Introduction to the *Handbook on Global Value Chains*

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A WORLD OF GLOBAL VALUE CHAINS

Technological and organizational changes have been crucial in transforming the way in which production is organized across time and space. The steam engine in the nineteenth century made transportation and manufacturing economical in ways that allowed the spatial separation of production from consumption (Baldwin, 2016). Although for much of the twentieth century production remained organized along vertically integrated firms, by the late 1970s a more flexible and spatially dispersed mode of production had taken hold based on slicing production into specific tasks and moving some of these out of the boundary of the firm through external contracting (Piore and Sabel, 1984). Information and communication technology (ICT) in the latter part of the twentieth century further facilitated the global outsourcing and offshoring of manufacturing activities (Dicken, 2007). This has led to the organization of economic activity in global value chains (GVCs) that are dispersed globally but governed centrally by 'lead firms' (Gereffi, 1994b; Gereffi, Humphrey and Sturgeon, 2005; Gibbon and Ponte, 2005; Bair, 2009a; Cattaneo, Gereffi and Staritz, 2010; Ponte and Sturgeon, 2014).

The term 'global value chain' refers to the full range of activities that firms, farmers and workers carry out to bring a product or service from its conception to its end use, recycling or reuse. These activities include design, production, processing, assembly, distribution, maintenance and repair, disposal/recycling, marketing, finance and consumer services. In a 'global' value chain, these functions are distributed among many firms scattered around the world. In this context, 'lead firms' are groups of firms that operate at particular functional positions along the chain. Lead firms are able to shape what is done and by whom along the chain, at what price, using what standards, to which specifications and at what point in time they are delivered (Humphrey and Schmitz, 2001; Gereffi et al., 2005; Ponte and Sturgeon, 2014). GVC governance, therefore, is the set of concrete practices and organizational forms through which a specific division of labour between lead firms and other actors arise and is managed (Gibbon, Bair and Ponte, 2008).

Understanding the changing dynamics of the global economy requires knowledge of how GVCs are governed and what distributional effects arise from different governance forms. The concept of GVC governance is based on the observation that value chains are rarely coordinated spontaneously through market exchange (Gereffi, 1994b; Gereffi et al., 2005; Gibbon et al., 2008). Instead, they are governed as a result of strategies and decision making by specific actors, usually large firms that manage access to final markets globally, but also at regional and national and local levels. In deciding how to manage trade and production networks in global industries, lead firms are faced with a number of choices. First, whether to make parts and components or provide particular services in-house, procure them on the market, or adopt hybrid solutions involving various kinds of longer-term outsourcing relationships with suppliers. Second, if they decide to outsource to suppliers, they will need to specify the characteristics of the good or service (such as price and volume) as well as identify the qualifications or attributes that suppliers should possess. Examining GVC governance thus means studying the content and the management of these decisions across all suppliers and sub-suppliers, the strategies behind the decisions taken, the management methods chosen to implement them and the systems through which their outcomes are monitored and reacted to (Ponte and Sturgeon, 2014).

From a broader perspective, however, GVC governance is also shaped by actors that do not directly produce, transform, handle or trade products and services – such as civil society organizations, trade unions, consumer groups, networks of experts and policymakers, industry groups and multistakeholder initiatives (Ponte and Sturgeon, 2014; Bair and Palpacuer, 2015; Nickow, 2015; Bair, 2017; Ponte, 2019). Finally, states and international organizations play a key role in constructing and maintaining GVCs through facilitative, regulatory and distributive interventions (Neilson and Pritchard, 2011; Nadvi and Raj-Reichert, 2015; Horner, 2017; Mayer and Phillips, 2017). States can act as intentional architects of GVCs, regulate (or deregulate) their functioning and choose to redistribute (or not) the wealth generated through GVCs. States can also be important direct actors in GVCs – for example, through state-owned enterprises and public procurement (Horner, 2017). In other words, states make active choices in a 'GVC world' and only a comprehensive analysis of all these actors can aptly explain the changing dynamics of GVC governance and related processes of capital accumulation.

The rise of GVCs is redrawing 'the international boundaries of knowledge. The contours of industrial competitiveness are now increasingly defined by the outlines of international production networks' (Baldwin, 2016, p. 6) and less so by the boundaries of nations. Production of goods and services is fragmented and spatially dispersed and is governed by lead firms that coordinate the activities of a myriad of suppliers and sub-suppliers worldwide (Gibbon and Ponte, 2005; Dicken, 2007; Gereffi, 2014; Coe and Yeung, 2015). In other words, 'GVCs have become the world economy's backbone and central nervous system' (Cattaneo, Gereffi and Staritz, 2010, p. 7). Lead firms have progressively focused on the specific tasks they excel in, while outsourcing and offshoring others – a movement that opened up possibilities for suppliers in new locations (and especially in the Global South) to specialize in specific tasks without necessarily needing their countries to build back-to-front industrial systems. This has important consequences for the design of trade and industrial policies and for development outcomes, which are thoroughly explored in this *Handbook*.

GVCs have opened up new opportunities for developing countries to participate in the global economy, but have also heightened the related risks and uncertainty of doing so. GVC participation *per se* does not lead to inclusive development outcomes unless increasing shares of value added are created and captured domestically and are fairly distributed among different social groups. The relation between GVC dynamics and economic development possibilities has coalesced around the general term 'upgrading', which has been used to highlight paths for value chain actors to 'move up the value chain' for economic and social gains. There are two broad orientations in this field. One relates to identifying the sources of firm capabilities that lead to their accessing new markets and increasing competences – a long-standing bone of contention between theories focused on locational and institutional knowledge sources and those focused on knowledge transmission via lead firm–supplier relations (Giuliani, Pietrobelli and Rabellotti, 2005; Morrison, Pietrobelli and Rabellotti, 2008). A second orientation examines which conditions and trajectories can lead to 'a better deal' for disadvantaged actors along the GVC (e.g., smallholder producers, developing country processors, women entrepreneurs) (Ponte and Ewert, 2009). Economic upgrading is also problematic if it does not bring social and/or environmental upgrading with it. The contributions to this *Handbook* examine all these facets of upgrading in view of providing a granular understanding of the changing features of contemporary global capitalism and informing on both gradual and more radical interventions that may be needed to address negative environmental and social effects, including rising inequalities.

The rest of this introduction is organized in two main sections. In the second section, we provide a genealogy of the emergence of GVCs as a concept and analytical framework, starting from the building blocks provided by work on multinational corporations in the 1970s and research on development strategies in Latin America and Asia in the 1980s and early 1990s. This section explains how the research effort around what were then called global commodity chains (GCCs) broke with earlier world-systems theory in its 'developmentalist turn' – recognizing that understanding the dynamics of integration in commodity chains is essential to explain the prospects of upgrading and downgrading of firms and nations in the global economy. It also chronicles how a series of workshops in the early 2000s led to the GCC approach being reframed as GVC analysis, thereby moving away from common understandings of 'commodities' as undifferentiated primary products and placing the concept of 'value added' (and its creation, distribution and appropriation) as a central theme. Finally, it provides some reflections on more recent developments in the GVC field, including the emergence of approaches focused on the role of large suppliers based in the Global South in shaping GVC governance and those providing a 'disarticulation' perspective to understanding different layers of inequality and inclusion and exclusion dynamics.

In the third section, we explain the chapter organization of these cross-cutting themes and provide short summaries of the chapters for each part. Part I is dedicated to hands-on discussions of how to map, measure and analyse a GVC. Part II examines issues of governance, power and inequality in GVCs. Part III highlights the multiple dimensions of upgrading and downgrading trajectories. Part IV focuses on how innovation, strategy and learning can shape governance and upgrading in GVCs. Part V discusses the complex links between GVCs and development and provides reflections on public policy.

