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CHAPTER

On the Road to Global Value Chains: How Industry Dynamics Reshaped Development Theory

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Abstract

This chapter provides a first-person account of four decades of theoretical and empirical work on linking the study of global industries to development theories. The Mexican pharmaceutical industry was the setting for examining the power of multinational corporations (MNCs) to shape national industry outcomes in ways that reinforced Mexico's strategic dependence on MNCs. In the case of import-substituting and export-oriented development strategies in Latin America and East Asia, an industry perspective showed that countries and regions alternated in strategically useful ways between inward-oriented and outward-oriented approaches. A framework for analyzing global industries per se did not emerge until the introduction of the global commodity chain (GCC) and global value chain (GVC) approaches in the 1990s and 2000s, respectively. A focus on global industry dynamics remains relevant to the cutting-edge themes of our times, ranging from the rise of trade protectionism and economic nationalism to the COVID-19 global pandemic.

Keywords: : global industries, global commodity chains (GCCs), global value chains (GVCs), multinational corporations, global pharmaceutical industry, dependency theory, development strategies, Mexico, Latin America, East Asia

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1. Introduction

Today, global supply chains are the talk of dinner table conversation and daily news feeds. The COVID-19 pandemic made shortages of medical supplies a global business issue and the topic of numerous research reports and academic publications (e.g., Bown, 2022; Gereffi, 2020; Gereffi, Pananond, & Pedersen, 2022). Fuelled by a global health crisis and broad geopolitical tensions, growing calls for protectionism and a resurgence of economic nationalism and populism have led to claims that globalization as we know it may be coming to an end (Farrell & Newman, 2020; O'Leary, 2020; O'Neil, 2020).

Although there is a well-established business literature on global supply chains (e.g., Shih, 2020a, 2020b; Gereffi & Lee, 2012), the academic literature on global value chains (GVCs) has diverged from the narrower supply-chain focus and become the dominant paradigm in international development discourse (Gereffi, 2018; Ponte, Gereffi, & Raj-Reichert, 2019; Mayer & Gereffi, 2019; World Bank, 2020; De Marchi et al., 2020; Kano, Tsang, & Yeung, 2020). The basic building block of GVC analysis, and the related frameworks of global production networks (GPNs) and global commodity chains (GCCs), share a standard reference point: the structure and dynamics of global industries. Policymakers are profoundly interested in this topic as well because global industries are seen as pivotal for the prospects of economic, social, and environmental progress in advanced industrial and developing economies alike (White House, 2021; Pietrobelli, Rabellotti, & Van Assche, 2021; Gereffi, Lim, & Lee, 2021).

However, the origins of global industry studies in the development field, and the conceptual and empirical underpinnings of the contemporary GVC framework, predate the Rockefeller Foundation-sponsored Global Value Chain Initiative of the early 2000s (Gereffi & Kaplinsky, 2001) by about twenty years. The intellectual precursors of the GVC framework are not merely an academic curiosity. The GVC paradigm has a remarkable record in terms of its adoption by diverse disciplines within academia as well as influential international organizations, such as the International Labor Organization (ILO), the World Trade Organization (WTO), the United Nations Conference on Trade and Development (UNCTAD), the United Nations Industrial Development Organization (UNIDO), and the World Bank, among others (Cattaneo, Gereffi, & Staritz, 2010; UNCTAD, 2013; World Bank, 2020; Gereffi, Posthuma, & Rossi, 2021; Mayer & Gereffi, 2019).

The reason for this exceptional breadth and longevity of GVC analysis, I will argue, is rooted in its unique ability to combine an actor-centred research agenda that links business strategies, government policies, and local impacts of global industries based on fieldwork-intensive, inter-industry, and cross-national research (Gereffi, 2019a). How these elements come together in a single framework, based on my experience, is a byproduct of path-breaking industry and cross-regional studies from the late 1970s and 1980s. That is the story I will tell in this chapter.

To identify the conceptual and methodological pillars of the GVC approach, this chapter provides a first-person account of the evolution of four decades of theoretical and empirical research on these topics. Although there have been numerous discussions of the GCC framework and the seminal volume on *Commodity Chains and Global Capitalism* (Gereffi & Korzeniewicz, 1994; Bair, 2005, 2009; Lee, 2010), and even more books and articles related to the establishment of the GVC paradigm beginning in the early 2000s (Gereffi & Kaplinsky, 2001; Sturgeon, 2009; Gereffi, 2018; Ponte, Gereffi, & Raj-Reichert, 2019; Kano, Tsang, & Yeung, 2020; De Marchi et al., 2020), relatively little attention has been given to the initial studies of global industries I carried out in the late 1970s and 1980s that laid the foundation for the subsequent GCC and GVC approaches.

Two key books stand out in this period. The first is *The Pharmaceutical Industry and Dependency in the Third World* (Gereffi, 1983). The pharmaceutical industry book is notable not only because it links the dynamic trajectory of the steroid hormone industry in Mexico with an analysis of the global pharmaceutical industry, but also because it pioneered the shift of dependency theory (one of the main development theories of that era) from the study of countries and regions to a focus on how the power of multinational corporations (MNCs) defined the governance structures of global and national industries. Key conceptual and methodological innovations in this research will be discussed further in this chapter.

