

# A GLOBAL VALUE CHAIN PERSPECTIVE ON INDUSTRIAL POLICY AND DEVELOPMENT IN EMERGING MARKETS\*

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## TABLE OF CONTENTS

I. GLOBAL VALUE CHAINS AND EMERGING ECONOMIES .....	434
II. THE RISE OF GVCS.....	435
III. GOVERNANCE AND UPGRADING IN GVCS .....	440
IV. CONNECTING GVCS TO ECONOMIC DEVELOPMENT .....	441
V. GVCS AND PRIVATE SECTOR DEVELOPMENT .....	443
VI. THE HETEROGENEITY OF EMERGING ECONOMIES AND THEIR EXPORT PROFILES.....	444
VII. THE ROLE OF INDUSTRIAL POLICIES IN GVCS.....	446
VIII. THE PRIMARY PRODUCT BATTLEGROUND: BRAZIL’S SOYBEAN EXPORTS TO CHINA .....	447
IX. INFRASTRUCTURE GROWTH IN ELECTRONICS: FOXCONN IN BRAZIL .....	448
X. BEYOND “PICKING WINNERS” IN BRAZIL.....	449
XI. AN ALTERNATIVE MODEL: MEXICO’S OPEN ECONOMY .....	450
XII. A NEW ROLE FOR REGIONAL INTEGRATION.....	451
XIII. DIFFERENTIATING BETWEEN LARGE AND SMALL ECONOMIES .....	451
XIV. POLICY CHALLENGES IN BRAZIL .....	453
CONCLUSION.....	453
FIGURE 1: FIVE TYPES OF GLOBAL VALUE CHAIN GOVERNANCE.....	457
TABLE 1. SEVEN SELECTED EMERGING ECONOMIES IN COMPARATIVE PERSPECTIVE, 2012 .....	457
TABLE 2. EXPORT PROFILES OF EMERGING ECONOMIES, 2000- 2012.....	458

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## I. GLOBAL VALUE CHAINS AND EMERGING ECONOMIES

Globalization has given rise to a new era of international competition that is best understood by looking at the global organization of industries and the ways in which countries rise and fall within these industries.<sup>1</sup> The global value chain (GVC) framework has evolved from its academic origins to become a major paradigm used by a wide range of international organizations, such as the World Bank, the World Trade Organization (WTO), the International Labor Organization (ILO), and the U.S. Agency for International Development (USAID). Using core concepts like “governance” and “upgrading,” GVCs highlight the ways in which new patterns of international trade, production, and employment shape prospects for development and competitiveness.

GVC analysis documents the international expansion and geographic fragmentation of contemporary production networks and focuses primarily on the issues of industry (re)organization, coordination, governance, and power in the chain.<sup>2</sup> Its concern is to understand the causes and consequences of the organizational reconfiguration taking place in global industries.<sup>3</sup> The GVC approach also explores the broader institutional context of these linkages, including trade policy, regulation, and standards.

In the past two decades, profound changes in the structure of the global economy have reshaped global production and trade and have altered the organization of industries and national economies.<sup>4</sup> As supply chains become global in scope, more intermediate goods are being traded across borders, and more imported parts and components are being integrated into exports.<sup>5</sup> In 2009, world exports of intermediate goods exceeded the combined export values of final and capital goods for the first time, representing 51% of non-fuel merchandise exports.<sup>6</sup> Because of the

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1. Gary Gereffi, *Global Value Chains and International Competition*, 56 ANTITRUST BULL. 37, 37 (2011).

2. *Id.* at 39.

3. The seminal publication is COMMODITY CHAINS AND GLOBAL CAPITALISM (Gary Gereffi & Miguel Korzeniewicz eds., 1994) (applying the global commodity chains concept for the first time to a broad range of contemporary industries). In the early 2000s, the global commodity chains research agenda helped to spawn the closely related global value chain and global production network approaches. Jennifer Bair, *Global Commodity Chains: Genealogy and Review*, in FRONTIERS OF COMMODITY CHAIN RESEARCH 2–14 (Jennifer Bair ed., 2009).

4. Gary Gereffi & Timothy Sturgeon, *Global Value Chains and Industrial Policy: The Role of Emerging Economies*, in GLOBAL VALUE CHAINS IN A CHANGING WORLD 329, 329 (Deborah K. Elms & Patrick Low eds., 2013), available at [http://www.wto.org/english/res\\_e/booksp\\_e/aid4tradeglobalvalue13\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/aid4tradeglobalvalue13_e.pdf).

5. *Id.*; see also Robert C. Feenstra, *Integration of Trade and Disintegration of Production in the Global Economy*, J. ECON. PERSP., Fall 1998, at 31, 39–40.

6. Gereffi & Sturgeon, *supra* note 4, at 329; see also WORLD TRADE ORG. & INST. OF

unique ability of the GVC framework to show how international supply chains link economic activities at global, regional, national, and local levels within particular industries, international organizations such as the United Nations Conference on Trade and Development (UNCTAD), the World Bank, the World Economic Forum, and the Organisation for Economic Co-operation and Development (OECD) are utilizing the GVC approach to structure new donor initiatives and data collection programs on global trade and development.<sup>7</sup>

Emerging economies are playing significant and diverse roles in GVCs.<sup>8</sup> During the 2000s, they became major exporters of intermediate and final manufactured goods (China, South Korea, and Mexico) and primary products (Brazil, Russia, and South Africa). However, market growth in emerging economies has also led to shifting end markets in GVCs, as more trade has occurred between developing economies (often referred to as South-South trade in the literature), especially since the 2008–09 economic recession.<sup>9</sup> China has been the focal point of both trends: it is the world’s leading exporter of manufactured goods and the world’s largest importer of many raw materials, thereby contributing to the primary product export boom.

## II. THE RISE OF GVCS

In the 1970s and 1980s, U.S. retailers and brand-name companies joined manufacturers in the search for offshore suppliers of most categories of consumer goods, which led to a fundamental shift from what had been “producer-driven” commodity chains, which include capital- and technology-intensive industries like automobiles and electronics, to “buyer-

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DEVELOPING ECONOMIES-JAPAN EXTERNAL TRADE ORG., TRADE PATTERNS AND GLOBAL VALUE CHAINS IN EAST ASIA: FROM TRADE IN GOODS TO TRADE IN TASKS 81 (2011) [hereinafter WTO & IDE-JETRO], available at [http://www.ide.go.jp/English/Press/pdf/20110606\\_news.pdf](http://www.ide.go.jp/English/Press/pdf/20110606_news.pdf).

7. Gereffi & Sturgeon, *supra* note 4, at 329; see, e.g., United Nations Conference on Trade & Dev. [UNCTAD], *Global Value Chains and Development: Investment and Value Added Trade in the Global Economy: A Preliminary Analysis*, UNCTAD Doc. UNCTAD/DIAE/2013/1 (Feb. 27, 2013), available at [http://unctad.org/en/PublicationsLibrary/diae2013d1\\_en.pdf](http://unctad.org/en/PublicationsLibrary/diae2013d1_en.pdf); ORG. FOR ECON. CO-OPERATION & DEV., INTERCONNECTED ECONOMIES: BENEFITING FROM GLOBAL VALUE CHAINS (2013), available at [http://s3platform.jrc.ec.europa.eu/documents/10157/46174/Interconnected\\_economies.pdf](http://s3platform.jrc.ec.europa.eu/documents/10157/46174/Interconnected_economies.pdf); THE WORLD BANK, GLOBAL VALUE CHAINS IN A POSTCRISIS WORLD: A DEVELOPMENT PERSPECTIVE (Olivier Cattaneo, Gary Gereffi & Cornelia Staritz eds., 2010), available at <http://elibrary.worldbank.org/doi/pdf/10.1596/978-0-8213-8499-2>; WORLD ECON. FORUM, ENABLING TRADE: VALUING GROWTH OPPORTUNITIES (2013), available at [http://www3.weforum.org/docs/WEF\\_SCT\\_EnablingTrade\\_Report\\_2013.pdf](http://www3.weforum.org/docs/WEF_SCT_EnablingTrade_Report_2013.pdf).