GLOBAL VALUE CHAIN ANALYSIS: A GENEALOGY[1]

Contending Perspectives on the International Economy and Development

In the early decades following World War II, there were several competing theories for developing economies and newly emergent post-colonial societies in the so-called Third World. Modernization theorists explicitly modelled their prescriptions for development on the historical legacy and institutional features of the advanced industrial democracies of the West. One of the well-known economic books in this genre was Walt W. Rostow's *The Stages of Economic Growth* (1960), which postulated that all countries pass through 'five stages' of economic development[2] with identical content regardless of when these nations started out on the road to industrialization. Notwithstanding the widely criticized Eurocentric bias of the modernization approach (Bendix, 1967; Gusfield, 1967; Huntington, 1971; Portes, 1973), a key recommendation was close economic, political and social ties between developing economies and the Western capitalist democracies they were encouraged to emulate.

Dependency theory, by contrast, highlighted the exploitative potential of increased contact between the 'core' countries and the 'periphery' in the international capitalist system. Andre Gunder Frank, one of the most widely read Marxist dependency authors, claimed that asymmetric ties of economic and political dependency between core and peripheral economies promote 'the development of underdevelopment' (Frank, 1967). Citing evidence from Latin America and Africa dependency writers argued that links to the centre were the source of many of the Third World's problems rather than a solution (see also Dos Santos, 1970; Amin, 1973). The dependency school, while unified in its critique of the ahistorical and apolitical assumptions of modernization theory, had significant internal differences in theoretical and research orientations, with varying prognoses for capitalist development in the periphery (see Gereffi, 1994a).

Dependency theory altered its initial claims with a new wave of research in the 1970s and 1980s. Diverging sharply from the 'stagnationist' views of writers like Frank, Dos Santos and Amin, which declared that dependency could only lead to underdevelopment and socialist revolution, a number of authors promoted the notion of 'dependent development' (Cardoso and Faletto, 1979), which asserted that structural dependency on foreign capital and external markets might constrain and distort but is not necessarily incompatible with capitalist economic development in the more advanced countries of the Third World, such as Brazil (Evans, 1979), Chile (Moran, 1974), Nigeria (Biersteker, 1978), Taiwan (Gold, 1981) and South Korea (Lim, 1985).

A related and at the time novel research agenda was pursued by dependency scholars who focused on industries rather than countries. This approach often employed a 'bargaining perspective' that analysed the interaction between the state, multinational corporations (MNCs) and national business elites in shaping local outcomes in relatively dynamic manufacturing industries. Sectors included in the initial set of studies were pharmaceuticals (Gereffi, 1983), automobiles (Bennett and Sharpe, 1985), computers (Grieco, 1984) and the electrical, tractor, tyre and food-processing industries (Newfarmer, 1985). This bargaining framework sparked a vigorous debate about the limits of dependency, hypothesis testing, counterfactual analysis and the possibilities for dependency reversal (Caporaso, 1978).

The research methodologies of these early country and especially industry case studies of dependency are a clear forerunner of the global commodity chain (GCC) studies that emerged in the mid-1990s (Gereffi and Korzeniewicz, 1994). Like the GCC and subsequent GVC approaches, dependency analysis involved extensive and detailed field research, with the authors typically spending one to two years in their chosen countries gathering relevant secondary materials and meeting local informants. These studies relied heavily on in-depth or 'strategic' interviews[3] with government officials in charge of both macro- and industry-specific policies, as well as firm-level managers and other stakeholders for the industries in question. MNCs were a central actor in virtually all dependency research, whether of the case study variety or in quantitative, cross-national studies intended to 'test' dependency theory (e.g., Chase-Dunn, 1975; Rubinson, 1976;

Bornschier, Chase-Dunn and Rubinson, 1978).[4] The main issues analysed in the country or industry studies of dependency revolved around the kinds of power being exercised by MNCs at the national level, the transnational structure and strategies of MNCs and the roles played by national governments, local firms, workers and other industry actors in defending perceived national interests with regard to the domestic and global goals of MNCs.

Against this backdrop, world-systems theory had a very different intellectual agenda. World-systems theory, which drew heavily on earlier critical perspectives of imperialism and capitalist exploitation, has been closely associated with the work of Immanuel Wallerstein (1974, 1979). This approach establishes a hierarchy of core, semi-peripheral and peripheral zones in which upward or downward mobility is conditioned by the resources and obstacles associated with a country's mode of incorporation in the capitalist world economy. Leaving one structural position implies taking on a new role in the international division of labour, rather than escaping from the system; thus, the possibilities for autonomous paths of development are quite limited. The semi-periphery, a main category in world-systems theory, identifies an intermediate stratum between the core and peripheral zones that promotes the stability and legitimacy of the three-tiered world economy. While world-systems theory takes a long-run historical view of cycles of change in the capitalist world economy, it is not well suited to analysing the development trajectories of countries and regions similarly situated in the hierarchical structure, but that respond differently to internal and external challenges.

Analytical Building Blocks in the Emergence of the Global Value Chains Paradigm

Given this brief overview of the contending theoretical perspectives on the international economy and development in the 1970s and 1980s, we turn to several cross-cutting themes that cumulatively began to distinguish the GCC and GVC research communities from their peers: (1) the centrality of MNCs and power dynamics in the study of global industries; (2) reconceptualizing the role of the state and regional 'development strategies' in East Asia and Latin America; and (3) institutionalizing the GVC research agenda through the support of foundations, intergovernmental organizations and university-affiliated research centres.

MNCs and power in global industries

While there was a great deal of popular interest in the power and global reach of MNCs in the 1970s (e.g., Sampson, 1973, 1975; Barnet and Müller, 1974), the study of multinational enterprises was still a neophyte field from an academic point of view. To the neoclassical economists of the 1950s and 1960s, the postwar world economy was defined by international capital flows, which were viewed at the country level as foreign direct investment (FDI). The United States was the main source of outward FDI and the first national studies of US FDI were carried out by Dunning (1958) on the United Kingdom and Safarian (1966) on Canada. Both these authors were interested in the public policy question of the contributions that US FDI had for a host economy and did not really think about MNCs as an institutional actor.

The Multinational Enterprise Project at Harvard Business School, which began in 1965 under the direction of Raymond Vernon and lasted for 12 years, tried to remedy the economists' relative neglect of MNCs. In his most popular book, *Sovereignty at Bay*, Vernon (1971) posed the question: to what extent have MNCs supplanted the national autonomy of governments? Despite being out of step with his academic brethren in economics departments and business schools, who were using general equilibrium models and rational choice to study the properties of efficient markets, Vernon's approach was distinguished by its emphasis on the strategies and activities of MNCs as both a political and economic force, rather than just another form of international capital movement (Vernon, 1999). Furthermore, empirical studies of MNCs underscored their large size, whether measured in sales or by more sophisticated calculations of value added, which led to an emphasis on the concentrated power of vertically integrated MNCs, which were bigger in economic terms than many countries.

While the study of MNCs and dependency theory were both popular topics, there was considerable controversy about how to combine them in a research project. The theoretical debates among dependency and world-systems scholars reaffirmed the importance of a core–periphery system, but did little to address the empirical question of how to analyse the global industries that actually make up the world economy. This became a practical mandate for the newly formed UN Centre on Transnational Corporations (UNCTC) in the late 1970s. Although UNCTC is probably best known for its unfilled quest to draft a code of conduct to govern the activities of transnational companies[5] in the wake of political scandals in the early 1970s (Moran, 2009, pp. 92–3; Bair, 2015), it nevertheless did important empirical studies of MNCs in diverse global industries.

An initial priority was the global pharmaceutical industry, which had received a lot of attention because of controversial practices related to transfer pricing, differential drug labelling across countries and the role of essential drugs programmes in the developing world (Lall, 1973, 1975, 1978). Given his ongoing dissertation research on the pharmaceutical industry in Mexico (Gereffi, 1978, 1983), Gary Gereffi was commissioned by UNCTC in 1977 to write a report on the structure and strategies of the top 50 pharmaceutical MNCs worldwide. This was followed by a second report on how the structure, conduct and performance of these pharmaceutical MNCs were good or bad for economic and health outcomes in developing countries, including for various industry stakeholders such as consumers, domestic drug firms and local innovation systems (UNCTC, 1979, 1981).