The second book, *Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia* (Gereffi & Wyman, 1990), extended the focus on MNCs and dependent development in the Mexican pharmaceutical industry to a comparative and cross-regional examination of shifting development strategies in Mexico, Brazil, South Korea, and Taiwan. These four newly industrializing economies (NIEs) embodied two contrasting development strategies that were vying for dominance in the 1970s and 1980s: import-

substituting industrialization (ISI) in Latin America and export-oriented industrialization (EOI) in East Asia. What *Manufacturing Miracles* sought to demonstrate, based on extensive field research and comparative analysis by leading scholars on each country, was the fallacy of the stereotype linking each region with a single development strategy. While mainstream thinking focused on fundamental dissimilarities in government policies between Latin American and East Asia, I used an industry perspective to highlight that Mexico, Brazil, South Korea, and Taiwan were all participating in a global manufacturing system in which inward-oriented and outward-oriented development strategies were not mutually exclusive alternatives (Gereffi, 1989a, 1989b, 1995, 1996a, 1996b). New patterns of export specialization within the “global factory” (Buckley & Strange, 2015) were based on distinctive and evolving industrial structures at the national level, which led the NIEs in both regions to adopt mixed ISI and EOI strategies in the 1970s and 1980s.

The structure of the chapter is as follows. The next section offers a personal narrative on how I became interested in globalization and development based on a combination of academic and traveling experiences that oriented me to bottom-up perspectives of what development means in the global economy as well as a penchant for research grounded in fieldwork. The third section documents my efforts to define a research topic in Mexico for my doctoral dissertation. The Mexican steroid hormone case that I selected opened an unexpected gamut of outlets for my work, including articles in academic journals and the popular press as well as commissioned research with the UN Centre on Transnational Corporations in New York that allowed me to define a new approach to carrying out an empirical study of MNCs in global industries. The fourth section focuses on my cross-regional analysis of development strategies in Latin America and East Asia based on “global factory” and GCC perspectives that I used to show similarities as well as differences across the two regions. The fifth section connects my earlier work to the emergence of both the GCC and GVC frameworks, which emphasized the impact of global industries on development, using concepts like “governance structures” and “industrial upgrading” to create more comprehensive, dynamic, and actor-centred theoretical frameworks. The concluding section highlights the advantages of a sustained focus on global industries.

2. A Hitchhiker’s View of the World

As a member of the baby boomer generation, the 1960s were a formative era. I was the first in a family of four children (two brothers and a sister, all younger than me) to get a college degree. Born in Pittsburgh, Pennsylvania, we moved to Fort Lauderdale, Florida, in the mid-1950s for the warmer weather. Although my father was a watchmaker in Pittsburgh, established jewellery stores were virtually non-existent in South Florida in those days and my father got a job as a letter carrier in the post office. When considering college after graduating high school in 1966, I was fortunate to receive one of six National Association of Letter Carriers scholarships and decided to attend the University of Notre Dame in South Bend, Indiana.

I majored in sociology at Notre Dame because it offered the broadest perspective in the social sciences. I had the opportunity to do a community-based summer research project after my junior year with a team from Notre Dame (two professors, six graduate students, and two undergraduates) in the small town of Fabens outside of El Paso, Texas that convinced me that sociological research could engage with real-world problems and offer constructive solutions. It also led to my first publication (Gereffi, 1970). I decided to pursue graduate studies in sociology and considered a range of doctoral programs that addressed a broad set of development themes. Ultimately, I decided to accept a fellowship in the Sociology Department at Yale University, but the 1960s spirit led to a detour in my plans.

Rather than go directly to graduate school, I opted to spend a year travelling with my college roommate, John Rudolf. Both of us had been sociology majors at Notre Dame, and in travelling to various graduate

schools we were considering, we took the preferred mode of transit in the late 1960s—hitchhiking. Both of us had PhD fellowship offers to sociology programs we wanted to attend (me at Yale and John at Columbia University), but the idea of spending a year travelling around the world to explore our interests had a powerful appeal. With a very limited budget, we decided that hitchhiking was the way to go.

After notifying our graduate programs of this change in plans, John and I spent the year following our 1970 graduation from Notre Dame hitchhiking across several continents, beginning with Mexico and Central America. An Icelandic Airlines flight took us to Europe in November, and we worked for several weeks in a Lindt & Sprüngli chocolate factory in Zurich, Switzerland over the Christmas holidays. We made our way to southern Spain and took a ferry to Tangier for a month-long sojourn in Morocco. The pinnacle of our trip was to hitchhike across the Sahara Desert from Algiers to Niamey, Niger. At that point, I decided to continue to West Africa (ultimately teaching high school for a month in Lagos, Nigeria), while John ventured to Kenya in East Africa. In the fall of 1971, we both began our doctoral programs in sociology, but after a couple of years, John decided to pursue what became a highly successful career in business. I was excited to start my graduate studies at Yale.

My hitchhiking experiences were an education in themselves, but they also are quite relevant to how my sociological career unfolded. As a hitchhiker, you see the world from the bottom up. You regularly meet strangers who reveal a mosaic of life stories shaped by diverse personal, cultural, and national backgrounds. The comparative sociology program I was accepted into at Yale provided an exceptional opportunity to interpret these experiences in a more integrated and comprehensive way. However, hitchhiking made me appreciate the inestimable value of personal narratives and field research in my future sociological studies. Every project I pursued was always informed by a strong set of in-depth interviews with the key actors and stakeholders I was studying. Notwithstanding the richness of the information and insights provided by personal encounters and interviews, however, good theory and comparative methodologies were an indispensable complement provided by my graduate school curriculum.

