization; and public regulation, labour laws and state enforcement mechanisms. Governance instruments have emerged at the global level to address the challenges of cross-border governance of GVCs, such as the United Nations Guiding Principles on Business and Human Rights (UN 2011), labour provisions in bilateral and multilateral trade agreements, and international framework agreements between global union federations and lead firms in GVCs.

Accumulated evidence suggests that labour governance is more effective when instruments and actors interact (compared with individual, "stand-alone" initiatives), drawing on complementarities and respective strengths and scope. The spirit of this was expressed in the terminology of "synergistic governance" used during the International Labour Conference in 2016 and in its background document for the discussion on decent work in global supply chains (ILO 2016). Articles in the three sections of this Special Issue present findings that offer

a deeper understanding of how this labour governance framework needs to evolve in a disruptive period for GVCs.

The first section highlights major trends and transformations in GVC structures with important implications for labour governance. Greater consolidation and concentration in GVCs enables them to increase their scale and economic dominance, which enhances the size and power of key suppliers, exporters and countries. For example, prototypical buyer-driven GVCs, as typified by the garment industry, were emblematic of the fragmented and relatively footloose expansion of global outsourcing – from the onset of economic globalization in the 1970s until the phase-out of the Multifibre Arrangement (MFA) and its quota system in 1995 and the entry of China into the World Trade Organization in 2001 (Gereffi 1999; Gereffi, Lim and Lee 2021). These two disruptions, along with the global economic recession of 2008–09, contributed to a period of dramatic concentration in global apparel export production based in a handful of Asian economies, including Bangladesh, China, Indonesia and Viet Nam.

The growing size of companies (both lead firms and suppliers) and their impact on where GVCs are heading have influenced the methodological approach and research samples of various articles in this Special Issue. To explore the role of technological change associated with automation and Industry 4.0 in labour-intensive and buyer-driven GVCs, Bárcia de Mattos et al. conducted strategic interviews with five leading companies in the apparel and footwear GVC. Four of the five companies operated in more than 40 countries and their FTSs ranged from 500 to 10,000 factories; annual revenues for these top four companies ranged from US$10 billion to nearly US$35 billion. These statistics are indicative of the massive scale of apparel and footwear supply chains, and why the power asymmetries exercised by a handful of lead firms in buyer-driven GVCs are so consequential in determining economic and social upgrading opportunities for the export industries of entire countries.

Kwon, Chung and Lee advance a similar finding in their article on Korean FTSs in the apparel GVC. The two case-study Korean FTSs operated multiple in-house factories and coordinated the activities of numerous third-party contractors across many countries and regions around the world. In addition, they had strategic partnerships with top global apparel brands, who were their main clients. The 20 interviews with these two FTSs were carried out at their headquarters and at their production subsidiaries in Viet Nam. Again, location matters in GVC studies: managers based in distinct countries within a GVC network have multiple opportunities to initiate and shape strategy, especially for social compliance programmes that respond to both lead-firm and host-country concerns. Strategic interviews were essential in tracing the longitudinal shifts in FTS strategy, which is a new topic in the GVC field (Sako and Zylberberg 2019).

Butollo and Schneidemesser also rely heavily on detailed field research. They carried out 20 qualitative interviews with firms linked to Industry 4.0 and the digital economy platform ecosystem in Germany and China between 2018 and 2020. In tracing the origins of Industry 4.0 in Germany, the authors draw on German-language sources to unpack the concepts and ramifications of the "smart factory" model discussed in their study. The contrast with China's "factory network" model becomes apparent when one analyses how in 2018 platform

companies like Alibaba were using e-commerce to set up distribution-oriented supply chains that included 27,000 Chinese factories. Thus, cross-national field research and a focus on the strategies and structures of platform-mediated supply chains are needed to understand the digital economy's impact on GVC governance structures and upgrading outcomes (Wu and Gereffi 2019).

In sum, these three articles highlight the size and power asymmetries that have emerged through consolidation and concentration in GVCs. These trends set the stage for examining the impacts and implications of consolidation and concentration for the labour governance framework (explored in the article by Frenkel and Schuessler). Moreover, synergistic governance that brings together all key actors is still influenced by the dominant role of large firms.