8. Gereffi & Sturgeon, *supra* note 4, at 351.

9. *Id.*; see also Cornelia Staritz et al., Editorial, 4 INT’L J. TECHNOLOGICAL LEARNING, INNOVATION & DEV. 1, 1–11 (2011) (analyzing multiple industry and country cases of shifting end markets and South-South trade in GVCs).

driven” chains, which include a broad range of consumer products like apparel, footwear, toys, and sporting goods.<sup>10</sup> The geography of these chains expanded from regional production-sharing arrangements to full-fledged global supply chains, with a growing emphasis on East Asia.<sup>11</sup> In the 1960s and 1970s, large, vertically integrated transnational corporations dominated the landscape in most international industries,<sup>12</sup> and the prevailing development strategy was import-substituting industrialization (ISI). Well established in Latin America, Eastern Europe, and parts of Asia since the 1950s, ISI was a state-led effort to build domestic industries by requiring foreign manufacturers to replace imports with locally-made products, beginning with the assembly of final goods and working back to key components, in return for guaranteed market access.<sup>13</sup> These domestic industrial policies were intended to nurture a set of full-blown national industries in key sectors that could significantly reduce, if not fully eliminate, imports from the industrialized nations.<sup>14</sup>

The death knell for ISI, especially in Latin America, came from the oil shock of the late 1970s and the severe debt crisis that followed it.<sup>15</sup> The ISI approach was creating large and persistent trade deficits because the manufacturing sectors in ISI countries were simply importing intermediate goods rather than reducing imports altogether, and escalating debt service payments led to a net outflow of foreign capital that crippled economic growth in the 1980s.

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10. Gary Gereffi, *Global Value Chains in a Post-Washington Consensus World*, 21 REV. INT'L POL. ECON. 9, 10 (2014).

11. *Id.*; see also Gary Gereffi, *Commodity Chains and Regional Divisions of Labor in East Asia*, 12 J. ASIAN BUS. 75 (1996) (describing the distinct roles played by Japan and the East Asian “tigers”—South Korea, Taiwan, Hong Kong, and Singapore—in the development of East Asia’s export-oriented development model); Gary Gereffi, *The Organization of Buyer-Driven Global Commodity Chains: How U.S. Retailers Shape Overseas Production Networks*, in COMMODITY CHAINS AND GLOBAL CAPITALISM 95 (Gary Gereffi & Miguel Korzeniewicz eds., 1994) [hereinafter *The Organization of Buyer-Driven Global Commodity Chains*] (introducing the classic typology of buyer-driven and producer-driven commodity chains).

12. Gereffi, *supra* note 10, at 10; see also RAYMOND VERNON, SOVEREIGNTY AT BAY: THE MULTINATIONAL SPREAD OF U.S. ENTERPRISES 7–18 (1971) (offering the first systematic empirical study of multinational enterprises in the post-war era).

13. Gereffi, *supra* note 10, at 10; see also Gary Gereffi, *The International Economy and Economic Development*, in THE HANDBOOK OF ECONOMIC SOCIOLOGY 160, 211–12, 215–16 (Neil J. Smelser & Richard Swedberg eds., 1994) (identifying the key features distinguishing Latin American and East Asian ISI and EOI development strategies).

14. Gereffi & Sturgeon, *supra* note 4, at 329–30.

15. Gereffi, *supra* note 10, at 11; see also Victor L. Urquidi, *The Prospects for Economic Transformation in Latin America: Opportunities and Resistances*, LATIN AM. STUD. ASS’N F., Fall 1991, at 1, 3 (discussing the rise in interest rates for loans to Latin American governments, which undermined their ability to deal with the accumulated trade deficits caused by ISI policies).

Under pressure from the International Monetary Fund (IMF) and the World Bank, many developing countries made the transition from ISI to export-oriented industrialization (EOI) during the 1980s.<sup>16</sup> This new outward-oriented development model focused on exports to the global market by local firms, and it removed the state requirement that foreign firms had to produce for protected domestic markets, which had mainly benefitted larger developing economies.<sup>17</sup> There was an equally profound reorientation in the strategies of transnational corporations. The rapid expansion of industrial capabilities and export propensities in a diverse array of newly industrializing economies in Asia and Latin America encouraged transnational companies to accelerate their own efforts to outsource relatively standardized activities to lower-cost production locations worldwide. Precisely this change in the strategies of transnational companies enabled the shift from ISI to EOI in developing economies, and it corresponds with the shift from producer-driven to buyer-driven commodity chains at the level of global industries.<sup>18</sup>

The rise of GVCs occurred in a period of falling trade barriers, the emergence of the WTO, and the policy prescriptions associated with the “Washington Consensus”—i.e., that governments had only to provide a strong set of “horizontal” policies (such as education, infrastructure, and macroeconomic stability) and be open to trade in order to succeed.<sup>19</sup> Of course, many observers noted that the dynamic emerging economies did much more than establish a set of economy-wide enabling institutions for growth. They frequently also targeted key domestic industries for support, under either ISI or EOI policies that tended to alternate over time in both Latin American and East Asian nations.<sup>20</sup>

Today, industrial policy is on the upswing.<sup>21</sup> WTO accession often comes with allowances for selective industrial policies (e.g., trade

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16. Gereffi, *supra* note 10, at 11; *see also* Gary Gereffi, *Paths of Industrialization: An Overview*, in *MANUFACTURING MIRACLES: PATHS OF INDUSTRIALIZATION IN LATIN AMERICA AND EAST ASIA* 3 (Gary Gereffi & Donald L. Wyman eds., 1990) (reviewing the determinants and timing of different types of ISI and EOI in Mexico, Brazil, South Korea, and Taiwan).

17. Gereffi, *supra* note 13, at 215–19.

18. Gereffi, *supra* note 10, at 11; *see also* Gereffi, *supra* note 11, at 97–99 (comparing buyer-driven and producer-driven commodity chains).

19. Gereffi & Sturgeon, *supra* note 4, at 329.

20. *Id.*; *see also* Richard Baldwin, *Trade and Industrialisation After Globalisation's 2nd Unbundling: How Building and Joining a Supply Chain Are Different and Why It Matters* 6 (Nat'l Bureau of Econ. Research, Working Paper No. 17716, 2011), available at <http://www.nber.org/papers/w17716.pdf> (arguing that successful industrialization before 1985 meant building a domestic supply chain, in contrast to the subsequent emphasis in export-oriented economies on using offshore production to “join” global supply chains).

21. Gereffi & Sturgeon, *supra* note 4, at 330.

promotion, local content rules, taxes, tariffs, and more indirect programs that drive local production) to remain in force for specified periods. Bilateral trade agreements can supersede such allowances under WTO rules, and a handful of relatively large and advanced emerging economies (such as those in the G-20) that have more clout in the institutions of global governance are using them to create policy space to design and implement activist industrial policies.

The organization of global industries into GVCs in which production and trade networks are spread across many countries and regions has reinvigorated industrial policy debates. There is not likely to be a return to the ISI and EOI policies of old. Domestic industries in both industrialized and developing countries no longer stand alone, competing mainly through arm's length trade. Instead, they have become deeply intertwined through complex, overlapping business networks created through recurrent waves of foreign direct investment (FDI) and global sourcing. Companies, localities, and entire countries have come to occupy specialized niches within GVCs. Because of this, today's industrial policies have a different character and generate different outcomes than before. Intentionally or not, governments currently engage in GVC-oriented industrialization when targeting key sectors for growth.

New governance structures reinforce the organizational consolidation occurring within GVCs and the geographic concentration associated with the growing prominence of emerging economies as key economic and political actors.<sup>22</sup> After 1989, the breakup of the Soviet Union, the opening of China to international investment and trade, and the liberalization of India brought a number of very large economies onto the global stage, known initially as BRICs (Brazil, Russia, India, and China). The rise of the BRICs spurred the globalization process, as GVCs began to focus their investment and sourcing operations in big and dynamic emerging economies that offered abundant raw materials, large pools of low-wage workers, highly capable manufacturers, and rapidly growing domestic markets.

Faced with slow growth at home, large lead firms in GVCs rushed to set up operations in BRIC countries, especially China, in an effort to carve out brand recognition and market share in rapidly expanding consumer markets and to cut costs on goods produced for export back to home markets.<sup>23</sup> In producer-driven chains, the lead firms that to a large degree defined the structure of these industries were largely global manufacturers

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22. Gereffi, *supra* note 10, at 15.

