Global Commodity Chains and Global Value Chains

Summary and Keywords

A commodity chain refers to “a network of labor and production processes whose end result is a finished commodity.” The attention given to this concept has quickly translated into an expanding body of global chains literature. Research into global commodity chains (GCC), and later global value chains (GVC), is an endeavor to explain the social and organizational structure of the global economy and its dynamics by examining the commodity chains of a specific product or service. The GCC approach first emerged in the mid-1980s from world-system research and was reformulated in the early 1990s by development scholars. The development-oriented GCC approach turned the focus of GCC analysis to actor-centered processes in the global economy. One of the initial criticisms facing the GCC approach was its exclusive focus on internal conditions and organizational linkages, lacking systemic attention to the effect of domestic institutions and internal capacity on economic development. Other critics pointed to the narrow scope of GCC research. With the huge expansion in global chains literature in the past decade—not only in volume but also in depth and scope—efforts have been made to elaborate the global chains framework and to render it industry neutral, as partly reflected in the adoption of the term “global value chains.” Three key research themes surround these recent evolutions of global chains literature: GVC governance, “upgrading,” and the social construction of global value chains. Existing literature, however, still has theoretical and methodological gaps to redress.

Keywords: commodity chains, global commodity chains, global value chains, global economy, development-oriented GCC, global chains literature

Introduction

Research into global commodity chains (GCC), and later global value chains (GVC), is an endeavor to explain the social and organizational structure of the global economy and its dynamics by examining the commodity chains of a specific product or service. A commodity chain refers to “a network of labor and production processes whose end result is a finished commodity” (Hopkins and Wallerstein 1986:159). Since the mid 1990s, the concept has drawn a great deal of attention from scholars and policy makers who have grappled with comprehending the changing global economy. This attention has quickly translated into an expanding body of global chains literature. Of 380 publications listed on the Global Value Chains Initiative website as of November 22, 2008 (see Online Resources), 87 percent have been published since 2000 (see Figure 1).

Meanwhile, global chains research has become multidisciplinary as researchers have entered the conversation from various disciplines. These include sociology, economics, geography, regional studies, management studies, and development research, to name a few. Prominent journals have devoted special issues to this emerging field (e.g., International Journal of Technological Learning, Innovation and Development[2009];
The chains were traced backward from a finished product (e.g., a ship) up to raw material inputs (e.g., grain). The chains constructed consisted of multiple stages, starting with the collection of raw materials, through processing and assembly, to the final distribution of the finished product. This backward trace was crucial for understanding the flows of labor, goods, and capital across different geographic locations.

Global commodity chains research originated in the world-system school (Hopkins and Wallerstein 1986) and was later formulated as "a relatively coherent paradigm" (Daviron and Ponte 2005) in a collected volume, *Commodity Chains and Global Capitalism* (Gereffi and Korzeniewicz 1994). Around the early 2000s, some GCC scholars began to introduce the GVC concept into their work, citing the conventional association of the term "commodity" with undifferentiated products with low entry barriers. At the same time, the introduction of the new term has caused a series of controversies over the relationship between GCC and GVC concepts that are outlined below (Kaplinsky 2000; Bair 2009).

Nonetheless, GCC and GVC research is characterized by considerable coherence: the two endeavors share key concepts and research questions. These include: (1) how a global commodity/value chain is organized, and who the most powerful players are driving the chain ("lead firms"); (2) how the way the chain is governed ("governance structure") affects the distribution of gains across chain participants, that is, countries, firms, and workers in developed and developing countries; and (3) what determines the movement of chain actors from low to high value-added activities ("upgrading"). In methodology, both approaches focus on a firm-level chain analysis with data gathered from fieldwork. These commonalities remain crucial to most GCC/GVC scholars, regardless of what they call their research. Thus, throughout this essay the two terms are used interchangeably, and I use "global chains research" to encompass both strands.

There are several other approaches that have many similarities to global chains literature in theory and methodology. These variants include Michael Porter’s (1985) "value chain" concept in management studies; the French “filière” tradition (Raikes et al. 2000) and the "commodity systems" approach (Friedland 1984), both from agricultural studies; and "global production network" (GPN) research (Henderson et al. 2002), used mostly by economic geographers. Some researchers are more attuned than others to the difference of their origins and to the peculiar intellectual "baggage" each carries (Henderson et al. 2002). Although a comparison might bear some merit, this essay solely focuses on global chains research, leaving that task to others (see Sturgeon 2001 and Henderson et al. 2002 for a comparison of GCC/GVC with GPN; Raikes et al. 2000 with "filière"; Gereffi 1996 and Whitley 1996 with "business systems"; Bair 2008 with the new economic sociology; and Gereffi 2005 with the varieties of capitalism literature).

The rest of the essay is organized as follows. The next section surveys the early development of GCC research through the late 1990s. The contemporary literature of this decade is then reviewed around the following themes: GVC governance, "upgrading," and the social construction of global chains. This essay concludes with notes on gaps in the existing literature and suggestions for the future direction of global chains research.

**Formulation of the Global Commodity Chains Approach**

The GCC approach first emerged in the mid 1980s from world-system research and was reformulated in the early 1990s by development scholars. Continuities and discontinuities in this reformulation deserve attention to understand how the questions the scholars attempted to address shifted in this formative period (see Bair 2005 for a review). This section examines the GCC literature up to the late 1990s with a focus on (1) its original conceptualization by world-system scholars, (2) the reformulation by Gereffi and his collaborators, (3) some empirical studies, and (4) initial critiques of the reformulated framework from inside and outside the GCC camp.