The two articles in the second section provide empirical grounding to advance our understanding of labour governance and working conditions in GVCs. Antolin, Babbitt and Brown offer insights from surveys conducted in nearly 200 garment factories in Indonesia, Jordan and Viet Nam on the basis of panel data spanning more than five years. Original survey data are complemented with structured manager interviews in garment factories in Cambodia. The rich detail provided by this methodology allows the authors to unpack the managers' motivations and compliance choices to facilitate decent work, beyond the fuzzier "business case" concept. Acknowledging a selection bias intrinsic in their research design (namely, focusing on first-tier garment suppliers that participate in the ILO/IFC Better Work programme and are by default better equipped to promote decent work), this research confirms that economic and social upgrading can go together but that the business case is dependent on GVC dynamics, even in the most propitious settings. The authors incorporate GVC insights on power dynamics in buyer-driven chains, showing that the role of lead firms is essential not only in rewarding compliance, but also in compensating for the costs that suppliers incur to achieve it.

In a similar vein, Frenkel and Schuessler develop their LGS framework by taking into account the complex web of institutions, stakeholders and power dynamics in the post-Rana Plaza garment industry in Bangladesh, building on primary data collected through thousands of manager and worker surveys (complementing the work published in Ashwin, Kabeer and Schuessler (2020) and Kabeer, Huq and Sulaiman (2020)). They adopt an inductive approach that contextualizes the complex dynamics of labour governance in buyer-driven GVCs and offer recommendations that go beyond the empirical case at hand.

The notion of synergistic governance is also cited in Anner's article, following Gereffi and Lee (2016). These studies highlight how to sustain improvements that rest at the meso-level of institutional change in regulatory and power structures, and the need to forge a shared systemic vision among actors to sustain positive changes in a more interactive LGS.

This framework of labour governance in GVCs is further enriched through the three empirical articles in the third section. Echoing conclusions in the previous section, Anner refers to a multi-stakeholder path in which private and non-private actors collaborate to ensure compliance with labour standards, as

well as social upgrading paths based on state actors and other paths arising from the mobilization and organization of workers. This final perspective is also mirrored in Mieres and McGrath's article, which underscores the decisive role of workers in the WSR model as an alternative to CSR. WSR is based on bottom-up empowerment and grassroots organizing among migrant workers, but it also involves pragmatic public-sector engagement in migrant countries of origin. These strategies enable even highly vulnerable workers to design and implement strategies to access labour rights and they challenge meso-level actors to support the sustainability of initiatives. In this context, these two articles provide examples in which worker voice and agency can be effective drivers of social upgrading and they underscore the central role of meaningful worker representation.

The final article by Tejani and Fukuda-Parr similarly contributes insights into how the crisis and disruption caused by the COVID-19 pandemic have affected the most vulnerable workers in lower tiers of supply chains and in labour-intensive, price-competitive sectors such as agriculture, apparel and electronics assembly. Many of these workers have low formal education, work as precarious informal and contract labour and are unorganized; they are often female and/or migrants. The gender-based framework developed by Tejani and Fukuda-Parr reinforces overarching lessons about GVC winners and losers in crises and disruptions. Their article serves as a reminder that certain categories of vulnerable workers – namely, those on precarious contracts, informal workers and workers who suffer unfair and discriminatory treatment, such as migrants and female workers – may still be excluded from social upgrading even when labour governance instruments are in place.

These findings raise important implications for the labour governance framework in GVCs. Like previous crises and disruptions in GVCs (including the global financial crisis, technological transformations and the geographical restructuring of supply chains), the COVID-19 pandemic has highlighted the channels by which vulnerable workers are further exposed to risk and precariousness: low-wage workers are either dismissed or used flexibly to conduct work under risky conditions because they have little option but to accept work. The vulnerabilities of female workers are exacerbated through wage compression and job loss. At the same time, women are left with the care burden of sustaining families during phases of lockdown.