23. Gereffi & Sturgeon, *supra* note 4, at 331.

like General Motors, Ford, IBM, and HP.<sup>24</sup> In buyer-driven chains, the lead firms were a mix of retailers (like Walmart, JCPenney, and Carrefour), global marketers (such as Nike, Liz Claiborne, and Polo Ralph Lauren), and supermarkets and food multinationals (like Tesco and Nestlé).<sup>25</sup> The lead firms in buyer-driven chains were particularly influential in the globalization process because they accelerated the process of “global sourcing” based on orders from developed countries, which relied almost entirely on production carried out in developing economies.<sup>26</sup>

As retailers and branded manufacturers in wealthy countries became more experienced with global sourcing, developing countries enhanced their infrastructure, and suppliers in those countries upgraded their capabilities in response to larger orders for more complex goods.<sup>27</sup> In the 1990s, many U.S.- and Europe-based manufacturers quickly became huge global players, with facilities in scores of locations around the world (e.g., Siemens, Valeo, Flextronics). A handful of elite East Asian suppliers (e.g., Pao Chen, Quanta, Foxconn) and trading companies (e.g., Li & Fung) also took on more tasks for multinational affiliates and global buyers. These firms expanded production throughout Asia and more recently in Africa, Eastern Europe, and Latin America.

Lead firms themselves are getting bigger and increasing their global market shares through mergers, acquisitions, and the decline of many rivals.<sup>28</sup> This has been coupled with a growing recognition of the strategic vulnerabilities of global supply chains: the risk of single-source relationships and the danger of lead firms losing access to critical inputs and raw material supplies.<sup>29</sup> This is particularly apparent in the agrifoods sector, in which consumer goods firms such as Cadbury, Coca-Cola, and Unilever are expanding their direct involvement in the procurement and sustainability of the raw material sides of their value chains, such as those

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24. *The Organization of Buyer-Driven Global Commodity Chains*, *supra* note 11, at 97.

25. *Id.* at 97–99.

26. See Gary Gereffi, *International Trade and Industrial Upgrading in the Apparel Commodity Chain*, 48 J. INT’L ECON. 37, 44–49 (1999) (identifying retailers, branded marketers, and branded manufacturers as three types of “lead firms” engaged in global sourcing in buyer-driven commodity chains).

27. Gereffi & Sturgeon, *supra* note 4, at 331; see also Gary G. Hamilton & Gary Gereffi, *Global Commodity Chains, Market Makers, and the Rise of Demand-Responsive Economies*, in FRONTIERS OF COMMODITY CHAIN RESEARCH, *supra* note 3, at 136, 153–59 (describing how U.S., European, and Japanese buyers worked with suppliers in South Korea and Taiwan to create the necessary conditions for expanding and diversifying exports of a broad array of consumer goods in both economies).

28. Gereffi, *supra* note 10, at 16.

29. *Id.*; see also BARRY C. LYNN, END OF THE LINE: THE RISE AND COMING FALL OF THE GLOBAL CORPORATION 177–79, 211–15 (2005) (underscoring the vulnerability of companies and consumers to disruptions in global supply chains caused by both predictable and uncontrollable factors).

involving cocoa, coffee, and sugar. This is also evident in the automobile and electronics industries, in which concern about the availability of raw materials such as lithium and coltan,<sup>30</sup> respectively, are spurring greater engagement between GVC lead firms and host country suppliers and governments. These examples suggest that a number of GVCs, especially in natural resource-based industries, are giving greater attention to strategic collaboration as a counterweight to the long-term trend toward specialization and fragmentation of supply chains.

### III. GOVERNANCE AND UPGRADING IN GVCs

The GVC framework focuses on globally expanding supply chains and how value is created and captured therein.<sup>31</sup> By analyzing the full range of activities that firms and workers perform to bring a specific product from its conception to its end use and beyond,<sup>32</sup> the GVC approach provides a holistic view of global industries from two contrasting vantage points: top-down and bottom-up.<sup>33</sup> The key concept for the top-down view is the “governance” of global value chains, which focuses mainly on lead firms and the organization of global industries; the main concept for the bottom-up perspective is “upgrading,” which focuses on the strategies used by countries, regions, and other economic stakeholders to maintain or improve their positions in the global economy.<sup>34</sup>

The concept of governance is the centerpiece of GVC analysis.<sup>35</sup> It examines the ways in which corporate power can actively shape the distribution of profits and risk in an industry and the actors who exercise such power through their activities. Power in GVCs is exerted by lead firms. In the governance typology outlined in Figure 1, the market and hierarchy poles of the GVC governance continuum are driven by price and ownership within vertically integrated firms, respectively.<sup>36</sup> The remaining three categories are stable forms of network governance (modular,

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30. Gereffi, *supra* note 10, at 16; *see also* DEV NATHAN & SANDIP SARKAR, BLOOD ON YOUR MOBILE PHONE? CAPTURING THE GAINS FOR ARTISANAL MINERS, POOR WORKERS AND WOMEN 2 (Capturing the Gains, Briefing Note 2, 2011), *available at* [http://www.capturingthegains.org/pdf/ctg\\_briefing\\_note\\_2.pdf](http://www.capturingthegains.org/pdf/ctg_briefing_note_2.pdf) (documenting the labor abuses endemic to coltan mining in Africa).

31. Gary Gereffi & Joonkoo Lee, *Why the World Suddenly Cares About Global Supply Chains*, 48 J. SUPPLY CHAIN MGMT. 24, 25 (2012).

32. *Id.*; *see also, e.g.*, Karina Fernandez-Stark, Penny Bamber & Gary Gereffi, *The Offshore Services Value Chain: Upgrading Trajectories in Developing Countries*, 4 INT'L J. TECHNOLOGICAL LEARNING, INNOVATION & DEV. 206, 209–11 (2011).

33. Gereffi, *supra* note 1, at 39.

34. *Id.* at 39–40.

35. Gereffi & Lee, *supra* note 31, at 25.

36. *See infra* Figure 1.

relational, and captive), in which different kinds of GVC lead firms control to a large degree the ways in which global supply chains operate and the main winners and losers within these chains.

While governance issues have attracted a good deal of attention among GVC scholars, the research on economic upgrading has been at least as important because many of the people who use the GVC framework have a very strong development focus.<sup>37</sup> “Economic upgrading” is defined as the process by which economic actors—firms and workers—move from low-value to relatively high-value activities in GVCs.<sup>38</sup> The challenge of economic upgrading in GVCs is to identify the conditions under which developing and developed countries and firms can “climb the value chain” from basic assembly activities using low-cost and unskilled labor to more advanced forms of “full package” supply and integrated manufacturing.<sup>39</sup>

#### IV. CONNECTING GVCs TO ECONOMIC DEVELOPMENT

GVCs matter for economic development in several ways, since the ability of countries to prosper depends on their participation in the global economy, which is largely a story about their role in GVCs.<sup>40</sup> Connecting countries to GVCs involves both investment and trade, which both rely heavily on efficient global supply chains in order to contribute to growth.<sup>41</sup> A key factor in such efficiency is infrastructure development, which enables global trade through the construction and improvement of the physical facilities that link national economies: ports and canals, airports, roads, and a wide range of information and communication technologies.<sup>42</sup> Improving trade flows at the border can be enhanced by infrastructure investments inside the border (i.e., in roads and facilities that connect rural regions and small firms to larger domestic markets) and also by investments beyond the border, especially in infrastructure facilities that connect a country to its nearby neighbors in regional supply chains.<sup>43</sup>

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37. Gereffi, *supra* note 10, at 9.

38. Gary Gereffi, *The Global Economy: Organization, Governance, and Development*, in *THE HANDBOOK OF ECONOMIC SOCIOLOGY* 160, 171 (N.J. Smelser & R. Swedberg eds., 2d ed. 2005).

39. Gereffi, *supra* note 10, at 10.

40. Gereffi & Lee, *supra* note 25, at 24.

41. See *WORLD ECON. FORUM*, *supra* note 7, at 13 (demonstrating that reducing supply chain barriers to trade could increase gross domestic product up to six times more than could removing tariffs).

42. PETER DICKEN, *GLOBAL SHIFT: MAPPING THE CHANGING CONTOURS OF THE WORLD ECONOMY* 400–06 (6th ed. 2011); WTO & IDE-JETRO, *supra* note 6, at 28, 30.