At Yale, I was drawn primarily to the strong set of interdisciplinary scholars working on Latin America. Louis Wolf Goodman in Sociology, Alfred Stepan in Political Science, and Carlos-Diaz Alejandro in Economics became key mentors. While Lou Goodman was among the first sociologists to focus on the relatively new topic of MNCs during his fieldwork in Chile, Al Stepan drew on his extensive research ties in Brazil to introduce dependency theory to his graduate seminars. The combination of these influences led me to apply in my third year for a Social Science Research Council (SSRC) Foreign Area Fellowship to study MNCs in Mexico as my dissertation topic. A great virtue of the SSRC fellowships is they provided funding for up to two years of field research in your chosen country.

Given my interest in studying MNCs in Mexico, the SSRC also provided funding for me to spend a semester in Boston prior to my Mexico research to take courses in economic development and project evaluation at Boston University with Shane Hunt and Daniel Schydrowski, and to work with Raymond Vernon, who was directing a large-scale Multinational Enterprise Project at Harvard Business School (HBS) (Vernon, 1999). My subsequent approach to GVCs, and particularly the analysis of MNCs in global industries, was strongly shaped by the work of Vernon and his colleagues in the HBS Multinational Enterprise Project and at Harvard's Center for International Affairs, where I was a visiting scholar from January 1977 to June 1980 (Gereffi, 2018, pp. 7–8; 2019a, p. 198).

Thus, prior to beginning my doctoral dissertation field research in Mexico, I had multiple opportunities to develop interdisciplinary and comparative perspectives on the topics I outlined in my SSRC proposal. However, the pathway from proposal to completed field research and dissertation is rarely a smooth one, and I was no exception.

3. The Pharmaceutical Industry in Mexico

When I arrived in Mexico in January 1975, I had an affiliation and an advisor at El Colegio de México, one of the most prestigious research institutions in the country. Although I did not realize it at the time, Mexico had become a mecca for many of the leading scholars from Brazil, Chile, Argentina, and other South American countries that were in the throes of military dictatorships that swept across the region in the early and mid-1970s. My initial task at El Colegio and elsewhere was to introduce myself to experts who were working on the topic of MNCs in Mexico and Latin America, and to see if I was framing my research questions in an appropriate way and to learn about relevant projects being carried out on these topics. The first three months I was in Mexico were a crash course on how the cutting-edge work on MNCs being carried out by Latin American scholars differed from much of the conventional US academic literature about development in the region.

Two topics became paramount in these early discussions: (1) I needed to identify specific cases in Mexico that embodied the interaction and frequent disputes between MNCs and the Mexican state over Mexico's ISI strategy in the manufacturing sector (which was the focus of my SSRC proposal), and (2) I needed to figure out how to refashion dependency theory to help describe and explain what was going on in Mexico in ways that informed ongoing economic and political controversies and policies.

In the early 1970s, Mexico's President Luis Echeverría was engaged in a vigorous political campaign during his 1970–76 administration to advance Mexican industrialization by harnessing the economic power and technological capabilities of MNCs who opted to set up manufacturing facilities in Mexico. His main government policies were the tools advocated by the ISI model, such as mandatory joint-ventures of MNCs with Mexican partners, local-content requirements, technology-transfer agreements, localized research and development (R&D) activities, and so on. One of the most contentious disputes at the time involved an innovative segment of the pharmaceutical industry that produced steroid hormone products. These were known as “wonder drugs” in the 1950s because one of them—cortisone—had nearly miraculous anti-inflammatory powers to relieve the painful symptoms of rheumatoid arthritis; in addition, the active ingredients of oral contraceptives also came from steroid products. What made this industry relevant to Mexico was the discovery that the active ingredients of steroid hormones could be derived from raw materials found in abundance in Mexico (primarily, a plant known as *barbasco*).

The international business side of the case was also fascinating (see Gereffi, 1978 for details on the story sketched further in this chapter). In the 1930s and 1940s, a few European MNCs dominated world hormone production through cartel arrangements, but they were hampered by the difficulty of extracting cholesterol, the favoured starting material for steroid products, from the spinal cords of cattle. To break the European cartel, American pharmaceutical companies like Parke-Davis sponsored research in Mexico to locate a new and more reliable source of steroid supply. Promising plant compounds were indeed found in Mexico, and three international scientists involved in this research decided in 1944 to form a new steroid company in Mexico named Syntex. In a series of pathbreaking discoveries, Syntex found an alternative compound derived from Mexican plants, diosgenin, that was far more efficient and versatile than cholesterol as a base for steroid production. As a national firm, Syntex enlisted the support of the Mexican government to grant it monopoly status as a supplier of bulk diosgenin to the United States and European MNCs. American MNCs countered this move by asking the US government to block Mexican exports of steroid products to the United States unless the discriminatory protection granted to Syntex was removed, and in a 1955 consent decree, Mexico agreed to allow all steroid hormone producers to freely enter Mexico.