These early studies of global industries foreshadow several important themes in the subsequent GVC literature. First, a focus on specific industries has obvious policy relevance. Often, the demand for industry studies comes from those most interested in designing or implementing effective regulation.[6] Second, the organization of global industries reflects the power dynamics of their leading firms. This insight led directly to the concept of 'governance structures', which is a mainstay in the GCC and GVC framework.[7] Third, the organization of global industries shapes the potential 'upgrading' pathways available to developing economies. The structures and strategies of MNCs present both opportunities and obstacles for how countries can link up with the international economy and build domestic industries.[8] Fourth, a detailed understanding of the role of MNCs in global industries allows us to 'map the activities' associated with efforts to create, capture and retain value, which are essential to economic growth and development (see Frederick, Chapter 1 and Sturgeon, Chapter 3 in this *Handbook*).

Development strategies in East Asia and Latin America

East Asia has been the most dynamic region in the world since the 1990s and played a major role in the emergence of the GCC and GVC paradigms. Dependency theory dealt primarily with developing economies in Latin America and Africa and neither it nor world-systems theory had the analytical tools or temporal focus to explain the impact of the rapid ascent of East Asia in the post–World War II era. Scholars who worked on East Asia believed that dependency theory had little, if any, relevance to their part of the world, where dynamic economic growth and social progress occurred without a number of the drawbacks typical of the Latin American experience (Amsden, 1979; Barrett and Whyte, 1982). Instead, East Asian political and economic elites managed to use external economic linkages effectively and selectively to promote domestic development.

The World Bank (1993) adopted a 'market-friendly' view of East Asian success that attributed its economic growth in large measure to functional intervention in market 'fundamentals' such as stable macroeconomic policies, high investments in human capital (especially education), secure financial systems, limited price distortions and openness to foreign technology and trade. A widely held alternative 'statist' interpretation, however, criticized the World Bank's adherence to doctrinaire market fundamentalism and emphasized instead pervasive state intervention and the critical role played by selective industrial policies in promoting the sustained and diversified patterns of export growth exhibited by these high-performing Asian economies (Johnson, 1982; Amsden, 1989; Wade, 1990).

To better understand the relevance of the Latin American and East Asian experiences to other newly industrializing countries, scholars elaborated cross-regional comparisons of their development strategies. One of the earliest studies in this vein was *Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia* (Gereffi and Wyman, 1990), which compared the development strategies of four of the most successful newly industrializing economies: Mexico, Brazil, South Korea and Taiwan. The core concept of *Manufacturing Miracles* was 'development strategies', defined as 'sets of government policies that shape a country's relationship to the global economy and that affect the domestic allocation of resources among industries and major social groups' (Gereffi and Wyman, 1990, p. 23). This meso-level approach, in contrast to the macro-focus of world-systems theory or the microanalysis of industrial clusters, highlighted the role of state policies in promoting desired local development outcomes and it made the inward- or outward-oriented nature of industrial production a subject of both comparative and historical interest.

The global commodity chain and global value chain paradigms

The challenges faced by previous development paradigms and the conceptual and empirical advances generated by research on MNCs laid the foundations for what today is known as the GVC research agenda. But additional steps were involved in institutionalizing the GVC research community, which are highlighted below.

Global commodity chains Immanuel Wallerstein founded the Fernand Braudel Center at Binghamton, State University of New York, in 1976, which sponsored an annual Political Economy of the World-System (PEWS) conference series that brought together scholars around world-systems topics to present papers subsequently published in conference volumes.[9] Hopkins and Wallerstein (1977, 1986) first introduced the concept of 'commodity chains' as a heuristic to study the operation of global capitalism and the reproduction of a stratified and hierarchical world-system beyond the territorial confines of the nation-state. By contrast, the introduction of the 'global' commodity chain[10] perspective in the early 1990s focused on the organization of contemporary global industries and how power asymmetries organized around MNC 'lead firms' affected the prospects for national development. This led to a split with traditional world-systems theory (Bair, 2005, 2009b).

The 16th annual PEWS conference on 'Commodity Chains and Global Capitalism' was held at Duke University in April 1992 and it resulted in an edited volume on this topic (Gereffi and Korzeniewicz, 1994). While building on the original definition provided by Hopkins and Wallerstein (1986, p. 159), which views a commodity chain as 'a network of labor and production processes whose end result is a finished commodity', the *Commodity Chains and Global Capitalism* book (Gereffi and Korzeniewicz, 1994) broke with several core precepts of world-systems analysis. Whereas research on commodity chains from a world-systems perspective focused on the characteristics of industries during the sixteenth century, most chapters in the new volume used the GCC concept to analyse contemporary industries.[11] This fuelled a debate about 'whether globalization is better understood as a contemporary phenomenon enabled by increasingly integrated production systems, or as a process beginning with the emergence of capitalism in the long sixteenth century' (Bair, 2005, p. 157).

This 'developmentalist turn' in commodity chain research shared with the world-systems framework the notion that change is possible as individual countries move up or down between different tiers of the world economy. For world-systems theorists, however, this is a zero-sum process – what is relevant is the reproduction of a hierarchically structured global capitalist economy (Wallerstein, 1974; Arrighi and Drangel, 1986). Hence, national development as a generalized goal is not deemed possible – it is simply a 'developmentalist illusion' (Arrighi, 1990).[12] Actually, the GCC approach was open to the option that commodity chains do not necessarily reproduce hierarchy and inequality in every case and it assumed power asymmetries are rooted in the organization of global industries. Thus, commodity chain dynamics started to be seen as essential to the prospects for upgrading or downgrading in the global economy.[13] Notwithstanding these controversies, the GCC approach gained considerable popularity because of the detailed insights it provided in the analysis of contemporary industries and upgrading/downgrading trajectories of countries and firms within them and became a foundation for the elaboration of the closely related GVC framework.

The Global Value Chains Initiative In September 1999, the Institute of Development Studies (IDS) at the University of Sussex in Brighton, UK, hosted a workshop on 'Spreading the Gains from Globalization'.[14] Two broad research communities were invited. One set of scholars focused primarily on the local dynamics of industrial clusters in order to understand how small firms in both developed[15] and developing[16] economies could improve their export competitiveness in the global economy. A second set of researchers emphasized the changing organizational features of global industries,[17] and how new strategies by powerful lead firms were altering international and domestic production networks and opportunities for upgrading by developing economies.[18] The workshop's goals were threefold: (1) to bring these disparate research communities together for fruitful dialogue; (2) to establish direct communication between the researchers and the policy-making and policy-implementing communities; and (3) to promote a new research agenda that could identify implementable policies to help reduce growing inequality within and between countries and the impoverishing aspects of globalization.

These two research communities saw the challenges of economic globalization from opposite vantage points. Industrial cluster researchers had a bottom-up, country-level perspective, built around numerous small exporters that sought to leverage local advantages to enter global markets. Global industry researchers, by contrast, tended to adopt a top-down, international perspective, where the drivers of change were multinational manufacturers and global buyers (retailers and brands) whose international production and sourcing networks imposed new rules of the game that determined winners and losers in the globalization era. The core challenge posed at the IDS workshop was to work toward an integrated research framework that could link the macro- (global), meso- (industry and country) and micro- (firm and community) levels of analysis and generate novel empirical findings and evidence-based policy proposals. To achieve these goals, a new type of policy-oriented, multidisciplinary and international research initiative was necessary and it required an institutional backer with a long-term vision and a shared agenda.