While a handful of earlier studies had employed the value chain concept or a similar concept by another name (Kaplinsky 2000), the GCC approach proper dates back to Hopkins and Wallerstein’s (1986:159) conceptualization, where commodity chains were defined as "a network of labor and production processes whose end result is a finished commodity." In their attempt to contest the incrementalist view that capitalism has been gradually globalized since the nineteenth century, these world-system scholars constructed the entire chains of two major commodities in the period from 1590 to 1790 – ships and wheat flour – to show that the production activities of these goods already spanned the globe. The chains constructed consisted of multiple "nodes" (or "boxes"), each of which represented distinct production operations, and "chains" linking them to each other. The chains were traced backward from a finished product (e.g., a ship) up to raw material inputs (e.g.,
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Overall, the “development turn” of the GCC concept brought a new focus to the literature (Gereffi et al. 1994; Bair 2005). First, it explicitly highlighted the unequal distribution of surplus between the core and the periphery. It is suggested that semiperiphery mobility depends on “a country’s ability to upgrade its mix of core–peripheral economic activities” (Gereffi and Korzeniewicz 1990:54, emphasis added). In other words, the extent to which a country is involved in core-like activities is a better predictor of its success than its overall level of industrialization. Commodity chains are not simply sequences of production, but also a key tool for dissecting interlinked economic activities into multiple nodes with differential profits. The world’s economic inequalities, they argued, were associated with “the creation and distribution of global wealth as embodied in a multidimensional, multistage sequence of activities, rather than an outcome of industrialization alone” (Gereffi et al. 1994:13). Similarly, industrialized countries have differential access to markets and resources that determines who moves up and who is left behind in the hierarchy of the global economy.

Second, with the “development turn” of the GCC concept came a new focus on competition and innovation. These are proposed to be the key factors that determine which nodes are more or less profitable, or core-like or periphery-like. The more severe the competition is in a particular node, the smaller the share of surplus that generally accrues to the node. By the same token, the more a node is monopolized by a few units, the bigger the share of surplus that goes into them. The profitability of the nodes, however, is hardly static, but is rather subject to technological and organizational innovations. As innovation renders certain nodes less profitable (“peripheralization”), firms or countries are pressured to develop a new competitive edge. In short, the GCC approach suggests that a country’s developmental success generally hinges on the ability to “upgrade” its industrial activities into more profitable and less competitive nodes within global commodity chains against the constant pressure of peripheralization brought by new innovations.

Finally, a now renowned distinction between producer-driven and buyer-driven chains was made to distinguish different types of commodity chains in terms of governance structures and types of lead firms. Gereffi (1994:97) defined governance as “authority and power relationships that determine how financial, material, and human resources are allocated and flow within a chain.” Producer-driven commodity chains (PDCCs) are driven by vertically integrated large industrial enterprises that control the production system through direct ownership or tightly knit production alliances. They characterize capital- and technology-intensive industries (e.g., automobiles, computers, and aircraft manufacturing). In contrast, buyer-driven commodity chains (BDCCs) are governed by lead firms as buyers (e.g., retailers, marketers, and brand manufacturers) that utilize a wide array of independent suppliers, linked to one another through sourcing networks. They are typically found in labor-intensive, consumer goods industries, like garments, footwear, or consumer electronics. The power of lead firms in BDCCs derives not from economies of scale or technological prowess as in PDCCs, but from their competence in such nodes as design, sales, and marketing. Ensuing studies have shown that this distinction sets the stage for the prospect, scope, and path of suppliers’ upgrading.

This original concept of commodity chains was soon picked up by development scholars (Gereffi and Korzeniewicz 1990) and then reformulated in a volume edited by Gereffi and Korzeniewicz (1994). While the collection includes contributions by world-system scholars (e.g., Hopkins and Wallerstein 1994), most of the chapters examine contemporary development challenges in export-oriented industries, such as apparel, automobiles, and footwear. Unlike world-system scholars whose pressing concern was the existence of a “global” economy in early modern capitalism, the development scholars found the commodity chains concept useful to capture emerging patterns of postwar industrialization that they suggested were characterized by the disaggregation and geographical spread of production activities and functional reintegration by transnationals. These scholars collectively address the bearing that these new trends in the global economy have had on prospects for economic development in developing countries.

The question of the contemporary development of developing countries related to a then broad debate on the relationship between industrialization and the mobility of nations in the global economy. A concern had been growing over why the developing countries’ share of total economic surplus did not increase proportionately despite the growth of their industrial output, and why some semiperiphery nations had been more successful in moving up the global economic hierarchy than their similarly industrialized peers (see Martin 1990). The GCC scholars found the GCC concept could provide a compelling explanation for these matters, since it allowed for dissecting industrial activities into multiple nodes with differential profits. The world’s economic inequalities, they argued, were associated with “the creation and distribution of global wealth as embodied in a multidimensional, multistage sequence of activities, rather than an outcome of industrialization alone” (Gereffi et al. 1994:13). Similarly, industrialized countries have differential access to markets and resources that determines who moves up and who is left behind in the hierarchy of the global economy.

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Gereffi’s studies on the global apparel chain (1994; 1999) exhibit a prime example of development-oriented GCC
research in the 1990s. He argued that the success of East Asian producers in the typical starter sector for export-oriented industrialization was largely attributable to their ability to upgrade in the buyer-driven chain, from simple assemblers to original equipment manufacturing (OEM), or full-package, suppliers. And this was enabled by learning from foreign buyers, who became the East Asian producers’ primary sources of not only material inputs but also knowledge transfers.

Some kinds of buyer–supplier chain linkages are more advantageous than others in such organizational learning, Gereffi has suggested. In global apparel chains, for instance, US brand manufacturers (e.g., Levi Strauss) are distinguished from retailers (e.g., JC Penney) and marketers (e.g., Nike) in terms of sourcing strategy. Brand manufacturers generally establish production networks and supply inputs with local producers, which only assemble them into a final product. In contrast, retailers and marketers tend to buy readymade apparel from their OEM suppliers, mostly in Asia. Gereffi suggests this difference matters from the upgrading standpoint, because the types of knowledge transferred from the buyer to the supplier are different. Unlike in the assembly model, where only production-related knowledge flows, the OEM suppliers can learn additionally from the buyers necessary skills in managing input supply as well as marketing and sales, which are critical for upgrading to original brand manufacturing (OBM). And as the suppliers move to serve more demanding buyers in quality and quantity (“organizational succession”), they can further enhance their skills and facilities. Therefore, upgrading significantly relates to “different kinds of buyer–seller links, and distinctive patterns of organizational succession among foreign buyers in exporting nations” (Gereffi 1999:40).

