Introduction

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At the turn of the millennium, emerging markets (EMs) bent the arc of the global economy. China, India, Latin America, and Africa witnessed over a decade of growth, increased foreign direct investments (FDIs), and pro-market reforms. These shifts gave cause and effect for the expansion of consumer markets and the accumulation of wealth.

Led by China, emerging market multinational companies (EMNCs) rose to ever greater heights, powering local development, innovation, and competition (Casanova et al., 2019; Casanova & Miroux, 2020). Research on innovation gained momentum, meanwhile, stimulated by the global interest for EM issues: how innovation takes place and how countries rank globally. It is now imperative to understand the effectiveness of innovation policies across EMs and their implications beyond.

Innovation is a major contributor to economic and social transformation. EM companies have successfully honed such capabilities and no longer depend solely on foreign technology from advanced economies (Amann & Cantwell, 2012). It is notable that while not all companies have made the pivot from copycats to leaders, a substantial number have crossed the Rubicon. Table I.1 depicts cases and examples examined throughout this book. These leaders are wide ranging, yet all revealing, with distinctive origins, ages, and routes in their trajectories.

Most of the cases and examples in this book are from the E20, a group of top twenty emerging countries established by Cornell University Emerging Markets Institute (see Chapter 13) and including as of 2019: Argentina, Brazil, Chile, China, Colombia, India, Indonesia, Iran, Malaysia, Mexico, Nigeria, Pakistan, Philippines, Poland, Russia, Saudi Arabia, South Africa, South Korea, Thailand, and Turkey (Casanova & Miroux, 2019).

Table I.1 *Emerging markets companies covered in the book*

Company	Sector	Country	Chapter in the book
Alibaba Group Holding	Digital platform	China	5
América Móvil	Telecom	Mexico	1
Artecola	Adhesives	Brazil	9
Bancolombia	Bank	Colombia	12
Bharat Forge	Conglomerate	India	3
Bharti Airtel	Telecom systems and services	India	1
Cemex	Cement	Mexico	1
Crepes & Waffles	Food	Colombia	12
Dr. Reddy's Laboratories	Pharmaceutical	India	3
Embraer	Aircraft	Brazil	13
Eurofarma	Pharmaceutical	Brazil	8
Flipkart	E-commerce	India	5
Glenmark	Pharmaceutical	India	1
Grupo Bimbo	Food	Mexico	1
HCL Technologies	Information technology	India	10
Haier	White goods	China	1
Huawei	Electronics	China	13
INVAP	Satellites	Argentina	4
Jiangsu Hengrui Medicine	Pharmaceutical	China	8
Jumia	E-commerce	Nigeria	5
M-Pesa	Mobile payment platform	Kenya	1
Mercado Libre	Digital platform	Argentina	5
Natura	Cosmetics	Brazil	11
Nubank	Digital bank	Brazil	1
Ping An	Insurance	China	1
Postobon	Conglomerate	Colombia	12
Samsung	Telecoms	South Korea	13

Table I.1 (*cont.*)

Company	Sector	Country	Chapter in the book
State Grid	Energy	China	4
Sun Pharma	Pharmaceutical	India	8
Suplicy Cafés	Coffee shop franchise	Brazil	9
Suzlon Energy LTD	Wind turbine	India	3
Tata	Conglomerate	India	1
Tencent	Digital services	China	13

Sources: Choice made by the authors based on different rankings: Forbes World's Most Innovative Companies 2018; Fortune Global 500 2018; 2018 BCG Global Challengers; Fast Company Most Innovative Companies, 2018.

At the heart of this volume reside the following inquiries: What is driving this phenomenon? What types of innovations are being undertaken? What are the outcomes with, for, and beyond EMs?

By way of response, this book probes the leadership of noteworthy EM economies and companies. Drawing on cases from Africa (Nigeria and Kenya), Asia (China, India, and Korea), Emerging (Eastern) Europe (the Balkans), and Latin America (Argentina, Brazil, Colombia, and Mexico), it describes the capabilities and external conditions that give rise to such developments in both local and global contexts. At its core, this work revisits innovation through the prism of the growing reach of EMs in the global innovation landscape.

And yet, innovation in EMs varies significantly. Some still rely on an incipient process, or on harnessing an incremental process. Others pursue more radical R&D-based innovation toward global dominance, while for others, innovation lies in the development of new business models. Local and regional players develop solutions in terms of cost, with a high level of responsiveness to local needs (frugal innovation, social innovation, and bottom-of-the-pyramid innovation, among others).

In all, the picture of innovation leaders in EMs is complex, and the scant consensus around such issues proves a challenge. From firm-level studies focused on innovation capability formation and on innovation related to local needs to studies concerning the flow between subsidiaries located in EMs and their multinational company (MNC) headquarters, innovation – broadly defined – is now fashionable in EM literature. National systems of innovation and technology catch-up have been well explored, but are devoid of a more integrative approach. Indeed, most works rely on a more singular analysis, missing connections to particular institutional environments and firm capabilities, as well as the differential impacts of innovation. An integrated view of the complex diversity at hand entails more than a lone unit of analysis and gestures toward an interdisciplinary and multilevel understanding.