The Rockefeller Foundation, one of the participants at the IDS meeting, met all these criteria. Rockefeller supported a five-year Global Value Chains Initiative (2000–2005),[19] which provided funding to support a committed network of scholars that sought to create an integrated research paradigm to address both knowledge and policy gaps created by globalization. At the initial meeting in Bellagio, Italy in September 2000,[20] there was considerable discussion about what to call the new framework. This decision was complicated because a variety of overlapping terms had been used to describe the network relationships that made up the global economy (Gereffi et al., 2001, p. 3; Sturgeon, 2001). The GVC Initiative group adopted the term 'global value chains'[21] for various reasons, including: the association of 'commodity' with undifferentiated primary products (such as agricultural commodities, crude oil or unprocessed minerals), leaving out manufactured goods and services; potential confusion with the world-systems theory usage of commodity chain; and also because the term 'value' aligned closely with the concept of 'value added', which focused attention on the process of creating, capturing and sustaining value in global supply chains (Sturgeon, 2009, p. 117).[22]

The proceedings of the first Bellagio meeting appeared in a special issue of the *IDS Bulletin* on 'The Value of Value Chains' (Gereffi and Kaplinsky, 2001). Core areas like governance, upgrading, gender and rents were introduced, and agriculture and apparel were among the industries studied.[23] Humphrey and Schmitz (2002) later elaborated the contrast between the industrial cluster and GVC approaches to governance and upgrading. Also, Gereffi et al. (2005) expanded the initial governance structure of producer-driven and buyer-driven chains used in the GCC approach (Gereffi, 1994b) into a fivefold typology, which included three forms of network governance (captive, relational and modular) between the more conventional modes of markets and hierarchies (vertically integrated firms).[24] Along with annual meetings,[25] which brought together researchers, practitioners, members of the business community and policy-makers and support for academic publications, another contribution of the GVC Initiative was the creation of a public website that would maintain an inventory of GVC-related publications and researchers.[26]

New Analytical Directions

In the past decade or so, the field of GVC analysis has expanded dramatically and with it a proliferation of approaches has taken place. A first set of contributions has explored the discursive dimension that frames buyer–supplier relations and the related transmission mechanisms along value chains (Gibbon et al., 2008). A second set has sought to tame some of the inevitability of 'buyer power' in the earlier literature by showing how key suppliers in some industries have been able to establish increasingly powerful positions (Sturgeon, 2002, 2009; Tewari, 2006; Kawakami, 2011; Raj-Reichert, 2015), by highlighting paths and strategies that suppliers can follow not only to create value, but also to retain it (Kaplinsky, 2004, 2005; Ponte and Ewert, 2009; Sako and Zylberberg, 2017) and/or by highlighting the increasing power of lead firms based in the Global South, often facilitated by state support (Horner, 2017; Horner and Nadvi, 2018).

A third set has sought to move beyond a focus on 'unipolar' value chains – be they buyer-driven, producer-driven (Gereffi, 1994b) or international trader-driven (Gibbon, 2001) – where 'lead firms' in one functional position of the chain play a dominant role in shaping it. They have explored the dynamics of governance in GVCs characterized as 'bipolar' or 'twin-driven', where two sets of actors in different functional positions both drive the chain, albeit in different ways (Fold, 2002; Islam, 2008) and showed the important roles 'platform leaders' can play (see Imai and Shiu, 2011; Kawakami, 2011). Ponte and Sturgeon (2014) expanded this direction further to suggest examining governance across a unipolar to multipolar spectrum, identifying the main drivers of these GVCs and the different degrees and mechanisms of driving. The concept of multipolarity has drawn attention to actors that operate outside the value chain, such as international non-governmental organizations (NGOs), trade unions, governments and multistakeholder initiatives (Nadvi and Raj-Reichert, 2015). The cognate literature on global production networks (GPNs) also highlighted the complexity and variety of non-firm actors in shaping the organization of economic activity (Henderson et al., 2002; Hess and Yeung, 2006; Coe, Dicken and Hess, 2008; Coe and Yeung, 2015; Yeung and Coe, 2015; Lund-Thomsen and Lindgreen, 2018).

A fourth set of contributions has sought to broaden the approach to governance in GVCs beyond 'internal' factors and has highlighted processes of disarticulation and counteraction. What brings these theoretically diverse approaches together is a general movement away from an interest in buyer-determined governance dynamics and towards: (1) highlighting the strategic logic of suppliers exiting from GVCs in specific situations; (2) the processes of suppliers clawing back power from lead firms; and/or (3) the increasingly important role of actors not directly involved in value-adding activities (Bair and Werner, 2011a; Bair et al., 2013; Werner, 2016). Bair and Werner (2011a) thus called for a disarticulation perspective on GVCs to look at the dynamics of exclusion and expulsion in GVCs (Bair and Werner, Chapter 10, this volume). Building on earlier work by Bair (2009a), this perspective seeks a return to the long-range, macro-historical roots of GVC analysis, with a focus on historical change, disjunctions, fragmentations and disarticulations. Disarticulation scholars call for more attention to be paid to *how* links in the chain are forged, not only in material terms, but also ideologically and in relation to the creation of subjectivities. They focus on the set of social relations that secure commodity production and related processes of exclusion (Bair and Werner, 2011b) and highlight the social and spatial contours of production through everyday practices and struggles over the creation and appropriation of value (see also Neilson and Pritchard, 2011). Their implicit take on governance shifts attention from the dynamics of integrative efforts (participation in value chains) to a more nuanced picture that includes the agency that allows less powerful actors to disarticulate and disentangle from uneven and exploitative GVC relations, or to exert the power of refusing to participate – leading to the consideration of alternative actors, non-actors and anti-actors (Berndt and Boeckler, 2011; Goger, 2013; Havice and Campling, 2013; Nickow, 2015).

Interim Reflections

In this section, we have shown that the idea of global value chains has roots in debates over development theory stretching back to the early formulations of centre and periphery in the modernization and dependency paradigms of the 1960s and 1970s. It also reflects the controversy over the nature of globalization and whether it should be traced back to the origins of capitalism in the sixteenth century, as world-systems theorists claim, or whether we should focus on the novel features of contemporary globalization in the postwar era, especially the genesis of international production networks in the 1970s and 1980s and their rapid acceleration in the 1990s and beyond. During these periods, ideas about the global economy struggled to keep pace with the startling changes facilitated by the ever-greater connectedness of the world enabled by improvements in transportation and communication technologies, as well as the geopolitical realignments brought by the end of the Cold War and the incorporation of vast regions of the globe to shifting international trade, investment, financial and intellectual property regimes.

In sum, the GVC framework has been shaped by many knowledge and research communities, drawing upon diverse groups of scholars with institutional support from numerous universities, foundations and professional associations. Together, these influences contributed in significant ways to the emergence and dissemination of the GVC framework. In the rest of this *Handbook*, we explore various facets of GVC analysis and insights arising from a rich variety of approaches and interdisciplinary cooperation in order to improve our understanding of the changing features of the global economy and of old and new winners and losers in its restructuring.

STRUCTURE AND ORGANIZATION OF THE HANDBOOK

Part I: Mapping, Measuring and Analysing GVCs

The contributions to Part I of the *Handbook on Global Value Chains* provide detailed guidance for how to map and analyse a GVC through a mixed-methods approach. In addition to detailed discussions of qualitative mapping and methods of analysis, they include useful information on the quality and availability of relevant ‘trade in value added’ datasets that can be used for quantitative analysis. Finally, they also discuss how selected economic models can help explain the organization of GVCs and their impacts on trade flows and welfare.

In Chapter 1, Stacey Frederick provides a practical guide on how to map a GVC. This is an essential first step in carrying out a full GVC analysis. Frederick guides the researcher in mapping: six sets of value-adding activities that firms engage in to bring a product from concept forward; the supply chain or input–output structure (the flow of business interactions); the end-markets for a final product or service; and the supporting institutional environment. She explains the sequence of qualitative research steps to be undertaken in this process, followed by mapping examples based on international standardized classification systems and/or input–output tables using publicly available data sources. Finally, Frederick provides the essential elements for industry/country comparisons.

In Chapter 2, Karina Fernandez-Stark and Gary Gereffi take the reader beyond mapping and through the other main stages of GVC analysis. The authors define the term 'global value chain' for operational purposes and identify six main dimensions of GVC analysis: three of which are 'global' (input–output structure, geographic scope and governance structure) and three of which are relatively 'local' (upgrading trajectories, local institutional contexts and the role of industry stakeholders). Finally, Fernandez-Stark and Gereffi provide useful examples of recent applications of this approach, drawing from empirical and policy-related work undertaken by the Duke Global Value Chains Center.