The upgrading constraints of assembly-based industrialization were confirmed by subsequent GCC research. In a study of consumer electronics chains established by Japanese multinationals in Mexico’s maquiladoras, Kenney and Florida (1994) found that despite some variation in their insertion into the chains, most local suppliers remained as labor-intensive export platforms. The Japanese firms’ pointed emphasis on cost cutting and Mexico’s lack of new investment in infrastructure and human capital limited the effect of their insertion on their upgrading. Similar challenges are identified in Schmitz’s study of Brazil’s Sinos Valley cluster (1995; 1999). Despite their significantly improved performance in quality, speed, and flexibility, Brazilian footwear suppliers found their exports stagnant and profits dwindling as competition intensified with low-wage Asian producers. Without accessing high-value nodes like design and marketing, Schmitz warned, they would face a so-called immiserizing growth trap; that is, increased industrial activities without sustainable income growth (Kaplinsky 1998).

Accessing high-value segments, however, can present a huge challenge to sustainable country producers, as illustrated in Schurman’s (1993) study of the global tuna chain. As tuna harvesting became competitive and less profitable in the late 1980s, US and Japanese multinationals divested from the node and concentrated on distribution and retailing, the highest value-adding segments. Consequently, Pacific Island countries’ efforts to build an export-oriented tuna sector by entering the harvesting node of the chain ended up with disappointingly lower gains than anticipated. The lack of their linkages to the lead firms’ tightly woven interfirm networks further inhibited their access to final markets and the know-how necessary to survive, leaving them locked in the most competitive and risky node.

Ultimately, the development-oriented GCC approach turned the focus of GCC analysis to actor-centered processes in the global economy. Unlike world-system scholars, most of these GCC researchers are uninterested in macro-historical processes, such as the long-term cycles of the world economy. Countries and firms are not regarded as static; rather, they are the actors strategically shaping and being shaped by the ongoing restructuring of the global industry. However, their ability to do so is not equal. This highlights power disparities between the actors.

Despite their general lack of interest in the macro-historical questions, these GCC researchers have retained from world-system theory a global perspective. They have maintained their focus on the global division of labor and its functional integration beyond national boundaries, as opposed to the national economy and international trade (Gereffi 1996). The carryover was a mixed bag. On the one hand, it has clearly distinguished the GCC approach from the existing, largely state-centric development literature. The brand of GCC scholarship promoted by Gereffi and colleagues has been well received by those in various adjacent fields who have sought, in their own scholarship, a fresh perspective attuned to the deeper integration of the globalized economy (McMichael 1995). On the other hand, some world-system scholars criticized the reorientation for having strayed too far from the core aims of the world-system approach and for being too “developmentalist” (Dunaway and Clelland 1995), while other critics from outside the world-system camp in fact found the association too strong, and thus problematic (Cramer 1999; Raikes et al. 2000).

One of the initial criticisms facing the GCC approach was its exclusive focus on external conditions and organizational linkages, lacking systemic attention to the effect of domestic institutions and internal capacity on economic development (Henderson et al. 2002). Cramer (1999:1248) has suggested that despite its empirical richness, the GCC approach tends to be “fatalistic” when it comes to analyzing prospects for developmental success, due to its sole emphasis on the structural constraints imposed by core-based multinationals. He cites a Mozambican cashew case in which the most pressing challenge to its exporters were rather domestic political
A series of efforts has been made to accommodate this complexity and to propose a more generalized conceptualization of these findings. They have resisted any portrayal of global chains as mono-polar, highlighting instead the multiplicity of interactions and dependencies within and between different levels of the value chain — from suppliers as being "captive" to the demands of buyers (Lee and Chen 1999) to the emergence of new types of suppliers that are capable of providing "turnkey services" to a wide range of buyers using industry-wide specifications. This new type of supplier has challenged a conventional notion of the boundary between manufacturers and buyers (Sturgeon 2002). The former has increasingly outsourced production activities to independent suppliers (Sturgeon 2009). How global chains research in this decade has addressed these criticisms and elaborated its theoretical framework are the subjects of the sections to follow.

From Global Commodity Chains to Global Value Chains

The past decade has witnessed a huge expansion in global chains literature, not only in volume but also in both depth and scope (see Bair 2005; 2009 for reviews). Efforts have been made to elaborate the global chains framework and to render it industry neutral, as partly reflected in the adoption of the term "global value chains" (Humphrey and Schmitz 2002; Gereffi et al. 2005). As happened in the past, global chains researchers have continued to grapple with new realities in the global economy, such as the proliferation of private regulations and standards (Dolan and Humphrey 2004; Ponte and Gibbon 2005). Theories from other disciplines, such as transaction cost economics, industrial cluster research, and convention theory, to name but a few, have been introduced to global chains analysis. Global chains research has been adopted by policy makers as well as by those, such as consumer activist groups, who pursue changes in the global economy.

At the same time, some of these developments have highlighted differences among researchers. Concerns have been raised about the theoretical eclecticism of the GVC approach, as the question has arisen of whether the approach constitutes a coherent theoretical framework, or is rather best applied as an analytical tool with little theoretical allegiance (Collins 2005; Gibbon et al. 2008). The adoption of the term "global value chains" by some researchers has been regarded by other GCC researchers as much more than a matter of nomenclature. Theoretical disagreements have emerged in recent years particularly surrounding the theory of GVC governance. These recent evolutions of global chains literature are traced in the following sections with a focus on three key research themes: GVC governance, upgrading, and the social construction of global value chains.