By the early 1960s, the battle lines were drawn between two rival oligopolies of six MNCs—an established European one and an ascendant American oligopoly—both seeking to use Mexico as a raw material base for a highly dynamic segment of the global pharmaceutical industry. Meanwhile, Syntex decided to move its

corporate headquarters from Mexico City to Palo Alto, California in 1958, and consolidated its role as a global innovator in the field, patenting three of the first four active ingredients for oral contraceptives. In a final twist to the story, the Mexican government in 1975 decided to re-enter this lucrative industry by creating a state-owned firm, Proquivemex, which sought to establish control over the collection and sale of *barbasco* to the pharmaceutical MNCs operating in Mexico.

This became the central case I focused on for my PhD dissertation (Gereffi, 1980), which subsequently was published as a book (Gereffi, 1983). My first task was to seek interviews with the managers of all six MNC subsidiaries that were protagonists in the Mexican industry, as well as consult with other industry specialists and researchers who had been studying Mexico's political economy in recent decades. Surprisingly, I was able to meet with all the MNCs involved in the steroid hormone case, in part because the controversy had created so many discordant accounts that the firms believed an "objective" assessment by an international researcher affiliated with a prestigious US university might assuage the ongoing conflict in Mexico. The manager of one of the American MNCs even asked me if he could share a copy of my typed notes from our interview with his boss in US headquarters because he did not have an accurate written account of the topics we covered in our two-hour conversation. When El Colegio de México learned that I was focusing on the steroid hormone industry in Mexico, they asked if I would publish an article describing my preliminary findings in one of their journals, *Foro Internacional* (Gereffi, 1977). Since my El Colegio article was published in Spanish, one of Mexico City's leading daily newspapers published a lengthy two-part article based on my account of events in the industry.

What I learned from this early fieldwork on MNCs and the pharmaceutical industry in Mexico is the value of high-quality, fieldwork-based, and timely research in a politically charged environment. In the Mexican case, my conclusions evolved over time and were tempered by the cross-national context I used to explore alternative outcomes in the same industry. Without clear historical trajectories and comparative baselines, any specific interpretation of events seemed arbitrary.

Another less obvious lesson is that the sequence of interviews matters. In contrast to many of my colleagues in political science who tend to initiate their country-based development projects by prioritizing interviews with government officials who are designing and implementing national policies, I usually prefer to talk with companies first. In industry studies, the central actors are typically firms, whether MNCs, private domestic companies, or state-owned enterprises. The role of the state is often critical, but I view government policies as the context in which industries operate. Even when the state leads the process, as in many authoritarian or socialist regimes, the behaviour and strategies of firms are the basic outcomes that state policies seek to influence or control.

The theoretical and methodological framing of my Mexican steroid hormone study evolved over time and was shaped by multiple factors. From my coursework at Yale, I had a relatively up-to-date understanding of the debates among broad development theories, such as modernization, dependency, and world-systems theory (see Gereffi, 1983, chapter 1; Gereffi, 1980, chapters 2 and 3). However, the details of the Mexican steroid hormone case raised important new issues, such as the role of scientific discoveries and technological innovation in an emergent industry centred around intermediate inputs rather than finished products. Also, the theme of "dependent development" (Cardoso & Faletto, 1979; Evans, 1979) raised questions about the actual alternatives to dependency (e.g., socialism, autonomy, dependency reversal) and outside scholars wanted to know whether there were any empirical examples ("counterfactual" alternatives) of what Mexico's steroid hormone industry might look like if it were controlled by capable national firms (such as research-oriented Syntex prior to its US departure).

Several serendipitous opportunities strongly shaped my thinking on these matters. First, I learned that the journal *International Organization* was doing a special issue on "Dependence and Dependency in the Global System" (Caporaso, 1978). While many of the contributors were well-established figures in the political

economy field, I was faced with the challenge of imbuing this novel Mexican case study with sufficient theoretical and methodological rigour that it could pass academic peer-review hurdles. Since I was refashioning dependency theory to address industry issues, I opted to use a hypothesis-testing framework. If Mexico's steroid hormone industry can be characterized as "dependent," I argued, then we can examine specific consequences resulting from its foreign control, such as: (1) an unequal distribution of its growth, favouring developed economies and MNCs more than Mexico, and (2) a restriction of choice among local development options that conflicted with the global priorities of MNCs (Gereffi, 1978, p. 251). Utilizing industry and country statistics, a detailed chronology of MNC, state, and local firm-level behaviour in Mexico, and a "counterfactual" assessment of the consequences of MNC investment in Mexico's steroid hormone industry against what could have been expected from a group of Mexican private companies like those led by Syntex before it relocated to the United States, the article drew both economic and policy conclusions about the costs and benefits of this concrete case of dependent development in Mexico.

A second timely input came from the SSRC, which funded my research in Mexico. In 1976, SSRC took a proactive stance to foster the nascent but mushrooming research community on MNCs and industry studies by creating the "Continuing Working Group on Multinational Corporations in Latin America," which brought junior and senior researchers together for periodic meetings in New York in the late 1970s and early 1980s to discuss their projects, methods, and preliminary findings. All members of the working group were studying MNCs in Latin America across varied countries and industries and exploring how dependency on MNCs in different sectors shaped national development outcomes (e.g., Gereffi, 1983; Bennett & Sharpe, 1985; Whiting, 1992). In the early 1980s, Richard Newfarmer joined the SSRC working group. Trained as an industrial organization economist at the University of Wisconsin, Newfarmer added a much-needed structural perspective on how global industries were organized. Using the tools of established industrial organization theory, Newfarmer edited a book with chapters from all working group members that related the market power of MNCs in diverse industries (including automobiles, tyres, cigarettes, food processing, pharmaceuticals, iron and steel, tractors, and electric power) to the conduct and performance of overseas affiliates and domestic firms (Newfarmer, 1985). This model was a precursor to the governance structure dimension that later appeared in GCC and GVC studies.