In Chapter 3, Timothy Sturgeon discusses how to measure trade in value added with input–output tables. Sturgeon argues that rich description has been the norm in GVC analysis until recently – often based on qualitative field research, small surveys, secondary sources (such as market studies and press reports) and descriptive statistics. These are still valuable and important research methods, but improvements in the quality and availability of input–output data means that additional sources of information are now available. For the purpose of GVC analysis, input–output tables are more useful than traditional trade statistics because they measure value added rather than gross export value. This is important for industrial and trade policy since the 'trade in value added' (TiVA) approach highlights the importance of imports for export-oriented activities. Still, Sturgeon cautions the reader against relying only on these data, as they are estimations and are not available for many countries in the Global South. He concludes that a mix of research methods and data will remain the preferred approach to explain the dynamics of GVCs.

In Chapter 4, Matthew Mahutga builds on the idea that a more extensive use of available quantitative data will improve both the theoretical and empirical contributions of the GVC framework. Drawing from his background in quantitative macro-comparative sociology, Mahutga focuses on three archetypical industries – apparel, transportation equipment and electronics – to show that the degree of global spatial fragmentation in each supports a number of key insights from GVC theory. For example, in contrast to the varieties of capitalism approach that predicts industrial governance patterns to vary across institutionally distinct market economies, the patterns of spatial fragmentation (or offshoring) in GVCs – greatest in apparel, followed by electronics and transportation equipment – were the same in both 'liberal' and 'coordinated' market economies, suggesting that GVC governance transcends national institutions. In terms of GVCs and income inequality, Mahutga finds empirical support for the argument that the degree of integration with GVCs has implications for the distribution of income within countries, both at the 'top' and the 'bottom' of the value chain.

In Chapter 5, Davin Chor argues that modelling approaches used by international economists to understand the drivers of the global fragmentation of production and sourcing decisions can be complementary to the tools used by GVC analysts. While

GVCs have entered the vocabulary of international trade economists and, despite the large overlap in their main research questions, there is still a major disconnect between economists and GVC scholars. Aiming to bridge these two approaches, Chor discusses two areas of economic modelling that can be particularly helpful for GVC analysis: firm-level approaches that seek to explain the location and organization of global production; and selected general equilibrium models that can help tracing the aggregate effects of GVC restructuring on volumes and patterns of trade, welfare gains and labour markets and inequality. Chor concludes by encouraging closer links between economists and GVC scholars, especially in relation to issues of power in GVC governance, the role of services in GVCs and trade and industrial policy formulation.

Part II: Governance, Power and Inequality

The contributions included in Part II critically examine GVC governance and its distributional effects. The first two chapters provide an entry point to understanding various modes of governance and the complex power dynamics underpinning them. The next chapter analyses inequality in GVCs from the perspectives of different forms of rent. The remaining chapters implicitly or explicitly take 'value' in GVCs as a site of political and social contestation and examine the related power dynamics and resulting inequalities.

In Chapter 6, Stefano Ponte, Timothy Sturgeon and Mark Dallas provide a discussion of governance and power in GVCs. First, they examine the three main approaches to governance that have been employed in the literature (governance as driving, linking and normalizing). Second, drawing from Dallas, Ponte and Sturgeon (2019) they put forward a new typology of power in GVCs (bargaining, demonstrative, institutional and constitutional power) that can be usefully leveraged to explain the underlying factors shaping GVC governance and distributive dynamics. They thus provide a relevant framework to think about the drivers of inequality and its different manifestations.

In Chapter 7, Jonkoo Lee and Minjung Lee show that industries with a high 'intangible' content can be usefully analysed with the same analytical tools employed in understanding GVC that have more 'tangible' content. Through the analysis of governance in cultural and creative industries, they highlight the key role played by co-production processes linking global buyers and local producers, which has been coupled with the relocation of production to lower-cost locations. They show that local customization in the audio-visual sector has partly replaced the system of Hollywood production and global export. However, asymmetries of power between global buyers and local producers persist, relational capital remains a key asset and project-based employment, often informal and unstable, is becoming the norm. Digital technologies can heighten competition among suppliers and allow platform providers (such as Apple's App Store and Google Play) to act as gatekeepers, thus engendering new forms of inequality. Still, co-production, coupled with lower entry barriers facilitated by new digital technologies, are providing opportunities for smaller firms (including those based in the Global South).

In Chapter 8, Raphael Kaplinsky leverages GVC analysis to explain inequality in the distribution of income through an analysis of different kinds of rent (resource, endogenous, exogenous and market) that can be generated, protected and appropriated along GVCs. He shows that the quest for these rents has driven four kinds of (re)distributions of income: interpersonal (distinguishing those who gain in high-income and emerging economies from those who lose in North America and Western Europe); by class (with labour in high-income economies losing out to capital); by skill set (with unskilled and semi-skilled in most high-income economies losing); and interfirm (with assemblers and manufacturers losing with regard to those operating in pre- and post-production activities). Kaplinsky argues that rent can explain the drivers of all redistribution effects except for the interpersonal ones and that these distributional outcomes make it difficult to imagine a political situation in which the status quo of three decades of GVC-led growth continues. He sees a likely stabilization or reversal of globalization in the near future through neo-protectionism and fourth industrial revolution technologies, but also new possibilities for leveraging Scandinavian-style policies to redistribute the gains of a 'GVC world'.

In Chapter 9, Elizabeth Havice and John Pickles examine how various meanings and approaches to 'value' in GVCs have led to different appreciations of power dynamics and inequalities. In addition to value as measured in terms of domestic value addition and value as arising from different abilities to accumulate profits and/or capture rents (as in Staritz and Whitfield, Chapter 24), Pickles and Havice highlight the potential of approaches that take 'value' as a site of political and social contestation. They suggest revisiting Marx's observation that capitalism has an innate tendency of reducing the production of value, a tendency that drives recurrent rounds of innovation, restructuring and creative destruction. They argue that uneven power relations do not derive from differential abilities of firms in GVCs to create value, but rather from the law of value that creates unequal relations among firms.

The next two chapters further the analysis of political and social contestation in GVCs. In Chapter 10, Marion Werner and Jennifer Bair argue that much of the existing literature on incorporation of firms and regions in GVCs takes an unduly narrow perspective on territorial and social inequalities. They propose an approach focused on 'disarticulations' that can better explain how uneven development occurs – in other words, how capital accumulation by some actors in specific places is tightly connected to the subordinate incorporation or exclusion of other actors and/or other localities. Werner and Bair provide examples of different modes of disarticulation, such as devaluation (e.g., through labour stratification), disinvestment (e.g., by leaving a particular area) and constitutive exclusion (e.g., when whole regions are excluded from GVC participation). They argue that rather than conceptualizing instances of downgrading as negative outcomes of otherwise benign GVC dynamics, GVCs should be seen as the very channel through which capital accumulation and uneven development occur. They conclude that such an approach would provide a more granular understanding of different kinds of inequalities and bring back politics at the centre of understanding the global political economy.

Chapter 11 by Florence Palpacuer continues the analysis of politics in GVCs by examining the transnational activist networks that are attempting to change governance structures and upgrading paths. Through the neo-Gramscian lenses of 'contested governance', Palpacuer dissects the various ways in which these networks have emerged; how they operate and make strategic choices; how they leverage information, symbolic and accountability politics; and how they handle internal tensions and contradictions – for example, between unions and labour NGOs, local and global interests, Southern and Northern workers, and social and environmental concerns. Palpacuer concludes that the relatively unsuccessful quest of 'GVC-centred activism' to radically alter labour and environmental practices suggests the need to explore alternative forms of regulation and new activist strategies that address the larger political structures of the global economy.

In Chapter 12, Liam Campling and Elizabeth Havice draw from current research on materiality, environmental upgrading, waste and post-consumption, and culture and ecology to explain how the environment in GVCs is being used for capital accumulation via direct extraction of natural resources as inputs and/or the appropriation of nature's ability to absorb externalities (e.g., through pollution). From their perspective, GVCs and the environment cannot be analytically separated because social processes and environmental impacts are integral parts of the socio-ecological dynamics of capitalism and its distributive outcomes. They urge analysing GVCs in the context of the historical development of capitalism and its expansion through nature, thereby explaining how GVC functioning is dependent on the environment being transformed into a series of marketable resources.