Governance in Global Value Chains

The concept of governance has been central in global chains research. How a global value chain is governed is regarded as determining market access, acquisition of capabilities, and, eventually, distribution of gains between chain participants (Kaplinsky 2000; Gereffi et al. 2001; Humphrey and Schmitz 2001). In fact, despite liberalization, most of international trade is carried out under production networks governed by a handful of big buyers, mostly from the global North (Dolan and Humphrey 2000; Schmitz and Knorringa 2000). These lead firms control access to the networks by setting standards for suppliers regarding what is to be produced and how it is to be produced. The control on the part of a handful of large buyers, in turn, creates considerable entry barriers for developing country producers (Humphrey and Schmitz 2001).

The distinction between producer- and buyer-driven chains (Gereffi 1994; 1999) was an early attempt to conceptualize different forms of value chain governance. Despite its timely attention to the rise of buyer-driven chains, the dichotomy was criticized for its simplified and abstract formulation as ensuing studies painted a more complicated picture of chain governance (Clancy 1998; Henderson et al. 2002). First, researchers were quick to identify different sources of drivenness, particularly outside of the garment and apparel sectors. Alternative governance forms were proposed, including international trader-driven (Gibbon 2001), bipolar (Fold 2002), technology-driven (O'Riain 2004), and assembler-driven (Rothstein 2005) chains. Second, BDCCs were found to be key players in the sectors formerly characterized as having been dominated by the influence of PDCCs, such as automobiles and electronics. The boundary between manufacturers and buyers has been blurred as the former has increasingly outsourced production activities to independent suppliers (Sturgeon 2009). Likewise, some suppliers ("contract manufacturers") have become capable of providing "turnkey services" to a wide range of buyers using industry-wide specifications. This new type of supplier has challenged a conventional notion of suppliers as being "captive" to the demands of buyers (Lee and Chen 2000; Fold 2002; Sturgeon 2002). All of these findings have resisted any portrayal of global chains as mono-polar, highlighting instead "the more complicated patterns of power relations between lead firms in global chains" (Fold 2002:230), or even the presence of multiple governance structures.

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transactions; and suppliers' capability to meet buyers' requirements. Sturgeon (2009) identifies being influenced by the three key determinants of the complexity of interfirm transactions; the codifiability of the transactions; and suppliers' capability to meet buyers' requirements.

What these researchers tried to do was to provide a generalized, parsimonious model to identify and explain variations found in GVC governance. This group's typology of governance categories, and key determinants of governance forms, as they emphasize, is industry neutral relative to the producer- and buyer-driven chains distinction and is, further, comparable to the concepts used in other industrial organization literature (Sturgeon 2009). This new formulation also allows for the variance of GVC governance by time and place. By specifying the key determinants of governance forms, the formulation can anticipate a shift from one form of governance to another in the face of changing economic and technological conditions.

An excellent example using this new framework is Dolan and Humphrey's (2004; see also Dolan 2004) study of fresh vegetables value chains. Until the mid 1980s, the fresh vegetables trade between Kenya and the UK largely depended on market-based governance, with little explicit buyer–supplier coordination. The situation has changed dramatically since then, as UK supermarkets have begun to compete for a year-round offering of quality produce with a greater variety in rotation, and food safety concerns have demanded more control over suppliers' farming activities. A few lead UK supermarkets have increasingly replaced existing market governance with more explicit coordination with fewer African exporters. In response to the buyers' complicated requirements, exporters have also more heavily relied on their own farms and on large contract farmers than on smallholders, implying the rise of hierarchical and captive governance between the farmers and the exporters. Using the GVC governance framework, Dolan and Humphrey's research shows not only the rise of buyer drivenness in the UK–Kenya chain over time, but also how such a shift has led to the divergence of governance in each chain link, a trend that the researchers have called "multiple governance structures."

The new proposed framework, despite its merit exemplified above, has raised fresh theoretical issues on which debates are underway (Gibbon et al. 2008; Bair 2009; Sturgeon 2009). One of them is how the entire value chain could be characterized if "even in a particular industry in a particular space and time, governance patterns may vary from one stage of the chain to another" (Gereffi et al. 2005:96). This question relates to the emphasis of the new framework on firm-level transaction coordination – a focus that has particularly invited criticism. Gibbon (2008:38), for example, criticizes this "coordination turn" of the GVC approach for narrowing the conceptual scope of chain governance from the entire chain to the firm-level resolution of coordination problems in a particular chain link. He cautions that "this formulation loses sight of the overall configuration of chains, as opposed to the content of specific links within them," unless an explanation is provided of "how to move from this level of analysis [link level] to a characterization of the overall pattern of decisions along a chain."

One proposed resolution has been to distinguish chain coordination at the individual linkages ("forms of coordination") from the governance of the entire chain ("modes of governance"). The latter refers to defining rules and conditions of chain participation (Ponte and Gibbon 2005). Along this line of reasoning and informed by convention theory, one group of scholars has paid attention to how quality standards and normative frameworks legitimizing such standards at a societal level shape the overall rules and conditions of chain participation (Ponte and Gibbon 2005; Gibbon and Ponte 2008). In an alternative proposal, Sturgeon (2009) suggests, instead of having an additional conceptual layer, that the governance structure between lead firms and their first-tier suppliers can be viewed as structuring the governance of the whole chain. While each proposal is quite plausible, both raise questions that have yet to be answered. If there is a mode of governance operating at the entire chain level, how does it relate to divergent forms of coordination at each individual link? Likewise, the question remains of how a particular linkage could set the tone of the governance forms of the rest of the chain.