Third, while my article in *International Organization* and my involvement with the SSRC Working Group in the late 1970s improved my theoretical and methodological approaches to analyzing MNCs in Latin America, they did little to address the core empirical question of how to assemble and assess systematic data on MNCs in contemporary global industries. This became a practical mandate for the newly formed UN Centre on Transnational Corporations (UNCTC), which was established in New York in 1974. One of the main objectives of UNCTC was to develop a novel approach for analyzing the activities of MNCs in diverse global industries. The global pharmaceutical industry was an early priority because it had received considerable attention due to controversial practices related to transfer pricing, differential drug labelling across countries, and the role of essential drugs programs in the developing world (Lall, 1973, 1978). Because of my ongoing research on the pharmaceutical industry in Mexico, I was commissioned by UNCTC in 1977 to write a report on the structure and strategies of the top fifty pharmaceutical MNCs worldwide. The scale of this project was daunting, and there were no guidelines or research models offered by UNCTC because systematic studies of this type for a broad audience had not been carried out before.

Drawing on a wide variety of industry-specific source materials and numerous consultations with academic and business experts on the sector, I drafted an initial report focusing on the fifty largest pharmaceutical MNCs in the world. After listing the biggest companies in terms of their annual sales, the MNCs were classified by nationality and information was gathered on their position in distinct "therapeutic markets" within the pharmaceutical sector (e.g., antibiotics and vaccines, cardiovascular, respiratory, autoimmune diseases, pain) to establish the main competitors in each product market. The global reach of the top pharmaceutical MNCs was estimated by their sales distribution across major geographic regions.

While the methodological and empirical difficulties in compiling such a report were formidable, probably the toughest challenge was handling the intense political scrutiny and stakeholder interest attached to a UN study of the embattled pharmaceutical MNCs. Every three months, I went to New York for meetings with UNCTC staff and representatives of the Pharmaceutical Manufacturers Association (PMA) and related industry groups, where I was grilled on all aspects of my research methodology and provisional findings. Drafts of the report were reviewed, critiqued, and defended line by line. When the official report (UNCTC, 1979) was released, it was widely circulated in UN circles and became a reference point for how subsequent global industry studies could be carried out. Subsequently, I was asked to write a follow-up report on whether the activities of pharmaceutical MNCs were good or bad for economic and health outcomes in developing countries and key industry stakeholders, such as consumers, domestic drug firms, and local innovation systems (UNCTC, 1981).

These early studies of global industries foreshadowed several important themes in the subsequent GCC and GVC literatures. 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 regulation to influence industry dynamics. This includes international development organizations as well as national governments (Mayer & Gereffi, 2019). Second, the organization of global industries reflects the power of their leading firms. This insight led directly to the concept of “governance structures”—a mainstay in the GCC and GVC frameworks (Gereffi, 1994, 1996b; Gereffi, Humphrey, & Sturgeon, 2005; Ponte & Sturgeon, 2014; Gereffi & Lee, 2016). Third, and finally, the organization of global industries shapes the potential “upgrading” pathways available to developing economies, which is another pivotal building block for the GCC/GVC literatures (Gereffi, 1999, 2019b). The structures and strategies of MNCs present both opportunities and obstacles for how countries can link up with the international economy and opportunities for upgrading in domestic industries (Gereffi & Memodovic, 2003; Humphrey & Memodovic, 2003; Staritz, Gereffi, & Cattaneo, 2011).

4. Development Strategies in East Asia and Latin America

East Asia has been the most dynamic region in the world since the 1990s and it played a major role in the emergence of the GCC and GVC paradigms. The ISI growth model that prevailed in Mexico under Echeverría crumbled as Latin America was hard hit by the oil shock of the late 1970s and the severe debt crisis that followed it. The ISI approach had devised no way to generate the foreign exchange needed to pay for increasingly costly imports, and escalating debt service payments led to a net outflow of foreign capital that crippled economic growth. Many developing countries, under pressure from the International Monetary Fund and the World Bank, made the transition from ISI to EOI during the 1980s (Gereffi, 2014).

From a research perspective, the debate over the relative merits of the ISI and EOI development strategies put industry studies and comparative analysis centre stage again. I decided to explore these questions by looking more carefully at the development experiences of the two largest Latin American economies closely associated with ISI policies (Mexico and Brazil) along with the two mid-sized East Asian NIEs (South Korea and Taiwan) that were being heralded as standard bearers for the new EOI growth model by the World Bank (1993) and others (Amsden, 1992; Wade, 1990).

I had begun my position in the Sociology Department at Duke University in 1980, and in the mid-1980s, I spent a sabbatical year at the Center for US-Mexican Studies at the University of California in San Diego to pursue this project. Together with Donald Wyman, who was associate director of the Center and specialized in Mexican economic history and US policies toward Mexico, we organized a pair of workshops on Latin America and East Asia that led to our co-edited volume, *Manufacturing Miracles: Paths of Industrialization in Latin America and East Asia* (Gereffi & Wyman, 1990). What was novel about these workshops is that we

invited leading scholars on Latin America and East Asia to discuss and analyze key similarities and differences in the development experiences of the two regions to make our comparative analysis more concrete and realistic.