43. Frederick Mayer & William Milberg, *Aid for Trade in a World of Global Value Chains: Chain Power, the Distribution of Rents, and Implications for the Form of Aid* 9–10 (Capturing the

These regional markets are often underappreciated because of the importance given to developed country markets in the 1990s and early 2000s, but in the current era, regional value chains are becoming a new focus for investment planning by development banks and international organizations.<sup>44</sup>

GVC studies are pervasive in academic publications that examine a wide range of global industries.<sup>45</sup> The framework has also been adopted by many of the most important international organizations concerned with economic development, such as the WTO, UNCTAD, the OECD, the World Bank, and the World Economic Forum.<sup>46</sup> The international institutions that have provided the underpinning for the Washington Consensus (such as the World Bank, the IMF, and the WTO) and major bilateral donors (such as USAID and the UK's Department for International Development (DFID)) have embraced new models of development thinking, with an emphasis on sectoral analysis that links macro issues such as international trade and investment more closely with the micro development issues of employment, gender dynamics, and sustainable livelihoods.<sup>47</sup> In addition, new alliances have emerged among diverse UN and other international agencies (such as the World Bank and the ILO) to promote joint research agendas that explore the links between economic and social upgrading, explicitly using the GVC framework.<sup>48</sup>

This is an area in which GVC analysis and supply chain management research can be mutually beneficial.<sup>49</sup> Sophisticated value chain data disaggregated by business functions can complement existing country-level trade statistics and industry-level input-output data, providing a clear

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Gains, Working Paper 34, 2013), available at [http://www.capturingthegains.org/publications/workingpapers/wp\\_201334.htm](http://www.capturingthegains.org/publications/workingpapers/wp_201334.htm).

44. Gereffi & Lee, *supra* note 62, at 28–29.

45. Gereffi, *supra* note 10, at 23.

46. *Id.*; see also *supra* notes 6–7.

47. Gereffi, *supra* note 10, at 23; see also, e.g., MAKING VALUE CHAINS WORK BETTER FOR THE POOR: A TOOLBOOK FOR PRACTITIONERS OF VALUE CHAIN ANALYSIS 1–4 (Tim Purcell et al. eds., 2008), available at <http://aciarc.gov.au/publication/cop019> (providing a better understanding of how markets work, using the principles of value chain analysis); GENDER DEV. UNIT, INT'L TRADE DEV., THE WORLD BANK, GLOBAL VALUE CHAINS, ECONOMIC UPGRADING, AND GENDER: CASE STUDIES OF THE HORTICULTURE, TOURISM, AND CALL CENTER INDUSTRIES 1–9 (Cornelia Staritz & José Guilherme Reis eds., 2013) (conducting a gendered analysis of the horticulture, tourism, and call center GVCs in Honduras, Kenya, and Egypt, respectively).

48. Gereffi, *supra* note 10, at 23; see also, e.g., INT'L LAB. ORG., TOWARDS BETTER WORK: UNDERSTANDING LABOUR IN APPAREL GLOBAL VALUE CHAINS (Arianna Rossi et al. eds., 2014); Stephanie Barrientos, Gary Gereffi & Arianna Rossi, *Economic and Social Upgrading in Global Production Networks: A New Paradigm for a Changing World*, 150 INT'L LAB. REV. 319 (2011).

49. Gereffi, *supra* note 10, at 21.

picture of who is gaining and losing in GVCs.<sup>50</sup> When combined with data on employment, they will greatly advance our understanding of both economic and social development opportunities in the global economy.

## V. GVCS AND PRIVATE SECTOR DEVELOPMENT

Today virtually all major bilateral and multilateral donor agencies use value chain analysis as an instrument of private sector development.<sup>51</sup> There are two principal reasons for the increasing popularity of the GVC approach within the international donor community since the end of the 1990s: first, the accumulating evidence of a link between economic growth driven by the private sector and poverty reduction; and second, the fact that global integration of trade and production through GVCs transmits the pressures of global competition to domestic markets in developing economies, leaving less space for local firms to design, produce, and market on their own.<sup>52</sup> Given the pervasiveness of GVCs, the challenge is to design patterns of GVC engagement that balance both competitiveness and equity objectives while simultaneously generating jobs, higher productivity, and expanded output.<sup>53</sup>

There is no simple way to connect GVC analysis to private sector development, since the firms in a value chain range from transnational corporations to microenterprises and since the institutional context and geographic scope of value chains vary enormously.<sup>54</sup> Generally, however, donor interventions have four objectives: strengthening the weakest link to address potential bottlenecks; improving flows of knowledge and resources to make all firms in the chain more productive; working on specific links between firms to improve efficiency; and creating new or alternate links in the chain to promote diversified outcomes.<sup>55</sup>

Much of this research and theoretical work has focused on how lead

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50. *Id.*; see also Timothy Sturgeon & Gary Gereffi, *Measuring Success in the Global Economy: International Trade, Industrial Upgrading, and Business Function Outsourcing in Global Value Chains*, TRANSNAT'L CORPS., Aug. 2009, at 1, 19 (illustrating how business functions can be integrated into GVC analysis, using a new typology and country survey data).

51. Gereffi, *supra* note 10, at 18.

52. *Id.*; see also TILMAN ALTENBURG, THE DONOR COMM. FOR ENTER. DEV., DONOR APPROACHES TO SUPPORTING PRO-POOR VALUE CHAINS 4 (rev. ed. 2007), available at [www.deza.admin.ch/ressources/resource\\_en\\_162916.pdf](http://www.deza.admin.ch/ressources/resource_en_162916.pdf).

53. ALTENBURG, *supra* note 52, at 4.

54. Gereffi, *supra* note 10, at 26.

55. *Id.*; see also JOHN HUMPHREY & LIZBETH NAVAS-ALEMÁN, INST. OF DEV. STUDIES, RESEARCH REPORT 63, VALUE CHAINS, DONOR INTERVENTIONS AND POVERTY REDUCTION: A REVIEW OF DONOR PRACTICE 20–22 (2010).

firms in specific GVCs have driven this process in various ways.<sup>56</sup> Decisions about outsourcing and offshoring are, after all, strategic calculations made by managers. But such decisions are not made in a vacuum. The policies and programs of countries and multilateral institutions set the context for corporate decision-making, and there has been an evolution in the form and effects of industrial policy along with the evolution of the business networks that comprise GVCs.

Today the organization of the global economy is entering a new phase—what some have referred to as a “major inflection point”<sup>57</sup>—that could have dramatic implications for firms and workers in emerging and industrialized countries. As world trade rebounds from the 2008–09 economic crisis, emerging economies have become a major engine of growth.

## VI. THE HETEROGENEITY OF EMERGING ECONOMIES AND THEIR EXPORT PROFILES

Focusing on a set of seven contemporary emerging economies—China, India, Brazil, Mexico, Russia, South Korea, and South Africa—will give a broader sense of the role of GVCs and development policies in the developing world. They are all centrally involved in distinct types of GVCs in agriculture, extractive industries (mining, oil, and gas), manufacturing, and services.<sup>58</sup> Together, these seven emerging economies account for 45% of the world’s population, 21% of gross domestic product (GDP), and 25% of global exports, and their GDP growth rates are substantially higher than the world average (3.4% versus 3.0%).<sup>59</sup> The economic and social characteristics of these countries are quite diverse, however. The specific roles of these countries in the global economy vary according to their openness to trade and foreign investment; their endowments of natural, human, and technological resources; their geopolitical relationships to the world’s most powerful countries; and the characteristics of their immediate neighbors.

Although collectively these seven nations have considerable economic clout, China is the global pacesetter of the group.<sup>60</sup> While China and India

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56. Gereffi & Sturgeon, *supra* note 4, at 332.

57. *Id.*; see also Victor K. Fung, Chairman, Fung Global Inst., Speech to the Executive Committee of the Federation of Indian Chambers of Commerce and Industry: Global Supply Chains – Past Developments, Emerging Trends (Oct. 11, 2011), available at <http://www.fungglobalinstitute.org/en/global-supply-chains-%E2%80%93-past-developments-emerging-trends>.

58. Gereffi & Sturgeon, *supra* note 4, at 333.

59. *Id.*; see *infra* Table 1.