The articles in the second and third sections strengthen and refresh the synergistic labour governance framework, drawing insights from the context of disruptions in GVCs. On the one hand, these findings highlight the importance of creating meso-level institutional change and a common systemic vision among actors. On the other hand, they underscore the key role of worker voice and agency in driving social upgrading, while maintaining concern to address vulnerable workers in the framework. Taken as a whole, this Special Issue – through its collection of articles based on original industry and country case studies, and using both longitudinal and comparative research designs and mixed methods – offers insights into a still-evolving labour governance framework that can adapt to future GVCs.

4. Conclusion

When we set out to focus this Special Issue of the *International Labour Review* on GVC disruptions, we could not have anticipated the major shock of the COVID-19 pandemic that was just around the corner. The issues that the authors in this Special Issue address in their research – understanding the impact of structural transformation driven by new technologies, Industry 4.0 and GVC consolidation, as well as different labour governance arrangements – have a new and more urgent relevance owing to the unprecedented impact that the pandemic is having on the structures and trends in GVCs.

Questions of a more existential nature are now being asked. Are GVCs a business model for the future, given the vulnerabilities that have been exposed during the pandemic? Are they still a viable vector for economic, social and human progress in developing and emerging countries, or has participation become more restricted? What are the implications as lead firms emerge in the global South, making countries there not only points of production but also important consumer markets? Are disruptions and shocks leading to a fundamental rethinking of the role of labour in production and in GVCs? Is there an opportunity to address the power imbalances that have been documented by the authors across different sectors and countries?

This Special Issue provides critical contributions to these questions and sets up a new research agenda going forward. Trends such as automation, robotization, Industry 4.0 and GVC supplier consolidation (organizationally and geographically) have accelerated in the past decade. They constitute readjustments of an earlier buyer-driven model of production, heavily reliant on outsourcing and offshoring for the labour-intensive production segments of GVCs. These trends caused disruptions for employment and working conditions in both developed economies and the global South, but they did not challenge the underlying power dynamics among GVC actors.

The empirical research in this Special Issue allows us to reinforce two main conclusions: (1) labour governance cannot be limited to the national realm if it is to be effective in a GVC world; and (2) effective labour agency is fundamental to ensuring social upgrading. A global labour governance framework for GVCs is needed. It should bring together all stakeholders, beyond the ILO's traditional tripartite actors (namely, the public sector, national employers and worker organizations), including lead firms and FTSs in GVCs, small and medium-sized enterprises that may be marginal to GVCs, and key civil society actors. Targeted attention is needed to ensure that the labour rights and protections of the most vulnerable workers are not overlooked by the new emerging governance configurations.

A radical restructuring of the buyer-driven GVC model seemed unlikely in the short run before COVID-19 appeared. However, the global pandemic has renewed our scrutiny of transnational production, and it also underscores the need for multilateralism and policy coherence. From the evidence presented in this collection of articles, it is clear that sustainable solutions to spur positive change and support economic and social upgrading in GVCs lie at the multilateral level and involve actors that operate within and beyond the nation State. To this

end, this Special Issue enriches the existing synergistic governance framework, enhancing its relevance on the basis of findings from this current era of disruption and uncertainty, and positions it as a compass to navigate the uncharted territory of the post-pandemic future.

From a methodological perspective, this Special Issue is a testament to the power of comparative analysis and how it informs GVC research designs. Our collection of studies clearly demonstrates that understanding the dynamics of GVCs at a time of great disruption requires mixed methods that combine quantitative and qualitative approaches, along with a longitudinal perspective. In addition to robust, publicly available statistical data, these articles include original micro-level surveys as well as in-depth interviews and focus group discussions. The comparative approach employed by several authors has helped generate novel conceptual frameworks for empirical studies spanning multiple countries, regions and sectors.

Future GVC research should focus on whether the disruptions analysed here will be accelerated or rendered obsolete by the pandemic and the related economic and geopolitical crises found throughout the world. Whatever direction these changes take, we believe this Special Issue provides robust and innovative input for the policy discussion on how the global economy can reconfigure itself to be more sustainable, open and equitable in a post-COVID-19 world.

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