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 & Wyman, 1990, p. 23). A central finding of *Manufacturing Miracles* was that, contrary to prevailing stereotypes, the distinction typically made between Latin America and East Asia as representing inward- and outward-oriented development models, respectively, was oversimplified. Each of the regional pairs pursued both inward and outward strategies of industrialization, although their timing and duration varied by region. In the early phases of development, all four economies adopted commodity export and primary ISI strategies. The main divergence occurred after the initial ISI phase: Mexico and Brazil followed a strategy of ISI deepening or secondary ISI (mid-1950s through the early 1980s), while Taiwan and South Korea shifted to primary EOI (1960–1972) and then pursued secondary ISI (1973–1979) (also known as “heavy and chemical industrialization”) and secondary EOI (1980s onward) (Gereffi, 1989b, pp. 515–519; also Gereffi, 1995, 1996a).

One of the key messages from the cross-regional analysis of development strategies was that regions like Latin America could not simply emulate the East Asian experience, given significant differences in both historical patterns of international economic and geopolitical engagement as well as domestic institutions. East Asia had unique circumstances associated with regional conflicts (the Communist Chinese Revolution and the Korean War) and subsequent Cold War tensions that led to very distinct patterns than found in Latin America.

Notwithstanding these regional differences, an industry perspective on development strategies revealed notable similarities across all four Latin American and East Asian country cases. In the commodity export phase of development in both regions, the output was usually unrefined or semi-processed raw materials. In primary ISI and EOI, firms were making basic consumer goods (e.g., textiles, clothing, footwear, food) for the domestic and export markets, respectively. In secondary ISI and EOI, there was a focus on consumer durables (e.g., automobiles), intermediate goods (e.g., petrochemicals and steel), and capital goods (e.g., heavy machinery). These insights sparked a new approach to the study of global industries and their governance structures in the 1990s and 2000s, which gave rise to the GCC and GVC paradigms (Gereffi, 1995, 1996a, 1996b).

5. Putting Global Industries Centre Stage: From GCCs to GVCs

While global industries were the context for my study of the pharmaceutical industry in Mexico and they provided the content for defining and comparing the ISI and EOI development strategies in Latin America and East Asia, a framework for analyzing global industries in and of themselves did not emerge until the introduction of the GCC paradigm in the 1990s and subsequently the much more extensive GVC literature published in the 2000s and 2010s.

5.1. Global Commodity Chains

The origins of the GCC framework are closely associated with world-systems theory and the work of Immanuel Wallerstein, who founded the Fernand Braudel Center at Binghamton, State University of New York in 1976, which became the intellectual hub for world-systems theory in the United States. The concept of “commodity chains” was first introduced by Hopkins & Wallerstein (1977, 1986) 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 perspective in the early 1990s focused on the organization of contemporary global industries and how power asymmetries associated with MNC “lead firms” affected the prospects for national development. This led to a split with traditional world-systems theory (Bair, 2005, 2009).

The first publication that explicitly utilized the GCC framework was a study of the footwear industry by Gereffi & Korzeniewicz (1990). The paper was presented at one of Wallerstein’s annual Political Economy of the World-Systems (PEWS) conferences on “Semiperipheral States in the World-Economy,” and my co-author was Miguel Korzeniewicz, a doctoral student in the Sociology Department at Duke University. The research question that motivated our study was why Argentina, Miguel’s home country, had very high-quality leather exports but lacked a strong footwear industry, while neighboring Brazil had extensive shoe exports but limited leather inputs. Since Brazil and Argentina were both in the semiperiphery of the current world-system, the paper examined how export niches were created in the footwear commodity chain during the initial phases of economic globalization (1967–1987). The rapid and varied growth of exports from the semiperiphery in footwear involved high levels of specialization, which shaped patterns of upward and downward mobility among the main footwear-exporting countries. In terms of the US market, Japan, Spain, and Italy were the major exporters of shoes during the late 1960s and early 1970s, and they were displaced by Taiwan, South Korea, and Brazil by the late 1980s. Creating export niches in the footwear commodity chain was partly a story of how and why the previous industry leaders moved to higher-value segments in the footwear chain and created economic opportunities for the emergent exporters in relatively lower-value niches, and how intermediaries (like trading agents) linked small producers to global markets.

The analysis of a contemporary global industry using the commodity chain concept generated spirited controversy. At the same PEWS conference where Miguel and I gave our paper on the footwear commodity chain, Giovanni Arrighi presented a paper on “The Developmentalist Illusion” (Arrighi, 1990) that argued against the “developmentalist turn” in GCC research that our paper was advocating. Wallerstein suggested to Miguel and me that Duke University might like to host a subsequent PEWS conference on commodity chains, looking at both historical and contemporary cases. We accepted the invitation. The sixteenth annual PEWS conference on “Commodity Chains and Global Capitalism” was held at Duke in April 1992, and it resulted in our edited volume with the same title (Gereffi & 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 broke with several core precepts of world-systems analysis. Whereas research on commodity chains from a world-systems perspective focused on the formation and evolution of industries during the long sixteenth century, most chapters in our volume used the GCC concept to analyze contemporary postwar industries (including apparel, athletic footwear, automobiles, fresh fruit and vegetables, business services, and cocaine). The introductory chapter to the *Commodity Chains* volume describes the GCC framework as “a nuanced analysis of world-economic spatial inequalities in terms of differential access to markets and resources” (Gereffi, Korzeniewicz, & Korzeniewicz, 1994, p. 2).