60. Gereffi & Sturgeon, *supra* note 4, at 335.

are the most populous countries in the world, with 1.35 and 1.24 billion inhabitants, respectively, China is the undisputed export leader, with \$2.0 trillion in exports in 2012.<sup>61</sup> China's export total is greater than that of South Korea, Russia, India, Brazil, and Mexico combined (\$1.9 billion), and its GDP has grown by over 9% per year for over 30 years.<sup>62</sup> It is now the second-largest economy in the world (after only the United States) and has overtaken Germany as the world's largest exporter.<sup>63</sup> Notwithstanding its rapid economic growth, however, its GDP per capita was the second-lowest among these emerging economies in 2012 (\$6,090), well ahead of India's (\$1,489) but less than two-thirds that of Brazil (\$11,322) and Russia (\$13,993) and just over one-quarter that of South Korea (\$22,600).<sup>64</sup> On average, the GDP per capita of these seven emerging economies was about 20% above the world average in 2012.<sup>65</sup>

The export profiles of these emerging economies indicate the roles that they play in GVCs. Using a classification scheme that categorizes traded goods according to primary products plus four types of manufactured exports (resource-based, low-tech, medium-tech, and high-tech),<sup>66</sup> Table 2 highlights some of the differences between the export profiles of these countries. Three of the emerging economies are heavily oriented toward primary product or resource-based exports: Russia (83%), Brazil (67%), and South Africa (55%).<sup>67</sup> Half of India's exports are resource oriented, and another 42% are low-tech (primarily apparel products) and medium-tech manufactured goods.<sup>68</sup> China, South Korea, and Mexico, by contrast, are heavily involved in manufacturing GVCs. About 90% of China's exports are manufactured goods, while a

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61. *Id.*; see *infra* Table 1.

62. Gereffi & Sturgeon, *supra* note 4, at 335; see *infra* Table 1.

63. Gereffi & Sturgeon, *supra* note 4, at 335; see also Andrea Beltramo et al., *The Export Performance of Countries Within Global Value Chains (GVCs)* 33 (Org. for Econ. Co-operation & Dev. Directorate for Sci., Tech. & Indus., OECD Science, Technology and Industry Working Paper No. 2012/02, 2012), available at <http://www.oecd-ilibrary.org/docserver/download/5k9bh3gv6647.pdf?expires=1401142150&id=id&accname=guest&checksum=994DE30A9A0594EA54E5113595ED1875> (documenting the surge in the export of high-technology products by emerging economies).

64. Gereffi & Sturgeon, *supra* note 4, at 335; see *infra* Table 1.

65. See *infra* Table 1.

66. Gereffi & Sturgeon, *supra* note 4, at 335; see also Sanjaya Lall, *The Technological Structure and Performance of Developing Country Manufactured Exports, 1985–98*, 28 OXFORD DEV. STUD. 337 (2000) (providing such a scheme).

67. Gereffi & Sturgeon, *supra* note 4, at 335; see *infra* Table 2.

68. Gereffi & Sturgeon, *supra* note 4, at 335; see *infra* Table 2. Lall's categories only cover goods, however, and India is also the world leader in exports of offshore services, with 45% of the global total. Lall, *supra* note 66, at 367; see also Fernandez-Stark, Bamber & Gereffi, *supra* note 32, at 214 (defining and analyzing recent trends in the offshore services industry using a GVC approach).

preponderance of the exports of South Korea (72%) and Mexico (60%) are medium-tech (automotive, machinery) and high-tech (mainly electronics) exports.<sup>69</sup>

## VII. THE ROLE OF INDUSTRIAL POLICIES IN GVCs

Industrial policies that take the new realities of GVCs into account include traditional measures to regulate links to the global economy, especially the regulation of trade, foreign direct investment, and the exchange rates used in ISI and EOI policies that sought to elevate the position of “national champions.”<sup>70</sup> Today, GVC-oriented industrial policy focuses to a greater extent than in the past on the intersection of global and local actors, and it takes the interests, power, and reach of lead firms and global suppliers into account, accepts international (and increasingly regional) business networks as the appropriate field of play, and responds to pressures from international non-governmental organizations (NGOs).<sup>71</sup>

There are three distinguishable types of industrial policies: “horizontal” policies that affect the entire national economy; “selective” (or “vertical”) industrial policies targeted at particular industries or sectors; and GVC-oriented industrial policies that leverage international supply chain linkages or dynamics to improve a country’s role in global or regional value chains.<sup>72</sup> “Horizontal” policies focus on the basic building blocks of competitive national economies, such as education, health, infrastructure, and R&D expenditures.<sup>73</sup> Although these areas all provide attractive opportunities for private investors, the public sector typically plays a role in providing widespread access to these factors as public goods. Domestic industrial policies tend to be “selective” or “vertical” because they are associated with prioritizing particular industries or activities at the national level. GVC-oriented industrial policies go beyond the domestic economic focus of ISI-style policy regimes, which try to recreate entire supply chains within a national territory. Given the expansion of international production networks associated with GVCs, this new type of industrial policy explicitly utilizes extraterritorial linkages that affect a country’s positioning in global or regional value chains.

Current examples of GVC-oriented industrial policies include efforts to create and sustain regional supply chains that provide inputs, such as the

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69. Gereffi & Sturgeon, *supra* note 4, at 335; *see infra* Table 2.

70. Gereffi & Sturgeon, *supra* note 4, at 338; *see also* Baldwin, *supra* note 20, at 30–31 (detailing the policy challenges confronted by newly industrializing states).

71. Gereffi & Sturgeon, *supra* note 4, at 336.

72. *Id.* at 342–43.

73. *Id.* at 342.

East Asian components that have been incorporated into China's smartphone exports, that are needed for national export success.<sup>74</sup> Case studies in Central America and sub-Saharan Africa describe efforts to create regional integration arrangements that could strengthen the export position of countries in each region by sourcing inputs from regional neighbors (e.g., textiles and apparel in Central America or sub-Saharan Africa and minerals processing in sub-Saharan Africa). The case of Brazil's efforts to upgrade via GVC-oriented industrial policies is examined in a bit more detail below.

#### VIII. THE PRIMARY PRODUCT BATTLEGROUND: BRAZIL'S SOYBEAN EXPORTS TO CHINA

Large emerging economies that supply primary products to China face a major challenge: finding ways to increase the technological content of their exports in order to move into higher value activities. This has been a vexing issue for Brazil, as China accounted for about 15% of its exports and imports in 2010.<sup>75</sup> From a GVC perspective, the pattern of Brazil's exports to China is notably skewed toward products (both primary commodities and manufactured goods) with very low levels of processing.<sup>76</sup>

The soybean value chain is a good example. About 95% of Brazil's soybean exports to China in 2009 were unprocessed beans; there were virtually no exports of soybean meal, flour, or oil to China.<sup>77</sup> To pursue its strategy of promoting the Chinese soybean processing industry, China had imposed a tariff of 9% on soybean oil imports, while the tariff on unprocessed soybean imports was only 3%.<sup>78</sup> There was also a higher value-added tax rate in China on imports of products based on processed soybeans than on unprocessed beans.<sup>79</sup> Similar protectionist policies, including both tariff and non-tariff barriers, have been imposed by the Chinese government on other primary and processed intermediate products from Brazil, including leather, iron and steel, and pulp and paper.<sup>80</sup>

On the import side, Brazil has also been influenced by China's structure of international trade. In 1996, low-tech products accounted for

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74. *Id.* at 343.

75. Rhys Jenkins, *China and Brazil: Economic Impacts of a Growing Relationship*, 41 J. CURRENT CHINESE AFF. 21, 22 (2012).

76. *Id.* at 28.

77. *Id.*

78. *Id.*

79. *Id.*

80. *Id.* at 29.

40% of Brazil's imports from China, while high-tech products accounted for 25%.<sup>81</sup> By 2009, the pattern was nearly reversed: high-tech products were 41.4% of the total, and low-tech products were 20.8%.<sup>82</sup> In terms of the end use of imports, Brazilian consumer goods imports from China fell from 44% to 16% between 1996 and 2009, while Brazilian imports of capital goods more than doubled from 12% to 25%, and parts for capital goods rose from 12% to 25%.<sup>83</sup> Thus, Brazil has fallen to the lowest rungs of the value-added ladder in its trade with China in recent decades.