This book takes such a gambit. It lays bare the profound imprint of EMs on the global economy by way of its grasp of the workings of innovation in these contexts. We discuss distinctive manifestations, the relevance of institutional environments, their impact on social development, and "catch-up" dynamics.

The chapters reflect the broad, and now increasingly accepted, definition of innovation: including not only technology and R&D-based innovation but also new managerial processes and business models as well as specific types of innovation related to local needs (e.g., frugal innovation, social innovation). Such a starting point makes visible new types and mechanisms of innovation in addition to alternative institutional resources for competitive advantage, social development, and interlocking types of innovation in EMs.

The book provides an expansive view of how the EM landscape fits into overall research on innovation. We highlight the significant progress made by EMs as innovation leaders in some industries over the past two decades (2000–2020) and also point to a number of areas demanding attention. The project is the first of a series and part of a wider research schedule of the Emerging Multinational Research Network (EMRN) on issues related to the surge of EMs. The EMRN

is a research initiative since 2014 under the auspices of the Emerging Markets Institute (EMI) at S. C. Johnson College of Business, Cornell University, with the Universidade de São Paulo in Brazil, Universidad de los Andes in Colombia, Tec de Monterrey in México, and Universidad de San Andrés in Argentina. The chapters in this book are written by EMRN members and invited experts from CASTED in China, Copenhagen University, and Temple University. EMRN relies on the extensive results of its case studies, survey-based research, and the annual EMI Report on Emerging Market Multinationals.

I.1 BOOK STRUCTURE

The book begins by presenting the theoretical and empirical context for the study of innovation in EMs. Throughout, we base our framework (Chapter 1) at the bridge between theory and practice, curating the literature so as to resignify the drivers, types, and outcomes of innovation in EMs. The structure of the book reflects the three key dimensions of our framework.

Part I aims to answer the question: What drives innovation leadership in EMs? The response resides in the cases. Some depend on traditional factors (e.g., innovation capabilities, industry competition, and the efforts of other innovators) and on the relationships forged within their innovation ecosystems. Others, still plagued by institutional voids, social demands, high transaction costs, and operational challenges, innovate out of necessity as local challenges give way to business opportunities. The five chapters in Part I explore these nuances.

Chapter 2 opens with the leading EM: China. Two decades of rapid growth and focused innovation policies have powered its companies to invest in key areas that drive innovation. Chinese firms, in particular, have profoundly altered the global competitive landscape, displacing trade and investment flows and implementing a new geography of innovation. This chapter presents the types, industries, and regional structures. It reveals that Chinese companies not only enjoy informal types of innovative activities (e.g., business model,

organizational innovation, among others), but also increasingly embrace R&D-related terrains.

Chapter 3 turns to another major engine of global economic growth, India and its companies. The country represents the seventh-largest GDP. Its national system of innovation (NSI) is rising, reflecting a speedy catch-up process toward innovation standards on par with advanced economies. The chapter draws on comparisons in the wind turbine, pharmaceutical, and auto-parts industries to ascertain the impact of endogenous and exogenous pressures on the Indian NSI.

In the context of EM, well-known approaches to innovation such as technology and R&D-based innovation can be unique in their manifestations. For instance, R&D in advanced economies is typically performed by the private sector (local and multinational companies). However, this domain in EMs faces significant financial and institutional constraints. As a result, innovation is often still championed by government or state-owned companies (Finchelstein, 2017). Chapter 4 explores the role of government involvement as a driver of innovation. The chapter examines the dynamic through the cases of State Grid Corporation of China (SGCC), a state-owned company in the electricity sector and the second-largest global firm by revenues in 2018, and INVAP, an innovation-based state-owned Argentine company specializing in nuclear reactors and satellites. Both are samples of a wider universe of highly competitive state-owned enterprises (SOEs), whose growth rests on innovation buoyed by the state.

The rise of entrepreneurial ecosystems drives much of the increase in the number of innovative start-up companies and so-called unicorns (start-up companies with a valuation of US$1 billion or more). The combination of digital intensity and high connectivity lends credence for rapid innovations, particularly in digital technologies and business models. The latter turns on organization capabilities to improve, recombine, or change, giving rise to new organizational functions, structures, and processes for the reinvention of the business itself. Chapter 5 examines this phenomenon through the lens of

e-commerce and mobile payments, which have become so pervasive through EMs. The case studies include Alibaba (China), Flipkart (at its origin, an Indian firm), Jumia (Nigeria), one of the e-commerce leaders in Africa, and Mercado Libre, the largest Latin American e-commerce company. These companies' business models have adapted to the regions they have incubated in, resulting in innovations such as new modes of delivery and payment systems. The extent to which these firms disrupt their respective markets, expand regionally or globally, and show how emerging countries have become innovation leaders in certain industries is the focus of the chapter.