In Chapter 13, Stefano Ponte expands this conversation by showing how environmental sustainability challenges are reshaping the organizational dynamics of GVCs, leading to new spatial, organizational and technological 'fixes' that ensure continuous capital accumulation. Drawing from Coe and Yeung (2015), he argues that sustainability management (the set of strategies and practices that corporations put in place to address sustainability issues) is becoming a fourth driver of key value chain dynamics – in addition to minimizing cost/capability ratios, increasing flexibility and heightening speed. As value creation and capture possibilities change, sustainability management is offering new venues of 'green capital accumulation', including lead firms in GVCs extracting more demands from their suppliers in a 'sustainability-driven supplier squeeze'. Ponte concludes that although sustainability management in GVCs is leading to environmental benefits in some industries, overall pressure on global resources is increasing. In other words, green capital accumulation and the unsustainable exploitation of nature continue to go hand in hand.

Part III: The Multiple Dimensions of GVC Upgrading

Part III examines the multiple dimensions of upgrading in GVCs. While much GVC research until a decade ago had focused on economic (or industrial) upgrading trajectories and typologies, more recent efforts have turned their attention to other aspects of upgrading. The first two chapters in Part III examine economic upgrading in general and in relation to services. The next three analyse social upgrading and livelihood upgrading and their interactions with economic upgrading. The last two chapters address the environmental and gender dimensions of upgrading.

In Chapter 14, Gary Gereffi introduces the reader to one of the key concepts of GVC analysis: economic upgrading. This concept has been at the centre of discussions on how different forms and paths of integration in GVCs can have different impacts on economic development outcomes at the firm, industry and national levels in the Global South. Gereffi assesses the key typologies and trajectories of upgrading and downgrading and provides an array of sectoral and country cases to highlight both the upgrading outcomes and the explanatory frameworks of interest to researchers. Finally, he assesses the limits to upgrading concepts and discusses the empirical and theoretical challenges for future research in this field.

In Chapter 15, Patrick Low adds to Gereffi's review of economic upgrading by highlighting how services can provide important sources of value addition, contrary to earlier assessments. Because of recent improvements in measuring the value addition of services, we now better understand their contribution to productivity growth and their role in all functions along a GVC. He shows that services play an important role in explaining outsourcing and bundling strategies, opening the way for alternative upgrading opportunities. Low concludes that maintaining separate international policy regimes for goods, services and investment is dysfunctional in a world where they are intimately connected.

In Chapter 16, Arianna Rossi examines the interactions between economic and social upgrading – the latter understood as the process of improving rights and entitlements of workers and their employment conditions. Rossi shows that economic upgrading may indeed lead to social upgrading, but this is not necessarily always the case. Social upgrading can also arise from regulatory interventions, which in turn generate economic upgrading. A social downgrading trajectory is also possible in the presence of economic upgrading when productivity gains result in higher margins for supplier firms but may not be redistributed to workers because of power imbalances. Rossi provides examples of when both economic and social upgrading occur and reinforce each other, highlighting the factors behind these positive dynamics, but also shows how within the same workplace some groups of workers can benefit (e.g., permanent employees) while others suffer downward pressure (e.g., casual workers). This suggests the necessity of analysing redistributional effects, not only general trends.

In Chapter 17, Peter Lund-Thomsen tackles the issue of social upgrading from the vantage point of corporate social responsibility (CSR). He examines the different ways in which CSR is governed in GVCs and what effects these approaches have on labour conditions. Via a thorough analysis of the pros and cons of private, public and civic governance of CSR in GVCs, Lund-Thomsen suggests that searching for synergies between them may not be the best approach to promoting better working conditions in the Global South. Rather, he suggests searching for their inherent limitations towards a more realistic evaluative approach to what can be done within each form of CSR governance in GVCs.

In Chapter 18, Jeff Neilson assesses the impact of GVC inclusion on the rural livelihoods of independent smallholders, thus extending the discussion of social upgrading beyond the factory floor. Neilson takes a novel analytical stance through the intersection of GVC analysis and the sustainable livelihood approach to propose an agenda for 'livelihood upgrading'. The chapter vividly shows how value chain development interventions in Indonesia, lacking a livelihood understanding to upgrading, strengthened local political elites at the expense of poorer farmers and in the process heightened risks to livelihoods.

In Chapter 19, Valentina De Marchi, Eleonora Di Maria, Aarti Krishnan and Stefano Ponte expand the analysis to environmental upgrading and identify its three major groups of drivers: those external to the firm (including regulation and civil society activism); those emanating from lead firms placing direct pressure on suppliers (through standards, product design and/or knowledge transfer and support); and proactive internal drivers in both lead firms and suppliers. They derive two main findings: buyer-driven environmental upgrading tends to take place when lead firms exercise strong power over their (lower-competence) suppliers – leading to improved production processes in price-sensitive markets and involving first-tier suppliers rather than those further upstream; and more collaborative forms of environmental upgrading happen when there is mutual dependence between buyers and (higher competence) first-tier suppliers. This often occurs in relation to production processes and eco-efficiency and where firms compete on quality and differentiation and not only on price. In both cases, environmental upgrading is more likely to take place and have positive environmental impacts when coupled with clear and enforceable regulation.

Finally, in Chapter 20, Stephanie Barrientos leverages feminist political economy to highlight the pervasiveness of gender inequality in upgrading/downgrading processes. Barrientos shows that while GVC participation has provided new opportunities for hundreds of millions of women to earn an income, gender discrimination remains systemic. A gender glass ceiling prevails in all major sectors, with supervisory and board-level positions remaining the purview of men. Through the analysis of agrifood value chains ending in supermarkets and drawing in particular from the fruit GVC originating in South Africa, she identifies key nodes in GVCs where gender roles facilitate their operation; highlights how a gendered combination of low cost and specific skills allow the undermining of women's work and facilitates value capture by global buyers; and shows how advocacy is challenging prevailing gender norms and opening up new opportunities and bargaining power for women workers.

Part IV: Strategy, Innovation and Learning

The chapters included in Part IV leverage the contribution of various approaches broadly pertaining to international business studies to a more nuanced understanding of governance and upgrading in GVCs. The first two chapters focus on strategy and especially supplier strategy. The next three examine innovation and learning in relation to the productive capabilities of local firms and clusters in developing countries. The final two chapters focus on how selected insights from the literature on MNCs and on supply chain management can be usefully integrated in GVC analysis.

In Chapter 21, Mari Sako and Ezequiel Zylberberg highlight three fields of strategy that are particularly relevant for this exercise: corporate strategy (make-or-buy decisions); technological strategy (how to capture the value wrought by suppliers through technological innovation); and institutional strategy (how to influence the working of institutions to their advantage). Sako and Zylberberg conclude that suppliers in GVCs can shape power relations to their advantage by diversifying their portfolio of buyers, by operating in fields with easier value appropriability, and by leveraging specialized and complementary resources.

In Chapter 22, Gale Raj-Reichert complements this effort by examining how transnational first-tier suppliers have been able to leverage 'supplier power' to reshape power relations and the rewards offered by participation in three major GVCs (automobiles, garments and electronics). These GVCs moved away from a unipolar form of governance (with lead firms situated in one functional position) to a more multipolar form (where groups of firms in different functional positions attempt to shape its governance). Suppliers achieved this through acquiring new functions and responsibilities, increasing their capabilities in design and technology, and becoming larger players through mergers and acquisitions.