While the trade relationship with China is the most severe challenge for Brazil, the problem is more pervasive.<sup>84</sup> For example, Embraer, a successful Brazilian producer of regional passenger aircraft, depends on imports for 100% of its aircraft-grade aluminum, despite Brazil's abundance of the aluminum ore (bauxite) and rare minerals required for aircraft-grade alloys. South Africa has had some success in this regard. It is the largest exporter of catalytic converters for use in vehicle exhaust systems, products that rely on platinum, a precious metal that is abundant in South Africa.

#### IX. INFRASTRUCTURE GROWTH IN ELECTRONICS: FOXCONN IN BRAZIL

Brazil's recent efforts to leverage its large and dynamic internal market to build domestic capabilities in the consumer electronics sector are instructive of how GVCs intersect with national industrial policies. A growing middle class in Brazil has begun to demand consumer electronics on an unprecedented scale.<sup>85</sup> Sales of smartphones and other Internet-connected mobile devices are expected to increase dramatically with Brazil's hosting of the World Cup soccer championship in 2014 and the Olympic Summer Games in 2016, and this will drive huge investments in equipment to upgrade Brazil's already strained infrastructure for voice connectivity and data communications.

Thanks to Brazil's GVC-oriented industrial policies and direct pressure on the company from policymakers, Foxconn has begun to assemble iPhones, iPads, and, most recently, iPad minis for Apple in Brazil.<sup>86</sup> While Foxconn is more vertically integrated than most electronics

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81. *Id.* at 29–30.

82. *Id.* at 30.

83. *Id.* at 31.

84. Gereffi & Sturgeon, *supra* note 4, at 345.

85. *Id.* at 346.

86. *Id.* at 350.

manufacturing services firms, it is likely to begin to manufacture components, including displays, in Brazil. Recent negotiations for a fifth Foxconn factory in Brazil have included language to suggest that once production is at 100% (projected to be 2016), Foxconn will be manufacturing components including cables, cameras, touch-sensor glass, LED products, and printed-circuit boards.<sup>87</sup>

Hewlett-Packard (HP) uses three global contract manufacturers in Brazil (Foxconn, Flextronics, and Jabil Circuit). Their products include computers, desktop and notebook PCs, workstations, computer servers, and single- and multi-function printers. Local production accounts for 95% of HP's local sales. HP imports low-volume products, such as large-format printers, high-end servers, and some high-end portable computers, and makes printer ink cartridges in its own plant using a proprietary manufacturing process. Most components are imported, except RFID chips for printer cartridges, which are developed by CEITEC, a local government-supported semiconductor foundry.

The presence of global contract manufacturers in Brazil creates a number of immediate advantages. The most obvious is jobs. For example, Foxconn currently employs 6000 people in Brazil and could add 10,000 more jobs by 2016.<sup>88</sup> Additionally, because contract manufacturers serve multiple customers, their manufacturing capabilities can satisfy local content requirements for multiple brands. Production capacity is generic and flexible enough to effectively pool capacity across all high-volume segments of the electronics industry, and capacity can be switched to accommodate product categories and firms that are successful in the local and the export market. The focus of Brazil's GVC-oriented industrial policy—attracting investments by contract manufacturers and GVC lead firms—signals a sophisticated understanding of the dynamics of the electronics GVCs by policymakers. Contract manufacturers provide a leading-edge, flexible, and scalable platform for local production and R&D. Lead firms like Apple and HP tend to use the same contractors on a global basis, and their presence in Brazil lowers the bar for localization.

## X. BEYOND “PICKING WINNERS” IN BRAZIL

As the Brazil consumer electronics case suggests, the formation of industrial policy need not involve policymakers “picking” growth

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87. *Id.*; see also Lisa Wang, *Foxconn Invests More in Brazil*, TAIPEI TIMES, Sept. 20, 2012, at 13, available at <http://www.taipeitimes.com/News/biz/archives/2012/09/20/2003543171>.

88. Gereffi & Sturgeon, *supra* note 4, at 351; see also Lorraine Luk, *Foxconn to Build Fifth Brazil Plant*, WALL ST. J., Sept. 19, 2012, 6:06 AM ET, <http://online.wsj.com/article/SB10000872396390444165804578005722309270246.html>.

industries; rather, it could begin with attempts to improve the performance of existing industries. This involves a search for mechanisms or activities that can capture investment and improve a country's value-adding position in dynamic segments of GVCs that are in the process of spreading to new locations or that may already be present in the policymaker's jurisdiction.<sup>89</sup> When Brazil's policymakers try to capture more value added in local markets that are already growing rapidly, they are reinforcing success rather than picking winners.

Of course, policymakers must also be concerned with increased prices caused by either market slowdowns or government-imposed import restrictions. Broad economic growth is likely to be inhibited when markets for products that make the whole economy more efficient, such as smart phones, computers, and business services, are disrupted. Presumably, policies that pressure lead firms to add more value locally can be modest and targeted enough that they do not impede market growth. Once policymakers accept the proposition that a balanced approach is possible, the question then becomes how to most effectively craft GVC-oriented industrial policies.

## XI. AN ALTERNATIVE MODEL: MEXICO'S OPEN ECONOMY

A major element of Mexico's success is its very high degree of trade openness: it has free trade agreements with 44 countries, which is more than twice as many as China and four times as many as Brazil.<sup>90</sup> Additionally, while rising wages and fuel prices have made exporting from China to the United States market increasingly expensive, Mexico's wages, which were nearly four times higher than China's a decade ago, are just 29% higher today.<sup>91</sup> Also, while Mexico still has an abundance of cheap labor, as more than half of its population of 112 million is under the age of 29, its workers are also becoming more skilled, with growing proportions of graduates in engineering, architecture, and other professions.<sup>92</sup>

Mexico's geographical proximity to the United States allows shorter supply chains, lower transport costs for bulky items, and quicker delivery times in the context of increasingly popular "fast fashion," "just in time," and other "rapid response" business models.<sup>93</sup> As with China, Mexico is a

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89. Gereffi & Sturgeon, *supra* note 4, at 353.

90. Adam Thomson, *China's Unlikely Challenger: Mexico*, FIN. TIMES, Sept. 19, 2012, at 11.

91. *Id.*

92. *Id.*

93. Timothy Sturgeon, Gary Gereffi, Andrew Guinn & Ezequiel Zylberberg, *O Brasil nas Cadeias Globais de Valor: Implicações para a Política Industrial e de Comércio* [Brazil in Global Value Chains: Implications for Trade and Industrial Policy], REVISTA BRASILEIRA DE COMÉRCIO

platform for multinational enterprises (MNEs) seeking to locate labor-intensive aspects of GVCs (including both manual and knowledge work) in a country that is both low-cost and close to the huge United States market. This should also create new project development options and finance opportunities for domestic and foreign-owned firms.

## XII. A NEW ROLE FOR REGIONAL INTEGRATION

Upgrading national firms in this context is not an easy task.<sup>94</sup> Because GVC lead firms encourage suppliers in different countries to compete with each other for orders, and lead firms often choose to work with the same global suppliers in multiple locations to reduce transaction costs, states tend to have less leverage to demand local content requirements or less scope to develop links to domestic suppliers. In the face of such challenges, some large emerging economies are shifting their development strategies inward and relying more extensively on regional production networks buttressed by regional industrial policy.

An alternative conception of regional integration strategies (including preferential trade agreements, economic cooperation arrangements, and regional production networks) could be based on supply-side strategies, rather than the traditional demand-side considerations that usually justify regional integration.<sup>95</sup> The demand-side logic of regional integration highlights increases in market size, market access, and foreign direct investment to create more attractive import markets. The supply-side approach would view regional integration as a necessary condition to create scale economies and complementarities that can drive more production and processing and thus higher value exports from the regions made up of small economies (e.g., the Dominican Republic-Central American Free Trade Agreement) or large ones (e.g., the North American Free Trade Agreement).