Another major issue is that it is unclear how power is conceptualized in the new framework. Governance was initially defined in terms of "authority and power relationships" surrounding allocation of resources. The distinction between producer- and buyer-driven chains reflects who exerts the power (Gereffi 1994). The new framework, however, only focuses on varying degrees of power asymmetry between buyers and suppliers of each governance type, with the asymmetry generally found to be lower in markets and higher in hierarchies. Critics find in the new framework that "power is a contingent property of only certain types of inter-firm coordination" (Gibbon et al. 2008:323). It is not regarded as being embedded in lead firms' strategies, but rather as being determined by the technical characteristics of the transactions in which they might be involved, and as being influenced by the three key determinants of the complexity of interfirm transactions; the codifiability of the transactions; and suppliers' capability to meet buyers' requirements. Sturgeon (2009:128–30) addresses this
Taiwanese suppliers succeeded in upgrading to ODM production by absorbing product design ability from evidence shows, however, that global buyers do not necessarily facilitate functional upgrading. While the early export phase, although buyers' support declined as a wider supplier pool became available (Kishimoto 2004). Likewise, learning from foreign buyers facilitated the upgrading of Taiwan's personal computer producers in the 2000s (Schmitz 1999). Researchers have found that these tightly coordinated buyer demands have tended to create favorable conditions for Brazilian suppliers to achieve product and process upgrading to meet such specific expectations. The emphasis on price, quality control, and flexibility, according to Bazan and Navas-Aleman (2000), explains the upgrading of local producers, now embedded in both cluster and global networks.

A systemic examination of different forms of upgrading was conducted by Humphrey and Schmitz (2002). They proposed four types of upgrading: (1) process upgrading: making production processes more efficient by reorganizing the production system and using advanced technology; (2) product upgrading: moving into more sophisticated, or high-value, product lines; (3) functional upgrading: occupying more profitable nodes within a chain; and (4) intersectoral upgrading: moving into a more profitable value chain.

Humphrey and Schmitz's typology of upgrading forms makes several important contributions to our understanding of the field of GVC research. First, their distinctions clarify different "niches" in which upgrading can take place. The differences they discover are not sufficiently clear in Gereffi's original definition of upgrading ("move to a more profitable and/or technologically sophisticated capital- and skill-intensive economic niche" (Gereffi 1999:51–2). Over the past decade, GVC research has further specified the types of upgrading and the circumstances under which a particular type of upgrading is more or less likely to occur. Informed by industrial cluster literature (Pyke et al. 1990) and strategic management research (Lee and Chen 2000), it has increasingly viewed upgrading as evolutionary rather than linear and unidirectional in nature.

Upgrading: Achieving Mobility in Global Chains

Global chains research has contributed to shifting the attention of development studies from industrialization to industrial upgrading. Upgrading has been defined as "a process of improving the ability of a firm or an economy to move to a more profitable and/or technologically sophisticated capital- and skill-intensive economic niche" (Gereffi 1999). Over the past decade, GVC research has further specified the types of upgrading and the circumstances under which a particular type of upgrading is more or less likely to occur. Informed by industrial cluster literature (Pyke et al. 1990) and strategic management research (Lee and Chen 2000), it has increasingly viewed upgrading as evolutionary rather than linear and unidirectional in nature.

A systemic examination of different forms of upgrading was conducted by Humphrey and Schmitz (2002). They proposed four types of upgrading: (1) process upgrading: making production processes more efficient by reorganizing the production system and using advanced technology; (2) product upgrading: moving into more sophisticated, or high-value, product lines; (3) functional upgrading: occupying more profitable nodes within a chain; and (4) intersectoral upgrading: moving into a more profitable value chain.

Humphrey and Schmitz's typology of upgrading forms makes several important contributions to our understanding of the field of GVC research. First, their distinctions clarify different "niches" in which upgrading can take place. The differences they discover are not sufficiently clear in Gereffi's original definition of upgrading ("move to a more profitable and/or technologically sophisticated capital- and skill-intensive economic niche"). Thus, Gereffi's definition is largely read to refer to functional upgrading. Further, some have critiqued Gereffi's original definition, arguing that he chose to privilege the particular type of upgrading he describes (e.g., from assembly to OEM to OBM based on the experience of East Asian garment suppliers) as a normative or optimal path over other types (Gibbon and Ponte 2005:89–90). Second, Humphrey and Schmitz's new typology allows GVC research to shift the upgrading question from "whether" to "under what conditions?" Insertion into global value chains was claimed as a key first step for upgrading (Gereffi 1999). However, evidence is mixed for this claim (Humphrey and Schmitz 2004), the discussion largely revolved around a binary distinction of insertion or lack of insertion, paying insufficient attention to the conditions under which insertion leads to upgrading. As Schmitz and Knorringa (2000:180) aptly note, "the issue is not whether buyers block or promote industrial development, but under what circumstances they are more likely to play a negative or positive role." The new typology has brought fresh attention to different niches of upgrading, and specific conditions under which upgrading is likely to occur.

Organizational learning was proposed as a key upgrading mechanism in industrial organization studies. GCC scholars emphasized vertical learning from global buyers, or "learning-by-exporting" (Gereffi 1999), while industrial cluster literature tended to emphasize the horizontal dimension, or collective learning within clusters (Schmitz 1995; 1999). However, as insertion into global value chains has come to play an increasing role in the economic viability of industrial clusters in recent decades, an integrative and dynamic model is required to explain the upgrading of local producers, now embedded in both cluster and global networks.

One pressing question is the extent to which suppliers’ upgrading prospects are associated with the types of value chains they are inserted into (Humphrey and Schmitz 2002). Studies suggest that product and process upgrading is greatly facilitated by learning from global buyers. In Brazil's Sinos Valley shoe cluster, US and European buyers tightly coordinate their chains through quasi-hierarchical (or captive) relationships, placing emphasis on price, quality control, and flexibility, according to Bazan and Navas-Aleman (2004). The researchers have found that these tightly coordinated buyer demands have tended to create favorable conditions for Brazilian suppliers to achieve product and process upgrading to meet such specific expectations. Likewise, learning from foreign buyers facilitated the upgrading of Taiwan's personal computer producers in the early export phase, although buyers' support declined as a wider supplier pool became available (Kishimoto 2004).