In Chapter 23, Rasmus Lema, Carlo Pietrobelli and Roberta Rabellotti examine how developing-country firms, once inserted in GVCs, acquire or lose innovation capabilities. They analyse how GVC dynamics interact with innovation systems and how different interactions impact the speed, depth and quality of capability building. They identify four main trajectories for firms' innovation capabilities in the co-evolution of GVCs and innovation systems: (1) gradually increasing (complementary and positive interaction between GVC characteristics and innovation policies at the national or local levels); (2) leap increasing (either through short-cycle technologies arising from well-developed innovation systems in GVCs that otherwise offer limited opportunities, or in places with weak innovation systems but where GVCs offer substantial learning opportunities); (3) stagnating (when the innovation system becomes weaker/fragmented or the value chain does not provide learning opportunities); and (4) declining (when the innovation system becomes too weak to sustain increasing competitiveness in a GVC). The authors highlight that the policies needed to attract GVCs and those to develop innovation systems are quite varied and that distinct situations will need different combinations of the two sets.

In Chapter 24, Cornelia Staritz and Lindsay Whitfield also delve into the role of learning and capability building of developing-country firms operating in GVCs, but in situations where innovation systems at the local level are weak. They apply a modified version of the 'technological capability' approach to trace firm-specific learning efforts and outcomes, with a focus on African firms in the apparel GVC. They highlight the different sources of knowledge for firms, the factors that can shape firms' efforts and the elements determining the outcomes of these trajectories. They conclude that international knowledge is indeed important in contemporary industrialization processes in developing countries, but also that it is more likely to positively shape learning processes and outcomes when combined with specific national, sectoral, institutional and policy efforts that reinforce productive capacity building among local firms.

In Chapter 25, Eleonora Di Maria, Valentina De Marchi and Gary Gereffi further contribute to this discussion by highlighting the mutual learning processes and knowledge sharing that take place in clusters, and how these are used by both individual firms and the cluster to facilitate participation and upgrading in GVCs. They observe that in the last two decades we have witnessed a diversification of firm strategies within clusters, along with multiple efforts at cluster repositioning with regard to GVCs. They conclude by underlining some of the theoretical opportunities that the integration of cluster and GVC approaches provides.

Chapter 26 by Noemi Sinkovics and Rudolf Sinkovics systematically compares the main characteristics and interests of the GVC and international business (IB) literatures to pave a path for a better understanding of the role of multinational enterprises (MNEs) in GVCs. They draw parallels between three main fields of GVC governance theory and six theoretical perspectives arising from IB scholarship (characterizing MNEs as: dominating, coordinating, knowing, designing, networking and/or politicizing), which combined can be useful in explaining specific governance and upgrading dynamics in GVCs.

Ruggero Golini and Matteo Kalchschmidt carry out a similar exercise in Chapter 27, this time in relation to the supply chain management (SCM) literature. This literature is particularly helpful when it comes to the possible internal and external SCM strategies that can facilitate different forms of upgrading. The chapter concludes by identifying areas of research that would benefit from the combined insights of SCM and GVC analysis – such as digitalization, Industry 4.0, reshoring and relocation, and new globalization patterns.

Part V: International Development and Public Policy

The contributions included in Part V examine the implications of a 'GVC world' for development trajectories and public policy. The first chapter explores the links between GVC analysis and development theory. The next five chapters provide detailed analyses of how GVC analysis can inform domestic and international trade, investment and industrial policies and the design of public–private partnerships for development. The last two chapters unpack how the state and international organizations can both shape and are shaped by GVC dynamics.

In Chapter 28, Timothy Sturgeon and D. Hugh Whittaker examine how GVCs and macro-historical narratives of development interact. In a first step, they expand on existing work tracing the evolution of techno-economic periods in relation to changes in predominant organizational paradigms and management models. They highlight the main transformations that occurred in five broad techno-economic eras, including the role played by GVCs in the most recent periods. Sturgeon and Whittaker then link these eras to various development models, arguing that we have been witnessing the emergence of 'compressed development' from the 1970s onward and its acceleration since the mid-1990s. They argue that this era is characterized by low value-added traps, thin industrialization and the geographical separation of innovation from production, requiring adaptive industrial, innovation and social policies.

In Chapter 29, Penny Bamber and Karina Fernandez-Stark discuss the policy implications of GVCs as drivers of development. They highlight an approach based on picking winners, on thinking globally but acting locally, and on moving from competition to collaboration. They provide specific examples of six policy areas that are essential to GVC participation and upgrading: human capital development, standards compliance, investment strategies, local firm development, trade, and infrastructure. Bamber and Fernandez-Stark conclude that GVC-oriented policy needs to be focused on specific industries and functions that can be performed in a specific locality, and necessitates a multistakeholder approach to policy formulation and implementation.

In Chapter 30, Victor Stolzenburg, Daria Taglioni and Deborah Winkler examine which country-specific characteristics can explain divergent economic upgrading trajectories in GVCs. First, they draw from a panel dataset of developing and industrialized countries and employ econometric techniques to show that GVC integration increases domestic value added, and that integration as a seller (e.g., through exporting intermediates) in GVCs has a stronger effect on domestic value addition than integration as a buyer only (e.g., importing for assembly). Second, they examine whether national policies that target investment and trade flows, the business climate and the quality of inputs and output make a difference in facilitating value addition. They conclude that GVC integration can be promoted not only through border measures, but also by beyond-the-border policies (e.g., to increase the quality of inputs).

In Chapter 31, Mike Morris and Cornelia Staritz discuss how the rise of GVCs has shaped industrialization paths and industrial policy options for developing countries.

They highlight that different kinds of GVCs involve different industrialization paths. In 'vertical specialization', GVCs are characterized by fragmentation and the slicing up of activities into many sub-processes; suppliers seek specialization and rent acquisition – needing policies that first promote a narrow specialization in specific activities and only later expansion to higher rent activities in the value chain. In 'additive' GVCs where value is added sequentially to each stage, policies facilitating domestic value addition and the development of backward and forward linkages need to come first. More generally, Morris and Staritz highlight that policies facilitating the connection of local suppliers to lead firms in GVCs are important, but they need to be coupled with interventions that can facilitate domestic value addition (e.g., technology transfer to suppliers, local content provisions, contributions to skills development). Finally, they suggest that industrial policies need to be fine-tuned to different end-markets and that locally embedded productive capacity building needs to come hand in hand with FDI attraction.

In Chapter 32, Shamel Azmeh expands the analysis of GVC-oriented development policy to international trade regimes. He argues that GVCs have expanded dramatically as the international trade regime gained predictability and depth. As a corollary, GVCs are unlikely to remain the dominant mode of organization of global production without an effective rules-based trade regime. Recent trade policy shifts in key countries (including the United States) are spawning trade barriers and lower predictability of trade regimes, thus opening a period of uncertainty regarding the geography and organization of GVCs.

In Chapter 33, Ajmal Abdulsamad and Hernan Manson observe that contemporary development approaches increasingly rely on public–private partnerships (PPPs). They examine the experience of three development PPPs in Indonesia, Kenya and Rwanda and show that they struggled to reconcile divergent development objectives and business interests. Abdulsamad and Manson argue that a proper GVC approach to PPPs could help resolve these interest alignment problems and promote interventions that shape GVC governance towards more 'developmentalist' forms.

While the previous chapters implicitly examined the role of the state as regulator or facilitator in the process of development, in Chapter 34, Rory Horner and Matthew Alford draw our attention to two additional and relatively neglected roles of the state in GVCs: the state as producer and the state as buyer. State-owned enterprises (SOEs) still play an important role in the global economy, accounting for an estimated 10 per cent of global GDP. Public procurement is also important in many countries, especially in sectors such as education, defence, utilities and public health. Despite the World Trade Organization's Agreement on Public Procurement, public buyers still exercise a large degree of discretion in view of promoting certain values (e.g., through buying products that meet certain sustainability and labour standards), social categories (e.g., buying from disadvantaged groups) and/or supporting domestic rather than foreign firms. Yet, the role of SOEs and/or public procurement in governing GVCs remains understudied, especially in relation to whether their governing role results in better development outcomes in GVCs driven by private producers and/or buyers.