## XIII. DIFFERENTIATING BETWEEN LARGE AND SMALL ECONOMIES

Large emerging economies have more options to upgrade within GVCs than small economies. Large emerging economies can focus on manufactured exports, as China and Mexico have done since the mid-1990s, but they can also reorient their productive capacity to serve

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EXTERIOR [R.B.C.E.], Apr.–June 2013, at 26, 31 (Braz.), *translated at* [http://www.cggc.duke.edu/pdfs/2013-05-22\\_Sturgeon\\_et\\_al\\_Funcex\\_article\\_submitted.pdf](http://www.cggc.duke.edu/pdfs/2013-05-22_Sturgeon_et_al_Funcex_article_submitted.pdf).

94. Gereffi & Sturgeon, *supra* note 4, at 338.

95. *Id.* at 339.

domestic demand if export markets become less attractive. While both small and large countries can upgrade at the regional level by diversifying or adding new capabilities that are not available at the national level, large countries have more leverage in such arrangements. Large countries with high potential for market growth (such as the BRICs) can also institute policies to drive FDI in technology- and capital-intensive sectors, such as electronics and motor vehicles.

Small countries have fewer options. Their market size is not big enough to attract FDI in the local market, and domestic firms tend to be small-scale and less advanced. The regional organization of some GVCs, however, has created opportunities for smaller countries to leverage low costs and proximity to large markets to build export capacities in specialized GVC niches (e.g., intermediate goods) in the context of regional production systems. Costa Rica, for example, has supply-side constraints related to productive capacity and skills and conceivably could partner with Mexico to enhance its training programs and skills development. Nicaragua, whose apparel firms have been buying textiles from East Asia, would benefit from supply arrangements with textile firms in Honduras, El Salvador, and Guatemala. In sum, specialization and regional GVC linkages matter for political and economic integration in a way that was not the case previously.

Recently there is a growing concern in both developed and developing countries that the economic gains from participating in global supply chains do not necessarily translate into good jobs or stable employment and that, in the worst case, economic upgrading may be linked to a significant deterioration of labor conditions, or social downgrading.<sup>96</sup> This raises the question of the extent to which global supply chains are “inclusive” or “exclusive” in their facilitation of the upgrading of lower-level firms in the chain.<sup>97</sup> This kind of research will require the development of precise indicators of upgrading (economic, social, or environmental) that are relevant to supplier firms and the countries where they are located. Information about upgrading and downgrading outcomes will require interviews with firms across the supply chain to identify mechanisms and outcomes that address this issue, the use of quantitative measures to allow the development of empirical indicators for each variable, and appropriate generalizations from these findings.

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96. Gereffi & Lee, *supra* note 31, at 29; *see also* Barrientos, Gereffi & Rossi, *supra* note 48, at 330–32 (arguing for the need to link economic and social upgrading).

97. Gereffi & Lee, *supra* note 31, at 30.

#### XIV. POLICY CHALLENGES IN BRAZIL

Like China, Brazil has a large internal market, allowing it to implement industrial policies that would be impossible for a smaller country (e.g., local content regulations and tax breaks).<sup>98</sup> It also lies at the core of Mercosur, the regional trade pact that links Brazil to several other South American economies. The question is: what sort of industrial policies make sense given the historical moment? Should Brazil pursue policies of the past and seek to develop fully independent domestic industries separate from GVCs? Should it pursue the same low-value-added business functions that have driven growth in China and Mexico? Or should it seek to capture more of the new, higher-value-added functions that are being hived off into GVCs today?

A dynamic, adaptive, and evidence-based policymaking process is called for in Brazil. Chief among the challenges is the complexity and instability of the country's industrial policy regime.<sup>99</sup> Because policies change constantly, companies are having trouble projecting into the future. For example, executives at electronics firms in Brazil indicated that uncertainty related to rapidly shifting local production incentives (Processos Produtivos Básicos, or PPBs) and import tariff levels have been significant constraints to growth. Such uncertainty tends to impact small and medium-size enterprises more significantly than large firms because small firms do not have clout with policymakers in Brazil.

Policy uncertainty is just one of the many elements of what has come to be known as the "Brazil cost." The added costs associated with working in Brazil include poor infrastructure, excessive layers of bureaucracy, corruption, and high interest rates. According to the World Bank's "Doing Business 2013" rankings, Brazil ranks 130th in the world in ease of doing business, behind China and Russia, and it ranks 156th in ease of paying taxes. Interviews with industry executives reflect the fact that while industrial policy interventions are needed, they will be for naught unless the broader issue of the "Brazil cost" is tackled as well. Thus, while Brazil's "Third Way Developmentalism" seeks to put foreign and domestic capital on the same footing, multinational firms unaccustomed to the market remain at a disadvantage.

#### CONCLUSION

Economic globalization is a byproduct of international production and trade networks organized by transnational firms, and it is embedded in

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98. Sturgeon, Gereffi, Guinn & Zylberberg, *supra* note 93, at 32.

99. *Id.* at 37.

various kinds of regulation, including rules of the game established by international institutions, national government policies, and various forms of private governance that non-state actors use to manage their activities in GVCs.<sup>100</sup> Public governance will likely be called upon to play a stronger role in supplementing and reinforcing corporate codes of conduct, product certifications, process standards, and other voluntary, non-governmental types of private governance that have proliferated in the last two decades, and multi-stakeholder initiatives involving both public and private actors will arise to deal with collective action problems.

The challenge will be to link economic and social upgrading of both material work conditions and the quantity and quality of jobs created in contemporary GVCs.<sup>101</sup> For developing countries, the trade, investment, and knowledge flows that underpin GVCs provide mechanisms for rapid learning, innovation, and industrial upgrading.<sup>102</sup> GVCs can provide local firms with better access to information, open up new markets, and create opportunities for fast technological learning and skill acquisition. Because transactions and investments linked to GVCs typically come with quality control systems and prevailing global business standards that exceed those in developing countries, enterprises and individuals in developing countries can acquire new competencies and skills by participating in GVCs.

Still, GVCs are not a panacea for development. Very rapid or “compressed” GVC-driven development can create a host of new economic and social policy challenges in areas such as health care and education.<sup>103</sup> GVCs can create barriers to learning and drive uneven development over time, even as they trigger rapid industrial upgrading, because of the geographic and organizational disjunctures that often exist between innovation and production. There is considerable evidence that greater profits accrue to those “lead firms” in the value chain that control branding and product conception (e.g., Apple) and to the “platform leaders” that provide core technologies and advanced components (e.g., Intel). At the same time, contract manufacturers and business process outsourcing service providers (e.g., call centers) tend to earn slim profits and may never develop the autonomy or capabilities needed to develop and market their

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100. Gereffi, *supra* note 10, at 21; *see also* Frederick Mayer & Gary Gereffi, *Regulation and Economic Globalization: Prospects and Limits of Private Governance*, 12 *BUS. & POL.*, no. 3, art. 11, at 8 (2010) (formulating a set of propositions about the limited role of private governance in GVCs).

101. Barrientos, Gereffi & Rossi, *supra* note 48, at 319, 322 (offering preliminary findings on economic and social upgrading).

102. Sturgeon, Gereffi, Guinn & Zylberberg, *supra* note 93, at 33.

103. *Id.*; *see also* D. Hugh Whittaker et al., *Compressed Development*, *STUD. COMP. INT’L DEV.*, Dec. 2010, at 439 (identifying the distinct features of “compressed” development in the contemporary global economy).

own branded products. Typically, firms that provide routine assembly tasks and other simple services within GVCs earn less, pay their workers less, and are more vulnerable to business cycles, not least because they are required to support large-scale employment and fixed capital.<sup>104</sup>

Large multinational corporations tend to be the most important suppliers and service providers in GVCs, thus crowding out opportunities for local firms.<sup>105</sup> If low-value-added activities dominate a specific country or region, then consequences for economic performance and social welfare can be profound. Specifically, entrenchment in narrow, routine, low-value-added activities can lock firms and national industries into unprofitable and intellectually narrow segments of the value chain. Learning might be rapid at first, but over time such limits can become acute, especially if lead firms in GVCs move to new sites for low-cost production and more promising markets.<sup>106</sup>

What is the role of policy in the current era? Economic globalization is mainly an artifact of corporate strategy. Top managers and corporate board members make decisions every day about what to invest in and where to invest. Conceptually this seems simple enough, but firm activities frequently transcend national boundaries. There is a growing mismatch between the activities of firms and the economies, policies, and politics of nation-states. Domestic rules provide only one element in the fabric of global governance that large MNEs consider.<sup>107</sup>

Several major features highlight the distinctive nature of GVC-oriented industrial policies. One is the role of global suppliers. GVC-oriented industrial policies require an increasingly sophisticated understanding of the global-scale patterns of industrial organization that have come to the fore in GVCs since at least the 1990s.<sup>108</sup> Lead firms are relying on global suppliers and intermediaries for an array of processes, specialized inputs, and services, and they demand that their most important suppliers have a global presence. Hence suppliers, not lead firms, are making many of the new investments that developing countries are seeking to capture. In many cases, suppliers generate the bulk of exports as well.