Evidence shows, however, that global buyers do not necessarily facilitate functional upgrading. While the Taiwanese suppliers succeeded in upgrading to ODM production by absorbing product design ability from
making. First, setting and imposing quality-related standards or corporate codes of conduct are increasingly

chains (Ponte and Gibbon 2005). For example, Bazan and Navas-Aleman (2004) found functional upgrading out of reach for most Brazilian shoemakers catering to US and European chains. Buyers were reluctant to support it, or actively blocked it out of concern that the suppliers might compete with them. For a similar reason – potential conflicts with buyers – even leading export manufacturers are sometimes unwilling to upgrade into design and marketing. Functional upgrading has, instead, taken place in market-based chains driven by domestic and Latin American buyers. In this less restrictive governance form, the shoemakers could acquire new functions – for example design and marketing – which were not encouraged by American and European buyers.

Similarly, Bair and Gereffi (2001) have documented how the arrival of US buyers in the wake of the North American Free Trade Agreement (NAFTA) clearly contributed to the upgrading of blue jeans producers in Mexico. As more sophisticated production functions have crossed the border, several local full-package suppliers have emerged, indicating the occurrence of functional upgrading within the production segment of the chain. However, this has not led to any large-scale functional upgrading beyond production into such nodes as design, product development, branding, and marketing. The burden of investment and risk attached to such upgrading is cited as the main obstacle.

A more complicated understanding of upgrading has led GVC research to pay more attention to the evolutionary nature and divergent patterns of upgrading (Lee and Chen 2000; Schmitz 2004; Pietrobelli and Rabellotti 2006). While it is often portrayed that producers in developing countries take upgrading for granted, some researchers have found that this is not always the case. Any kind of upgrading requires strategic intent and substantial investments (Humphrey and Schmitz 2002). Some producers may choose to “downgrade” for short-term survival at the expense of an upgrading that might have provided for long-term growth, as exemplified by the Italian shoemakers of Brenta (Rabellotti 2004). The actual path of upgrading reflects different strategic moves on the supplier side against the varying opportunities and constraints they confront. Some suppliers take a step-by-step approach, for example from export platforms to OEM, ODM, and OBM. Others may strategically skip some steps or perform two different roles at the same time but for different market niches.

Drawing from the experience of Taiwan’s contract manufacturers, for example, Lee and Chen (2000) suggest that firms can find a chance to leverage what they have learnt from the global market and apply it in their operations in different, regional or local, chains, where they can enjoy a greater power and autonomy. In these alternative chains, they can build their own capabilities for higher-value domains, like product design, without being locked in or in conflict with existing global buyers. Lee and Chen further suggest that being an OEM producer is compatible with having one’s own design or brands and that playing dual roles as such may be synergistic with upgrading, an argument that also finds support from other cases (Bazan and Navas-Aleman 2004; Kishimoto 2004).

In short, GVC researchers have articulated the association of GVC governance with types of upgrading under various conditions. An upgrading path is no longer considered as linear and incremental, but as evolutionary and divergent. In shaping the path, suppliers’ competence building strategies are as critical as their relationships with global buyers.

The Social Construction of Global Chains

While noted by early GCC scholars (Gereffi et al. 1994; Hopkins and Wallerstein 1994), the socially constructed nature of global chains has been little examined until recently. However, a growing body of GVC literature explores how political and social institutions – norms, rules, regulations, standards, and conventions – interact with the organizational structure of global value chains and affect the dynamics of upgrading. It also examines how social activism and political contention shape global value chains and influence the lives of workers taking part in the chains. In the following, two topics from this emerging research area are particularly discussed: (1) standards and conventions in global value chains; and (2) social activism and GVC governance.

Many scholars have noticed the increased prevalence of private regulations in transnational economic activities in general (Reardon et al. 2001; Henson and Reardon 2005), and more frequently in agrifood value chains (Ponte and Gibbon 2005). For example, in response to elongated and globalized food supply networks and the potential risks involved, food standards have been tightened and extended in scope from safety into quality attributes, and social and environmental concerns. Along the way, a greater percentage of the standards shaping the industry have been promulgated, and are now enforced, by private actors, such as retailers, in the name of product differentiation (Henson and Reardon 2005). One of the examples is GLOBALGAP, a European retailer standards scheme for fresh fruit and vegetables.

A potentially fruitful area of inquiry arises out of this growing attention to the role of standards in global value chains (Ponte and Gibbon 2005; Gibbon 2005; Gibbon and Ponte 2008). Two relevant points particularly deserve making. First, setting and imposing quality-related standards or corporate codes of conduct are increasingly
consumption, these attempts are certainly a welcome addition. Transactions are nested. Responding to calls for linking the economy to social processes, and production to consumption, these attempts are certainly a welcome addition.

Second, attention to standards and regulations may bring greater focus on social and political institutions -- such as the household, the state, and domestic agencies -- back to GVC analysis. While being considered one of the key GVC dimensions (Gereffi 1995), institutions have garnered only scattered attention in GVC analysis (Cramer 1999; Leslie and Reimer 1999). In recent years, researchers have set out to explore the origins of the rules, norms, and discourse governing global value chains. One argument is that the institutions shaping particular global value chains originate in normative and ideological changes in buyer markets (Ponte and Gibbon 2005). Lead firms may take part in shaping the changes, but their actions are also affected by the broader institutional contexts in which they are embedded. Palpacuer et al. (2005), for instance, find that varying governance characteristics of clothing value chains among European retailers in Britain, France, and Scandinavia are associated with the extent to which firms in each country generally subscribe to such institutional logics as “financialization” and “supply chain rationalization.” The more they do, the more their supply networks are concentrated and the more they are subject to detailed standards. This finding can offer a hint of why governance forms and upgrading outcomes vary by chain, as different chains are directed to different national markets (Bazan and Navas-Aleman 2004; Gibbon 2008).