Finally, in Chapter 35, Frederick Mayer and Gary Gereffi show how GVC analysis since the early 2000s has been adopted in one form or another by all major international organizations (IOs) with a mandate related to economic development. Early movers in this process were the International Labour Organization (ILO) and the United Nations Industrial Development Organization (UNIDO), followed by many others in the wake of the 2008 financial crisis – including the World Bank, the Organisation for Economic Co-operation and Development (OECD) and the World Trade Organization (WTO). In most cases, specific 'policy entrepreneurs' were behind the adoption of GVC frameworks in these IOs. In contrast to the Washington Consensus position that envisioned limited roles for governments and public policy, GVC-oriented development interventions assume that both matter. However, the translation of these principles into policy practice has been shaped by the different histories and cultures of specific IOs. Neoliberal interpretations leveraged GVC analysis to make the case for facilitating trade and minimizing obstacles to it. Partnership-oriented policies emphasized the role of business in development processes that involve public and private stakeholders. Developmentalist interpretations sought to place the state at the centre of economic development through industrial policy and investment in human development, infrastructure and productive capacity, while at the same time seeking to address the needs of more vulnerable groups and locations. Mayer and Gereffi conclude by arguing that despite the challenges they face, IOs remain necessary for international development in a GVC world as they can act as repositories of global public goods and knowledge. This is particularly important because nimble trade, industrial and investment policies require greater attention to alternative strategic options, sectoral specificity and contextual adjustment to changes in the global economy.

In the Epilogue of this *Handbook*, the editors explore a set of possible trajectories for the future of GVC research. As our understanding of GVCs deepens, new questions and areas of exploration arise. And as the 'world of GVCs' changes, new issues need to be addressed to chart the impacts of GVCs on economies, societies and environments.

Overall, the chapters in the *Handbook on Global Value Chains* demonstrate the continued ability of the GVC approach to generate timely and relevant research and research questions across a remarkably diverse range of interdisciplinary topics. The *Handbook* reflects on the core themes of GVC analysis: the links between global, national and local dynamics; the changing nature of interfirm networks; shifting trends in technological development and GVC governance structures; the interactions between diverse patterns of economic, social and environmental upgrading; the impact of power asymmetries between lead firms and suppliers on uneven development and inequality between and within countries; and the future challenges of dynamic, inclusive and sustainable development. Given the pitfalls of globalization and the uncertainties facing development trajectories in developed and developing economies alike, the GVC approach remains one of the key instruments to understand the changing global economy and its inequalities.

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NOTES

1. This section draws extensively from Chapter 1, 'The emergence of global value chains: ideas, institutions and research communities' in Gereffi (2018).
2. Rostow's five basic stages were: traditional society, transitional society, take-off, drive to technological maturity and high mass consumption.
3. For a brief description of strategic interviews in GCC studies, see Bair and Gereffi (2001), Appendix A.
4. For a critique of this approach, see Cardoso (1977).
5. In this introduction, transnational corporations and MNCs are treated as synonyms.
6. In the case of the pharmaceutical industry, UNCTC had broad concerns over controversial MNC practices in terms of the high prices of medicines, tax avoidance through transfer pricing, misleading drug advertising and the impact of patents on local innovation.
7. In addition to the general governance typologies like producer-driven and buyer-driven chains (Gereffi, 1994b) and the fivefold typology of GVC governance in Gereffi et al. (2005), most detailed empirical studies of GVCs identify the leading MNCs involved in governing the chains they are analysing. Industry examples include: apparel (Bair and Gereffi, 2001; Gereffi and Memodovic, 2003); automotive (Humphrey and Memodovic, 2003; Sturgeon et al., 2009); electronics (Sturgeon, 2002; Sturgeon and Kawakami, 2011); offshore services (Fernandez-Stark, Bamber and Gereffi, 2011) and cocoa (Fold, 2002).
8. There is a voluminous literature on this topic. For a few examples, see Gereffi (1999), Schmitz (2004) and Staritz, Gereffi and Cattaneo (2011).
9. For a listing of the PEWS annual conference volumes, see http://asapews.org/annuals.html; accessed 29 April 2019.
10. In the GCC lexicon, the term 'global' does not necessarily refer to the geographic scope of commodity chains (since many commodity chains are regional and vary in their geography over time). Rather, it builds on the distinction introduced by Dicken (1992) between 'internationalization' and 'globalization': the former refers simply to the spread of economic activities across international boundaries, while the latter requires significant functional integration between these geographically dispersed activities (Gereffi, 1994b, p. 96).
11. The only exceptions were the studies of the shipbuilding and grain flour commodity chains, which covered the period 1590–1790. The other industries covered in the volume were: apparel, athletic footwear, automobiles, fresh fruit and vegetables, business services and cocaine.
12. For a critique of *Commodity Chains and Global Capitalism* on these grounds, see Dunaway and Clelland (1995); for a rejoinder, see Korzeniewicz, Gereffi and Korzeniewicz (1996).
13. For a perceptive review of the world-system, GCC and GVC views of commodity chains, see Bair (2009b, pp. 7–14).
14. IDS was established in 1966 as Britain's first national institute of development studies. The workshop was organized by senior IDS researchers, including Raphael Kaplinsky, Hubert Schmitz and John Humphrey. It was held on 15–17 September 1999 with around 60–70 participants.
15. Among developed economies, Italian 'industrial districts' were a cornerstone of Piore and Sabel's *The Second Industrial Divide* (1984), a pioneering work that translated the experience of small firms in craft-based regions like the Third Italy into a new 'flexible specialization' model that represented an alternative to the Fordist system of mass production geared to making identical, inexpensive goods.
16. IDS researchers edited two special issues of *World Development*, a leading multidisciplinary journal, which highlighted the key themes related to industrial clusters and globalization and indeed laid the groundwork for subsequent collaboration with GVC scholars (see Humphrey, 1995; Nadvi and Schmitz, 1999). Similar topics were addressed in the edited volume by Schmitz (2004).
17. This includes the work of GCC researchers, such as Gereffi and Korzeniewicz (1994), as well as the Alfred P. Sloan Foundation's Industry Studies programme launched in 1990 to foster a closer interaction between academia and industry.
18. This included scholars affiliated with the Berkeley Roundtable on the International Economy (BRIE), which looked at 'international production networks' (e.g., Ernst and Ravenhill, 1999; Borrus, Ernst and Haggard, 2000; Sturgeon, 2002).
19. Rockefeller later provided supplemental funding for 2006–08.
20. The first GVC workshop in Bellagio took place on 25 September–1 October 2000. The participants are listed in Gereffi and Kaplinsky, 2001, p. 8.
21. Although Michael Porter of Harvard Business School developed a value-chain framework that he applied at the level of individual firms (Porter, 1985) and as one of the bases for determining the competitive advantage of nations (Porter, 1990), Porter did not use it to highlight the changing organizational structure of global industries or to address the impact of GVCs on the upgrading dynamics of developing economies, as GVC researchers did.

22. There was also discussion of whether to replace the *chain* metaphor with less linear terms like networks or webs. Ultimately, the chain metaphor was retained because it embodied the familiar input–output structure of a production network where value is added as goods are transformed along a supply chain.
23. All these topics are covered in this *Handbook* especially in core areas like GVC governance (Ponte et al., Chapter 6), economic upgrading (Gereffi, Chapter 14) and measurement (Sturgeon, Chapter 3).
24. See Sturgeon (2009) for a more extensive analysis of the GCC and GVC approaches to governance. As noted in Bair (2009b, pp. 13–14, 26–7), the shift from GCC to GVC governance structures implies a conceptual reorientation from 'drivenness' to 'coordination' that remains relevant for researchers, in particular for those who want to retain the power dimension of the GCC approach (e.g., Appelbaum and Gereffi, 1994).
25. While Rockefeller sponsored most of the events, a GVC Initiative workshop held at Rockport, Massachusetts on 'Globalization, Employment and Economic Development' in June 2004 was supported by the Alfred P. Sloan Foundation – see http://www.soc.duke.edu/sloan_2004/; accessed 29 April 2019.
26. About 1050 publications and 780 researchers appear on the Global Value Chains Initiative website (https://globalvaluechains.org/) as of 27 July 2018. The website is hosted and maintained by the Global Value Chains Center at Duke University (see https://gvcc.duke.edu/).

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