In addition, a critical contention of the GCC approach was that the internationalization of production in contemporary globalization reflected a novel process of economic organization—namely, “governance

structures” that could be characterized as “producer-driven” and “buyer-driven” commodity chains (Gereffi, 1994, 1995, 1996b). 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 GCC research shared with the world-systems framework the notion that mobility 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 & Drangel, 1986). Hence, national development as a generalized goal is not deemed possible; it is simply a “developmentalist illusion” (Arrighi, 1990). 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 are essential to the prospects for upgrading or downgrading in the global economy (see Bair, 2009, pp. 7–14). 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 it became a foundation for the elaboration of the closely related GVC framework.

5.2. 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.” Two broad research communities were invited. One set of scholars focused primarily on the local dynamics of industrial clusters to understand how small firms in both developed and developing economies could improve their export competitiveness in the global economy (e.g., Humphrey, 1995; Nadvi & Schmitz, 1999; Schmitz, 2004). A second set of researchers emphasized the changing organizational features of global industries, and how new strategies by powerful lead firms were altering international and domestic production networks and opportunities for upgrading by developing economies. In addition to GCC researchers, this latter group included scholars affiliated with the Berkeley Roundtable on the International Economy (BRIE), which looked at “international production networks” (e.g., Ernst & Ravenhill, 1999; Borrus, Ernst, & Haggard, 2000; Sturgeon, 2002). The IDS workshop’s goals were threefold: (1) to bring these disparate research communities together for fruitful dialogue, (2) to establish direct communication between 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 MNC 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 a common framework that could link the macro (global), meso (industry, country and regional), 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.

One of the participants at the IDS meeting, the Rockefeller Foundation, met these criteria. Rockefeller supported a five-year Global Value Chains Initiative (2000–2005), which provided funding to support a

committed network of scholars that sought to create an integrated paradigm to address both the knowledge gaps and the policy gaps created by globalization. At the initial meeting in Bellagio, Italy in September 2000, there was considerable discussion about what to call the new framework. This decision was complicated because a variety of overlapping terms had been used for the network relationships that made up the global economy (Gereffi et al., 2001, p. 3; Sturgeon, 2001). The GVC Initiative adopted the term “global value chains” 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).

The proceedings of the first Bellagio meeting appeared in a special issue of the *IDS Bulletin* on “The Value of Value Chains” (Gereffi & Kaplinsky, 2001). Core topics like governance, upgrading, gender, and rents were covered, and agriculture and apparel were among the industries analyzed. Humphrey and Schmitz (2002) highlighted the contrast between cluster and GVC approaches to governance and upgrading. Later, Gereffi, Humphrey and Sturgeon (2005) expanded the initial binary governance structure of producer-driven and buyer-driven chains used in the GCC approach (Gereffi, 1994) 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). Along with its support for annual meetings that brought together researchers, practitioners, members of the business community, and policymakers, the Rockefeller Foundation stressed the need to institutionalize the incipient network of GVC scholars. This resulted in the creation of the Global Value Chains Center at Duke University (initially called the Center on Globalization, Governance, and Competitiveness), which established a website to facilitate the tracking of early GVC publications and projects see (Duke Global Value Chains Center, 2022).

In the early 2000s, the originators of the GVC Initiative laid out an extremely ambitious theoretical and research agenda (Gereffi et al., 2001). Two decades later, it is fair to ask if the paradigm lived up to these lofty expectations, and if so, how did it do it? A detailed answer to these questions is beyond the scope of this chapter, but we already have strong clues for a provisional assessment. Even though the study of global industries was twenty years in the making *before* the GVC Initiative was launched in the early 2000s, scholarly output in the subsequent two decades has accelerated dramatically (De Marchi et al., 2020; Kano, Tsang, & Yeung, 2020) and the GVC approach seems to be hitting a new crest of popularity in the early 2020s. The thematic urgency of supply chain shortages during the COVID-19 pandemic has spawned numerous special issues of journals. For example, the relatively new *Journal of International Business Policy (JIBP)* has two multi-issue topical collections related to GVCs: its 2020 topical collection (nine articles) on “COVID-19 and International Business Policy” (*JIBP*, 2020); and *JIBP*’s 2021 topical collection of thirteen articles on “Global Value Chain-Oriented Policies” (*JIBP*, 2021). The *California Management Review* has a Winter 2022 special issue on GVCs entitled “The Future of Global Supply Chains in a Post-COVID-19 World” (Panwar, Pinkse, & De Marchi, 2022), while at virtually the same time the ILO’s *International Labour Review* has a 2021 special issue on “Labour Governance and the Future of Work in an Era of Disruptions and Global Value Chains” (Gereffi, Posthuma, & Rossi, 2021). Thus, government policies, business, and labour issues are all linked to the pervasive reach and volatility of GVCs. In addition, the Biden administration in the United States issued a detailed review of global supply chain fragmentation and vulnerabilities in four key industries: semiconductors, pharmaceutical active ingredients, large-capacity batteries for electric vehicles, and critical materials and rare-earth minerals used in advanced electronics (White House, 2021).