The idea that lead firms’ actions are socially constructed by broader contexts also points to the heightened influence of consumers and social and environmental activists on international trade. In recent years, consumer activism has increased its involvement in GVC governance (Hughes 2001; Raynolds 2002; Barrientos and Smith 2007). The uptick in consumer involvement has been triggered by growing public awareness of the production–consumption nexus, occasionally evoked by news coverage of contaminated food imports or of adverse labor conditions in the Third World factories employed by prominent global brands (e.g., antisweatshop campaigns in the US, the Dutch Clean Clothes Campaign, and the Fair Trade movement for coffee and other goods). In response to pressure from the public to hold lead firms responsible for whatever happens in their supply networks, some corporations have established codes of conduct and other corporate social responsibility measures (Barrientos and Dolan 2006).

From a GVC standpoint, one intriguing inquiry is the extent to which these corporate measures change the dynamics of value chains and are actually efficacious in making the intended changes. Two findings stand out. First, the efficacy of the codes implemented by lead firms is often undermined by their own just-in-time purchasing practices that emphasize flexibility and demand lower prices, shorter lead times, and stringent quality standards. Therefore, suppliers confront the double burdens of meeting often contradictory demands from buyers: be lean but not mean (Dolan 2004; Barrientos and Smith 2007). Second, the pressure and risks involved in flexible production are unevenly spread. They tend to transfer to upstream nodes within the chain; and within the nodes, informal sectors, often with a predominantly female workforce, tend to be left at a disadvantage. Focusing mainly on formal workers, some suggest, most codes of conduct fail to address the needs of informal workers, particularly women, when buyers’ demands for quality and flexibility increase their share in employment (Collins 2000; Barrientos et al. 2003).

Another fruitful line of research regarding the social construction of value chains is the examination of how value chain dynamics are factored into social contention. Noteworthy is research on the effect of industry structures on social movement outcomes. In a comparative study of campaigns against genetically modified (GM) foods in Britain and the US, Munro and Schurman (2009; see also Schurman 2004) find that the competitive and concentrated nature of processed food retailing in Britain facilitated anti-GM activists’ “cutting the commodity chains” strategy; that is, targeting supermarkets and playing one supermarket off against another in forcing them to reject GM foods. The same strategy, however, failed in the US. Food retailers in the US have a relatively easy exit when faced with anti-GM activism because their operations are geographically dispersed and diversified into organic produce. Different upstream structures of the GM food chains were also found to be relevant. British activists were emboldened by the fact that GM technology is imported from the US with little local support, particularly from farmers. However, in the US the strong power of vertically integrated seed multinationals (e.g., Monsanto) as the driver of GM food chains and the longstanding relations of the agro-business giants with local farmers effectively marginalized anti-GM activism.

In short, investigations of the social and normative dimensions of global chains, albeit still nascent, have contributed to opening up global chains research to social, political, and cultural contentions where economic transactions are nested. Responding to calls for linking the economy to social processes, and production to consumption, these attempts are certainly a welcome addition.
New Directions for Global Chains Research

This essay has reviewed the evolution of global chains research into one of the most effective approaches for exploring the changing dynamics of the global economy. From an organizational perspective, global chains literature addresses the crucial questions of global development studies: how gains from economic globalization are distributed, and how countries and firms improve their positions in the global economy. Over decades, scholars have considerably elaborated theories of GVC governance and of upgrading; at the same time, the scope of inquiry of the field has broadened to include the social construction of global chains.

Existing literature, however, still has theoretical and methodological gaps to redress. There is also no shortage of substantive domains in the global economy awaiting GVC analysis. This final section discusses some key gaps in the research and suggests future directions for global chains inquiry, focusing on (1) the clarification and elaboration of global chains theory and methods; and (2) the extension of its coverage into new substantive domains.

The global chains approach, as noted above, has been influenced by a variety of other theoretical strands at multiple junctures. In each turn, some elements were retained and combined with new pieces. As a result, it is noted that “the epistemological canvas of commodity chain analysis is very broad and its affiliations heterodox” (Rammohan and Sundaresan 2003:921). While this “theoretical eclecticism” might increase its multidisciplinary appeal, the question has been raised whether the GVC approach is a heuristic or methodological tool to study economic globalization, or a coherent theoretical enterprise to explain it. Some consider it an analytical tool “innocent of theory” that can capture particular—meso-level and organizational—dimensions of the global economy. Among those appreciating it as a theory, some affirm its theoretical promiscuity as a counter to modernist and economically deterministic development theory (Collins 2005), whereas others remain suspect of its theoretical integrity (Gibbon et al. 2008). Whether these disagreements will cohabit under the roof of global chains literature or are now diverging into different literatures remains an open question. The debate is underway, but with no definitive conclusion as yet.

Whether GVC is understood as a method or as a theory, there are still challenging conceptual questions ahead emerging from recent studies. One is conceptually to bridge different levels of governance/coordination in global value chains, as discussed above. GVC governance is understood in three different ways, each of which highlights a particular aspect of governance and power relations: drivenness (Gereffi 1994), coordination (Gereffi et al. 2005), and convention (Ponte and Gibbon 2005). It remains unanswered whether these approaches are contending or complementary (Gibbon et al. 2008), and, if they are complementary, how two levels of governance—individual linkages and the entire chain—can be integrated into a comprehensive framework.

These questions also pertain to the issue of multiple governance structures. Recent GVC studies demonstrate that even a single value chain entails multiple governance forms. Lead firms as well as local suppliers operate in more than one chain. Multiple types of lead firms—manufacturers and retailers—coexist in a value chain with different strategies. Then, the question is the extent to which a certain firm can exert its power and contain others’ over the value chains and where the power comes from (see Fold 2002). Power relations in the horizontal dimension (e.g., competition between lead firms, and between suppliers) is an equally important topic, to be explored as much as vertical power asymmetry (i.e., between buyers and suppliers), a dimension on which GVC literature has more often focused. GVC analysis also would benefit from inquiry on the circumstances under which multiple governance structures poise opportunity or constraints for the upgrading of local suppliers.