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104. Sturgeon, Gereffi, Guinn & Zylberberg, *supra* note 93, at 33; *see also* Boy Lüthje, *Electronics Contract Manufacturing: Global Production and the International Division of Labor in the Age of the Internet*, 9 *INDUS. & INNOVATION* 227 (2002) (documenting the rise of network-based mass production in electronics manufacturing services).

105. Sturgeon, Gereffi, Guinn & Zylberberg, *supra* note 93, at 34.

106. *Id.*; *see also* John Humphrey & Hubert Schmitz, *How Does Insertion in Global Value Chains Affect Upgrading in Industrial Clusters?*, 36 *REGIONAL STUD.* 1017 (2002).

107. Sturgeon, Gereffi, Guinn & Zylberberg, *supra* note 93, at 33–34.

108. Gereffi & Sturgeon, *supra* note 4, at 353.

The capability to serve multiple customers also takes on heightened importance.<sup>109</sup> Thus, it is no accident that Brazil sought investments from Foxconn, rather than Apple, in its desire for iPhones and iPads to be produced in the country for domestic consumption and export elsewhere in Latin America.

A second feature of industrial policies in the GVC era is global sourcing and value chain specialization. Policies that promote linkages to GVCs have very different aims than traditional industrial policies that intend to build full-blown, vertically integrated domestic industries. Policies can target specialized niches in GVCs. These can be higher-value niches suited to existing capabilities, or they can be generic capabilities pooled across foreign investors. Either of these can serve both domestic and export markets. This sort of value chain specialization assumes an ongoing dependence on imported inputs and services. Global sourcing means that the entire value chain may never be captured, but it also assures ongoing involvement in leading-edge technologies, standards, and industry best practices.

Third, firms in emerging economies like China and Brazil are seeking to move to the head of GVCs, regionally if not globally. Encouraging global suppliers to establish facilities within a country has long-term advantages. Local lead firms can rely on global suppliers in their midst and on broader GVCs for a wide range of inputs and services, from design to production to logistics to marketing and distribution. This can lower risk and barriers to entry for local firms, provide access to capabilities and scale that far outstrip what is available domestically, and ensure that products and services are up to date.

The use of industrial policies by emerging economy policymakers should not come as a big surprise. Both developed and developing countries have deployed these policies in the past, often with considerable sophistication, as in the case of East Asian economies such as Japan, South Korea, Singapore, Taiwan, and now China. Looking towards the future, the traditional rulemaking and finance-oriented international organizations of the Washington Consensus era, such as the WTO, the IMF, and the World Bank, face the challenge of constructing a new global economic order that aligns with the shifting roles of both the emerging and developed economies. A stable foundation for sustainable development will require both bold vision and a flexible pragmatism to guide a new generation of inclusive growth policies and institutional arrangements within the global economy.

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109. *Id.* at 354.

FIGURE 1: FIVE TYPES OF GLOBAL VALUE CHAIN GOVERNANCE<sup>110</sup>

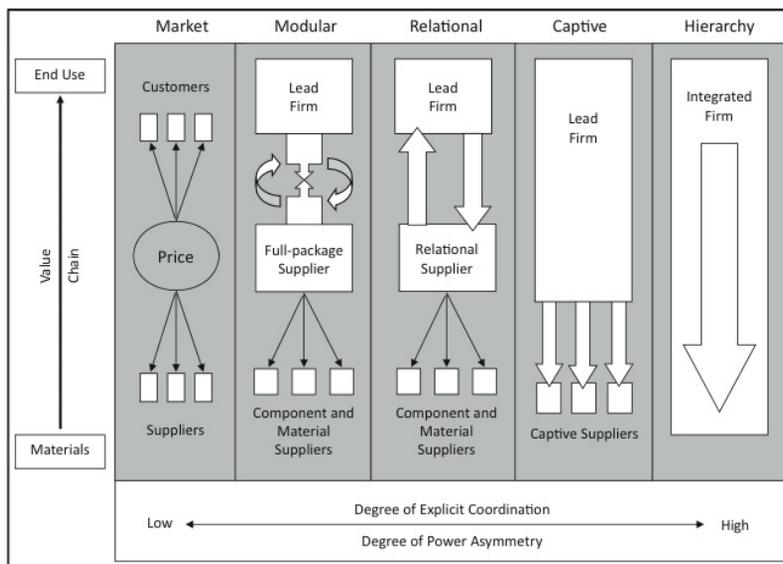


TABLE 1. SEVEN SELECTED EMERGING ECONOMIES IN COMPARATIVE PERSPECTIVE, 2012<sup>111</sup>

Country	Population (Millions) <sup>1</sup>	Exports (\$Billions) <sup>2</sup>	GDP (\$Billions) <sup>1</sup>	GDP/capita (USD) <sup>1</sup>	GDP/capita (PPP) <sup>1</sup>	GDP growth YoY (%) <sup>1</sup>	Percent of GDP <sup>3</sup>		
							Agriculture	Industry	Services
China	1,351	\$2,049	\$8,227	\$6,090	\$9,083	7.8	10	45	45
South Korea	50	\$548	\$1,130	\$22,600	\$30,801	2.0	3	39	58
Russia	144	\$525	\$2,015	\$13,993	\$23,501	3.4	4	36	60
Mexico	115	\$371	\$1,115	\$9,696	\$16,734	3.8	4	36	61
India	1,237	\$290	\$1,842	\$1,489	\$3,813	3.2	17	26	57
Brazil	199	\$243	\$2,253	\$11,322	\$11,716	0.9	5	26	68
South Africa	51	\$87	\$384	\$9,752	\$11,255	2.5	3	28	69
Total or Avg.	3,147	\$4,113	\$16,966	\$10,706	\$15,272	3.4	7	33	61
World Total	7,095	\$16,457	\$84,970	\$11,365	\$12,700	3.0			
% of World Total	45%	25%	21%	94%	120%	112%			

110. Gary Gereffi et al., *The Governance of Global Value Chains*, 12 REV. INT'L POL. ECON. 78, 89 (2005).

111. *The World Factbook*, CENT. INTELLIGENCE AGENCY, <https://www.cia.gov/library/publications/the-world-factbook/>; UN COMTRADE DATABASE, <http://comtrade.un.org/>; *World Development Indicators*, WORLD BANK, <http://data.worldbank.org/products/wdi>.

TABLE 2. EXPORT PROFILES OF EMERGING ECONOMIES, 2000-2012<sup>112</sup>

	Share of exports by sector*					Total Export Value (\$Billions)	Change in total export value, 2000-2012	Percentage point change in share of exports by sector, 2000-2012				
	Primary Products	Resource Based	Low-Tech	Medium-Tech	High-Tech			Primary Products	Resource Based	Low-Tech	Medium-Tech	High-Tech
China	2%	9%	31%	24%	33%	2049	722%	-4	-1	-10	4	11
South Korea	1%	19%	9%	43%	27%	548	218%	0	7	-7	10	-9
Russia	53%	30%	2%	9%	1%	525	409%	12	5	-3	-3	-2
Mexico	17%	8%	9%	39%	23%	371	123%	5	3	-6	2	-6
India	12%	36%	23%	19%	8%	290	584%	-2	8	-16	8	3
Brazil	48%	19%	5%	19%	5%	243	340%	24	-4	-7	-6	-8
South Africa	29%	26%	5%	27%	3%	87	230%	12	-4	-5	1	-1

\*Exports totals do not include uncategorized exports, and therefore they may not equal 100%. Legend:  $x \leq -6$   $-5 \leq x < 0$   $0 \leq x \leq 9$   $x \geq 10$

112. UN COMTRADE DATABASE, *supra* note 111.