While there was concern that the research agenda of the international business (IB) field in the early 2000s may be “running out of steam” (Buckley, 2002), the skyrocketing interest in the GVC perspective easily clears that bar. A key distinction between the GVC and IB perspectives that may explain the former’s accelerating growth trajectory is that the GVC paradigm has consistently focused on the *dynamics* of global

industries in current real-world settings, while many IB scholars turned from major contemporary topics and MNC-state relationships toward internal governance issues within MNCs that reduced the perceived policy relevance of IB work (Gereffi, 2019a). This dynamic orientation of the GVC focus on global industries can be seen clearly in both the governance and upgrading literatures. In both areas, GVC scholarship has made extensive use of *dynamic typologies* grounded in actual cases and modified as real-world conditions shift in significant ways rather than static ideal types.

In the extensive literature on GVC governance, for example, the seminal distinction between producer-driven and buyer-driven chains (Gereffi, 1994) reflected a key concern with the sources and consequences of power exercised by multiple kinds of lead firms in global industries and how they affected the growth prospects of developing economies. In the more elaborate typology of five types of governance in GVCs—hierarchical, captive, relational, modular, and market (Gereffi, Humphrey, & Sturgeon, 2005)—the growing pervasiveness of global industries emphasized a broader set of coordination challenges in orchestrating increasingly complex global supply chains where first-tier suppliers were becoming much larger and technologically quite sophisticated (Sturgeon, 2002; Sako & Zylberberg, 2019). Thus, coordination replaced power (or chain drivers) as a basis for the typology (Ponte & Sturgeon, 2014). A decade later, the burgeoning literature on GVCs began to focus more explicitly on social upgrading in industrial clusters, and the governance paradigm evolved again to look at the confluence of “private governance” (corporate codes of conduct and monitoring), “social governance” (civil society pressure on business from labour and non-governmental organizations), and “public governance” (government policies to support gains by labour groups and environmental activists). In some cases, complementary forms of governance were combined in hybrid or “synergistic governance” (Gereffi & Lee, 2016).

Similar conceptual shifts reflecting industry dynamics occur in the upgrading literature as well. A well-known early typology of firm-level strategies to improve competitiveness in GVCs identifies four types of economic upgrading: product, process, functional, and intersectoral (or chain) upgrading (Humphrey & Schmitz, 2002). Although analytically useful, the typology itself is relatively static and does not tell us how these types of upgrading might be linked or evolve over time. Thus, the notion of dynamic trajectories of upgrading was introduced in the literature based largely on the experience of East Asian exporters in consumer goods industries like apparel, footwear, or electronics. An oft-cited upgrading trajectory of this sort includes assembly (often in export-processing zones), original equipment manufacturing (OEM), own-brand manufacturing (OBM), and own-design manufacturing (ODM) (Gereffi, 1999). These upgrading pathways or trajectories need not be strictly linear or sequential; stages could be merged or bypassed, and leapfrogging can occur (Gereffi, 2019b). Finally, the growing concern of both firms and governments with sustainable development and climate change has added environmental upgrading and related concepts like recycling and the circular economy to the list of GVC research topics (e.g., De Marchi et al., 2019; Ponte, 2019).

Thus, the GVC paradigm has reflected the changing world not only in the topics it covers, but also in its key concepts, typologies, and theories. The fieldwork-oriented nature of GVC research has allowed its empirical findings and theoretical and methodological tools to remain fresh because they track and interpret actions by diverse kinds of firms, the state, and other key industry actors and stakeholders through international patterns that are also cross-sectoral, which is critically important for digital economy industries like smartphones (Lee & Gereffi, 2021). Both longitudinal and comparative evidence is utilized to establish patterns that both describe and explain industry changes. For instance, in a recent article on the impact of trade policies on the apparel, automobile, and electronics industries, the historical evolution of these classic GVCs is tracked from the 1970s to the present to highlight the dynamic interaction of GVC-oriented trade policies and firm strategies. Trade restrictions, as it turns out, frequently have unintended consequences in a world of GVCs, and firm strategies follow persistent patterns of “switching” production locations, end markets, and suppliers, as well as “upgrading” value chain activities in ways that often reconfigure the

GVCs of which they are a part (Gereffi, Lim, & Lee, 2021). Thus, industry dynamics provide not only the context but also the subject for GVC analysis.

6. Concluding Remarks

The emergence of intellectual paradigms and research frameworks is a complex process. Ideas, institutional settings, and resources are interconnected with the flow of real-world events, and research communities from diverse backgrounds help to sustain and carry forward the most fruitful approaches. This is how academic progress is usually characterized in a retrospective manner.

The vantage point of this chapter is different. In line with the goals of this handbook, I have presented a first-person account of my own experiences in launching the study of global industries over more than four decades of research and writing on these topics. Although I have relied extensively on a bottom-up, fieldwork-based, and development-centred approach to global industries, my academic training has made me fully aware of the advantages of robust theoretical and methodological efforts to link industry and country cases with theory generation and testing as well as policy-relevant insights. The study of the dynamics of global industries has helped me redefine the boundaries of development theories (Gereffi, 2018). While all theories are continuously revised or rejected based on their usefulness and accuracy, I am struck by the continued relevance of a GVC lens to the cutting-edge themes of our times.

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