One of the methodological difficulties in GVC analysis is that some of its key concepts are poorly operationalized. Gauging the distribution of gains in global value chains is still challenging because there is little agreement on the proper measure (e.g., surplus, added values, and unit values). Combined with the limited availability of firm-level data, this difficulty has led to a significant shortage of quantitative studies, with a few notable exceptions (e.g., Talbot 1997). Taken together, these problems in turn compound the difficulty of making cases comparable for across-the-board analysis. While single case studies can be comparative, the lack of rigorously operationalized and commonly used measures constrains any comparative inquiry that might contribute to building and testing a general theory.

This is not to say that all global chains researchers aim for a general model. In fact, some prefer a nuanced analysis and “thick descriptions” (Gibbon et al. 2008). They often trace the entire chain from inputs to final consumption, with detailed descriptions of each chain node. However, this is a daunting task given the geographical dispersion of global value chains; still, there have been some notable attempts in recent years (e.g., Collins 2003; Rivoli 2006). When well conducted, such studies are particularly effective in capturing the socially constructed dimensions of global value chains, for example how particular chain nodes are discursively racialized and gendered.

Global chains literature can further benefit from broadening the substantive domains and issues of its inquiry. One potentially valuable extension would be to examine the effect of value chain structures or governance types on phenomena beyond upgrading, a widely used outcome variable, as exemplified by the aforementioned anti-
GM activism study (Munro and Schurman 2009). Take food and health as an example. Research on changes in agricultural value chains, such as consolidated and globalized food production and retailing, has been prolific. It has been little explored, however, how these organizational changes could affect various health and nutritional phenomena at the population level, such as nutritional transition, food (in)security, and food safety. Health scholars, meanwhile, have paid little attention to such macro-level factors as industry structure. GVC analysis can link the two literatures by examining how the global agrifood value chain affects the amount, type, and quality of food produced and marketed; such a line of inquiry could demonstrate consequences in various health outcomes.

Another promising contribution would come from research on various service sectors. Service sectors play a crucial role in keeping global value chains working. No global movement of goods, for example, is possible without the physical and information infrastructures that enable them. It is only recently that global logistics were subject to the scrutiny of global chain research. The expanding role of logistics providers into value chain coordinators or integrators highlights the importance of business service in the contemporary global economy (Ojala et al. 2008). This holds true, for example, for information technology and R&D services, which have become increasingly mobile and global in terms of production and consumption. Many countries and regions are eager to induce or nurture these service sectors; the challenging question is how to foster the necessary capabilities effectively. Analysis of these service sectors would not only improve the existing theories by testing their applicability, but might also provide entrepreneurs and policy makers with practical guidance.

Finally, more research on the institutional dimensions of global value chains, particularly on the supplier end, would be another welcome contribution. When paying attention to institutions, recent studies are largely focusing on the buyer side; that is, how institutions in the buyer country (e.g., paradigms of corporate governance and private codes of conduct) affect value chain dynamics. It is relatively unknown, however, how institutions on the supplier side influence not only the actions of local suppliers but also foreign buyers’ strategies. As with buyers, suppliers’ strategies and their positioning in global market niches are shaped by the institutional contexts in which they are embedded: state policy, regulations, and social conventions and discourses.

Notwithstanding unsettled issues and a long “to do” list, global chains research remains one of the most dynamic research strands for examining economic globalization and its consequences for the upgrading and wellbeing of various actors – countries, firms, workers, farmers, and consumers. Its organizational perspective exhibits a particular strength in illuminating the restructuring of the global economy and the unequal distribution of gains therein. A recent extension of the literature into health, the environment, social movements, innovation systems, and other contemporary development challenges demonstrates its theoretical and methodological flexibility in embracing a wide range of real-world issues in a rigorous manner. Therefore, global chains research would only benefit from the further articulation of its theoretical framework and the broadening of its substantive domains.

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**Links to Digital Materials**

Center on Globalization, Governance and Competitiveness (CGGC), Duke University. At [www.cggc.duke.edu](http://www.cggc.duke.edu), accessed July 27, 2009. The CGGC, directed by Gary Gereffi, focuses on using global value chain methodology to study the effects of globalization on various topics of interest, including industrial upgrading, the environment, global health, engineering and entrepreneurship, and innovation in the global knowledge economy. The website lists recent studies conducted by the center.

Danish Institute of International Studies (DIIS). At [www.diis.dk](http://www.diis.dk), accessed July 27, 2009. DIIS is an independent research institution engaged in research in international affairs. Its trade and development research unit, headed by Peter Gibbon, examines how developing countries could better participate in the global economy, focusing on standards, smallholders in international trade, international trade regimes, and African development.

Duke University–Venice International University (VIU) International Summer Research Workshops. At [www.dukeviuworkshop.org](http://www.dukeviuworkshop.org), accessed July 27, 2009. These multiyear workshops, co-organized by Duke’s Center on Globalization, Governance and Competitiveness (CGGC) and VIU’s Center for Studies on Technologies in Distributed Intelligence Systems (TeDIS), aim to train future scholars with two institutions’ complementary research foci: CGGC’s GVC approach and the TeDIS’s research of Italian industrial districts. The 2009 workshop will be held at Duke University following its inaugural workshop in Venice in 2008.

Global Value Chains Initiative. At [www.globalvaluechains.org](http://www.globalvaluechains.org), accessed July 27, 2009. The GVC Initiative is a loose network of researchers, activists, and policy makers who seek to consolidate and foster the GVC perspective. Its website provides information on researchers involved in GVC studies and their publications. As of November 2008, more than 330 researchers and 380 publications are listed in a searchable form.
Global Value Chains. • A value chain refers to all the activities and tasks which are needed to bring a product from its conception through design, sourcing of components and materials to production, marketing, distribution and retail to final consumers. • These processes need not happen across national borders (need not be international). • In practice, however, they have become increasingly “global”. Global Value Chains. • Growing interconnectedness of production • Offshore outsourcing (bringing components from, or performing tasks in different locations) • Fragmentation of production: certa