Chapter 6 explores how entrepreneurial ecosystems become drivers of innovation and leadership in EMs. The chapter turns to the experience of eleven Balkan markets and provides evidence of the dynamism of their entrepreneurial ecosystems despite the shortcomings of the national institutions and low public spending in R&D. Balkan nations score comparatively high on measures of innovation. The chapter emphasizes the role of finance and technical talent as well as the culture and connectedness of the entrepreneurial community as the major drivers behind entrepreneurial ecosystems in the Balkans.

Part II is dedicated to understanding the types of innovation EM leaders are undertaking. The chapters unpack unique manifestations of technology-driven and R&D-based innovation, including reverse, organizational, and business model innovation. Part II, "Types of Innovation in Emerging Markets," rounds out with innovations related to resource scarcity and the fundamental needs of EMs.

There has been remarkable progress of EMNCs in R&D internationalization. Chapter 7 opens Part II and considers a core aspect of innovation: how EMNCs access and leverage knowledge from R&D internationalization. China has seen a particularly strong increase in R&D investments. The country not only successfully attracts foreign firms in R&D but also encourages its own. The chapter presents the internationalization of R&D as a product of the interplay of firm strategies, domestic government policies, and international affairs.

Chapter 8 discusses the market leadership of pharmaceutical companies from EMs and their efforts to move from generic producers to innovators. Since the 1950s, R&D investments in the pharmaceutical sector were based on large MNCs from advanced markets. Over the past thirty years, the pharmaceutical industry has been shaken by profound changes. Investments in R&D for drug development are more expensive than ever before, accelerating digitalization and spurring competition in EMs. Chapter 8 presents the evolution of the industry in China, India, and Brazil and explains how firm-level capabilities of the local companies have evolved. It compares the strategies of innovation by China's Jiangsu Hengrui Medicine, India's Sun Pharma, and Brazil's Eurofarma. It emphasizes the specific capabilities and external conditions that foster the growth of generic drugs by EM pharmaceutical companies in the last twenty years, as well as strategies and paths for their march to competitiveness.

The presence of subsidiaries of MNCs in EM is an important source of innovation and, in many cases, demonstrates significant implications for companies that seek foreign knowledge for innovation. Knowledge transfers from subsidiaries to the headquarters (reverse innovation) have come to garner attention in the last decade. However, an understanding of how foreign subsidiaries integrate with local partners and generate benefits for both sides still proves to be underexamined. Chapter 9 analyzes how the quality of the relationship – relational embeddedness – that subsidiaries of MNCs from developed countries cultivate with local partners influences the development of reverse innovations in EMs.

Chapter 10 explores how EM firms capture value through organizational innovations and comprise changes in the structure and processes for implementing new managerial and working practices. The chapter analyzes the innovations in human resource management systems of one of the largest IT consulting Indian multinationals: HCL Technologies. The chapter presents the "Employees First, Customer Second" (EFCS) management philosophy at HCL

Technologies. The case presents an emerging model of innovation based on value co-creation with employees.

A closer look at innovation in EMs reveals a variety of different terms such as frugal innovation, low-cost innovation, social innovation, bottom-of-the-pyramid innovation, good-enough innovation, resource-constrained innovation, and many others. The interconnection of these terminologies is that they describe innovations that are considerably less expensive than their peers in developed countries, typically triggered by the economic realities of EMs. The last chapters of Part II focus on innovations related to scarcity and constraints.

Chapter 11 turns to the case of frugal innovation in EMNCs. The chapter outlines how Brazilian multinationals employ the frugal innovation strategy to consolidate their international competitiveness. Frugal innovation is not limited to a new product or a redesign of products using fewer resources; it can also involve new production processes and new business models.

Some types of innovation from EMs generate prosperity not from growth per se, but also in combating inequality or promoting peace and social stability.

Chapter 12 examines such practices in places where social demands create opportunities for deep societal transformations. The chapter describes how companies in EMs often operate in territories riddled with conflicts. These companies innovate alongside their stakeholders and undertake initiatives that benefit both the business environment and local communities. Colombia is taken as an example, where armed conflict and postconflict gave rise to innovation in the military and business domains.

Finally, Part III covers innovation outcomes in EMs by drawing on the preceding chapters. Chapter 13 examines innovation performance at the macro-level, analyzing the progress made by emerging countries in global innovation mainly using the Global Innovation Index (GII). At the firm level, we examine the most innovative firms in different rankings, including the European Union industry scoreboard. We also take stock of the importance of industrial policies and

coordinating policies among different stakeholders. The last chapter highlights the lessons from EM innovators and encapsulates the lessons that can be drawn from discussions in this book.

This book highlights innovation success stories in EMs, many of which are moving from copycats to becoming innovation leaders. Today, innovation is not anymore a migration of ideas from the North to the South. Innovation has become global in nature, and there is a need to learn both across developed and emerging economies and also within EMs.

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